ASANTE GOLD CORPORATION

CSE: ASE, FSE: 1A9, U.S. OTC: ASGOF

NI 43-101 Technical Report And Updated Mineral Resource Estimate

CHIRANO GOLD MINES LIMITED

Ghana, West Africa

Effective Date: 31 December 2023

Issue Date: 30 April 2024

Authors/Qualified Persons:

David Michael Begg
BSc (Hons) Geology, Pr.Sci.Nat., GSSA, SAIMM
Director, dMb Management Services (Pty) Ltd

Clive Brown
Bsc (Eng) Mining, Pr. Eng, FSAIMM
Partner & Principal Consultant Bara International

Glenn Bezuidenhout
Nat Dip. (Ex Met) FSAIMM
Senior Process Consultant & Director GB Independent Consulting Pty Ltd

Galen White
BSc (Hons) Geology, FAusIMM, FGSL
Partner & Principal Consultant Bara Consulting UK Limited

Malcolm Titley
BSc Geology & Chemistry, MAusIMM, MAIG
Director & Principal Consultant Maja Mining Limited

OFFICE LOCATIONS

Asante Gold Corporation
Asante Gold Corporation
17 Jungle Avenue
East Legon, Accra
Ghana
Tel: +233 (0) 558 799 3309
Email: info@asantegold.com
Website: www.asantegold.com

dMb Management Services
38 Gemsbok Street
Scarborough
Cape Town, 7975
South Africa
Tel: +27 82 5684549
Email: dmbegg62@gmail.com

BARA International Ltd
PO Box 3085
Road Town
Tortola
British Virgin Islands
Tel: +27 82 5575373
Email: clive@baraconsulting.co.za

MAJA Mining Limited
33b Moffat Avenue
Hillside
Bulawayo
Zimbabwe
Tel: +233 55 978 9490
Email: malcolm.titley.mt@gmail.com

GB Independent Consulting
50 Faisan Avenue
Boskruin
Randburg, 2188
South Africa
Tel: +27 83 236 9804
Email: bezuidenhoutglenn@gmail.com

This report was prepared as a National Instrument 43-101 Standards of Disclosure for Mineral Projects Technical Report for Asante Gold Corporation (Asante). The quality of information, conclusions, and estimates contained herein are consistent with the quality of effort involved in all relevant Authors' services. The information, conclusions, and estimates contained herein are 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 Technical Report. This report is intended for use by Asante subject to the terms and conditions of its contract with the Authors and relevant securities legislation. The contract permits Asante to file this report as a Technical Report with Canadian Securities Administrators/ regulatory authorities pursuant to National Instrument 43-101. Except for the purposes legislated under provincial securities law, any other uses of this Technical Report by any third party is at that party's sole risk. The responsibility for this disclosure remains with Asante. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

Issued by:	***dMb Management Services (Pty) Ltd***
Doc ref:	*Chirano Gold Project 2023*
Date:	*30 April 2024*
Number of copies:	*2*

DATE AND SIGNATURE PAGE

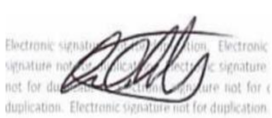
This Report titled - "NI 43-101 Technical Report and Updated Mineral Resource Estimate, Chirano Gold Mines Limited, Ghana, West Africa" - was prepared on behalf of Asante Gold Corporation (CSE: ASE; GSE: ASG; FSE:1A9; U.S. OTC: ASGOF). The Report is compliant with the National Instrument 43-101 and Form 43-101F1. The effective date is 31 December 2023. The issue date is 30 April 2024.

The Qualified Persons responsible for this Report are:

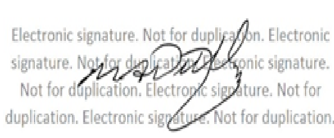
David Michael Begg
BSc (Hons) Geology. Pr.Sci.Nat, GSSA, SACNASP, SAIMM
Director, dMb Management Services (Pty) Ltd
Date: 30 April 2024

Clive Wyndham Brown
Bsc (Eng) Mining, Pr.Eng, FSAIMM
Partner & Principal Consultant, Bara Consulting UK Limited
Date: 30 April 2024

Glenn Bezuidenhout
Nat Dip, (Ex Met), FSAIMM
Senior Process Consultant and Director of GB Independent Consulting (Pty) Ltd
Date: 30 April 2024



Galen White
BSc (Hons) Geology, FAusIMM, FGSL
Partner & Principal Consultant, Bara Consulting UK Limited
Date: 30 April 2024



Malcolm Titley
BSc Geology & Chemistry, MAusIMM, MAIG
Director & Principal Consultant, Maja Mining Limited
Date 30 April 2024

Table of Contents

LIST OF TABLES

LIST OF FIGURES

1. EXECUTIVE SUMMARY

1.1 Terms of Reference

This Technical Report and updated Mineral Resource Estimate ("MRE") for Chirano Gold Mine Limited ("CGML"), which operates the Chirano Gold Mine ("Chirano", "Chirano Gold Mine" or "Project"), was sanctioned on behalf of Asante Gold Corporation ("Asante" or "Company"), a gold exploration and development company with a high-quality portfolio of projects in Ghana and two operating mines. The Company is listed on the Canadian Securities Exchange (CSE: ASE), the Ghana Stock Exchange (GSE:ASG), the Frankfurt Stock Exchange (FSE:1A9), and the United States over the counter market (OTC: ASGOF). The Ghanaian Government holds a 10% non-equity free carry interest in the Chirano Gold Mine.

The Technical Report has been prepared in accordance with the terminology, definitions and guidelines of CIM (2014) and the National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101"). It is prepared and is intended to be used as at the Effective Date, in connection with the ongoing mining and processing operations and to support production, operational improvements and ongoing exploration disclosures made by Asante since previous Technical Report submissions.

In August 2022 Asante acquired Kinross' 90% interest in the Chirano Gold Mine. The Chirano Gold Mine has been in production since 2005 and has a proven track record of production producing over 2.8Moz of gold since Kinross assumed ownership in 2010 up until the end of 2023. Chirano has a current Life of Mine ("LoM") of five years.

The main components of the current Project include:

- Open pit operations at the Mamnao South Pit and more recently the Sariehu and Obra mineralised deposits.
- Six underground operations on the Akwaaba, Suraw, Akoti, Paboase (suspended), Tano and Obra mineralised deposits.
- Extensive supporting existing infrastructure, including 3.6Mtpa upgraded milling circuit, tailings storage facility and all other ancillary infrastructure.
- Successful mine site and regional resource and reserve exploration.
- The impending conversion to a Mining Lease and subsequent planned open pit development of the Aboduabo Project situated in the Chirano North prospecting license area.

This Technical Report supersedes and is an update of the earlier NI 43-101 Technical Report:

"*Amended NI 43-101 Technical Report, Chirano Gold Mine, Ghana, West Africa*" with Effective Date: 31 December 2021 and Issue Date: 15 May 2023.

Mensin Gold Bibiani Limited ("MGBL"), incorporated in Ghana, which owns and operates the neighbouring Bibiani Gold Mine, is also a wholly owned subsidiary of Asante.

The Authors and recognised Qualified Persons ("QPs") from dMb Management Services (Pty) Ltd (South Africa), BARA Consulting (Pty) Ltd (South Africa) and BARA International (BVI), MAJA Mining Limited (UK) and GB Independent Consulting (Pty) Ltd (South Africa) were commissioned by Asante to compile this update Technical Report. All QPs are totally independent of Asante and there is no circumstance that could interfere with any judgments made in this Technical Report.

1.2 Location and Setting

Ghana is a West African country approximately 600km north of the equator on the Gulf of Guinea. It is bordered by Burkina Faso to the north, Ivory Coast to the west and Togo to the east. Ghana has an area of approximately 239,000km² and an estimated population of 33 million people (2021). English is both the official and commercial language while Twi is the most widely spoken language.

The CGML concessions are situated in the Sefwi-Bibiani Belt, in the Western North Region of Ghana. This prolific granite-greenstone terrane is the second-most significant gold producer in Ghana after the Ashanti Belt to the east. The Mine is approximately 250km from the capital Accra, 120km from the regional capital of Kumasi and 15km south-southwest of Bibiani Town (37km by road).

Access to the Mine from Accra is via a sealed highway to Kumasi and then sealed highway running south-west to Bibiani and onwards to the town of Sefwi-Bekwai. The final approach is via a 13km road whose junction is approximately 9km beyond Sefwi-Bekwai.

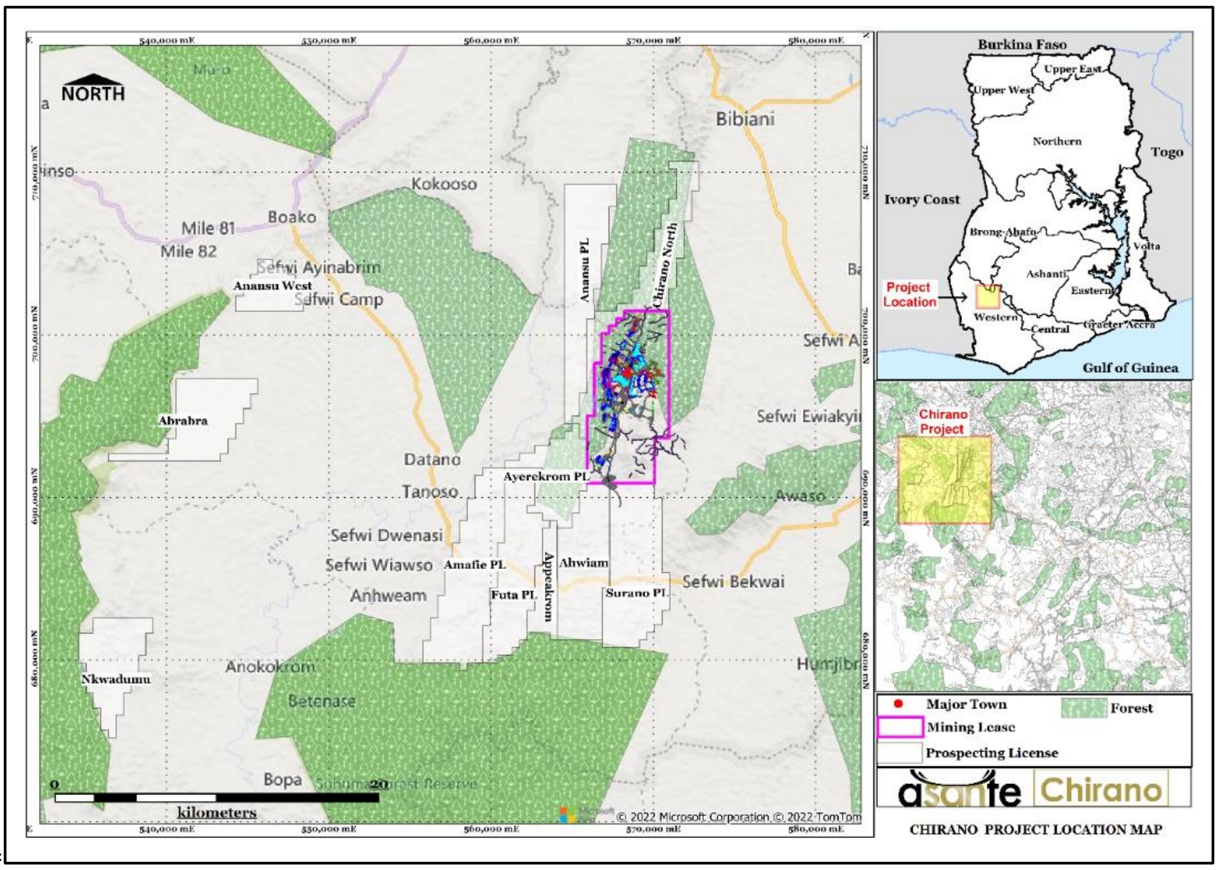


Figure 1-1: Location of Chirano Gold Mine, Western North Region of Ghana

(Source: CGML 2023)

1.3 Property Description and Ownership

The Project is managed and operated by Chirano Gold Mine Limited, a wholly owned Ghanaian subsidiary of Asante Gold Corporation. Asante is listed on the Canadian Securities Exchange (CSE: ASE); the Ghana Stock Exchange (GSE:ASG); Frankfurt Stock Exchange (FSE: 1A9) and the United States (OTC: ASGOF) with headquarters at 615-800 West Pender Street, Vancouver, British Columbia.

All concessions carry a 10% free carried interest in favour of the Ghanaian government under Section 8 of the Ghanaian Mining Act. The Project is also subject to a 5% royalty on gross revenue of all CGML gold production based on monthly gold prices and payable to the Government of Ghana.

A summary of information regarding the Project proponent is given in the table below and covered in more detail in Section 4.

Table 1-1: Chirano Gold Mine Limited - Information of Project Ownership

Detail	Description
Proponent	Chirano Gold Mine Limited (CGML)
Registered Address	17 Jungle Avenue, East Legon, Accra, Ghana
Site Address	Post Office Box 98
Executive Vice President & Country Director	Mr Frederick Attakumah
Mine Manager	Stephen Asante Yamoah

The Chirano Gold Mine comprises a granted mining lease in the Western North Region of Ghana encompassing a multi-deposit complex, within which fourteen gold deposits have been identified, quantified and reserves estimated. Identified mineralised deposits have been historically mined from both open pit and underground operations over a long period of time. The EPA permit has been granted and formal permission to mine is in place. The Mine is located at 697,000N, 568,000E (UTM, WGS84, Zone 30N). CGML also holds approximately 600km² of Prospecting Licenses approved and in process of approval. These are detailed in Item 4.

On advice from CGML there is no environmental liability held over Asante for any of the CGML concessions relating to the Chirano project area, except for project works to date.

Table 1-2: Chirano Gold Mine Limited – Mining Lease

Tenement Name	Licence Category	Title Ownership	Status of Licence/ Expiration Date	Licence Area (km²)
ML2/37	Mining Lease	Chirano Gold Mine Limited, Ghana – 100%	Valid 23 December 2034	46.00

The QPs have not researched property title or mineral rights for the Project and express no opinion as to the validity of ownership status of the property. The Technical Report has been prepared on the understanding that the current operations and property are, or will be lawfully accessible for evaluation, development, mining and processing.

1.4 History

A brief history of the development and ownership of the Chirano Gold Mine is given in the table below.

Table 1-3: History of Chirano Gold Mine Development

Date	Interested Party	Activity
1930's	Two concessions held by Gold Coast Selection and Anglo-African Goldfields Limited	No reports of work
1980's	Billiton International Metals BV	Regional reconnaissance
1990's	Johnsons Limited (Private Ghanaian businessman) and Chirano Goldfields Company Limited	Current phase of exploration initiated
1993	Agreement with Placer Outokumpu Exploration (POE) Limited	Several phases of exploration
1997	Reunion Mining Company	Continues exploration after Government imposed moratorium on exploration
1998	Red Back Mining formed Chirano Gold Mines Limited	Extensive exploration and drill programmes for open pit development. BFS completed in 2003.
2004	Red Back Mining	Decision to develop Chirano Mine. First gold pour in October 2005. 2009 plant expanded to 3.5Mtpa. First underground deposit mined in 2008
2010	Kinross	Buys out Red Back Mining for ownership of CGML
2022	Asante Gold Corporation	August 2022, Asante acquires Kinross' 90% interest in Chirano Gold Mine and CGML becomes a wholly owned subsidiary of Asante.

1.5 Geology and Mineralisation

The geology of Ghana is dominated by metavolcanic Paleoproterozoic Birimian Supergroup sequences (2.25 – 2.06 billion years) overlain unconformably by the predominantly coarse-grained clastic sediments of the Tarkwaian Group (2.12 - 2.14 billion years), in the central-west and northern parts of the country. Clastic shallow water sediments of the Neoproterozoic Volta Basin cover the northeast of the country. A small strip of Paleozoic and Cretaceous to Tertiary sediments occur along the coast and in the extreme southeast of the country.

The Paleoproterozoic Birimian terrains consist of five linear northeast-trending volcanic belts with intervening sedimentary basins. The volcanic belts have been folded by multiple deformation events and are generally 15-40km wide and extend for several hundred kilometres laterally. The 90km wide Kumasi Basin lies between the Ashanti Belt (south-east) and the Sefwi Belt (north-west). And these belts collectively host most of the gold endowment in Ghana. Other world class deposits within the Belt include Ahafo (20Moz, Newmont) and Bibiani (2.3Moz, Asante, 2022).

On a regional scale, the Project is located on the eastern limb of the West African Precambrian Shield which is a cratonised complex of Archaean basement (Item 7). The main components are Proterozoic greenstone belts, granitoids and post-orogenic sediments that extend through Ghana, Burkina Faso, Guinea and the Ivory Coast. Most gold deposits in Ghana are in or adjacent to the Ashanti Gold Belt, the Bibiani-Sefwi Belt and the Asankrangwa Belt.

The Chirano mines and associated mineralised deposits lie within the Proterozoic terrain of southwest Ghana along a major structure separating the Sefwi Belt to the west from the Kumasi Basin to the east known as the Bibiani Shear Zone ("BSZ"). The belt and basin architecture comprises rocks of Birimian age, with the belts being dominated by mafic volcanics and the basins typified by fine-grained, deep marine sediments. Both are intruded by granites. The Chirano deposits lie close to a splay off the BSZ known as the Chirano Shear Zone ("CSZ"). The deposits that are integral in the operations of Chirano occur along a mineralised zone over 11km long. However, regional exploration continues to identify interesting, mineralised targets as extensions both to the north and south of the CSZ. The mineralised zone is characterised by intense folding and subsequent foliation, ubiquitous quartz-carbonate veining and tectonic transpression induced brecciation.

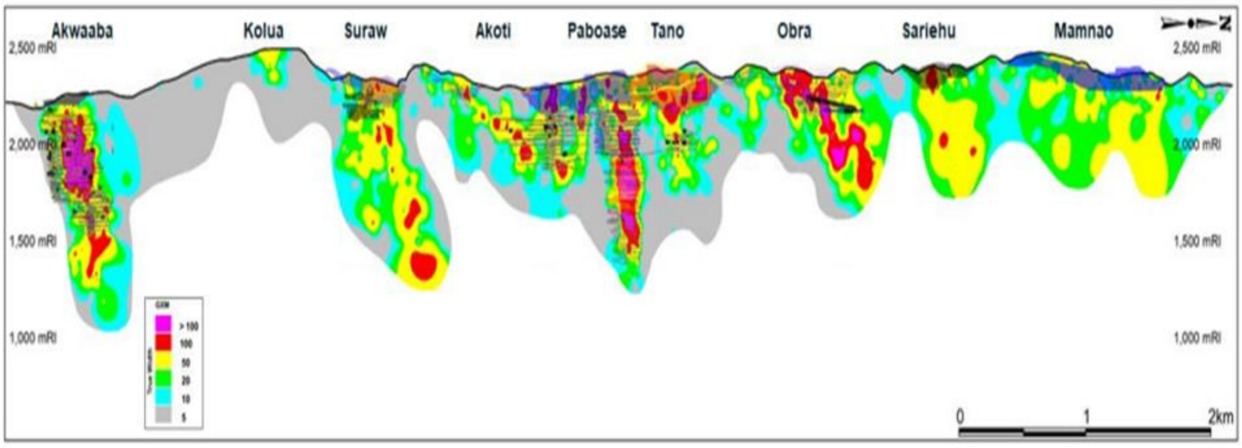


Figure 1-2: Long Section of Chirano Gold Mine Surface and Underground Gold Deposits
Note: Horizontal scale incorrect and vertical scale exaggerated.

The deposits are hosted by fractured and altered mafic volcanics and granite and include stacked arrays of parallel quartz-filled veinlets, veinlet stockworks and mineralised cataclasites. The geometry and shape of the deposits range from tabular (Obra), or pipe-like (Tano) to multiple parallel lodes (Paboase). The mineralised zone thickness ranges from a few metres to over 70m. Most deposits dip very steeply towards the west or southwest and plunge steeply. Generally, the tenor of gold mineralisation is related to intensity of hydrothermal alteration (silica, ankerite, albite, sericite, pyrite), veining and brecciation. The gold is fine-grained and is commonly associated with 1% - 5% pyrite.

1.6 Status of Exploration, Development and Operations

Exploration at Chirano is at a very advanced stage. The known open pit and underground resources have been defined by extensive geological input and drilling over many years. Geological mapping continues to advance knowledge of the mineralization and controls and more sophisticated ongoing ground geophysics has been utilized to probe deeper parts of the 11km strike length of the Chirano Shear Zone.

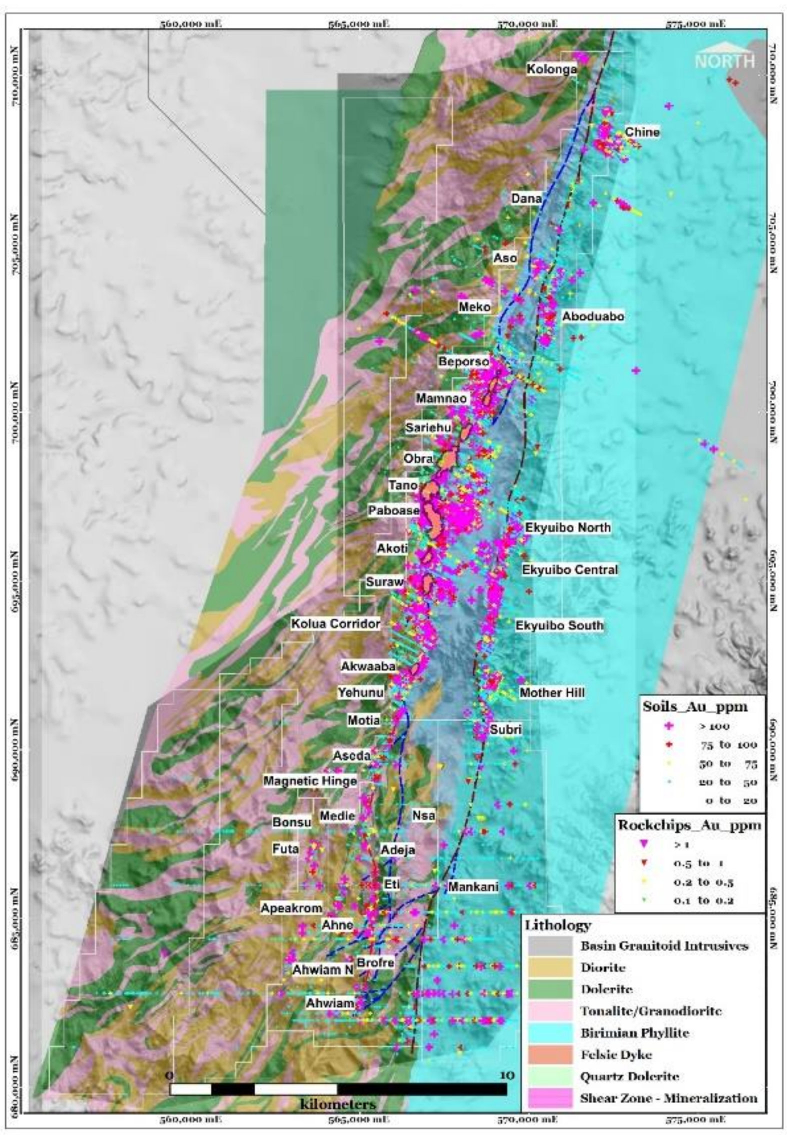


Figure 1-3: Chirano Exploration Targets showing Geology and Au Targets

(Source: CGML 2023)

Since the purchase by Asante, exploration activities have continued to advance the mine's potential for mine life extension and pipeline opportunities beyond the current LoM. Mineral Resources have been successfully converted at Obra, Suraw, Tano, Akwaaba and Mamnao. In addition, successful exploration at the Aboduabo Project in the Chirano North Prospecting License area, 3.5km north of Mamnao open pit, has added Mineral Resources to the previous LoM published in May 2023.

Chirano is a well-established, sizable mine in a mining-friendly jurisdiction. It maintains extensive existing infrastructure with its own installed power supply but also access to the national power grid. It has a 3.6Mtpa milling and CIL processing plant, tailings storage facilities ("TSF"), residential housing, clinic and all other relevant infrastructure to support a large open pit and underground mining operation. It is a producing asset with a strong operating track record which began in 2005. Chirano is recorded to have produced approximately 3Moz Au up to the date of purchase.

The primary components of the current operations of CGML since the last NI 43-101 Technical Report that are discussed in this Technical Report include:

- Continued open pit mining within the Mamnao and Sariehu pits.
- Ongoing underground development and stoping within the Akwaaba, Obra, Tano, Akoti and Suraw Mines.
- Successful resource definition exploration at the Aboduabo Project and inclusion into the current Mineral Resource Estimate.
- Updated and reviewed Mineral Resources and Reserves as at 31 December 2023.
- Upgrades and improved efficiencies in the 3.6Mtpa mill and processing plant.
- Updated capital and operating costs and financial analysis.
- Regional and mine site exploration strategy, results and potential.

Mine production over the last two-year period is summarised in Table 1-4 below.

Table 1-4: Production Statistics for Chirano Gold Mine – 2022 and 2023

Production Year	2022			2023		
Mining Statistics	**Tons (t)**	**Grade (g/t Au)**	**Gold (Oz Au)**	**Tons (t)**	**Grade (g/t Au)**	**Gold (Oz Au)**
Open Pit Operations						
Mamnao Central	723 849	0.78	18 268	932 265	1.00	29 837
Mamnao South	342 527	1.10	12 092	481 041	1.45	22 461
Sariehu				438 346	1.13	15 962
Underground Operations						
Akwaaba	368 325	1.80	21 262	215 603	1.78	12 368
Paboase	69 444	1.85	4 134			
Akoti	540 090	1.83	31 694	252 138	1.48	12 029
Tano	296 503	1.62	15 396	119 455	1.86	7 149
Suraw	489 432	2.12	33 298	507 207	2.20	35 922
Obra	25 497	1.28	1 052	481 384	1.54	28 873
TOTAL	**2 855 666**	**1.49**	**137 195**	**3 427 439**	**1.45**	**159 601**
Processing Statistics	**Tons (t)**	**Grade (g/t Au)**	**Recovery (%)**	**Tons (t)**	**Grade (g/t Au)**	**Recovery (%)**
Total Milled	3 423 470	1.34	88	3 296 882	1.47	86
	Tons/mth (t)	**Grade (g/t Au)**	**Recovery (%)**	**Tons/mth (t)**	**Grade (g/t Au)**	**Recovery (%)**
Average Feed Data	285 289	1.34	88	278 531	1.47	86

As of November 2023, CGML had a workforce of 874 directly under its employment for both underground and surface operations. Out of this number, 2 are expatriate workers, 228 senior staff and line managers, 584 junior staff, and 60 trainees (21 Graduate Trainees, 39 National Service Personnel).

There are 12 Ghanaians in management positions. In addition to this, various contract companies on the mine site employ 1,612 workers on permanent and casual basis.

1.7 Diamond Drilling

Exploration at Chirano is at a very advanced stage and has been ongoing since the late 1990's. It has culminated in the discovery of 14 surface gold deposits and one underground deposit. Significant potential remains to increase the known Mineral Resources and Mineral Reserves, and exploration will continue during the life of the mining operation.

Exploration strategy, during the latter portion of 2021 and through to present date, has focussed exploration activities on resource conversion and mine life extensions, both on the identified main lode horizon and other promising western splay structures. In addition, successful exploration has occurred on the Aboduabo Project which is situated on the Bibiani Shear Zone. At Aboduabo a total of 24,000 metres of drilling was completed in 69 drill holes since Asante took ownership in 2022.

Drilling that has been completed under Asante ownership up to the effective date off this Technical Report is reported in Item 10. CGML has completed and remains active with several resource definition and resource extension drilling exercises to increase LoM mineral resources for the current underground operations (Akwaaba, Tano, Akoti South, Suraw, Obra), and the current and planned open pit operations (Mamnao South-Central-North, Sariehu, Aboduabo).

The revised Mineral Resources Estimate reflects the success of the exploration and additional resources identified. A summary of exploration activities on each deposit target is given in Item 10.

1.8 Sample Preparation, Analysis and Security

The QP from Bara Consulting has reviewed current Standard Operating Procedures (“SOPs”) in relation to sampling, sample preparation, analysis and security and reviewed sampling practises on site during the October 2023 site visit (see Section 12.1). In addition, Quality Control and Quality Assurance (“QAQC”) program protocols and procedures, monthly reports and relevant datasets were also reviewed.

The QP has conducted spot checks on the QAQC datasets via referencing original assay certificates, has reviewed the QA/QC program analysis completed by Chirano over time via review of monthly QAQC reporting and has reviewed control plots for SRMs and blanks as well as duplicate graphs. The QAQC dataset covers sampling completed over project areas, Akoti, Akoti South, Akwaaba, Obra, Paboase, Suraw, Sariehu, Mamnao and Tano.

The QP is of the opinion that the density determination sampling process that was conducted is appropriate for the deposit types and is consistent with industry best-practice.

It is the opinion of the QP that the adequacy of the sample preparation, security and analytical procedures for the Chirano Gold Mine deposits under investigation, and the results of the QA/QC program in place between January 2022 and December 2023 suggest data is of sufficient confidence, accuracy and precision to be acceptable for use in downstream Mineral Resource evaluation.

1.9 Metallurgical Test Work and Mineral Processing

The previous Technical Report dated 15 May 2022 for Asante summarised the historical test work that was undertaken by Kinross from 2010 until the acquisition of CGML by Asante in 2022. It was previously reported that the gold recoveries and associated gold head grades from the historical test reports had not been used for the declaration of the Chirano plant’s 2022 gold recovery performance.

Subsequently, in 2023 additional test work has been undertaken by CGML to increase the gold recoveries by the implementation of plant modifications with the inclusion of gravity concentration in November 2023 and as motivation for the future installation of a shear reactor as a pre-oxidation plant modification. The evaluation of the gold recovery improvement from these plant modifications will be from a baseline of monthly gold recovery consistency over the period of 2022 to 2023.

The estimated gravity concentration recovery from the 2023 test work is 10.5%. This resultant 10% reduction in the CIL head grade by gravity concentration mitigates the recovery losses associated with coarse gold dissolution in the leaching circuit. The estimated overall gold recovery improvement from gravity concentration is in the range of 0.5% to 1.0%.

The 2023 diagnostic leach test shows the gold leached by direct cyanidation was 5.3% and the mild oxidative pre-leached gold extraction was 16,6%. A total of 21.9% of the gold in the tailings could be recovered by utilising the shear reactor’s faster leach kinetics and better oxygen transfer efficiency measured by a >15ppm dissolved oxygen concentration. The increased leach stage gold recovery of 21.9% with a shear reactor reduces the tailings gold grade by 0.04g/t Au equivalent to a 2.5% improvement in overall gold recovery on a 1.40g/t Au head grade.

Preliminary test work was conducted on the Aboduabo oxide ore samples in Q4 2023. At base case leaching conditions the gold recovery ranged between 87.8% and 93.5%.

1.10 Mineral Resource Estimates ("MRE")

The Chirano Gold Mine includes twelve deposits for which Mineral Resources have been estimated, along an 11km long N-S trend. Most of these deposits are currently in production. The deposits, from north to south along the trend are; Aboduabo, Mamnao, Sariehu, Obra, Tano, Paboase, Akoti, Akoti South, Suraw, Kolua, Mag Hinge and Akwaaba.

The Chirano underground Mineral Resource inventory is derived from the following deposits:

- Akwaaba – the first underground mine which came into production during H2 of 2008.
- Paboase – commenced production in Q1 of 2012 and ceased mining in November 2022.
- Akoti – commenced production in 2016.
- Tano – commenced production in Q4 of 2020.
- Sariehu -Production resumed in Q2 2023.
- Aboduabo – a greenfields deposit as yet unmined.
- Mamnao – where production is currently underway at Mamnao North, with Central and South completed.
- Obra – commenced UG development in 2021 and production in 2023; and
- Suraw – commenced production in 2021.

The Chirano open pit Mineral Resource inventory is derived from the following deposits:

- Mamnao – where production is currently underway at Mamnao North:
- Akoti South pit – ceased mining in Q4 2021 after pit re-optimisation.
- Sariehu pit – the open pit cutback 2 near completion.
- Obra pit – the open pit cutback has commenced.
- Mag Hinge – currently a development project.
- Aboduabo – a greenfields deposit evaluated but as yet unmined.
- Kolua – No development is as yet incorporated into the current mine plan.

Mineral Resources disclosed herein have either been prepared by the Company in 2022 and 2023 where additional drilling data has been incorporated into Mineral Resource updates or are those prepared in 2020 and for which there is no new drilling and as such are disclosed herein following depletion for mining activity.

All Mineral Resource estimates have been prepared under the JORC Code (2012) using accepted industry practices and have been classified and reported in accordance with the JORC Code. There are no material differences between the definitions of Measured, Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012).

The QP has reviewed the Mineral Resources for CGML operations. The QP was afforded sufficient access to supporting data, block models and Chirano employees responsible for generating and reporting the Mineral Resource estimates to follow the process through exploratory data analysis, estimation, classification, and reporting. The site visit afforded an opportunity to review and gain sufficient understanding of the on mine data collection and management processes, and the current geological interpretations.

The QP did not identify any material issues with the Mineral Resource estimations and in general considers the standard procedures, and internal controls in place at Chirano to be transparent and robust. QP validations of the Mineral Resources agree with those undertaken by Chirano and the QP concludes that the estimates are a reasonable representation of the grade distributions evident by the composite database informing the estimates.

The Mineral Resource Statement for the Chirano Gold Mine is set out in the tables below, broken down into Open Pit amenable Mineral Resources and Underground amenable Mineral Resources.

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

Table 1-5: Chirano Gold Mine – Open Pit Mineral Resource Statement (inclusive of Mineral Reserves) as at 31 December 2023

Open Pit Operation	Resource Classification	Tons (Mt)	Grade (g/t)	Gold (Moz)
Akoti South	Measured	0.11	1.10	0.004
	Indicated	0.84	1.08	0.029
	Measured and Indicated	**0.95**	**1.08**	**0.033**
	Inferred	0.00	0.00	0.000
Obra	Measured	1.87	0.86	0.052
	Indicated	2.00	0.91	0.058
	Measured and Indicated	**3.86**	**0.89**	**0.110**
	Inferred	0.30	0.66	0.006
Mamnao	Measured	0.30	0.99	0.009
	Indicated	4.16	0.98	0.131
	Measured and Indicated	**4.45**	**0.98**	**0.140**
	Inferred	0.22	0.70	0.005
Kolua	Measured	0.00	0.00	0.00
	Indicated	0.11	1.91	0.007
	Measured and Indicated	**0.11**	**1.91**	**0.007**
	Inferred	0.00		0.000
Sariehu	Measured	0.57	0.93	0.017
	Indicated	1.67	0.93	0.050
	Measured and Indicated	**2.24**	**0.93**	**0.067**
	Inferred	0.02	1.03	0.001
Mag Hinge	Measured	0.00	0.00	0.00
	Indicated	0.00	0.00	0.00
	Measured and Indicated	**0.00**	**0.00**	**0.000**
	Inferred	0.53	1.24	0.021
Aboduabo	Measured	0.00	0.00	0.000
	Indicated	3.28	1.39	0.146
	Measured and Indicated	**3.28**	**1.39**	**0.146**
	Inferred	0.64	1.68	0.035
Total Measured Resources		**2.85**	**0.90**	**0.082**
Total Indicated Resources		**12.05**	**1.09**	**0.421**
Total Measured and Indicated Resources		**14.90**	**1.05**	**0.503**
Total Inferred Mineral Resources		**1.71**	**1.23**	**0.068**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of Mineral Reserves.*
4. *1 troy ounce = 31.1034768g.*
5. *Akoti Sth, Kolua, Mag Hinge and Aboduabo open pit Mineral Resources are reported above a cut-off of 0.49g/t Au. Mamnao, Sariehu and Obra open pit Mineral Resources are reported above a cut-off of 0.31g/t Au, 0.22g/t Au and 0.20g/t Au respectively.*
6. *A density of 2.75 t/m³, 2.30 t/m³ and 1.56 t/m³ for fresh, transition and oxidised sediments respectively, have been applied.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*
9. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

Table 1-6: Chirano Gold Mine – Underground Mineral Resource Statement (inclusive of Mineral Reserves) as at 31 December 2023

Underground Operation	Resource Classification	Tons (Mt)	Grade (g/t)	Gold (Moz)
Akwaaba	Measured	1.93	2.22	0.138
	Indicated	0.67	1.69	0.036
	Measured and Indicated	**2.59**	**2.08**	**0.174**
	Inferred	0.22	1.64	0.011
Obra	Measured	1.46	1.92	0.090
	Indicated	7.16	2.01	0.464
	Measured and Indicated	**8.62**	**2.00**	**0.554**
	Inferred	3.08	1.88	0.171
Suraw	Measured	1.11	2.51	0.089
	Indicated	2.94	2.30	0.217
	Measured and Indicated	**4.05**	**2.35**	**0.306**
	Inferred	1.26	2.80	0.114
Akoti	Measured	2.23	1.98	0.142
	Indicated	1.08	1.93	0.067
	Measured and Indicated	**3.30**	**1.97**	**0.209**
	Inferred	0.65	1.76	0.037
Tano	Measured	1.11	1.95	0.069
	Indicated	1.66	1.74	0.093
	Measured and Indicated	**2.76**	**1.82**	**0.162**
	Inferred	0.85	2.01	0.055
Paboase	Measured	0.09	2.07	0.006
	Indicated	0.08	2.19	0.006
	Measured and Indicated	**0.16**	**2.13**	**0.011**
	Inferred	0.06	1.89	0.004
Sariehu	Measured	-	-	-
	Indicated	0.51	1.41	0.023
	Measured and Indicated	**0.51**	**1.41**	**0.023**
	Inferred	7.50	1.36	0.328
Mamnao	Measured	-	-	-
	Indicated	1.95	1.43	0.090
	Measured and Indicated	**1.95**	**1.43**	**0.090**
	Inferred	3.76	1.59	0.192
Aboduabo	Measured	-	-	-
	Indicated	1.05	1.66	0.056
	Measured and Indicated	**1.05**	**1.66**	**0.056**
	Inferred	0.92	1.73	0.051
Total Measured Resources		**7.92**	**2.10**	**0.534**
Total Indicated Resources		**17.09**	**1.91**	**1.051**
Total Measured and Indicated Resources		**25.00**	**1.97**	**1.585**
Total Inferred		**18.30**	**1.64**	**0.963**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of Mineral Reserves.*
4. *1 troy ounce = 31.1034768g.*
5. *Akwaaba, Obra, Suraw, Akoti, Tano and Paboase underground Mineral Resources are reported within constraining MSO volumes defined following analysis to determine input cut-off grade input parameters. Cut-off grades calculated were 1.13g/t Au, 1.00g/t Au, 1.03g/t Au, 1.10g/t Au, 1.07g/t Au and 1.34g/t Au respectively.*
6. *A density of 2.75 t/m³, 2.30 t/m³ and 1.56 t/m³ for fresh, transition and oxidised sediments respectively, have been applied.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*
9. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

Table 1-7: Chirano Gold Mine – Total Mineral Resource Statement - Open Pit and Underground (inclusive of Mineral Reserves) as at 31 December 2023

Resource Classification		Tonnage (Mt)	Grade (g/t)	Gold (Moz)
Total	Measured Resources	10.76	1.78	0.617
	Indicated Resources	29.14	1.57	1.472
	Measured and Indicated Resources	**39.90**	**1.63**	**2.088**
	Inferred Resources	20.01	1.60	1.031

Notes:

1. *The Mineral Reserve has been reported in accordance with the requirements and guidelines of NI 43-101 and are 100% attributable to CGML.*
2. *Apparent computational errors due to rounding and are not considered significant.*
3. *The Mineral Reserves are reported with appropriate modifying factors of dilution and recovery.*
4. *The Mineral Reserves are reported at the head grade and at delivery to Plant.*
5. *The Mineral Reserves are stated at a price of US$1,700/oz Au as at 31 December 2023.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves.*
7. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate.*
8. *Quantities are reported in metric tonnes.*
9. *The input studies are to the prescribed level of accuracy.*
10. *The Mineral Reserve estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential exploitation of such Mineral Reserves.*
11. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

1.11 Mineral Reserve Estimates ("MRev")

The Mineral Reserve Estimates presented here are based on the December 2023 Mineral Resource Estimates completed by Chirano Gold Mines Limited. Only Measured and Indicated Resources were used in the determination of the Mineral Reserves. CGML have used a gold price of US$1,700/oz Au for determining Mineral Reserves. As at the date of this report (March 2024), the spot gold price is US$2,165/oz.

This Mineral Reserve estimate is based on a depletion date of 31 December 2023. It followed an assessment of the economic viability of the Mineral Resources that were scheduled for depletion before confirming them as Mineral Reserves.

Table 1-8: Mineral Reserve Estimate for Chirano Gold Mine as at 31 December 2023

Classification	Tonnes (000's)	Au Grade (g/t)	Au Ounces (000's)
Proven	3 723	1.99	239
Stockpile(s)	1 567	0.51	26
Subtotal	**5 290**	**1.55**	**264**
Probable	13 419	1.84	795
Total Mineral Reserves	**18 709**	**1.76**	**1 059**

Notes:

1. *The Mineral Reserve has been reported in accordance with the requirements and guidelines of NI 43-101 and are 100% attributable to CGML.*
2. *Apparent computational errors due to rounding and are not considered significant.*
3. *The Mineral Reserves are reported with appropriate modifying factors of dilution and recovery.*
4. *The Mineral Reserves are reported at the head grade and at delivery to Plant.*
5. *The Mineral Reserves are stated at a price of US$1,700/oz Au as at 31 December 2023.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves.*
7. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate.*
8. *Quantities are reported in metric tonnes.*
9. *The input studies are to the prescribed level of accuracy.*
10. *The Mineral Reserve estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential exploitation of such Mineral Reserves.*
11. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

The Qualified Person for Mineral Reserves has satisfied himself that the methodology used for estimating and presenting Mineral Reserves herein conform to the requirements and guidelines of NI 43-101 and therefore supports this Mineral Reserve estimate as stated above.

1.12 Mining Methods

Open pit mining activities first commenced in 2004 when the project was operated by Red Back Mining. First gold from the project was poured in October 2005. Multiple pits were operated along the full strike length of the deposits, with the first underground operation, Akwaaba, commencing in 2008.

There are currently five operating underground mines. From south to north these are Akwaaba, Suraw, Akoti, Tano and Obra. Paboase ceased operation during 2022. There are currently three open pits operating on the mining lease, which are Mamnao, Obra and Akoti South.

Figure 1-4 shows a plan and long section view of mining operations.

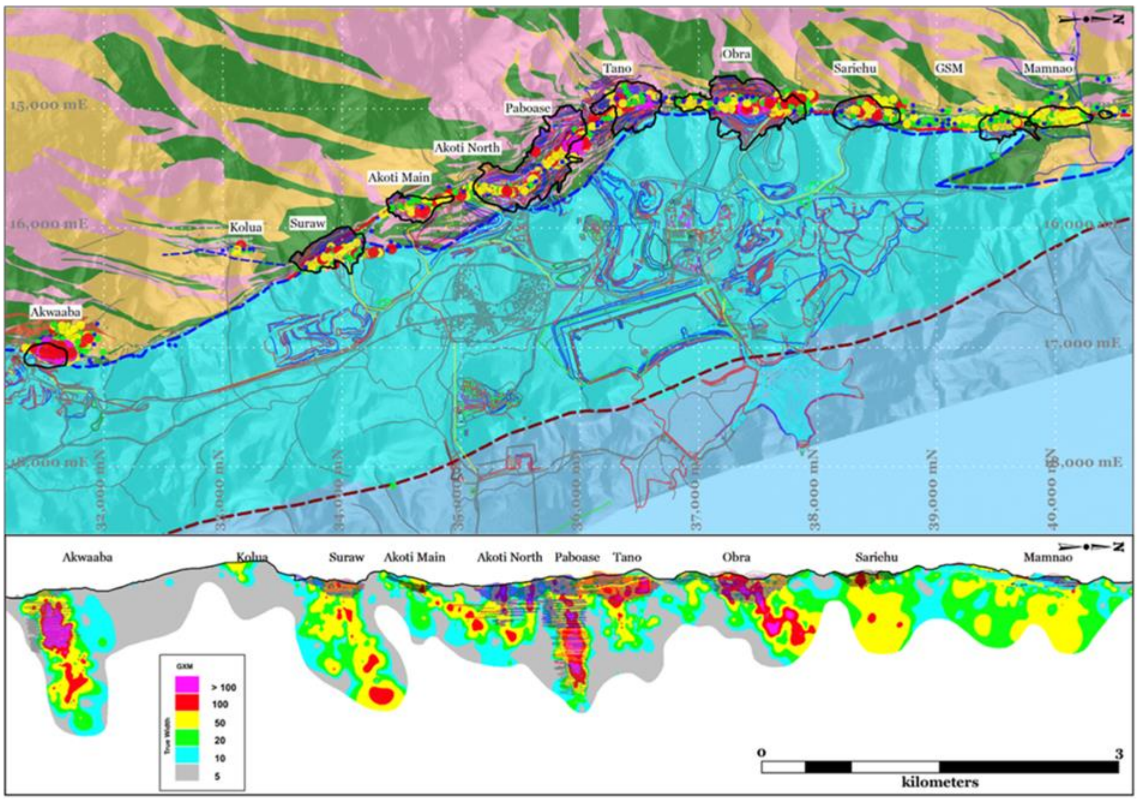


Figure 1-4: Chirano Operations

The average planned annual mine production rate of all mining for the years 2024 to 2028 is approximately 4Mtpa.

All underground mining operations are undertaken by CGML employees. The underground mining operations utilise trackless mobile fleet consisting primarily of Volvo, Caterpillar and Sandvik equipment. The predominant mining method is longitudinal Sub Level Open Stoping, although in wider areas transverse Sub Level Open Stoping is practised. Stopes are backfilled with uncemented waste rockfill, other than in the transverse stopes where cement is added to the fill to provide vertical stability. Ore from the underground operations is hauled to their respective portals or pit crests, where it is generally stockpiled for future delivery to the process plant ROM pad.

A Ghanian contract mining company (Maxmass) are used for open pit mining operations at CGML. The open pits are currently scheduled to be completed by 2026.

The six underground operations will generate from 2.1 million tonnes in 2024 increasing to 3.2 million in 2028. The open pits will produce 2 million tonnes of ore in 2024 reducing to 0.6 million in 2026. Mill feed is supplemented with surface stockpiles to ensure mill feed of approximately 3.8Mtpa in 2024, 4.1Mtpa thereafter, with a ramp down after 2026.

Based on December 2023 Mineral Reserves, the mining operations will continue to 2028. However, there are substantial Inferred Resources that will inevitably be converted to Reserves, extending mine life.

1.13 Recovery Methods

The Chirano Plant has a design throughput capacity of 3.6Mtpa using a comminution circuit comprised of a three-stage crushing circuit that produces a crushed product for a two-stage ball milling circuit. A standard carbon-in-leach (CIL) process is used for gold extraction. Modifications to the plant in 2023 include the Q2 installation of a pebble crusher in the milling circuit to increase the mill throughput to 3.7 Mtpa, the commissioning of the gravity circuit in December and a 10tpd Pressure Swing Oxygen plant to enhance overall gold recovery.

Further plant modification to improve gold recovery are scheduled for 2024. These include the installation of a shear reactor in Q1 on the pre-leach tank and the upgrading of the pre-leach and CIL agitation with larger impellers agitators and agitator motor power in Q2. The efficient oxygen transfer taking place in the pre-leach tank with the shear reactor and the replacement of air with oxygen in the preceding three CIL tanks will improve the gold leaching kinetics and improve the cyanide consumption.

Modifications have been scheduled in 2024 to the crushing and milling plant to increase the plant throughput to 4.0Mtpa or 510tph. These include new smaller diameter cyclone clusters on both secondary milling circuits and the installation of a larger tertiary crusher. Operationally, the primary mill has been operated at 510tph when there is a high percentage of fine material in the feed. The planned operation strategy is to replace one of the three tertiary cone crushers with the larger Sandvik CH865i Hydrocone crusher at a smaller closed-side setting to generate additional fine material in the mill feed by reducing the closed-circuit screen aperture size to 17mm to produce p80 12.5mm mill feed size. Cyclone simulations are targeting a 4.0Mtpa mill throughput at a mill product size of P80 75µm with a 50% reduction in the circulating load. Criteria for the cyclone operation is a controlled cyclone feed dilution and a primary mill discharge particle size of 35% -75µm.

The 2023 average effective crusher plant utilisation was 76% and the average milling plant effective was 91.3%. The mill effective utilisation should increase with the change to the reliable gas-generated power supply from GENSER in September 2023 which will alleviate the numerous plant power outages from the national grid supply. There is a marginally higher plant operations recovery difference of 0.6% in the 2022 gold recovery at 87.1% and 86.5% gold recovery in 2023. Over the two years, the average gold recovery is 86.7% with a standard deviation of 1.6%.

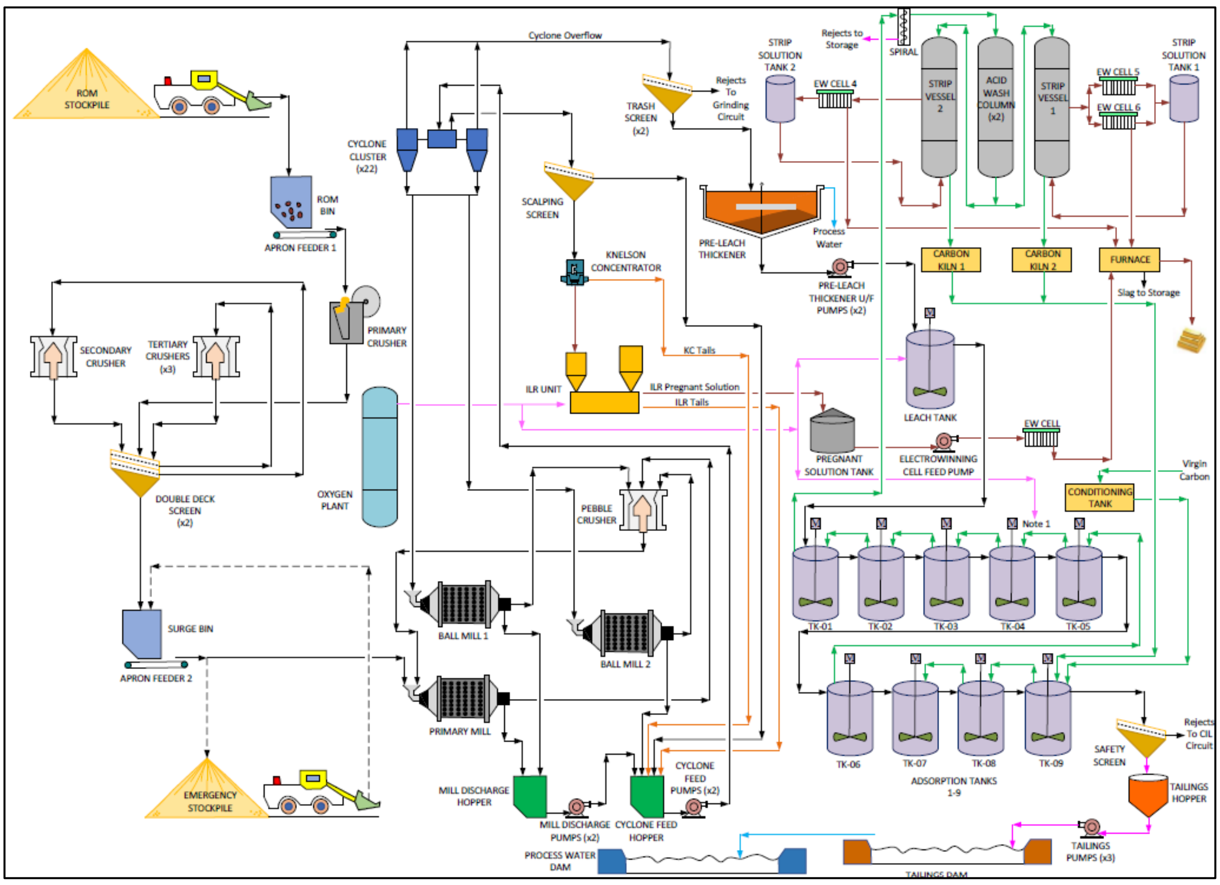


Figure 1-5: Chirano Process Plant Overall Flowsheet

1.14 Infrastructure

The Chirano Gold Mine is a well-established project that has been producing gold since 2005. All infrastructure is in place to continue operations well into the next decade.

Ghana is serviced by international flights to the capital of Accra and to some regional airports within Ghana. The international airport at Kumasi is currently being upgraded to handle a higher capacity of flights from international destinations. Kumasi is approximately 133km by sealed road from the Project.

Security checkpoints are operated at all entrances to the operational areas and to the camp facilities. The high value areas are fully fenced with electronic security passes required for entry. The processing plant is fully fenced, with electronic ID's required for entry. Eighteen full time security staff are employed by CGML in addition to the security contractors.

CGML utilises power supplied primarily by a gas turbine power plant built on site, which is owned and operated by Genser Energy, through a power sales and purchase agreement. The turbines utilise natural gas as a fuel source, which is supplied through a pipeline from Atuabo gas plant 272km from the mine site.

The Electricity Corporation of Ghana supplies power through the national grid. The mine is also connected to the national grid through an onsite substation, which acts as a back-up power supply. The mine further has an 18MW diesel power plant on site which serves as the second back-up power supply for the process plant.

All underground works are undertaken by CGML employees. A large fleet of mobile mining equipment is maintained on site by CGML maintenance personnel. There are two heavy machinery workshops dealing separately with surface and underground mining equipment and a third workshop for light vehicles and auxiliary machines. The open pit mining contractor has its own dedicated mining fleet and workshop.

The Project hosts accommodation for staff members at three camps for a combined capacity of 480 rooms. Many of the local employees reside in the local communities which are proximal to the mine. A small shop, mess hall, bar facilities, pool, gymnasium and tennis courts are available for employees. A full medical clinic is available that is open 24hrs. Two full time doctors are employed. In addition, the Project hosts a pathology laboratory, radiology unit, two ambulances and fire truck.

Full communications are available on surface and underground via IP telephony, 2-way radio systems, internet and standard mobile data systems. Satellite phones are available for emergencies.

All mines are operated with high levels of efficiency with modern planning, software and safety systems. All mines are equipped with mobile refuge chambers, dedicated escape routes and well-designed and good quality ventilation systems.

Offices are spacious and well maintained. Separate office complexes are in use for Administration, Technical Services, Environmental, Exploration, Health and Safety, Processing and Maintenance.

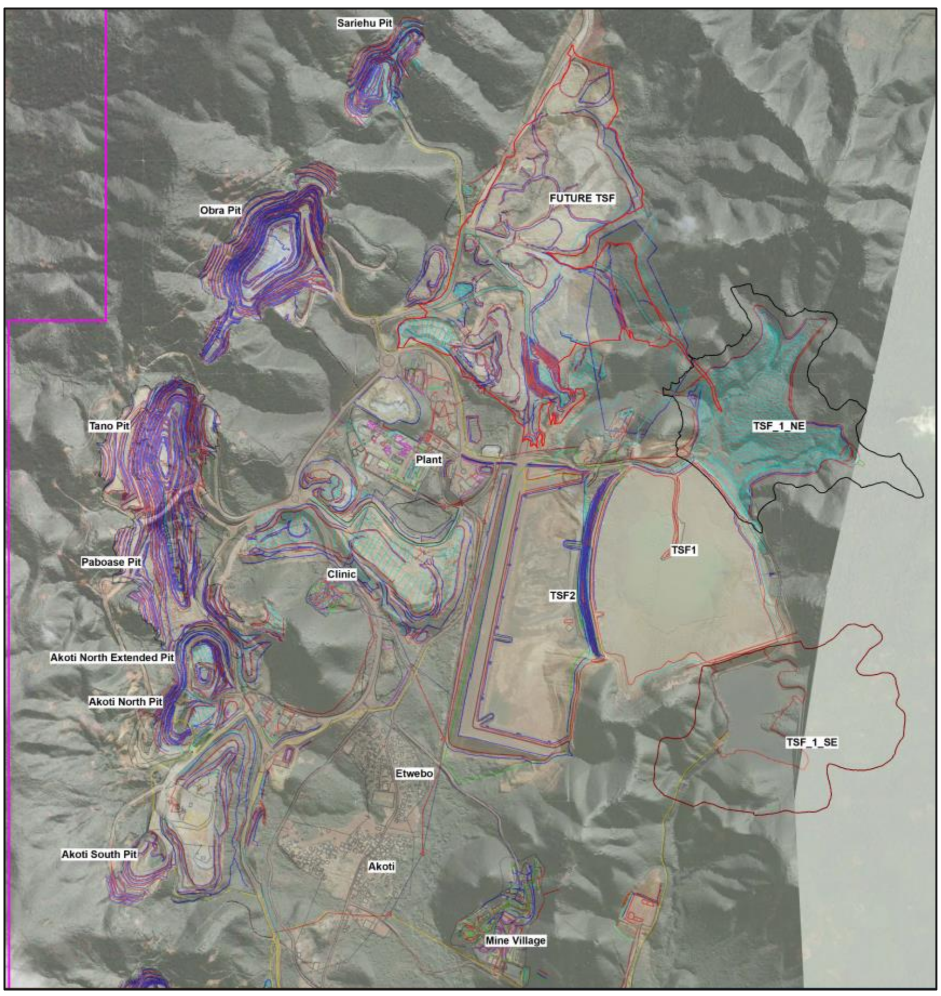


Figure 1-6: Overall Project Site Layout Plan

(Source: CGML 2023)

1.15 Environmental Studies, Permitting and Social Impact

CGML has acquired all the necessary permits to continue to operate the mine and its ancillary facilities. The Mine lease has been renewed and is valid till 2034. CGML is aware of all procedures required to renew permits, certificates and licences that will enable the mine to operate in compliance with all the requirements of the requisite Acts, legislative instruments and guidelines provided by the regulatory agencies.

CGML normally carries out formal stakeholder engagements through the preparations of EIAs for project expansions or special projects. It also engages its key stakeholders quarterly through the Community Consultative Committee (CCC). Out of these engagements, the ADR committee was formed for amicable dispute resolutions.

Detail regarding the environmental studies, permitting, social and community impacts are covered in Item 20.

1.16 Capital Cost Estimate

A summary of the Total Capital Cost is presented in Table 1-9. The table presents the Non-Sustaining Capital, Sustaining Capital and Total Capital.

Table 1-9: Summary of Capital Cost

Cost Centre	Non-Sustaining Capital Cost (US$)	Sustaining Capital Cost (US$)	Total (US$)
Underground Development	45,308,917		45,308,917
Underground infrastructure-Chirano	19,600,878		19,600,878
Tailings Facility	25,000,000		25,000,000
Aboduabo Haul Road Construction	1,000,000		1,000,000
Aboduabo Crop Compensation	2,000,000		2,000,000
Light Vehicles Replacement	1,100,000	761,745	1,861,745
Plant Engineering Capital Repairs		6,843,495	6,843,495
Water Storage Facility		1,653,107	1,653,107
Mobile Equipment/Replacement		23,278,060	23,278,060
Process Plant upgrade/Infrastructure	200,000	4,310,000	4,510,000
Capital Repairs		49,463,007	49,463,007
Total	94,209,795	86,309,414	180,519,209

1.17 Operating Cost Estimate

The operating cost estimate is presented in Table 1-10. The table presents the life of mine total and the unit operating cost per tonne milled and per ounce of gold recovered, by activity.

Table 1-10: Summary of Operating Cost

Operating Cost Centre	LOM Total (US$)	Cost/t ROM (US$)	Cost/oz Au (US$)
Open Pit Mining	207,971,133	11.12	215
Underground Mining	425,645,352	22.75	440
Processing	281,412,510	15.04	291
Site Administration	118,109,157	6.31	122
Royalties	102,947,013	5.50	106
less capitalised mining cost	-45,308,913		-47
Cash Costs	**1,090,776,251**	**58.30**	**1,127**
Exploration	28,781,249	1.54	30
Reclamation Costs	42,013,260	2.25	43
Total Operating Costs	**1,161,570,760**	**62.09**	**1,201**

Life of Mine operating cost cashflow per annum presented in Figure 1-7 with the unit cash operating cost per tonne on the secondary axis. The operating cost cashflow is largely estimated by applying unit rates to the mine production schedule, with fixed costs applied over the Life of Mine where appropriate.

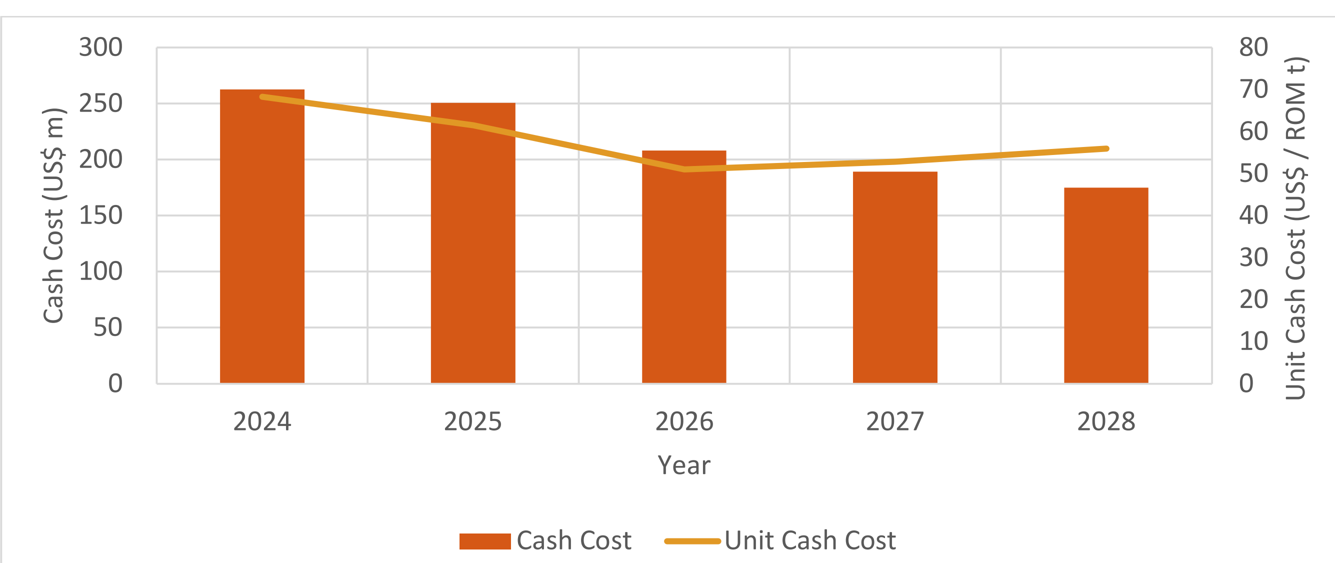


Figure 1-7: Operating Cost Cashflow and Unit Operating Cost

1.18 Economic Analysis

The economic evaluation of Chirano Gold Mine was undertaken through a discount cashflow (DCF) modelling approach. This approach includes determining cashflows through deduction of capital and operating costs from operational revenues. The resulting cashflows are used to determine key financial metrics such as payback period, peak funding requirement, net present value (NPV) and internal rate of return (IRR).

Assumed physicals and process recovery which drive the calculation of revenue is presented in Table 1-11. A total revenue of US$1,8 billion has been calculated over the life of mine.

Table 1-11: Calculation of Revenue

Description	Unit	Value
Processed Tonnes	(t)	18,709,201
Processed Gold (Au) Content	(oz)	1,053,759
Processed Gold (Au) Grade	(g/t Au)	1.75
Process Recovery (LOM Average)	(%)	92%
Recovered Content	(oz)	967,547
Troy Ounces Sold	(oz)	967,547
Gold Price (LOM Average)	(US$/oz)	1,900

A summary of the results of the discount cashflow analysis is presented in Table 1-12. The table shows that the post-tax NPV is US$253 million at a discount rate of 5% Post-tax cashflow is presented in Table 22-4.

Table 1-12: Summary of Discount Cashflow Analysis

Metrics	Units	Value (LOM/Avg)
Physicals		
Tonnes Milled	(t)	18,709,201
Gold Produced	(oz)	967,547
Recovered Grade	(g/t)	1.61
Life of Mine (Incl. Closure)	(years)	7
Capital Cost		
Non-Sustaining Capital Cost	(US$)	94,209,796
Sustaining Capital Cost	(US$)	86,309,414
Total Capital Cost	US$	180,519,210
Operating Cost		
Total Operating Cost	(US$)	1,161,570,760
Cash Cost	(US$/t ROM)	62.09
AISC	(US$/t ROM)	66.70
AISC	(US$/oz)	1,290
Economics		
Revenue	(US$)	1,838,339,512
EBITDA	(US$)	676,768,752
Free Cashflow (After Tax)	(US$)	308,643,019
Post-Tax NPV_5	(US$)	253,126,096
Operating Margin	(%)	37

1.19 Conclusions and Recommendations

Chirano holds the relevant mining leases, surface rights, major approvals and permits required for ongoing mining operations and exploration.

Several consulting geologists have been appointed by CGML over the last few years to assist the in-house geological team in the understanding of the regional and mine site geological, structural and mineralogical characteristics and interpretations. The Chirano mineralisation is part of a regional structure and is not the only deposit of its type in the region. The nature of the mineralisation style and setting are therefore well understood and can support a declared Mineral Resource and further exploration potential.

The QP's found that sampling methods, preparation, analyses and security are performed to Industry Standards and data is fit for use in MRE and MRev estimation. Appropriate QA/QC programs, to address precision and accuracy of information, are adhered to by the Company geologists and exploration teams.

The relevant QP's have reviewed the Mineral Resources for the CGML operations which are estimated by the company's employees. The QPs were afforded sufficient access to supporting data, block models and CGML employees responsible for generating and reporting the Mineral Resource estimates to follow the process from exploratory data analysis, estimation, classification, and reporting. The site visit enabled the QPs to review and gain sufficient understanding of the on mine data collection and management processes, and the current geological interpretations. The QPs did not identify any material issues with the Mineral Resource Estimation and consider the standard procedures, and internal controls in to be transparent and robust. The validations carried out on the Mineral Resources agree with those undertaken by Chirano. The estimates are a reasonable representation of the grade distributions evident by the composite database informing the estimates.

The Chirano deposits relevant to this Technical Document are mined by active open pit and underground operations. Mineral Reserves are supported by a positive economic assessment having been undertaken assuming a US$1,900/oz Au price. The cut-off grades selected for the various mineralised underground and open pit deposits were deemed appropriate for the Company objectives and LoM analyses.

In 2022 to 2023 additional test work was undertaken by CGML to increase the gold recoveries by the implementation of plant modifications. The Chirano Plant has a design throughput capacity of 3.6Mtpa using a comminution circuit comprised of a three-stage crushing circuit that produces a crushed product for a two-stage ball milling circuit. A standard carbon-in-leach (CIL) process is used for gold extraction. In December 2023 the PSA Oxygen Plant was commissioned to deliver 10 tons of oxygen per day to the leaching circuit. The 2024 scheduled installation of more efficient secondary mill cyclone classification coupled with a finer mill feed size from the installation of larger tertiary cone crusher will give better operational control at the 510tph mill feed rate in the ramp up to 4.0Mtpa. The uprating of the tank agitation with high powered mixing in the pre-oxidation tank and the CIL tanks together with the replacement of air sparging with oxygen in the tanks will improve the efficiency of the gold dissolution and cyanide consumption. The installation of a shear reactor to the 3200m^3 pre-leach tank using oxygen generated from the new PSA pressure plant will improve the oxygen transfer efficiency.

Chirano has received all necessary legal requirements and complies with environmental and social requirements. The TSF is managed under a current contract by Knights Piesold Ghana Limited.

The discounted cashflow model for the proposed operation demonstrates that the Project is robust under the current techno-economic assumptions described in the report and continues an attractive economic future. The analysis supports the declared Mineral Reserve and supports the Company's decision to progress with the acquisition.

Exploration at Chirano is at a very advanced stage and has been ongoing since the late 1990's and therefore is considered a well-developed, well maintained, brownfields mining project. It has culminated in the discovery of 14 surface gold deposits and one underground deposit. Significant potential remains to increase the known Mineral Resources and Mineral Reserves, and exploration will continue during the life of the mining operation.

The Project is considered by the QPs to be an advanced mining operation and therefore most engineering, mining and other technical studies, as well as cost associated estimates, have been completed and are in operation.

2. INTRODUCTION

2.1 Issuer – Asante Gold Corporation

Asante Gold Corporation ("Asante" or the "Company") is a pure gold exploration, development and operating company with a high-quality portfolio of projects and operating mines in Ghana, Africa's largest gold producer, and is focused on developing high margin gold projects. Asante is operating both the Bibiani and Chirano Gold Mines, situated approximately 15km apart, creating a highly prospective gold district that exceeds 53km in length and cover 392km². Asante also continues with detailed technical studies at its Kubi Gold Project and on other Ghana-based exploration concessions adjacent to these properties.

Asante has its headquarters at 615-800 West Pender Street, Vancouver, British Columbia and is listed on the following Exchanges:

- Canadian Securities Exchange (CSE: ASE),
- Ghana Stock Exchange (GSE:ASG),
- Frankfurt Stock Exchange (FSE: 1A9),
- United States (OTC: ASGOF).

Asante holds a strategic land position within the region surrounded by world class gold producers. Asante has interest in >90km² along strike of AngloGold's Obuasi Mine (Mineral Resource 24.5Moz Au, www.anglogoldashanti.com) and Perseus' Edikan mine (Measured and Indicated Mineral Resource of 2.1Moz Au: www.perseusmining.com). Asante also has interest in +200km² along strike of Galiano Gold's Asanko Mine (Measured and Indicated Mineral Resource 3.5Moz Au; www.galianogold.com). The Chirano Gold Mine shares the same geological gold belt as the Ahafo Mines owned by Newmont (8Moz Au produced to date; www.newmont.com).

The Chirano Gold Mine ("Chirano", "Chirano Gold Mine" or "Project") are managed and operated by Chirano Gold Mines Limited ("CGML"), a wholly owned Ghanaian subsidiary of Asante Gold Corporation. The Project has a past production of circa 5Moz and is fully permitted with available mining and processing infrastructure on site, consisting of a 3.6Mtpa mill and processing plant and extensive existing underground and surface infrastructure. The Ghanaian Government carries a 10% non-equity free carry in the Chirano Mine.

The QP's have not attempted to assess or verify the information available in the public space regarding the properties that surround the land holding under licence to Asante and therefore this information is by no means indicative of the mineralisation on the properties mentioned or described in this Technical Report.

Figure 2-1 below illustrates the various interests that Asante is investigating at this current time. It must be noted that some prospecting licences are subject to final transfer, royalties and Governmental approvals.

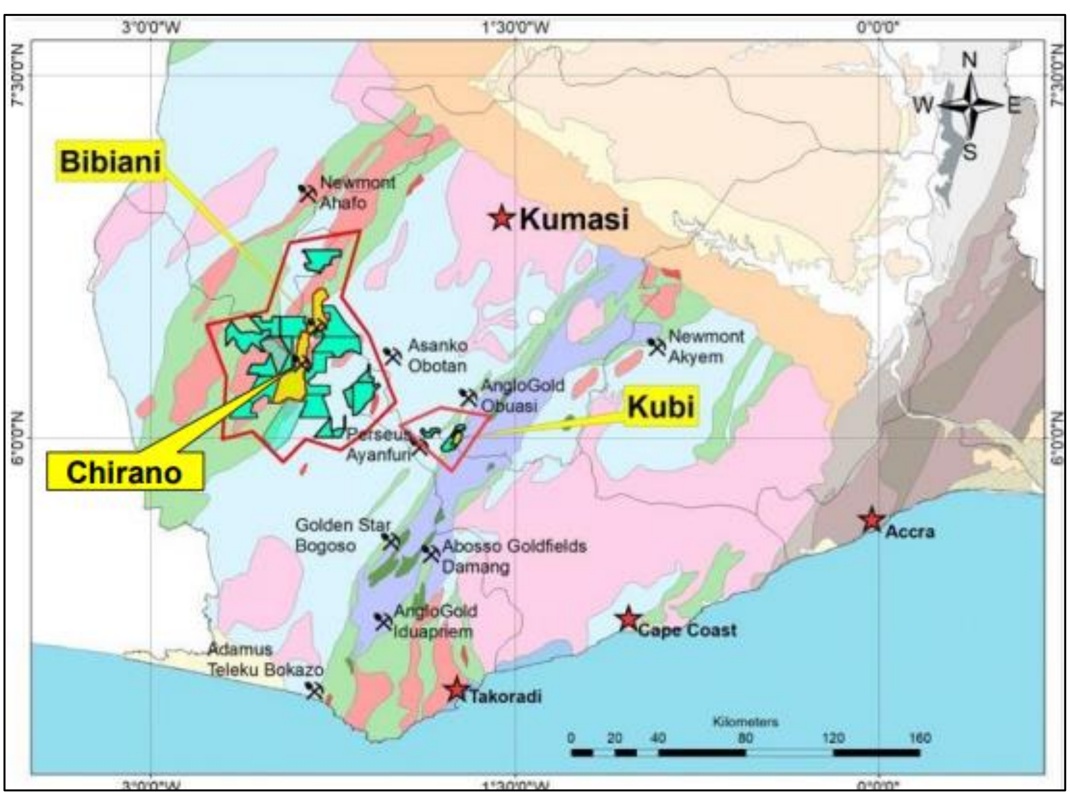


Figure 2-1: Asante Gold Corporation – Land Package showing Mines and Current Exploration Concessions

(Source: CGML 2023)

Note: Some concessions await Ministerial Approval

2.2 Terms of Reference

This Technical Report and updated Mineral Resource Estimate is a National Instrument 43-101 ("NI 43-101") compliant Technical Report on the Chirano Gold Mine owned and operated by Chirano Gold Mines Limited. The Mines and adjacent exploration concessions are owned 100% by CGML, a wholly owned Ghanaian subsidiary of Asante Gold Corporation.

This Technical Report supersedes the previous NI 43-101 Technical Reports:

1. "NI 43-101 Technical Report, Chirano Gold Mine, Ghana, West Africa" with Effective Date: 31 December 2021 and Issue Date: 30 September 2023. Compiled by dMb Management Services, BARA International, Snowden Optiro and GB Independent Consulting.

2. 'Amended NI 43-101 Technical Report, Chirano Gold Mine, Ghana, West Africa" with Effective Date: 31 December 2021 and Issue Date: 15 May 2023. Amended by dMb Management Services with consent from BARA International, Snowden Optiro and GB Independent Consulting.

The Project consists of a multi-deposit complex with at least fourteen mineralised deposits, eleven of which making up the updated Mineral Resources contained in this Technical Report. The Chirano mineralised deposits have been historically mined from both open pit and underground operations over a long period of time.

The Project has extensive existing infrastructure which includes an operational carbon-in-leach ("CIL") processing plant with a capacity of 3.6Mtpa.

2.3 Purpose of Report

The previous amended NI 43-101 for the Project, issued in May 2023, was sanctioned and completed in response to the acquisition of CGML by Asante in August 2022. The primary components of the overall operations and mineralised deposits of CGML at that time included:

- Mamnao and Sariehu open pit operations.
- Five operational underground mines (Akwaaba, Obra, Akoti and Tano, and Suraw).
- Establishment of Obra underground mine.
- 3.6Mtpa Mill and Processing plant.
- Successful completion of Process Plant Improvement projects.
- Tailings Storage Facility (dam/impoundment).
- Establishment of Aboduabo open pit operation in 2024.
- Various resource extension mine site and regional exploration projects.

However, after the purchase date, Asante embarked on numerous initiatives to expand resources both mine site and regional, improve underground mining and plant processing efficiencies, improve general infrastructure and increase and advance regional exploration.

This update Technical Report is focused on communicating change in all aspects of the Project in the intervening period since acquisition and will include, but is not restricted to, technical details of the following:

- The status of mining and processing operations.
- A review of updated Mineral Resources and Reserves with an effective date of 31 December 2023.
- A review of the LoM plan, operating and capital costs, and economic analysis.
- Inclusion of the Aboduabo Project mineralised deposit and planned development.
- A review of the results and geological interpretation from ongoing mine site and regional exploration.

This Technical Report has been prepared in accordance with the terminology, definitions and guidelines of CIM (2014) and the National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101"). The Technical Report is prepared and is intended to be used as at the Effective Date, in connection with the ongoing mining and processing operations and to support production, operational improvements and ongoing exploration disclosures made by Asante since previous Technical Report submissions.

2.4 Authors and Qualified Persons

The principal authors and recognised Qualified Persons of the Technical Report are listed in Table 2-1 below.

Table 2-1: Qualified Persons – Showing Items, Site Visits Dates and Purpose

Qualified Person	Company	Site Visit Date(s)	Item/Section	Primary Responsibility
David Michael Begg	dMb Management Services (Pty) Ltd	12/10/2023-16/10/2023 23/11/2023-26/11/2023	1-10, 20, 23-27	Principal Author, geology, exploration and general overview of entire Project.
Malcolm Titley	MAJA Mining Ltd	Visited in 2022.	14	MRE Evaluation
Galen White	BARA International (BVI)	12/10/2023-16/10/2023	11-12	Sample Preparation, Data Verification.
Clive Brown	BARA International (BVI)	23/11/2023-26/11/2023	15-16, 18-1 to 18-12, 19, 21-22	Mining & Mineral Reserves, Opex & Capex , Infrastructure
Glen Bezuidenhout	GB Independent Consulting (Pty) Ltd	23/11/2023-26/11/2023	13, 17, 18-13	Metallurgical Test work and Processing Design

Note: All QP's had input into Items 1, 25 and 26.

Members of dMb Management Services, BARA Consulting, MAJA Mining, GB Independent Consulting or any other external sources involved in the preparation of this report, have no material interest in Asante or the mineral assets considered in this report.

Certificates of Qualification are contained in Section 27.

2.5 References and Information Sources

CGML have provided certain information, internal and external reports and data to the Authors in preparing this document which, to the best of CGML's knowledge and understanding, is complete, accurate and true and CGML acknowledges that the Authors have relied on such information, reports and data in preparing this document. No warranty, or guarantee, be it express, or implied, is made by the authors with respect to the completeness, or accuracy of the legal aspects of this document.

Current operational information, resource modelling and estimations, environmental responsibilities and status, LoM planning and exploration projects and data used in compiling the Technical Report was sourced and derived from updated mine site and corporate reports and personal communications with the Asante and CGML executive and senior management, mine site employees and associated consultants. Additional sources include the CGML data room, previous feasibility studies and technical reports, public disclosures and exploration presentations, and other specific technical documents relevant to the Chirano Gold Mine, the current operations, investigations and exploration.

Professor Kim Hein, Principal Consultant and Director of ***KAAH Geoservices***, Netherlands, has been involved on an ad hoc basis in the structural and geological interpretation of mine and regional geology and mineralisation trends in the Bibiani Shear complex. Work done by Professor has input, with permission, into Sections 7.2; 7.3; 8; 9.2.1; 9.2.2 which relate to the local geology and interpretation of exploration information.

Mr Joe Baidoe of ***RonDave Engineering Solutions*** has had input into Section 16.3 dealing with the open pit and underground geotechnical analyses. Mr Baidoe is a Ghanaian resident with > 25 years of rock engineering experience in Ghana and has had relevant exposure in Canada, Australia, South Africa and Brazil. He is a member of the International Society of Rock Mechanics and of the Ghana Institute of Engineers. Currently, he is also a part time (Adjunct) Lecturer at the University of Mines and Technology in Tarkwa, Ghana.

The authors, all of whom have visited the mine site and operations in Ghana, have made all reasonable enquiries to relevant Company management and mine personnel to establish completeness and authenticity of the information provided. In addition, a final draft was presented to the Company along with written request to identify any material errors or omissions prior to lodgement.

The Authors are satisfied that Asante, its representatives and employees, have disclosed all material information pertaining to its Chirano Project and related matters. Asante has agreed to indemnify the Authors from any liability arising from its reliance upon the information provided or from information not supplied. A draft version of this report was provided to the Directors of Asante for comment in respect of omission and factual accuracy.

2.6 Personal Inspections by QPs

CGML site was visited by the following QPs and the tasks carried out are summarised below.

Table 2-2: Summary of QP's Visits and Activities

Qualified Person	Visit Date	Activity
Mr DM Begg dMb Management Services (Pty) Ltd	12 – 15 October 2023 23 – 26 November 2023	The following activities and visits were carried out: • All the operational open pits were visited. • The newly defined Aboduabo mineralised deposit and field exploration drilling site was visited and discussed. • The RoM pad, waste dumps and general mine infrastructure were inspected. • The core shed was visited to examine and review the core storage, geological and structural logging, core sampling and current QA/QC protocols. • Meetings were held with site personnel to review drilling procedures, sampling practices, general QA/QC protocols and data management. • The mine roads to and from the mining sites to the processing plant and other infrastructure were travelled and are all in good condition. • The nearby residential and community settlements were also observed.
Mr G White Bara Consulting (BVI)	12 – 15 October 2023	For the purposes of completing audit works in relation to geological data collection, sampling and Mineral Resource evaluation. Audits, inspections and activities were undertaken of the following: • Held meetings with geological personnel in relation to geological setting, mineralisation styles, deposit portfolio, exploration activity, data collection and Mineral Resource evaluation. • Visit to all open pit environs including Mamnao Pit. • Review of workflows for data collection, inspection of geological plans, sections and presentations, including review of litho-structural model interpretation. • Inspection of core processing facilities and inspection of selected drill core from Akwaaba and Aboduabo mineralised deposits. • Review of database structure, validation processes and assay QA/QC. • Review of Mineral Resource modelling processes, assumptions, and estimation methodologies.
Mr C Brown BARA Consulting (BVI)	23 – 26 November 2023	In order to collect data, verify physical conditions and interact with site personnel, to support the reporting of Mineral Reserves, a site visit was undertaken. The following activities were undertaken during the visit: • Held discussions and meetings with management and technical services personnel to discuss mine plans and mining operations. • Visited open pit and underground operations to observe production and technical services activities as well as operating conditions. • Visited the core shed to observe drill core pertaining to the Mineral Reserves and mine planning. • Reviewed the workflows and procedures for mine planning and the estimating of mineral Reserves. • Undertook a general tour of the mine site to observe and verify the existence of infrastructure requirements to support the life of mine plans.
Mr G Bezuidenhout GB Independent Consulting (Pty) Ltd	23 – 26 November 2023	For the NI 43-101 Technical Report for Chirano specifically Chapter 13: Metallurgical Test Work, Chapter 17: Recovery Methods, and Chapter 18: Infrastructure – TSF, the following activities and visits were carried out. • Inspected the Bibiani plant and met with the plant superintendent. A list of process and metallurgical information was reviewed. • Visited the TSF and reviewed latest Knights Piesold Site audit reports.

All references and information sources are listed in Section 28.

2.7 Effective Date and Declaration

The Issue Date of this Technical Report is 30 April 2024. The Effective Date of the Technical Report is 31 December 2023.

As of the date of this report, the authors are not aware of any material fact or change with respect to the subject matter that is not presented herein, or which the omission to disclose could make this report misleading.

2.8 Units, Currency and Abbreviations

Unless otherwise stated, all currencies are expressed in US dollars (US$), with metric units applied throughout this Technical Report.

Section and Item have been used interchangeably in this Technical Report.

Table 2-3: Abbreviations and Units of Measurements

Abbreviation/ Unit of Measurement	Description	Abbreviation/ Unit of Measurement	Description
%	Percent	MRE	Mineral Resource Estimate
°	Degrees	MRev	Mineral Reserve Estimate
°C	Degrees Celsius	mRL	Reduced Level/Depth or Height of a Place (in m) Above a Reference Datum or Mean Sea Level
3D	Three-Dimensional	Mt	Million Tonnes
AAS	Atomic Absorption Spectrometry	Mtpa	Million Tonnes Per Annum
Ag	Silver	NI 43-101	Canadian Securities Administrators National Instrument 43-101
AISC	All-In-Sustaining-Capital	NPV	Net Present Value
As	Arsenic	opex	Operating Expenditure
capex	Capital Expenditure	oz	Ounce (Troy)
CIL	Carbon in Leach	Pb	Lead
CIM	Canadian Institute of Mining, Metallurgy and Petroleum	PFS	Prefeasibility Study
cm	Centimetre(s)	pH	Activity of Hydrogen Ions
CP	Competent Person	ppm	Parts per Million
Cu	Copper	QA	Quality Assurance
DDH	Diamond Drill Hole	QA/QC	Quality Assurance/Quality Control
EPA	Environmental Protection Agency	QC	Quality Control
FEL	Front End Loader	QP(s)	Qualified Person(s)
FS	Feasibility Study	RAP	Resettlement Action Plan
g	Gram(s)	RC	Reverse Circulation
g/cm^3	Grams(s) per Cubic Centimetre	Resolute	Resolute Mining Limited
g/t	Grams per Tonne	RF	Revenue Factor
G&A	General & Administration	RoM	Run of Mine
GPS	Global Positioning System	SABC	Semi-Autogenous and Ball Milling Circuit
hr	Hour(s)	SAG	Semi-Autogenous Grinding
ha	Hectare(s)	SD	Standard Deviation(s)
kg	Kilogram(s)	$Si0_2$	Silicon Dioxide (Silica)
KNA	Kriging Neighbourhood Analysis	SLC	Sub Level Caving
JORC	Joint Ore Reserves Committee	SLOS	Sub Level Open Stoping
JORC Code, 2012	Current Australasian Code for Reporting of Mineral Resources and Ore Reserves.	SMBS	Sodium Meta-Bisulphite
kg/hr	Kilograms per Hour	SMU	Selective Mining Unit
km	Kilometre(s)	t	Tonne(s)
koz	Kilo Ounce/Thousand Ounce (Troy)	t/m^3	Tonnes per Cubic Metre
kt	Thousand Tonnes	tpa	Tonnes per Annum
kW	Kilowatt	TSF	Tailings Storage Facility
ℓ	Litre	TSX	Toronto Stock Exchange
kℓ	Kilolitre	µm	Micron
LOI	Loss on Ignition	US$	United States Dollars
LoM	Life of Mine	VTEM	Versatile Time-Domain Electromagnetic Surveying
m	Metre(s)	XRD	X-Ray Diffraction
m^2	Square Metre(s)	XRF	X-Ray Fluorescence
m^3	Cubic Metres(s)	WRD	Waste Rock Dump
Ma	Million Years	WRDF	Waste Rock Dump Facility
MAMSL	Metres Above Mean Sea Level	Zn	Zinc
mm	Millimetre(s)		

3. RELIANCE ON OTHER EXPERTS

The QPs have relied upon the legal, environmental and permitting information provided by management and employees of CGML. The QPs have not researched property title or mineral rights for the Project and express no opinion as to the validity of ownership status of the property. The Technical Report has been prepared on the understanding that the property is, or will be lawfully accessible for evaluation, development, mining and processing.

Dr Charles Akayuli, ***Geosystems Consulting Pty Ltd***, Ghana, at the invitation of the Principal Author, produced the input for Section 20 dealing with the status of the EIS, EMP and closure plans. Licenses and permits were collated and checked. Dr Akayuli has over 30 years' experience in research and consultancy, project management and environmental permitting within Mining and Construction. He is a member of the National Technical Committee on Tailings Dams in Ghana and EPA and Mineral Commissions recognised auditor of tailings dams in Ghana.

Except for the purposes legislated under provincial securities laws, any use of this Technical Report by a third party is at that party's sole risk.

4. PROPERTY DESCRIPTION AND LOCATION

4.1 Regional Overview

Ghana is in West Africa, approximately 600km north of the Equator and sharing boundaries with Togo to the east, Cote d'Ivoire to the west, Burkina Faso to the north and the Gulf of Guinea to the south.

Ghana has a population of 30.8 million (2021 census) and covers an area of approximately 239,000km². Ghana has a large variety of African tribal or sub-ethnic units. English is the official language with Twi being the most widely spoken local African language. Most of the population are Christian (71%), whilst the northern ethnic groups are largely Muslim (20%) and indigenous beliefs (9%) are also practiced throughout the country, (2021 Population and Housing Census data).

In 2018 Ghana was divided into sixteen distinct regions and the Project falls within the Western North Region, on the boundary of the Ashanti Region as shown in Figure 4-1.

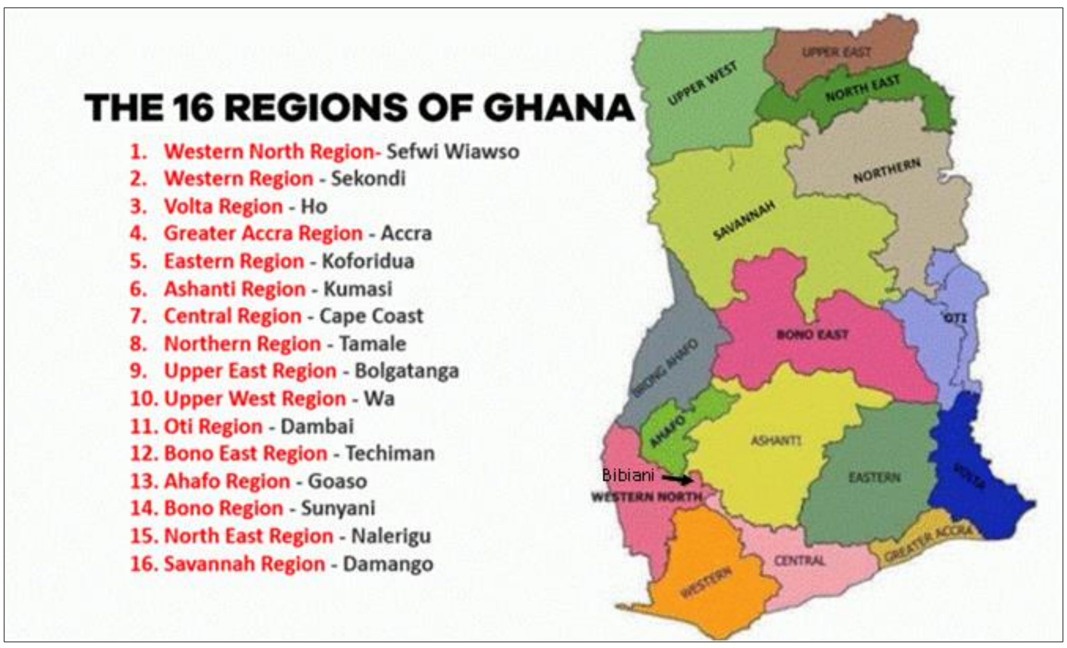


Figure 4-1: The Sixteen Regions of Ghana

Gold represents Ghana's major export commodity, followed by crude oil and cocoa. Ghana is the world's sixth and Africa's largest producer of gold. Manganese, bauxite and diamonds are also mined. Tourism is also growing rapidly.

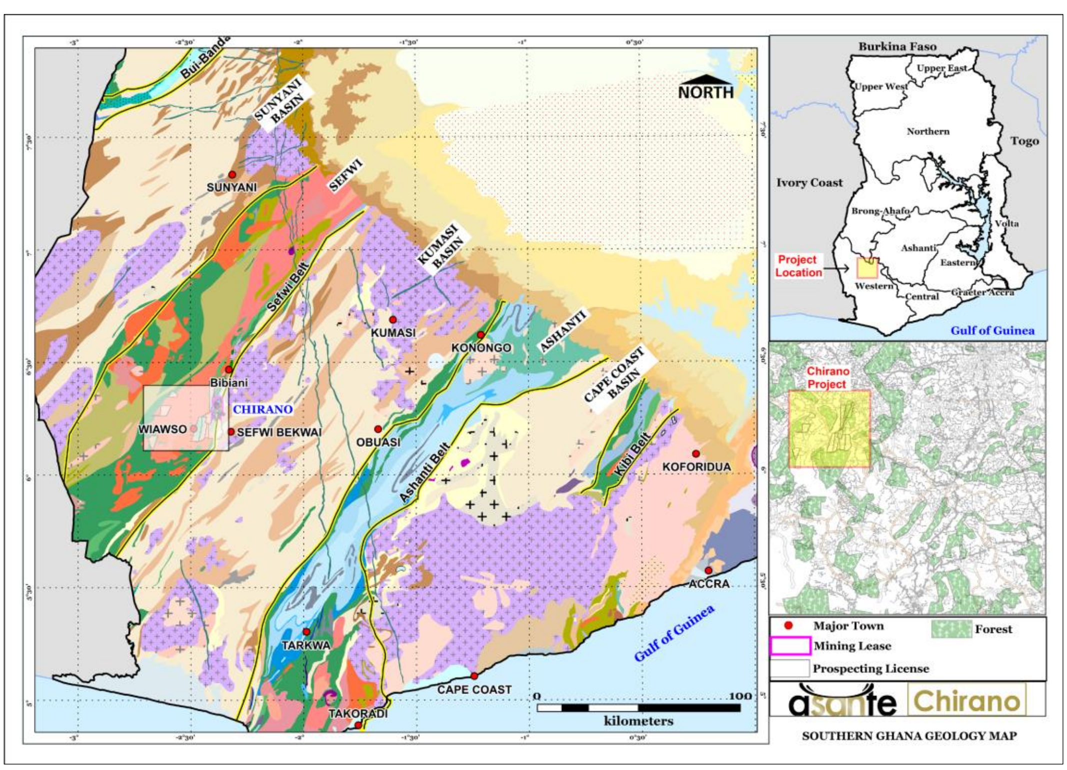


Figure 4-2: Chirano Gold Mine Location and Nearby Operations

(Source: Asante, 2023)

4.2 Project Location and Area

Chirano is located mostly in the Bibiani-Anhwiaso-Bekwai and partly in the Sefwi Wiawso Municipalities of the Western North Region of Ghana and lies between Latitude 6 00'00'' N and 6 24'75'' N and Longitude 2 21'33'' W and 2 24'33'' W with a total Mine Lease of forty-five kilometres (45km²). The Project in its entirety covers a footprint of approximately 190ha and it is about 100km south-west of the city of Kumasi and 15km south-southwest of the township of Bibiani.

Access to Chirano from the capital Accra is via a sealed highway to Kumasi and then running south-west towards Bibiani and onwards to Sefwi-Bekwai. The final approach is either by turning off the highway at Tanoso or Subri (15km and 17km south of Bibiani respectively) and traveling west for approximately 22km on a gravel feeder road or by a 13km northward gravel road whose junction is approximately 9km beyond Sefwi-Bekwai.

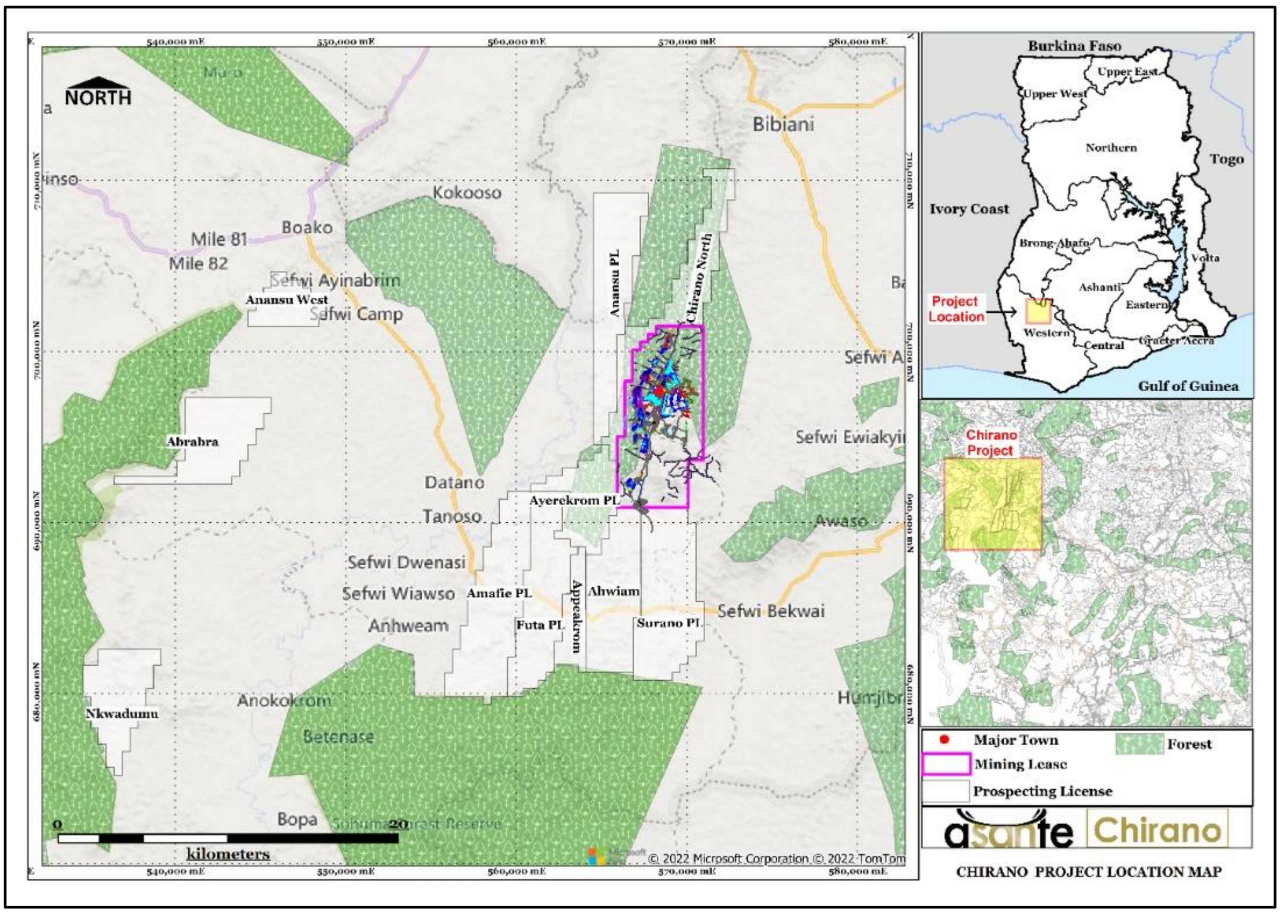


Figure 4-3: Location Map of the Project

(Source: CGML 2023)

4.3 Licences and Mineral Tenure

CGML holds a large prospective land package of over 600km² in Ghana. The Chirano Mining Lease covers 46km² and Asante holds approximately 600km² of Prospecting Licenses (applications approved or in process) along the Chirano trend.

Figure 4-4 below illustrates the Prospecting License areas currently held by Chirano Gold Mine.

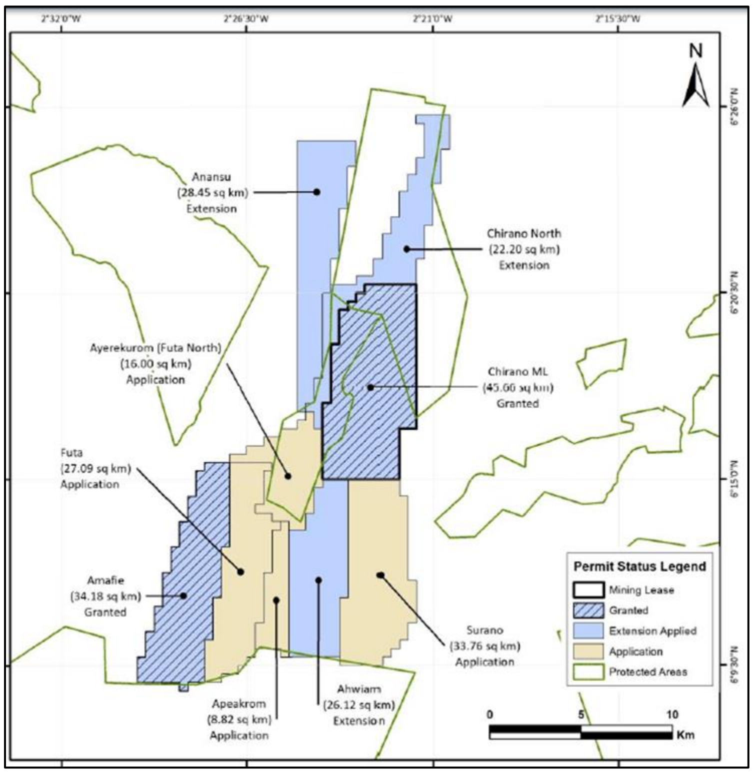


Figure 4-4: CGML – Mining Lease and Exploration License Status

(Source: CGML 2023)

4.3.1 Mining Leases

The Chirano Mining Lease, ML2/37 was granted on 23 December 2019 for a further 15 years and covers an area of 46km². The Mining Lease area contains all reported Mineral Reserves and Mineral Resources. Table 4-1 and Figure 4-5 below shows the total property holding under Mining Lease of Chirano Gold Mine.

Table 4-1: Chirano Gold Mine Limited – Mining Lease

Tenement Name	Licence Category	Title Ownership	Status of Licence/ Expiration Date	Licence Area (km²)
ML2/37	Mining Lease	Chirano Gold Mine Limited, Ghana – 100%	Valid 23 December 2034	45.66

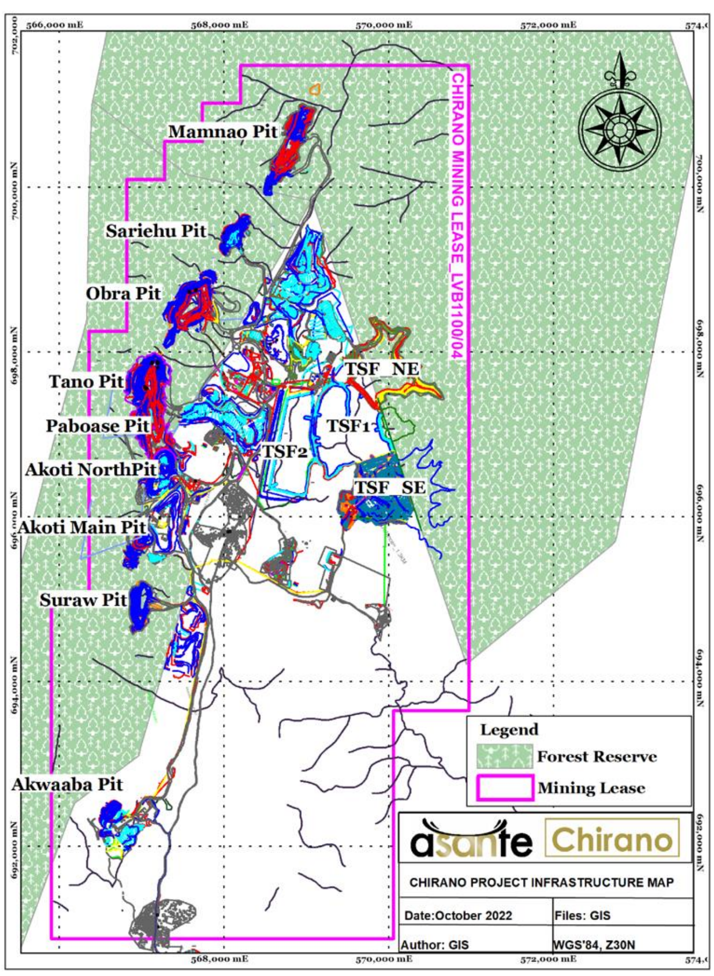


Figure 4-5: Chirano Gold Mine – Mining Lease

(Source: CGML 2023)

4.3.2 Prospecting Licences

Chirano holds the following Prospecting Licences (Table 4-2):

Table 4-2: Chirano Gold Mine – Current Prospecting Licenses

Tenement Number	Name	Status/ Validity	Area (km²)	Comments
PL 2/74	Ahwiam	Valid 16/02/13	26.12	Renewal Application re-submitted on 13/5/19. Awaiting renewal offer letter.
PL 2/115	Anansu	Valid 29/11/23	28.45	License renewed. Awaiting renewal offer letter.
PL 2/415	Amafie	Valid22/03/23	34.18	License renewed. Awaiting renewal offer letter.
PL 2/56	Chirano North	Valid 10/08/23	24.20	Application for conversion to ML in April 2023. Renewal pending Ministers approval.
		TOTAL AREA	**112.95**	

In addition, Chirano also has the rights to the following Prospecting Licenses that are currently under application, resulting from the shedding-off of previously expired licenses.

Table 4-3: Prospecting Licences Under Application

Tenement Number	Name	Status	Area (km²)
PL 2/438	Surano	Renewal pending Minister approval	33.76
PL 2/473	Apeakrom	Application Submitted 28/1/2014	8.82
PL 2/474	Futa	Application Submitted 28/1/2014	27.09
PL 2/475	Abrabra	Application Submitted 28/1/2014	22.47
PL 2/476	Nkwadumu	Application Submitted 28/1/2014	19.53
PL 2/477	Anansu West	Application Submitted 28/1/2014	9.87
PL 2/485	Ayerekurom	Application Submitted 15/5/2015	16.00
PL 5/79	Kwahu Oda	Renewal pending Minister approval	30.38
PL 5/156	New Abirem	Renewal pending Minister approval	16.78
PL 6/302	Abofour	Application submitted 15/5/2014	71.34
PL 2/410	Kasutie	Application submitted 15/5/2014	72.86
PL 7/33	Tanoso	Updated work program 13/2/2019	84.70
		TOTAL AREA	**511.34**

The map below indicates the regional position within Ghana of the various Asante mineral rights assets.

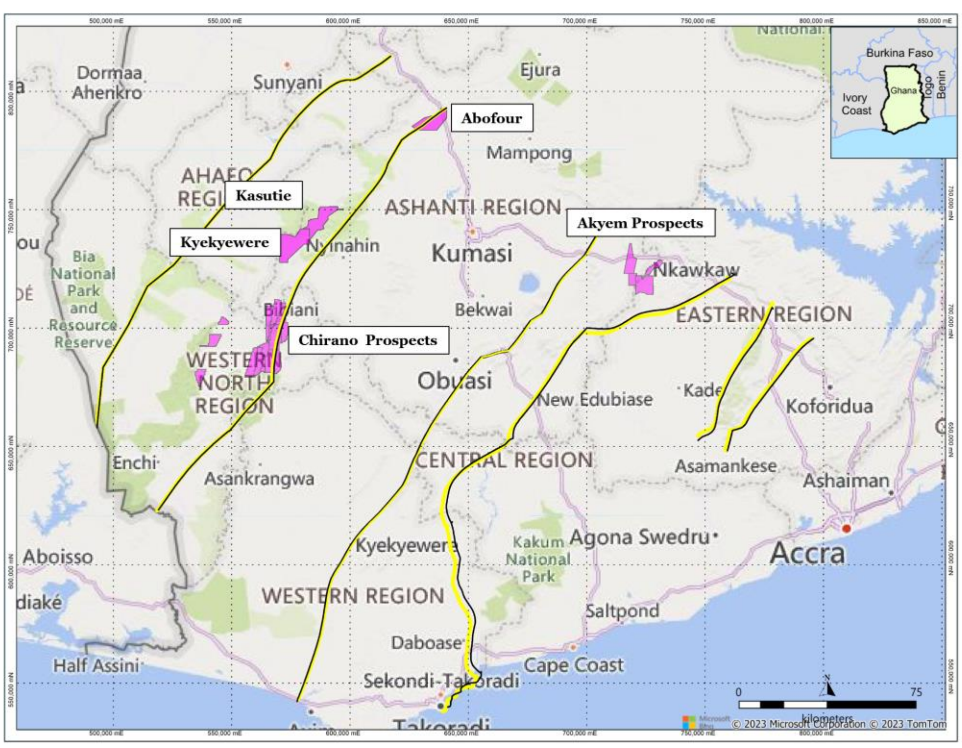


Figure 4-6: Asante Mineral Rights Interests - Regional Location

(Source: Asante 2023)

4.3.3 Mining Legislation and Overview

4.3.3.1 State Lands Act (1963)

Section 6(1) provides that any person whose property is affected by a public project is entitled to compensation and provides mechanisms through which people not satisfied with compensation may seek redress. Dissatisfied compensation claimants may seek redress by notifying the minister.

4.3.3.2 Minerals and Mining Act 703

The Minerals and Mining Act, 2006 (Act 703) (as amended by the Minerals and Mining (Amendment) Act, 2015 (Act 900) and the Minerals Commission Act, 1993 (Act 450) are the principal enactments setting out the framework of Ghanaian mining law. These acts express the basic position that minerals in their natural state are owned by the state; they also outline the licensing scheme for mineral operations, the incidents of the various mineral rights and the powers of the principal regulatory institutions. The following pieces of subordinate legislation add detail in specific areas to the regime set out in the principal legislation:

- Minerals and Mining (General) Regulations, 2012.
- Minerals and Mining (Support Services) Regulations, 2012.
- Minerals and Mining (Compensation and Settlement) Regulations.
- Minerals and Mining (Licensing) Regulations, 2012.
- Minerals and Mining (Explosives) Regulations, 2012.
- Minerals and Mining (Health, Safety and Technical) Regulations, 2012.

The mining law divides the various licences that can be granted for a mineral right into three categories, Reconnaissance Licence, Prospecting Licence and a Mining Lease, defined under the Minerals and Mining Act, 2006 (Act 703).

4.3.3.3 Reconnaissance Licence (SECTIONS 31-33)

A reconnaissance licence entitles the holder to search for specified minerals by geochemical, geophysical and geological means. It does not permit drilling, excavation, or other physical activities on the land, except where such activity is specifically permitted by the licence. It is granted for 12 months and may be renewed for a period not exceeding 12 months if it is in the public interest. The area extent is negotiable, related to the proposed reconnaissance program.

4.3.3.4 Prospecting Licence (SECTIONS 34-38)

A prospecting licence entitles the holder to search for the stipulated minerals and to determine their extent and economic value. This licence is granted initially for a period of up to three years covering a maximum area of 150km^2. This may be renewed for an additional period of two years, but with a 50% reduction in the size of the licence area if requested. A prospecting licence will only be granted if the applicant shows adequate financial resources, technical competence and experience and shows an adequate prospecting program. It enables the holder to carry out drilling, excavation and other physical activities on the ground.

4.3.3.5 Mining Lease (SECTIONS 39-46)

When the holder of a prospecting licence establishes that the mineral to which the licence relates is present in commercial quantities, notice of this must be given to the Minister of Lands, Forestry and Mines and if the holder wishes to proceed towards mining, an application for a mining lease must be made to the Minister within three months of the date of the notice.

4.3.3.6 Surface Rights

The laws regarding surface rights are captured in the Mineral and Mining Act 206, Act 703 subsection 72. This section gives rights to the owners of land (i.e.: Chiefs, families, individuals, etc) to be compensated by Mineral Right holders. Compensation with regards to surface rights comes in the form of:

- Crop compensation.
- Deprivation of land use compensation.
- Compensation of immovable properties (shrines, ponds, etc).
- Royalty payments through the Stool lands.

4.4 Agreements, Royalties and Encumbrances

Mining Lease ML2/37 is wholly owned by Chirano, without any option or joint venture arrangement. The Ghana Government retains a 10% free carried interest. No back-in rights are held by any other party.

A 5% Mining Lease royalty is payable to the government. An additional 0.6% gross revenue royalty is payable to the EPA in relation to minerals extracted from Ghana's productive forest reserves. Production from most of the proposed Chirano pits is subject to this additional royalty. Akwaaba lies outside of the forest reserve.

4.5 Environmental Obligations

The CGML open pit operations comply with all applicable Ghanaian legislations particularly the Environmental Assessment Regulations 1999 (LI 1652).

CGML has in the past undertaken a variety of baseline studies to provide a base line from which potential impacts and issues can be evaluated. In addition, detailed stakeholder programmes, including a public hearing, were executed to sensitise catchment communities, regulators, local and regional authorities, and traditional leaders on the Project development and future.

4.6 Permits

CGML holds the following permits:

- Water Abstraction Permit – for both potable and dewatering requirements.
- Operation of a fuel dispensing and storage facility.
- On site medical facility permits (Issued by the Ghana Health Facilities Regulatory Agency).
- Environmental Permit (EPE/EIA/568).
- Mine Operating Permit (No. 0000714/22).

These Permits allow for the commencement and continuation of all mining operations. Receipt of these permits follows an extensive process of scoping studies, presentation and detailed review of the Environmental Impact Study, public consultation and review of mine operating plans and schedules. This is covered in more detail in Item 20.

4.7 Other Significant Factors and Risks

Environmental, permitting, legal title, taxation, socio-economic and political or other relevant issues could potentially materially affect access, title or the right or ability to perform planned operations. However, as of the Effective Date of this Report the QP and other Authors are unaware of any such potential issues that may hinder Chirano’s ability to continue to perform operations.

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

5.1 Accessibility

Most major international airlines fly into the international airport in Ghana's capital city, Accra. The nearest city to the mine is the regional capital, Kumasi, situated 92km east of Bibiani town and about 250km to the north-west of Accra. Kumasi is served by the Kumasi Airport with two domestic airlines operating regular flights from Accra.

The Chirano Gold Mine is situated 100km southwest of Kumasi. The town of Bibiani lies 15km north-northeast of the mine area (37km by road). Access to the mine from the Capital Accra is via a sealed highway to Kumasi and then sealed highway running south-west to Bibiani and onwards to the town of Sefwi-Bekwai. The final approach is via a 13km road whose junction is approximately 9km beyond Sefwi-Bekwai.

5.2 Climate

Ghana has a predominantly tropical climate and consists mostly of low savannah regions with a central, hilled forest belt. Ghana's one dominant geographic feature is the Volta River, upon which the Akosombo Dam was built in 1964. The damming of the Volta created the enormous Lake Volta, which occupies a sizeable portion of Ghana's south-eastern territory.

The Project falls within the semi-equatorial climatic zone which is characterised by two rainy seasons in a year cycle; April to July and September to November. The dry season which occurs between December and March is generally named "Harmattan". Rainfall data collated at the Sefwi Bekwai synoptic station from 1996 to 2015 indicates a mean annual rainfall of 1.42m. For the same period the mean monthly temperature ranges between 21.4˚C and 34.3˚C. Relative humidity for the area is generally high and moist all year round with the lowest mean relative humidity of 73% recorded in February whilst the most humid month is June with an average of 84%. Records at Ghana Meteorological Agency indicate the municipality within the project area experiences NE dry harmattan winds during the dry season.

The Western Region of Ghana, out of which the Western North Region was recently carved, has an average daily temperature of 31^{o}C, with average humidity above 80%. The World Bank Group (Climate Risk Profile: Ghana (2021): The World Bank Group) reports that temperatures in Ghana have risen by 1˚C since the 1960's with the number of very hot days (Tmax >35˚C) increasing by over 13% and hot nights (Tmin >26˚C) by over 20%. Over the same period precipitation has decreased by 2.4% per decade.

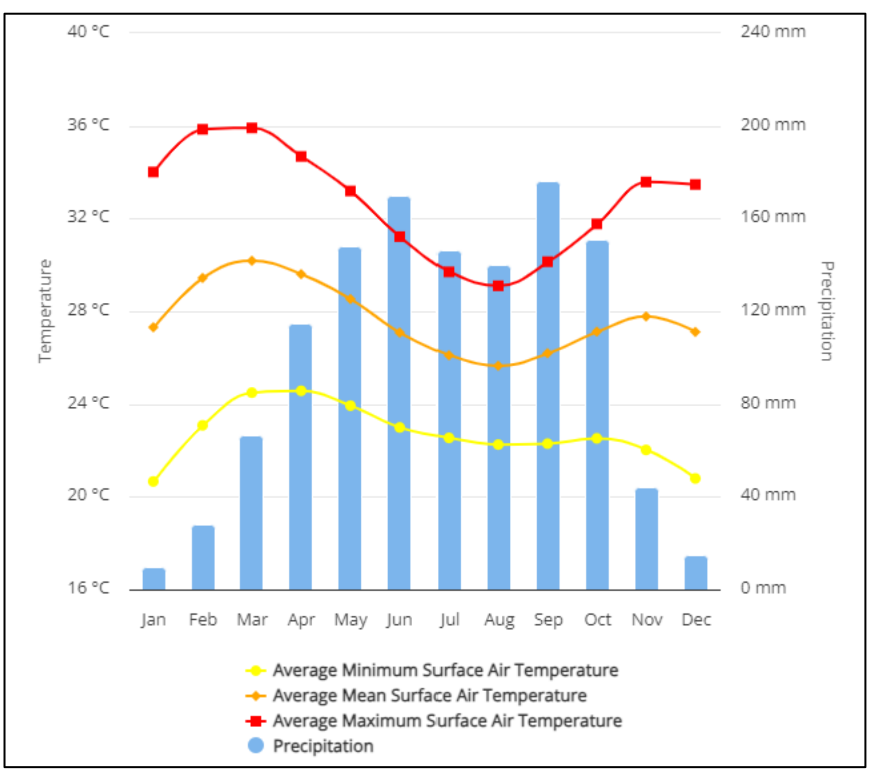


Figure 5-1: Ghana Monthly Climatology – 1991-2020

(Source: climateknowledgeportal.worldbank.org)

The WBG continues to predict that; "Ghana will become hotter and drier and the country will continue to experience temperature increases, extreme events like droughts and floods and the increase in frequency and duration of heat waves. Rainfall will remain variable with increased rainfall in some areas and decreased rainfall in others."

5.3 Local Resources

Chirano has been in operations since 2005 and has a full complement (employees and contractors) on site to support open pit and underground mining operations and the processing plant operations. The team includes senior and executive management, project management and personnel, accounting and procurement staff, open pit and underground mining personnel, environmental officer and community liaison personnel, maintenance personnel, geological and technical personnel, plant operations personnel, human resources, medical clinic personnel and full camp catering and management. A contracted security complement is also present.

The Project Area consists of parts of two neighbouring Municipal Administrative areas, mostly in the Bibiani-Anhwiaso-Bekwai (BAB), and partly in the Sefwi Wiawso Municipalities of the Western North Region. Both Municipalities are almost entirely based on a "rural" cultural and economic way of life. The predominant economic activity in these areas is farming.

The main communities occurring within the Project area are the twin villages of Etwebo-Akoti, Kwaokrom and the village of Paboase located on the southern boundary. In addition to these villages there are numerous scattered hamlets. Chirano identified 21 settlements occurring within the boundary of its Mining Lease.

Most of the road networks in the district are feeder roads that are mostly in extremely poor condition, especially during the rainy season. Consequently, transportation is very difficult and expensive.

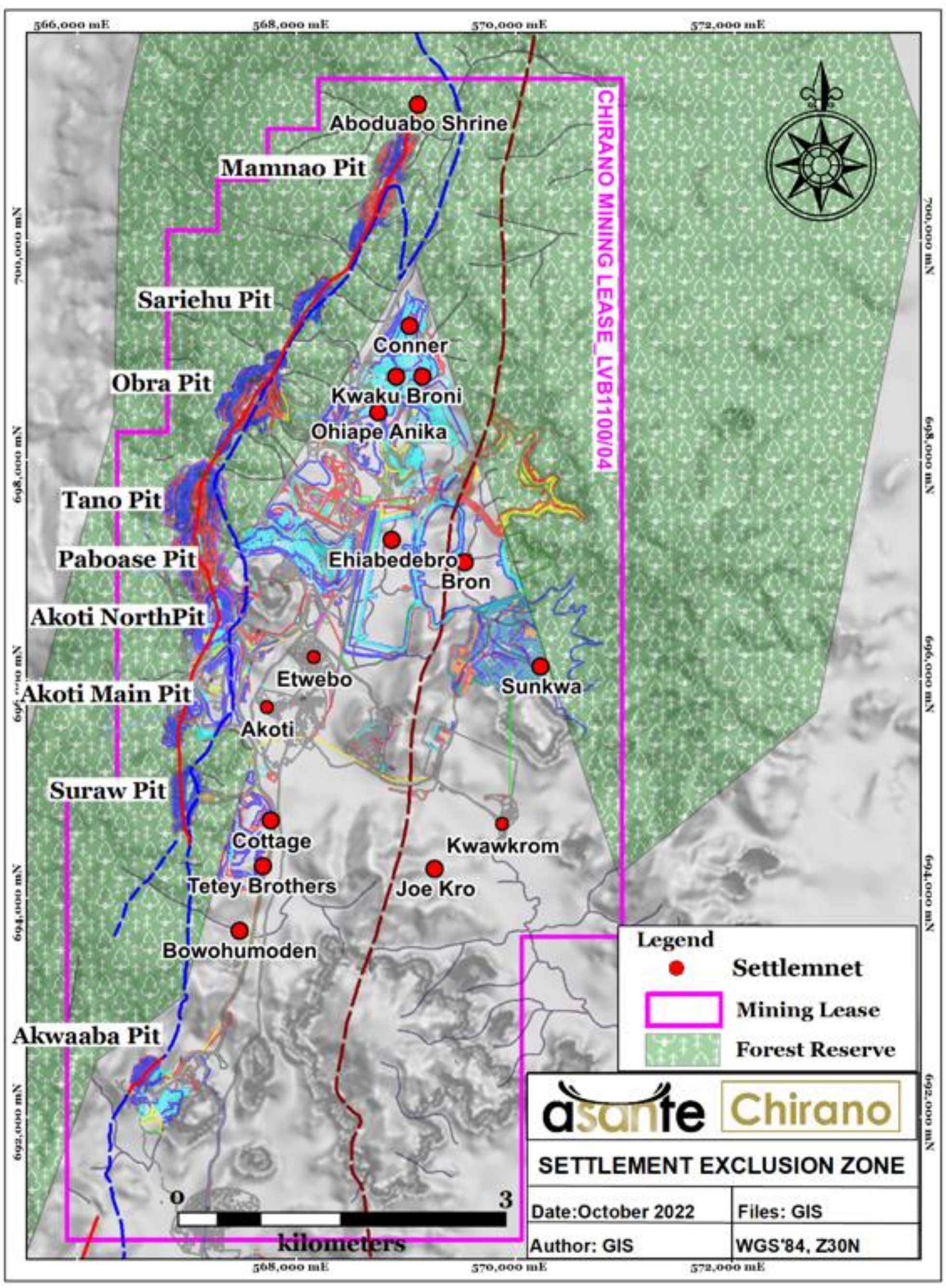


Figure 5-2: Initial Settlements within the Project Area

(Source: CGML 2023)

5.4 Infrastructure

The mine currently operates three surface mining pits; Mamnao North, Obra and Sariehu. There are six underground operations namely Akwaaba, Suraw, Paboase (suspended in 2023), Akoti, Tano and Obra underground operations. Obra underground is currently a new underground project which commenced development in 2021. Ore is processed at the Chirano CIL plant. The capacity of the mill is approximately 3.6Mtpa. Beneficiation of ore is accomplished through crushing, grinding, flotation and carbon-in-leach processing.

The mine and adjacent residential township have excellent infrastructure and services necessary for successful operations of the mine. The mine site infrastructure includes ample administration and operational offices, well established residential areas and canteens, large engineering workshops, mine laboratory, well-constructed mine roads, explosives magazine, fuel storage tanks and a medical clinic managed by a qualified doctor.

The mine already had a 3.6Mtpa processing plant, tailings storage facility and workshops. All mine related areas are fully secured with a contract Security Company deployed in all areas. Senior staff are housed in existing well established residential camps and other mine labour is bussed to site from the surrounding towns and villages.

The primary source of raw water is the Water Storage Facility (WSF) which has been designed to store approximately 400,000m^3. The water storage facility is in a natural river valley approximately 2km east of the treatment plant site.

Potable water is used for drinking, ablutions, laboratory, buildings and safety showers, and is sourced from boreholes to minimize the risk of disease from surface sources. The borehole water is treated by chlorination and ultraviolet sterilization before being distributed by pump to the plant, mine services area and the staff village. Potable borehole water is not required for any process purpose.

CGML utilises power supplied primarily by a gas turbine power plant built on site, which is owned and operated by Genser Energy, through a power sales and purchase agreement. The turbines utilise natural gas as a fuel source, which is supplied through a pipeline from Atuabo gas plant 272km from the mine site.

The Electricity Corporation of Ghana supplies power through the national grid. The mine is also connected to the national grid through an onsite substation, which acts as a back-up power supply. The mine further has an 18MW diesel power plant on site which serves as the second back-up power supply for the process plant.

Infrastructure is covered in more detail in Item 18.

5.5 Physiography

The Project Area lies partly within the Suraw sub-basin of the Tano river basin and partly in the main Ankobra basin. These two major rivers drain the south-western parts of Ghana into the Atlantic Ocean.

The Project Area is drained principally by the main Suraw River and its tributaries. Smaller catchments include the Mamnao stream in the north and the Paboase stream to the south. The Mamnao stream joins the upper part of the Ankobra River within the boundary of the Tano Suraw Extension Forest Reserve, while the Paboase stream empties into the Suraw River south of the Project Area. The Suraw River flows southward for approximately 70km before joining the Tano River.

The streams and rivers draining the Project Area receive flow contributions, which originate from an area where most of the deposits are located or from sites where future Project facilities will be developed. Therefore, the main mining area is comprised of headwaters for these tributaries.

Within the Project Area, most of these water bodies are devoid of major pollution problems. They are used, mainly during the rainy season, as sources of potable water by the inhabitants of the settlements located near their banks. These streams are very seasonal, and dry completely except during exceptionally wet years. Most of these settlements have access to an alternative source of water.

Together with lease boundaries, location of existing settlements and features such as forested areas with high conservation value, the topography of the Project site has had a significant influence on the location of project infrastructure.

The western side of the area is dominated by the south Bibiani range which forms a major range of hills. The hills run roughly north-south and the Chirano gold deposits lie halfway up its steep (15˚-25˚) eastern slope, such that the open pits will have high western walls and low eastern walls. The range rises from a height of about 250m above mean sea level (AMSL) near the river to about 550m AMSL at the crest.

Part of the Mining Lease (42%) lies within forest reserves and is covered by tall semi-deciduous rain forest. Most of the area is reserved for commercial timber production. Parts of the reserves have been degraded by illegal farming activities.

The Project has been developed on a land area of approximately 6.2km² within a Project Area of 45km². The topography of the site consists of moderately to very steep sided hills exceeding 250m above the surrounding terrain. The valleys are drained by various seasonal streams and their tributaries which take their sources from relatively well vegetated hills located in the Tano, Suraw and Tano Suraw Extension Forest Reserves. In the triangle outside the Forest Reserves, the Project Area contains a number of small settlements (villages and hamlets) supported by cocoa and subsistence farming.

The Project Area is not located within or near a site with significant tourism potential.

6. HISTORY

6.1 Prior Ownership and Ownership Changes

In the mid-1930s two concessions covered the Chirano area; one held by Gold Coast Selection Trust and one by Anglo-African Goldfields Ltd. No reports of work at this time survive, but some small pits have been found which may date from this period.

Billiton International Metals BV held the area in the late 1980s, possibly undertaking regional reconnaissance for gold-bearing laterite deposits.

The current phase of exploration began in early 1990s when Mr Johnson Gyamfi, a prominent Ghanaian businessman, applied for two prospecting concessions at Chirano in the names of Johnsons Limited and Chirano Goldfields Company Limited.

6.2 Historical Exploration and Development

Table 6-1 below gives a summary of previous owners and development history prior to Asante Gold taking over the Bibiani Mine.

Table 6-1: Brief History of Chirano Gold Mine Development

OWNERSHIP ENTITY	DATES	RELEVANT HISTORICAL ACTIVITIES
Gold Coast Selection Trust & Anglo-African Goldfields Ltd	1930s	Owners of 2 concessions that covered Chirano. No work recorded but small exploration pits evident.
Billiton International Metals BV	1980s	Regional reconnaissance work.
Johnsons Ltd & Chirano Goldfields Company Ltd	1990s	Mr Johnson Gyamfi a Ghanaian businessman owned two prospecting concessions.
	1993	Made a deal with Outokumpo Exploration Ltd. After several phases of exploration POE judged area unlikely to deliver 1Moz.
	1995	Joint venture with British Company Reunion Mining Plc.
	1996	Government Moratorium - No exploration allowed in Forest Reserves
	1997	Reunion resume exploration.
	1998	Red Back Mining negotiate option agreement with Reunion.
Red Back Mining (CGML)	1999	Subsidiary company - Chirano Gold Mine Ltd (CGML) owns 95% interest.
	2003	Bankable feasibility Study submitted for mine development and open pit mining.
	2004	CGML completes extensive exploration. 15,000 soil samples, 81 trenches (>4,000m), >60,000m drilling (100m-200m depth). A total of USD17m
		Decision to develop the Chirano deposits. Proven & probable reserves of 17.8Mt grading 1.9g/t Au.
	2005	Mine construction completed. Commissioning of gold plant. First gold in October. Capital cost USD73m.
	2008	Development of underground operation at Akwaaba deposit.
	2009	Plant expansion to 3.5Mtpa.
Kinross Mining Corporation	2010	Red Back Mining acquired by Kinross.
	2012	Second underground operation at Paboase.
	2016	Third underground at Akoti
	2020	Fourth underground at Tano
	2021	Fifth underground at Suraw
	2022	Sixth underground deposit in progress at Obra.
Asante Gold Corporation	August 2022	Asante acquired all Kinross's interest in Chirano Gold Mine Limited through the purchase of 100% of the shares of CGML.

6.3 Historical Mineral Resources Estimates

Several Mineral Resource and Mineral Reserve estimations were done in the early years by Red Back Mining prior to the operations being purchased by Kinross in 2010. These historically declared Mineral Resources have not been verified or used by the QPs of this Technical Report. It is accepted that the Mineral Resources were estimated in accordance with the best practice guidelines and international mineral reporting codes by suitably qualified persons.

Updated Mineral Resources for CGML were published in a CIM NI 43-101 compliant Technical Report in August 2022. The Mineral Resources as at 31 December 2021 were reviewed by Competent Persons under the JORC Code (2012) using accepted industry practices and were classified and reported in accordance with the JORC Code. It must be noted that the Mineral Resources were reported exclusive of any Mineral Reserves that were derived from them.

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

Table 6-2: Total Exclusive Chirano Underground Mineral Resource as at 31 December 2021

CGML	Resource Classification	Tons (Mt)	Au (g/t)	Au (Moz)
Underground Operations	Total Measured Resources	4.751	2.01	0.308
	Total Indicated Resources	6.299	1.79	0.362
Total Measured and Indicated Resources		**11.050**	**1.88**	**0.669**
Total Inferred Resources		**4.791**	**2.22**	**0.343**

Table 6-3: Total Exclusive CGML Open Pit Mineral Resource as at31 December 2021

CGML	Resource Classification	Tons (Mt)	Au (g/t)	Au (Moz)
Open Pit Operation	Total Measured Resources	4.45	0.80	0.115
	Total Indicated Resources	12.60	0.86	0.350
Total Measured and Indicated Resources		**17.05**	**0.85**	**0.465**
Total Inferred Resources		**1.26**	**0.73**	**0.029**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported exclusive of any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1034768g.*
5. *Akwaaba, Tano, Obra and Suraw were evaluated at resource cut-off grade of 1.14 g/t and Akoti and Paboase undergrounds were evaluated at 1.21 g/t and 1.34 g/t cut-off respectively.*
6. *A density of 2.75 t/m³, 2.30 t/m³ and 1.56 t/m³ on fresh, transition and oxidised sediments have been applied respectively.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*
9. *Akwaaba, Tano, Obra and Suraw were evaluated at resource cut-off grade of 1.14g/t.*
10. *Akoti and Paboase undergrounds were evaluated at 1.21g/t and 1.34g/t cut-off.*

6.4 Historical Mineral Reserve Estimates

Based on the declared Mineral Resources (31 December 2021), Mineral Reserves were calculated considering all modifying factors. Life of Mine ("LoM") plans and mining schedules were completed for the underground and open pit operations, to determine the Mineral Reserves which are shown in Table 6-4.

Table 6-4: Chirano Gold Mine Mineral Reserves as at 31 December 2021

Reserve Classification	Tonnes (000's)	Au Grade (g/t)	Au Ounces (000's)
Proven	4,777.20	1.63	250.5
Stockpile(s)	822.7	0.79	20.9
Subtotal	5,600.00	1.51	271.4
Probable	10,159.90	2.2	718.3
Total	**15,759.80**	**1.95**	**989.7**

(Source: Kinross Annual Report 2021)

It is noted that 90% of Mineral Reserves are attributed to Asante and 10% to the Government of Ghana.

Following a full review of all available information, Bara Consulting were of the opinion that the declared Mineral Reserves were compliant with CIM reporting standards.

6.5 Historical Production

Production since the operations were developed by Red Back Mining between 2005 to 2010 followed by Kinross to August 2022 is summarised in the table below.

Table 6-5: Chirano Gold Mine - Historic Production

Year	Milled (Mt)	Grade (g/t)	Recovery (%)	Gold Produced (koz)
2005	0.51	1.84	93.7	30
2006	2.31	1.88	90.7	127
2007	1.98	2.17	90.3	127
2008	2.21	1.90	91.8	121
2009	2.72	2.33	90.4	183
2010	3.48	2.37	90.7	240
2011	3.57	2.47	91.9	262
2012	3.38	2.91	92.9	293
2013	3.36	2.71	93.8	275
2014	3.14	3.12	92	280
2015	3.49	2.51	91	260
2016	3.46	2.10	91	206
2017	3.44	2.43	92	251
2018	3.51	2.12	92	225
2019	3.46	1.99	92	202
2020	2.97	1.81	88	155
2021	3.43	1.59	87	148
2022 (Aug)	2.33	1.32	87	86

6.6 Asante Gold Corporation

On 25 April 2022 Asante announced that it had entered into a share purchase agreement with Kinross to acquire Kinross' 90% interest in the Chirano Gold Mine. The Ghanaian government retains a 10% free carried interest in the Chirano Gold Mine.

Since taking ownership in 2022, and apart from the relevant successful fund raises, Asante has initiated and, in some cases, completed important infrastructure and operations related projects and exploration drilling exercises. Some of these initiatives and operational improvement projects are listed below:

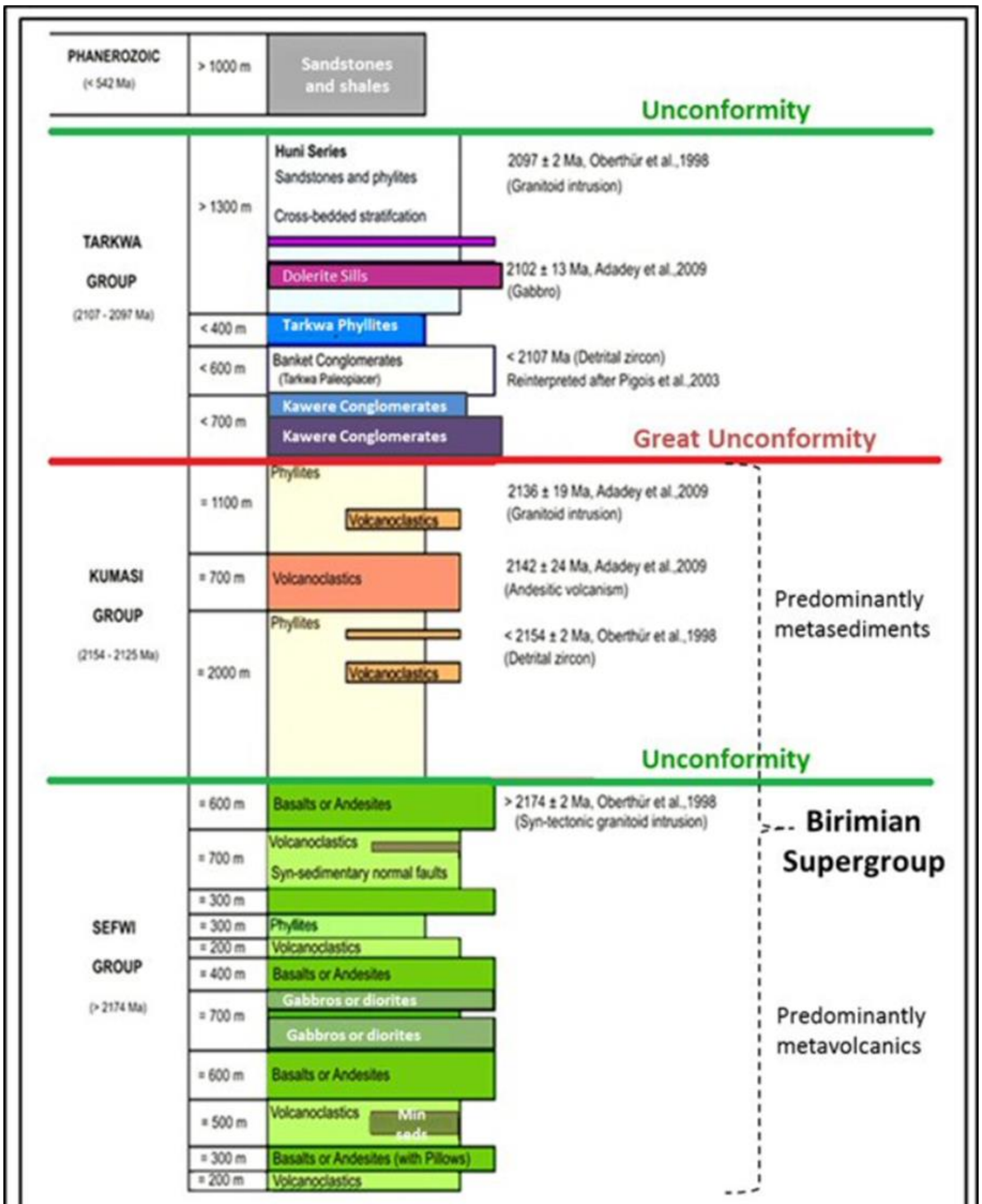
- Initiated and has completed pebble crusher and primary grinding upgrades to the crushing plant and general process plant overhaul and refurbishment.
- In December 2023 the gravity circuit in the milling plant was commissioned. A QS48 Knelson centrifugal gravity concentrator has been installed.
- Commencement and ongoing construction of the Sulphide flotation and regrind plant, Oxygen Plant and Aachen Reactor to improve gold recoveries and increase throughput to 4mtpa. Completion expected in Q1 2024.
- Tailings storage facility refurbishment, preparation and improvements to attain a 12-month storage capacity. A further lift to provide additional 4 years storage is planned to commence in Q1 2024. The new TSF design and planning has been outsourced to Knights Piesold to prepare.
- General mine infrastructure refurbishments (roads, residential camps, sporting facilities, canteens, workshops, offices, security, etc).
- Pit preparation and successful open pit mining activities at Mamnao, Obra, Tano and Sariehu surface mineralized deposits.
- Design work and related Mineral Resource Estimation on future underground operations that may possibly link the potential Obra, Sariehu and Mamnao underground reserves.
- Ongoing ground-based field exploration involving mine-site, underground and regional diamond drilling, geological mapping, sampling and geophysical surveys.
- Successful exploration and subsequent mineral resource estimation and mine planning on the Aboduabo Project situated on the adjacent Bibiani Shear Zone. At Aboduabo a total of 24,000 metres of drilling was completed in 69 drill holes.
- In the period between Asante taking ownership in August 2022 and the end of 2023, a total of 265 diamond drill and reverse circulation drill holes have been completed for a total meterage of circa 72,300m. These focused drill programs have occurred from surface or underground and within or over numerous mineralized deposits.

7. GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Geology

On a regional scale, the Project is located on the eastern margin of the West African Precambrian Shield, which is a cratonised complex of Archaean basement. The main components are Proterozoic greenstone belts, granitoids and post-orogenic sediments that extend through Ghana, Burkina Faso, Mali, Guinea and the Ivory Coast.

The Upper Birimian Formation is dominantly volcanic in origin, although the sequence starts with conglomerates, grits, quartzites and tuffaceous wackes. The dominant components of the Upper Birimian are basaltic and andesitic lavas, tuffs and tuffaceous sediments with subordinate rhyolite, quartz-feldspar porphyry and felsite. The Birimian Formation rocks are unconformably overlain by the Tarkwaian, which is composed of dominant coarse-grained sediments (Figure 7-1).



Scource: Adapted from Precambrian Research, May 2012, Perroutya, S. et al.

Figure 7-1: Generalised Stratigraphy of Southwest Ghana

Primary gold mineralisation in the region is predominantly associated with northeast-southwest trending Proterozoic greenstone belts separated by basins, which together form part of the West African Craton. This craton is believed to have remained geologically stable for the last 1.7 billion years. The greenstone belts represent Proterozoic island arc volcanism which has been mildly metamorphosed to lower greenschist facies.

The Birimian geology throughout West Africa contains several significant gold deposits, including Obuasi, Tarkwa, Bibiani and Konongo. The Chirano deposit is located in the Sefwi-Bibiani belt which is host to over 30Moz Au (Figure 7-2).

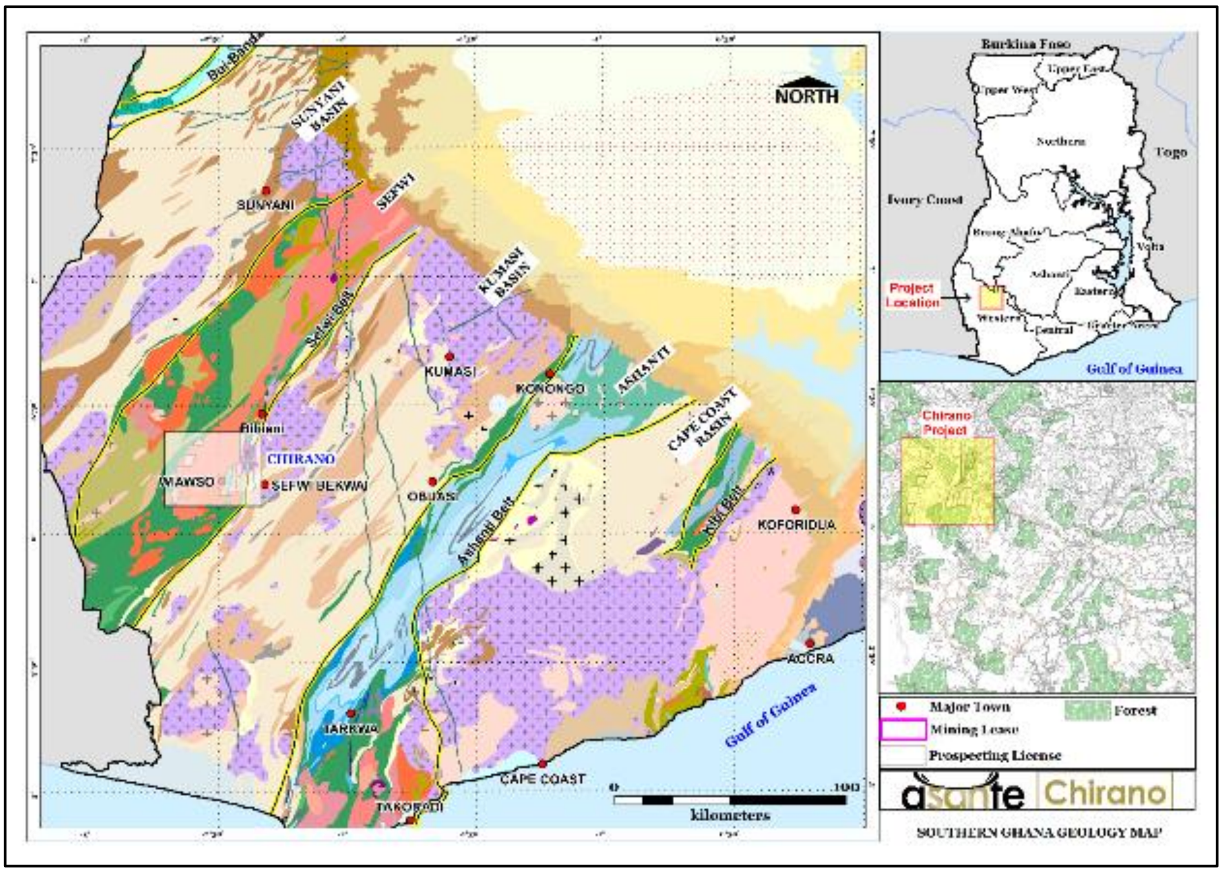


Figure 7-2: Chirano Gold Mine - Regional Geological Setting Within Southwest Ghana and Relation to Bibiani

(Source: CGML 2023)

7.2 Local Geology

The Chirano mineralized deposits can be described as epigenetic, mesothermal gold deposits, demonstrating a strong structural control and a brittle structural style. They are hosted by mafic volcanics and granite, ranging from stacked parallel veinlet systems to vein stockworks, breccias and cataclasites. The veinlets are dominated by quartz, with lesser ankerite, calcite, albite and traces of pyrite and hematite. The deposits show varying degrees of ankerite-albite-muscovite-pyrite alteration superimposed on earlier hematite alteration.

The deposits occur close to a major fault, the Chirano Shear Zone (“CSZ”), and it is considered likely that any new deposits found will also be closely associated with faulting. Individual deposits are often closely associated with small dextral jogs in the host structure. Although the currently known gold deposits are in granite, there are also strong gold anomalies in Birimian metasediments elsewhere within the mine area, which require concerted follow-up exploration. The Bibiani Shear Zone (“BSZ”) is the fault contact between the Tarkwaian sediments and the Kumasi Basin sediments.

The deposits range in strike length from 150m to 700m, and range in thickness from a few metres to over 70m (Figure 7-3). They vary from rather tabular (Obra, Sariehu, Suraw) to more pipe-like (Tano and Akoti North) morphologies. The longer, the more tabular bodies generally comprise at least two shorter lenticular shoots, such as the Obra main and north lenses. These lenses may be separated by a small dextral jog such as those at Obra and Sariehu. Within the Paboase Bulge there are several parallel lodes, whereas elsewhere along the mineralized horizon there is commonly only a single zone is evident.

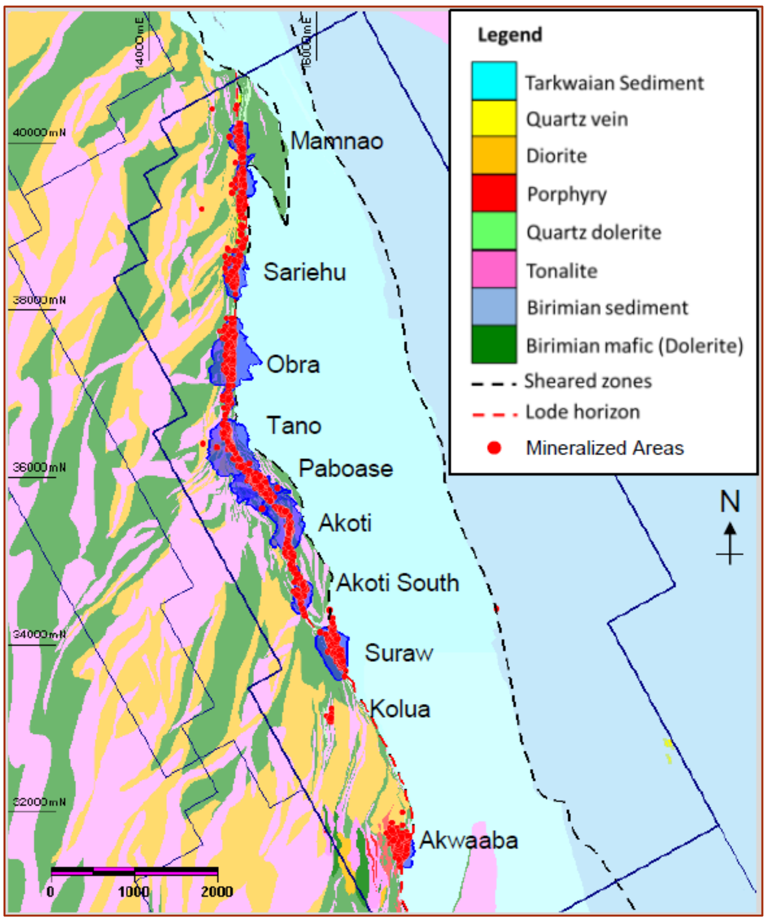


Figure 7-3: Simplified Geological Map – Akwaaba to Mamnao Mineralised Deposits

(Source: CGML 2023)

Most of the deposits dip steeply to the west, however shallow west, vertical and steep east dips occur locally. The mineralization plunges either directly down dip or steeply northwards. The mineralization demonstrates excellent continuity, there being no known gaps due to oblique faults or dykes.

Unusually flat dips have been noted in short sections of the lode horizon at Mamnao Central (39,850 N to 39,975 N), Obra South (36,850 N to 36,950 N), Sariehu (38,400 N), and Akoti South (34,635 N), however these areas do not demonstrate any spatial relationship with thicker or higher-grade mineralized intervals.

In some of the deposits, thicker zones of gold mineralization appear to have formed where nearby parallel lodes have coalesced. Such deposits have a single thick zone in the core of the deposit, which splits into two or three thinner zones along strike. Tano is the best example of this type of deposit geometry.

7.2.1 Deformation and Structural Interpretation

The last two years of detailed investigation by Professor Hein and the Chirano geological team has resulted in a revised interpretation of the structural history and subsequent controls on mineralisation. The earlier interpretation of a strike slip fault zone, the Chirano Shear Zone, was over simplified and has been revised. It is now believed that the deposits are aligned along a zone with multiple strike slip faults in a network that is linked by smaller relay faults (Figure 7-4). Activity on these faults was "transtensive" allowing dilation and fluid migration from depth. The variety of rock types experienced throughout the numerous mineralised deposits, namely cataclasite, gouge and pseudotachylite rocks, are strongly indicative of a fault zone associated with brittle deformation, accompanied by earthquakes, causing further fracturing, crush and pulverized geological materials.

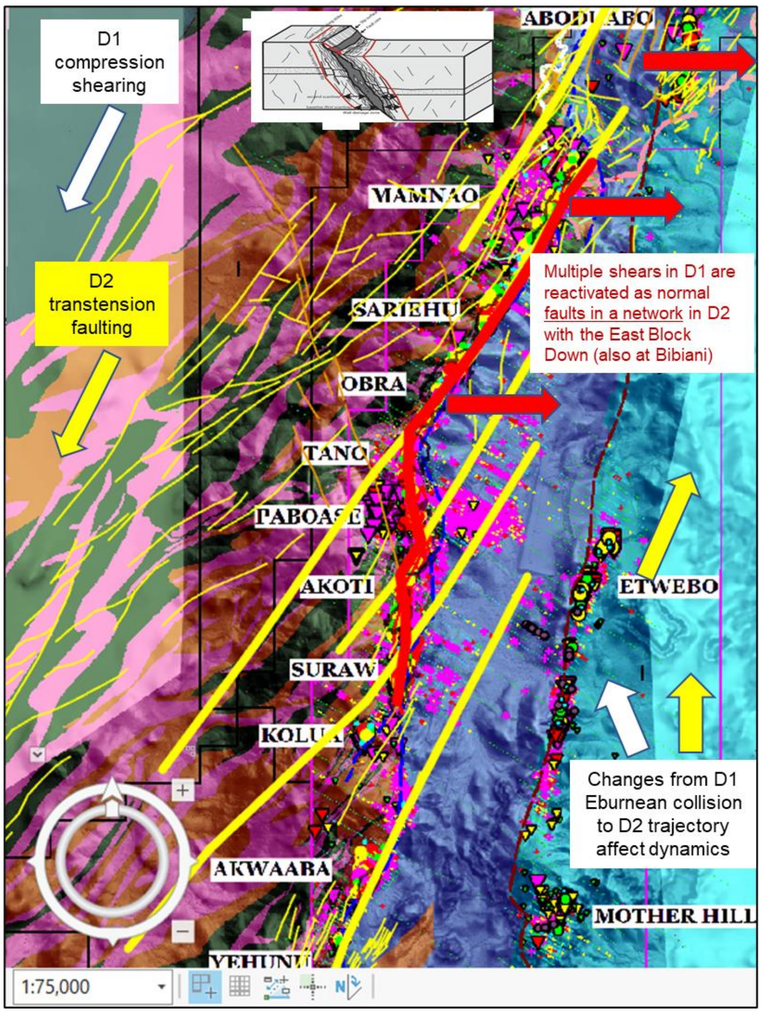


Figure 7-4: Chirano Shear Corridor – Structural Interpretation

(Source: KAAH, 2023)

In summary the Chirano-Bibiani Corridor has been subjected to progressive structural development producing regional en-echelon fold formation and boudinage coupled with wrench tectonics resulting in transpression-transtension failure. The decompressive failure has allowed fluid migration from depth as a consequence of seismic pumping, earthquake activity and lithological competency contrasts. The transpression-transtension tectonic regime is then associated with brittle failure and the formation of fault vein breccia systems that are found in the Chirano mineralised deposits.

The deposits comprise fractured, veined, altered and slightly pyritic mafic volcanics and granite. Within each deposit there is generally a positive correlation between the intensity of fracturing and brecciation and intensity of gold mineralization, however the degree of fracturing varies greatly between the deposits. The gold mineralization at Obra, for example, is generally hosted in severely deformed and brecciated granite (cataclasite), whereas much of the Tano lode is less fractured and can be considered more of a stockwork or vein swarm.

At Obra there is clear evidence that brecciation, veining and alteration have been prolonged, or the result of repeated episodes of deformation, and diamond drill core shows a complex array of small-scale structures that often appear ambiguous or contradictory. For example, some rock fragments in the Obra cataclasite contain veins that predate the brecciation and later veins cut through the breccia. Fragments of altered and unaltered rock are juxtaposed in some parts of the breccia, implying alteration before deformation, however adjacent fragments show alteration that overprints the brecciation. In addition, stylolites have been observed to cut across the breccia and early veins but are cut by later veining.

7.2.2 Alteration and Veining

7.2.2.1 Albite-dominated Alteration

An albite dominated alteration assemblage affects the wall rocks associated with the mineralised zones. In particular, felsic intrusive units (eg: tonalite) are replaced by a pinkish aggregate of albite, quartz and trace hematite.

7.2.2.2 Carbonate-dominated Alteration

Most of the alteration exhibits strong replacement by carbonate of the host rocks. Fine-grained, buff brown coloured ankerite pervasively replaces chlorite-sericite altered host rocks. This is not as pervasive into the hanging wall rocks as the albite alteration.

7.2.2.3 Veining

All the gold deposits at Chirano contain quartz and ankerite veinlets and there is generally a positive correlation between intensity of veining and elevated tenor of gold mineralization. Most of the observed veining is oriented parallel to the dip of the overall mineralized zone; however, veins have also been noted to dip more shallowly to the west, and some deposits have a sub-horizontal vein set in addition to the dominant west-dipping vein set.

The shallowly west-dipping veins have been interpreted to result from 'west-block-up' shearing in the mineralized zone. The veinlets are mostly a few millimetres to a few centimetres thick. More massive vein quartz (sometimes metres thick) occurs locally, usually on the eastern side of a deposit close to a footwall shear and usually carries only low gold grades. This feature has been observed at Sariehu and Tano.

The quartz veins vary in style from early veins (which may be recrystallized, folded, boudinaged, corroded by pressure solution, offset by micro faults or truncated at the edges of clasts) to late quartz veins (which may be undeformed and exhibit evidence of internal zonation such as carbonate crystals lining the vein selvedge). Some veins contain pyrite replacing hematite in the adjacent rock (sulphidation). At Obra the ankerite veins tend to comprise irregular networks and may have formed early in the paragenetic history.

7.2.3 Sulphide and Gold Development

Gold associates with pyrite, galena, silver and chalcopyrite with tellurise, pyrrhotite, stibnite C-As sulphide, arsenopyrite and molybdenite.

Pyrite represents the principal gold-bearing sulphide, typically 1% or 2% by volume, rarely exceeding 5% by volume. The presentation is generally in micro fractures or stylolites. It is noted that the surrounding barren rocks contain lower levels of disseminated sulphides than the mineralized horizon.

The pyrite may be very fine grained and disseminated throughout the rockmass, as at Obra, or occur as cubic euhedra a millimetre or two in diameter (and rarely larger at Tano and Sariehu). Pyrite may also occur as rare aggregates to a centimetre in size and has also been observed to form concentrations along stylolites. The quartz-carbonate veins can also contain pyrite, and pyrite has also been noted as an alteration selvedge to the quartz-carbonate veins. Pyrite also occurs disseminated through the altered host adjacent to veining.

There are several lines of evidence suggesting that the gold is very fine grained, including the following:

- Visible gold is not common in RC or diamond drill holes at Chirano.
- Relatively few gold grains have been seen in polished sections.
- Dissolution of gold during cyanide leaching is very rapid.
- Knelson gravity concentration recovers less than 30% of the gold.
- Gold is associated with pyrite and is sub-microscopic.

7.3 Property Geology and Mineralisation

Several consulting geologists have been appointed by CGML over the last few years to assist in the understanding of the regional and mine site geological, structural and mineralogical characteristics and interpretations.

Dr Chris Bonson, structural geologist and Director of Tektonik Consulting Ltd, conducted a visit to CGML over the period 15/03/2022 to 03/04/2022. The main elements of this exercise included:

- Review of all geological data and available published articles.
- Open pit and underground geological mapping and structural geological analysis.
- Selected core analysis of areas of interest.
- 3D structural analysis and provisional modelling.

Professor Kim Hein of KAAH Geoservices, contracted by Asante, has also assisted over the last two-year period to carry out intensive geological and structural re-interpretation of the local geological environment with the aim of better understanding the tectonic evolution of the Chirano-Bibiani Corridor (“BCC”) and relevant mine site mineralization environment as a model for further exploration and target generation. The work concluded by Professor Hein at Chirano involved underground (Akwaaba, Suraw) and open pit mapping (Mamnao), as well as orientated re-logging of numerous drill cores for structural and lithological re-interpretation. Additional focus was given to the geological interpretation of the newly investigated Aboduabo mineralised deposit.

Some information from the internal reports generated by these consultants has been included with permission of CGML in the geological section of this Technical Report.

The mineralised deposits have been drilled to depths ranging from 50m to 700m. Many show a consistent asymmetry, which is characterised by the following observations:

- There is commonly an abrupt change from elevated gold grade to barren assays at the eastern margin of the lode, but a more gradual transition on the western side, with patches of low-grade material or thin mineralised veins.
- Unusually high gold grades are often concentrated near the eastern margin.
- Strong quartz veining often occurs on the eastern side of the lode.
- Close spaced drilling has indicated that quartz veins on the eastern limb dip steeply west as opposed to those on the west that dip more flatly towards the west and are discordant with the lode envelope.

7.3.1 Akwaaba

Akwaaba is the southernmost mineralised deposit in the Chirano mine lease to date and was the first to have had underground resources exploited. The mine has become deep and current development and operations are occurring on Level 1,550mRL approximately 650m below surface. Akwaaba continues to be a valuable underground ore source into the mine's production profile. In 2022/23 it produced approximately 584kt (circa 17% of total UG production) at an average grade of 1.79g/t Au.

Mineralization is hosted within dominantly quartz porphyry, hydrothermally altered quartz rich dolerite that is variably foliated and Tarkwaian sediments with strong brecciation characterised by wide and consistent carbonate alteration.

The deposit contains high-grade mineralised shoots which occur at subtle dip-changes in the fault-shear zone that plunge towards the north and contain hydrothermally brecciated basalt and cataclasis (Figure 7-5). Locally, the shear zone is intruded by tonalite, which is strained, altered, and mineralized. The mineral deposit, which is 20-50m wide, has gold grades which correlate well with the intensity of alteration, veining, brecciation and 1 to 5% pyrite.

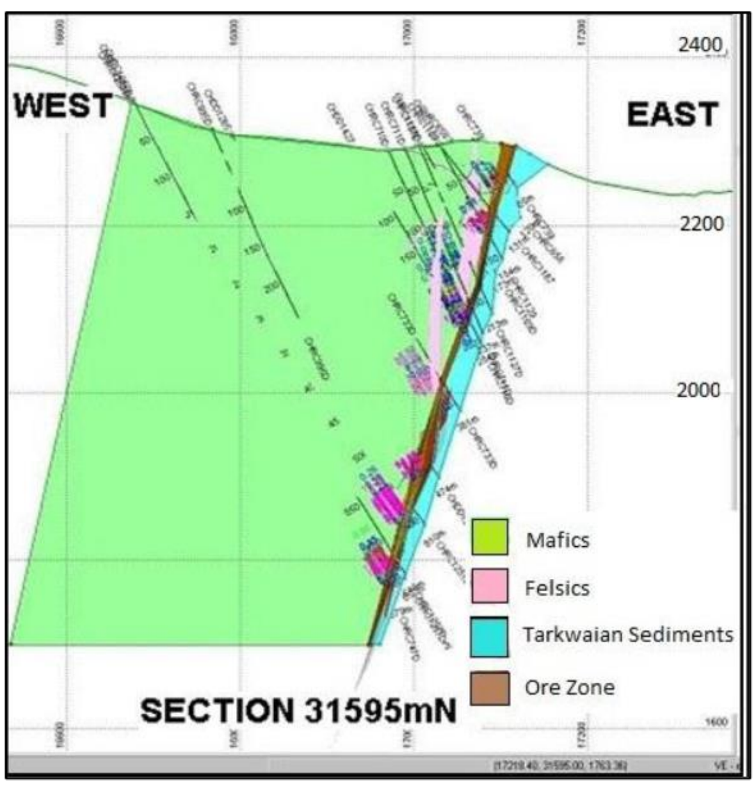


Figure 7-5: Akwaaba Mine - Typical Cross Section (Chirano Local Grid)

(Source: CGML 2023)

Towards the base of mineralization brecciation increases substantially and takes on two distinct forms consisting of what is locally referred to as the 'Black Breccia' (Figure 7-6) and immediately below that is the brown breccia, which is the last mineralized rock before the CSZ.

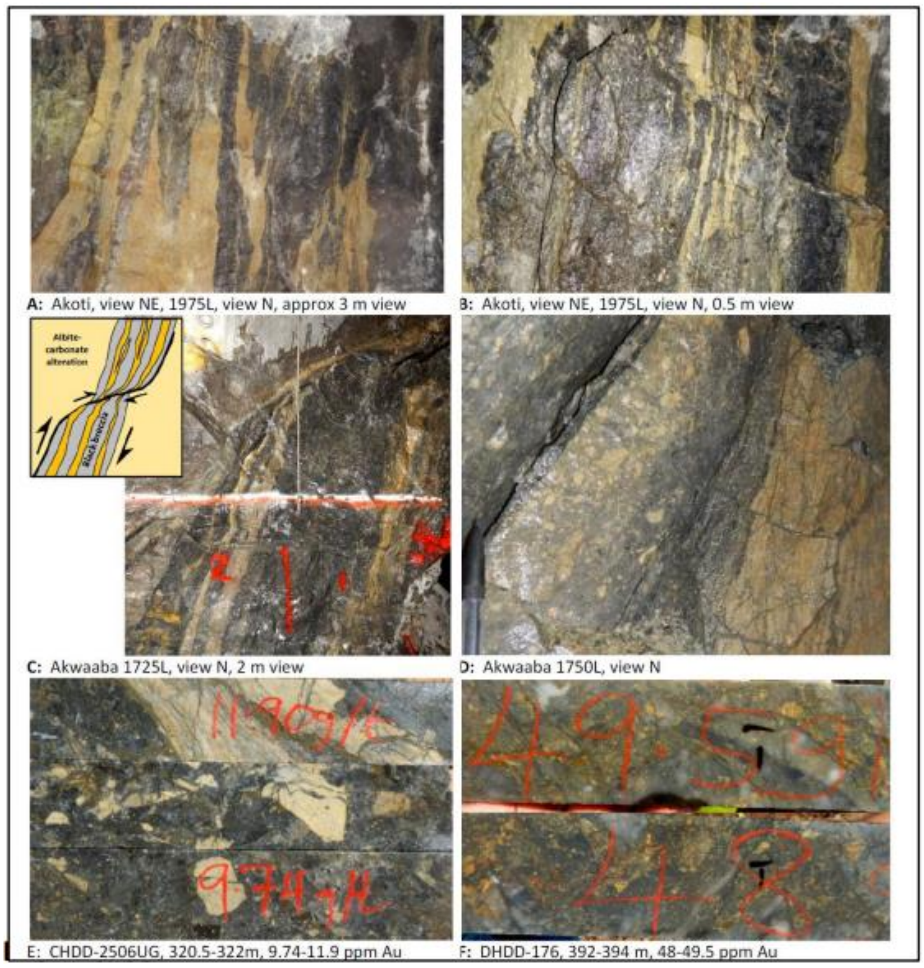


Figure 7-6: Chirano Gold Mine - Examples of Mineralized Black Breccia Veins and Textures in Akoti and Akwaaba Underground Mines

(Source: CGML 2023)

A and B: Carbonaceous "Black breccia" quartz veins formed and deformed within a strongly sericite-carbonate altered shear zone in the Akoti Zone. C: and D: Akwaaba hangingwall zone. In C the full width of the zone is seen showing the banded nature of the grey carbonaceous quartz veins transposed in a yellow-orange sericite-carbonate-albite shear zone. In the upper part of the image the vein is cut by a reverse shear band, also mineralized. In D the nature of the grey quartz breccia is shown in detail, with sericite-albite-Fe-carbonate altered wall rock. E and F: Akwaaba high grade black quartz breccia. In E, the face has angular foliated wall rock fragments, high pyrite content locally in matrix, and in F with higher fragment and lower matrix content. This includes more cataclastic matrix texture and grey quartz fragments.

7.3.2 Suraw

Suraw mineralised deposit is north of Akwaaba and about 300m south of the Akoti South deposit. It is approximately 400m long and steeply ENE dipping. Suraw is currently a major source of underground ore for the current production profile. During the Asante 2022/23 period Suraw has produced approximately 996kt from underground (circa 30% of total UG production) at an average grade of 2.16g/t Au.

The rock sequence hosting the Suraw deposits represents the strike extension of the same geological lithologies from Akoti South. Current underground development and operations are occurring on Level 2100mRL approximately 300m below surface.

Dolerite is evident in both the footwall (west) and to a lesser extent in the hanging wall (east) of the Suraw mineralised zone. The dolerite comprises a fine to medium grained rock that hosts a variable percentage of leucoxene (after titano-magnetite). Tonalite is the dominant rock type in the immediate hanging wall to the mineralised zone and is also a significant component of the footwall sequence. The tonalite shows the typical equigranular, granitic texture that is the hallmark of this suite of intrusions within the Chirano host sequence.

The mineralisation is hosted in a shear-breccia zone of quartz dolerite and quartz porphyry where a strong, relatively early brittle-ductile fabric has been overprinted by multi-phase brecciation and a quartz-sulphide fracture mesh. A grey smoky quartz vein that varies in width from few centimetres up to 5 metres is considered a marker located immediately east of the high-grade fault zone which serves as a guide to development and exploration. The mineralization is bounded on the hanging wall side, especially at depth, by a large mass of highly competent albite altered tonalite (Figure 7-7).

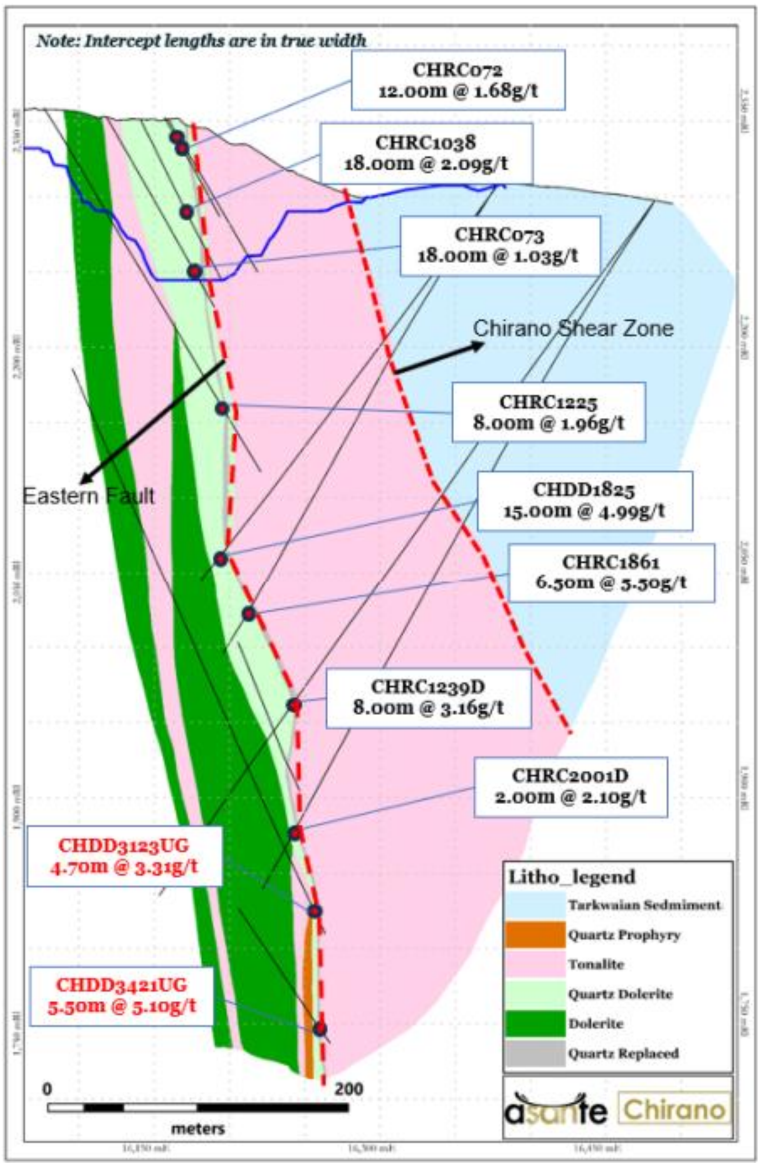


Figure 7-7: Suraw Mineralized Deposit – Typical Cross Section

(Source: CGML 2023)

Ankerite-albite-pyrite alteration characterizes proximal, ore-related alteration, with pyrite percentage and brecciation/veining intensity showing a correlation with gold grade. From drill sections it is noticed that, as the dip of the shear-breccia structure steepens the grade and width of the Suraw mineralised zone appears to improve.

Tarkwaian sedimentary rocks dominate the eastern portion of the footwall sequence and comprises a mixture of poorly bedded lithic-arkosic wacke intermixed with polymictic pebble to boulder conglomerate with an arkosic matrix. The contact between the Tarkwaian and Birimian sequence is not noticeably deformed in the drill holes with most of the strain instead being localized within the mineralised zone.

7.3.3 Akoti

Akoti is currently a major source of underground ore within the current production profile and future planning. During the Asante 2022/23 period Akoti has produced approximately 792kt (circa 23% of total UG production) at an average grade of 1.72g/t Au.

The Akoti North and extended deposits are sub-vertical tabular zones of mineralization hosted within two differently striking portions of the mineralised horizon. The fault zone strikes about 035º at the south and about 005º at the north of the deposit and is hosted within quartz dolerite. At both ends of the deposit, the main fault surface within the lode horizon is sub-vertical and extremely planar. A minor volume of the fault zone is intruded by tonalite that locally forms an intrusive breccia with dolerite. Mineralization is hosted within hydrothermally altered basalt and tonalite, which are commonly foliated. High grade zones contain hydrothermally brecciated rocks and cataclasis.

The Akoti South deposit is about 500m south from the Akoti North pit. Mineralization within the Akoti South pit dips steeply westwards in multiple small lodes. The main zone of mineralization is associated with a grey/black smoky pyritised quartz vein which sits in a zone of strong shearing, brecciation and alteration – the Akoti South Main Shear.

A second zone of mineralization is associated with the quartz replaced shear that contacts the western mafics with the slightly more tonalite rich felsic and mafic package which makes up the central portion of the Akoti South pit – The Western shear. This shear can be traced striking northwest towards the western side of Akoti North pit.

The western part of the south wall of the Akoti South pit is predominantly made up of strongly weathered fine to medium grained mafics. The bulk of the lithologies found in the Akoti South pit consist of a typical mixture of predominantly strongly altered and deformed mafics, which are distinct from the sequence in the western part of the pit, intruded by lesser strongly altered tonalites. The altered tonalite is a blocky, medium-grained grey/green granitoid that has partially re-silicified quartz/feldspar. The mafics are strongly altered to quartz – sericite – ankerite – pyrite generally with occasional albite alteration especially immediately to the west of the Akoti South Main shear.

They vary locally from strongly oxidized and partially weathered to fresh rock with an apparent quartz stock working. These mafics are distinct from the strongly weathered and generally unaltered sequence in the western part of the pit. The southern wall of the Akoti South pit is a unit that appears to be strongly altered and deformed Tarkwaian boulder conglomerate alongside strongly altered fine grained Tarkwaian sediments, enclosed within Birimian volcanics. The boulders appear to be boudinaged and closer to the Akoti Main shear are very strongly deformed in a high strain zone towards the contact with the Birimian mafic and tonalite mineralized package. These units have been a subject of contention as consensus is lacking with respect to its classification and it is preferred to be called 'contentious unit'.

7.3.4 Paboase

Paboase underground production was terminated in late 2022. No further production is contemplated at this time from this deposit. The final underground level of extraction depth was 950m vertical below surface and is indicative of the possible vertical extent of these mineralized bodies. Paboase was successful in producing from underground over 6.7Mt at a grade of 3.57g/t Au (circa 780koz Au) and from the open pit over 1.9Mt at 1.37g/t Au (circa 90ko Au).

The Paboase mineral deposit lies along a planar segment of the main mineralized shear zone between Akoti and Tano; this is intersected at a high angle by numerous faults mapped in the open pit. The geology within the open pit is a mixture of mafics (basalts and dolerites) intruded by a more significant quantity of tonalite, with quartz vein stock-working, than is seen at all other Chirano deposits apart from Tano. Where tonalite intrudes the Paboase main fault it seems to be more mineralized than intrusions further away from the fault.

The mineralization is hosted to the western side of the steeply Northeast dipping main mineralized shear zone locally referred to as the Paboase fault. Within the pit confines the mineralization is mainly hosted in a strongly silica– albite ± hematite altered quartz stock worked tonalite but at depth the best mineralised zones occur within a wide zone of strongly sheared, tectonically and hydrothermally brecciated, predominantly mafic (quartz dolerite) package. Gold grades at depth are highest where carbonate – sericite - silica ± albite ± chlorite alteration has been most intense, bleaching the rocks to a pale greyish-brown, although tonalite rocks also carry high grades locally where intensely sheared and altered.

There is a high level of structural complexity throughout the Paboase deposit with at least three main fault orientations. These include the northwest striking Paboase main fault and western fault, large east-west striking structures and a number of oblique faults, with the latter two orientations appearing to intersect but not cross the main mineralized shear zone.

The Paboase fault may be the main conduit along which numerous structural, magmatic and metamorphic processes occurred. The main mineralised zone at Paboase appears to be sandwiched between two northwest striking shear zones and has cataclastic textures similar to the Obra deposit. Grade tends to increase west in a rapid fashion from the Paboase fault into the most strongly altered and deformed host rocks. It however decreases rather gradually again towards the western bounding fault.

7.3.5 Tano

Tano has also been a major contributor of underground ore in the last two-year period. In the 2022/23 period approximately 415kt at an average grade of 1.69g/t Au has been extracted (circa 12% of total UG production).

Tano was a large and relatively high-grade open pit deposit at Chirano that sits between Paboase and Obra towards the northern end of the locally interpreted "Paboase Jog or Bulge". The deposit is hosted, unusually for Chirano, within a hydrothermally altered and brecciated tonalite in the hanging wall of a steeply west-dipping portion of the main mineralized shear zone, which varies in strike from northwest in the south to north south in the north along the deposit.

The Tarkwaian sediments, visible in the upper pit walls, are a strongly foliated, folded, deformed and altered sequence of arkosic/argillaceous sediments with polymictic conglomerates. Contacting the Tarkwaian to the west and separating it from the main mineralised shear zone is a sequence of unmineralized Birimian mafic volcanics and felsic – intermediate intrusives. Mineralisation is mostly hosted within a domain of unfoliated, hydrothermally altered and crushed tonalite that locally has a high density of quartz ± carbonate veins. The high-grade mineralisation at Tano occurs within a hydrothermally quartz – albite – sericite altered hematite dusted pyritic tonalite with a high density of quartz veining.

Pit mapping has shown that the Chirano Shear is not present within the Tano pit but occurs to the east of the deposit. The shear within the Tano deposit (Tano Shear) is sub-parallel to the main shear and may represent a splay off the parent Chirano Shear. The Tano Shear is characterized by chloritic ductile fabric in contrast to most of the mineralization which is brittle in character. Where the ductile shearing and mineralization are in contact, they are separated by a brittle fault. The brittle faults in some places separate lithologies with gold content below detection (and commonly ductile fabrics) from rocks with high grades (over 10g/t) (and generally brittle fabrics). The lack of incipient mineralization adjacent to such high grades suggests that the rocks have been juxtaposed after mineralization.

7.3.6 Obra

Obra has been recently developed below the historic open pit, within the Asante ownership period, for current and future underground extraction. Development ore was first produced in December 2022 and output ore tonnage has increased steadily with >72kt ore at a grade of 1.63g/t Au extracted from both development and stope sources in December 2023, approximately 52% of underground production. In total over the 2022/23 period Obra has contributed approximately 506kt at an average grade of 1.53g/t Au (circa 15% of UG production). Obra will continue to be a major source of ore in the Chirano short term production plan.

The Obra deposit is a tabular zone of mineralization hosted within a northeast striking fault (Obra fault-OF) and sub vertical dipping of the Chirano shear zone (CSZ). Mineralization occurs in strongly hydrothermally altered, brecciated qtz-co3 and stockwork veined rocks of mafic(dolerite) + tonalite mixed fabric comprising of about 60% mafic + 40% tonalite combined host. Locally the Obra mineralization has a grid N-S trend following the regional structural trend of the Sefwi Belt.

The volume of tonalite rocks highly influences the dilatancy-fracturing, brecciation, fluid transport and deposition, hydrothermal alteration and most importantly the distribution of grades within the mineral deposit.

The margins of this domain are bounded by shears and zones of intense foliation. Bedding within folded Tarkwaian sedimentary rocks to the east of the CSZ is steepened and drag folded adjacent to the CSZ. Important controls on mineralization at this deposit appear to be the closely spaced CSZ and hanging wall faults, which were intruded by tonalite early during deformation. The Obra deposit is bounded by two main structures. On the west is the Obra fault and on the east is the CSZ. A mylonitised zone of about 10-15m is evident on both ends of the pit. The mylonite is a very fine grained strongly re-silicified, foliated, and altered rock, with a yellow to grey or green colour. Alteration in the mylonite consists primarily of silica-ankerite-sericite-chlorite and is generally pervasive, overprinting any remnant textures.

7.3.7 Sariehu

Sariehu became an additional open pit source of ore in May 2023. To date approximately 483kt at an average grade of 1.13g/t Au has been added to the production profile (circa 15% of OP production).

Sariehu is situated approximately 400m north of Obra. The mineral deposit is broadly massive, but rather sinuous, with a major thickening between 38 300 and 38 400 N, and a lesser thickening between 38 500 and 38 600 N and has a strike length of about 500m. The mineralization at Sariehu has a vertical plunge and it is hosted mainly in altered Birimian mafics with the following characteristics:

- First phase of hydrothermal alteration appears to have been albitization and ankeritization of the Birimian Mafics most certainly during prograde (greenschist) metamorphism and regional deformation.
- Alteration zones up to several hundred metres long were then followed by silica flooding, and carbonate veins and breccias (albite and ankerite).
- These siliceous alteration packages stiffened the hydrothermal-metamorphic alteration package allowing further brittle deformation, and the gold episode arrived along with sulphidization and the infilling of fissures by chlorite, carbonate and silica, with pyrite.
- During the waning phases of hydrothermal activity, narrow quartz veins cut the alteration packages, and gold can be found along the margins of some quartz veins and pyrite but contained no significant gold mineralization.
- Mineralisation tends to pinch at both the south and north of the deposit and it is the most pyrite rich deposit of all the deposits in Chirano hence, it has a higher bulk density.

This is depicted by different mineral assemblages showing a spatial variation with regard to original lithology and proximity to the footwall structure (West). Proximal to the mineralised zone is the ankerite – quartz – pyrite – sericite – albite which is the normal alteration style associated with mineralization at Chirano. Away from the footwall structure, alteration tends to change from moderate propylitic alteration of calcite – chlorite - pyrite - sericite to weak propylitic alteration of calcite - chlorite + epidote + albite.

Pit mapping has shown a predominance of mafic rocks to the west and east of the mineralised zones. West of the lodes are mafic rocks, with minor included pegmatite, and a couple of thin gold lodes. On the eastern side there is generally a thin sliver of mafic rock (up to 15 metres thick), then the Tarkwaian arkose.

The mineralised zone is hosted in stock work of veins in mainly fine-grained mafic rocks (Quartz Dolerite) intruded by diorite and dolerite and the level of silica flooding is very massive hence destroying the original fabrics of the rocks making the zone medium to coarse grained. The doleritic rocks is partially overprinted by carbonate-rich alteration, some relic textures/mineralogy is preserved.

The zone is crushed, veined; quartz vein is unusually abundant at Sariehu. Locally there are thick massive quartz veins (this quartz does not always carry good gold grades). Mineralisation tends to pinch at both the south and north of the deposit.

Assay drop off from mineralization to barren rock is generally sharper on the eastern (footwall) side where there is intense quartz veining, than it tends to be on the eastern side of the lode.

Thin lodes parallel to the main lode are locally developed on the western (hanging wall) side, but not on the east. There is a major shear close to the western (footwall) margin of the lode, but little evidence on shearing on the other side.

7.3.8 Mamnao

The Mamnao mineralised body was included in the previous NI 43-101 Technical Report which published Mineral Resources as at the 31 December 2021. In the 2022/23 period CGML successfully re-developed the Mamnao Central and Mamnao South open pit operations. Mamnao Central open pit between January 2022 and its termination in September 2023, produced approximately 1.66Mt at a grade of 0.90g/t Au. Mamnao South open pit in the same period produced approximately 823kt at a grade of 1.30g/t Au. Both open pits made up circa 85% of the oxide ore source to the processing plant. Development of Mamnao North is in progress (Figure 7-8).

Figure 7-8: Mamnao South and Central Open Pit Mine – Looking to North Pit Preparation

(Source: dMb 2023)

The host rock is quartz dolerite, tonalite and quartz porphyry. The mineralized deposit dips steeply west and strikes approximately N-S in the local Chirano grid. It manifests as a breccia with a strong carbonate+silica+pyrite alteration. The deposit is characterized by parallel splay mineralized shoots to the west referred as Western Shears. These are targets for future exploration drill programs in 2024/25.

7.3.9 Aboduabo

7.3.9.1 General Comment

The Aboduabo Project has been the primary focus of Chirano exploration during the last two-year period since Asante took ownership. A total of 88 drill holes were completed (DD and RC) for approximately 21,000m. It is a new addition to the latest Mineral Resources contained within this Technical Report and is being currently investigated for open pit extraction in the short-term business plan.

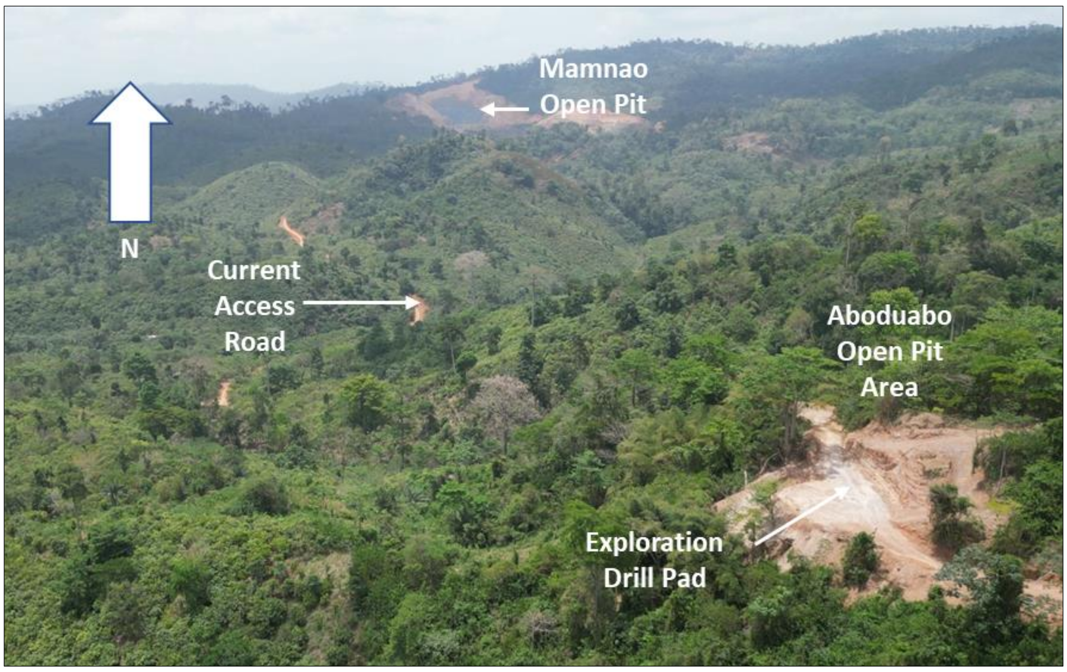


Figure 7-9: View looking North from Aboduabo Drilling Site – Shows Terrane and Proximity to Mamnao

(Source: dMb 2023)

In March 2023 an application was made to the Ghana Minerals Commission ("MinCom") for the conversion of the Prospecting License PL2/56 that covers the historical Chirano North prospecting area into a Mining Lease. The Chirano North Prospecting Licence is located along the southwestern margin of the northeast trending Sefwi-Bibiani Belt. The licence straddles the contact zone between the western mafic volcanic belt and the eastern Kumasi Basin sediments.

The Report that was submitted in support of this application was titled: "*Feasibility Study Report, Chirano Gold Mine Limited, Ghana, West Africa; Chirano North, Aboduabo Project; Application for Mining Lease, PL2/56*" dated March 2023. It was submitted by Daniel Apau, CGML Technical Manager Exploration. The word "feasibility" is used only as it was required by the MinCom guidelines for this specific application. It is not regarded as a feasibility in terms of the meaning ascribed by the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, and amended as of May 2014 (CIM, 2014). However, some relevant geological information about this mineralised deposit, the exploration and subsequent results, geological environment and mineralisation characteristics, is taken from this report.

There have been no declared Mineral Resources or Mineral Reserves for Chirano North deposits prior to this License conversion application internal report. The recent exploration during 2022/23 completed by Asante and CGML has resulted in the first maiden mineral resource potential for the Aboduabo Project. The Maiden Mineral Resource and Reserve that was published in the Mining Lease application is given below.

Table 7-1: Aboduabo Project Maiden Open Pit Mineral Resource as at 31 March 2023 using 0.6g/t Constrained within US$1,950 Shell

Aboduabo Project	Resource Classification	Tons (t)	Au (g/t)	Au (oz)
Open Pit Operation	Measured	0	0	0
	Indicated	1 596 806	1.40	71 771
	Total Measured and Indicated	**1 596 806**	**1.40**	**71 771**
	Inferred	385 778	1.61	19 969
	Potential (Unclassified)	1 035 346	1.60	53 337
	TOTAL RESERVES	**3 017 930**	**1.50**	**145 155**

Table 7-2: Aboduabo Project Maiden Open Pit Mineral Reserve as at 31 March 2023 using Modifying Factors Constrained within US$1,950 Shell

Aboduabo Project	Reserve Classification	Tons (t)	Au Grade (g/t)	Au (oz)
Open Pit Operation	Measured	0	0	0
	Indicated	1 422 202	1.42	55 651
	Measured and Indicated	**1 422 202**	**1.42**	**55 651**
	Inferred + Potential	1 403 862	1.56	60 592
	TOTAL RESERVES	**2 826 064**	**1.49**	**116 244**

The Project report presented to MinCom was based on Maiden Indicated, Inferred and Unclassified Mineral Resources that at the time were considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorised as Mineral Reserves and there was no certainty that the Project will be realised.

However further infill drilling completed by CGML has improved resource confidence and Aboduabo is now included in the latest Mineral Resource Estimates found in Section 14 of this Technical Report. The drilling detail and significant intercepts will be contained in Section 10.

7.3.9.2 Geology and Mineralisation

In March 2023 Professor Hein submitted two internal reports:

- Rpt009 Part 1 and 2; Geology and Structure of the Chirano-Bibiani Goldfields; March 2023.
- RPT010; Geology and Structural features of the Aboduabo Gold deposit from Fieldwork and Oriented Boreholes, March 2023.

Information pertaining to the geology, structural interpretation and mineralisation of the Aboduabo Project has been extracted in part from these internal reports.

The Aboduabo deposit (Figure 7-10) is hosted in metasedimentary and chemical sequences of the Birimian Kumasi Basin (ca. 2150 Ma) in the Eastern Domain of the Chirano permit. The deposit lies immediately NE of the Mamnao OP mine and immediately south of the Aboduabo village (UTM30 571387 703926). The project area straddles the contact zone between the western mafic volcanic belt and the eastern Kumasi Basin sediments.

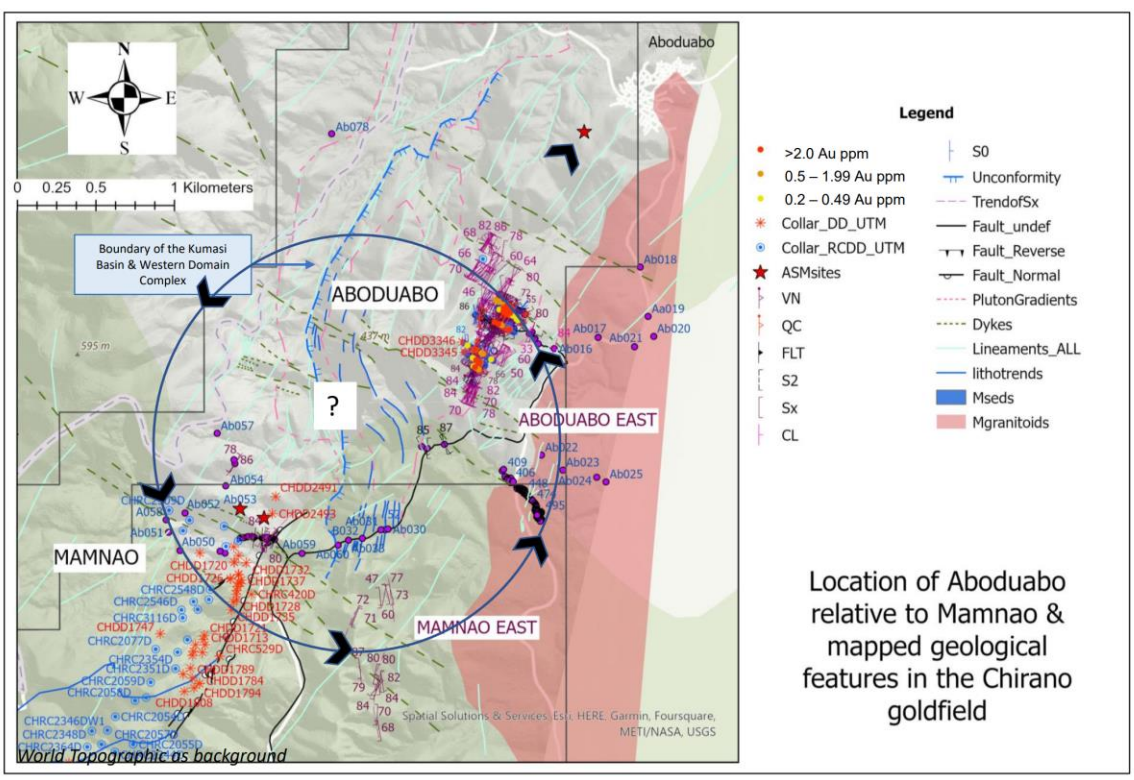


Figure 7-10: Aboduabo project – Geology, Location and Proximity to Mamnao Deposit

(Source: KAAH 2023)

The Birimian metasedimentary and chemical sequences were found by the team to consist of interbedded graphitic shale, siltstone and volcaniclastic greywacke, turbidite, buff-coloured argillite, and carbonaceous to evaporitic chemical sediments. The sequences were interpreted to have been deposited in a back-arc basin proximal to a volcanic arc, in a deltaic to marginal marine environmental setting.

In the Bibiani shear trend, which hosts the Aboduabo mineralised body, drill hole information and mapping indicates that folded and faulted graphitic meta-pelite rocks of the Birimian sedimentary sequence in the east of the Bibiani shear are the host to gold mineralisation. This is like that experienced by the adjacent Bibiani Gold Mine. Drilling information at Aboduabo and Chine shows that gold grades are associated with deformed graphitic pelite/+ with stockwork of quartz veins and altered-deformed felsic intrusive that are structurally interleaved with the pelite over several meters in a folded complex system (Figure 7-11). These veins are developed in graphitic, brittle-ductile fault/shear zones up to several metres wide that have caused significant folding and disruption of the mineralized quartz veins.

Two styles of gold mineralisation are therefore interpreted from structural evaluation of oriented half core and related to progressive deformation in D1, namely:

- Style 1: Intrusion-related fault-vein style.
- Style 2: Massive cataclasite fault-stockwork vein style (as described above). This is the dominant style at Aboduabo and certainly the most interesting for deep exploration drilling in the future.

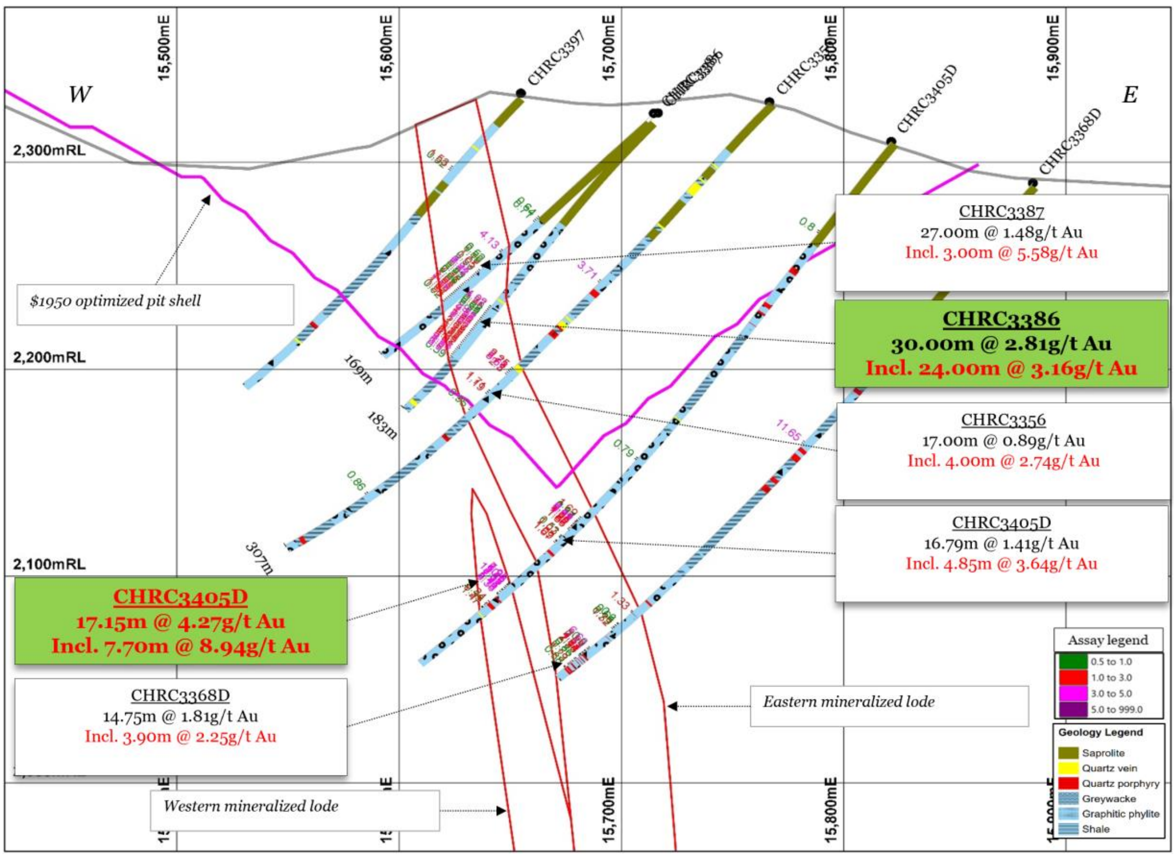


Figure 7-11: Aboduabo Project Section 42425mN - Interpreted X-section of Lithology and Mineralisation

(Source: CGML 2023)

7.3.9.3 Structural Interpretation

At Aboduabo, evidence for progressive deformation in D1 during the Eburnean Orogeny (ca. 2136- 2070 Ma), and a weak D2, can be found in the metasedimentary and chemical sequences, the tonalite-diorite pluton, the contact aureole, dykes, pegmatites and quartz veins. It is evident from field observation and core logging that the Aboduabo pluton was emplaced during F1 folding of the supracrustal lithologies and was therefore deformed along with these early rock formations. At Aboduabo the D1 orogenic event associates with the formation of regional folds, a subsequent range of cleavages and pervasive schistosity and associated shears and faults. Folds trend N-E but are deflected NNE at the inferred position of the Chirano and Bibiani shear zones near the project site. Field interpretation places the Aboduabo mineralized deposit on the eastern limb of an anticline.

8. DEPOSIT TYPE

Gold plays an important role in the economy of Ghana, with up to 1,500t of gold produced throughout its history. From the late 15th century until the mid-19th century, two-thirds of Africa's gold production was estimated to have originated from the Gold Coast. Annual production in the early 1980s was 12,000kg-15,000kg. The major primary gold lodes are found in strike-slip faulting and extension, rifting or divergence deformational zones typically between the Lower Birimian, characterized by soft graphitic foliated pelites, and Upper Birimian greenstones and consist of quartz veins and lenticular reefs. The gold is usually accompanied with arsenopyrite.

Gold deposits in Ghana can be broadly categorised into:

- Tourmalinised turbidite-hosted disseminated gold sulphides.
- EoEburnian paleo-placer formation.
- Mesothermal auriferous arsenopyrite and quartz vein mineralisation.
- Mesothermal gold-quartz vein deposits.

The Sefwi belt-type volcanic orogenic gold belt is most likely to succeed the prolific Ashanti gold belt which has produced over 100Moz Au in its history. The lode deposits found in both types have broad similarities in relation to structure, mineralogy, alteration, geochemistry and regional setting.

The formation of the West African geological and structural environment is now believed to be the result of two Eburian orogenic events – D1 and D2. D1 occurred approximately around 2136-2105Ma. This D1 event had a NNW-SSE shortening effect resulting in collision along the margins of the Sefwi Belt. This was characterised by associated folding and low angle thrust faults, crustal thickening and subsequent lower crustal anatexis. The Tarkwa Series, which is syn-deformational in age, was formed by erosion in the period 2133-2097Ma. The D2 orogenic event, characterised by transtension forces with an ENE-WSW stress, caused tearing apart and collapse of the geological formations. It is a late event and crosscuts all preceding geology in the region. All events that occurred before or during the formation of the Birimian Supergroup (2195-2150Ma) are called the EoEburnian (2200-2150Ma).

Figure 8-1, Figure 8-2,and Figure 8-3 below illustrate the interpreted D1 and D2 Eburnian orogenic events with the final regional geological environment experienced in this region of Ghana. The three Figures below are adapted from reports by Professor Hein and originate from the following Precambrian Research: *Episodic Collisional Orogenesis and Lower Crustal Exhumation during the Palaeoproterozoic Eburnean Orogeny: Evidence from the Sefwi Greenstone Belt, West African Craton; H.B. Macfarlane et al.*

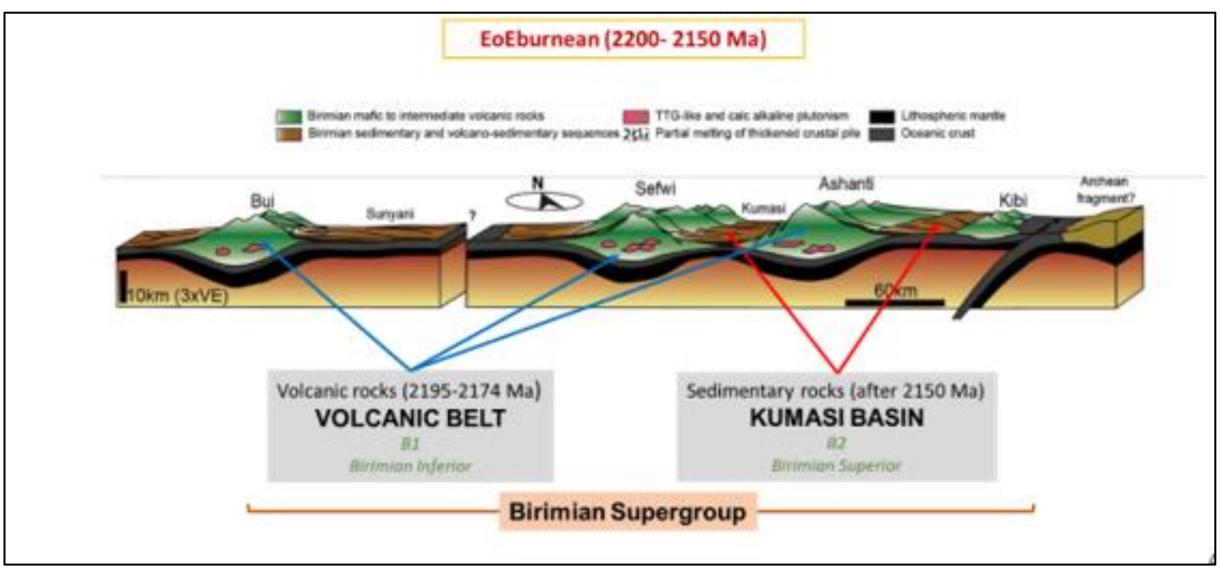


Figure 8-1: Eburnian D2 Orogenic Event – Episodic Collisional Orogenesis and Lower Crustal Exhumation

(Source: Adapted KAAH 2023)

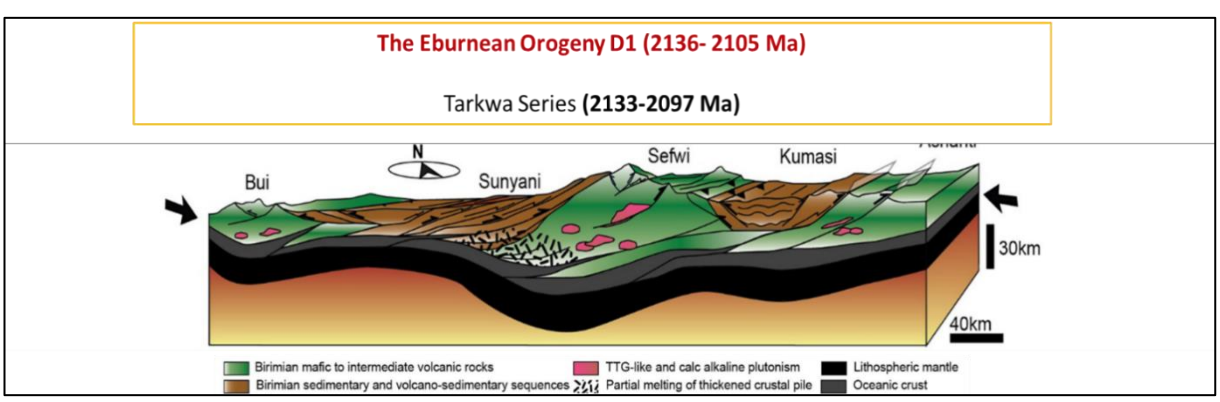


Figure 8-2: Eburnian D1 Orogenic Event - Episodic Collisional Orogenesis and Lower Crustal Exhumation

(Source: Adapted KAAH 2023)

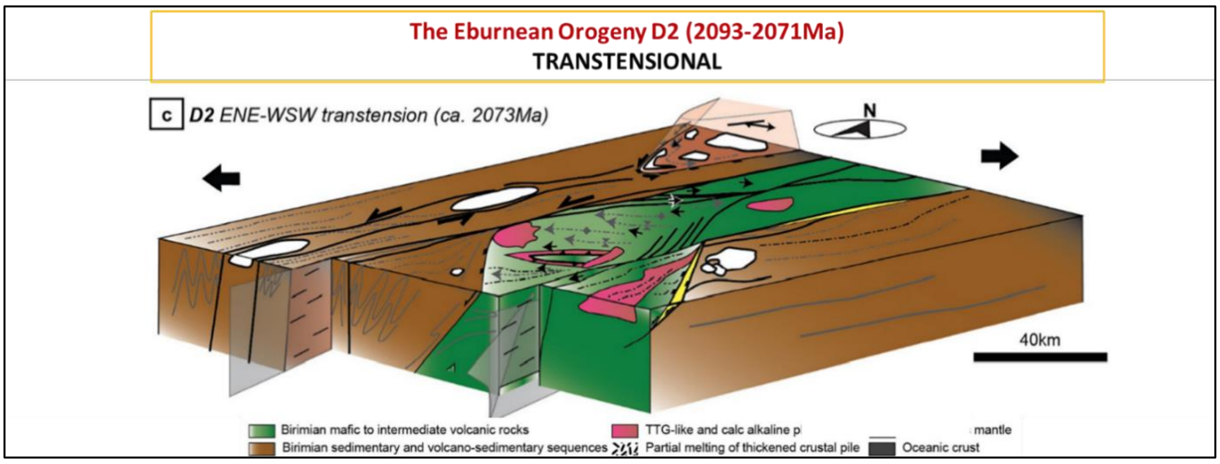


Figure 8-3: Eburnean Orogenic Event – Formation of Ghana Gold Event

(Source: Adapted KAAH 2023)

Exploration strategy is focussed on advancing the potential for a significant mine life extension on the known lode horizon and other interpreted west splay structures and on several district targets. The program outline is to drill test pipeline opportunities, test depth and lateral extensions, confirm and upgrade continuity outside reserve shells.

The above geological mineralisation environment and characteristics of the mineralised deposits formed within these re-interpreted structural domains will guide all future exploration exercises. The en-echelon pinch and swell characteristics that accompany these steeply dipping shear zone hosted gold deposits, common in the greenstone terrains within the Ghana gold belts, are extensive in strike and are known to extend to depth. The drilling programs adopted by Chirano take cognisance of this experience and are designed to investigate these deposits accordingly.

9. EXPLORATION

Exploration at Chirano is at a very advanced stage and has been ongoing since the late 1990's. It has culminated in the discovery of 14 surface gold deposits and one underground deposit. Significant potential remains to increase the known Mineral Resources and Mineral Reserves, and exploration will continue during the life of the mining operation.

9.1 Historical Exploration

Placer Outokumpu Exploration (POE) carried out the first systematic reconnaissance exploration of the area, via stream sediment sampling, widely spaced soil geochemical traversing, rock chip sampling, then trenching and pitting of the more promising soil anomalies.

Reunion carried out the first detailed exploration work by extended and in-filling the soil sampling grid and excavating trenches across the better soil anomalies. Several potentially economic grade gold prospects worthy of drilling were defined. The exploration program undertaken by Reunion focused on shallow oxide mineralization. A modest oxide gold resource was defined, and preliminary metallurgical testing was completed.

CGML as a subsidiary of Red Back, proceeded with intensive exploration of the Project area between 1998 and 2004. This included extensive soil geochemistry, geological and regolith mapping, trenching, ground geophysics (magnetics and induced polarization), and RC and diamond core drilling. CGML also studied the petrography of the mineralization and associated alteration, the trace element signature of the gold deposits, the metallurgy of the lode material, local hydrology, and the geotechnical characteristics of the host rocks. By mid-2004 all the deposits had been drilled sufficiently to define their gold resources. 15,000 soil samples were collected, 81 trenches with a total length of 4,063 metres completed and 605 drill holes totalling 60,489 metres were drilled. A prefeasibility study was completed by in 2000 and a Bankable Feasibility Study in early 2003.

Kinross acquired its ownership in CGML on 17 September 2010. In February 2015 Kinross carried out an Exploration Targeting Review assisted by Geoscience Now Pty Ltd. The work program included a complete review of all drilling to date and surface and underground mapping.

The mine currently comprises the Akwaaba, Paboase, Akoti, Tano, Suraw and Obra underground operations and Akoti South and Mamnao cut-back pits. New discoveries by CGML since 2010 have brought the number of known Chirano gold deposits to fourteen (eight open pits and six undergrounds), distributed along a strike length of ten kilometres.

Geological mapping has been undertaken over the entire Chirano mine area. Ground geophysics has also been used (magnetics and induced polarization) and many of the known deposits have a specific geophysical signature that are being used in exploring for repetitions and extensions. Both reverse circulation (RC) and diamond drilling have been employed for exploration and resource definition purposes.

Exploration has continued both during and after the development of the mine. Most significantly, drilling below Akwaaba, Paboase, Akoti, Tano, Suraw and Obra open pits has delineated higher grade underground resources. Further drilling below the pits has also identified underground targets at Sariehu and Mamnao. Another open pit was discovered on a parallel western splay structure at Mamnao and is currently being mined as part of the Mamnao enclave open pit complex.

Multi-element analysis provided useful and additional information for pathfinder identification where gold in soil anomaly was subtle. Results have indicated that in the mining lease environment, including adjacent prospecting licenses, the footprint of the system is best mapped by Au, W, As and Sb. Mo, Bi, and Te. There is anomalous antimony along the 30km length of the Bibiani Shear, however it is strongest in a 12km segment that sits outboard from Mamnao to just south of Akwaaba. There is a similar antimony signature towards the southern end of the area mapped.

9.1.1 Soil Sampling

Soil sampling and analysis has been the major tool used in the early phases of exploration at Chirano and has been the major factor in locating each of the eight open pit gold deposits found to date. The entire mining lease area has been covered by soil sampling, with the sample spacing ranging from reconnaissance traverses at an 800m x 100m sample spacing, through to detailed infill surveys at a 50m x 10m spacing.

An industry standard soil sampling technique, appropriate for the regolith developed at Chirano, has been routinely employed. A hole 50cm to 60cm deep is excavated with a hand tool and a 3kg bulk sample is collected from the bottom of the hole. This entire sample is bagged and sent to the laboratory without preliminary processing, apart from the removal of large rocks and macroscopic organic material.

Two different analytical methods have been used over the years:

- Entire sample is oven dried, pulverized in a large ring mill, and analysed for gold by atomic absorption spectroscopy (AAS) by fire assay digestion.
- Samples were sieved to -180 micron (80 mesh), retain both fractions and analysed Au by aqua regia extraction with ICP-MS finish.

Quality control samples have been included in the sequence of samples which have been sent to the assay laboratories for analysis. Three types of control samples used are:

- Standards – are inserted every 60th sample. The low-grade Au standard material are sourced from very well-known industrial accepted companies such as Rocklabs, OREAS and GEOSTATS.
- Blanks – are inserted every 40th sample. The blank materials are in-house prepared obtained from areas within the lease that the material is known to have no Au value.
- Duplicates – are taken every 25th sample. These are splits from the original sample. Widths of the sampling pits where the duplicates are taken are slightly increased in order to collect material that will represent the sample weight after splitting.

9.1.2 Trench Sampling

Trench excavation has been used to test soil anomalies. During the early days of exploration, they were set out by Geologists using GPS coordinates, compass and flagging tapes. As exploration advanced, they were set out using Sokkia Power Total Station for the coordinates and the start and end points.

The trenches are dug by hand to a width of approximately 1m and a depth of approximately 3m. 1m long continuous channel samples have been cut from the northern wall of each trench near the base of the trench with about 3kg of sample material being collected onto a plastic sheet. The channel sampling programs are supervised by CGML geological staff to ensure that a high-quality channel sample was collected. The material from each 1m interval is transferred from the plastic sheet to a plastic sample bag and labelled prior to dispatch to the assay laboratory. Spatial location information for every sample was picked up by the survey team and saved with the sample IDs.

The samples are analysed using the normal fire assay procedure, oven dried, crushed, split off 250g and pulverize split to better than 80% passing 75 microns, Au by fire assay and AAS.

9.1.3 Geochemistry

Multi-element geochemistry (Figure 9-1) indicates a large hydrothermal cell to the south and east of Akwaaba. This cell shows a very distinct metal zonation, from south in the mafic rocks, across to the mafic-phyllite contact, then north into the phyllites along the Bibiani shear. The metal zonation is from Bi - Te - Mo - Sb - As. This is a classic temperature zonation pattern. Gold in the system should be around the transition from Bi-Te-Mo to As-Sb. Geologically and chemically, the best target zone appears to be along the Bibiani Shear. In this location, the shear is Birimian phyllites faulted against the Chirano mafic sequence.

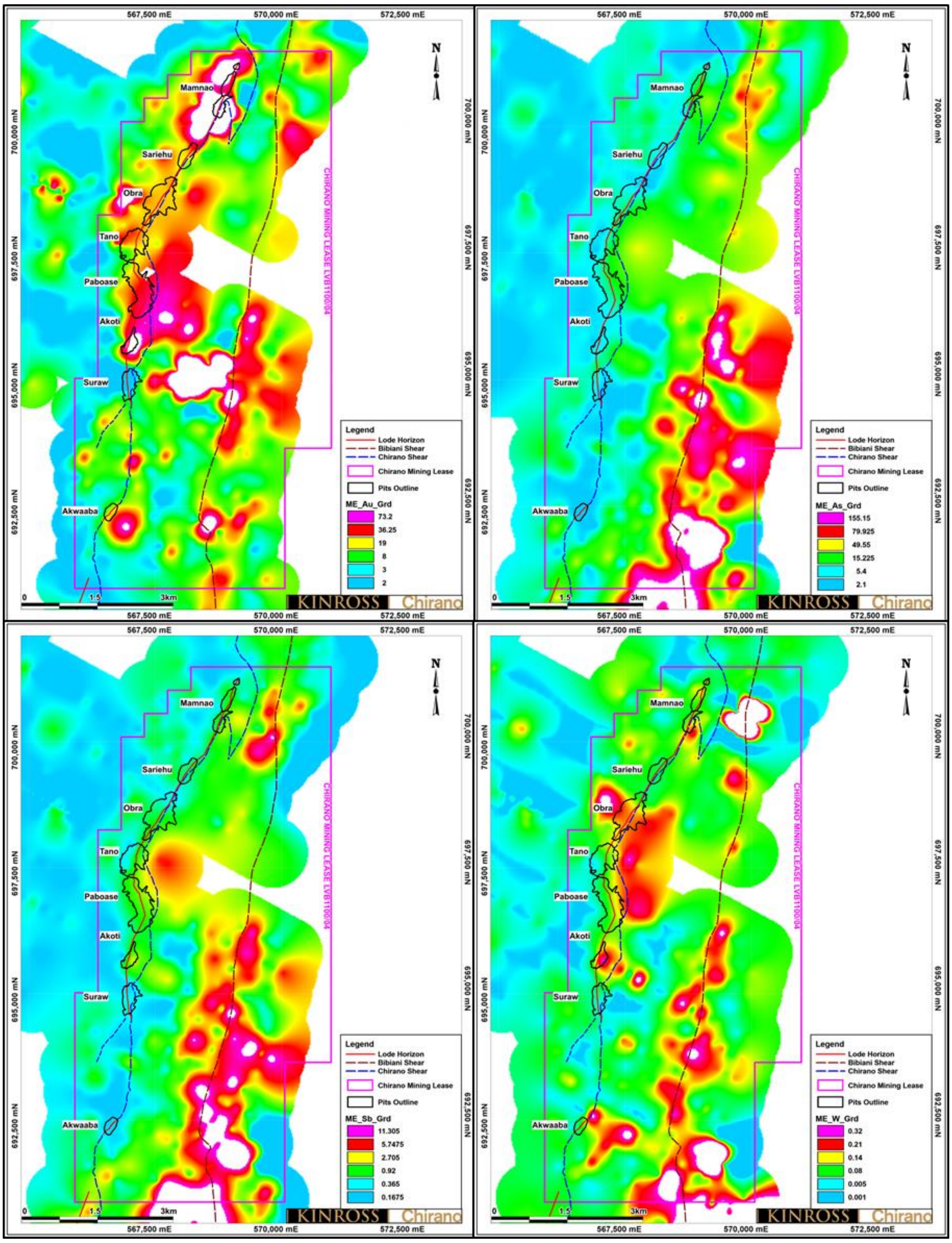


Figure 9-1: Chirano Mining Lease - Multi Element Geochemical Analysis – Au, As, Sb and W Signature

(Source: CGML 2023)

9.1.4 Geophysics

Geophysical surveys at Chirano confirmed both structures already mapped and those unmapped where surface information was not available during mapping, rock chip sampling or trenching.

A series of Induced polarization (IP) surveys were carried out at Chirano between 1999 and 2011. Gradient IP/ resistivity was first acquired in 1999 (with ground magnetics and dipole-dipole IP/res). Campaigns of acquisition and reprocessing followed in 2006, 2007, 2008, 2009, 2010 and 2011. These data were compiled in 2011 and is the best summary of the gradient data for the entire License.

The IP data identified the location of the mineralized horizon (Figure 9-2). Interpretation shows that the mineralized horizon is 'visible' in the IP results as a moderately resistive, moderately chargeable horizon. Within the mineralized horizon some of the gold deposits are easily discernible as specific anomalies whilst others are not. Drilling of IP targets has intersected mineralization in about 50% of cases, however these targets were also identified by soil sampling and geological mapping. The pole-dipole method used appears to be able to detect some Chirano mineralization up to 200 metres below surface. Following the discovery and delineation of the Akwaaba Underground resource further pole-dipole surveys were undertaken.

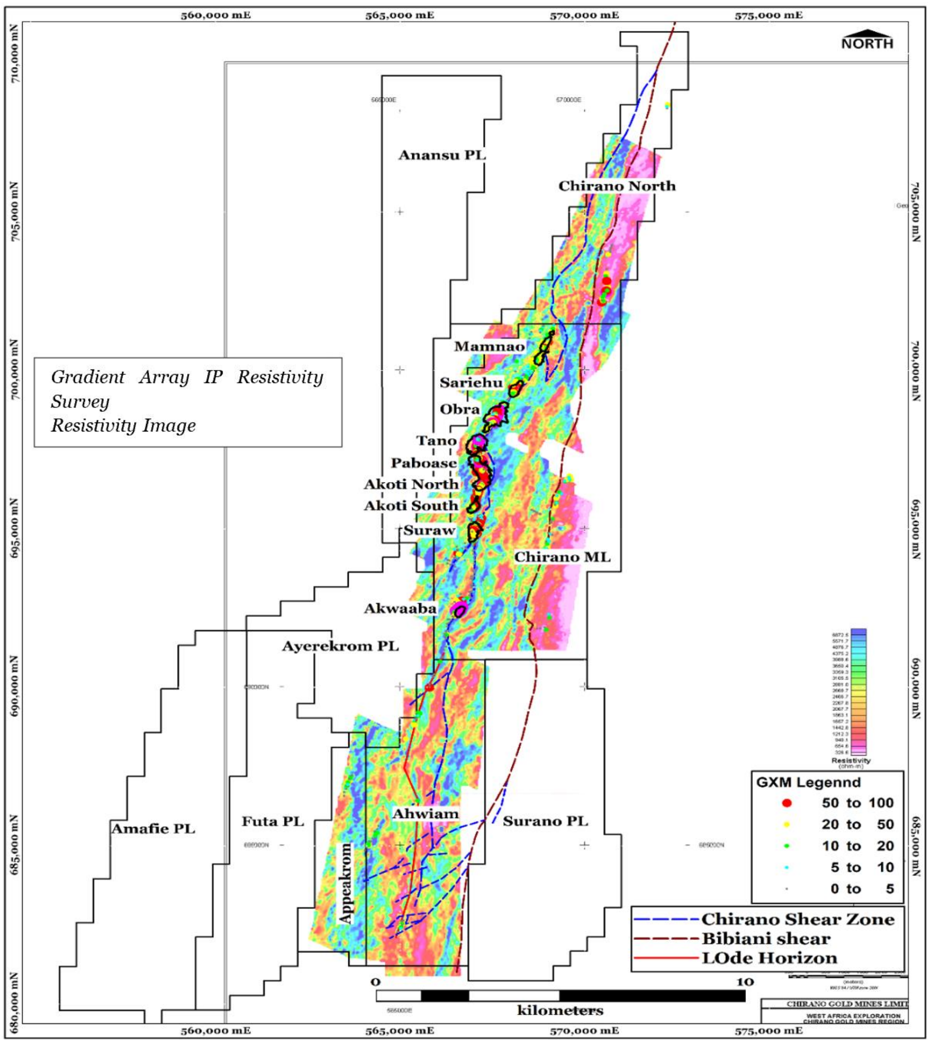


Figure 9-2: Gradient Array IP Resistivity Survey – Chirano Mining Lease Area

(Source: Chirano 2022)

Gravity data was collected in two phases; Historic (2008 - 2009) gravity data suffered resolution problem at the mine scale hence did not contribute meaningfully to the exploration process. However, high-density mafic volcanics to the west and low-density sedimentary basin to the east were indicated on the regional scale. Gravity data captured in 2015 - 2016, at a grid spacing of 100m x 100m, over the southern parts of the mine trend aimed at probing deep seated massive felsic intrusives (gravity low) associated with mineralization in wide gaps between certain existing mineral deposits (e.g., Akwaaba–Suraw gap). The gravity data confirmed the two main shears, namely Chirano and Bibiani, bounding a sedimentary basin on both sides and mafic volcanics on the western margin but failed to identify any massive anomalous intrusions within the gap.

Between 2004 and 2005, Airborne Geophysical surveys were carried out at Chirano. The data has been useful in confirming the mineralized horizon identified by soils and supports the relationship between the three major geological environments at Chirano. Fugro completed a detailed survey utilising a Midas system on a helicopter platform with multiple magnetic sensors and captured 9,616km TMI/Grad magnetic and radiometric data on 100m line spacing with 3m sampling interval. This data was merged with a Regional Mag and Radiometric data captured on 400m line spacing earlier in 2014.

Airborne magnetic data reveals an abundance of structural information. Interpretation at both regional and prospect scale was not problematic. The data was processed by several consultants in the various forms with different techniques to derive the most information out of it. Generally, the airborne magnetic data contributed to the accurate determination of major structural setting of the mineralized shear (Lode horizon), Chirano shear and the Bibiani shear. Several splay shears and x-faults relating to mineralization at Chirano were also interpreted.

Chirano airborne radiometric data includes gamma counts for Potassium (K), Uranium (U) and Thorium (Th) (Figure 9-3). Data quality was deemed satisfactory by all processing consultants. U and Th are generally low in the drainages, although this can vary. The potassium is often high in the drainages and along topography. In addition, the known mineralization appears to follow a narrow curving high in the potassium data. However, the radiometric data represents lithology, alteration and regolith well and major structural differences were also identified.

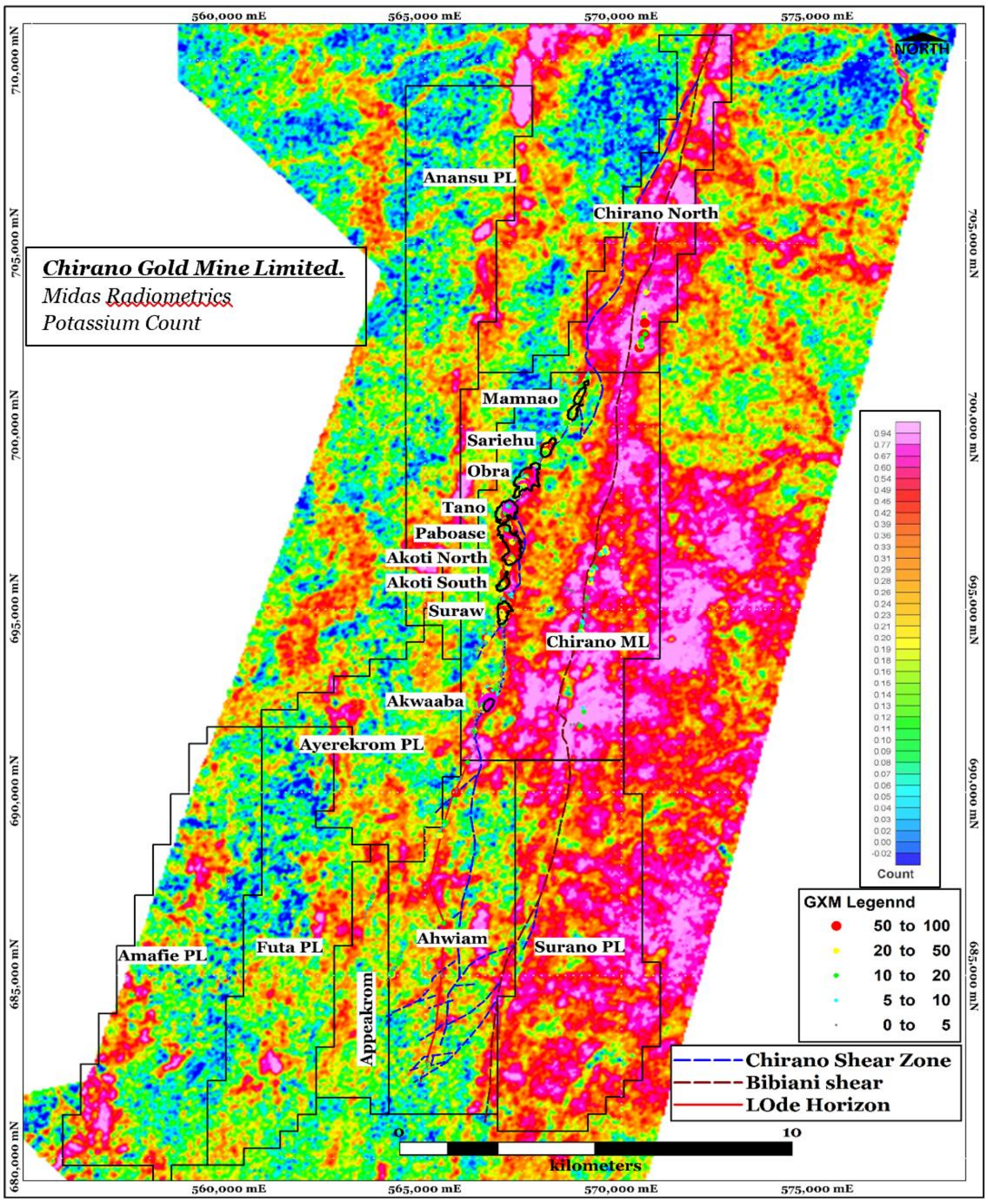


Figure 9-3: Midas Radiometric Potassium Count over Chirano Mining Lease Area

(Source: CGML 2022)

9.2 Asante Exploration 2022/2023 – Results and Interpretation

Exploration strategy, during the latter portion of 2021 and through to present date, has focussed exploration activities on resource conversion and mine life extensions, both on the identified main lode horizon and other promising western splay structures. In addition, successful exploration has occurred on the Aboduabo Project which is situated on the Bibiani Shear Zone. At Aboduabo a total of 24,000 metres of drilling was completed in 69 drill holes since Asante took ownership in 2022. These focussed drilling activities and results are discussed in more detail in Item 10.

The revised Mineral Resources Estimate reflects the success of the exploration and additional resources identified. A summary of exploration activities on each deposit target is given below.

9.2.1 Brown Fields Targets

9.2.1.1 Open Pit and Underground Exploration Drilling

In the period 2022/23 after Asante took ownership exploration drilling has continued to focus on the extension of current underground and open pit operations, as well as testing new mineralized targets. The exploration drilling locations and results will be further discussed in Section 10. In summary, drilling continued either from surface or underground for underground mineral resource extensions in the following deposits: Akwaaba, Suraw, Akoti South, Obra, Mamnao, Mag Hinge and Aboduabo. Approximately 72,000m of exploration drilling has been completed in the two-year period.

9.2.1.2 Aboduabo

The information offered below is in addition to the detailed discussion on the Aboduabo mineralized deposit in Section 7.3.9 earlier.

Field mapping on the Chirano North PL at Aboduabo commenced in September 2022 to follow on historical work done and to better identify the mineralisation trend and guide subsequent diamond drilling exercises. Historic artisanal mining pits were discovered during this mapping exercise. The area mapped covered 10km². A total of 39 grab samples were taken. Some significant grab sample results include 9.64g/t, 7.34g/t, 5.49g/t, 5.36g/t, 4.66g/t, 3.56g/t, 1.73g/t, 1.38g/t, 1.00g/t, 0.31g/t, 0.23g/t ,0.22g/t, 0.18g/t. 15.2g/t Au, 9.66g/t Au, 4.66g/t Au, 1.38g/t Au and 0.34g/t. The rocks mapped are mainly sheared, altered phyllitic schists, stockworks of quartz vein and tonalite with varying oxidized sulphides.

Field and core litho-structural assessments of the Aboduabo deposit were conducted in late 2022 and early 2023 by the CGML geological team, under the guidance of Professor Kim Hein, as part of ongoing exploration activities along the Bibiani-Chirano structural metallogenic corridor for Asante Gold Corporation.

Field investigations took place in November 2022, with borehole studies in the core-shed at Chirano in December of that year. Orientated full core, half core and rocket launcher imagery was subsequently studied in March-May 2023 of 8DD and 12 RCDD boreholes. Point structural data was available for most of the boreholes. The combined database was supplemented with trench data from 2015, and field data collected in 2022. Geophysical datasets of magnetics and IP where synthesized inhouse and provided regional and local contexts to structural and lithological trend-data, targets, and various mineralogical anomalies.

Exploration drilling over the mapped Aboduabo Project commenced in December 2022 after completion of earth works on the Bibiani Shear Zone structure. The drilling exercise was aimed at testing and extending mineralization both along strike and at depth for future open pit development. The first diamond holes were completed in December 2022 and intersected an eastern limb of a fold and fault structure. In total 88 holes (DD and RC) for 21,000m were completed by August 2023.

The mineralised zones were marked by stockwork of veins and tuffs, typical of the various gold reefs system at Bibiani. Mineralization is marked to the west by a controlling steep east dipping (~80˚) fault zone and enclosed by a strongly brecciated-sheared fault zone which precedes the high-grade mineralization halo. This shoot is interpreted to be the eastern limb of the Aboduabo fold structure.

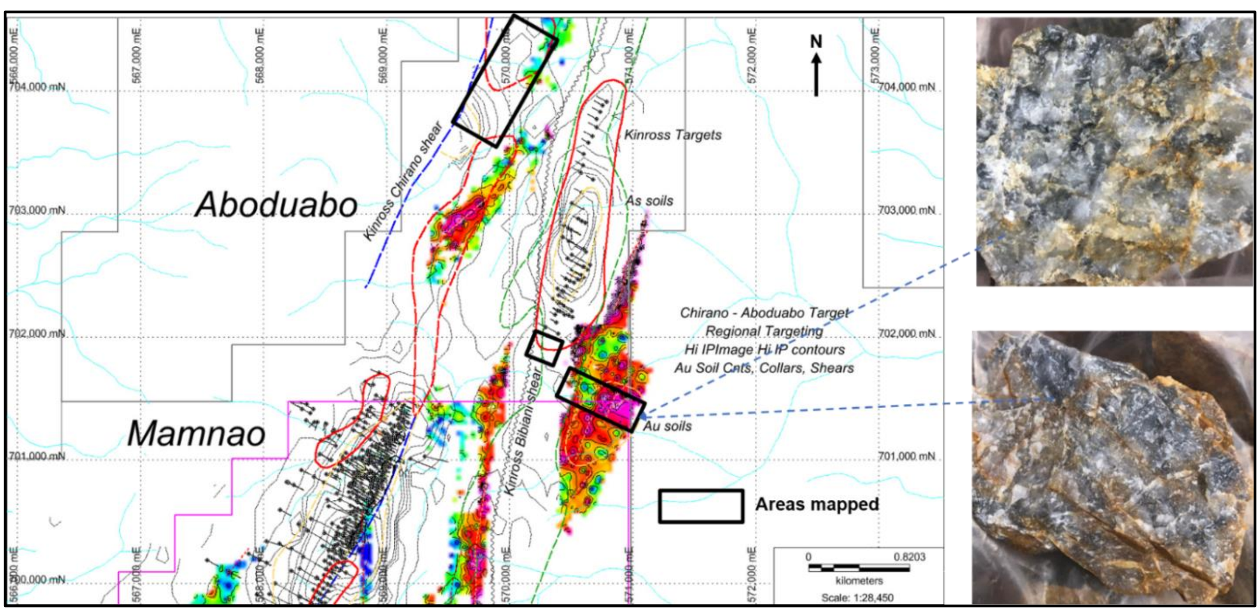


Figure 9-4: Aboduabo Project - areas mapped (12km²) in 2022

(Source: CGML 2023)

9.2.2 Green Fields Targets

9.2.2.1 Mother Hill

Field mapping commenced at Mother Hill target which lies 1.3Km east of the Akwaaba mine within the Bibiani shear structure. The aim is to explore the target to better understand the geological and structural controls of Au mineralization as shown in a wide high Au soil geochemical signature. Two historic trenches were located and ten grab samples were collected and dispatched to the lab awaiting results. The outcrops were predominantly highly foliated phyllite with alterations of chlorite, sericite and silica with sheared carbonate quartz vein that either crosscuts the phyllite rock or are aligned to the foliation.

9.2.2.2 Anansu PL

Geological mapping was carried out at Anansu PL in search of mineralised outcrops, presence of any geological controlling structures and other important geological features. Outcrops were randomly sampled from the southern portion of the PL to the north to have full understanding of the mineralised settings of the area. Rocks identified were predominantly diorite, dolerite as well as weak-moderately sheared, pinkish, and dark grey tonalite rich in albite with less or no visible pyrite. Twenty-three (23) samples in all were collected and sent to the lab for analysis but returned negative results. Further geological mapping is needed as a follow-up to a historic rock chips and soil anomaly within the PL.

9.2.2.3 Aso-Meka Target

Mapping also extended to the northwest of Aboduabo to investigate the Meko/Aso targets with returned good IP/Soil signatures during earlier exploration activities. Mapping commenced at Aso–Meko as a follow up to historic soil and rock chips anomaly with a broader of extending Mamnao north mineralization with the volcanics. Area mapped was $3km^2$. Rocks mapped over the target area included altered, weakly-moderately sheared tonalite with intruding quartz veining + < percentage of Pyrite, diorite boulders, sandstones and Arkose (Tarkwaian sedimentary units). Trenching has been proposed.

9.2.2.4 Bokaso West

Field visits and desktop review were carried out on the Bokaso West Target in the month. Eight short RC/RCDD program totalling 1500m has been planned as a follow up to grab results, historic trench results and the recent gold anomaly confirmed in 2 DHs assay results: 13m@0.5g/t and 1m@3.28g/t; 19m@1.45g/t Including 10m@2.05g/t. The facts about this target include:

- High grade OP gold system parallel to Mamnao Central mineralization.
- Target is completely new and under explored. Within 8km distance from plant.
- Have ~ 95% of Haul road access in place.
- Located 0.9km west of Mamnao Central pit within Mining Lease/PL.
- 0.65km strike of HG gold mineralization.
- Associated structural complexity favourable for Gold mineralization.
- Gold anomalism supported by rock results: 2.1g/t, 3.94g/t, 9.35g/t, 14.0g/t, 81.6g/t.
- Gold anomalism confirmed in 2 DHs assay results: 13m@0.5g/t and 1m@3.28g/t; 19m@1.45g/t Incl. 10m@2.05g/t.
- Potential for extension along strike (both North and South).
- Tonalite - Quartz Dolerite - Quartz vein mapped and in drill logs.
- Host rock identified by pyrite mineralization up to 3% with ankerite-albite-silica-carbonate, alteration, bound by diorite/dolerite to both east and west.

9.2.2.5 Aseda and Motia

Mapping commenced at Aseda North Extension (Motia) to grow the target through the extension of the Aseda short strike (100m) mineralization to the north. The mapping also aims to unearth the chargeability anomaly highlighted in the 2022 Quantec Geophysics IP survey. The area mapped to date is $2.1km^2$. Rocks mapped over the target area included altered, weakly-moderately sheared tonalite with intruding quartz veining (+ Pyrite), diorite boulders, fresh unaltered felsic dykes, Tarkwaian sedimentary units (Arkose). A batch of 16 samples were sampled and taken to laboratory for analysis. Structure measurements on the few outcrops were taken and exploration is expected to be continued into 2024.

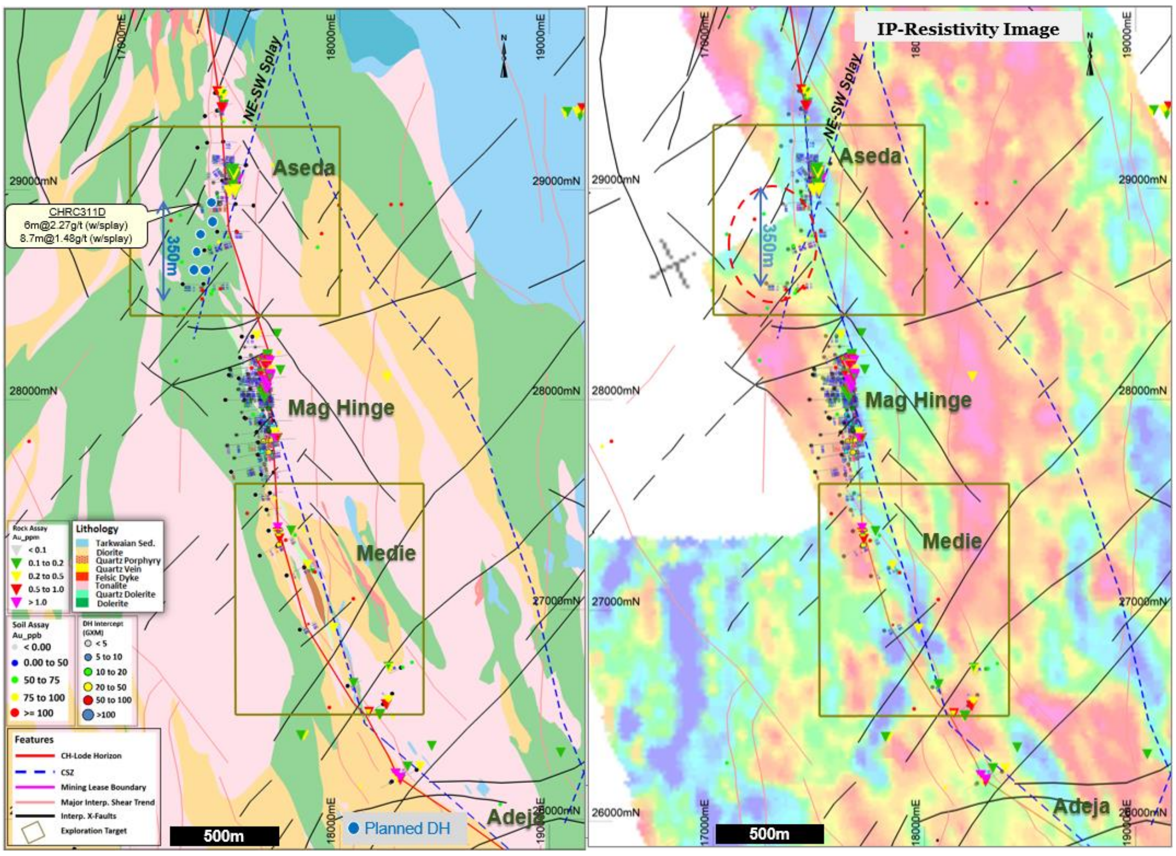


Figure 9-5: Geology and Geophysics Over Green Fields Exploration Projects

(Source: CGML 2023)

9.2.3 Geophysical Exercises

ORION SWATH 3D ground geophysical survey system has been deployed on the Chirano property in 2022, surveying from Suraw pit to the base of Mag Hinge which is within the Ahwiam PL for subsurface geophysical property information from surface to depths of up to 800m with IP chargeability and DC resistivity. This geophysical approach is aimed at detecting and discriminating targets related to potential mineralization, alteration, lithology and structures and to compliment near surface information for integrated drill targeting.

Additional focus has been given to the in-house interpretation of aeromagnetic coverage over the Bibiani-Chirano Corridor given that Asante holds the mining and exploration licences over both entities (Figure 9-6). The entire mineralized structure has many similar characteristics and has been compared, by the Asante and mine geological teams, to the Carlin Trend found in the USA. The re-interpretation of the overall regional geology, the large database of exploration information and the continued field exploration and drilling programs has assisted in identifying additional targets that lie on and within both the Bibiani Shear Zone and the Chirano Shear Zone.

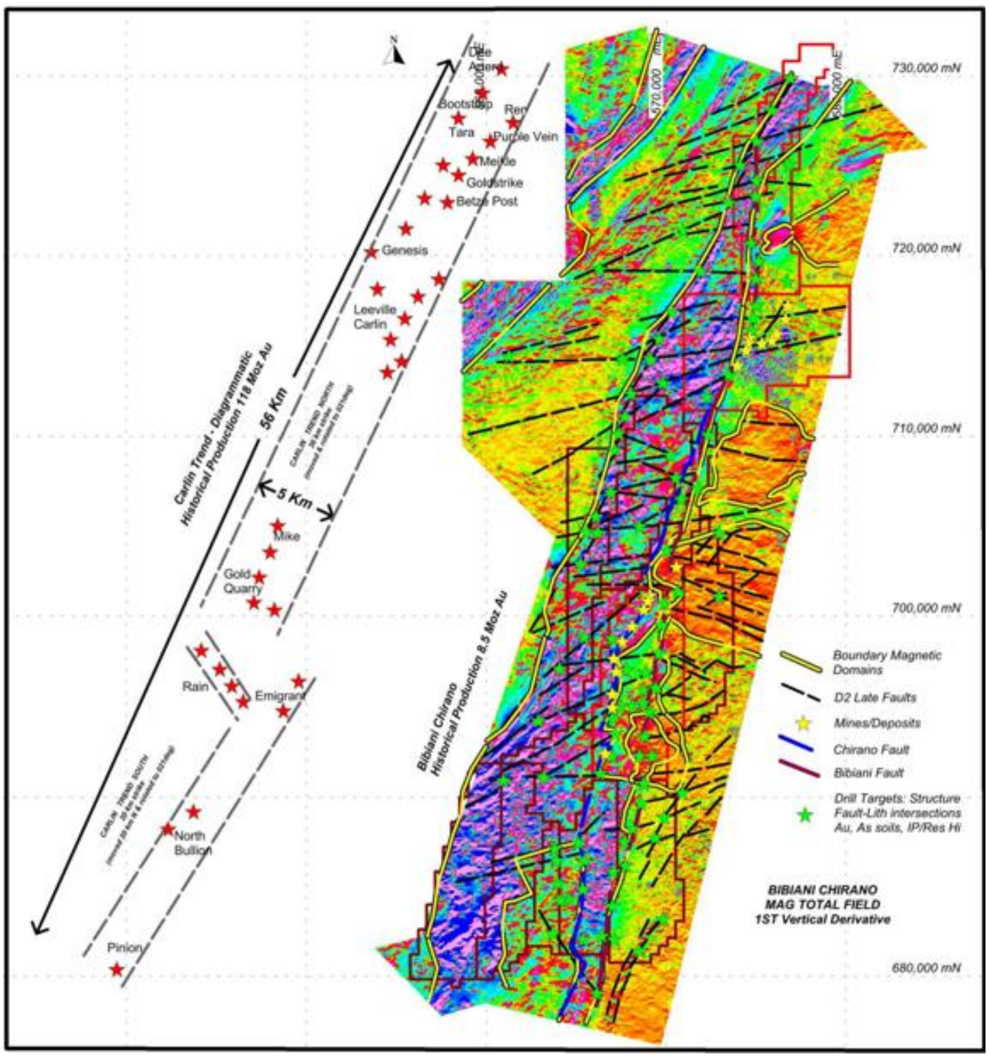


Figure 9-6: Bibiani-Chirano Corridor – Aeromagnetic and Structural Interpretation

(Source: CGML 2023)

9.3 Data Reliability

Data acquired during exploration at Chirano is very reliable. All work has been carried out by technically qualified personnel and has been planned and supervised by highly trained and experienced geoscientists. The location of all exploration data is known with adequate accuracy. The quality of geochemical analysis has been monitored using blanks, standards, field duplicates, and check analysis via primary and umpire laboratories. The quality of all geophysical data has been monitored by a consultant independent of the field contractor.

9.4 Conclusions

The QP is of the opinion that the exploration results from the underground and surface drilling programs and other exploration methods applied, completed on the existing mineral deposits and in the brownfields target, indicate positive extension potential to the existing mineral deposits on the Chirano Shear trend in strike and especially to depth.

Figure 9-7 below indicates the numerous targets for further exploration and investigation.

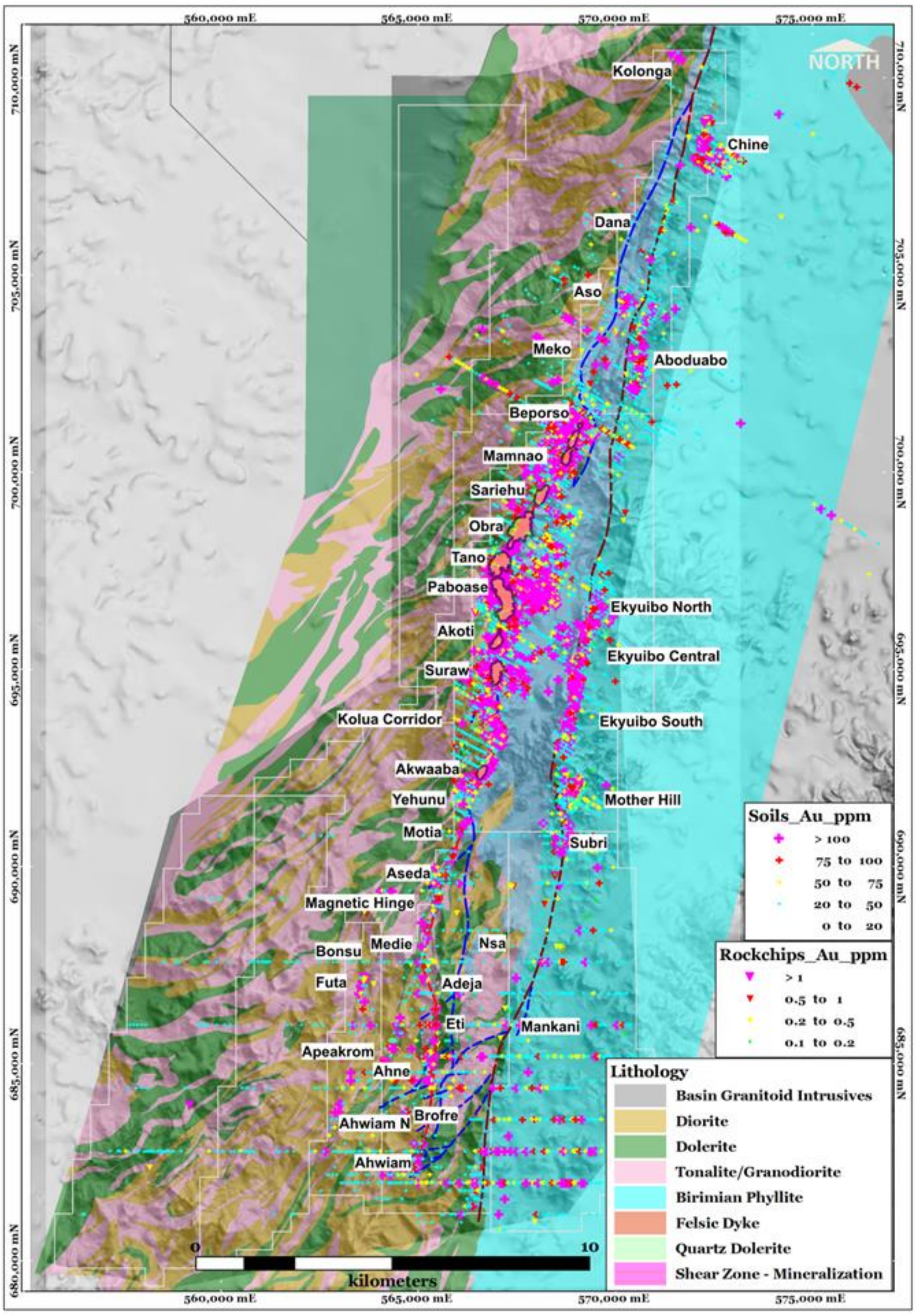


Figure 9-7: Regional Geology Interpretation showing New Exploration Targets

(Source: CGML 2023)

10. DRILLING

CGML has integrated several historical databases with recent and ongoing drilling programmes and can be considered an advanced production and exploration project. Drilling that has been completed under Asante ownership up to the effective date off this Technical Report is reported in the following sections. CGML has completed and remains active with several resource definition and resource extension drilling exercises to increase LoM mineral resources for the current underground operations (Akwaaba, Tano, Akoti South, Suraw, Obra), and also the current and planned open pit operations (Mamnao South-Central-North, Sariehu, Aboduabo).

The main exploration focus over the last two-year period has been the drilling over the Aboduabo mineralized deposit. The successful outcome resulted in the publishing of a Maiden Mineral Resource early in 2023 (see Section 7.3.9). Subsequent additional drilling improved resource definition confidence to allow the inclusion into this latest Mineral Resource Estimation (Section 14).

Chirano's drilling activities are undertaken by independent drilling contractors (Geodrill Limited) and supervised by a qualified team geologists employed on a fulltime basis by Chirano.

10.1 Historical Drilling

The Chirano Gold Mine is considered an advanced operation that has been active for almost 20 years and in that period, prior to Asante acquiring ownership, a large amount of drilling, both surface and underground, has been completed over a long strike length and on many individual target areas and mineralized deposits. The table below gives an indication of the extent of drilling over the period.

Table 10-1: Chirano Gold Mine - Historical Drilling

Prospect Code	Description	Hole (No)	DD Drill (m)	RC Holes (No)	RC Drill (m)
ABO	Aboduabo	2	205.00	54	7 280.00
AH	Ahwiam	13	2 709.90	40	4 949.00
AK	Akwaaba	363	104 289.50	89	25 065.60
AKN	Akwaaba North	13	5 605.40	20	2 207.00
AP	Apeakrom	0	0.00	23	3 523.00
AT	Akoti	150	47 767.39	224	49 638.50
CN	Chine	1	228.50	17	1 755.00
EK	Ekyuiabo	3	338.00	60	6 772.70
FT	Futa	5	443.40	37	5 636.00
KL	Kolua	12	2 150.80	50	7 910.00
MG	Magnetic Hinge	5	613.10	36	6 325.00
MH	Mother Hill	0	0.00	13	1 363.00
MM	Mamnao	50	9 788.06	235	34 486.50
MN	Mamnao North	6	510.66	68	9 933.60
OB	Obra	169	49 067.29	217	52 777.60
PB	Paboase	223	72 525.49	142	28 895.30
PBW	Paboase West	0	0.00	8	757.00
PLANT	Plant	10	387.70	6	490.00
SU	Sariehu	27	6 462.75	115	19 064.40
SW	Suraw	156	46 647.24	179	46 553.10
TAIL	Tailings	5	105.50	12	600.00
TN	Tano	196	53 191.89	164	35 075.30
TT	Tetteh	2	745.04	21	1 355.00
WDC	Waste Dump	0	0.00	3	280.00
WDN	Waste Dump	0	0.00	6	394.00
YN	Yehunu	12	2 016.20	33	7 177.60
Project Pre 2022		**1 423**	**405 798.81**	**1 872**	**360 264.20**

10.1.1 Kinross Minex Drilling

In 2021, under the ownership of Kinross, exploration activities continued to advance the mine's potential for mine life extension and pipeline opportunities beyond the current LoM. Significant Mineral Resources were converted at Obra, Mamnao (potential open pit extension), Suraw, Tano and Akwaaba. Overall, within 2021, 112 underground drill holes totalling approximately 33,700m m (RC, RCDD and DD) were completed at Suraw UG, Akwaaba UG, Tano UG, Obra UG and Mamnao Open Pit. The subsequent updated Mineral Resource Estimate was published in the previous NI 43-101 Technical Report.

10.1.2 Kinross Brownfields Drilling – South Mine Trend

Advanced exploration drilling was also carried out on selected targets south of Akwaaba within the Mining Lease area during 2021 prior to Asante ownership. Of particular interest was the Mag Hinge and Aseda targets.

Seventeen diamond drill holes were completed in 2021, made up of 10 RC and 7 RC pre-collar with diamond tails (RCDD) on four targets, 6 RC and 2 RC pre-collar with diamond tails were drilled into the Mag Hinge target, 1 RC and 4 pre-collar with diamond tails from Aseda, 1 RC pre-collar with diamond tail (RCDD) from Sariehu and 3 RC and 4 RC from Bokaso South targets respectively. Diamond drill holes are of NQ2 diameter.

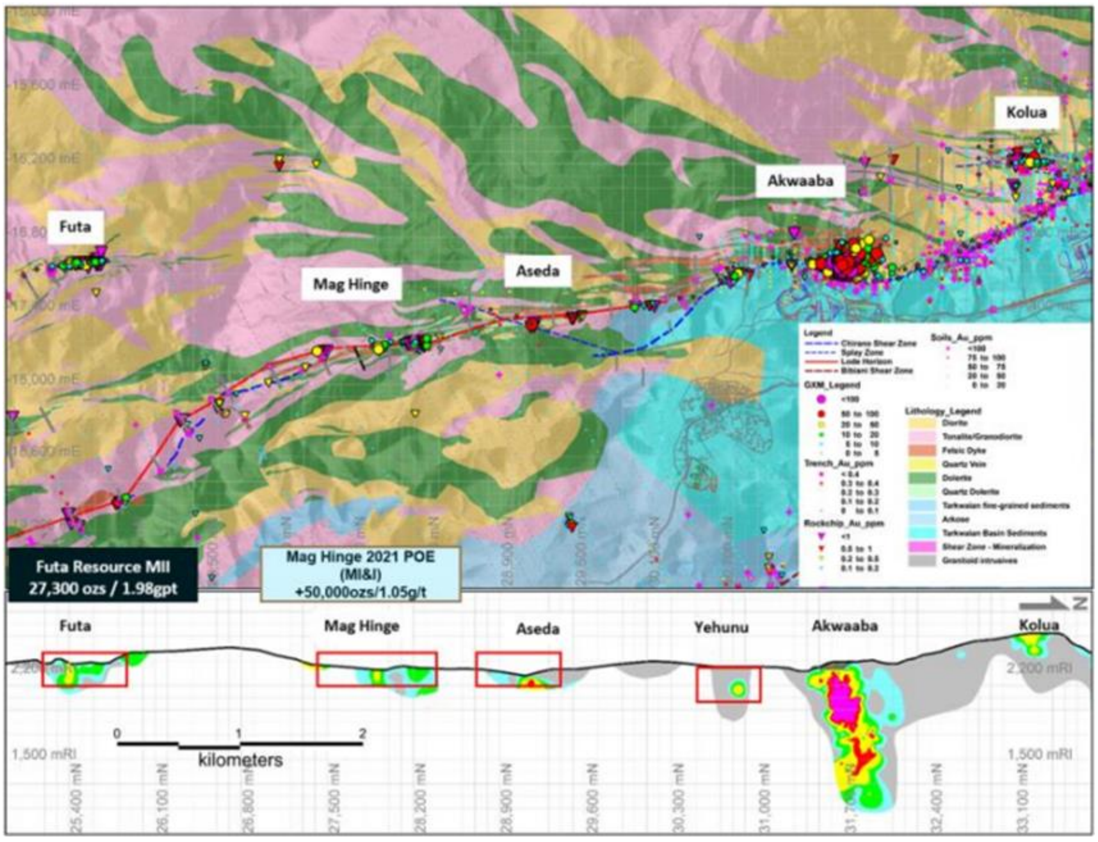


Figure 10-1: Chirano Identified Exploration Targets

(Source: CGML 2022)

Table 10-2: Brownfields Drill Program 2021 – Collar Positions

Chirano Drill Hole Locations							
Hole ID	Target	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)
CHRC3051	Mag Hinge	28122	17564	2230	151.0	88.0	-48.0
CHRC3057		28123	17561	2230	205.0	87.0	-68.0
CHRC3059		28050	17570	2226	184.0	90.0	-59.0
CHRC3060		27843	17600	2223	154.0	82.0	-66.0
CHRC3061		27797	17607	2224	157.0	82.0	-65.0
CHRC3064		27738	17606	2226	157.0	80.0	-62.0
CHRC3071D		27656	17482	2242	270.1	79.0	-50.0
CHRC3072D		27914	17545	2222	216.1	80.0	-62.0
CHRC3158	Bokaso South	40051	14727	2392	122.0	89.0	-52.0
CHRC3159		39999	14716	2403	116.0	90.0	-58.0
CHRC3160		39949	14740	2410	253.0	88.0	-45.0
CHRC3119D	Sariehu	38481	14689	2520	642.0	87.0	-68.0
CHRC3105D	Aseda	28986	17414	2214	152.8	82.0	-50.0
CHRC3106D		29034	17397	2217	156.2	82.0	-50.0
CHRC3108		29118	17555	2215	260.0	270.0	-48.0
CHRC3109D		29116	17502	2214	126.4	191.0	-65.0
CHRC3111D		28927	17328	2215	209.9	83.0	-45.0

10.1.2.1 Magnetic (Mag) Hinge

The Mag Hinge deposit is situated about 3km south of Akwaaba. 8 diamond drill holes (1,494m) were completed in 2021. Intercepts continue to demonstrate mineralisation continuity both at depth and along strike in favourable quartz dolerite/tonalite host rocks within hydrothermal shear/breccia zones with pyrite-carbonate-silica alteration assemblages. Table 10-3 shows the significant intercepts.

10.1.2.2 Aseda

Five diamond drill holes (905m) were completed at the Aseda target which is situated between Akwaaba and Max Hinge. Results received indicated a shorter strike length of mineralisation than expected but good geological signatures. Table 10-3 shows the significant intercepts.

10.1.2.3 Bokasu South

Three diamond drill holes (491m) have been drilled at this target area. Further detailed geological work is required by CGML. Table 10-3 shows the significant intercepts.

10.1.3 Significant Intercepts

The table below lists some of the significant intercepts from the brownfields drilling exercise completed in 2021 by the Kinross Chirano team.

Table 10-3: Chirano Brownfields Drilling 2021 - Significant Intercepts

Hole ID	Target	From (m)	To (m)	Interval (m)	True Width (m)	Au (g/t)
CHRC3051	Mag Hinge	132.0	136.0	4.0	3.40	1.16
CHRC3057		193.0	199.0	6.0	3.40	1.17
CHRC3059		126.0	138.0	12.0	8.50	1.60
Including		132.0	138.0	6.0	4.20	2.39
CHRC3059		151.0	157.0	6.0	4.20	1.11
CHRC3060		114.0	132.0	18.0	12.00	1.00
CHRC3061		114.0	145.0	31.0	24.00	1.21
Including		115.0	125.0	10.0	7.70	1.96
CHRC3064		116.0	123.0	7.0	5.50	3.99
CHRC3071D		153.0	156.0	3.0	2.00	2.45
CHRC3071D		253.8	255.3	1.5	1.00	2.01
CHRC3072D		166.8	169.0	2.2	1.60	1.05
CHRC3072D		179.9	184.0	4.1	3.00	1.67
CHRC3105D	Aseda	65.3	68.4	3.1	2.80	0.96
CHRC3106D		125.5	136.4	10.9	8.20	3.29
Including		128.9	133.3	4.4	3.30	5.12
CHRC3108		117.0	123.0	6.0	4.10	1.28
CHRC3108		223.0	226.0	3.0	2.00	0.90
CHRC3108		240.0	246.0	6.0	4.10	0.61
CHRC3109D		25.0	35.0	10.0	2.00	1.43
CHRC3109D		51.8	58.0	6.3	1.20	0.97
CHRC3111D		97.0	103.0	6.0	5.00	2.27
CHRC3111D		136.0	144.7	8.7	7.20	1.48
CHRC3119D	Sariehu	554.2	563.8	9.7	6.50	1.12
CHRC3119D		590.0	628.0	38.0	25.80	1.64
Including		597.0	607.0	10.0	6.80	3.43
CHRC3158	Bokaso South	116.0	117.0	1.0	1.00	3.71
CHRC3159		5.0	11.0	6.0	4.80	0.90
CHRC3159		65.0	67.0	2.0	1.80	2.94
CHRC3160		12.0	18.0	6.0	5.60	2.37
CHRC3160		47.0	48.0	1.0	1.00	1.79
CHRC3160		61.0	62.0	1.0	1.00	3.62
CHRC3160		68.0	70.0	2.0	1.80	1.40

10.1.4 Aboduabo

Several drill programs during the Red Back tenure were completed to test high priority targets. The Aboduabo target was the most extensively drilled. A total of 52 holes (7,677m) were drilled in fences along strike. The Aboduabo targets were drilled over a 2km strike length and had two to three holes per a fence at the south and one hole per a fence at the north of the target.

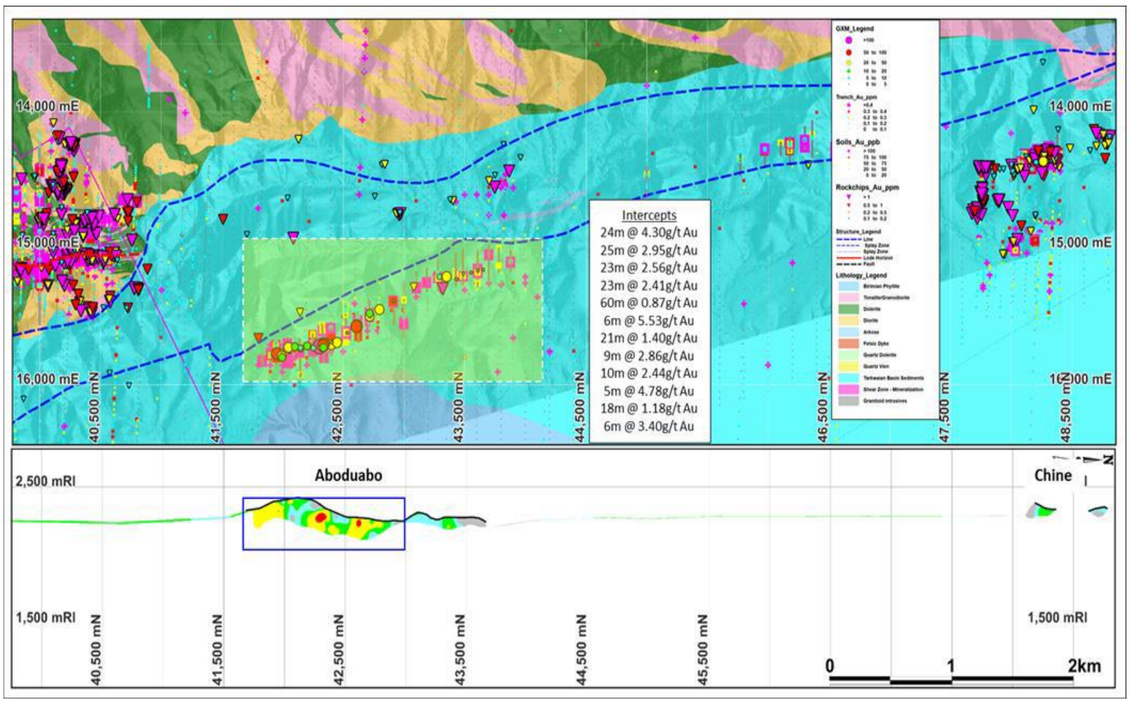


Figure 10-2: Aboduabo Project – Historical Drilling Coverage

(Source: CGML 2022)

A summary table of significant intercepts from the historic drilling is given below.

Table 10-4: Aboduabo Project – Historical Significant Intercepts

Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)	Elevation (m)	From (m)	To (m)	Interval (m)	Au (g/t)	Elevation (m)
CHRC1050	113	117	4.0	2.71	259					
	134	141	7.0	2.36	240					
CHRC1051	96	100	4.0	1.06	261					
	116	122	6.0	0.90	243					
CHRC1052	144	149	5.0	1.56	221					
	159	168	9.0	2.86	207					
CHRC1053	143	157	14.0	0.95	207	Incl.143	152	9.0	1.24	209
	175	181	6.0	3.40	186					
CHRC1054	99	123	24.0	4.27	279					
CHRC1056	65	70	5.0	4.78	212					
CHRC1057	52	54	2.0	1.56	234					
CHRC1062	78	80	2.0	3.33	213					
CHRC1063	70	88	18.0	1.29	205					
CHRC1065	39	42	3.0	1.26	250					
CHRC717	29	31	2.0	4.94	362					
CHRC718	60	62	2.0	2.17	353					
	71	76	5.0	1.53	342					
	86	90	4.0	1.56	330					
CHRC720	91	114	23.0	2.40	282					
CHRC721	77	80	3.0	1.31	288					
CHRC722	62	64	2.0	1.11	259					
	79	80	1.0	3.10	246					
CHRC723	127	150	23.0	2.56	215					
CHRC724	61	82	21.0	1.47	212					
CHRC781	1	8	7.0	1.05	264					
	35	39	4.0	1.33	239					
	45	52	7.0	1.83	230					
CHRC782	19	23	4.0	3.28	299					
	83	106	23.0	2.52	241					
CHRC788	45	53	8.0	1.09	320					
CHRC789	137	143	6.0	1.51	301					
CHRC791	1	7	6.0	5.53	377					
	31	85	54.0	0.80	335	Incl.38	43	5.0	1.64	348
						Incl.59	69	10.0	1.60	330
						Incl.79	85	6.0	1.60	317
CHRC793	29	37	8.0	2.06	323					
CHRC798D	94	104	10.0	1.43	284					
	114	139	25.0	2.95	264					
CHRC800	4	10	6.0	0.79	371					
CHRC803	43	45	2.0	2.30	334					
CHRC804	1	4	3.0	3.38	394					
	80	83	3.0	1.98	334					

10.2 Asante CGML Drilling – 2022/2023

10.2.1 General Comment

In the period between Asante taking ownership in August 2022 and the end of 2023, a total of 265 diamond drill and reverse circulation drill holes have been completed for a total meterage of circa 72,300m. These focused drill programs have occurred from surface or underground and within or over numerous mineralized deposits and have been carefully designed by the experienced in-house geological team to add extensions to existing resources or identify new resources to underground and open pit assets. Figure 10-3 below gives a reference longitudinal view of the various explored and drilled mineralised deposits in relation to each other along the strike of the Chirano mineralized shear zone.

The pertinent individual drilling information for each project will be given in the separate subsections below.

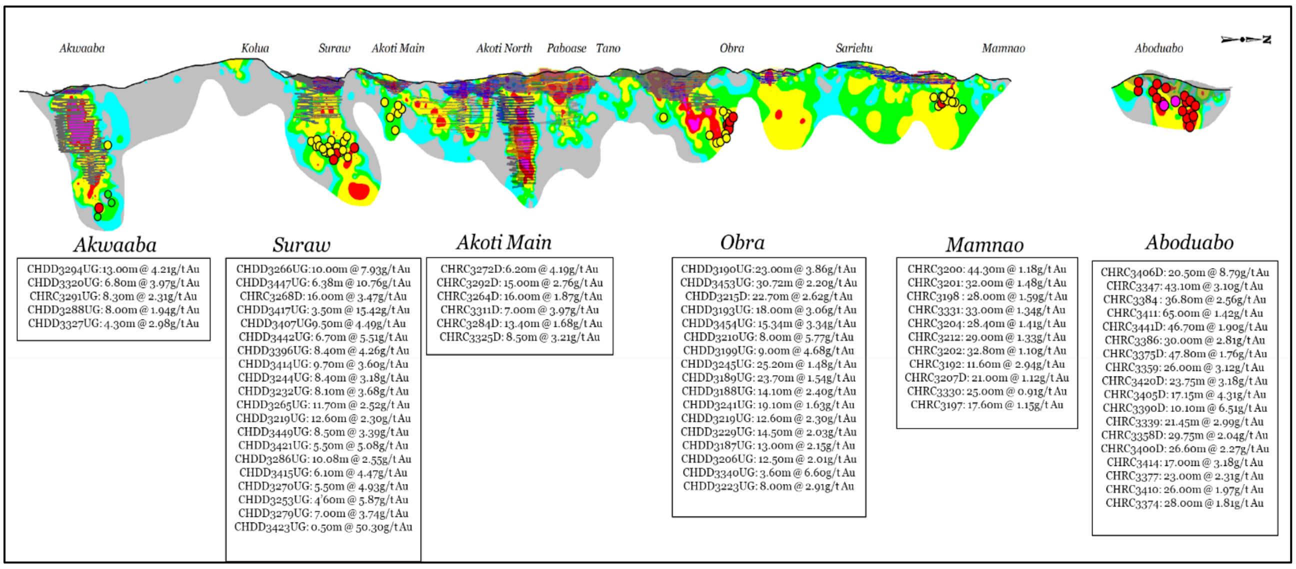


Figure 10-3: CGML – 2022/23 Mine Site and Exploration Drilling – Strike Location Reference and Examples of Significant Intercepts
(Source: CGML 2023)

10.2.2 Akwaaba

CGML has continued drilling underground at the oldest orebody, Akwaaba, to target the depth extensions of the main mineralised zone down and below to 1300mRL. The primary aim is to convert current Mineral Resources to Ore Reserves and extend the LoM for this orebody. The results to date indicate that potential exists still below this level (Figure 10-4). Further exploration is planned to investigate the hanging wall mineralisation potential that has also been identified during recent drilling programs and exploited on upper levels. In the 2022/23 period under investigation a total of 38 DD holes (9,346m) have been completed.

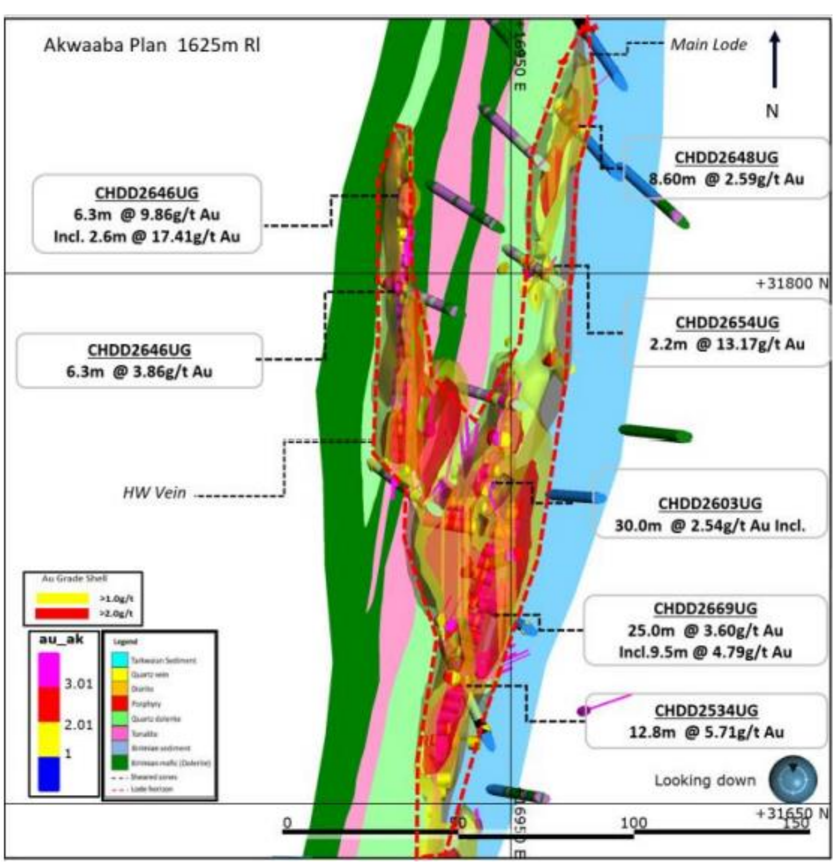


Figure 10-4: Akwaaba Mine - Plan of 1625 mRL with Geology and Intercepts

(Source: CGML 2023)

The table below summarises the collar locations for the underground Akwaaba drill exercise.

Table 10-5: Akwaaba – 2022/23 Underground Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Akwaaba	CHDD3267UG	31812.89	17047.48	1553.3	281.9	316.4	-34.58	DD
	CHDD3269UG	31813.12	17047.39	1553.48	293.8	318.13	-27.23	DD
	CHDD3271UG	31812.56	17047.26	1553.18	341.7	307.28	-37.79	DD
	CHDD3274UG	31813.05	17047.49	1553.16	368.9	318	-37.28	DD
	CHDD3277UG	31813.28	17047.39	1554.1	222	320.18	-8.41	DD
	CHDD3278UG	31812.88	17047.14	1553.77	211.1	310.27	-17.45	DD
	CHDD3280UG	31811.86	17046.74	1553.51	191.7	281.2	-23.27	DD
	CHDD3281UG	31811.73	17046.92	1553.11	284.7	287.4	-40.79	DD
	CHDD3283UG	31812.16	17047.09	1553.17	296.8	296.34	-40.15	DD
	CHDD3285UG	31811.38	17046.92	1552.94	348	278.24	-48.79	DD
	CHDD3288UG	31811.88	17047.02	1553.01	318	290.56	-46.14	DD
	CHDD3291UG	31812.1	17047.15	1553	362.8	295.42	-48.65	DD
	CHDD3294UG	31810.66	17046.99	1552.81	452.7	259.95	-52.23	DD
	CHDD3297UG	31832.7	17090.41	1852.42	112.8	263.46	1.48	DD
	CHDD3298UG	31810.99	17046.94	1552.88	393	268.11	-51.65	DD
	CHDD3299UG	31834.17	17090.13	1852.99	100.8	291.39	9.87	DD
	CHDD3300UG	31834.55	17090.61	1855.2	97.1	299.05	37.28	DD
	CHDD3301UG	31833.15	17090.32	1854.55	97.9	273.18	31.07	DD
	CHDD3302UG	31834.15	17090.27	1852.97	101.2	255.32	28.36	DD
	CHDD3303UG	31809.68	17047.17	1552.84	476.4	238.1	-46.1	DD
	CHDD3305UG	31834.43	17090.35	1852.2	104.9	295.04	-4.05	DD
	CHDD3306UG	31834.57	17090.9	1851.75	112.5	300.3	-16.7	DD
	CHDD3307UG	31834.78	17090.63	1852.05	113.5	266.44	-9.69	DD
	CHDD3308UG	31832.36	17090.84	1855.46	106.7	256.23	43.22	DD
	CHDD3309UG	31810.31	17047.03	1552.8	460.2	254.6	-48.5	DD
	CHDD3310UG	31833.79	17090.81	1855.75	121.5	286.31	45.55	DD
	CHDD3312UG	31835.23	17090.46	1852.09	116.3	307.01	-5.38	DD
	CHDD3313UG	31835.01	17091.01	1851.69	128.3	309.59	-16.81	DD
	CHDD3315UG	31836.1	17090.94	1852.41	135.9	321	1.6	DD
	CHDD3316UG	31810.01	17047.09	1552.81	458.6	245.4	-49.2	DD
	CHDD3317UG	31833.26	17090.92	1851.66	128.6	275.43	-23.81	DD
	CHDD3318UG	31833.49	17091.03	1851.51	152.8	280.1	-30.4	DD
	CHDD3320UG	31834.14	17090.94	1851.43	140.7	293.2	-29.2	DD
	CHDD3321UG	31834.96	17091.19	1851.29	155.6	309.7	-29.4	DD
	CHDD3323UG	31833.98	17090.99	1851.25	165	290.5	-35.3	DD
	CHDD3324UG	31811.62	17046.88	1553.06	398.8	283.56	-52.07	DD
	CHDD3327UG	31810.55	17047.11	1552.78	512.7	259.84	-52.58	DD
	CHDD3329UG	31809.21	17047.2	1552.8	479.6	229.2	-41.7	DD

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Akwaaba drilling.

Table 10-6: Akwaaba – 2022/23 Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Akwaaba 2022	CHDD3267UG	227	231.00	4.00	2.7	1.86					
		242	242.90	0.90	0.7	5.18					
		264.95	265.60	0.65	0.5	9.27					
	CHDD3269UG	207.15	209.95	2.80	2.0	2.39					
		219.85	226.10	6.25	4.5	0.96					
		248.95	250.40	1.45	1.0	4.16					
	CHDD3271UG	263	265.85	2.85	2.0	2.71					
		273	276.00	3.00	2.1	2.61					
	CHDD3274UG	284.45	301.00	16.55	11.7	1.71	Incl.293	298.55	5.55	4.0	2.36
		342.4	347.40	5.00	3.7	2.25					
	CHDD3278UG	154	156.00	2.00	1.4	1.24					
		184.3	185.80	1.50	1.1	6.81					
	CHDD3280UG	141.05	142.25	1.20	1.0	2.03					
		164.05	165.30	1.25	1.1	5.73					
	CHDD3281UG	209.45	217.00	7.55	5.5	1.77	Incl.212	217.00	5.00	3.6	2.12
		229.4	234.00	4.60	3.3	3.39					
		246.4	247.05	0.65	0.5	4.99					

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
		268.1	269.75	1.65	1.2	3.67					
	CHDD3283UG	226.05	228.00	1.95	1.5	4.08					
		237.1	237.65	0.55	0.4	2.52					
		255	255.70	0.70	0.5	2.66					
		287.25	288.35	1.10	1.0	3.14					
	CHDD3285UG	274.95	277.50	2.55	2.0	0.80					
		291	293.00	2.00	1.5	0.57					
	CHDD3288UG	238	249.00	11.00	8.0	1.94	Incl.245	247.00	2.00	1.5	3.13
		305.7	306.20	0.50	0.5	3.50					
	CHDD3277UG	161.6	164.10	2.50	1.7	1.09					
	CHDD3291UG	301.05	301.90	0.85	0.8	1.19					
		323.2	332.30	9.10	8.3	2.31					
		358	359.00	1.00	1.0	2.61					
	CHDD3294UG	352.9	355.80	2.90	2.8	2.62					
		359.7	373.00	13.30	13.0	4.21					
	CHDD3297UG	49.2	52.10	2.90	2.9	1.08					
		98.7	100.00	1.30	1.3	1.14					
	CHDD3298UG	312	314.20	2.20	1.5	5.67					
	CHDD3299UG	74.6	79.10	4.50	4.3	1.68					
	CHDD3300UG	82	83.00	1.00	1.0	1.23					
		87.5	88.10	0.60	0.6	1.75					
	CHDD3301UG	47.4	49.00	1.60	1.4	1.29					
		83.4	84.20	0.80	0.8	2.93					
	CHDD3302UG	53	60.70	7.70	6.1	1.18					
		88.2	88.75	0.55	0.5	4.22					
		92.45	94.45	2.00	1.9	6.67					
	CHDD3303UG	408.1	409.00	0.90	0.8	2.88					
	CHDD3305UG	55.45	60.00	4.55	4.0	1.73					
		83.5	84.25	0.75	0.6	3.95					
	CHDD3306UG	92	95.00	3.00	2.6	1.95					
	CHDD3307UG	52.75	54.50	1.75	1.7	1.56					
		68	68.90	0.90	0.8	1.67					
		105.05	106.50	1.45	1.4	4.71					
	CHDD3308UG	53	54.10	1.10	1.0	4.50					
		68	71.00	3.00	2.8	0.77					
	CHDD3309UG	354	356.50	2.50	1.8	3.46					
		361	371.80	10.80	8.0	4.45	Incl.366	371.80	5.80	4.2	6.69
	CHDD3310UG	56	57.00	1.00	0.9	1.23					
		65	67.85	2.85	2.5	1.32					
		83.1	85.00	1.90	1.5	1.74					
	CHDD3312UG	84	89.35	5.35	4.0	1.35					
	CHDD3313UG	76.6	78.20	1.60	1.3	4.03					
		90.4	91.65	1.25	1.0	3.38					
		98.65	99.40	0.75	0.6	1.00					
	CHDD3315UG	74.6	79.00	4.40	3.1	1.40					
		106.7	107.50	0.80	0.6	17.65					
	CHDD3316UG	374	380.80	6.80	4.7	2.83					
		432.6	433.55	0.95	0.7	2.47					
	CHDD3317UG	61	64.35	3.35	3.1	2.29					
		69	71.00	2.00	1.8	3.35					
	CHDD3318UG	71.4	73.00	1.60	1.4	2.23					
		89	90.00	1.00	0.8	3.19					
		131.6	133.75	2.15	1.8	1.76					
	CHDD3320UG	70.1	73.00	2.90	2.5	1.64					
		88	92.40	4.40	3.8	2.51					
		110.3	118.25	7.95	6.8	3.97	Incl.110.3	115.30	5.00	4.3	5.81
	CHDD3321UG	101	102.00	1.00	0.8	1.23					
		128	130.15	2.15	1.9	5.25					
	CHDD3323UG	82	87.05	5.05	4.0	1.29					
		144.2	147.70	3.50	2.8	2.47					
	CHDD3324UG	317.8	320.50	2.70	2.2	0.78					
	CHDD3327UG	442.2	448.50	6.30	4.3	2.98					

(Source: CGML 2023)

Figure 10-5 below illustrates the mineralized continuity that the drilling has identified below current working levels. Akwaaba continues to be a valuable underground ore source for the Chirano operation.

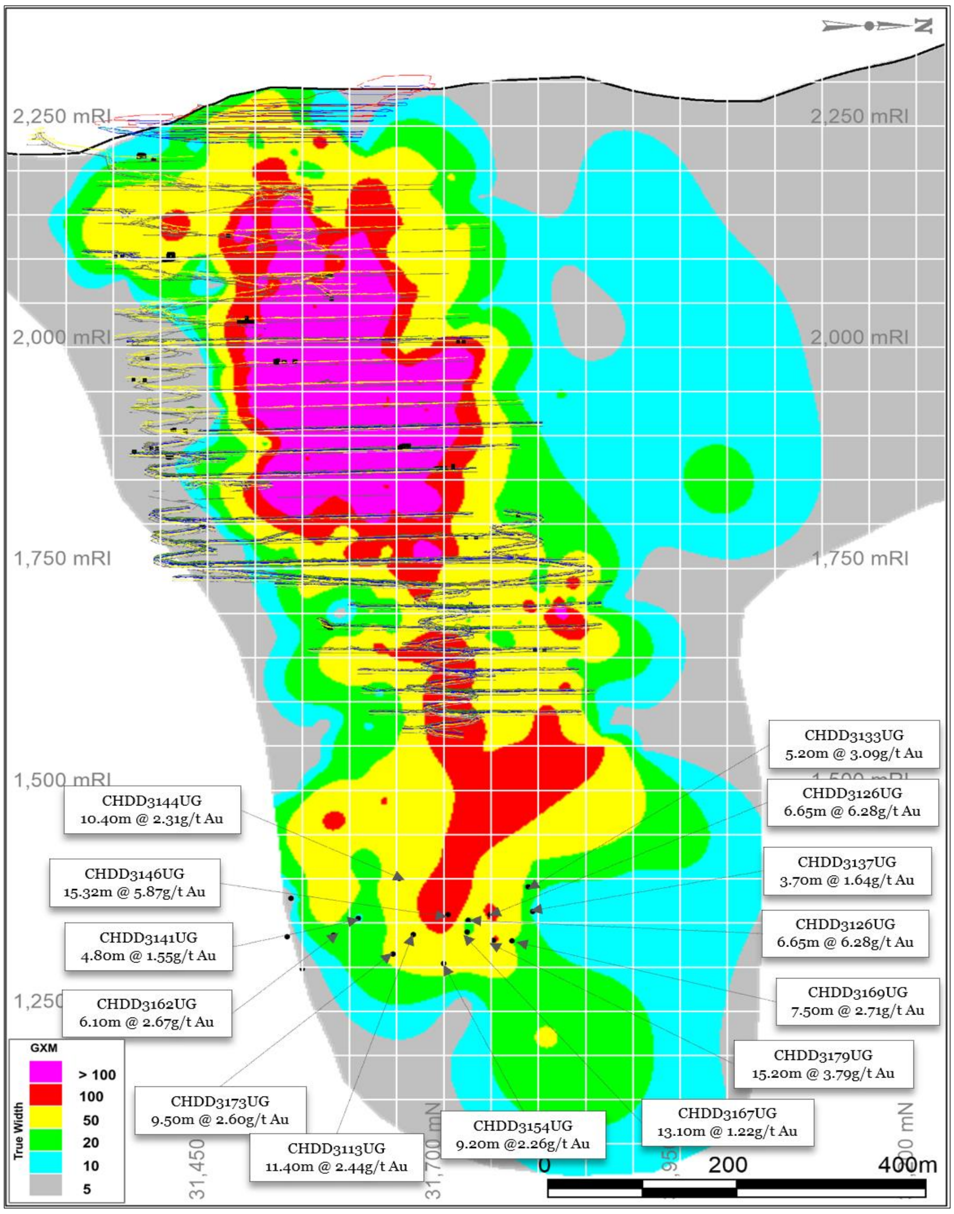


Figure 10-5: Akwaaba 2021 Underground Drilling – Longs Section showing Significant Intercepts below 1300M RL

(Source: CGML 2023)

10.2.3 Suraw

Exploration to investigate the potential of additional open pit reserves was carried out in the last two years. A total of 6 RCDD holes (2,266m) were completed in this focussed exercise.

Underground Mineral Resource conversion drilling was also continued and commenced in March 2022 Table 10-7. This drilling exercise was initiated to investigate additional mineral resources 100m below the current base of identified mineral reserves. Mineralised intercepts returned by drilled holes during the exercise, which continued to September 2023 with 21 DD holes (8,282m) being completed, continued to justify the continuity of mineralization hosted within the shears between the metavolcanics and tonalitic intrusions to the south extension of the northern block of the orebody.

High gold grade mineralization at depth along the Eastern Fault Zone, hosted by ankerite-pyrite zones within fault-brecciated quartz dolerite and quartz porphyry, therefore seems to continue and indicate possible expansion to the south which will be tested in a later phase of drilling. The table below summarises the collar locations for the underground Suraw drill exercise.

Table 10-7: Suraw – 2022/23 Underground Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Suraw	CHDD3219UG	33955.88	16089.57	2135.78	447.4	23.15	-49.52	DD
	CHDD3222UG	33955.63	16089.78	2135.64	424.7	30.55	-54.43	DD
	CHDD3232UG	33954.96	16090.3	2135.62	371.7	50.31	-61.14	DD
	CHDD3238UG	33954.52	16090.62	2135.66	361.4	61.92	-59.14	DD
	CHDD3244UG	33952.65	16090.8	2135.75	397.7	109.86	-53.36	DD
	CHDD3253UG	33953.09	16090.85	2135.58	410.9	100.09	-58.53	DD
	CHDD3263UG	33953.89	16090.74	2135.58	412.9	77.63	-63.26	DD
	CHDD3266UG	33955.11	16090.13	2135.66	461.1	44.38	-64.5	DD
	CHDD3270UG	33953.25	16090.94	2135.57	369.3	96.15	-56.49	DD
	CHDD3275UG	33955.18	16090.58	2135.67	425.2	48	-63	DD

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
	CHDD3279UG	33954.43	16090.5	2135.63	415	62.5	-63	DD
	CHDD3282UG	33955.28	16090.08	2135.65	379.7	41.39	-58.19	DD
	CHDD3286UG	33953.44	16090.82	2135.58	412.5	90.22	-60.73	DD
	CHDD3290UG	33951.7	16090.66	2135.61	532.8	127.91	-46.31	DD
	CHDD3295UG	33951.62	16090.83	2135.62	429.8	126.9	-42.92	DD
	CHDD3391UG	34112.09	16058.85	2039.4	365.7	46.2	-56.1	DD
	CHDD3396UG	34111.21	16059.2	2039.37	374.8	73.25	-62.01	DD
	CHDD3401UG	34112.74	16058.27	2039.3	441.5	26.37	-50.24	DD
	CHDD3407UG	34111.94	16058.74	2039.38	412.7	47.4	-62	DD
	CHDD3413UG	34110.7	16059.43	2039.27	324.5	84.7	-59.6	DD
	CHDD3415UG	34109.72	16059.37	2039.3	386.8	110.1	-56.9	DD
	CHDD3417UG	34110.65	16059.33	2039.3	371.7	82.2	-62.8	DD
	CHDD3421UG	34109.36	16059.44	2039.29	384.2	117.2	-51.8	DD
	CHDD3423UG	34111.58	16059.02	2039.39	359.8	61.62	-61.33	DD
	CHDD3428UG	34112.37	16058.48	2039.35	415.2	34.7	-56.8	DD
	CHDD3435UG	34110.79	16059.24	2039.34	414	81.9	-65.2	DD
	CHDD3437UG	34109.57	16059.29	2039.31	416.5	98.4	-57	DD
	CHDD3440UG	34111.76	16059.03	2039.43	335.8	57.8	-57.16	DD
	CHDD3442UG	34109.86	16059.49	2039.31	364.9	107.55	-57.18	DD
	CHDD3444UG	34110.33	16059.42	2039.37	352.04	95.65	-57.33	DD
	CHDD3447UG	34110.35	16059.27	2039.33	422.8	96.13	-63.32	DD
	CHDD3448UG	34109.47	16059.26	2039.28	473.8	117	-59.4	DD
	CHDD3449UG	34109.18	16059.48	2039.34	383.1	120.2	-49	DD
	CHDD3450UG	34109.44	16059.45	2039.34	362.8	115.4	-51.2	DD
	CHDD3451UG	34108.84	16059.42	2039.28	443.6	126.7	-45.8	DD
	CHDD3452UG	34109.12	16059.33	2039.31	476.9	123	-51.2	DD
	CHRC3216D	34173.32	16314.36	2286.13	259.4	272	-49	RCDD
	CHRC3217D	34201.99	16360.47	2289.63	347.4	269	-53.2	RCDD
	CHRC3220D	34173.78	16315.84	2286.22	277.2	276	-58.5	RCDD
	CHRC3221D	34150.38	16301.78	2289.87	246	273	-52.47	RCDD
	CHRC3265D	34205.07	16369.51	2289.2	524.3	280.49	-66.16	RCDD
	CHRC3268D	34277.37	16426.83	2291.04	611.5	272	-64.6	RCDD

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Suraw drilling.

Table 10-8: Suraw – 2022/23 Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Suraw 2022	CHRC3216D	249	250.30	1.30	1.0	1.09					
	CHRC3217D	329.85	332.00	2.15	1.8	2.58					
	CHRC3220D	265	268.50	3.50	2.6	1.58					
	CHRC3221D	238.8	239.55	0.75	0.7	1.35					
	CHDD3219UG	312	315.60	3.60	1.5	1.12					
		347	355.00	8.00	3.4	2.07					
		369.9	375.00	5.10	2.2	1.30					
		382	411.45	29.45	12.6	2.30	Incl.403	411.45	8.45	3.6	3.64
		418	419.55	1.55	0.6	1.96					
	CHDD3222UG	339	340.90	1.90	0.9	1.46					
		381.65	385.30	3.65	1.6	1.71					
		397.55	403.05	5.50	2.5	1.04					
	CHDD3232UG	332	349.00	17.00	8.1	3.68	Incl.335.3	348.40	13.10	6.2	4.40
	CHDD3238UG	321.4	322.60	1.20	1.0	0.40					
	CHDD3244UG	370.85	385.10	14.25	8.4	3.81	Incl.373.85	385.10	11.25	6.6	4.64
	CHDD3253UG	399	407.30	8.30	4.6	5.87	Incl.402	407.30	5.30	3.0	8.78
	CHDD3263UG	377	385.00	8.00	3.8	2.25					
	CHRC3265D	442.65	461.00	18.35	11.7	2.52	Incl.450.95	458.80	7.85	5.0	4.10
	CHDD3266UG	419.05	445.00	25.95	10.0	7.93	Incl.427	443.70	16.70	6.4	10.63
	CHRC3268D	552.1	578.00	25.90	16.0	3.47	Incl.552.1	570.00	17.90	11.0	4.35
							Incl.554.55	564.00	9.45	6.0	5.17
		600	603.00	3.00	2.0	5.05					
	CHDD3270UG	332	336.00	4.00	2.4	2.00					
		343.9	353.05	9.15	5.5	4.93	Incl.348.15	353.05	4.90	3.0	8.18
	CHDD3275UG	379.9	380.50	0.60	0.6	0.66					
	CHDD3279UG	361	363.10	2.10	1.0	1.67					
		384	398.90	14.90	7.0	3.74	Incl.387	398.10	11.10	5.2	4.39
	CHDD3282UG	354	362.70	8.70	4.0	3.67	Incl.354	356.25	2.25	1.0	8.17
	CHDD3286UG	365.6	367.10	1.50	0.7	3.72					

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
		381.5	402.60	21.10	10.8	2.55	Incl.391	402.60	11.60	6.0	3.59
	CHDD3290UG	494.4	497.00	2.60	1.4	1.02					
		517.5	524.00	6.50	3.5	1.26					
	CHDD3295UG	384	385.00	1.00	0.6	1.82					
		400	401.00	1.00	0.6	1.17					
Suraw 2023	CHDD3391UG	261	265.00	4.00	2.0	1.00					
		283	287.45	4.45	2.3	1.97					
		300.65	304.00	3.35	1.7	1.71					
		314	336.35	22.35	11.6	1.48	Incl.321	330.00	9.00	4.7	2.64
	CHDD3396UG	327.25	344.00	16.75	8.4	4.26	Incl.335.4	339.75	4.35	2.1	8.53
	CHDD3401UG	341.6	344.00	2.40	1.4	1.62					
		354	361.75	7.75	4.7	1.05					
		392	395.00	3.00	1.8	1.21					
		408.85	415.00	6.15	3.8	2.35					
	CHDD3407UG	355	357.10	2.10	1.0	2.28					
		374.35	394.20	19.85	9.5	4.49					
	CHDD3413UG	287	305.60	18.60	9.7	3.60	Incl.299	305.60	6.60	3.4	7.81
	CHDD3415UG	361.15	373.40	12.25	6.1	4.47	Incl.365.65	373.40	7.75	3.9	6.33
	CHDD3417UG	340.5	347.70	7.20	3.5	15.42	Incl.343	347.70	4.70	2.3	21.91
	CHDD3421UG	367	378.50	11.50	5.5	5.09	Incl.371.25	378.50	7.25	3.5	7.12
	CHDD3423UG	319	320.00	1.00	0.5	50.30					
		332.95	354.20	21.25	10.1	1.82	Incl. 344.3	350.95	6.65	3.1	3.09
	CHDD3428UG	308.15	310.00	1.85	0.9	1.28					
		387.7	389.00	1.30	0.6	2.86					
		394.55	405.60	11.05	5.5	2.36	Incl. 401.3	405.60	4.30	2.1	4.66
	CHDD3435UG	387.15	406.20	19.05	6.1	1.86	Incl.387.15	394.00	6.85	3.0	3.71
	CHDD3437UG	398.65	399.50	0.85	0.7	0.83					
	CHDD3440UG	283	285.33	2.33	1.3	1.52					
		305.3	310.20	4.90	2.8	1.29					
		318	329.00	11.00	6.2	2.67	Incl.319.7	327.20	7.50	4.2	3.23
	CHDD3442UG	348.6	360.25	11.65	6.7	5.51	Incl.352.75	360.25	7.50	4.3	7.54
	CHDD3444UG	303.2	304.70	1.50	1.1	1.33					
	CHDD3447UG	400	412.50	12.50	6.4	10.76	Incl. 401.9	411.45	9.55	5.5	13.54
	CHDD3448UG	451.2	451.80	0.60	0.6	0.58					
	CHDD3449UG	350	365.85	15.85	8.5	3.39	Incl.357	364.00	7.00	3.7	4.69
	CHDD3450UG	339.7	348.80	9.10	5.7	2.94					
	CHDD3451UG	421	425.25	4.25	2.7	1.34					
		429	436.00	7.00	4.5	2.21					
	CHDD3452UG	464	465.10	1.10	1.0	2.26					

(Source: CGML 2023)

Figure 10-6 and Figure 10-7 below illustrate the mineralized potential of Suraw below the open pit outline from the recent drilling exercise.

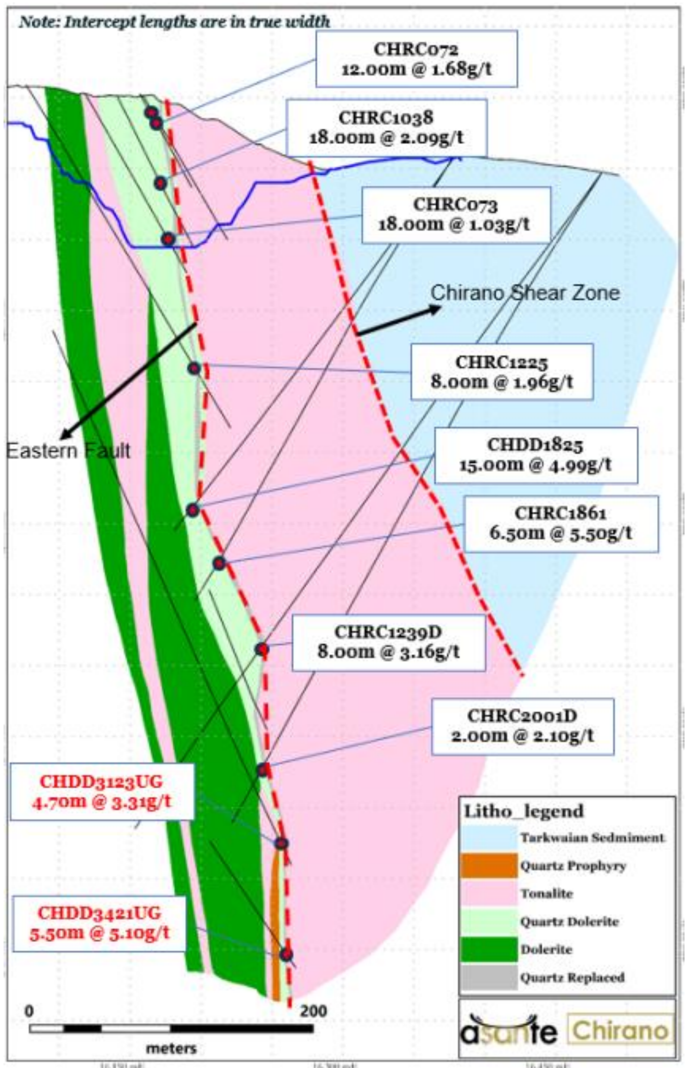


Figure 10-6: Suraw Deposit 2022/23 – Surface and Underground Drilling Resource Extension

(Source: CGML 2023)

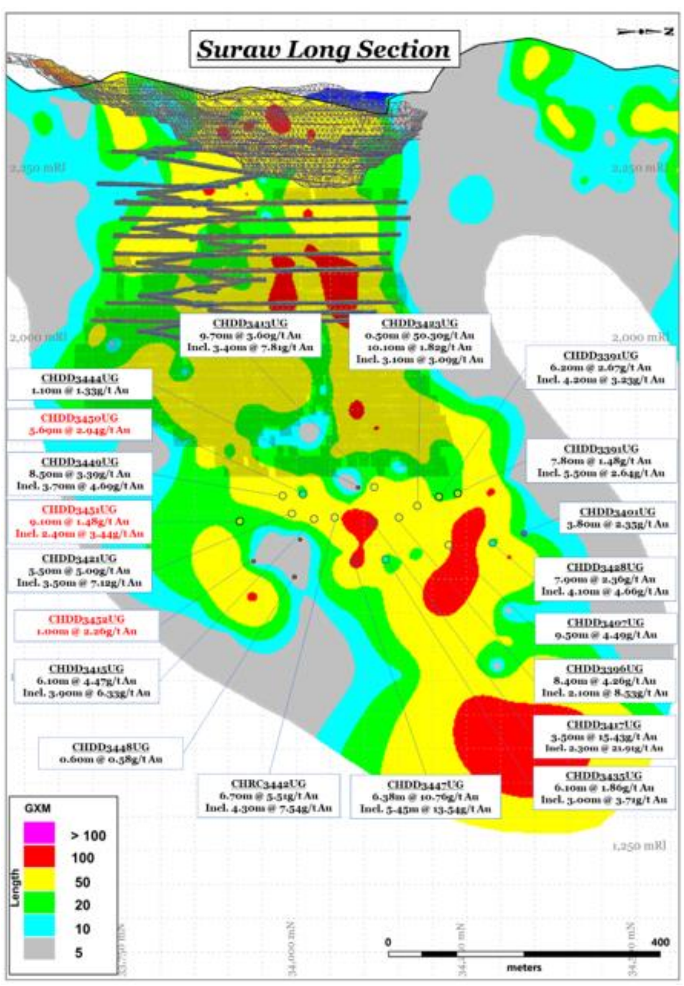


Figure 10-7: Suraw 2022/23 UG Drilling – Long Section showing Significant Intercepts below Current Reserves

(Source: CGML 2023)

10.2.4 Akoti South

Drilling for additional open pit resources continued at Akoti South with 19 RC/RCDD holes (6,522m) completed in 2022/23. The table below gives the collar positions of this drilling program.

Table 10-9: Akoti South – 2022/23 Surface Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Akoti	CHRC3264D	34680.01	15582.61	2355.6	479.2	85.5	-70	RCDD
	CHRC3272D	34575.03	15638.89	2361.3	288.7	85	-60.5	RCDD
	CHRC3273D	34575.01	15638.06	2361.27	353.8	87	-70	RCDD
	CHRC3276D	34653.72	15613.49	2358.27	349.7	96	-64	RCDD
	CHRC3284D	34648.22	15612.69	2358.81	383.2	91.4	-69	RCDD
	CHRC3289D	34733.66	15569.88	2349.1	431.9	91.4	-64.4	RCDD
	CHRC3292D	34731.27	15570.97	2349.26	365.7	97.5	-54.2	RCDD
	CHRC3293D	34685.36	15597.83	2354.18	269.5	88.45	-44.94	RCDD
	CHRC3296D	34549.95	15606.33	2375.58	335.7	84.64	-55.34	RCDD
	CHRC3304D	34630.34	15614.28	2361.23	365	95.4	-66.7	RCDD
	CHRC3311D	34754.42	15537.59	2349.72	332.9	86.74	-48.35	RCDD
	CHRC3314D	34755.13	15534.97	2349.94	458.2	82.79	-64.01	RCDD
	CHRC3322	34837.15	15644.81	2328.79	227	94.97	-50.67	RC
	CHRC3325D	34719.49	15604.82	2346.56	293.8	89.6	-54	RCDD
	CHRC3326D	34723.65	15548.87	2354.39	500.5	91.1	-67.6	RCDD
	CHRC3328D	34685.04	15596.99	2354.31	308.8	84.9	-47	RCDD
	CHRC3335	34720.52	15618.62	2346.42	240	86.8	-44.5	RC
	CHRC3336	34684.08	15592.47	2354.48	282	92.3	-49.1	RC
	CHRC3337	34761.5	15602.47	2339.36	256	83.6	-51.4	RC

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Akoti South drilling.

Table 10-10: Akoti South – 2022/23 Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Akoti 2022	CHRC3264D	443	468.00	25.00	16.0	1.88	Incl.443	456.00	13.00	8.3	2.75
							Incl.445	450.40	5.40	3.5	4.76
	CHRC3272D	197.1	199.05	1.95	1.5	2.15					
		212	214.00	2.00	1.5	1.83					
		227	235.15	8.15	6.2	4.20					
	CHRC3273D	301.5	304.80	3.30	2.7	2.69					
	CHRC3276D	298.45	310.00	11.55	7.5	2.24	Incl.303	309.25	6.25	4.0	3.03
	CHRC3284D	335	357.40	22.40	13.4	1.69	Incl.354	357.40	3.40	2.0	4.26
	CHRC3289D	333.05	334.60	1.55	1.0	1.56					
		393.35	405.90	12.55	7.8	1.82	Incl.401.2	405.00	3.80	2.4	2.17
	CHRC3292D	254	261.50	7.50	4.7	2.28					
		297	303.00	6.00	3.7	1.76					
		306.85	314.00	7.15	4.4	1.57					
		318	342.00	24.00	15.0	2.76	Incl.321.5	332.00	10.50	6.5	4.53
	CHRC3293D	218	223.70	5.70	4.7	2.23					
	CHRC3296D	278.85	279.65	0.80	0.7	1.95					
	CHRC3304D	314.85	315.40	0.55	0.4	4.00					
		327	339.00	12.00	9.0	2.21	Incl.330.15	333.00	2.85	2.1	3.45
	CHRC3311D	270	271.00	1.00	0.7	62.80					
		288	293.00	5.00	3.7	2.28					
		299	303.00	4.00	3.0	3.31					
		313	322.25	9.25	7.0	3.97					
	CHRC3314D	333.7	334.60	0.90	0.7	1.19					
		392.5	393.00	0.50	0.3	0.62					
	CHRC3322	163	180.00	17.00	12.5	1.02	Incl.175	180.00	5.00	3.6	1.89
		191	207.00	16.00	11.8	2.30	Incl.199	206.00	7.00	5.2	3.28
	CHRC3325D	238.7	240.75	2.05	1.3	1.51					
		246	259.45	13.45	8.5	3.21	Incl.251.05	259.45	8.40	5.3	4.55
		280	282.00	2.00	1.3	1.69					
	CHRC3326D	351	352.00	1.00	1.0	2.48					
		396.7	399.70	3.00	1.6	0.80					
		435.2	441.00	5.80	4.0	1.36					
		465	474.00	9.00	6.0	2.18					
	CHRC3335	141	142.00	1.00	1.0	3.37					
		173	174.00	1.00	1.0	6.15					
		192	198.00	6.00	5.2	1.95					

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
	CHRC3336	245	250.00	5.00	4.0	3.12					
	CHRC3337	180	186.00	6.00	5.4	0.94					
		226	228.00	2.00	1.8	1.33					

(Source: CGML 2023)

Figure 10-8 and Figure 10-9 below illustrate the mineralized potential of Akoti South below the open pit outline from the recent drilling exercise.

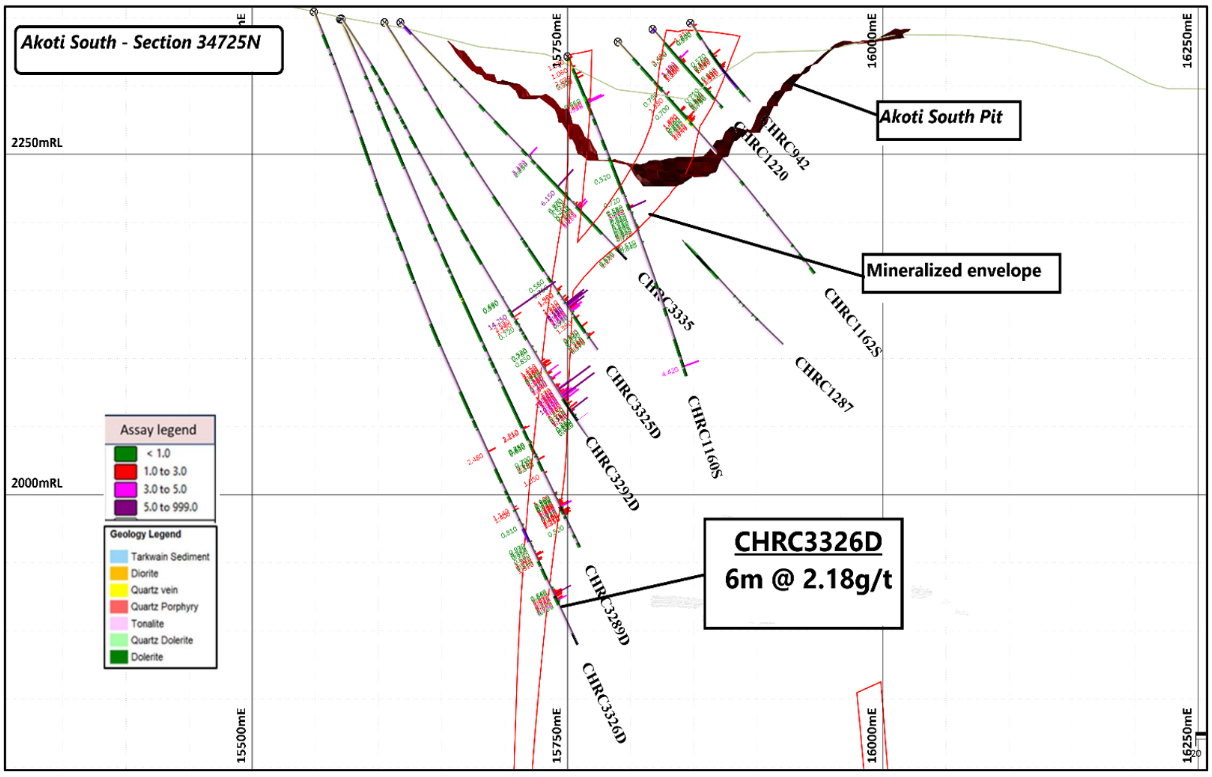


Figure 10-8: Akoti South -Xsection 34725mN – Recent Surface Drilling Intercepts Indicating Mineralization Continuity in Depth

(Source: CGML 2022)

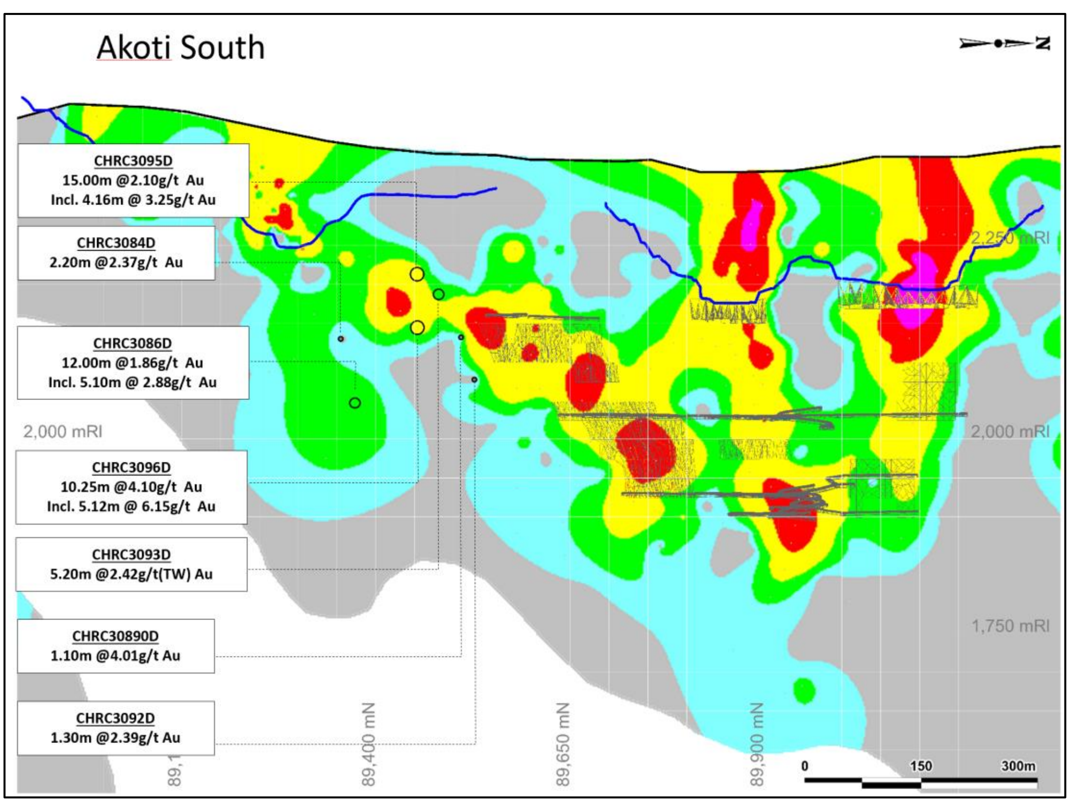


Figure 10-9: Akoti South Drilling – Long Section showing Significant Intercepts South of Main Akoti Zone

(Source: CGML 2023)

10.2.5 Obra

Underground resource conversion drilling continued at Obra during 2022/23. A total of 33 DD holes (7,153m) have been completed. The table below summarises the collar locations for the underground Obra drill exercise.

Table 10-11: Obra – 2022/23 Underground Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Obra	CHDD3187UG	37814.37	14832.39	2203.59	278.7	31.7	48.88	DD
	CHDD3188UG	37814.57	14831.95	2203.56	344.8	20	-49.2	DD
	CHDD3190UG	37814.1	14831.94	2203.53	350.8	25.1	-58	DD
	CHDD3191UG	37814.08	14833	2204.15	238.4	46.09	-30	DD
	CHDD3193UG	37814.28	14831.65	2203.6	371.8	16.49	-55.88	DD
	CHDD3199UG	37813.48	14832.1	2203.53	425.9	43.49	-82.29	DD
	CHDD3206UG	37813.98	14831.8	2203.51	416.6	20.27	-68	DD
	CHDD3210UG	37813.76	14831.64	2203.51	429	26.1	-79.37	DD
	CHDD3215UG	37814.26	14831.69	2203.52	410.8	15.33	-61.68	DD
	CHDD3223UG	37814.03	14831.5	2203.51	434.9	13.4	-68.5	DD
	CHDD3229UG	37811.24	14832.42	2203.52	405	124.1	-78	DD
	CHDD3235UG	37811.03	14832.15	2203.59	444.15	132.4	-81.8	DD
	CHDD3241UG	37814.33	14832.62	2203.62	299.7	36.16	-45.59	DD
	CHDD3245UG	37813.87	14833.06	2204.01	239.5	50.39	-38.01	DD
	CHDD3250UG	37813.82	14832.24	2203.52	326.7	38.52	-65.75	DD
	CHDD3254UG	37813.86	14832.98	2203.79	260.7	45.25	-50.74	DD
	CHDD3262UG	37810.73	14831.75	2203.54	447.1	151.3	-80.09	DD
	CHDD3338UG	37495.94	14790.53	2205.18	431.7	161.7	-54.5	DD
	CHDD3340UG	37495.75	14791.24	2205.37	323.6	144	-40.9	DD
	CHDD3342UG	37496.56	14792.06	2205.08	272.7	137.6	-47.8	DD
	CHDD3453UG	38019.4	15095.55	2118.14	266.8	255.9	-30.3	DD
	CHDD3454UG	38019.83	15095.69	2118.32	275.7	264.3	-28.3	DD
	CHDD3455UG	38020.04	15095.77	2118.23	306.6	269.1	-32.8	DD
	CHDD3456UG	38019.62	15095.59	2118.54	278.7	259.95	-19.47	DD
	CHDD3457UG	38019.29	15095.43	2118.74	221.7	254.2	-11.8	DD
	CHDD3458UG	38020.84	15096	2118.62	269.5	288.2	-20.3	DD
	CHDD3459UG	38020.25	15095.76	2118.67	254.8	274.6	-17.2	DD
	CHDD3460UG	38018.16	15095.55	2119.6	218.5	233.5	7.5	DD
	CHDD3461UG	38020.27	15095.79	2119.02	224.8	275.2	-4.6	DD
	CHDD3462UG	38019.7	15095.63	2118.88	227.6	261.6	-8.8	DD
	CHDD3463UG	38018.46	15095.51	2118.43	242.3	238.7	-17.6	DD
	CHDD3464UG	38020.57	15095.82	2118.41	305.9	283	-27.2	DD
	CHDD3465UG	38021.04	15095.9	2118.84	245.9	292.3	-10.4	DD

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Obra drilling.

Table 10-12: Obra – 2022/23 Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Obra 2022	CHDD3187UG	248.65	270.00	21.35	13.0	2.15	Incl.264	268.90	4.90	3.0	4.42
	CHDD3188UG	254	286.00	32.00	14.1	2.40	Incl.266	278.00	12.00	5.3	3.69
		324.9	336.15	11.25	5.0	1.71					
	CHDD3189UG	207	242.00	35.00	23.7	1.54	Incl.227.35	242.00	14.65	10.0	1.96
	CHDD3190UG	198.05	201.20	3.15	1.4	7.67					
		245	298.00	53.00	23.0	3.85	Incl.254	290.60	36.60	16.0	5.03
							Incl.255	263.00	8.00	3.4	7.49
	CHDD3191UG	144	146.00	2.00	1.5	1.56					
		189	200.00	11.00	8.5	1.35	Incl.189	193.00	4.00	3.0	2.36
		215	219.00	4.00	3.0	1.19					
	CHDD3193UG	242	244.50	2.50	1.0	2.27					
		260	318.00	58.00	18.0	3.06	Incl.280	298.00	18.00	5.6	5.12
							Incl.306.9	311.00	4.10	1.3	5.98
		344	354.00	10.00	3.1	1.70					
	CHDD3199UG	219	222.05	3.05	1.3	6.00					
		374	395.00	21.00	9.0	4.68	Incl.378	394.00	16.00	6.9	5.91
	CHDD3206UG	294	296.00	2.00	1.0	4.74					
		301	305.00	4.00	1.8	2.63					
		318.9	346.25	27.35	12.5	2.01	Incl.327	335.00	8.00	3.7	2.60
		381	390.00	9.00	4.1	3.00					
	CHDD3210UG	368.45	391.00	22.55	8.0	5.77	Incl.368.45	383.70	15.25	5.4	7.09
	CHDD3215UG	278	339.00	61.00	15.0	2.62	Incl.327.1	339.00	11.90	3.0	3.94
		347	355.00	8.00	2.0	1.35					
		380.7	384.00	3.30	0.8	1.38					
		388	396.00	8.00	2.0	1.56					
	CHDD3223UG	266.8	275.00	8.20	3.3	4.68					
		346.15	349.00	2.85	1.1	3.49					

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
		358	377.60	19.60	8.0	2.91	Incl.358	370.00	12.00	5.0	3.78
		399	407.00	8.00	3.2	1.47					
	CHDD3229UG	310	340.15	30.15	14.5	2.03	Incl.327	340.15	13.15	6.3	3.22
	CHDD3235UG	363	385.00	22.00	7.4	2.65	Incl.363	371.00	8.00	2.7	5.13
	CHDD3241UG	221	248.40	27.40	19.1	1.62	Incl.232	239.00	7.00	4.8	2.13
	CHDD3245UG	174.85	208.05	33.20	25.2	1.48	Incl.174.85	180.00	5.15	4.0	2.35
							Incl.186	191.40	5.40	4.1	1.98
	CHDD3250UG	238	249.00	11.00	6.0	3.22					
		263.6	269.00	5.40	3.0	4.34					
		287	297.00	10.00	5.7	1.01					
	CHDD3254UG	142.65	144.25	1.60	1.0	1.50					
		186	188.00	2.00	1.2	2.16					
		212	218.00	6.00	3.6	1.45					
		221.6	227.00	5.40	3.2	2.07					
		244	250.60	6.60	4.0	1.06					
	CHDD3262UG	381.1	391.00	9.90	3.7	3.27					
		407.65	420.75	13.10	5.0	2.52					
	CHDD3338UG	382	383.70	1.70	1.1	0.67					
	CHDD3340UG	257	262.00	5.00	3.6	6.60					
	CHDD3342UG	214.5	218.30	3.80	2.5	4.22					
Obra 2023	CHDD3453UG	188.35	202.00	13.65	11.9	2.19					
		212	250.15	38.15	30.7	2.20	Incl. 234	244.00	10.00	8.8	3.50
		256	258.50	2.50	2.0	1.24					
	CHDD3454UG	159.1	177.00	17.90	15.3	3.34					
		246	248.30	2.30	2.0	1.28					
	CHDD3455UG	173	185.75	12.75	11.5	2.94					
		242	300.00	58.00	52.5	1.98	Incl.260.5	276.73	16.23	14.7	2.30
							Incl.294	300.00	6.00	5.4	5.05
	CHDD3456UG	142	147.00	5.00	3.5	1.24					
		151.3	157.00	5.70	4.0	1.86					
		182.75	211.00	28.25	20.0	1.71	Incl.190	204.00	14.00	10.0	2.51
		254	265.00	11.00	7.8	1.94					
	CHDD3457UG	129	135.00	6.00	5.8	1.36					
		141.37	149.00	7.63	7.4	1.31					
	CHDD3458UG	162.62	172.00	9.38	8.5	1.17					
		178	181.00	3.00	2.7	2.11					
		233.65	266.85	33.20	30.0	2.29	Incl.236	255.00	19.00	17.0	3.10
	CHDD3459UG	147	159.00	12.00	11.5	1.65					
		197	206.00	9.00	8.6	1.00					
		227	240.00	13.00	12.4	2.38	Incl.232	240.00	8.00	7.6	3.06
	CHDD3460UG	155	175.00	20.00	17.0	1.43	Incl.169.3	175.00	5.70	4.8	1.80
		207	208.60	1.60	1.3	1.37					
	CHDD3461UG	136.05	147.00	10.95	10.0	1.47					
		212.5	213.00	0.50	0.5	10.65					
	CHDD3462UG	136.9	142.00	5.10	4.5	1.79					
		157.7	186.60	28.90	26.0	1.49	Incl.179	186.60	7.60	6.8	2.31
	CHDD3463UG	190	204.00	14.00	12.0	2.01					
		224	231.00	7.00	6.0	1.12					
	CHDD3464UG	173	185.00	12.00	10.6	1.98					
		245.4	287.67	42.27	37.5	2.83	Incl.275	281.00	6.00	5.3	4.51
							Incl.275	287.67	12.67	11.2	3.69
	CHDD3465UG	160	173.00	13.00	11.7	3.05					
		205.75	226.00	20.25	18.3	1.55					

(Source: CGML 2023)

The intercepts shown in the figures below (true widths) are those recorded from the 2021 drilling program completed by Chirano. The results confirmed the expected depth extension of the high-grade plunging shoot. All the 2021 drilling was carried out from underground in an exploration drive specifically developed for this purpose. Obra has both open pit and underground reserves reported.

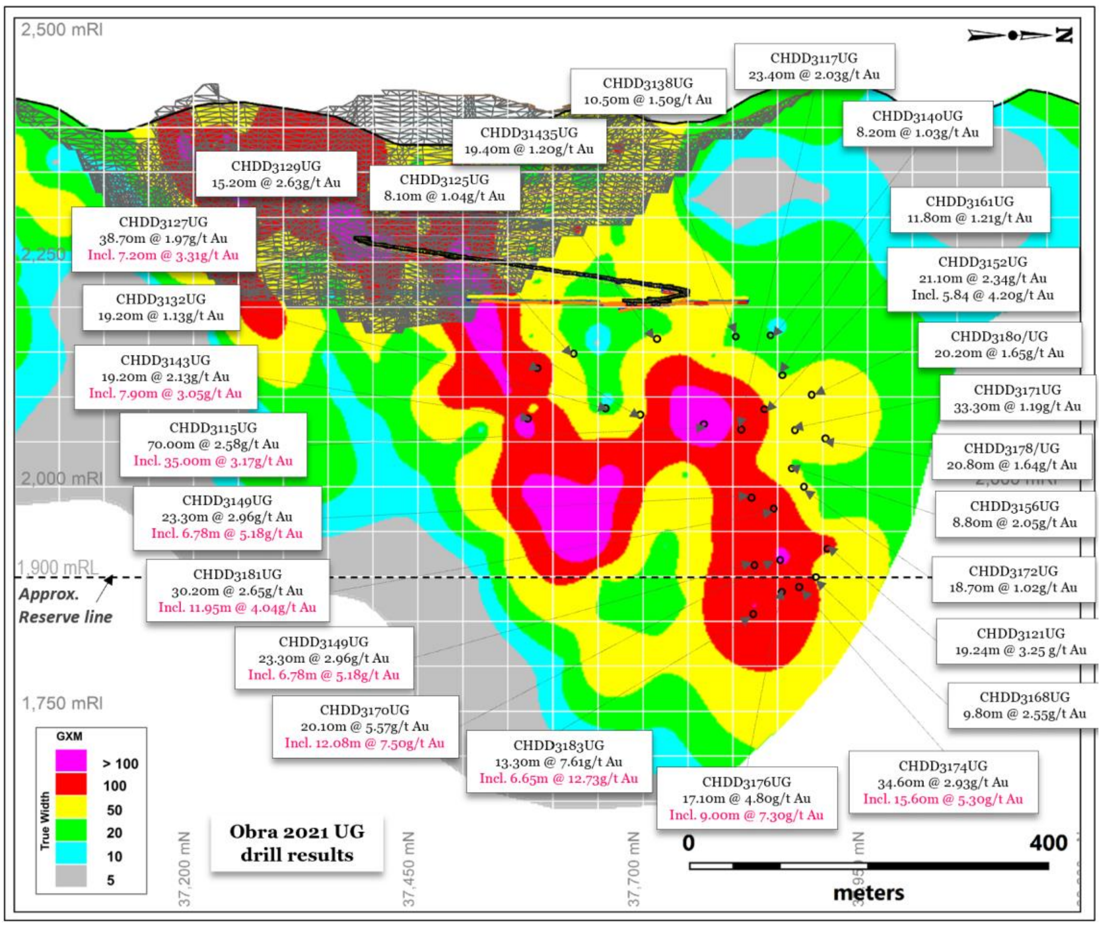


Figure 10-10: Obra 2021 Drilling – Long Section showing Mineralization below Base of Reserve

(Source: CGML 2023)

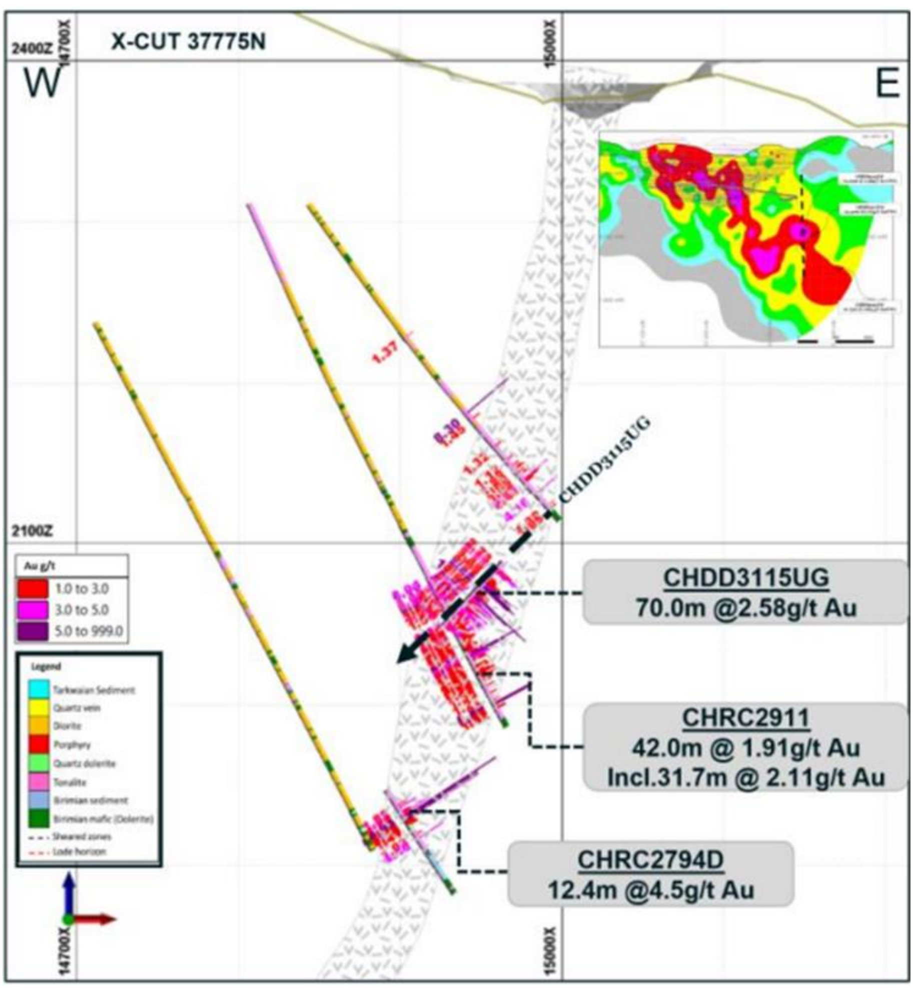


Figure 10-11: Obra 2021 Drilling – Long Section 37775mN showing Drill Intercepts

(Source: Kinross, 2022)

10.2.6 Mamnao and Mamnao-Sariehu

Mamnao is currently an active open pit operation supplying approximately 30% of mill feed. Drilling commenced in January 2022

Drilling in the Sariehu-Mamnao gap was commenced in December 2023 to extend the Mamnao open pit to the south. Mapping to the north of Mamnao was also initiates as a follow up to historical results from rock chip sampling and geophysical anomalies.

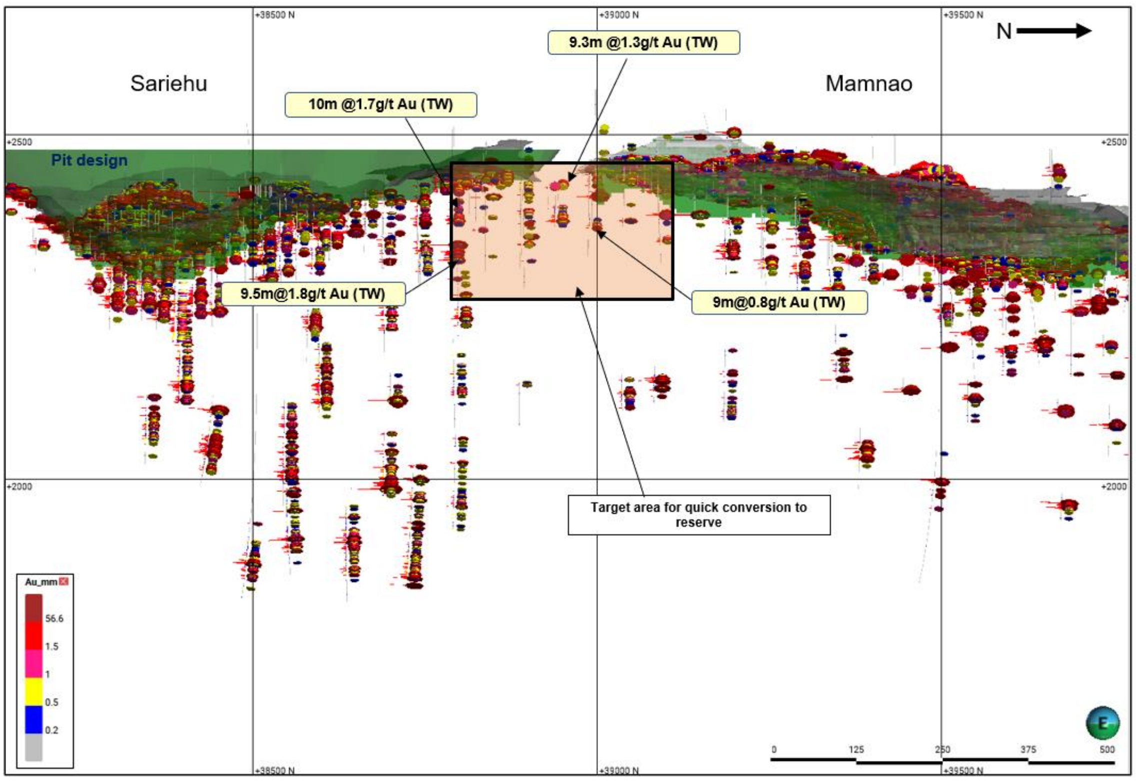


Figure 10-12: CGML Sariehu and Mamnao GAP - Potential Connectivity of the Two Pits

(Source: CGML 2023)

The program successfully extended mineralization, upgraded and confirmed grade continuity on the main lode horizon and west structure below the pit design. Success of the program has initiated a further pushback of the current pit with added opportunity to merge both central and north pit.

Figure 10-13: Mamnao Open Pit looking North towards Bibiani Mine

(Source: dMb)

The table below summarises the collar locations for the underground Mamnao drill exercise.

Table 10-13: Mamnao – 2022/23 Surface Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Mamnao	CHRC3192	40014.65	14948.02	2338	199	109.79	-43.52	RC
	CHRC3194	40015.71	14946.55	2337.98	222	100.42	-61.3	RC
	CHRC3195	39972.87	14768.51	2398.72	227	65	-52	RC
	CHRC3196	39948.84	14704.06	2407.07	150	90	-54	RC

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
	CHRC3197	40024.67	14955.07	2337.91	244	90	-70	RC
	CHRC3198	40052.14	14969.64	2338.12	182	90	-70	RC
	CHRC3200	40052.06	14968.53	2338.17	230	87	-72	RC
	CHRC3201	40072.2	14968.49	2338.78	202	88	-64	RC
	CHRC3202	40126.61	14982.26	2347.31	230	116	-71	RC
	CHRC3203	40212.34	14889.39	2365.69	248	84	-47	RC
	CHRC3204	40175.06	14907.72	2368.37	266	90	-61	RC
	CHRC3205	40256.09	14883.23	2365.98	272	87	-52	RC
	CHRC3207D	40255.82	14882.02	2366.24	316.8	87.9	-64	RCDD
	CHRC3208	39898.31	14744.09	2419.65	74	90	-50	RC
	CHRC3209	39898.29	14697.99	2414.16	150	90	-57	RC
	CHRC3211	40014.89	14946.23	2337.82	247	113	-61.5	RC
	CHRC3212	40175	14906.29	2368.61	273	102	-60	RC
	CHRC3213D	40256.18	14882.88	2366.13	275	103	-58	RCDD
	CHRC3214	40048.39	14766.08	2386.18	200	100	-45	RC
	CHRC3330	40121.02	14967.86	2332.38	150	77.8	-41	RC
	CHRC3331	40066.22	14929.4	2332.29	200	89.9	-45	RC
	CHRC3332	39974.6	15016.33	2337.83	122	89.4	-52.8	RC
	CHRC3333	39325.51	15119.24	2404.43	30	90	-80	RC
	CHRC3334	39346.93	15122.5	2404.27	20	90	-80	RC

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Mamnao drilling.

Table 10-14: Mamnao – 2022/23 Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Mamnao 2022	CHRC3192	169	183.00	14.00	11.6	2.94					
	CHRC3194	12	14.00	2.00	1.4	2.24					
		154	165.00	11.00	7.8	1.02					
		183	186.00	3.00	2.1	1.38					
		195	213.00	18.00	12.8	1.07					
	CHRC3195	16	17.00	1.00	1.0	1.00					
		29	30.00	1.00	1.0	1.76					
		38	39.00	1.00	1.0	2.69					
		127	128.00	1.00	1.0	2.72					
		192	194.00	2.00	1.8	1.19					
	CHRC3196	47	48.00	1.00	1.0	3.14					
	CHRC3197	0	4.00	4.00	3.0	1.22					
		71	72.00	1.00	1.0	2.64					
		207	230.00	23.00	17.6	1.15	Incl.221	229.00	8.00	6.1	1.67
	CHRC3198	0	2.00	2.00	1.5	1.32					
		129	166.00	37.00	28.0	1.59	Incl.159	166.00	7.00	5.3	3.46
	CHRC3200	1	3.00	2.00	1.1	1.52					
		148	226.00	78.00	44.3	1.18	Incl.162	167.00	5.00	2.8	2.28
							Incl.183	203.00	20.00	11.3	1.51
	CHRC3201	139	187.00	48.00	32.2	1.48	Incl.140	148.00	8.00	5.3	2.22
							Incl.164	177.00	13.00	8.7	1.79
		198	202.00	4.00	2.6	2.73					
	CHRC3202	145	208.00	63.00	32.8	1.08	Incl.149	163.00	14.00	7.3	1.49
							Incl.201	208.00	7.00	3.6	1.72
	CHRC3203	159	165.00	6.00	5.3	0.83					
		233	244.00	11.00	9.8	1.29					
	CHRC3204	219	254.00	35.00	28.0	1.41	Incl.234	244.00	10.00	8.0	1.85
	CHRC3205	108	118.00	10.00	8.3	1.33					
		236	256.00	20.00	16.5	1.16	Incl.248	255.00	7.00	5.8	2.09
	CHRC3207D	138	142.00	4.00	3.2	1.49					
		184	187.00	3.00	2.4	2.53					
		276.4	302.00	25.60	21.0	1.12	Incl.287	302.00	15.00	12.3	1.53
							Incl.293	301.00	8.00	6.6	2.34
	CHRC3208	64	70.00	6.00	5.0	1.18					
	CHRC3209	34	40.00	6.00	4.3	0.99					
		134	140.00	6.00	4.3	0.77					
	CHRC3211	205	208.00	3.00	1.8	2.34					
		231	244.00	13.00	8.0	1.69	Incl.234	243.00	9.00	5.5	2.18
	CHRC3212	89	92.00	3.00	2.3	2.21					
		217	254.00	37.00	29.0	1.33	Incl.237	250.00	13.00	10.1	2.30
	CHRC3213D	72	74.00	2.00	1.6	1.75					

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
		254.95	269.85	14.90	12.0	1.57					
	CHRC3214	15	22.00	7.00	6.0	2.27	Incl.18	22.00	4.00	3.0	3.82
	CHRC3330	90	103.00	13.00	12.0	0.77					
		110	137.00	27.00	25.0	0.91	Incl.123	137.00	14.00	13.0	1.07
	CHRC3331	119	123.00	4.00	3.6	1.65					
		152	188.00	36.00	33.0	1.34					
		171	180.00	9.00	8.2	1.83					
	CHRC3332	95	105.00	10.00	8.0	2.18					
	CHRC3333	0	12.00	12.00	7.5	2.47					
	CHRC3334	0	5.00	5.00	4.0	3.30					

(Source: CGML 2023)

10.2.7 Aboduabo

CGML, under the Asante banner, commenced drilling on the Aboduabo Project site in November 2022 after all necessary negotiations and crop compensation issues were resolved with the local communities. To date 69 holes (RC and DD) have been completed for a total of 24,058m. Drilling was preceded by intense drill pad preparation over the steep slopes and Aboduabo Project terrain. The intention was to get as much drilling completed prior to the rain season anticipated to begin early April.

Figure 10-14: Contractor (GeoDrill) Equipment on Aboduabo Project Site

(Source: dMb 2022)

The table below lists the collar positions and depths of the holes completed.

Table 10-15: Aboduabo - 2022/23 Surface Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
	CHDD3339	42251.25	15730.33	2367.96	313.4	268	-50	DD
	CHDD3341	42399.98	15802.32	2320.38	332.4	268	-53.5	DD
	CHDD3344	41945.54	15725.77	2367.11	99.3	273	-48	DD
	CHDD3345	41999.62	15572.62	2373.62	228.4	94	-50	DD
	CHDD3346	42049.06	15530.33	2418.11	335.3	92	-48	DD
	CHDD3347	42339.78	15807.18	2319.26	266.6	272	-50	DD
	CHDD3364	42271.86	15689.38	2362.57	126.2	261.5	-45	DD
	CHDD3371	42275.33	15696.13	2362.7	171.8	120	-51	DD
	CHRC3343D	42265.16	15788.4	2350.03	277.7	271	-60	RCDD
	CHRC3348D	42340.51	15808.17	2319.14	315.4	270	-55	RCDD
Aboduabo	CHRC3349	42249.84	15785.97	2347.42	274	271	-51	RC
	CHRC3350	42226.1	15762.99	2344.32	181	267	-48	RC
	CHRC3351	42329.36	15720.5	2357.83	175	267	-47	RC
	CHRC3352	41988.49	15826.83	2320.2	240	268	-46	RC
	CHRC3353	42233.13	15711.97	2369.3	121	267	-45	RC
	CHRC3354	42399.88	15686.36	2336.56	175	266.6	-45	RC
	CHRC3355	42034.12	15796.56	2327.38	253	272	-47	RC
	CHRC3356	42425.17	15766.64	2329.17	307	267	-46	RC
	CHRC3357	42124.64	15709.72	2380.76	260	267	-46	RC
	CHRC3358D	42500.08	15781.94	2303.68	230.5	267	-45	RCDD
	CHRC3359	42124.48	15711.8	2380.62	193	267	-66	RC

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
	CHRC3360	42055.86	15683.53	2387.08	163	270	-45	RC
	CHRC3361	42055.99	15686.25	2386.98	180	268	-66	RC
	CHRC3362	42049.7	15631.05	2402.58	150	268	-68	RC
	CHRC3363	42024.73	15658.53	2397.54	154	267	-51	RC
	CHRC3365D	42424.67	15886.99	2290.3	389.7	267	-47	RCDD
	CHRC3366	42367.96	15751.35	2345.91	223	267.1	-54	RC
	CHRC3367	42367.94	15752.17	2345.75	313	267	-63	RC
	CHRC3368D	42425.67	15885.16	2290	420	267	-49	RCDD
	CHRC3369	42398.78	15689.38	2336.54	172	265	-58	RC
	CHRC3370	42330.2	15729.49	2357.38	220	265	-65	RC
	CHRC3372D	42470.67	15842.67	2294.03	276.3	267	-45	RCDD
	CHRC3373D	42203.15	15761.22	2338.26	230.2	267	-45	RCDD
	CHRC3374	42449.96	15740.72	2323.09	223	267	-45	RC
	CHRC3375D	42469.97	15851.98	2293.66	404.9	268.6	-55	RCDD
	CHRC3376	42161.2	15700.09	2376.23	149	267	-45	RC
	CHRC3377	42161.36	15701.71	2376.24	193	267	-65	RC
	CHRC3378	42106	15741.97	2370.2	100	90	-48.01	RC
	CHRC3379	42072.13	15709.45	2370.76	193	267	-45	RC
	CHRC3380	42028.07	15708.97	2374.06	193	268	-45	RC
	CHRC3381D	42102.89	15855.09	2353.41	389.8	267	-52	RCDD
	CHRC3382D	42505.11	15843.42	2288.02	345.4	267	-47	RCDD
	CHRC3383D	42000.44	15571.93	2373.45	252.16	84	-58	RCDD
	CHRC3384D	42505.29	15846.73	2287.83	379.4	271	-60	RCDD
	CHRC3385D	42149.36	15804.9	2336.11	333	266	-53	RCDD
	CHRC3386	42425.79	15716.46	2323.85	183	271	-47	RC
	CHRC3387	42425.79	15714.61	2323.71	169	270	-45	RC
	CHRC3388	42449.55	15732.55	2323.16	196	270	-45	RC
	CHRC3389D	42577.82	15620.68	2289.94	315	270	-56	RCDD
	CHRC3390D	42204.33	15760.72	2338.36	324	267	-57	RCDD
	CHRC3392D	42579.92	15738.58	2293.76	436.4	268	-53	RC
	CHRC3393D	42098.82	15614.76	2421.87	290.7	85	-59	DD
	CHRC3394	41975.55	15721.64	2368.8	124	276.5	-46	RC
	CHRC3395	41950.34	15692.33	2382.33	120	276	-45	RC
	CHRC3397	42425.14	15654.82	2333.4	340	272	-46	RC
	CHRC3398D	42262.91	15783.14	2349.1	255	266	-47	RCDD
	CHRC3399	41951.76	15749.19	2353.67	157	273	-49	RC
	CHRC3400D	42475.41	15742.91	2316.02	243.4	270	-50	RCDD
	CHRC3402	42499.78	15637.46	2301.66	160	265	-50	RC
	CHRC3403D	42498.8	15638.42	2310.66	192.3	233	-46	RCDD
	CHRC3404	42375.12	15673.23	2345.32	175	263.1	-54	RC
	CHRC3405D	42424.93	15821.45	2310.03	345.4	266	-52	RCDD
	CHRC3406D	42230.59	15783.53	2338.64	261.4	268	-58	RCDD
	CHRC3408	42329.77	15653.73	2334.13	80	97.4	-49	RC
	CHRC3409	42325.2	15646.36	2333.74	181	260	-53	RC
	CHRC3410	41985.76	15758.94	2344.22	170	263	-50	RC
	CHRC3411D	42016.99	15659.05	2397.27	145.9	141	-48	RCDD
	CHRC3412	42024.81	15661.37	2397.53	235	128	-41	RC
	CHRC3414	42170.91	15786.13	2331.64	230	255.8	-51	RC
	CHRC3418	42510.17	15717.17	2303.42	277	262	-46	RC
	CHRC3419	42544.34	15697.91	2294.28	223	258	-45	RC
	CHRC3420D	42557.54	15798.26	2292.97	362	259	-46	RC
	CHRC3422D	42639.99	15766	2286.8	325.1	242	-54	RCDD
	CHRC3424D	42640.28	15608.36	2279.89	213.4	250.7	-53.3	RCDD
	CHRC3425	42605.22	15666.55	2285.97	271	243	-57	RC
	CHRC3426	42663.12	15710.86	2279.81	217	252	-54	RC
	CHRC3427	42715.71	15608.4	2274.37	256	249	-55	RC
	CHRC3429	42739.23	15711.39	2273.23	249	249	-58	RC
	CHRC3430	42804.11	15374.82	2270.95	97	74	-43	RC
	CHRC3431	42803.67	15373	2270.72	204	73	-61	RC
	CHRC3432	42754.93	15383.89	2264.76	128	72	-43	RC
	CHRC3433	42724.22	15370.61	2266.67	167	72.2	-43	RC
	CHRC3434	42718.79	15346.71	2267.35	230	71	-46	RC
	CHRC3436	42508.44	15718.79	2303.43	262	252.9	-42	RC
	CHRC3438	42544.31	15653.44	2297.06	243	254	-45	RC
	CHRC3439D	42681.01	15805.54	2283.62	459.6	255	-51	RCDD
	CHRC3441D	42498.82	15918.09	2280.45	489.9	268	-51	RCDD
	CHRC3443	42636.5	15423.95	2294.8	153	76	-50	RC

(Source: CGML 2023)

Drilling has intersected mineralization in all holes with results extending strike length approximately > 1km in multiple mineralized structures, which highlights the strong upside potential of the mineralised deposit. Table 10-16 below report the significant intercepts received on the majority of holes drilled.

Table 10-16: Aboduabo – Recent Drilling Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)	From (m)	To (m)	Interval (m)	Au (g/t)
Aboduabo 2022	CHDD3339	96.5	117.95	21.45	2.99	Inc.106.6	117.95	11.35	4.73
	CHDD3341	188	210.00	22.00	1.31	Incl.188	191.50	3.50	1.97
						Incl.198	210.00	12.00	1.72
	CHDD3344	58	75.60	17.60	1.15	Incl.66	75.60	9.60	1.82
						Incl.70	75.00	5.00	3.05
	CHDD3345	134	136.00	2.00	2.22				
		168	177.00	9.00	2.93	Incl.171.1	175.55	4.45	4.79
	CHRC3343D	67	72.00	5.00	1.14				
		174	176.70	2.70	1.03				
		221	228.30	7.30	0.84				
		264.5	268.55	4.05	5.56				
Aboduabo 2023	CHDD3346	141	144.60	3.60	1.96				
		219.4	224.55	5.15	1.45				
	CHRC3349	202	203.00	1.00	0.58				
		258	269.00	11.00	0.48				
	CHRC3350	85	100.00	15.00	2.64	Incl.85	92.00	7.00	4.44
		137	145.00	8.00	0.97				
	CHRC3351	72	73.00	1.00	1.25				
		99	105.00	6.00	1.09				
		131	134.00	3.00	3.55				
	CHRC3352	80	82.00	2.00	0.99				
		176	178.00	2.00	0.79				
	CHRC3354	86	91.00	5.00	0.78				
	CHRC3353	38	39.00	1.00	0.82				
		49	50.00	1.00	0.69				
	CHRC3355	189	190.00	1.00	0.56				
	CHRC3356	173	190.00	17.00	0.89	Incl.173	177.00	4.00	2.74
						Incl.188	190.00	2.00	1.45
	CHRC3357	44	61.00	17.00	1.74	Incl.55	60.00	5.00	4.22
	CHDD3347	169.5	212.60	43.10	3.07	Incl. 172.8	177.20	4.40	5.02
						Incl. 182.5	190.05	7.55	4.47
						Incl. 196	205.95	9.95	6.85
	CHRC3348D	199.3	212.50	13.20	1.59	Incl. 200.15	203.50	3.35	3.93
		250.95	264.00	13.05	1.11	Incl. 250.9	254.05	3.10	4.01
		287.55	298.70	11.15	0.56				
	CHRC3358D	73	76.00	3.00	1.22				
		123	124.30	1.30	1.68				
		187	216.75	29.75	2.04	Incl. 196.65	204.50	7.85	5.47
	CHRC3359	121	147.00	26.00	3.12	Incl. 123	141.00	18.00	4.19
		175	183.00	8.00	2.94				
	CHRC3360	53	55.00	2.00	1.36				
	CHRC3361	117	120.00	3.00	1.93				
	CHRC3363	51	52.00	1.00	3.73				
	CHDD3364	33.55	36.00	2.45	1.11				
	CHRC3365D	276	277.50	1.50	1.99				
		296.25	307.50	11.25	0.53				
		313	316.00	3.00	1.14				
		369.35	376.90	7.55	1.52	Incl.372	374.15	2.15	4.02
	CHRC3366	157	183.00	26.00	1.32	Incl.172	183.00	11.00	2.43
	CHRC3367	163	199.00	36.00	1.22	Incl.177	185.00	8.00	1.52
						Incl.196	199.00	3.00	4.87
		239	242.00	3.00	2.71				
		283	287.00	4.00	1.35				
	CHRC3368D	162	163.00	1.00	11.65				
		283.6	287.25	3.65	0.65				
		301	315.75	14.75	1.18	Incl.303.25	307.15	3.90	2.25
	CHRC3369	102	104.00	2.00	0.92				
	CHRC3370	125	130.00	5.00	0.88				
	CHRC3374	168	196.00	28.00	1.81	Incl.168	177.00	9.00	4.10
	CHRC3376	45	57.00	12.00	1.46	Incl.53	56.00	3.00	3.03
	CHRC3377	0	15.00	15.00	1.24	Incl.0	3.00	3.00	4.21
		51	74.00	23.00	2.31	Incl.52	63.00	11.00	2.84
		159	164.00	5.00	1.37				

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)	From (m)	To (m)	Interval (m)	Au (g/t)
	CHRC3378	85	86.00	1.00	9.81				
	CHRC3379	112	113.00	1.00	1.13				
	CHDD3371	92	95.20	3.20	0.89				
	CHRC3372D	232.3	244.60	12.30	0.92				
		256.5	265.90	9.40	1.20				
	CHRC3373D	86	88.00	2.00	0.91				
		126	126.95	0.95	1.21				
		186.25	187.55	1.30	0.85				
	CHRC3380	5	7.00	2.00	0.73				
		43	46.00	3.00	1.16				
		62	64.00	2.00	1.26				
	CHRC3375D	230.5	232.00	1.50	3.30				
		287.2	335.00	47.80	1.76	Incl. 287.2	313.90	26.70	2.06
						Incl. 295.35	301.00	5.65	4.23
		360	364.80	4.80	4.14				
		394.7	396.80	2.10	1.30				
	CHRC3381D	58	60.00	2.00	1.40				
	CHRC3382D	246.27	269.80	23.53	0.84	Incl.246.27	249.85	3.58	2.39
	CHRC3383D	203	204.40	1.40	1.06				
	CHRC3384D	132	134.00	2.00	0.97				
		280.75	317.55	36.80	2.56	Incl.280.75	302.30	21.55	3.12
						Incl.289.4	295.30	5.90	4.18
		355.7	358.07	2.37	3.24				
	CHRC3386	120	133.00	13.00	3.33	Incl. 126	133.00	7.00	4.99
	CHRC3387	72	75.00	3.00	0.61				
		104	131.00	27.00	1.48	Incl. 112	115.00	3.00	5.58
	CHRC3388	153	167.00	14.00	0.98	Incl. 160	163.00	3.00	2.75
	CHRC3385D	51	52.00	1.00	5.79				
		181	183.00	2.00	4.57				
		234	238.00	4.00	2.15				
	CHRC3386	120	150.00	30.00	2.81	Incl.126	150.00	24.00	3.16
						Incl.126	133.00	7.00	4.99
	CHRC3389D	126.85	133.75	6.90	1.42				
	CHRC3390D	163	165.40	2.40	0.72				
		175.3	181.00	5.70	0.56				
		195.9	206.00	10.10	6.48				
	CHRC3392D	195	208.00	13.00	1.02				
		247	251.45	4.45	1.87				
		304.95	306.70	1.75	0.83				
	CHRC3393D	120	122.00	2.00	0.76				
	CHRC3394	0	11.00	11.00	1.63				
		44	53.00	9.00	3.04				
	CHRC3395	0	39.00	39.00	0.61				
	CHRC3397	47	49.00	2.00	1.03				
	CHRC3398D	125.67	137.50	11.83	1.19	Incl.125.67	129.10	3.43	3.76
		153	162.90	9.90	1.29				
		238.25	241.45	3.20	0.95				
	CHRC3399	36	38.00	2.00	1.09				
		101	114.00	13.00	1.77	Incl.106	112.00	6.00	2.94
	CHRC3400D	110.97	113.10	2.13	2.02				
		166.35	192.95	26.60	2.27	Incl.169.7	178.00	8.30	4.20
	CHRC3402	81	83.00	2.00	0.69				
		156	158.00	2.00	0.66				
	CHRC3403D	51	57.00	6.00	3.54				
		155	157.20	2.20	1.42				
	CHRC3404	29	56.00	27.00	1.29	Incl.29	36.00	7.00	3.17
		161	166.00	5.00	0.68				
	CHRC3405D	229.51	246.30	16.79	1.41	Incl. 232.55	237.40	4.85	3.64
		274.5	291.65	17.15	4.27	Incl. 274.5	282.20	7.70	8.94
	CHRC3406D	166.3	180.70	14.40	0.69				
		222	242.50	20.50	8.73				
	CHRC3408	4	5.00	1.00	2.35				
		47	49.00	2.00	4.89				
	CHRC3409	21	22.00	1.00	0.54				
	CHRC3410	99	125.00	26.00	1.97	Incl.118	125.00	7.00	4.76
	CHRC3411D	0	3.00	3.00	5.46				
		46	111.00	65.00	1.41	Incl. 46	70.20	24.20	2.47
						Incl. 63	70.20	7.20	6.03

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)	From (m)	To (m)	Interval (m)	Au (g/t)
						Incl. 77.9	89.95	12.05	1.57
	CHRC3412	20	30.00	10.00	2.22	Incl.23	27.00	4.00	4.54
		52	68.00	16.00	1.68				
	CHRC3414	166	183.00	17.00	3.18	Incl.171	176.00	5.00	7.31
		190	201.00	11.00	3.18				
	CHRC3418	114	122.00	8.00	1.15				
		127	133.00	6.00	1.14				
		150	159.00	9.00	1.82				
		169	171.00	2.00	2.05				
	CHRC3419	104	106.00	2.00	1.93				
		178	181.00	3.00	5.35				
	CHRC3420D	209.55	233.30	23.75	3.18	Incl.214.7	224.80	10.10	5.83
	CHRC3422D	218.2	224.60	6.40	3.82				
		244	246.60	2.60	1.87				
	CHRC3424D	115	116.40	1.40	0.74				
		131.85	134.00	2.15	0.89				
		141	149.00	8.00	0.50				
	CHRC3425	119	125.00	6.00	1.23				
		133	157.00	24.00	1.70	Incl.135	141.00	6.00	3.82
	CHRC3426	187	191.00	4.00	1.17				
	CHRC3427	92	93.00	1.00	0.85				
		189	190.00	1.00	1.08				
	CHRC3429	218	226.00	8.00	0.92	Incl. 223	225.00	2.00	1.38
	CHRC3430	18	24.00	6.00	0.67				
	CHRC3431	61	67.00	6.00	1.35	Incl. 65	67.00	2.00	3.50
	CHRC3432	35	39.00	4.00	0.87				
		84	86.00	2.00	1.81				
	CHRC3433	70	72.00	2.00	1.43				
	CHRC3434	111	125.00	14.00	1.78	Incl. 111	117.00	6.00	2.37
	CHRC3436	111	119.00	8.00	1.77				
		132	140.00	8.00	1.04				
		148	157.00	9.00	2.71	Incl. 153	157.00	4.00	4.74
	CHRC3438	25	27.00	2.00	1.13				
		209	210.00	1.00	1.69				
	CHRC3439D	305	307.00	2.00	0.97				
		321	322.00	1.00	3.91				
	CHRC3441D	334	337.00	3.00	1.13				
		380.3	427.00	46.70	1.90	Incl.380.3	413.75	33.45	2.42
						Incl.402.1	413.00	10.90	4.37
		439.9	449.60	9.70	1.62				
	CHRC3443	44	53.00	9.00	3.47				
		60	62.00	2.00	2.35				
		105	113.00	8.00	1.86				

(Source: CGML 2023)

Figure 10-15 and Figure 10-16 below illustrate the strike and depth mineralized potential of Aboduabo for additional lateral extension and underground investigation into the future below the planned open pit outline from the recent drilling exercise.

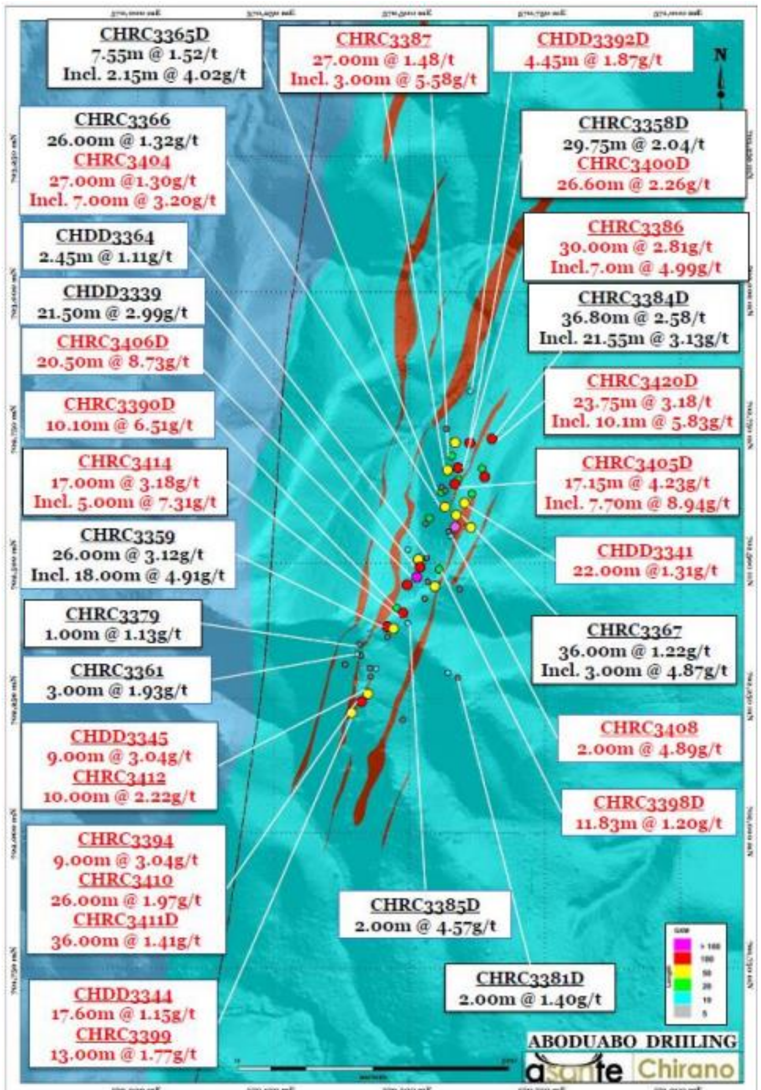


Figure 10-15: Aboduabo Project - Plan View of Recent Drilling Results

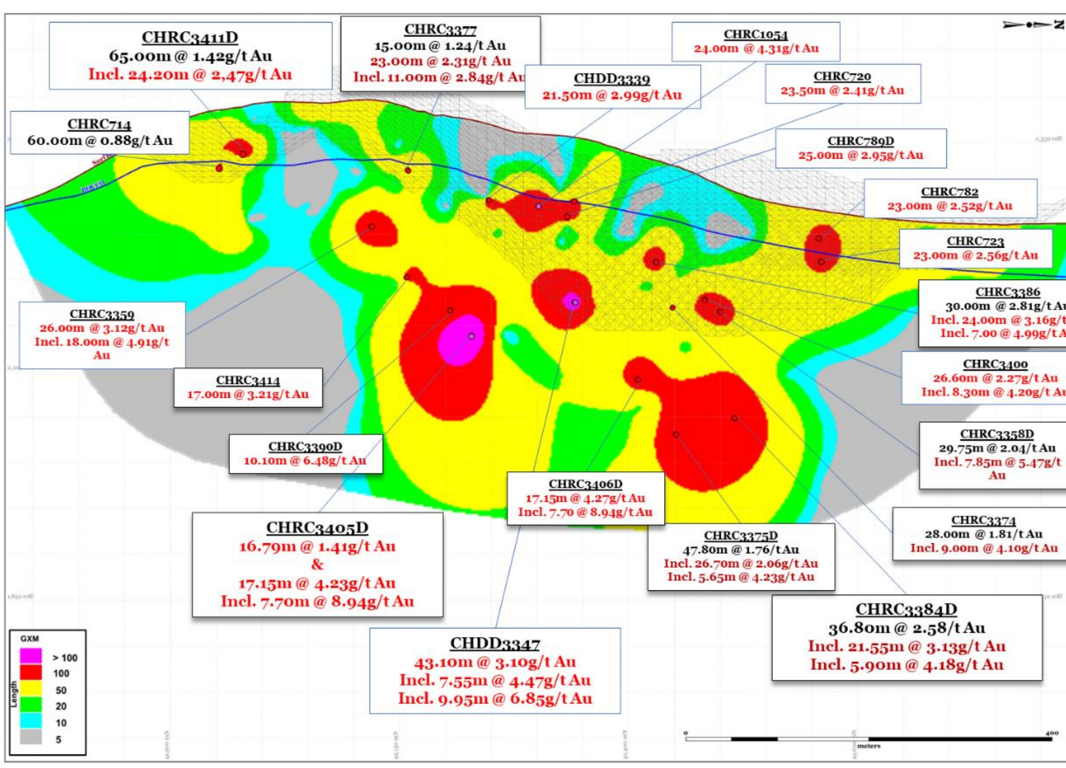


Figure 10-16: Aboduabo Project – Significant Intercepts

10.3 Generative Drill Targets

10.3.1 Mag Hinge

Exploration drilling for Mag Hinge deposit which is within 3km trackable distance from Akwaaba in the Ahwiam PL continued in 2022. 21 DD/RCDD holes, totalling 3,327m have been completed to date. Drilling focussed on depth extension and improving continuity over the defined >500m strike length with the view of helping to refine understanding of the structural controls and corridors of mineralization as the deposit graduates into scoping studies.

Three of the holes drilled to the north did not show positive results and returned gold assay results below 1.2g/t Au over 8m width. These holes touched the peripherals of the gentle-steep north plunging shoot and suggest limit of mineralization to the north. The next phase of drilling is planned to focus on converting the resources following completion of metallurgical testing of the samples. The tables below summarize the collar positions and significant intercepts.

Table 10-17: Mag Hinge - 2022/23 Surface Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Magnetic Hinge	CHRC3233	28143.49	17478.45	2225.22	236	83	-45	RC
	CHRC3234D	28143.65	17475.65	2225.26	255	85	-54	RCDD
	CHRC3236D	28114.1	17474.24	2224.07	269	85	-58	RCDD
	CHRC3237D	28049.07	17516.82	2222.26	227.3	86	-57	RCDD
	CHRC3239	28123.24	17603.67	2234.09	116	90	-44	RC
	CHRC3240	28102.71	17567.12	2230.23	152	87	-48	RC
	CHRC3242D	28048.65	17515.67	2222.24	245.5	88	-64	RCDD
	CHRC3243	28049.16	17575.01	2226.58	140	87	-45	RC
	CHRC3246	28055.59	17571.6	2227.09	146	79	-45	RC
	CHRC3247D	27908.38	17549.67	2221.71	201	88	-62	RCDD
	CHRC3248	28157.4	17625.02	2236.95	70	86	-47	RC
	CHRC3249	28157.5	17627.02	2236.93	113	89	-76	RC
	CHRC3251	28025.33	17541.36	2222.02	212	90	-60	RC
	CHRC3252	28025.22	17567.1	2222.94	176	90	-45	RC
	CHRC3255	28004.04	17578.66	2223.54	170	90	-48	RC
	CHRC3256	27949.16	17631.16	2226.06	118	78	-65	RC
	CHRC3257	27920.87	17637.96	2225.31	98	85	-50	RC
	CHRC3258	27867.89	17657.58	2223.62	66	78	-45	RC
	CHRC3259	27882.31	17619.96	2222.43	150	88.19	-75.01	RC
	CHRC3260	28025.2	17636.11	2232.01	74	90	-44	RC
	CHRC3261	28068.77	17621.4	2233.67	92	79	-43	RC

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Magnetic Hinge drilling.

Table 10-18: Mag Hinge – Recent Drilling Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Mag Hinge 2022	CHRC3233	209	213.00	4.00	3.2	1.09					
	CHRC3234D	242.7	243.25	0.55	0.5	2.02					
	CHRC3236D	158	163.00	5.00	3.0	1.64					
		254	255.00	1.00	0.7	0.88					
	CHRC3237D	52	53.00	1.00	1.0	1.49					
		187	206.00	19.00	14.6	0.89	Incl.199	205.00	6.00	4.6	1.03
	CHRC3239	72	74.00	2.00	1.6	1.19					
	CHRC3240	132	142.00	10.00	8.0	1.02					
	CHRC3243	103	110.00	7.00	5.7	1.18					
	CHRC3246	104	107.00	3.00	2.5	0.77					
		120	133.00	13.00	11.0	1.25	Incl.121	127.00	6.00	5.0	1.56
	CHRC3247D	169.3	179.05	9.75	7.1	1.02					
	CHRC3248	27	37.00	10.00	8.2	0.59					
	CHRC3249	25	27.00	2.00	0.8	4.98					
		32	35.00	3.00	1.2	1.02					
		66	83.00	17.00	7.0	2.54	Incl.73	80.00	7.00	2.8	4.50
	CHRC3251	26	28.00	2.00	1.2	2.08					
		196	200.00	4.00	2.4	0.88					
	CHRC3252	109	111.00	2.00	1.8	0.93					
		152	157.00	5.00	3.9	1.05					
	CHRC3255	101	106.00	5.00	3.8	0.43					
		128	132.00	4.00	3.0	0.86					
		142	143.00	1.00	1.0	1.25					
		150	152.00	2.00	1.5	0.90					
	CHRC3256	61	87.00	26.00	17.0	0.77	Incl.74	81.00	7.00	4.6	1.45
	CHRC3257	46	53.00	7.00	5.8	0.76					
	CHRC3258	26	31.00	5.00	4.5	1.38					
	CHRC3259	98	112.00	14.00	7.0	1.00	Incl.103	108.00	5.00	2.5	1.51
	CHRC3260	37	39.00	2.00	1.7	1.17					
	CHRC3261	51	62.00	11.00	9.6	1.22	Incl.54	61.00	7.00	6.1	1.43

(Source: CGML 2023)

Geological observation and interpretation from the holes indicates a mineralized structure defined by brecciated zones associated with pyrite-carbonate-silica alteration assemblage with numerous quartz veins. Lithological controls on mineralization are dominantly quartz dolerites, tonalites and porphyries.

10.3.2 Kolua

Kolua sits 300m south-west of Suraw pit and has potential for open pit oxide material to supplement the mill. Historically 70 DD holes (10,938m) have been drilled over this mineralized body. A follow-up drill program was initiated in March 2022 and aimed at obtaining samples for metallurgical test work as part of a pre-feasibility study of the project. 7 RC holes (923m) were completed.

The objective of the drilling was to upgrade and convert inferred resources into indicated category for open pit optimization. Drilling results revealed approximately 180m strike length of continuous mineralization with average vertical height of 100m within the hot spot area. Generally, mineralization is located on the N-S structural corridor off the main lode horizon but parallel to the Obra-Mamnao trend in terms of geometry.

The table below summarises the collar locations for the underground Kolua drill exercise.

Table 10-19: Mag Hinge - 2022/23 Surface Drilling Collar Positions

Mineralized Deposit	Hole ID	North	East	Elevation (m)	Depth (m)	Azimuth (˚)	Dip (˚)	Hole Type
Kolua	CHRC3224	33026.84	16136.05	2455.72	68	85.77	-46.06	RC
	CHRC3225	33026.79	16138.3	2455.66	132	84.27	-69.18	RC
	CHRC3226	33073.46	16084.81	2467.78	146	90	-50	RC
	CHRC3227	33100.3	16133.42	2470.47	100	90	-48	RC
	CHRC3228	33101.66	16098.31	2473.1	146	90	-58	RC
	CHRC3230	33123.55	16082.22	2479.04	146	90	-44	RC
	CHRC3231	33124.08	16082.85	2479.08	185	58.58	-68.18	RC

(Source: CGML 2023)

The table below lists the pertinent significant intercepts obtained from the Kolua drilling.

Table 10-20: Kolua – 2022/23 RC Drilling Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	TW (m)	Au (g/t)
Kolua 2022	CHRC3224	18	25.00	7.00	6.0	0.61
	CHRC3225	37	39.00	2.00	1.8	1.89
		72	73.00	1.00	0.8	1.18
		83	84.00	1.00	0.8	1.10
	CHRC3226	83	85.00	2.00	1.7	2.75
		99	100.00	1.00	0.8	2.25
		108	110.00	2.00	1.7	0.54
		129	133.00	4.00	3.1	1.63
	CHRC3227	44	57.00	13.00	10.1	1.60
		Incl.45	52.00	7.00	5.4	1.84
		72	74.00	2.00	1.6	1.63
	CHRC3228	47	48.00	1.00	0.7	1.41
		72	73.00	1.00	0.7	1.66
		90	92.00	2.00	1.6	1.27
		132	133.00	1.00	0.7	1.19
	CHRC3230	104	106.00	2.00	1.6	1.82
		120	127.00	7.00	5.5	1.11
	CHRC3231	144	145.00	1.00	0.7	1.16
		151	152.00	1.00	0.7	1.32

(Source: CGML 2023)

10.4 Drilling Procedures

The QP was able to investigate the various standard procedures present that document the logging and sampling protocols implemented by the site team and drilling contractors for both the diamond drilling and RC drilling activities. The procedures are designed to ensure that data is collected in a manner acceptable for feasibility level studies and to satisfy CIM NI 43-101 regulations and standards. Some of these protocols are summarised below and additional information regarding sample preparation and analysis is covered in Section 11.

10.4.1 Drill Hole Location and Rig Setup

Collar locations are reported in the local Chirano Mine Grid. For surface drilling, surveyors mark the drill pad using pegs and reflective tapes to help the drillers positioning the rig. The pegs and tapes are aligned according to the proposed orientation using a Sokkia Total Station and the coordinates and azimuth are written on the reflective tape for verification. For underground platforms, the rig is aligned using True North seeking Gyro azimuth aligner after development of the drill chamber using Survey Leica instruments to set out the holes. Final survey pickups are done using same survey instruments after anchorage. Down hole surveys are captured using Reflex NQ2 Ori tool. Drill hole trend is monitored using Reflex EZ-Trac, and Site geologists monitor it in Micromine. The Reflex data can be accessed through the HUB, which is downloaded, saved in the server and imported to Fusion.

Micromine Software is used to plan required collar positions. Coordinates are and azimuths are given to the survey department. If impediments to the initial site exist, then alternative more suitable collar positions are created. The collar is pegged by the surveyor and the coordinates recorded using a survey Total Station theodolite.

10.4.2 Core Logging and Core Recovery Measurement

Core from the field or from underground is transported to the core shed. Logging is started after the metre marks, drill run measurements and orientation has been completed by the relevant Geotechnicians. This information is loaded directly into DHLogger. The ideal order of logging is as follows:

- Lithology – major rock types.
- Rock description – done as core arrives to feed directly into Micromine to ensure hole depths are maintained and no unnecessary overruns occur.
- Rock quality -RQD and recovery data is recorded.
- Structure – alteration, structural event and description, veining, magnetic susceptibility.

Markings for cutting and sampling are done by the logging geologist after all information has been input into DHLogger. The markings take into consideration the following:

- Lithological contacts – contacts not crossed for samples.
- Alteration - separate altered from un-altered core samples.
- Sample intervals – between 0.5m and 1.0m.

All samples, core and QC, are marked with unique sampling numbers captured directly in DHLogger.

Core recoveries are calculated at the drilling site by qualified technicians and recorded in the geological logs. The core is transferred from the trays and pieced together on a V-rail (angle iron) rack and the recoveries calculated. The recording of recoveries is the responsibility of the geologist. Core recoveries are typically more than 95%.

10.4.3 Geotechnical Logging

Data of the drilling blocks is recorded in the geotechnical logging form by the logging geologist. He then verifies that the blocks are marked in the box trays and checks the run length data. The geotechnical characteristics of the rockmass are recorded to provide all necessary data for rockmass classification schemes.

10.5 Factors Influencing the Accuracy of Results

The Author is of the opinion that the historical and current drilling programmes have been done according to strict industry standard protocols and under the experienced supervision of qualified and experienced geological mine personnel and Senior Mining Executives and are considered suitable for incorporation into currently utilised geological models and MREs.

Drilling is carried out currently by Geodrill Limited (a TSX listed company), a leading exploration drilling company with operations in two continents and vast experience in Africa, in particular Ghana. It has a fleet of world class surface and underground drill rigs and employs experienced professional drill crews.

Analytical quality assurance and quality control procedures include the systematic insertion of blanks, standards and duplicates into the sample. Drill spacing and planning reflects the nature of mineralization and the geologic settings. Bulk density determination of samples was conducted historically using appropriate method and was deemed appropriate reflecting the various weathering profiles.

11. SAMPLE PREPARATION, ANALYSIS AND SECURITY

The QP from Bara Consulting has reviewed current Standard Operating Procedures ("SOPs") in relation to sampling, sample preparation, analysis and security and reviewed sampling practises on site during the October 2023 site visit (see Section 12.1). In addition, Quality Control and Quality Assurance ("QAQC") program protocols and procedures, monthly reports and relevant datasets were also reviewed.

11.1 Drill Core Sampling Procedures

After geological logging is completed on drill core, core material is marked up for sampling taking into account the following requirements;

- Sampling to lithological contacts;
- Sampling of different alteration styles within lithological units;
- Sampling based on intensity of brecciation, sulphide zonation, quartz vein intensity and structural contacts; and;
- Sampling intervals taken are ≥0.5 m and ≤1 m to ensure standard sample support.

11.1.1 Core Photography

All diamond drill core is photographed prior to cutting and sampling by a digital camera with high resolution. This provides a visual record of core material, which may be reviewed with received assay data, or as part of ongoing refinement to the geological and structural model at Chirano. Photographs are taken of core both wet and dry. A standard setup is in place that provides a consistent frame and camera mount. The captured photos include hole number, box number, approximate drilled interval and scale and are stored electronically in the exploration network drive. Once the photos for a particular hole are completed, the core shed supervisor/assistant downloads them immediately and conducts a quality control exercise to make sure that they are of good quality before cutting commences. An example of a photographed core is shown in Figure 11-1.

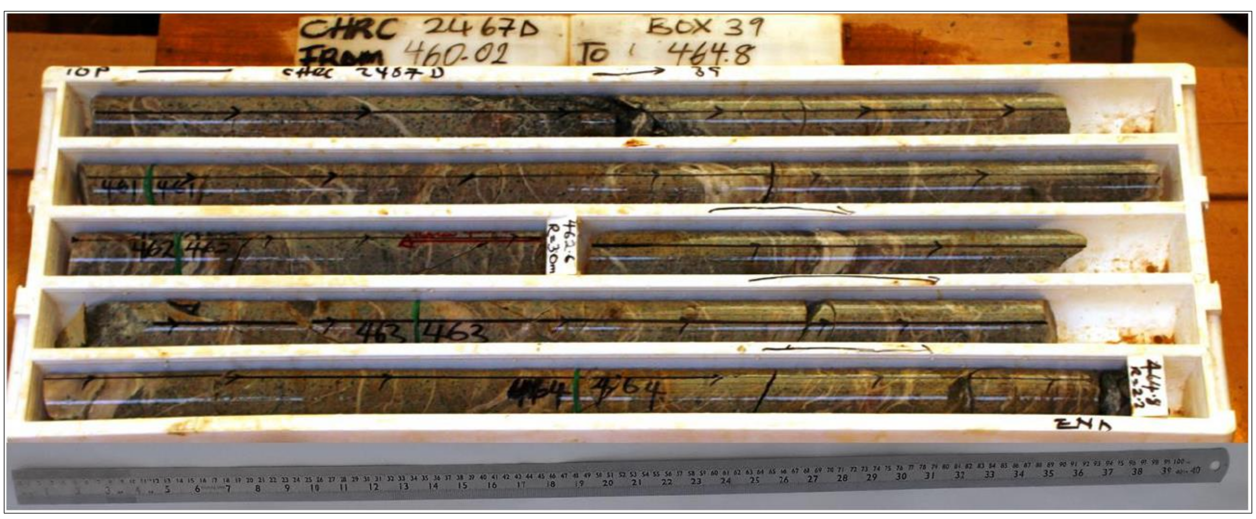


Figure 11-1: Example of Photographed Core (Source: Chirano Standard SOP 43)

11.1.2 Core Cutting and Core Sampling

Core cutting is carried out along the temporal cutting line which is parallel to the orientation line on the core. The core is then split into two equal halves. The core orientation line is preserved in retained core halves.

Sampling is carried out by the logging geologist on the marked intervals on the half core that does not contain the orientation line and broken into the sample bag. The sample bag is labelled with a unique sample number and one of the two paper sample tickets containing the sample number placed in it, whilst the other is stapled onto the sample bag. The drillhole ID, interval, sample type and requested analyses are then recorded on the sampling sheet. The other half core is retained for future reference. In the case of sampling a field duplicate interval, the other half core is sent for sampling and no core for that interval is left in the box.

The marked intervals including QC samples are assigned unique sample numbers, captured directly in DHLogger and printed for the cutting crew to guide in cutting and sampling.

11.1.3 Quality Control Insertion

Insertion of QC samples is carried out in adherence to the relevant SOP (Standard_43_DD Logging and Sampling Procedures.pdf) by either the core shed supervising geologist or the logging geologist who ensure that any submission to the laboratory contain control samples i.e., standards, duplicates and blanks, in addition to primary samples. Sampling sheets include the names of the Geologist and Senior Technician supervising the sampling and the sample bags are clearly labelled with the sample numbers and the duplicate sample numbers with a ticket from the ticket book placed in them. Serial numbers of standards inserted are attached to the corresponding ticket stub in the ticket book to provide a record of the inserted standard. Bulk sample bags are clearly labelled with the hole number and sample interval.

The standard identification sticker is removed before insertion and its ID written on the sample sheet. The records of submission are kept on the exploration network drive as soon as the samples are dispatched to the laboratory.

Standards reference material (“SRM”) samples and blanks are added to all sample batches for both RC and DD according to the following procedure:

- RC drilling standards and blanks are inserted at a rate of 1:60 samples and 1:40 samples respectively.
- DD drilling standards and blanks are inserted at a rate of 1:40 samples.
- RC drilling field duplicates are taken at a rate of 1:25 samples where duplicates comprise splits of the same sampling interval.
- The splits are bagged separately with separate sample numbers to be blind to the laboratory.
- DD field duplicates are inserted at a rate of 1:20 samples and are based on half core.

11.1.4 RC Splitting, Sampling and QAQC

The RC chip samples are homogenized, prior to final splitting, by passing them through the splitter and then recombined into a large bag. This helps reduce sampling error and improve precision. After splitting with a riffle splitter, each sample is then collected from the cyclone using a large plastic bag marked with hole ID and sample interval where it is the weighed and the sample bag sealed. The riffler splitter is cleaned thoroughly after each sample.

The preferred method of splitting and original/duplicate sampling is as shown in Figure 11-2.

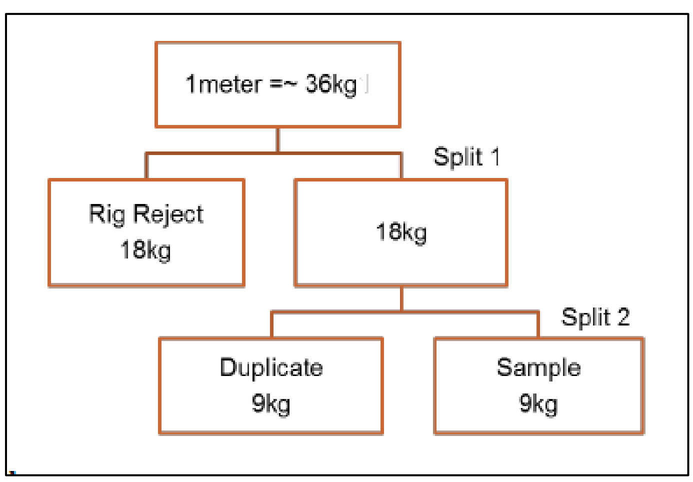


Figure 11-2: Preferred Method of Splitting and Original/Duplicate Sampling

In the event of wet samples, two splitters are used, and one splitter rinsed with fresh water while the other is in use. Each sample alternates the splitter used and is split with a clean splitter to prevent contamination.

For bulk sampling (coarse rejects), the remaining bulk samples are organised neatly and in order near the drill rig with the open top turned down to prevent contamination. Once QAQC has passed, the bulk samples are disposed of with bags brought to the waste dump under the instruction of the supervising geologists.

11.2 Sample Preparation and Analysis

For the reporting period January 2022 to December 2023, and since 2011, the primary laboratory used to analyse Chirano samples was ALS Chemex, Kumasi, approximately 120km from Chirano Mine Site whilst Intertek Laboratory serves as the secondary laboratory, located in Tarkwa. Historically, SGS was the primary laboratory whilst Analabs Laboratory was used as the secondary, “check” laboratory. Both are independent laboratories located in Tarkwa.

Registration and accreditation of the laboratories are as follows:

- ALS is currently accredited with SANAS for ISO17025. Accreditation No. T0747.
- Intertek is currently accredited with SANAS for ISO17025. Accreditation No. T0796.
- SGS is currently accredited with SANAS for ISO/IEC17025. Accreditation No. T0638.
- Analabs is currently accredited with accredited with ISO/IEC17025.

RC samples are collected in pre-numbered bags at the drill rig and checked at the core shed. Locations for standard and blanks are pre-marked and standards and blanks are added to each batch prior to submitting at the core shed. DD core samples are logged and bagged at the core shed. The laboratory collects the samples, and the laboratory personnel checks the samples, reconciles with site personnel and then signs as received. Digital copies of the assay certificates received from ALS Laboratory are stored in the Fusion database on an SQL server and backed up on portable drives. Hard copies of original assay certificates are stored at the mine.

All RC and DD core samples submitted to the laboratory for analyses weigh about 2 to 3 kilograms on submission. The entire sample is oven dried then pulverized to better than P90 -75µm with 50-gram charge Fire Assay and AAS (atomic absorption spectroscopy) finish.

11.3 Quality Analysis and Quality Control Procedures

The Chirano Exploration department routinely submits pulp samples returned from ALS to the Intertek Laboratory in Tarkwa. SRMs to monitor the ALS laboratory performance were obtained from Rocklabs Ltd of New Zealand and Geostats Pty Ltd in Australia while, blanks are in house prepared from barren Kumasi basin granites.

The QP has conducted spot checks on the QAQC datasets via referencing original assay certificates, has reviewed the QA/QC program analysis completed by Chirano over time via review of monthly QAQC reporting and has reviewed control plots for SRMs and blanks as well as duplicate graphs. The QAQC dataset covers sampling completed over project areas, Akoti, Akoti North, Akoti South, Akwaaba, Obra, Paboase, Suraw, Sariehu, Mamnao and Tano.

11.3.1 Standard Reference Material Analysis – Period 2022-2023

The QP was provided with QAQC data for the period January 2022 to September 2023. During this period SRMs were included in the Chirano drilling campaigns at regular intervals as discussed in Section 11.1.3. Up to 17 different SRMs were used in the drilling campaigns to analyse 1,048 samples.

The SRMs, with expected gold values ranging from 0.132g/t to 8.52g/t, were used during the programme and were included in each dispatch to the laboratory. The SRMs provide a good indication of the overall accuracy and precision of each batch of analytical results, with an appropriate grade range to cover the grade population of each deposit.

Spots checks were completed and the SRM performance analysed.

Control plots are contained in Figure 11-3 to Figure 11-19 below. A summary, Table 11-1, shows the Rocklabs standards used, their certified value, number of analyses, analytical average, lower and upper limits, failures and % bias.

Table 11-1: Chirano CRM Performance Summary (Rocklabs Standards, Analysed by ALS Chemex, Kumasi)

Standard	Number Analysed	Certified Value	Analytical Average	Lower Limit	Upper Limit	Failures (no)	Failures (%)	Analytical Average %Bias
OxB146	122	0.132	0.134	0.114	0.150	11	9.02%	-1%
OxC168	103	0.213	0.213	0.195	0.231	4	3.88%	0%
OxG103	25	1.019	1.014	0.935	1.103	0	0.00%	0%
OxG140	88	1.019	1.015	0.953	1.085	1	1.14%	0%
OxG180	163	0.971	0.995	0.893	1.049	0	0.00%	-2%
OxH163	34	1.313	1.335	1.235	1.391	1	2.94%	-2%
OxK160	23	3.674	3.583	3.440	3.908	1	4.35%	2%
SC110	35	0.235	0.221	0.208	0.262	3	8.57%	6%
SE114	23	0.634	0.610	0.586	0.682	0	0.00%	4%
SG113	104	1.024	1.023	0.967	1.081	3	2.88%	0%
SH98	36	1.400	1.356	1.316	1.484	2	5.56%	3%
Si81	131	1.790	1.788	1.700	1.880	1	0.76%	0%
SJ111	11	2.812	2.809	2.608	3.016	3	27.27%	0%
SJ121	47	2.715	2.726	2.529	2.901	0	0.00%	0%
SL123	40	5.899	5.851	5.536	6.262	0	0.00%	1%
SN103	36	8.520	8.476	8.082	8.958	0	0.00%	1%
SN117	27	8.443	8.538	8.113	8.773	0	0.00%	-1%

Observations from Table 11-1 show a low bias of the sample set relative to the SRM average values (+/-2%) indicating good overall accuracy and precision of each batch of analytical results apart from SRM SC110 and SEC114 (at 6% and 4% respectively). A review of the control plots below does not suggest consistent bias on analytical drift.

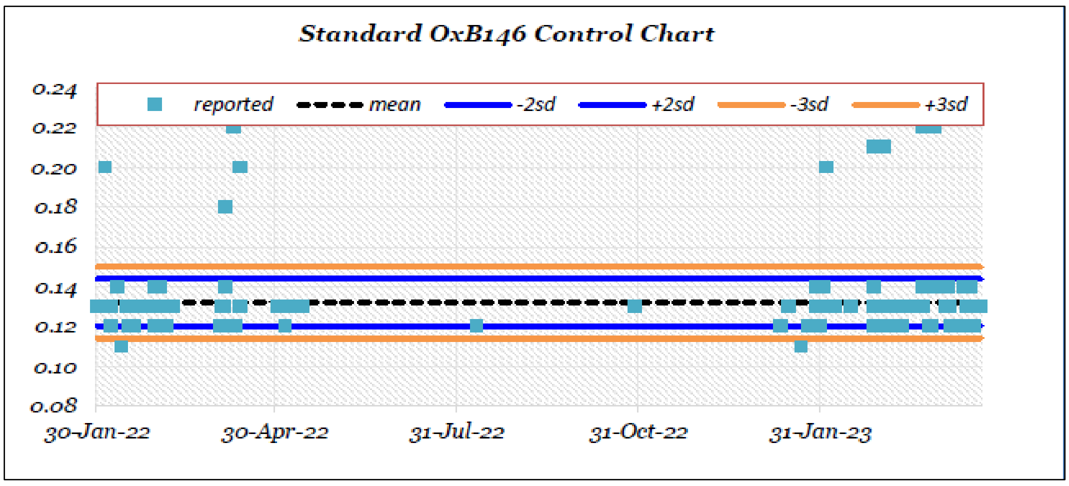


Figure 11-3: Standard OxB146

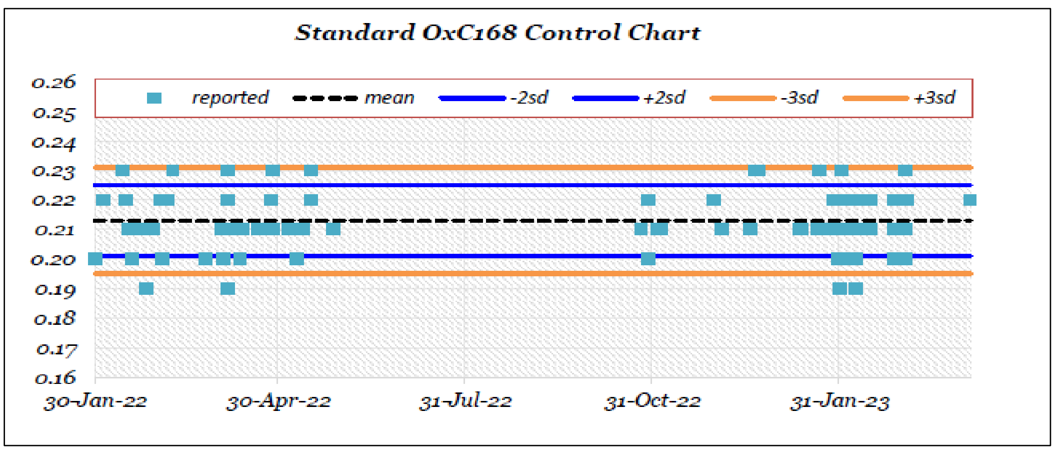


Figure 11-4: Standard OxC168

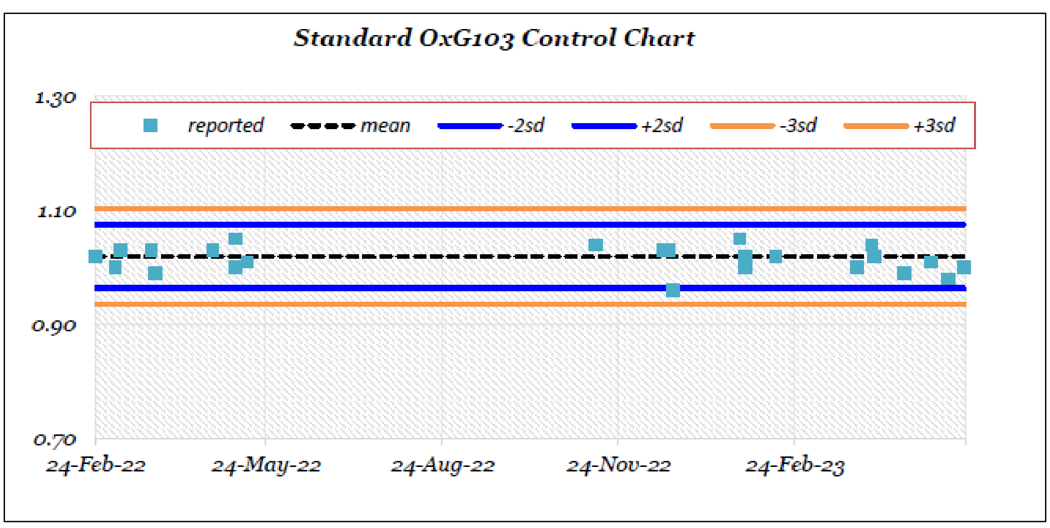


Figure 11-5: Standard OxG103

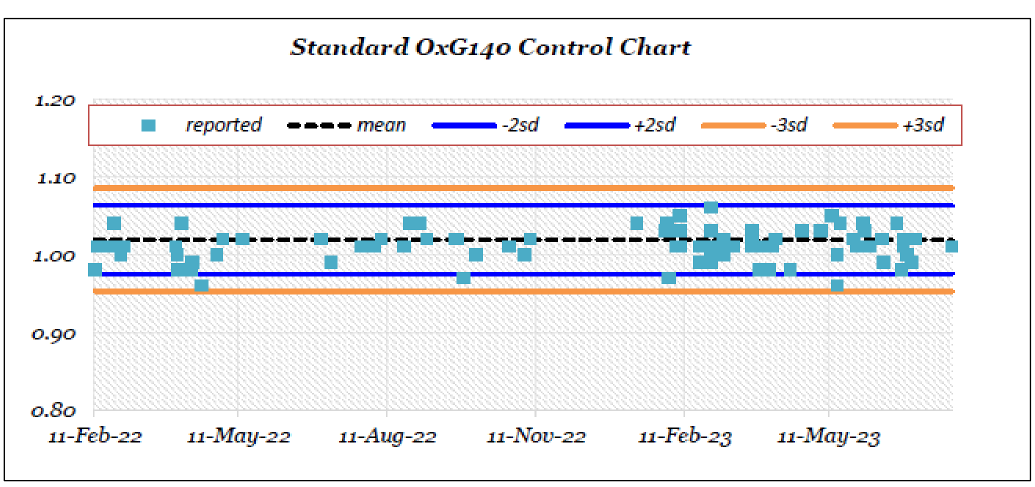


Figure 11-6: Standard OxG140

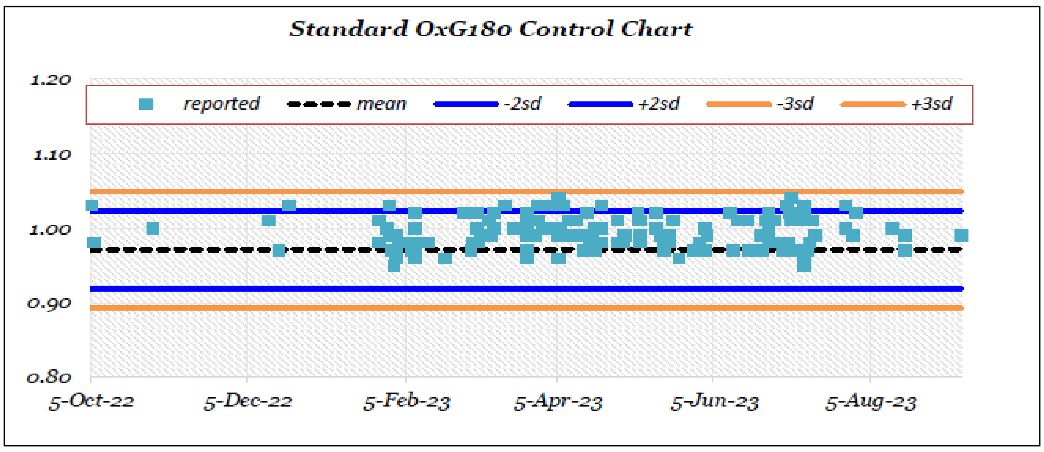


Figure 11-7: Standard OxG180

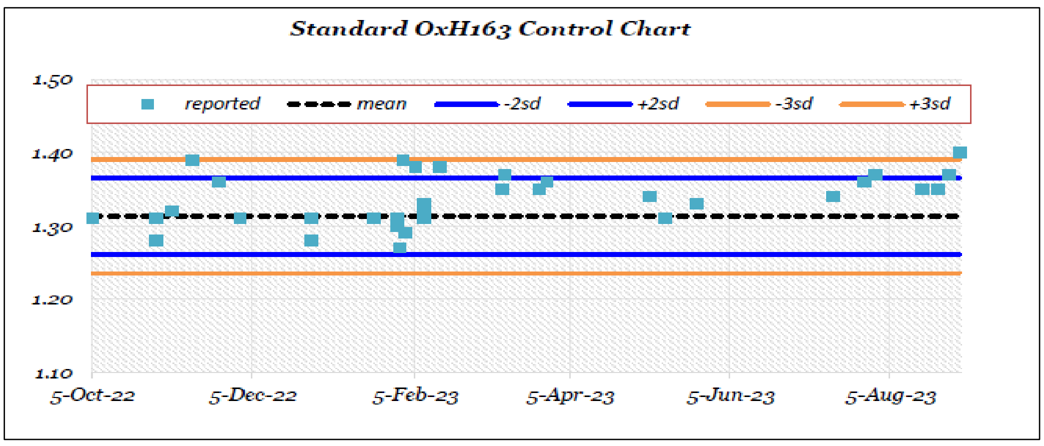


Figure 11-8: Standard OxH163

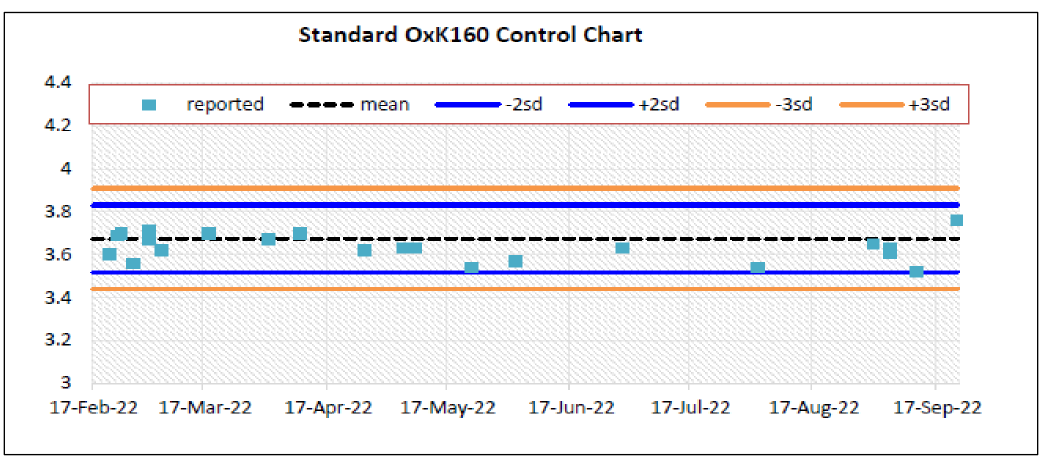


Figure 11-9: Standard OxK160

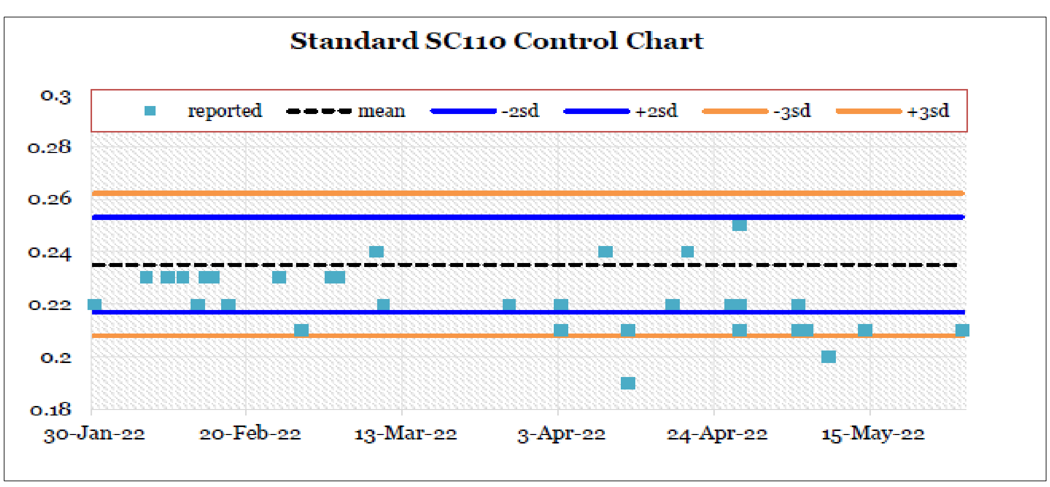


Figure 11-10: Standard SC110

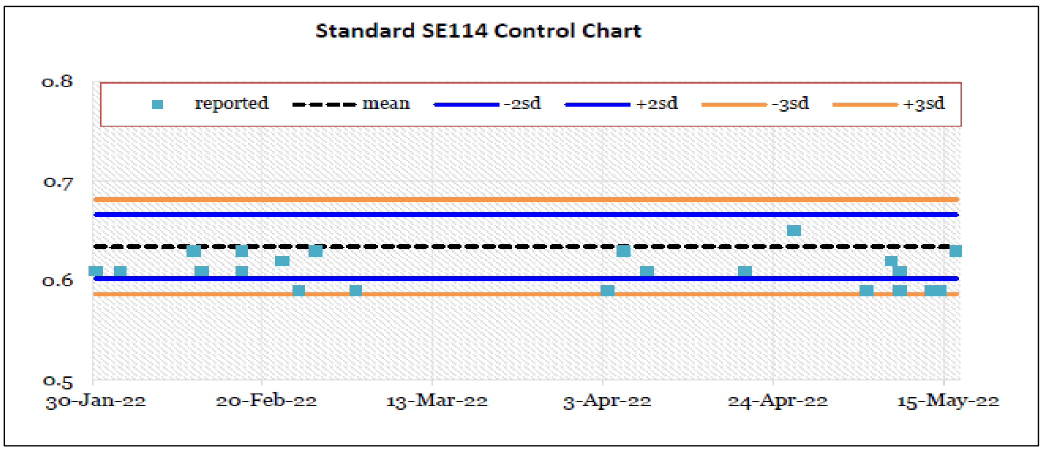


Figure 11-11: Standard SE114

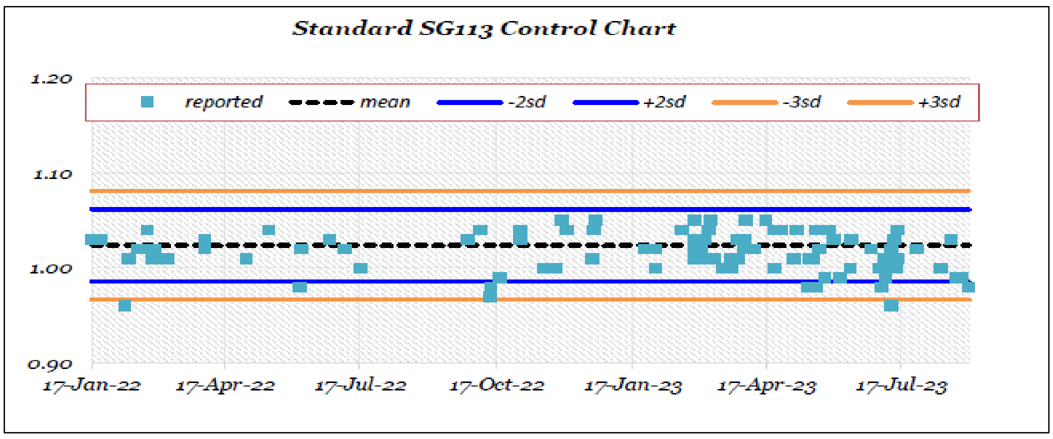


Figure 11-12: Standard SG113

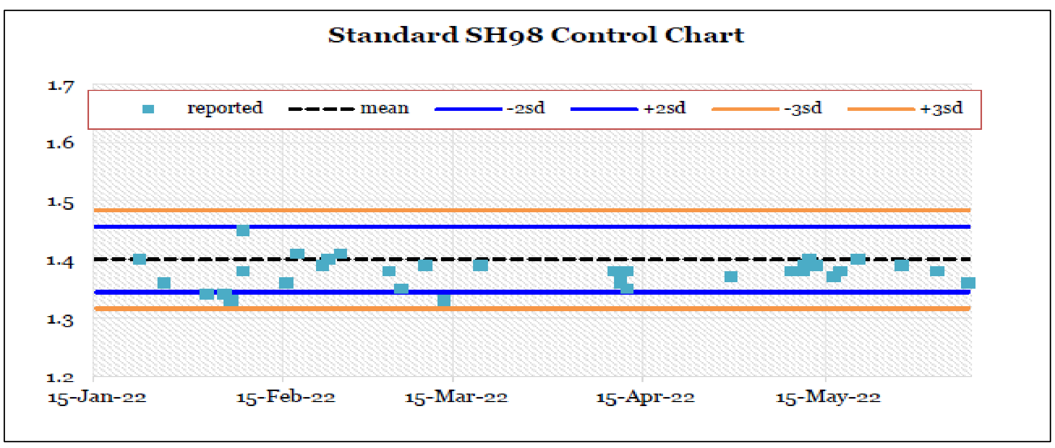


Figure 11-13: Standard SH98

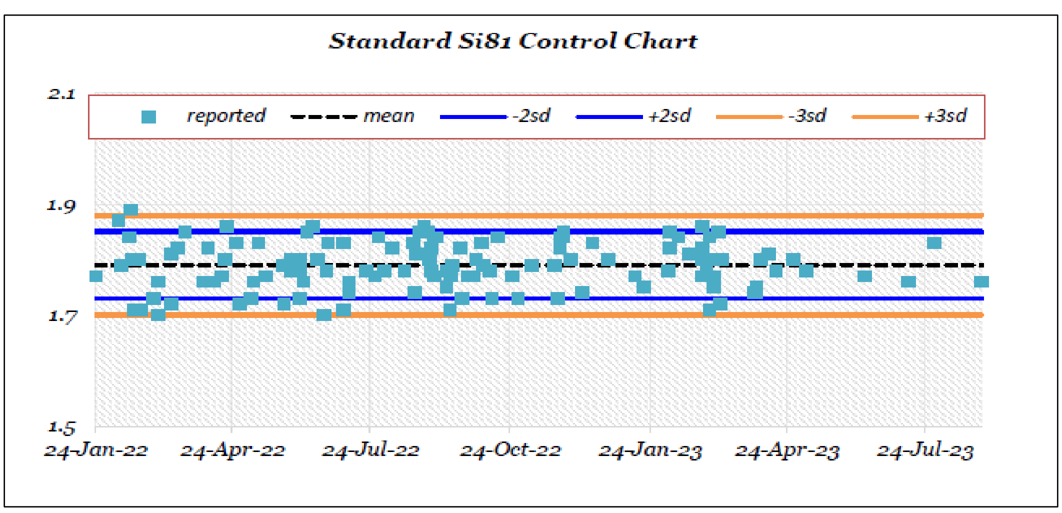


Figure 11-14: Standard Si81

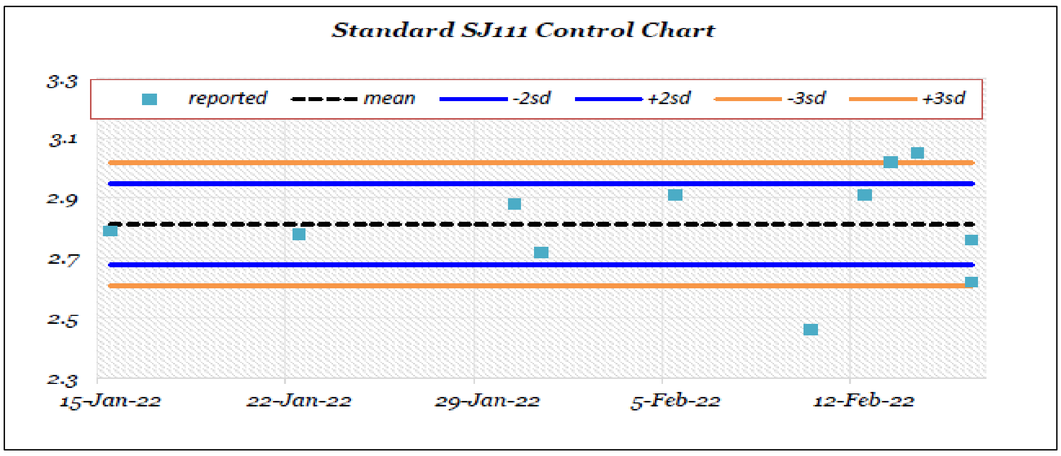


Figure 11-15: Standard SJ111

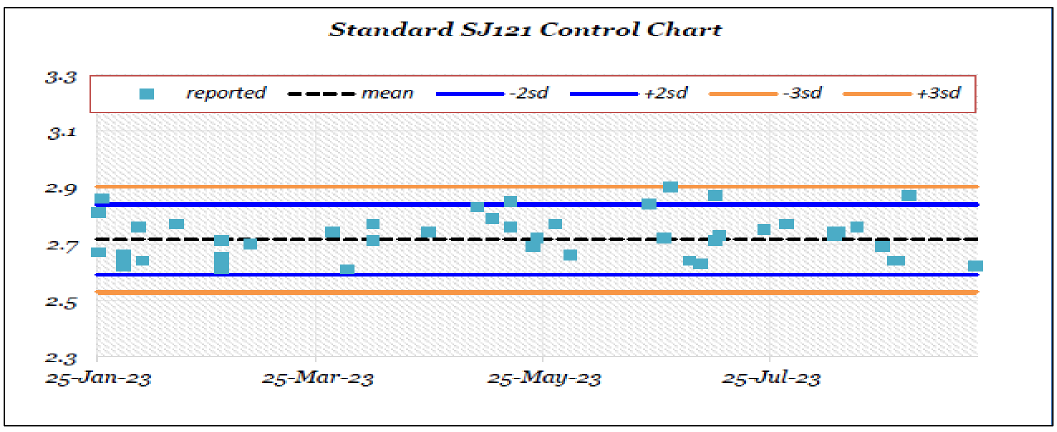


Figure 11-16: Standard SJ121

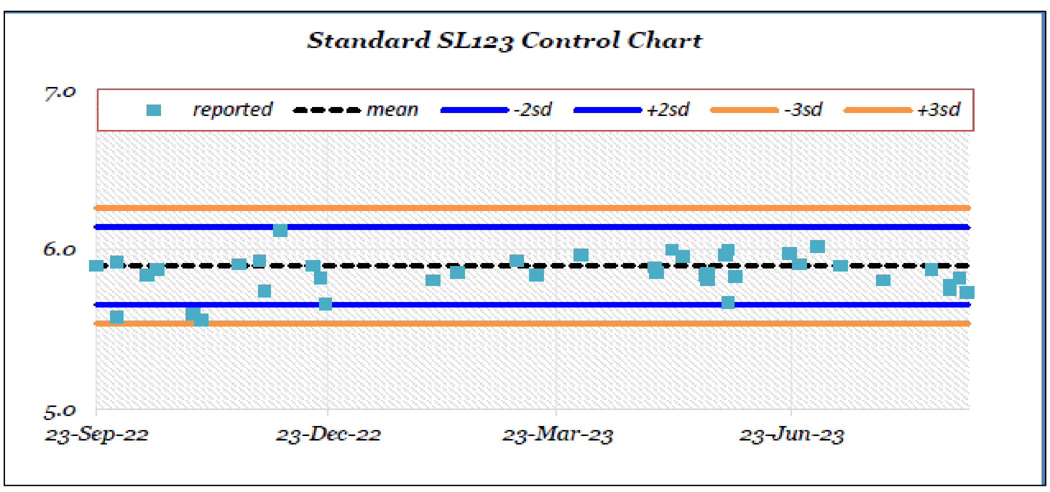


Figure 11-17: Standard SL123

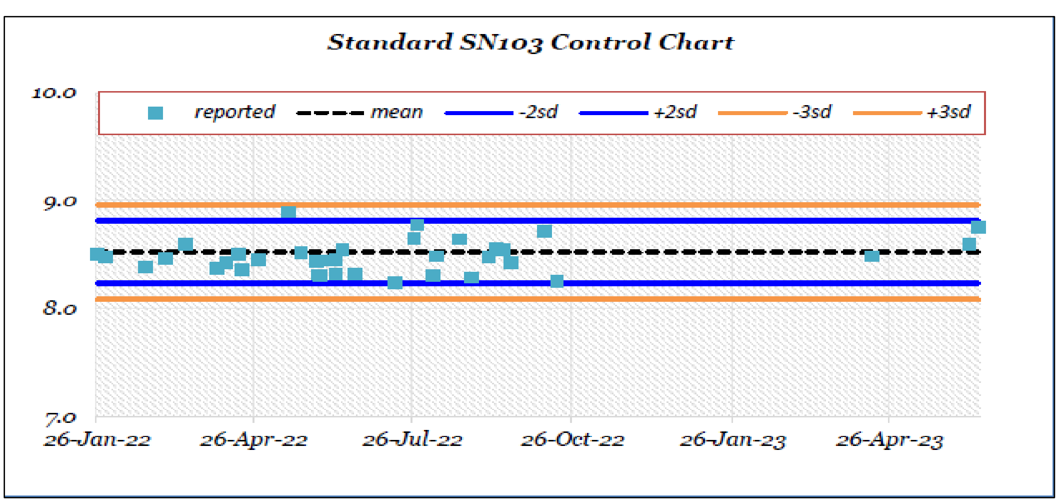


Figure 11-18: Standard SN103

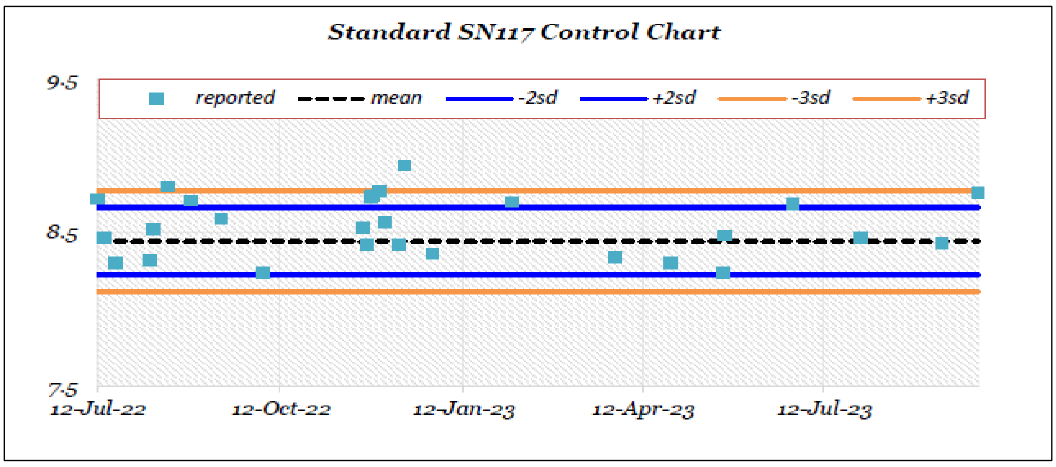


Figure 11-19: Standard SN117

11.3.2 Blanks Analyses

A total 949 coarse blanks were analysed and reviewed. The sample is derived from Kumasi basin granite material which is unmineralised. The failure limit chosen is that of ten times the analytical detection limit (0.01ppm). The maximum value returned is 0.06ppm. 27% of assays were returned below the detection limit, 76% <0.02ppm and 92% <0.03ppm. There is no suggestion of contamination in sample batches submitted over the period.

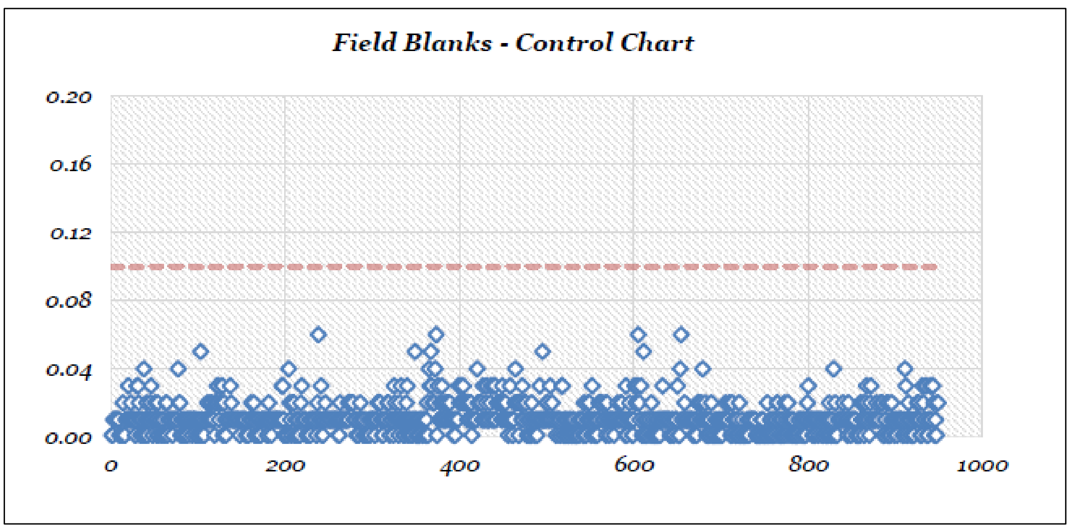


Figure 11-20: Blank Analysis (sample number versus grade)

11.3.3 Field Duplicates and Umpire Check Sample Analyses

The QP was provided with QAQC data for the period January 2022 to September 2023. During this period a total of 1,661 duplicate samples were included in the Chirano drilling campaigns at regular intervals as discussed in Section 11.1.3. This comprised 908 RC samples and 753 DD samples.

Duplicate sample data was analysed using scatter plots, quantile-quantile (Q-Q) plot and a Thompson Howarth plot of precision versus assay concentration.

Scatter plots of duplicate data for RC data and DD data are shown in Figures 11-21 and 11-22 respectively.

A scatter plot of primary assay data versus umpire check data is shown in Figure 11-23.

A modified Thompson-Howarth plot of precision versus concentration is shown in Figure 11-24 where comparisons are made between field duplicates (core and RC) and check assays (on randomly selected pulps analysed by the umpire laboratory).

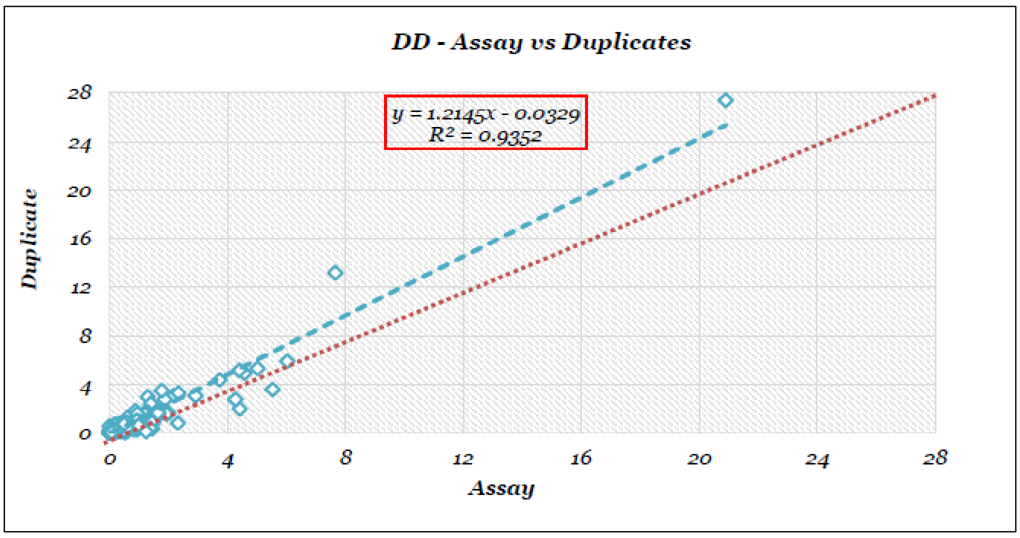


Figure 11-21: Scatter Plot – DD Duplicates

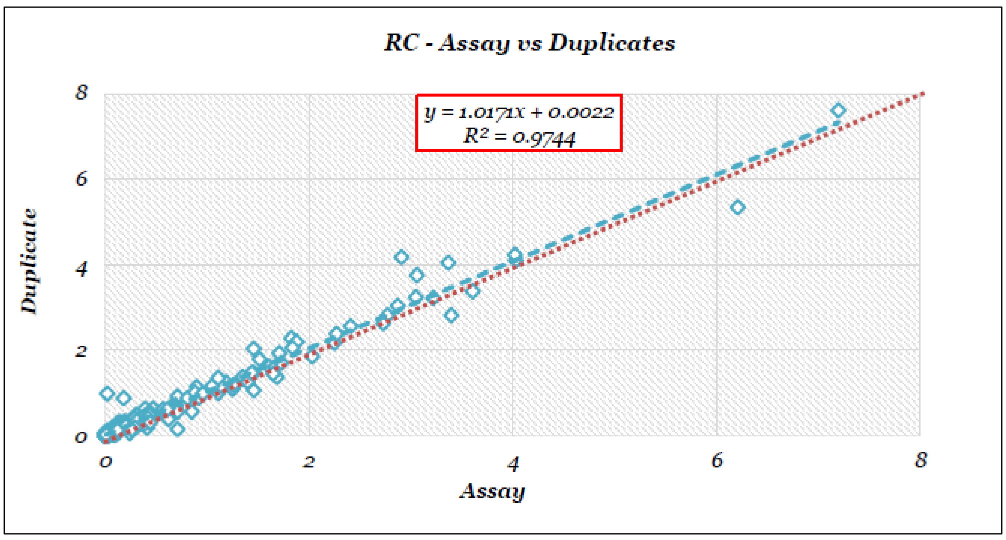


Figure 11-22: Scatter Plot – RC Duplicates

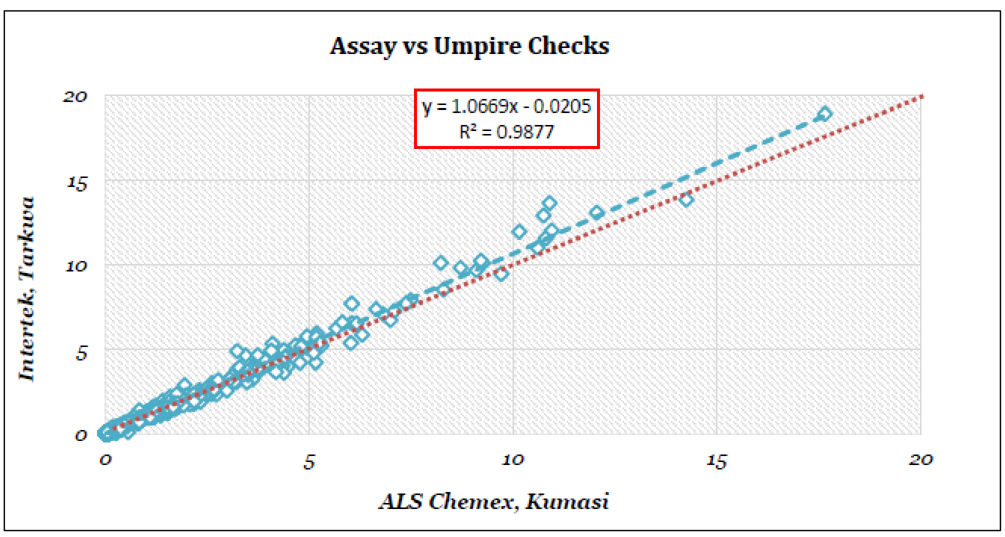


Figure 11-23: Scatter Plot – Primary Assay versus Umpire Assay

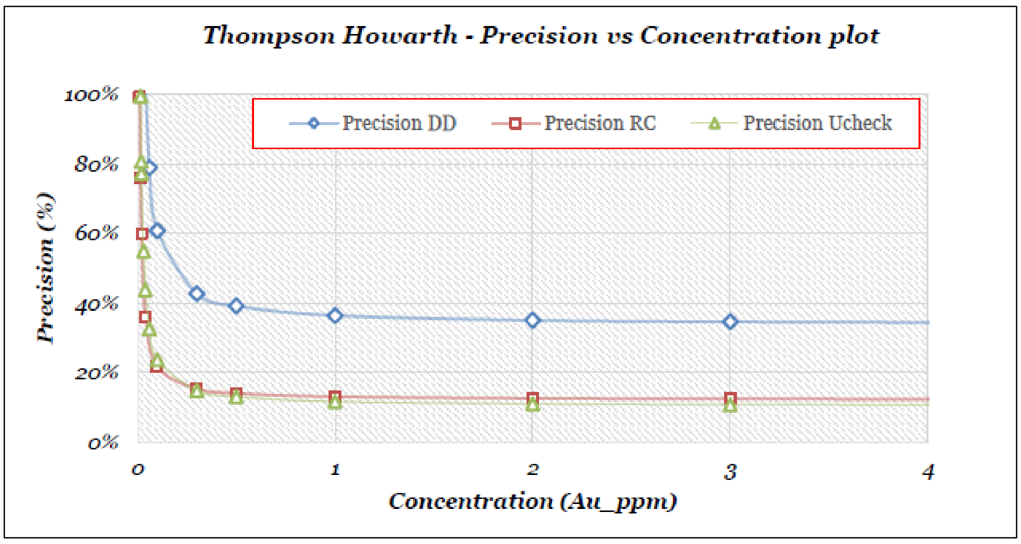


Figure 11-24: Precision versus Concentration Plot

The QP makes the following comments in relation to duplicate analysis;

- The scatter plots of RC and DD data suggest good correlation, with R2 values close to 1 (0.97 and 0.94 respectively). No appreciable bias is noted in RC samples. A slight positive bias is noted in the DD scatter plot, at higher grades but it should be noted that the regression line is influenced by two high-grade outliers. Overall, repeatability is considered good.
- The results of umpire analysis suggest a good correlation (R2 value at 0.99) of check assay with original primary assay. There is a slight bias observed in higher grade samples (>8g/t Au) where check assays overstate these higher grades relative to primary assays.
- The precision versus concentration plots (after Thompson & Howarth (1973) and described by Stanley (2006) suggests overall precision (uncertainty) above 0.5g/t Au of 10% (umpire), 12% (RC) and 36% (DD). Below 0.5g/t precision deteriorates as it reaches the true detection limit (where precision = 100%).

Overall, the results of the QAQC program implemented over the reporting period suggest that there was no issue with sample contamination during the sample preparation stage of sample batches. Analytical accuracy is considered high with no appreciable bias. Umpire analysis suggests good correlation between primary and umpire samples to suggest the ALS Laboratory precision to be acceptable. There is good precision exhibited in RC and umpire assaying, with DD assays exhibiting some higher-grade duplicate bias (overstating relative to primary assay), with +-36% uncertainty on DD data. The reason for variance is likely attributable to spatial variability rather than issues in sampling methodology.

In the past the Chirano site team has investigated this via the submission of a re-split of coarse rejects for both the original sample and the duplicate sample. Results for this study returned precision values closer to that of field RC samples, suggesting an element of inherent field variance. Efforts should be made to understand this further and consider any remedies to improve precision of core field duplicates.

The QP considers that the overall assessment of the QAQC data is positive and provides confidence in the veracity of the gold assays used in downstream Mineral Resource evaluation.

11.4 Data Management

All data and interpretative inputs to the Chirano Mineral Resource estimates have been reviewed and checks completed and verified in accordance with a range of SoPs employed on site. Core is logged directly in DHLogger using motion tablets or laptops. This is done as soon as the core becomes available, in this way the data can be immediately exported from DHLogger and imported into graphic software to visualise data. DD core is then marked up, and photographed with geology, bulk density, and geotechnical information. All logging and assay data is stored in a Fusion database, to which login and access permissions are limited to control access and to maintain integrity of the resource data. Data access is generally limited to the geologists and database administrators.

The Fusion database management system has several inbuilt data validation checks that run when data is imported. Any discrepancies in the data return an error and must be corrected before the database will accept the new information into the system.

11.5 Bulk Density

Between 1999 and 2002 the previous operator at Chirano completed a series of sampling programs to determine appropriate density values for oxide, transition and fresh material for all deposits at that time. In 1999 a total of 52 density determinations were taken from fresh core material of six drillholes at Obra, returning densities in the range 2.6 to 2.9 t/m^3, averaging 2.75 t/m^3. In 2000 various methods of density determination were considered at Chirano, as SOPs were improved. Methods reviewed included measuring a cylinder of core (where the core is regular, coherent and competent), weighing in air and water method, RC chips in flask method, pycnometer method, sand method and condom method. In 2002 a total of 8 holes representing oxide and transition material from Akoti, Obra, Tano, Mamnao Central, Mamnao Suth, Paboase and Sariehu were sampled. Oxide values ranged from 1.48 t/m^3 to 1.70 t/m^3 and transition values ranged from 2.06 t/m^3 to 2.51 t/m^3. Late in 2002 a review of all density data for fresh rock was collated, totalling 909 samples from drill core material over Akoti, Obra, Tano, Mamnao, Paboase, Sariehu, Suraw and Akwaaba, averaging 2.74 t/m^3.

It is stated in the 2021 Year End Mineral Resource and Mineral Reserve Report which was compiled by the Company that a total of 277 bulk density measurements were done to calculate mean density values for resource tonnage reporting for the feasibility study in 2003. These density determinations were carried out using Weight and Calliper Method (154 measurements) and Water Immersion Method (123 measurements). Mean values of 1.56t/m^3 for completely oxidised rock, 2.30t/m^3 for partially oxidised rock and 2.75t/m^3 for fresh rock were considered appropriate for all the Chirano prospect areas. Densities of the transition can be difficult to assess as the transition is often characterized by boulders of fresh in partially to fully oxidized surroundings. Another 80 samples were tested for the Paboase underground on both footwall and hanging wall samples using the water immersion method. Tests indicated an average of 2.75t/m^3 for the Paboase mineralised material. For Paboase all blocks were assigned a default in situ bulk density of 2.75t/m^3. Density values in the updated resource models were assigned 1.56 t/m^3 for oxide and 2.75t/m^3 for fresh rock including mineralised material and waste. The oxidation surface represents the bottom of complete oxidation (BOCO). A transition zone between the two surfaces was assigned a density of 2.30 t/m^3.

The total density database is summarised in Table 11-2.

The Chirano geological team routinely take samples from active mining areas during the grade control process and apply density values to ore blocks, whilst also considering whether there is any variance to the density assignation in the Mineral Resource block models. Variances are small and suggest the selected densities for oxide, transition and fresh material to be robust.

Table 11-2: Historical Density Database

Weathering	Oxidation	Samples (No)	Density (t/m^3)
Fresh	Partial	11	2.72
		2477	2.74
Total/Average		**2488**	**2.74**
Highly Oxidised	Oxidised	143	1.56
		143	1.56
Moderately Transition	Oxidised	6	1.54
	Transition	49	2.32
Total/Average		**55**	**2.19**
Slightly Primary	Partial	11	2.73
	Transition	30	2.54
Total/Average		**41**	**2.59**

The QP is of the opinion that the density determination process that was conducted is appropriate for the deposit type and is consistent with industry best-practice.

11.6 Security Sampling Governance

All samples are sealed after bagging and delivered to the laboratory as soon as practically possible. The Company's sampling governance and chain of custody requires that each sample to be submitted to the laboratories is accompanied by a sample submission list that also serves as a sample advice sheet with instructions for analysis. The laboratory is notified of samples that are ready for delivery. Upon receipt of the samples, the laboratory representative cross-checks all samples against the submission list to confirm the names and number of samples they are receiving. All submission lists are managed in duplicates with signed copies scanned and saved electronically.

11.7 Author's Opinion

The QP has reviewed all the sample preparation, analyses and security protocols and these have been discussed in the sections above.

It is the opinion of the QP that the adequacy of the sample preparation, security and analytical procedures for the Chirano Gold Mine deposits under investigation, and the results of the QA/QC program in place between January 2022 and December 2023 suggest data is acceptable for use in downstream Mineral Resource evaluation.

12. DATA VERIFICATION

12.1.1 Personal Inspection and Subsequent Reviews

Mr Galen White (QP) visited the Chirano Gold Mine between 13 and 16 October 2023 for the purposes of completing verification in relation to geological data collection, sampling and Mineral Resource evaluation. During the site visit the following audits, inspections and activities were undertaken;

- Held discussions and meetings with geological personnel in relation to geological setting, mineralisation styles, deposit portfolio, exploration activity, data collection and Mineral Resource evaluation methodology.
- Visit to open pit environs along the Chirano trend, south to north, ground truthing.
- Review of workflows for data collection, inspection of geological plans and sections.
- Inspection of core processing facilities and inspection of selected drill core from Obra, Akwaaba and Aboduabo deposits.
- Review of database structure and validation processes.
- Review of Mineral Resource modelling processes, assumptions, and estimation methodologies.
- Visit to processing plant facilities.

With a printed version of the geological, sample and assay logs, the QP was able to assess the correspondence in lithological/stratigraphic depths between the electronic version and the physical core, also confirming that the mineralised intervals according to assays correspond with visual and geological indications of mineralisation. It is the QP's opinion that the logging/capturing of the details of these variables is generally consistent with the company's protocols.

Lengths of RC holes range from less than 50m to more than 300m while core hole depths range from 180m to 1,480m. Drilling has been carried out using industry standard equipment and procedures. Drillhole collar locations were marked by a surveyor in the field and picked up after drilling. Sampling length for both RC is 1 metre and diamond core is between 0.5 and 1.5 metres based on the alteration, mineralisation and geology contacts, with RC recoveries and core recoveries recorded.

Data validation includes drilling, logging, sampling, assaying, QAQC and database management. Datamine Fusion is the database management system that is used to store all exploration data which includes, drilling, logging, sampling information etc. It is understood that the system was setup in 2006. Data imported electronically from the Core Logger software undergoes built-in validations to check for logging continuity, missing information and other basic checks. The QP found the SoPs to be robust and appropriate for sample storage and security.

The QP completed random spot checks on sampling records and analytical results and compared them to the corresponding data contained within the geological database. The QP is satisfied that the original data has been adequately transferred to the electronic database and that the processes and techniques used to validate the geological data prior to constructing the geological model are appropriate and have been correctly applied.

The relevant Chirano SOPs were reviewed, and it is the QP's opinion that the Company has produced comprehensive procedure manuals, including SOPs for all activities. The QP also reviewed the previous review of data and information (Snowden, 2021) with respect to drilling, and sampling to verify that the data being used in modelling and MRE is of sufficient quality and has been collected with due diligence and have found these all to be of a satisfactory quality to provide confidence in the resulting data.

12.2 Opinion of Qualified Persons

The Company's internal protocols governing drilling, logging, sample preparation, sample analysis, sample security, QAQC, data collection and database management measures applied by the Company and by previous owners of Chirano mine are considered adequate and consistent with industry norms.

It is the QP's opinion that the sampling methods and recoveries are acceptable, meet industry-standard practice, and are adequate for use in downstream Mineral Resource evaluation.

The QP notes that no deficiencies (be it material or immaterial) have been identified specific to the sampling governance system in place and the QP's own review of the SOPs indicates reliability in the governance system. The QP is of the opinion that the Company's data is appropriately captured and stored and that adequate checks are done to verify the accuracy of the data used for Mineral Resource estimation.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The previous Chirano Technical Report Dated 15 May 2022 for Asante summarised the historical test work that was undertaken by Kinross from 2010 until the acquisition of Chirano Gold Mine Limited (CGML) by Asante in 2022. It was previously reported the gold recoveries and associated gold head grades from the historical test reports had not been used for the declaration of the Chirano plant's 2022 performance. Subsequently, in 2022 to 2023 additional test work has been undertaken by CGML to increase the gold recoveries by the implementation of plant modifications. Some of the historical test work has been referenced by CGML as motivation for these plant modifications. The future evaluation of the gold recovery improvement from the plant modifications will be from a baseline of monthly gold recovery consistency over the period of 2022 to 2023.

13.2 Referenced Historical Test Work 2016 to 2019

13.2.1 Mineralogy

13.2.1.1 Quantitative Mineralogical Analysis on Composites, Als Reports A16829 And A16913 – May 2016.

Bulk mineralogy was done on composites from Mamnao, Suraw, and on an additional composite.

13.2.1.2 Discussion Of Mineralogy and Gravity Concentration

COMPOSITE BULK MINERALOGY: The bulk mineralogy reports a pyrite content in all the composite ore samples ranging from 1-13%. The P80 particle size of pyrite is also variable in the composites, it is about 100µm in Dolomite, Siderite, Black Breccia, and Ankerite, 80µm in Silver, 65µm in Muscovite and 38µm in Phengite. Pyrite abundance is not directly proportional to the gold grade but is indicative of the gold grade. Pyrite liberation is similar across the composites and classified at 70% well liberated.

COMPOSITE GOLD MINERALISATION: Native gold is the main mineral detected, traces of tellurides and electrum were also detected. 125 grains were detected in Black Breccia composite and a 38µm free gold grain accounted for 15% of the gold mass. 5 grains are about 25µm and another 5 grains are about 15µm, these grains are in pyrite and account for 40% of the gold. The remaining gold grains are 10µm and occur in pyrite particles.

The gravity concentrator circuit was decommissioned in 2008. Gravity gold recovery test work has subsequently been done in 2022 on the current ore feedstocks to assess the potential for incremental gold extraction.

13.2.2 Metallurgy

13.2.2.1 Metallurgical Test Work, Suraw Drill Core Samples, ALS Report A16829 – 2016.

From the diagnostic tests on the composite >89% of the gold is free cyanidable but 5% to 10% of the gold is contained within the pyrite minerals.

13.2.2.2 Metallurgical Assessment of Chirano Gold Mine Samples, ALS Report Addendum KM5800 – 2018.

The effect of lower dissolved oxygen was tested which slowed the leaching kinetics. After 48hrs the measured gold extraction was 86-90% with air sparging and with oxygen sparging. Cyanide consumptions increased 0.7-1.0kg/t without oxygen sparging compared to 0.4-0.9kg/t with oxygen sparging.

13.2.2.3 Pre-oxidation and Aachen Assisted Leach, Maelgwyn Prop 18/007 – 2018.

At the cyanide additions for the base case tests and grind size P_{80} 106µm and 24 hours CIL the Aachen pre-oxidation with five passes increased the leaching kinetics and the final gold recovery by an average of 5.3%.

13.2.2.4 Recovery of gold from two Mamnao Samples, SGS Lakefield Report 16006/001 – 2018.

Diagnostic leach tests on tailings from the Fresh composite and Transition composite indicated that a portion of gold lost from the initial leach was recoverable by further intensive cyanide leaching conditions. Intensive cyanidation extracted 19.6% of the Fresh composite tailings losses and 17.2% from the Transition tailings losses, equivalent to 2.7% and 1.7% additional gold recovery, respectively. Overall, 5.4% and 13.1% of the gold contained in the Fresh composite and Transition composite respectively was in refractory association with the sulphides.

13.2.2.5 Cyanide Leach Testing of the Obra Underground Deposit, ALS Report KM5916 – 2019.

A diagnostic leach was done on the residue of the Master Composite. About 17% of the gold was extractable from intensive cyanide conditions, 29% was contained in carbonate minerals, 45% contained in sulphide minerals, and 9% was encased in non-sulphide gangue minerals.

13.2.2.6 Discussion of the Leach Test Results

PRE-OXIDATION: The Maelgwyn test work demonstrated that a five-pass high shear pre-oxidation with oxygen improved the leaching kinetics and increased the gold extraction by an average of 5.3% on samples tested from Akwaaba, Akoti, Mamnao, Paboase, and on a composite sample. Previous test work had shown there was no difference between sparging with air or oxygen and a 7ppm dissolved oxygen level was sufficient for leaching. The shear reactor has a higher oxygen pass efficiency than the tank sparger and the increased dissolved oxygen content in the pre-leach tank increases the leaching kinetics.

LEACHING: The diagnostic leach tests on the tailings from the various ore bodies at Chirano indicate that shear reactor on the pre-leach tank ahead of the CIL could marginally improve the gold recovery with oxygen transfer efficiency increasing the leaching kinetics.

13.3 Current Test Work from 2022 to 2023

The current test work program investigated the potential gold recovery improvement of gravity gold concentration and high-intensity pre-oxidation. Oxide ore samples for Aboduabo mineralised deposit were tested to establish the gold recovery.

13.3.1 Diagnostic Leach Test on Leached Tails Sample Month of February, Intertek Report 30 March 2023

The sample was received as Chirano slurry plant tailings.

13.3.1.1 Head Grade Analysis

Table 13-1: Duplicate Fire Assays on Tails Sample

Assay 1ST (g/t)	Assay 2nd (g/t)	Average Assay (g/t)
0.20	0.19	0.20

13.3.1.2 Diagnostic Test Work Results

The results of the diagnostic leach tests are report in Table 13-2.

Table 13-2: Diagnostic Leach Test Results on Tails Sample

Item	Au Associaton / Solubilization Process	Au Recovered (g/t)	Gold Distribution (g/t)	Gold Distribution (%)
1	Free milling Au (leached by direct cyanidation, WITHOUT carbon)	0.01	0.01	5.3
2	Au extracted via mild oxidative pre-leach (HCl digestion); Au associated with Carbonates	0.03	0.03	16.6
3	Au extracted by H_2SO_4 digestion; Au associated with mild Sulphides	0.03	0.03	18.0
4	Au extracted via severe oxidative pre-leach (HNO_3 digestion); Au associated with Sulphides	0.02	0.02	11.5
5	Au extracted via complete oxidation (Roasting); Au associated with Carbonaceous matter	0.00	0.00	1.3
6	Undissolved Au (assumed to be associated with Quartz and cannot dissolve)	0.09	0.09	47.3
	TOTAL		**0.19**	**100.0**

The diagnostic leach test shows the gold leached by direct cyanidation was 5.3% and the mild oxidative pre-leached gold extraction was 16,6%. A total of 21.9% of the gold in the tailings could be recovered by the shear reactor's faster leach kinetics and better oxygen transfer efficiency measured by a >15ppm dissolved oxygen concentration. The increased leach stage gold recovery of 21.9% reduces the tailings gold grade by 0.04g/t Au equivalent to a 2.5% improvement in overall gold recovery on a 1.40g/t Au head grade.

13.3.2 Gravity Recoverable Gold of Ore Sample Studies, University of Mines and Technology, Tarkwa Report June 2022

Six ore samples were received from Akoti, Akwaaba, Mamnao South, Rehandle, Suraw and Tano. There is no information available on the spatial plan and depth location of these samples.

13.3.2.1 Head Grade Analysis

Table 13-3: Duplicate Fire Assays on Ore Samples

Sample Source	Head Assay (g/t)		
	1st	2nd	Average
Akoti	2.8	2.66	2.73
Akwaaba	2.27	2.41	2.34
Mamnao South	1.06	1.17	1.12
Rehandle	0.59	0.61	0.60
Suraw	0.75	0.80	0.78
Tano	2.56	2.63	2.60

The minor variations in the head grade assays could be due to the absence of coarse gold.

13.3.2.2 Gravity Recoverable Gold Test Work Results

Table 13-4 shows the Gravity Recoverable Gold (GRG) test work results on Akoti, Akwaaba, Mamnao South, Rehandle, Suraw and Tano ore samples.

Table 13-4: GRG Test Work Results on Akoti, Akwaaba, Mamnao South, Rehandle, Suraw and Tano

Sample Name	Head Assay (g/t)	Grind Size (80% Passing)	Recovery (%)		Average Rec (%)	Conc Grade (g/t)	
			1st	2nd		1st	2nd
Akoti	2.73	710 µm	12.1	9.5	10.8	18.19	13.89
		106 µm	11.3	9.2	10.3	38.94	26.67
Akwaaba	2.34	710 µm	16.2	17.5	16.8	15.84	14.33
		106 µm	15.3	14.8	15.1	33.61	47.41
Mamnao South	1.12	710 µm	4.1	4.7	4.4	1.48	1.63
		106 µm	3.3	3.0	3.1	1.48	1.25
Rehandle	0.60	710 µm	17.5	12.8	15.2	5.33	3.86
		106 µm	17.6	8.1	12.9	13.96	6.89
Suraw	0.78	710 µm	25.8	26.3	26.1	7.56	5.78
		106 µm	43.4	33.1	38.3	20.83	17.29
Tano	2.60	710 µm	16.8	20.0	18.4	17.91	20.06
		106 µm	23.3	17.3	20.3	49.86	30.18

The gravity recoverable gold test work procedure omitted the further upgrading of the Knelson concentrator with shaking table or super panner which is an industry standard to replicate the plant operations of a 0.1% mass pull. This step further reduces the gravity concentrate mass pull to 0.1% the equivalent of a production scale centrifugal gravity concentrator and is an industrial standard for this test work procedure. The further reduction in concentrate mass pull reduces the gravity gold recovery. The corrected gravity test work results have used a 50% reduction in gravity recovery and have also excluded the Mamnao South gravity test results. The estimated gravity concentration recovery from the 2023 test work is 10.5%. This resultant 10% reduction in the CIL head grade by gravity concentration mitigates the recovery losses associated with coarse gold dissolution in the leaching circuit. The estimated overall gold recovery improvement from gravity concentration is in the range of 0.5% to 1.0%.

13.3.2.3 Estimated Gravity Test Work Results

Table 13-5: Estimated GRG Test Work Results on Akoti, Akwaaba, Mamnao South, Rehandle, Suraw and Tano

	Concentrate Mass (%)		Gold Recovery (%)		Industry Standard Mass Pull 0.1%
Sample Source	P80 710 µm	P80 210 µm	P80 710 µm	P80 210 µm	P80 210 µm Recovery
Akoti	1.9	0.9	10.8	10.2	5.1
Akwaaba	2.6	0.9	16.9	15.1	7.6
Mamnao South	3.2	2.6	4.4	3.2	NIL
Suraw	3.1	1.6	26.1	38.2	19.1
Tano	4.5	1.4	19.4	20.3	10.2
Average	**3.1**	**1.5**	**15.5**	**17.4**	**10.5**

13.3.3 Aboduabo Test Work on Oxide Ore Sample, Intertek December 2023.

There is no information available on the spatial plan and depth location of the CHRC3412, CHRC3404, and CHRC3394 samples.

13.3.3.1 Head Grade Analysis

Table 13-6: Duplicate Fire Assays on Ore Samples

Sample Source	Head Assay (g/t)		
	1st	2nd	Average
CHRC3412	3.12	3.67	2.73
CHRC3404	2.27	2.41	2.34
CHRC3394	1.06	1.17	1.12

The following observations are made:

The differences in gold grade between each of the two fire assays indicate there is no coarse gold present.

13.3.3.2 Sensitivity Leach Test Work Procedure

500g sub-samples from each composite were tested for sensitivity to grind, dissolved oxygen concentration, lead nitrate addition, and cyanide concentration at 24 hours of leaching. Gravity concentration has not been included in the tests.

NOMINAL CONDITIONS FOR THE LEACH SENSITIVITY TESTS:

- 50% solids w/w with Intertek tap water.
- Sodium cyanide addition 500g/t.
- Activated carbon 10g/l.
- pH 10.5.
- Grind size P80 75µm.
- Conditioning time 2hr.
- DO 25pm concentration.

The leach sensitivity test variations for dissolved oxygen concentration, lead nitrate addition, cyanide addition, and no activated carbon concentration are stated for each test.

- Base Case: The base case leach test was performed at a grind size of P80 106µm.
- Dissolved Oxygen Sensitivity: Cyanide leach tests were performed at DO concentration 35ppm.
- Lead Nitrate Sensitivity: Lead Nitrate tests were performed at a nominal lead nitrate addition rate 50g/t.
- Cyanide Sensitivity: Cyanide leach tests were performed at nominal sodium cyanide addition of 0.8kg/t.
- Activated Carbon Sensitivity (Direct Leach): Direct cyanide leach tests were performed without the addition of activated carbon at 24 hours leaching.

13.3.3.3 Leach Test Results

The optimal leach test results of the CHRC 3412, CHRC 3404, and CHRC 3394 samples and the MP-LG for each sensitivity test have been summarised in Table 13-7. The pre-robbing effect leaching test results with no activated carbon is the exception.

Table 13-7: Results of Leach Tests

Sample Source	Base Case P80 106µm	DO 35ppm	Lead Nitrate 50g/t	NaCN cons 0.8kg/t	No Activated Carbon
CHRC 3412	93.5%	95.6%	96.2%	96.1%	92.0%
CHRC 3404	87.8%	89.1%	88.7%	88.7%	80.5%
CHRC 3394	91.4%	94.7%	95.1%	94.3%	89.4%

13.3.3.4 Discussion on Gold Leach Test Results

The optimal leaching result is a 2.7% and 3.7% increase in gold recovery for the respective samples CHRC 3412 and CHRC 3394 at the lead nitrate leaching conditions of 50g/t lead nitrate addition at a 20ppm DO concentration and at a P80 75µm grind size. Cyanide consumption was 0.45kg/t. There was a marginal 1.1% increase in gold recovery under the same conditions for sample CHRC 3404.

For the samples CHRC 3412 and CHRC 3394 there was a <2.0% gold recovery difference between the Base Case test with activated carbon and the direct leach test without activated carbon indicating there is no pre-robbing. There were no carbon analyses for Sample CHRC 3404 to establish a reason for the 7.3% gold recovery difference for the same test procedure, indications are a low preg-robbing ore rating.

13.4 Plant Gold Recovery Performance from 2022 to 2023

Figure 13-1 shows the Chirano gold recovery has a downward trend in gold recovery from an 87.1% average in 2022 to an 85.6% average in 2023.

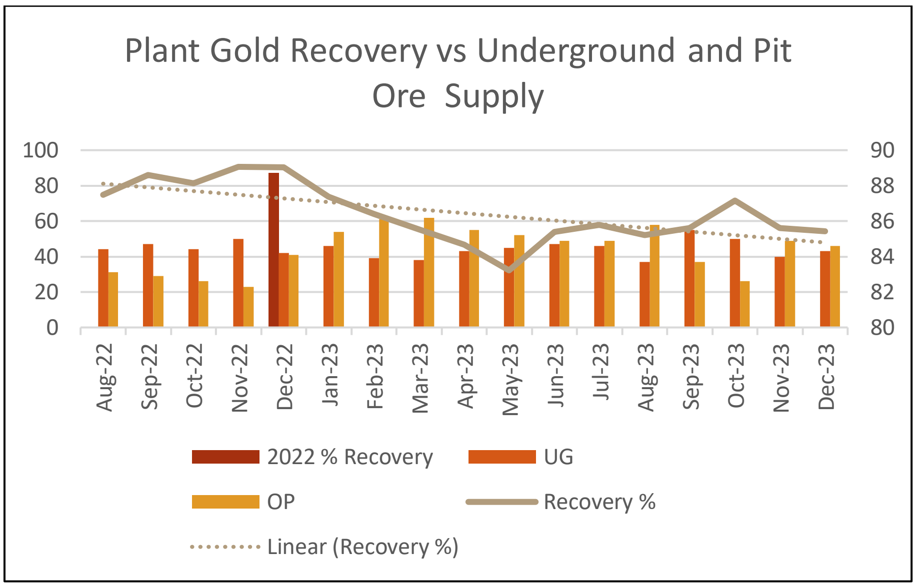


Figure 13-1: Plant Gold Recovery vs Underground Pit Ore Supply

From December 2022 the underground-to-pit ore ratio remains constantly below 1:1 until August 2023 and during this period of operation, the gold recovery has a declining trend as shown in Figure 13-2. The ore supply to the Chirano plant is from numerous mining sources, broadly there is a gold recovery differential between underground ore and pit ore.

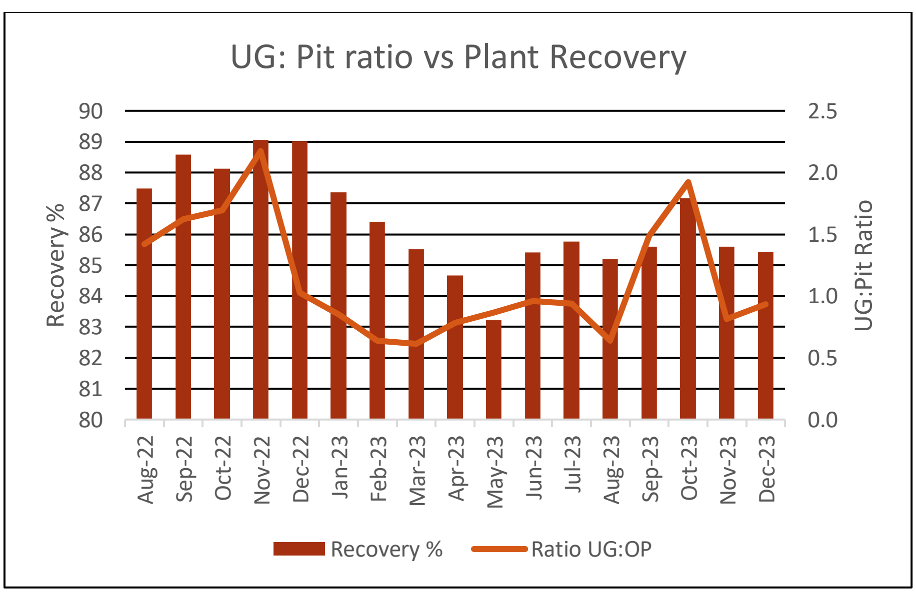


Figure 13-2: UG: Pit Ratio vs Plant Recovery

Figure 13-3 gives a gold recovery relationship of the underground to pit ore ratio in the feed blend to the plant.

Gold plant recovery = 2.1879 x (UG: Pit ratio) + 83,955.

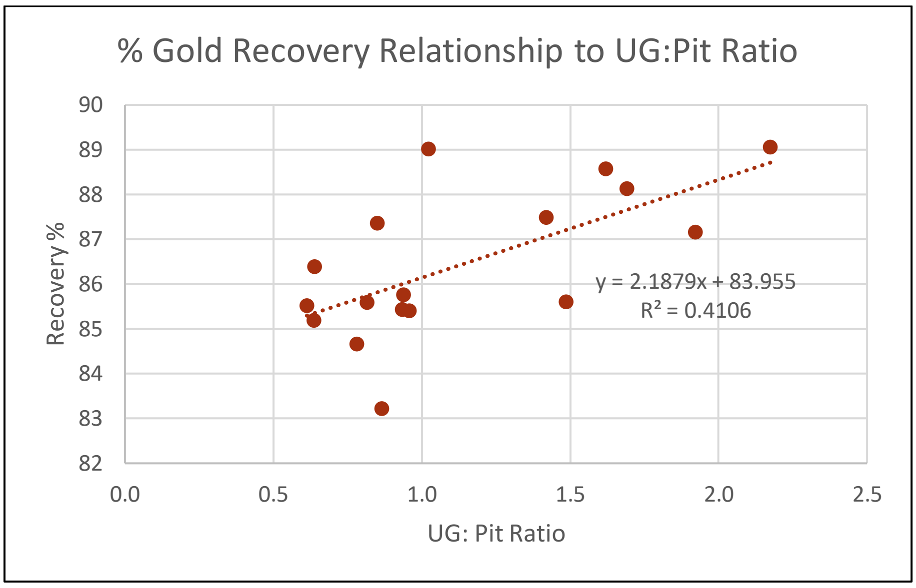


Figure 13-3: Recovery % Relationship to UG: Pit Ratio

Figure 13-3 shows the influence of the UG ore to Pit ore ratio on gold recovery. At an ore ratio of 1:1 an 86% gold recovery can be estimated and as the ore ratio increases to 2:1 (higher blend of UG ore) the estimated gold recovery increases to 88%. Extrapolating the trend line to a 2.5:1 ore ratio (minor blend of Pit ore) the projected gold recovery is 90%. The ore ratio to gold recovery relationship is qualified in the head grade range of 1.30g/t Au to 1.50g/t Au at a leach P80 106µm and without gravity concentration recovery which is estimated as an additional 1.0% gold recovery.

14. MINERAL RESOURCE ESTIMATES

14.1 Introduction

The Chirano Gold Mine includes twelve deposits for which Mineral Resources have been estimated, along an 11km long N-S trend. Most of these deposits are currently in production. The deposits, from north to south along the trend are; Aboduabo, Mamnao, Sariehu, Obra, Tano, Paboase, Akoti, Akoti South, Suraw, Kolua, Mag Hinge and Akwaaba.

The Chirano underground Mineral Resource inventory is derived from the following deposits:

- Akwaaba – the first underground mine which came into production during H2 of 2008;
- Paboase – commenced production in Q1 of 2012 and ceased mining in November 2022;
- Akoti – commenced production in 2016;
- Tano – commenced production in Q4 of 2020;
- Sariehu -Production resumed in Q2 2022
- Aboduabo – a brownfields deposit as yet unmined.
- Mamnao – where production is currently underway at Mamnao Central and South:
- Obra – commenced UG development in 2021 and production in 2023; and
- Suraw – commenced production in 2021.

The Chirano open pit Mineral Resource inventory is derived from the following deposits:

- Mamnao – where production is currently underway at Mamnao Central and South:
- Akoti South pit – ceased mining in Q4 2021 after pit re-optimisation;
- Sariehu pit – the open pit cutback was completed;
- Obra pit – the open pit cutback is planned to commence by Q1 2024;
- Mag Hinge – currently a development project.
- Aboduabo – a brownfields deposit as yet unmined.
- Kolua – No development is as yet incorporated into the current mine plan.

Both open pit and underground Mineral Resources disclosed herein have either been prepared by the Company in 2022 and 2023 where additional drilling data has been incorporated into Mineral Resource updates or are those prepared in 2020 and for which there is no new drilling and as such are disclosed herein following depletion for mining activity. All Mineral Resource estimates have been prepared under the JORC Code (2012) using accepted industry practices and have been classified and reported in accordance with the JORC Code. There are no material differences between the definitions of Measured, Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012).

The QP has reviewed the Mineral Resources for the Chirano operations which are estimated by the company's employees. The QP was afforded sufficient access to supporting data, block models and Chirano employees responsible for generating and reporting the Mineral Resource estimates to follow the process through exploratory data analysis, estimation, classification, and reporting. The site visit afforded an opportunity to review and gain sufficient understanding of the on mine data collection and management processes, and the current geological interpretations.

The QP did not identify any material issues with the Mineral Resource estimations and in general considers the standard procedures, and internal controls in place at Chirano to be transparent and robust. QP validations of the Mineral Resources agree with those undertaken by Chirano and the QP concludes that the estimates are a reasonable representation of the grade distributions evident by the composite database informing the estimates.

The methodology used by Resource Geologists on site to update Mineral Resources follows a structured procedural approach, refined over time and modified as appropriate, informed by deposit-specific geological and data-related characteristics. Significant work has been completed both by Asante and previous owners to understand the geological and structural controls of mineralisation over the mineralised belt, and at the deposit scale. This work and knowledge underpins the evaluation of, and methodologies employed to estimate Mineral Resources.

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

The sections below are set out to align with the workflow adopted, rather than sub-sections set out by deposit, to avoid repetition since much of the commentary relating to workflows adopted for each deposit are common to all.

14.2 Summary

The following tabulation summarises an overview of the updates to the Mineral Resource estimates at Chirano.

Table 14-1: Chirano Mineral Resources Overview

Deposit	OP/UG	Local Grid	Additional Data (Since 2022 MRE)	MRE Date Stamp	Software Used	Interpolation Method	RPEEE Constraints (CoG's & Constraining Shells @ US$1,950 Gold Price)	Comments
Akoti/Akoti South	OP/UG	Paboase	33 DDHs for 7,980.2m	Sep-23	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within constraining conceptual MSO shapes.	Focus of the MRE update was to extend the MRE to Akoti South
Obra	OP/UG	Chirano	53 UG DDHs for 11,884.48m, 28 exploration DH for 9,570.15m, and 25 GC holes for 2,314.33m	Aug-22	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within constraining conceptual MSO shapes and pit shell.	Updating of litho-structural domains, particularly the RSZ (shear zone) and high-grade RBX domain
Akwaaba	UG	Chirano	20 exploration DDHs for 6,539m and 27 GC holes for 4,633.35m	Aug-22	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within constraining conceptual MSO shapes.	Updating of litho-structural domains, particularly the RSZ (shear zone), high-grade RBX domain and RIX.
Suraw	UG	Paboase	16 UG DDHs for 6,142.94m and 64 GC holes for 12,084.01m	Sep-23	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within constraining conceptual MSO shapes.	Updating of litho-structural domains, particularly the RSZ200 (shear zone), high-grade RBX101 domain and RBX 101 and 102.
Tano	UG	Paboase	47 GC holes for 5,110.71m	Apr-22	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within constraining conceptual MSO shapes.	Updating of litho-structural domains, particularly the RSZ (shear zone), high-grade RBX domain and RIX.
Mamnao	OP/UG	Chirano	25 RC/RCDD holes for 5,335.8m	Jul-22	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within conceptual pit shell.	Focus on down-dip extension of the west mineralisation, updating of litho-structural domains including RSZ, RBX and RBZ.
Paboase	UG	Paboase	Previous MRE remains current	Sep-20	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within constraining conceptual MSO shapes.	MRE depleted with final production

Deposit	OP/UG	Local Grid	Additional Data (Since 2022 MRE)	MRE Date Stamp	Software Used	Interpolation Method	RPEEE Constraints (CoG's & Constraining Shells @ US$1,950 Gold Price)	Comments
Sariehu	OP/UG	Chirano	No additional data	Aug-23	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within conceptual pit shell.	Focus on reviewing and adjusting existing 3D geological models for a revised estimation and subsequent optimization.
Mag Hinge	OP	Chirano	Not previously updated, Maiden MRE	Dec-23	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within conceptual pit shell.	Focus on building preliminary 3D geological models with mineral resource estimate.
Aboduabo	OP/UG	Chirano	139 RC/DD holes for 27,856m	Dec-23	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within conceptual pit shell.	Focus on building preliminary 3D geological models with mineral resource estimate.
Kolua	OP	Chirano	Previous MRE remains current	Dec-20	Supervisor (EDA), Leapfrog Geo v2022.1.1 (modelling & block model coding), Datamine Studio RM (estimation).	Dynamic Anisotropy with Ordinary Kriging (OK)	CoG calculation and MRE reporting within conceptual pit shell.	

14.3 Drill Hole Data Verification

Following a validation check of database data (including post-survey collar locations, downhole survey validations and assay validations and QAQC review), database exports of underground drilling, exploration drilling and grade control drilling data were prepared for each deposit. Exports were imported into geological modelling and estimation software as .csv files for collar, survey, assay, geology, structure and alteration.

Data export cut-off dates are set out below;

- Akoti – 14 September 2023.
- Obra – 06 July 2022.
- Akwaaba – 11 August 2022.
- Suraw – 17 September 2023.
- Tano – 24 February 2022.
- Mamnao – 28 April 2022.
- Paboase – 16 May 2019.
- Sariehu – 18 November 2018
- Mag Hinge – 22 April 2021.
- Aboduabo – 30 August 2023.
- Kolua – 27 November 2020.

14.4 Geological and Mineralisation Modelling and Estimation Domains

Litho-structural-mineralisation domains have been developed for each deposit, updating and validating those developed in previous Mineral Resource estimates via the inclusion of new drilling. Estimation domains have been created for each deposit using Leapfrog software, coded and assigned to blocks in the block model. The hanging wall (HW) and footwall (FW) for each domain were merged into a single surface for the coding of dip and dip direction into the block model. The plunges of the various domains were derived from the variogram models (see Section 14.7) in Supervisor software and coded to the block model. Oxidation surfaces for the Base of Complete Oxidation (BOCO) and Top of Fresh Rock (TOFR) have been developed via the review of descriptive geological logging and weathering data and refined over time as new drilling data has been added.

Domain coding at each deposit is set out in the table below. Domain coding is assigned to the largest domains first, followed by smaller domains. For example, domain 101 at Akoti North is of larger volume that domain 132.

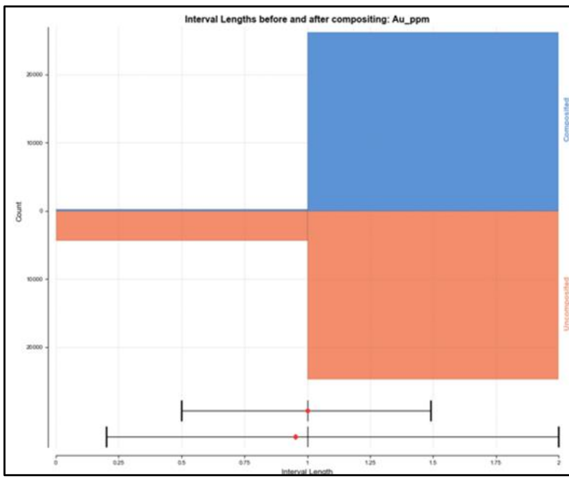
Table 14-2: Chirano Deposits – Mineralised Domains

Deposit	Mineralisation Domains	Comments
Akoti	Akoti Extended - 121, 124, 126; Akoti North - 101, 102, 103, 104, 106, 131, 132, 133, 134 and 136; Dilution Halo - 150	
Obra	ob_rbxrix_nsz100, ob_rbxrix_obeast101 and ob_rsz_nsz200	
Akwaaba	rbx100, rbx_splay101, rbx_splay102, rix_110 and rsz_200	
Suraw	rbxrix_SSZ101, rszrbxrix_ALL_SWSeg2_102 and rszrbxrix_ALL_SSZ_200	
Tano	rbx_nsx100, Tnmain101, rbx_Tnoblique103, TNsplay4_104, TNsplay6_106, rix_nszqr110 and rsz_all_nsz200	
Mamnao	rsz200, rsz_westsplay101, rsz_weastsplay2_102, Bokaso west splay and gto250	Extensive review of geological & structural interpretations following field & pit mapping to understand the relationship between the west splay & main lode.
Sariehu	rsz200, gto250	
Mag Hinge	splay100, rsz200	
Aboduabo	main zone100, west main zone101, northwest zone102	
Paboase	rbx (101), rix (110), rsz (200)	
Kolua	rbx100, rsz200	

14.5 Data Compositing

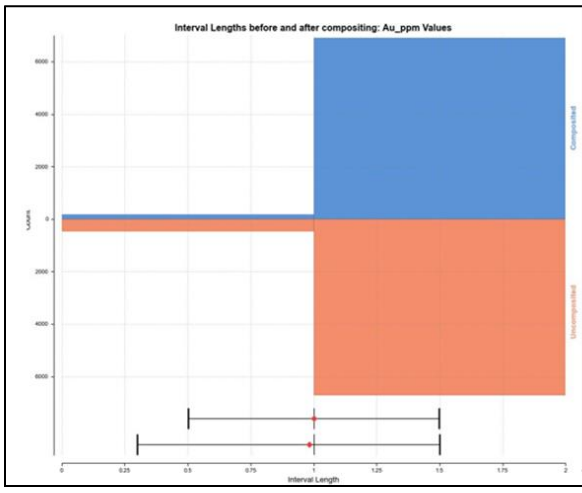
Sample data used for estimation was composited to regular intervals to ensure similar sample support and to minimise potential bias. Data was composited to 1.0m lengths with a minimum length of 0.5m due to the (narrow) size of high-grade mineralization, the 1.0m composite would be more representative and reduce any smoothing/dilution however the composite length for the NN estimation was generated at 5m with the minimum length of 0.5m due to the parent block size parameters.

Summary statistics of uncomposited and composited data for each of the deposits are contained in the figures below.



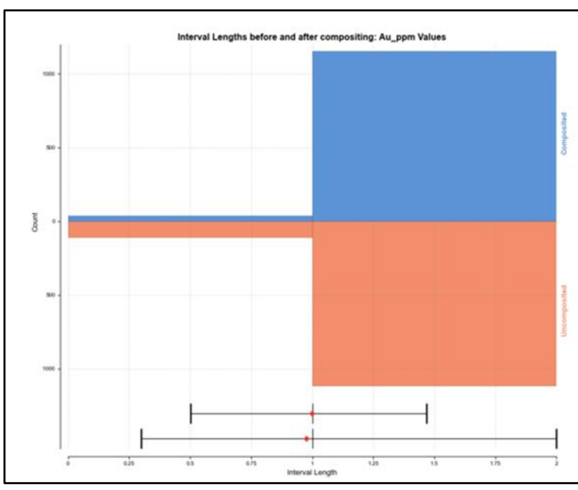
	Composited	Uncomposited
Count	26,468	29,101
Length	26,470.1	27,719.9
Mean	1.00008	0.95254
SD	0.0296859	0.13848
CV	0.0296835	0.14538
Variance	0.000881251	0.0191767
Minimum	0.5	0.2
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.491	2

Figure 14-1: Summary Statistics for Uncomposited and Composited Sample Data – Aboduabo



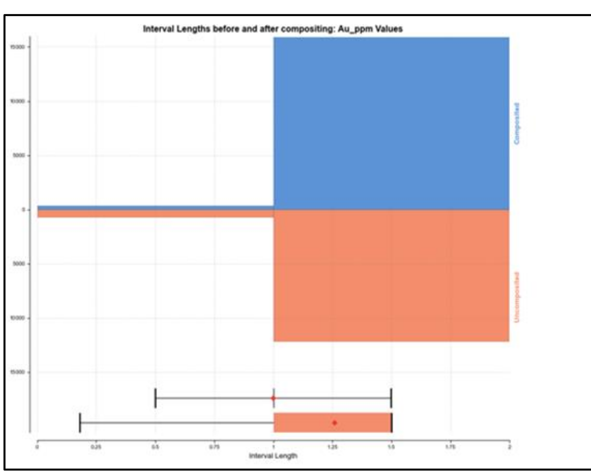
	Composited	Uncomposited
Count	7,073	7,186
Length	7,075.1	7,069.4
Mean	1.0003	0.983781
SD	0.0550644	0.108487
CV	0.0550479	0.110276
Variance	0.00303209	0.0117694
Minimum	0.501	0.3
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.498	1.5

Figure 14-2: Summary Statistics for Uncomposited and Composited Sample Data – Mamnao



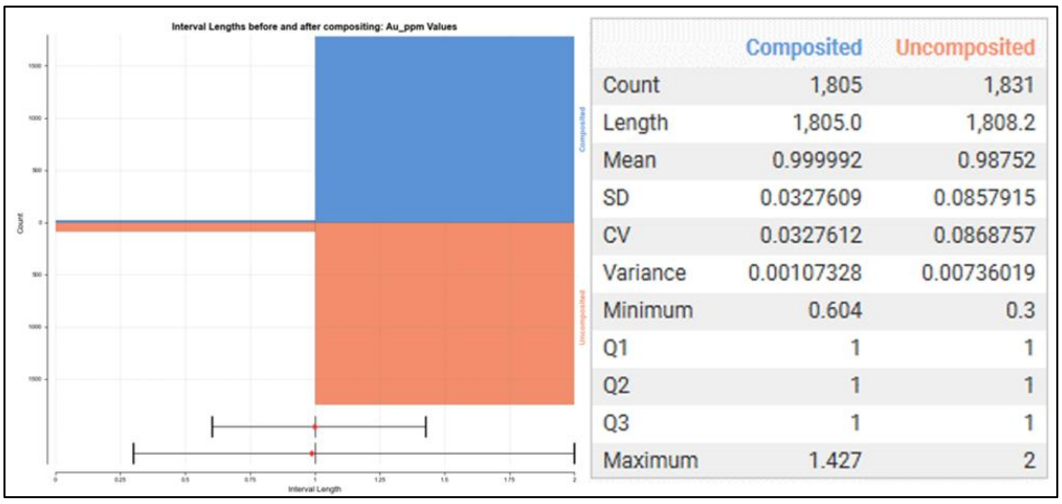
	Composited	Uncomposited
Count	1,192	1,227
Length	1,190.4	1,197.2
Mean	0.99868	0.975713
SD	0.0606938	0.1264
CV	0.060774	0.129546
Variance	0.00368373	0.0159769
Minimum	0.503	0.3
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.468	2

Figure 14-3: Summary Statistics for Uncomposited and Composited Sample Data – Mag Hinge



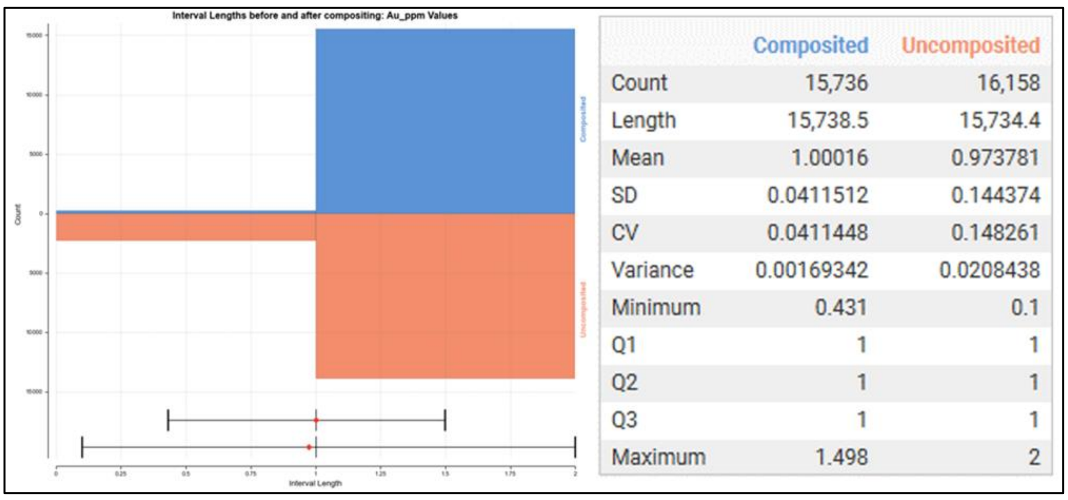
	Composited	Uncomposited
Count	16,250	12,888
Length	16,236.3	16,228.0
Mean	0.999155	1.25916
SD	0.0495011	0.285343
CV	0.049543	0.226614
Variance	0.00245036	0.0814205
Minimum	0.5	0.18
Q1	1	1
Q2	1	1.5
Q3	1	1.5
Maximum	1.498	1.5

Figure 14-4: Summary Statistics for Uncomposited and Composited Sample Data – Sariehu



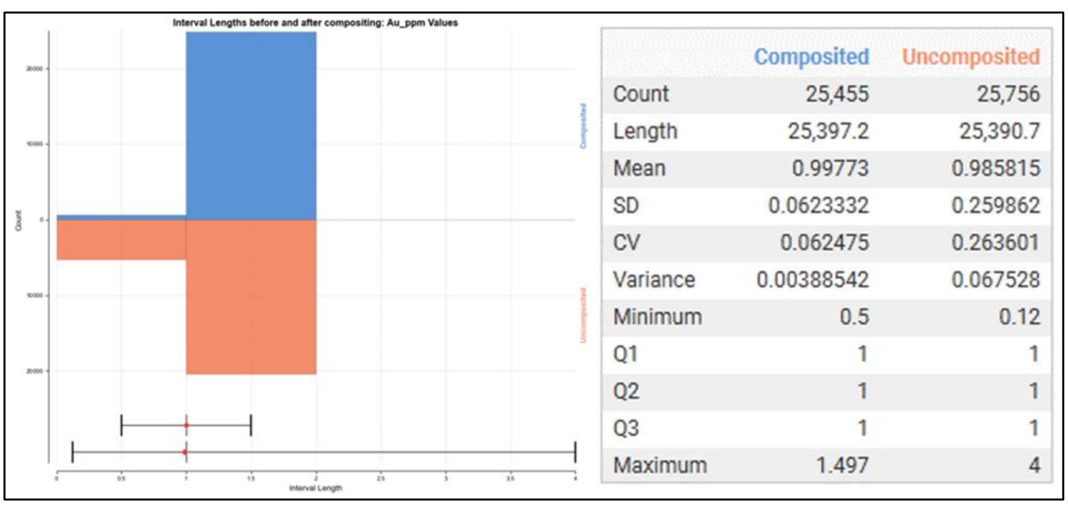
	Composited	Uncomposited
Count	1,805	1,831
Length	1,805.0	1,808.2
Mean	0.999992	0.98752
SD	0.0327609	0.0857915
CV	0.0327612	0.0868757
Variance	0.00107328	0.00736019
Minimum	0.604	0.3
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.427	2

Figure 14-5: Summary Statistics for Uncomposited and Composited Sample Data – Kolua



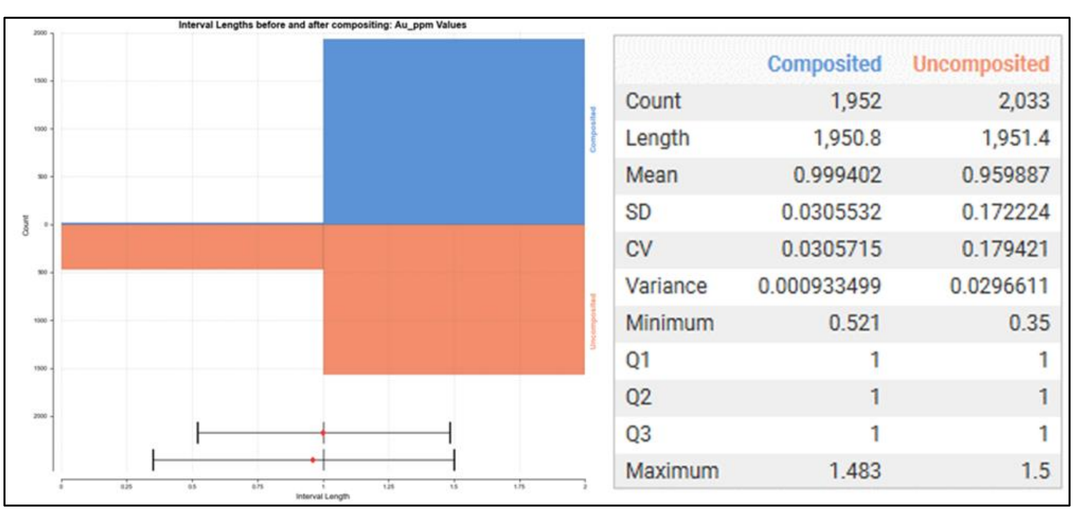
	Composited	Uncomposited
Count	15,736	16,158
Length	15,738.5	15,734.4
Mean	1.00016	0.973781
SD	0.0411512	0.144374
CV	0.0411448	0.148261
Variance	0.00169342	0.0208438
Minimum	0.431	0.1
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.498	2

Figure 14-6: Summary Statistics for Uncomposited and Composited Sample Data – Tano



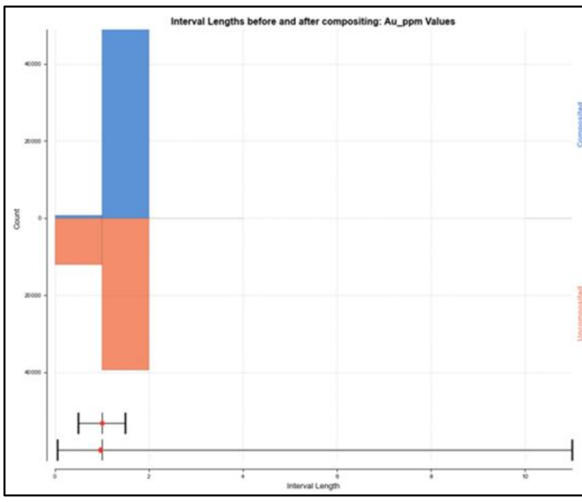
	Composited	Uncomposited
Count	25,455	25,756
Length	25,397.2	25,390.7
Mean	0.99773	0.985815
SD	0.0623332	0.259862
CV	0.062475	0.263601
Variance	0.00388542	0.067528
Minimum	0.5	0.12
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.497	4

Figure 14-7: Summary Statistics for Uncomposited and Composited Sample Data – Suraw



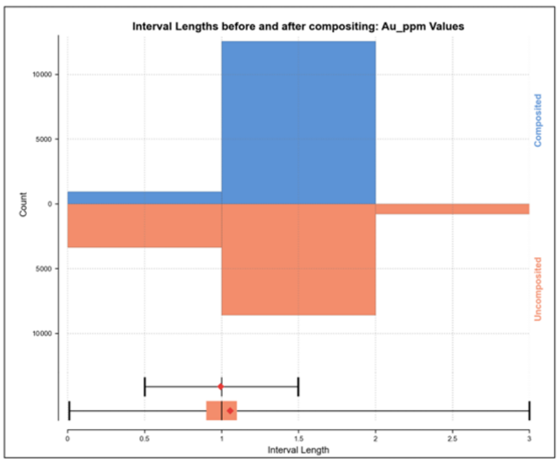
	Composited	Uncomposited
Count	1,952	2,033
Length	1,950.8	1,951.4
Mean	0.999402	0.959887
SD	0.0305532	0.172224
CV	0.0305715	0.179421
Variance	0.000933499	0.0296611
Minimum	0.521	0.35
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.483	1.5

Figure 14-8: Summary Statistics for Uncomposited and Composited Sample Data – Obra



	Composited	Uncomposited
Count	49,657	51,597
Length	49,590.9	49,564.1
Mean	0.998669	0.9606
SD	0.0473195	0.202285
CV	0.0473826	0.210582
Variance	0.00223913	0.0409192
Minimum	0.5	0.05
Q1	1	1
Q2	1	1
Q3	1	1
Maximum	1.499	11

Figure 14-9: Summary Statistics for Uncomposited and Composited Sample Data – Akwaaba



	Composited	Uncomposited
Count	13,498	12,705
Length	13,431.0	13,417.3
Mean	0.995039	1.05607
SD	0.107516	0.421313
CV	0.108052	0.398946
Variance	0.0115597	0.177505
Minimum	0.5	0.01
Q1	1	0.9
Q2	1	1
Q3	1	1.1
Maximum	1.498	3

Figure 14-10: Summary Statistics for Uncomposited and Composited Sample Data – Akoti

14.6 Exploratory Data Analysis (EDA) and Grade Capping

The downhole composite Datamine .csv file for each domain at each deposit was evaluated to determine an appropriate grade capping regime to prevent outlier high grades having too much influence on the grade estimate and introducing bias. Data was loaded into Supervisor software and the Global Topcut Analysis tool and grade data histograms, log probability plots, mean and variance plots and cumulative metal plots analysed to inform appropriate grade capping levels for each domain. Grade caps were rounded to the nearest 0.5ppm Au.

Examples of Topcut analyses completed are set out in the following figures, completed for each deposit.

Finalised domain Topcuts are set out in the table below.

Table 14-3: Chirano Deposits – Assigned Domain Topcuts

Deposit	Domain	Topcut (Au ppm)	Deposit	Domain	Topcut (Au ppm)
Akoti	101	20	Tano	rbx_nsx100	21
	102	4.5		Tnmain_101	13.5
	103	5		rbx_Tnoblique103	19
	104	11		TNsplay4_104	12
	106	5		TNsplay6_106	10
	121	23		rix_nszqr110	6.5
	124	8.5		rsz_all_nsz200	8
	126	13	Mamnao	rsz200	8
	131	11		rsz_westsplay101	4
	132	11.5		weastsplay2_102	5
	133	11		Bokosa westsplay	2
	134	9.5		gto250	1
	136	2.9	Sariehu	rsz200	10
	150	1		gto250	4
Obra	ob_rbxrix_nsz100	12 (Z>2010) | 18 (Z<2010)	Mag Hinge	splay100	2
	ob_rbxrix_obeast101	12 (Z>2010) | 18 (Z<2010)		rsz200	5
	ob_rsz_nsz200	6	Aboduabo	main zone100	10
Akwaaba	rbx100	30		west main zone101	10

Deposit	Domain	Topcut (Au ppm)	Deposit	Domain	Topcut (Au ppm)
	rbx_splay101	30		northwest zone102	7
	rbx_splay102	30	Kolua	rbx100	No Topcut
	rix_110	50		rsz200	2
	rsz_200	10	Paboase	rbx (100)	20
Suraw	rbxrix_SSZ101	19		rix (110)	20
	rszrbxrix_ALL_SWSeg2_102	6		rsz (200)	10
	rszrbxrix_ALL_SSZ_200	6			

14.7 Geostatistical Analysis (Variography)

Using the composited data, variography for the mineralised domains at each deposit was completed in Supervisor software. The downhole variogram was used to define the nugget component of the modelled variogram and the spatial directional variograms were modelled using spherical structures to define the directions and ranges (m) of grade continuity. Examples of variogram models for major domains at each deposit are set out in the figures below.

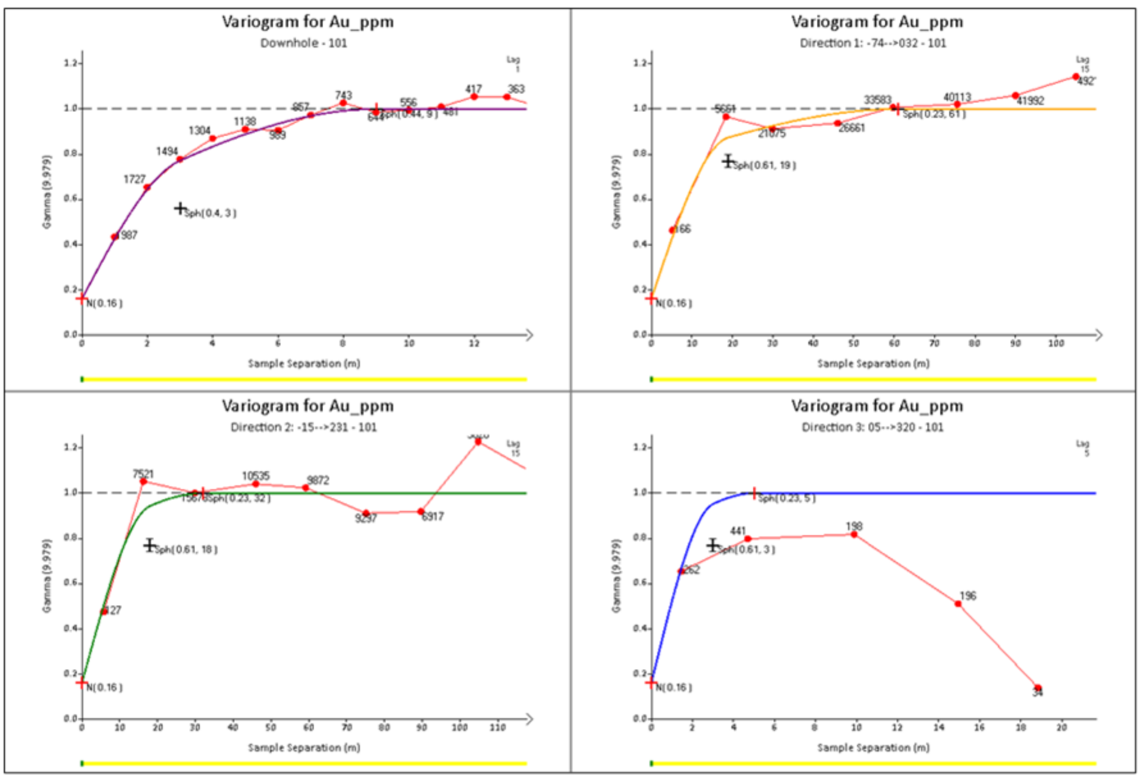


Figure 14-11: Directional Variograms for Akoti Domain 101

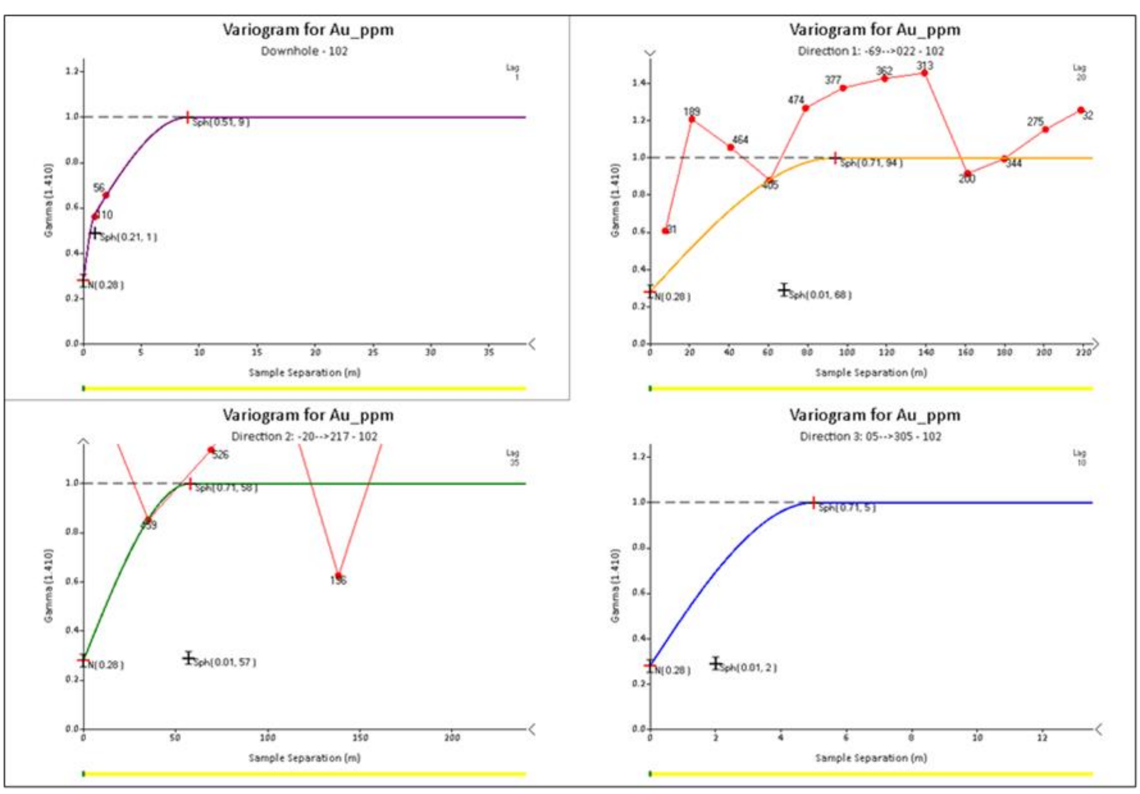


Figure 14-12: Directional Variograms for Akoti Domain 102

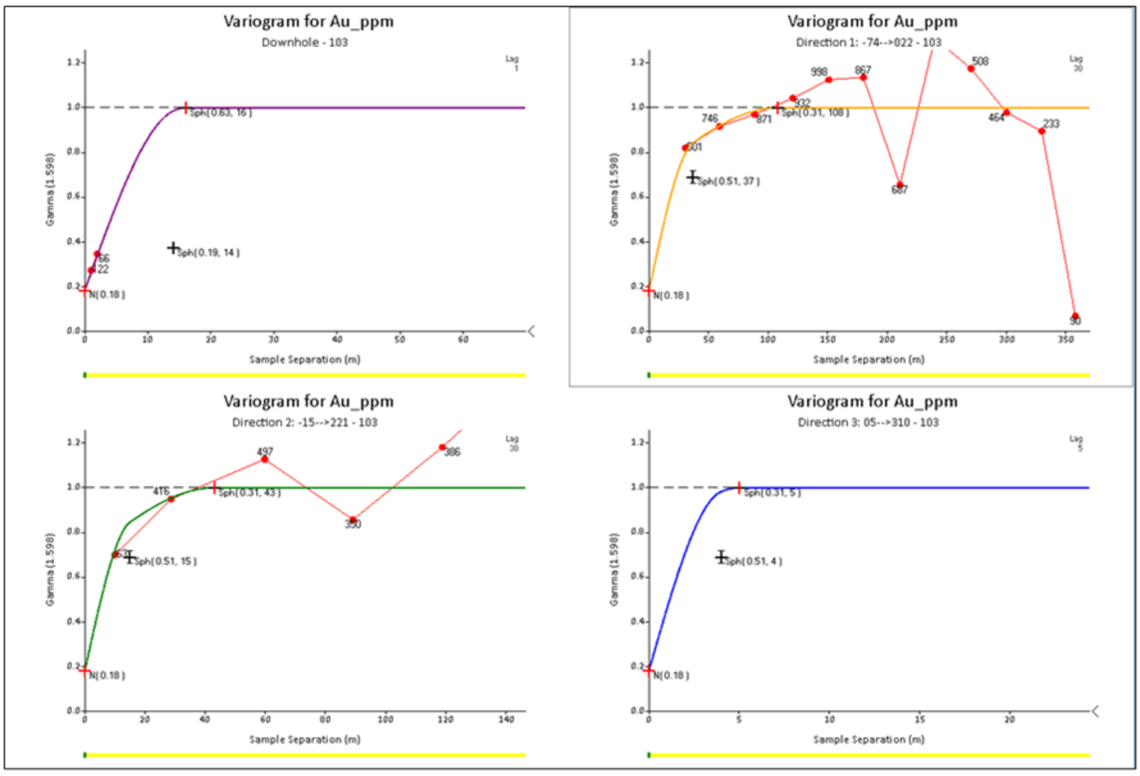


Figure 14-13: Directional Variograms for Akoti Domain 103

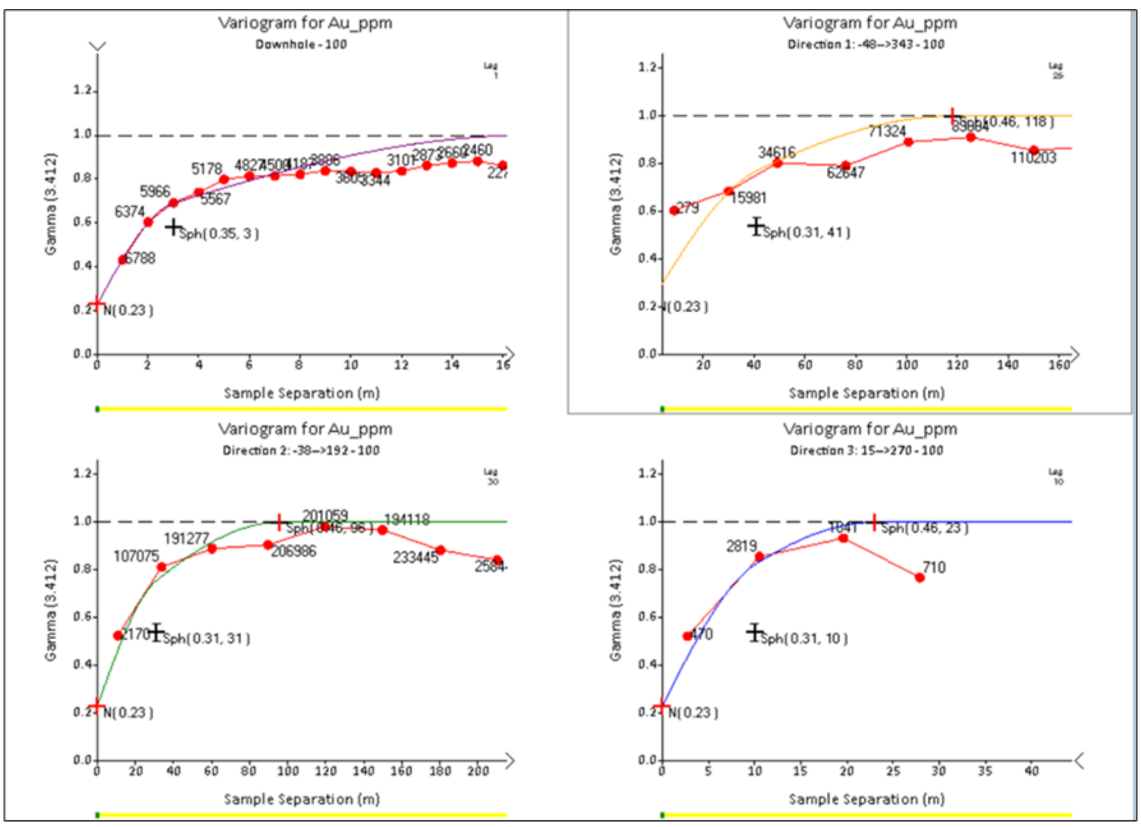


Figure 14-14: Directional Variograms for Obra Domain rbx (100)

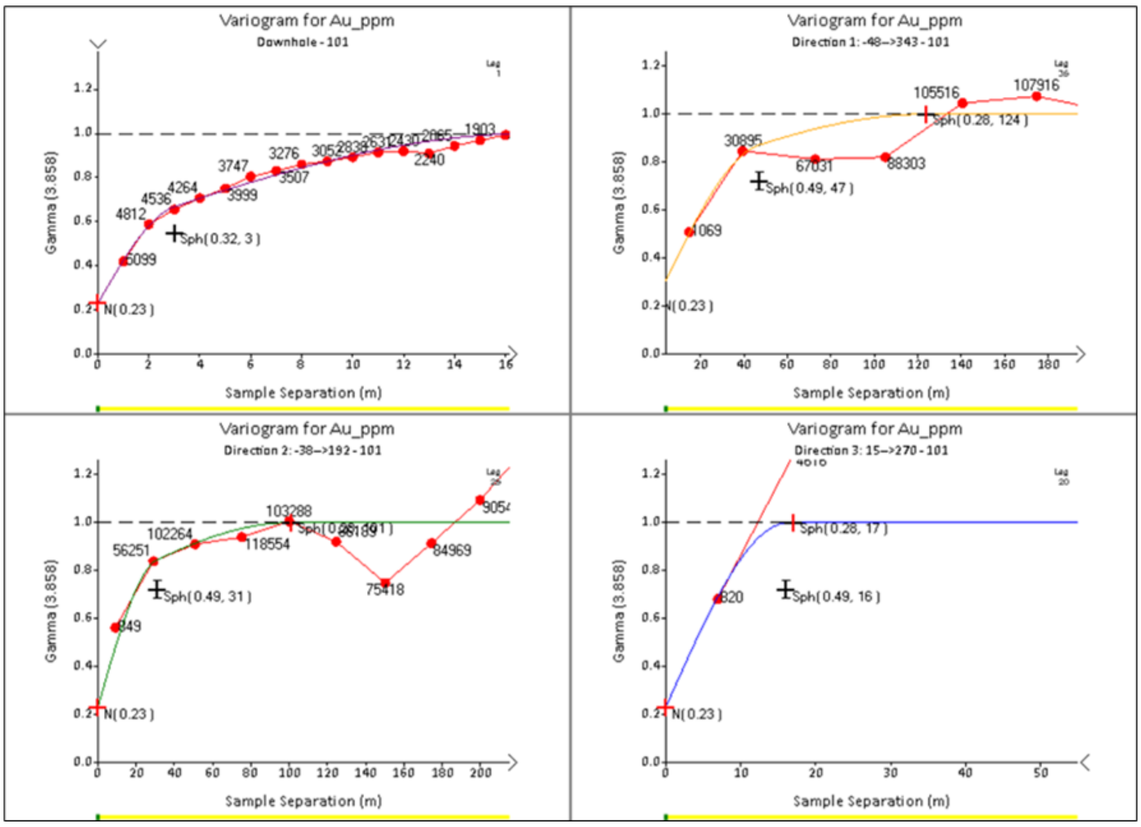


Figure 14-15: Directional Variograms for Obra Domain rbx (101)

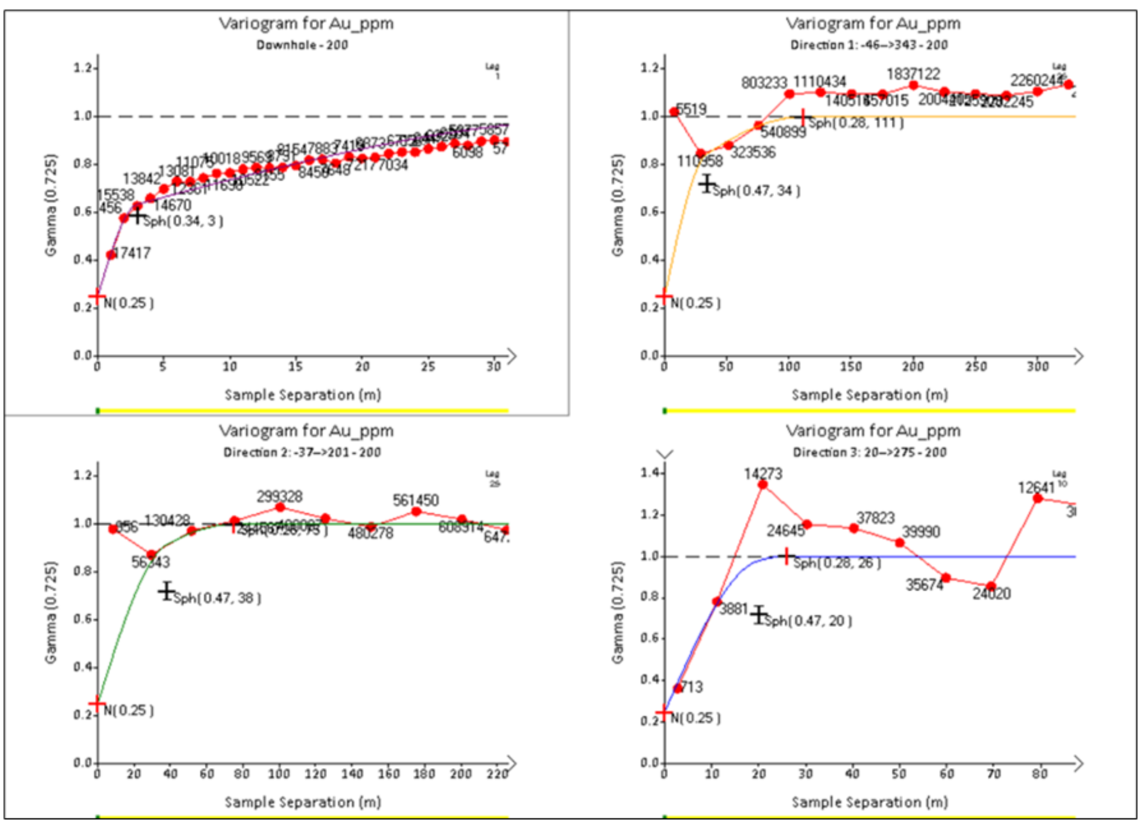


Figure 14-16: Directional Variograms for Akoti Domain 102

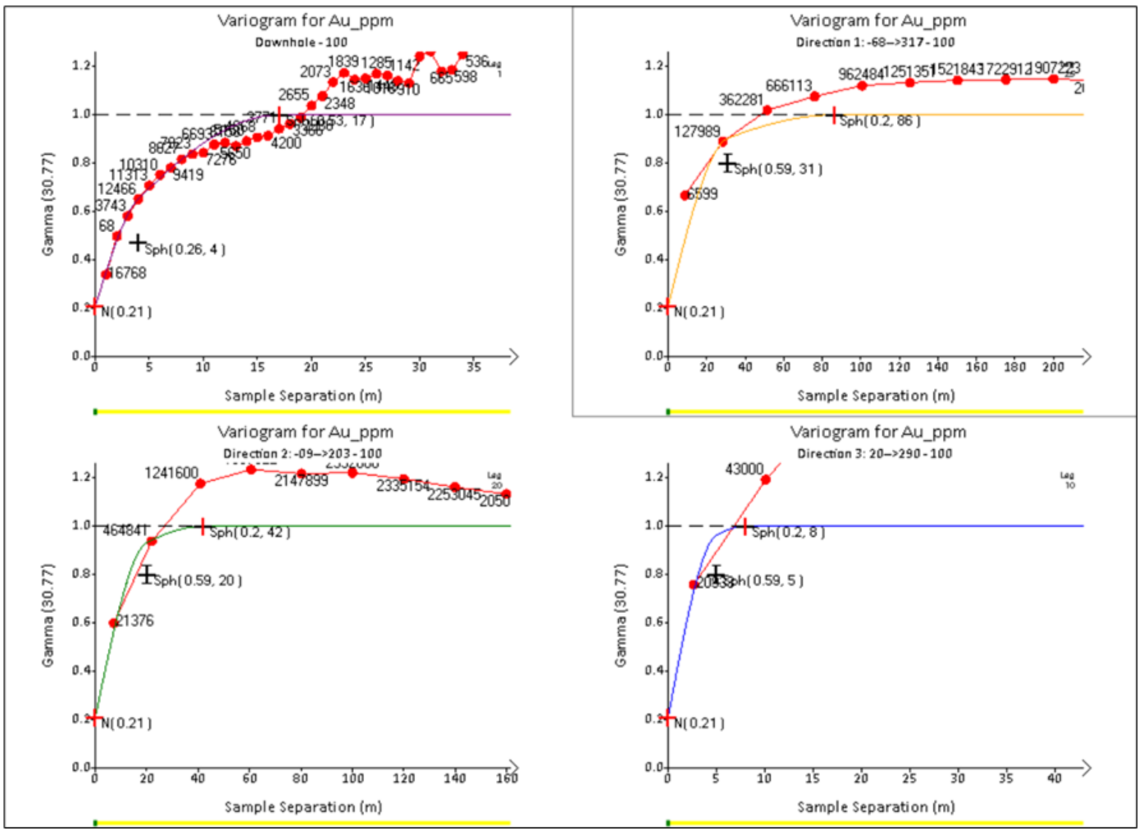


Figure 14-17: Directional Variograms for Akwaaba Domain rbx (100)

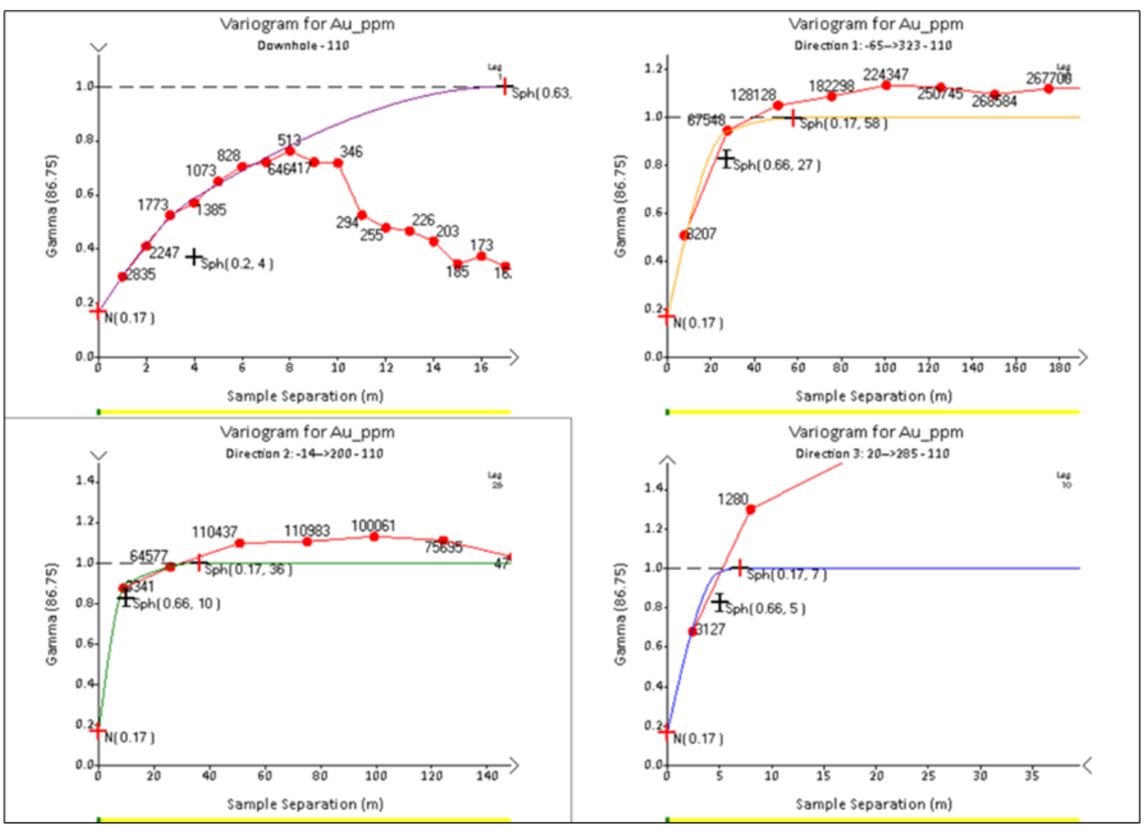


Figure 14-18: Directional Variograms for Akwaaba Domain rix (110)

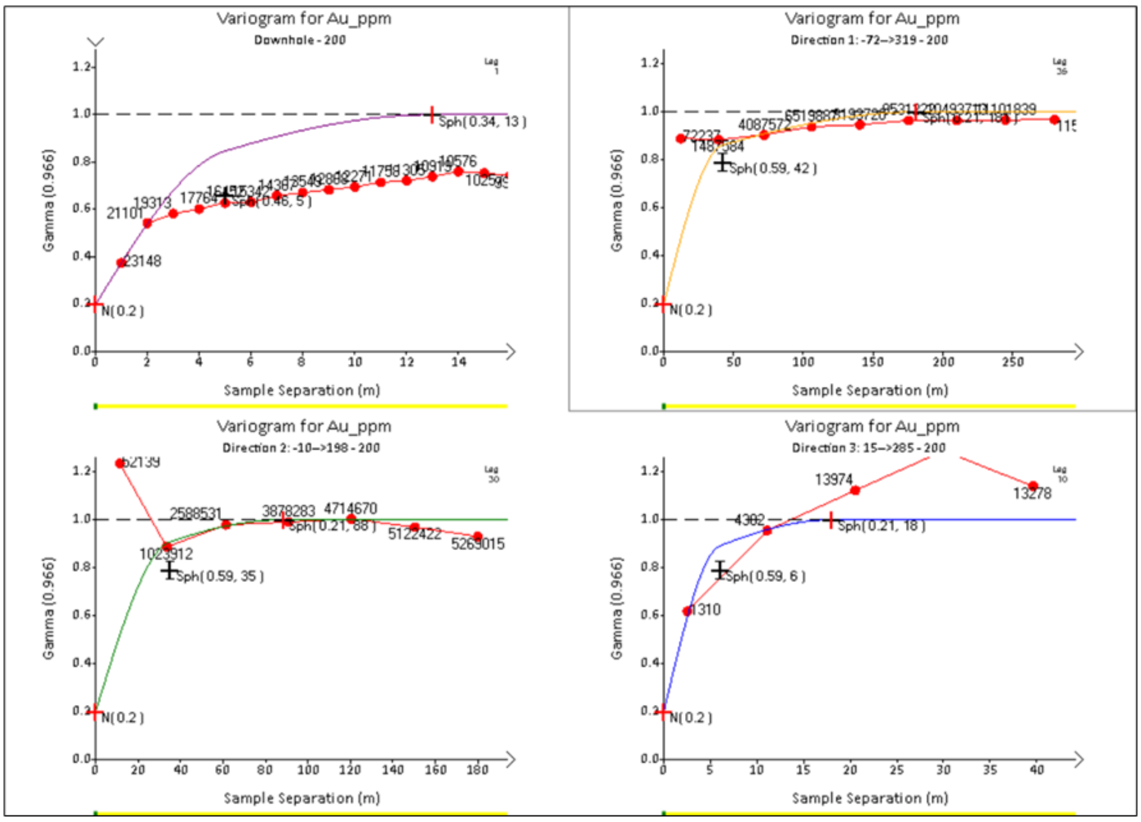


Figure 14-19: Directional Variograms for Akwaaba Domain rsz (200)

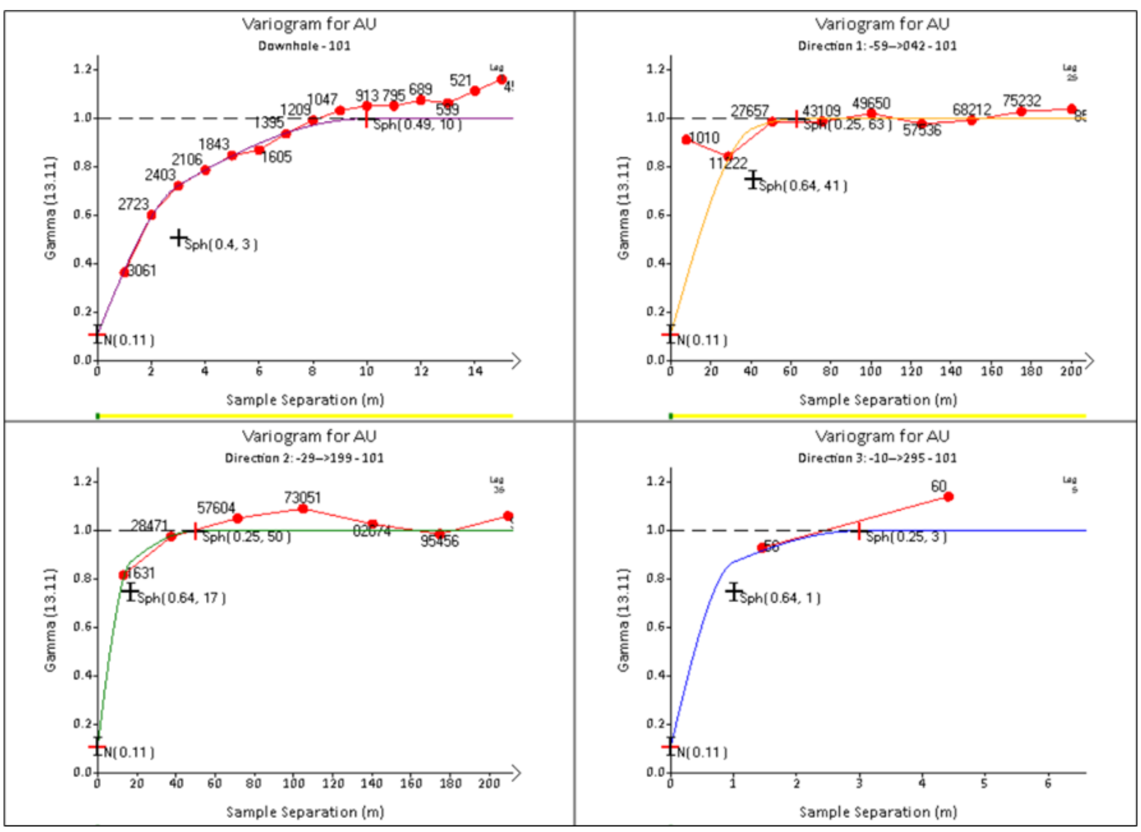


Figure 14-20: Directional Variograms for Suraw Domain bxz (101)

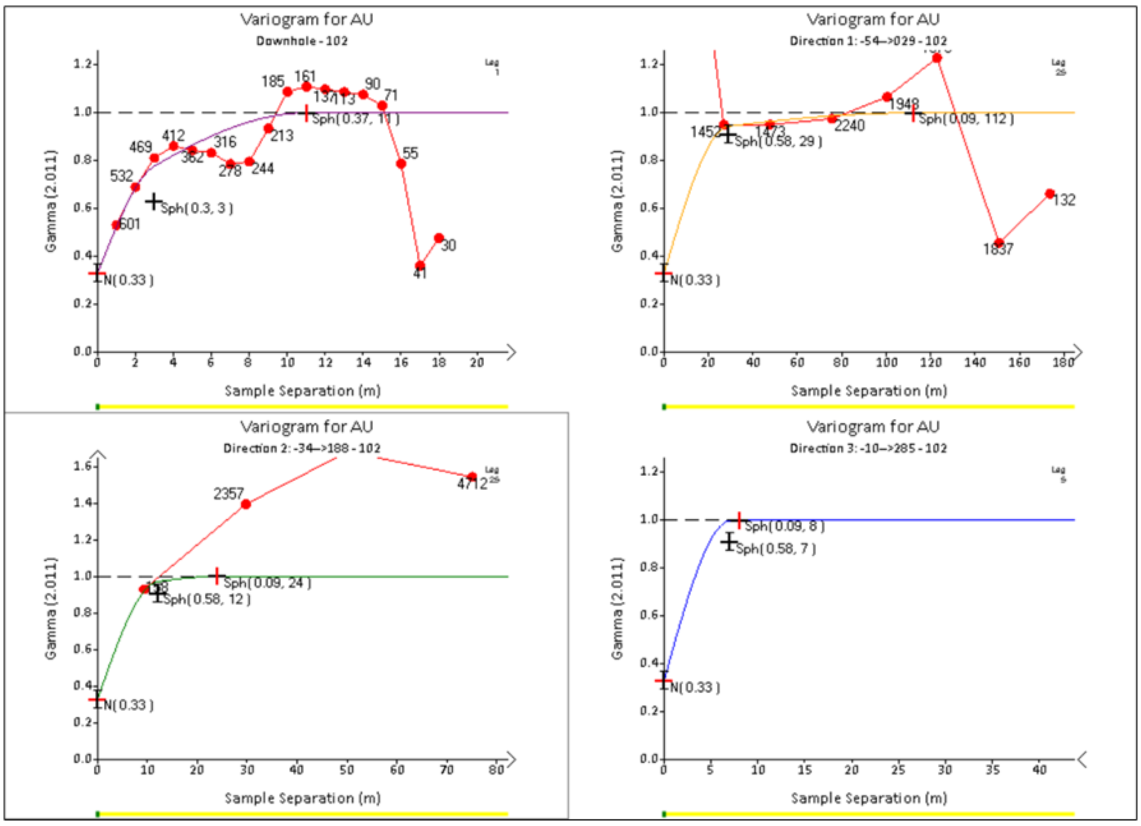


Figure 14-21: Directional Variograms for Suraw Domain rsz_ALL_SWSeg2 (102)

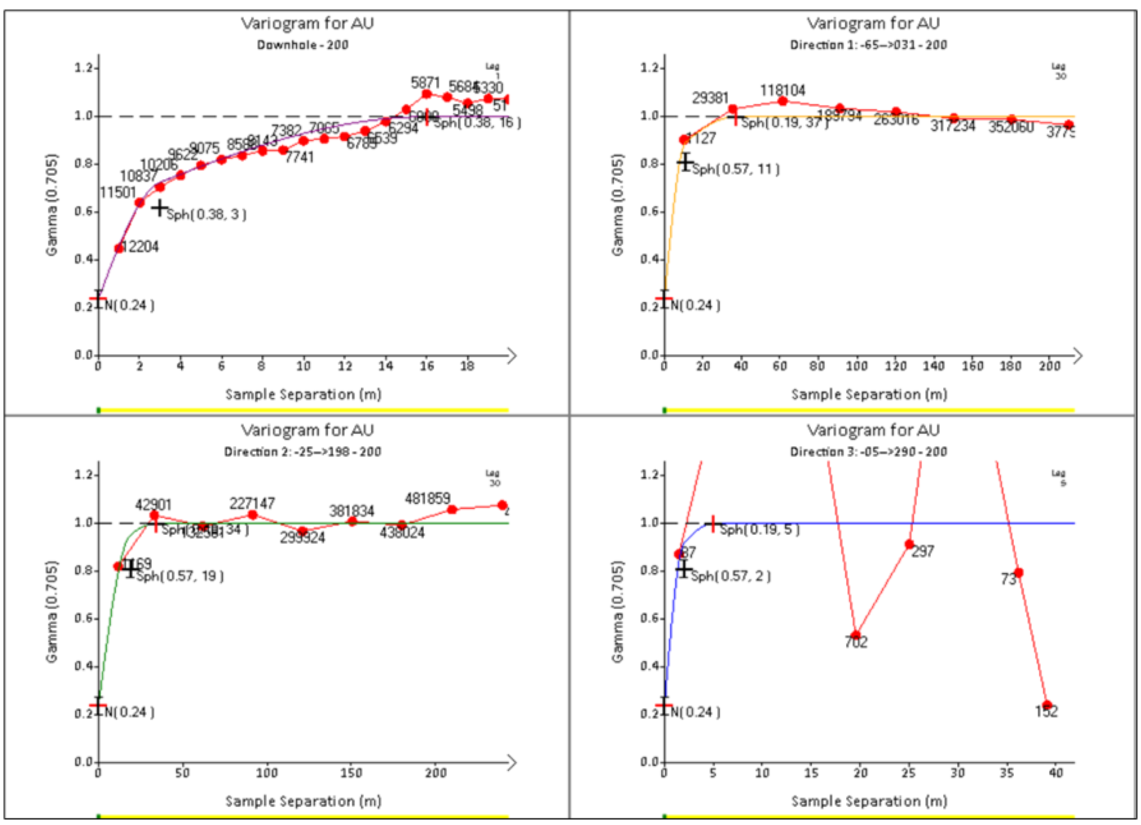


Figure 14-22: Directional Variograms for Suraw Domain rsz (200)

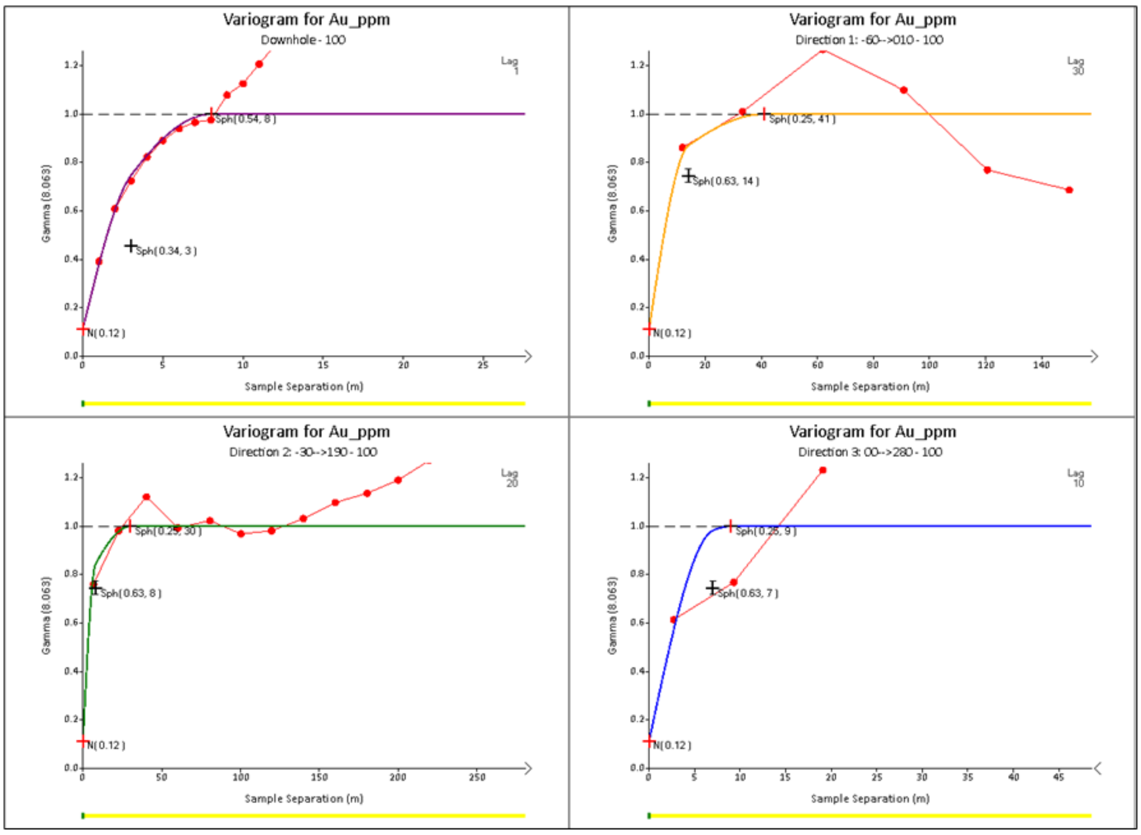


Figure 14-23: Directional Variograms for Tano Domain rbx (100)

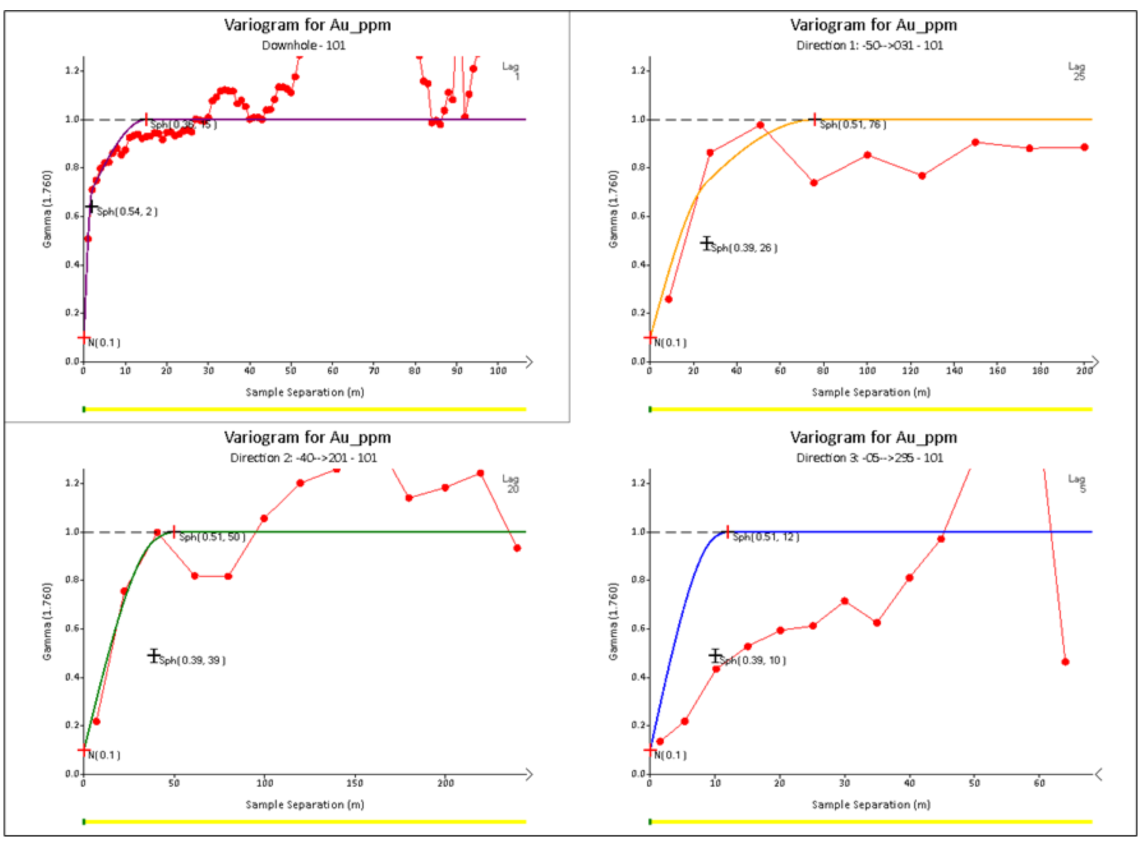


Figure 14-24: Directional Variograms for Tano Domain (101)

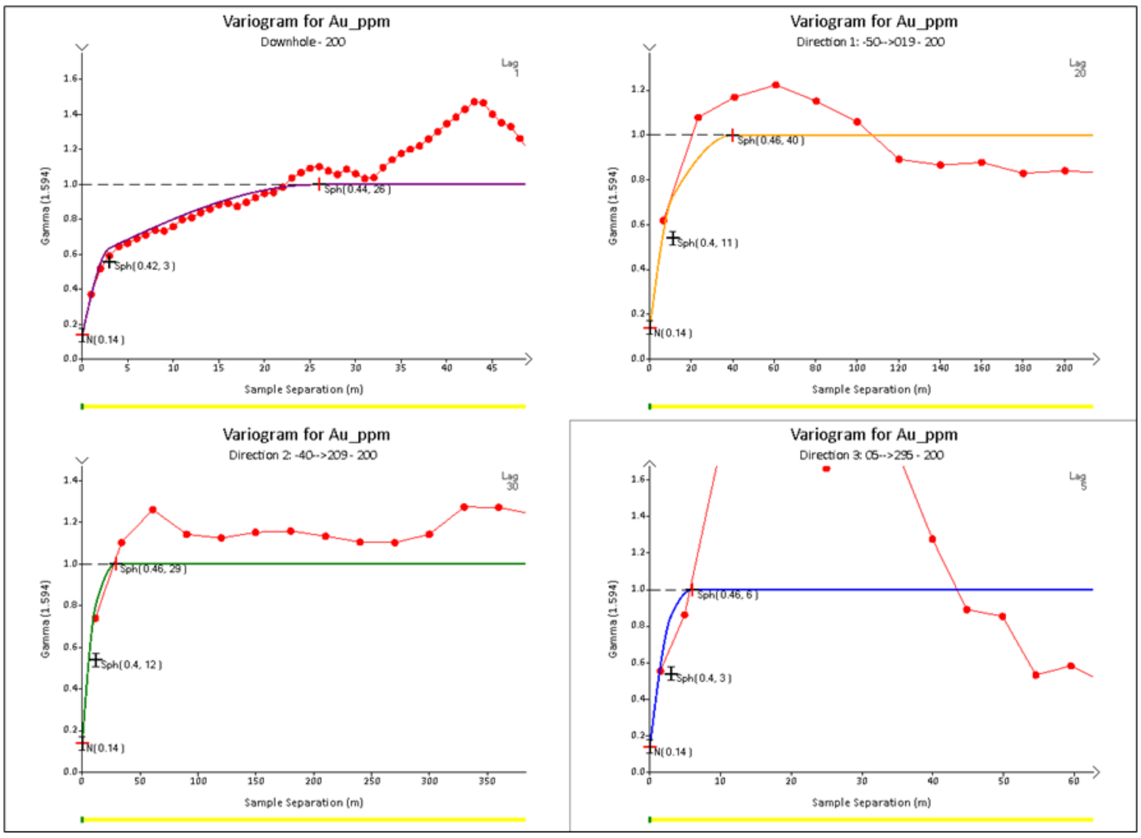


Figure 14-25: Directional Variograms for Tano Domain rsz (200)

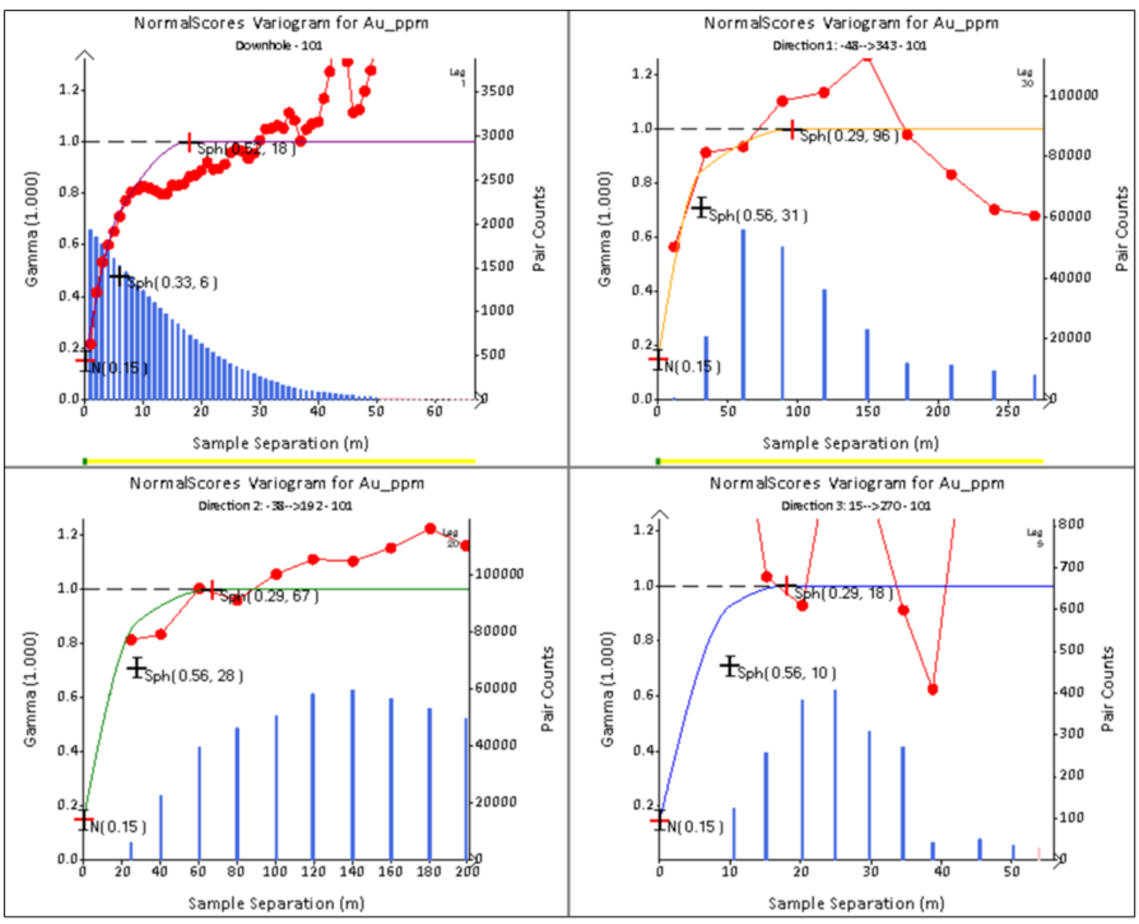


Figure 14-26: Directional Variograms for Mamnao West Splay Domain (101)

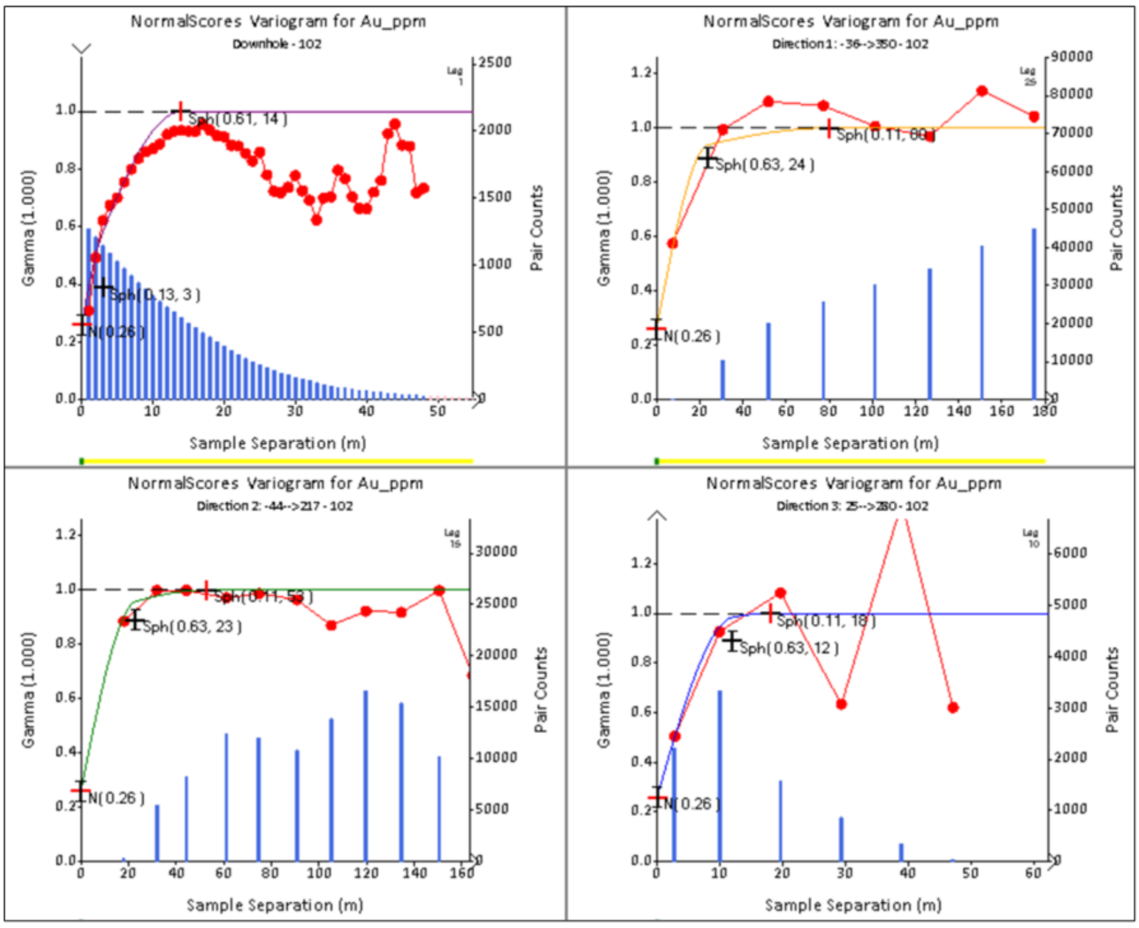


Figure 14-27: Directional Variograms for Mamnao West Splay 2 Domain (102)

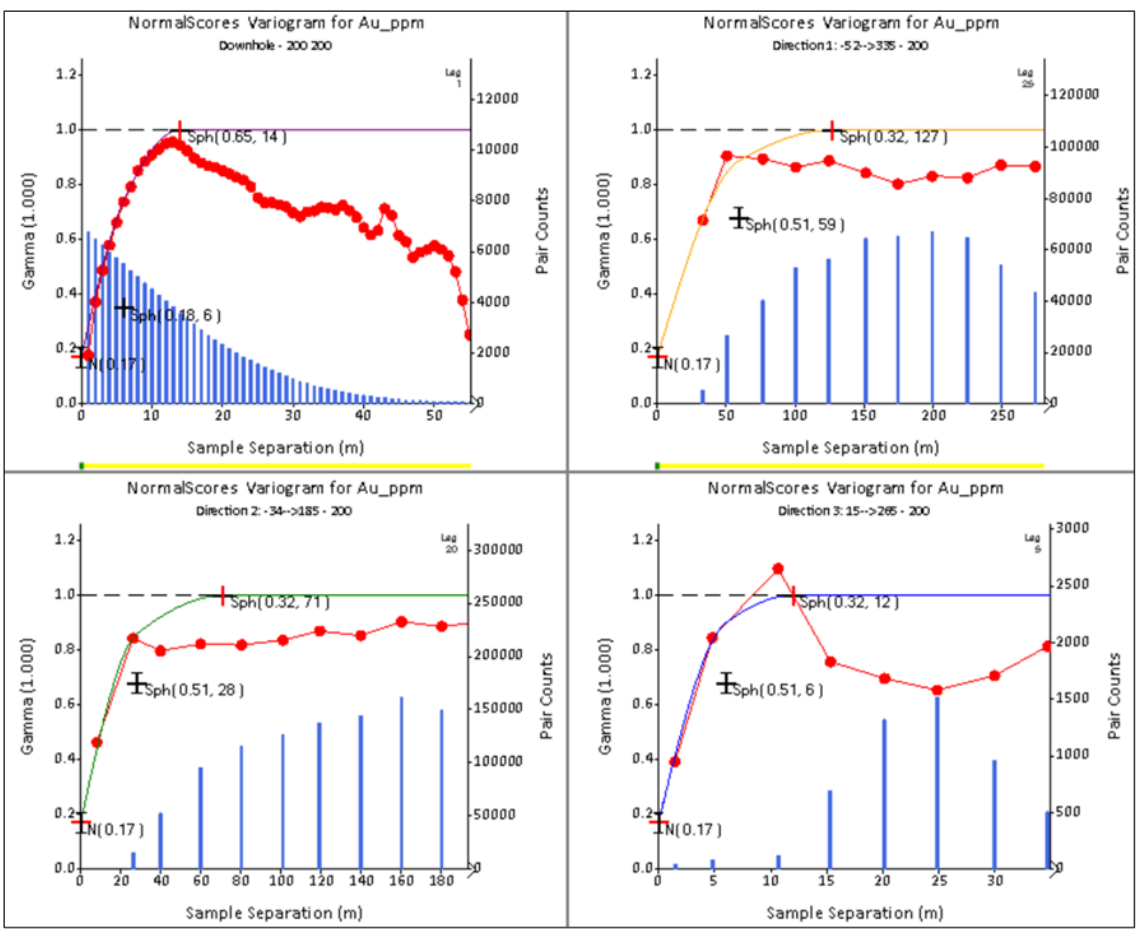


Figure 14-28: Directional Variograms for Mamnao Domain rsz (200)

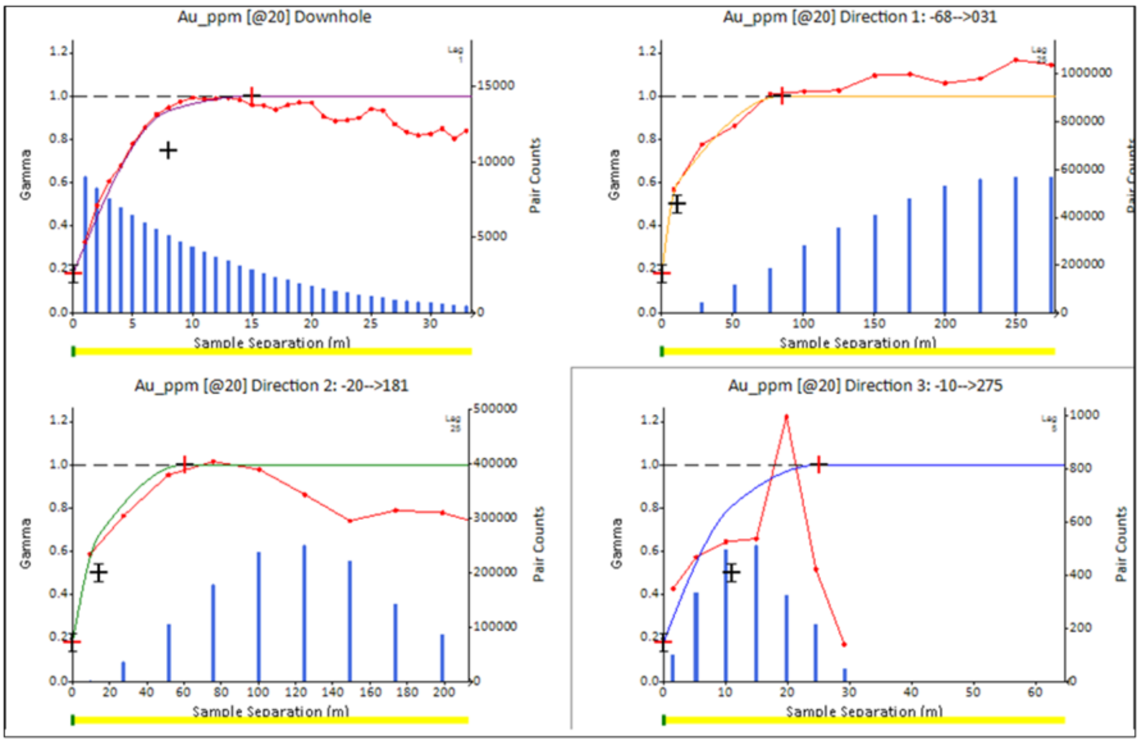


Figure 14-29: Directional Variograms for Domain rbx (101)

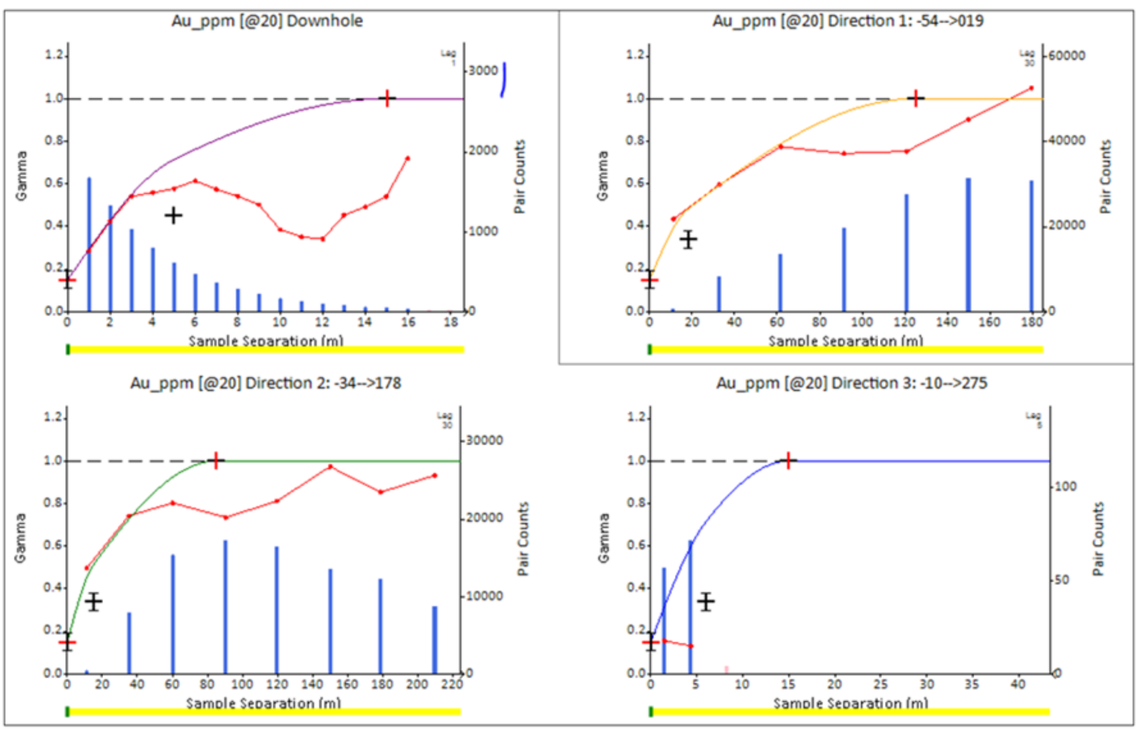


Figure 14-30: Directional Variograms for Domain rix (110)

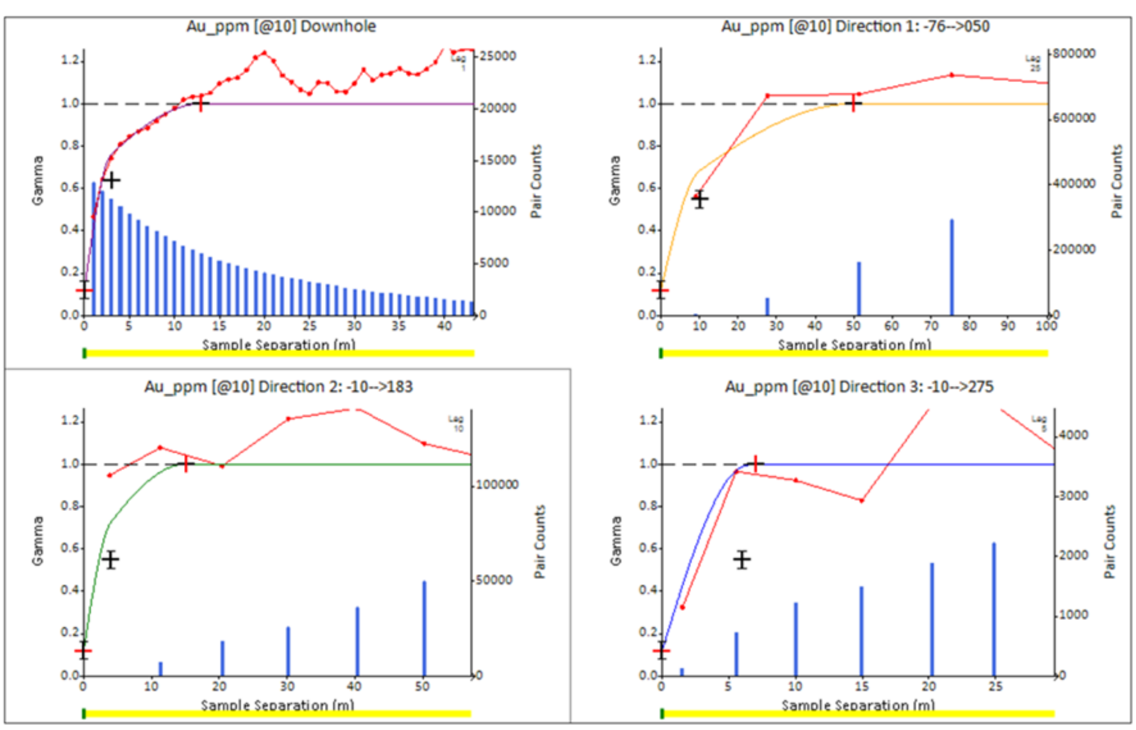


Figure 14-31: Directional Variograms for Paboase Domain rsz (200)

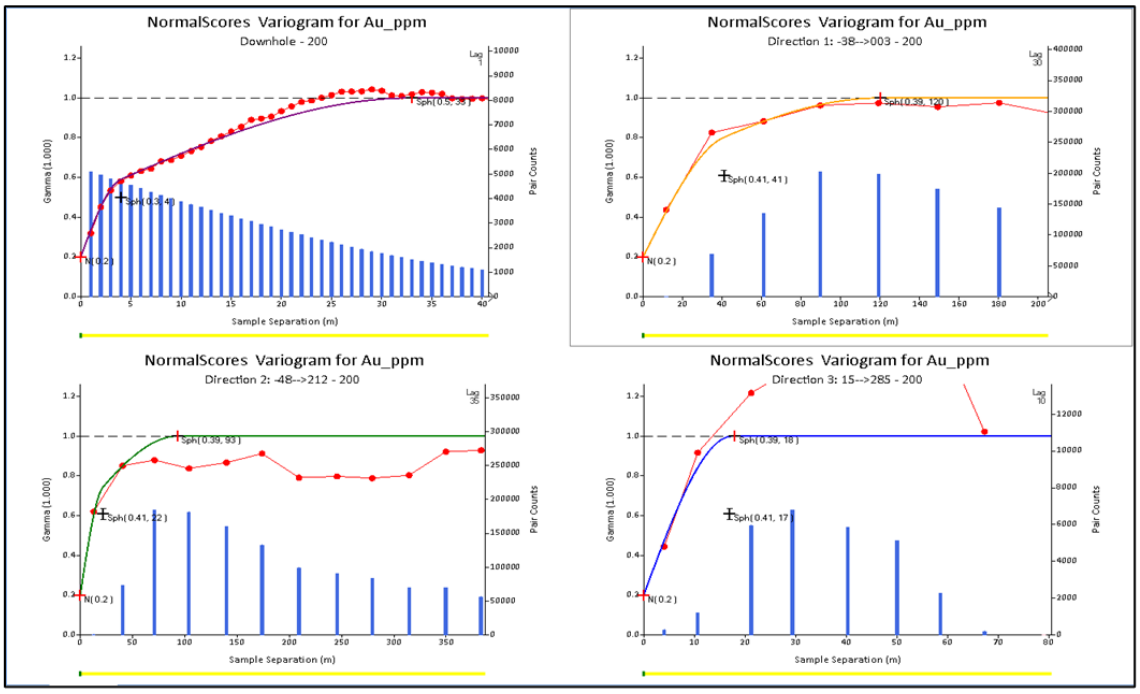


Figure 14-32: Directional Variograms for Sariehu Domain rsz (200)

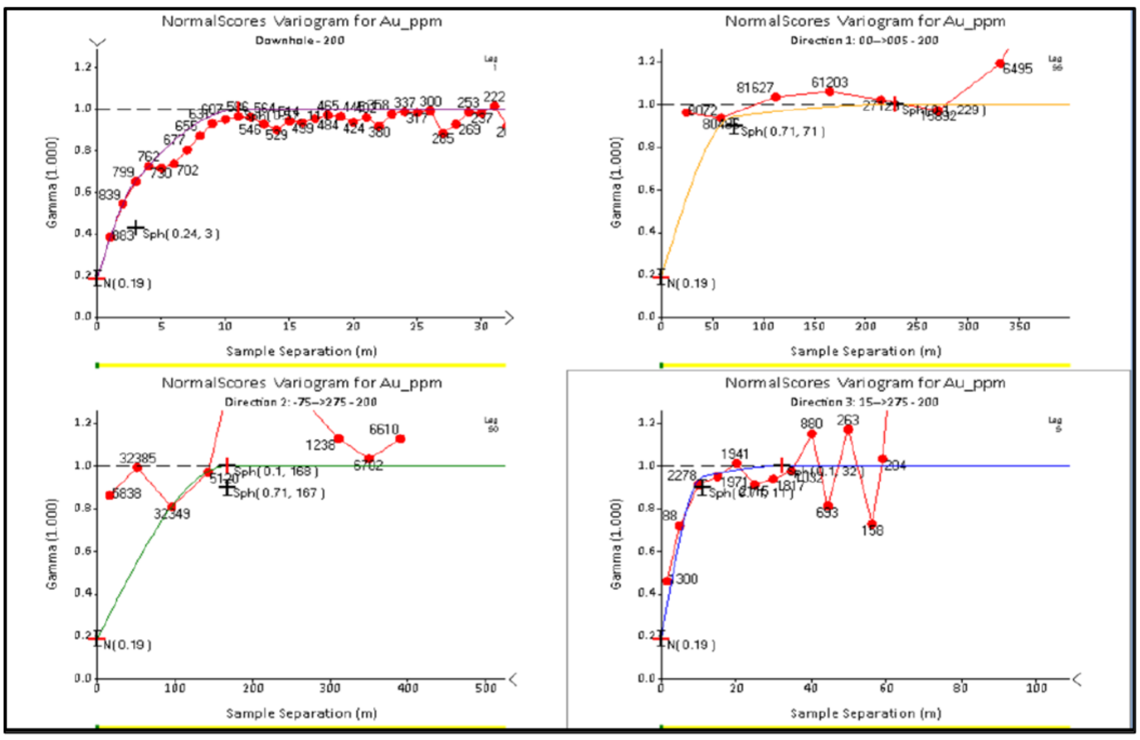


Figure 14-33: Directional Variograms for Kolua Domain rsz (200)

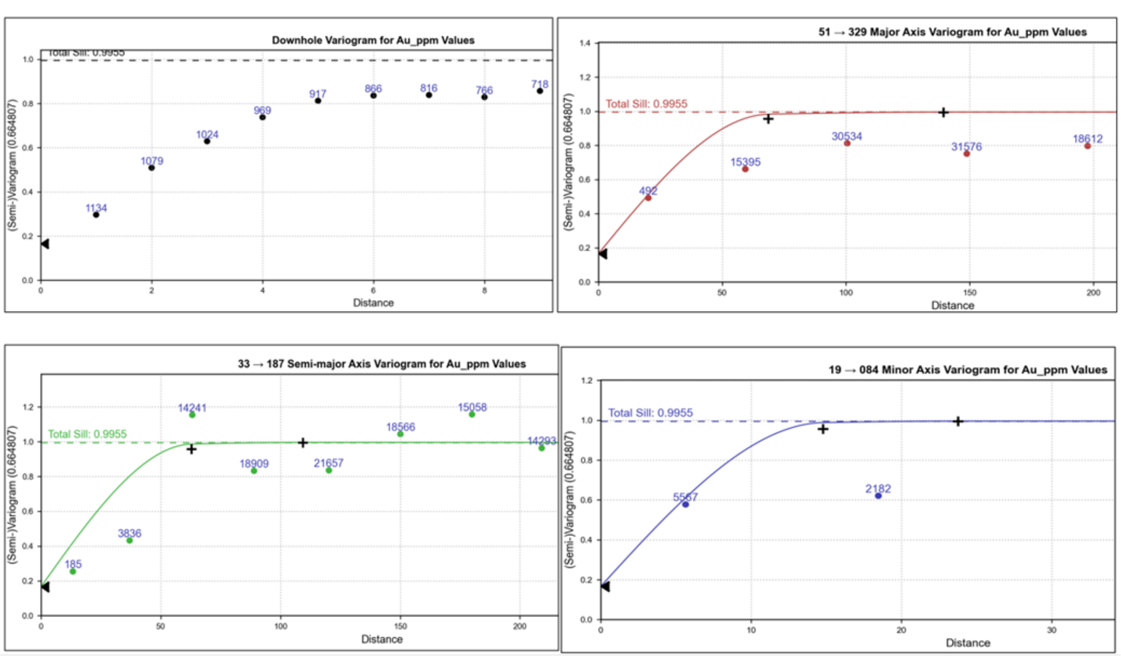


Figure 14-34: Directional Variograms for Mag Hinge Domain rsz (200)

Dip, azimuth and ranges (in metres) of the principal directions are shown in the table below.

Table 14-4: Chirano Deposits – Directional variogram Directions and Ranges

Directional Variograms										
Deposit	Domain	Direction 1			Direction 2			Direction 3		
		Dip (˚)	Azimuth	Range (m)	Dip (˚)	Azimuth	Range (m)	Dip (˚)	Azimuth	Range (m)
Aboduabo	100	-29.5	1	154	-58.5	158	77	-10	265	25
	101	-35	359	142	-55	168	81	-5	265	14
	102	-15	333	130	-72	117	67	-10	240	17
Akoti	101	-74	32	61	-15	231	32	5	320	5
	102	-69	22	94	-20	217	58	5	305	5
	103	-74	22	108	-15	221	43	5	310	5
	104	-79	19	54	-10	226	32	5	315	4
	106	-79	76	60	-10	229	33	-5	320	4
	121	79	334	59	-10	1	15	-5	270	4
	124	76	320	70	-10	7	39	-10	275	2
	126	75	200	99	-15	200	67	0	110	9
	131	-39	27	110	-49	227	74	10	305	8
	132	-33	27	72	-50	246	37	20	310	9
	133	-34	30	73	-52	240	40	15	310	4
	134	-39	32	46	-49	232	26	10	310	5
	136	-39	37	81	-49	237	48	10	315	4
	150	-55	30	57	-35	210	24	0	300	14
Obra	100	-48	343	118	-38	192	96	15	270	23
	101	-48	343	124	-38	192	101	15	270	17
	200	-46	343	111	-37	201	75	20	275	26
Akwaaba	100	-68	317	86	-9	203	42	20	290	8
	101	-61	346	68	-24	202	33	15	285	7
	102	-52	344	37	-27	214	32	25	290	7
	110	-65	323	58	-14	200	36	20	285	7
	200	-72	319	181	-10	198	88	15	285	18
Suraw	101	-59	42	63	-29	199	50	-10	295	3
	102	-54	29	112	-34	188	24	-10	285	8
	200	-65	31	37	-25	198	34	-5	290	5
Tano	100	-60	10	41	-30	190	30	0	280	9
	101	-50	31	76	-40	201	50	-5	295	12
	103	-60	11	52	-30	203	32	5	290	7
	104	-52	20	80	-34	230	38	15	310	12
	106	-55	22	120	-35	192	61	-5	285	8
	110	-60	11	95	-30	203	52	5	290	5
	200	-50	19	57	-40	209	29	5	295	6
Mamnao	101	-48	343	96	-38	192	67	15	270	18
	102	-36	350	80	-44	217	53	25	280	18
	103	-43	345	103	-43	195	70	15	270	15
	200	-52	335	127	-34	185	71	15	265	12
	250	-48	338	128	-38	187	79	15	265	16
Sariehu	200	-38	3	120	-48	212	93	15	285	18
	250	-38	3	206	-48	212	103	15	285	20
Mag Hinge	100	71	264	166	71	264	110	71	264	24
	200	70	266	184	70	266	58	70	266	30
Paboase	110	-83	49.9	204	-5	185	137	-5	275	12
	101	-79	68	91	-5	184	53	-10	275	17
	200	-79	31	98	-10	184	71	-5	275	9
Kolua	100	0	5	237	-70	275	140	20	275	8
	200	0	5	229	-75	275	168	15	275	32

The QP has reviewed the robustness and structure of the experimental and modelled variograms and though most are robust and are well structured, some of the directional variograms are moderately structured, though acceptable for use as inputs into finalisation of continuity directions and ranges as estimation parameters, as set out in the tables below.

14.8 Block Modelling

Block models for each of the deposits were generated in Leapfrog software, covering the extents of the domain models. A parent block size of 1.25m x 1.25m x 5m was used to ensure adequate resolution of the block model as compared to the 3D domain model. Grade estimation was completed in Datamine software. Estimation of re-blocked 5m x 5m x 5m panels was undertaken at Obra, Akwaaba and Suraw.

Block model origins, number of blocks and block size are set out in the table below.

Table 14-5: Chirano Deposits – Block Model Overviews

Deposit	Origin			Number of Blocks			Block Size			Panel Block Size		
	(mE)	(mN)	(mRL)	(mE)	(mN)	(mRL)	(mE)	(mN)	(mRL)	(mE)	(mN)	(mRL)
Akoti	49100	88871	2500	880	1098	206	1.25	1.25	5			
Obra	14745	36500	2445	62	350	210	1.25	1.25	5	5	5	5
Akwaaba	16761	31248	2450	87	181	280	1.25	1.25	5	5	5	5
Suraw	49119	88000	2500	118	218	220	1.25	1.25	5	5	5	5
Tano	49842	90624	2475	589	748	275	1.25	1.25	5			
Mamnao	14475	39000	2602	200	350	467	5	5	3			
Sariehu	14475	38000	1201	200	200	467	5	5	3			
Mag Hinge	17220	27500	2371	120	280	291	5	5	3			
Aboduabo	15206	41721	2470	318	248	224	2.5	5	3			
Kolua	15498	31588	2666	510	481	544	2.5	5	3			
Paboase	49990	90160	1095	156	704	279	1.25	1.25	5			

14.9 Grade Estimation

Grade estimation was completed using a search pass strategy informed by the defined ranges of continuity in each of the principal directions, derived from variography. A three-search strategy of increasing dimensions was used until all blocks in the model received an interpolated grade. Block grade estimates in the first search pass (Pass 1) are of higher confidence than those in subsequent searches (Passes 2 and 3). Minimum and maximum number of samples used in each estimate were set.

Grade estimation search ranges and sample numbers are contained in the table below.

Table 14-6: Chirano Deposits – Grade Estimation Search Passes Inputs

Passes			Search Ranges			Samples	
Deposit	Domain	Search Pass	X Axis Search Range (m)	Y Axis Search Range (m)	Z Axis Search Range (m)	Min (no)	Max (no)
Akoti	101	Pass 1	50	35	7	7	15
		Pass 2	75	52.5	10.5	7	15
		Pass 3	100	70	14	3	15
	102	Pass 1	50	25	7	7	15
		Pass 2	75	37.5	10.5	7	15
		Pass 3	100	50	14	3	15
	103	Pass 1	50	25	5	7	15
		Pass 2	75	37.5	7.5	7	15
		Pass 3	100	50	10	3	15
	104	Pass 1	50	20	5	7	15
		Pass 2	75	30	7.5	7	15
		Pass 3	100	40	10	3	15
	106	Pass 1	40	20	7	7	15
		Pass 2	60	30	10.5	7	15
		Pass 3	80	40	14	3	15
	121	Pass 1	30	20	7	7	15
		Pass 2	45	30	10.5	7	15
		Pass 3	60	40	14	3	15
	124	Pass 1	50	25	7	7	15
		Pass 2	75	37.5	10.5	7	15
		Pass 3	100	50	14	3	15
	126	Pass 1	50	30	7	7	15
		Pass 2	75	45	10.5	7	15
		Pass 3	100	60	14	3	15
	131	Pass 1	50	35	7	7	15
		Pass 2	75	52.5	10.5	7	15
		Pass 3	100	70	14	3	15
	132	Pass 1	50	30	7	7	15
		Pass 2	75	45	10.5	7	15
		Pass 3	100	60	14	3	15
	133	Pass 1	45	25	7	7	15

Passes			Search Ranges			Samples	
Deposit	Domain	Search Pass	X Axis Search Range (m)	Y Axis Search Range (m)	Z Axis Search Range (m)	Min (no)	Max (no)
		Pass 2	67.5	37.5	10.5	7	15
		Pass 3	90	50	14	3	15
	134	Pass 1	45	20	7	7	15
		Pass 2	67.5	30	10.5	7	15
		Pass 3	90	40	14	3	15
	136	Pass 1	40	25	7	7	15
		Pass 2	60	37.5	10.5	7	15
		Pass 3	80	50	14	3	15
	150	Pass 1	50	25	10	7	15
		Pass 2	75	37.5	15	7	15
		Pass 3	100	50	20	3	15
Obra	100	Pass 1	70	50	9	7	15
		Pass 2	105	75	13.5	4	15
		Pass 3	140	100	18	4	15
	101	Pass 1	70	50	9	7	15
		Pass 2	105	75	13.5	4	15
		Pass 3	140	100	18	4	15
	200	Pass 1	70	50	15	7	15
		Pass 2	105	75	22.5	4	15
		Pass 3	140	100	30	4	12
Akwaaba	100	Pass 1	50	35	7.5	18	24
		Pass 2	75	52.5	11.25	12	18
		Pass 3	100	70	15	6	18
	101	Pass 1	60	40	5	18	24
		Pass 2	90	60	7.5	12	18
		Pass 3	120	80	10	6	18
	102	Pass 1	50	45	5	18	24
		Pass 2	75	67.5	7.5	12	18
		Pass 3	100	90	10	6	18
	110	Pass 1	60	40	5	18	24
		Pass 2	90	60	7.5	12	18
		Pass 3	120	80	10	6	18
	200	Pass 1	70	55	10	18	24
		Pass 2	105	82.5	15	12	18
		Pass 3	140	110	20	6	18
Suraw	101	Pass 1	35	25	5	12	24
		Pass 2	52.5	37.5	7.5	6	18
		Pass 3	70	50	10	6	18
	102	Pass 1	40	20	5	12	24
		Pass 2	60	30	7.5	6	18
		Pass 3	80	40	10	6	18
	103	Pass 1	25	20	5	12	24
		Pass 2	37.5	30	7.5	6	18
		Pass 3	50	40	10	6	18
Tano	100	Pass 1	70	50	8	3	15
		Pass 2	105	75	12	3	15
		Pass 3	140	100	16	3	15
	101	Pass 1	55	40	8.5	3	15
		Pass 2	82.5	60	12.75	3	15
		Pass 3	110	80	17	3	15
	103	Pass 1	50	40	8	3	15
		Pass 2	75	60	12	3	15
		Pass 3	100	80	16	3	15
	104	Pass 1	50	35	6	3	15
		Pass 2	75	52.5	9	3	15
		Pass 3	100	70	12	3	15
	106	Pass 1	50	25	5	3	15
		Pass 2	75	37.5	7.5	3	15
		Pass 3	100	50	10	3	15
	110	Pass 1	35	25	5	3	15
		Pass 2	52.5	37.5	7.5	3	15
		Pass 3	70	50	10	3	15
	200	Pass 1	70	50	11	3	15
		Pass 2	105	75	16.5	3	15

Passes			Search Ranges			Samples	
Deposit	Domain	Search Pass	X Axis Search Range (m)	Y Axis Search Range (m)	Z Axis Search Range (m)	Min (no)	Max (no)
		Pass 3	140	100	22	3	15
Mamnao	101	Pass 1	50	35	9	7	15
		Pass 2	75	52.5	13.5	4	15
		Pass 3	100	70	18	2	15
	102	Pass 1	50	30	7	7	15
		Pass 2	75	45	10.5	4	15
		Pass 3	100	60	14	2	15
	103	Pass 1	40	25	5	7	15
		Pass 2	60	37.5	7.5	4	15
		Pass 3	80	50	10	2	15
	200	Pass 1	70	45	10	7	15
		Pass 2	105	67.5	15	4	15
		Pass 3	140	90	20	2	15
	250	Pass 1	50	25	9	7	15
		Pass 2	75	37.5	13.5	4	15
		Pass 3	100	50	18	2	15
Sariehu	200	Pass 1	60	45	5	7	15
		Pass 2	90	67.5	7.5	4	15
		Pass 3	120	90	10	4	15
	250	Pass 1	60	45	7	7	15
		Pass 2	90	67.5	10.5	4	15
		Pass 3	120	90	14	4	15
Mag Hinge	100	Pass 1	100	75	15	3	15
		Pass 2	200	120	30	3	15
	200	Pass 1	100	60	15	3	15
		Pass 2	200	100	30	3	15
Aboduabo	100	Pass 1	65	35	10	7	24
		Pass 2	97.5	52.5	15	7	15
		Pass 3	162.5	87.5	25	5	15
	101	Pass 1	65	40	8	7	24
		Pass 2	97.5	60	12	7	15
		Pass 3	130	80	16	5	15
	102	Pass 1	60	25	7	7	24
		Pass 2	90	37.5	10.5	7	15
		Pass 3	120	50	14	5	15
Kolua	200	Pass 1	80	60	7	7	15
		Pass 2	160	120	14	4	15
		Pass 3	240	180	21	2	15
Paboase	101	Pass 1	50	40	10	7	12
		Pass 2	85	60	15	7	12
		Pass 3	170	120	20	2	9
	110	Pass 1	85	60	10	7	12
		Pass 2	127.5	90	15	7	12
		Pass 3	170	120	20	2	9
	200	Pass 1	50	30	7	7	12
		Pass 2	75	45	10.5	7	12
		Pass 3	100	60	14	2	9

Gold grades were interpolated in the models using Ordinary Kriging (OK) of both the capped and uncapped grade values (capped being the reported block grade with uncapped used as a comparison to assess the influence of grade capping on the estimate, with a Nearest Neighbour (NN) check run for comparison. The NN check used minimum and maximum number of samples set to 1.

Final block model files used for assessment of RPEEE, classification and preparation of the Mineral Resource Statement for Chirano are contained in the table below.

Table 14-7: Block Model Files

Deposit	Block Model File Name	Deposit	Block Model File Name
Akoti Sth OP	bm_akoti_s_op_jan2019.dm	Mamnao OP	bm_mamnao_July2022.dm
Akoti UG	bm_akoti_ore_sept2023.dm	Sariehu UG & OP	bm_sah_ore_aug2023.dm
Obra UG & OP	Bm_obra_0214.dm	Mag Hinge OP	BM_Maghinge_Jul21.dm
Akwaaba	AK_0822_BMOK	Aboduabo UG	abo 1023_bmok.dm
Suraw UG	SU_0923_BMOK.dm	Kolua OP	bm_kolua_ore_nov20.dm

Deposit	Block Model File Name	Deposit	Block Model File Name
Tano UG	bm_tan_ore_mar2022.dm	Paboase UG	bm_pab_res_sept20.dm

14.10 Reasonable Prospects of Eventual Economic Extraction (RPEEE)

Reasonable prospects of eventual economic extraction (RPEEE) must be demonstrated when disclosing estimates of Mineral Resources. At Chirano, the current mining of multiple deposits by both underground and open pit mining methods provides a reasonable set of mining and conceptual economic parameters with which to assess RPEEE.

Accordingly, RPEEE of Chirano Mineral Resource estimates disclosed herein is demonstrated via;

- The application of conceptual economic cut-off grades for open pit mining, evaluated using input parameters derived from the current mining operation, using a gold price of US$1,950.
- Constraining deposit block models to conceptual optimised pit shells (in the case of open pit Mineral Resources) or to conceptual MSO shapes (in the case of underground deposits) using a $1,950 gold price. In the case of underground block models, Mineral Resources report all material within the constraining volume.

Tabulations of the parameters used to calculate cut-off grades for each the deposits are set out in the tables below. The COG for Paboase remains at the historical mining cut-off since operations at this deposit are currently suspended and thus there are no updated actual costs with which to update the COG. This remains at 1.34g/t Au.

Table 14-8: Mineral Resource Cut-Off Grade Calculation Parameters for Underground Mineral Resource Reporting

Deposit	Akwaaba	Akoti	Tano	Suraw	Obra
Opex Cost per Tonne (US$/t)	**2021 SBP**	**2021 SBP**	**2021 SBP**	**2021 SBP**	**2021 SBP**
Mining Cost	34.97	33.51	31.85	29.61	28.02
Process Costs	16.13	16.13	16.13	16.13	16.13
Site Administration Costs	7.37	7.37	7.37	7.37	7.37
Sustaining Capital		-	-	-	-
Total US$/Ore Tonne	**58.48**	**57.01**	**55.36**	**53.11**	**51.52**
Average Total Mining Cost	**34.97**	**33.51**	**31.9**	**29.6**	**28.02**
Secondary Development		-	-	-	-
Stoping	29.36	27.32	26.24	24.00	22.41
Backfill	0.57	1.15	0.57	0.57	0.57
Other	5.05	5.05	5.05	5.05	5.05
Others	**5.05**	**5.05**	**5.05**	**5.05**	**5.05**
Surface Haulage (Transit to ROM)	3.28	3.3	3.3	3.3	3.3
Assay	1.76	1.76	1.76	1.76	1.76
Costs per Gold Ounce (US$/Oz)					
Shipment & Refinery	6.31	6.31	6.31	6.31	6.31
Royalty (5.6% of effective Revenue)	-	-	-	-	-
Reclamation Costs	3.66	4.9	4.7	2.5	6.9
Total US$ per Gold Ounce	9.97	11.3	11.0	8.8	13.2
Total US$ per Gold Gram	0.62	0.7	0.7	0.5	0.8
Gold Price	1 950	1 950	1 950	1 950	1 950
Gold Recovery	88%	88%	88%	88%	88%
Overbreak Dilution (%)	12.5%	12.5%	12.5%	12.5%	12.5%
Cut-Off Including Dilution (g/t)	1.13	1.10	1.07	1.03	1.00

Table 14-9: Cut-Off Grade Calculation Parameters – Open pit – Mamnao, Sariehu and Obra

Parameter	Units	Mamnao	Sariehu	Obra
		OP	OP	OP
Gold Price	(US$/oz)	1 950	1 950	1 950
Mining Dilution	(%)	5	5	5
Mining Recovery	(%)	98	98	98
Mining Cost				
Oxide	(US$/t ore)	3.50	3.50	3.50
Transition	(US$/t)	3.50	3.50	3.50
Fresh	(US$/t)	3.50	3.50	3.50
Recoveries				
Oxide	(%)	Coded in BM Zone 1 - 94% Oxide South of 39500 Zone 2 – 59% Oxide North of 39500	82	90

Parameter	Units	Mamnao	Sariehu	Obra
		OP	OP	OP
Transition	(%)	92		
Fresh	(%)	92		
Processing Cost				
Oxide	(US$/t ore)	10.75	10.75	10.75
Transition	(US$/t ore)	10.75	10.75	10.75
Fresh	(US$/t ore)	10.75	10.75	10.75
Other Operating Costs				
G&A	(US$/t ore)	0	0	0
Calculated CoGs				
Oxide	(g/t)	0.31	0.22	0.20
Transition	(g/t)	0.31	0.22	0.20
Fresh	(g/t)	0.31	0.22	0.20

Table 14-10: Cut-Off Grade Calculation Parameters – Open Pit - Akoti South, Kolua, Mag Hinge and Aboduabo

Mineral Resource Reporting Cut-Off Grade (Informed by Operational Inputs)		
Parameters	**Unit**	**Value**
Revenue	**(US$/oz)**	**1950**
Gold Price (Mineral Resource Reporting)	(US$/oz)	1950
Selling Cost	**(US$/oz)**	**99.76**
Refinery and Shipment	(US$/oz)	4.56
Government Royalty	(%)	5.6
Government Royalty	(US$/oz)	95.2
Operating Cost		
Mining		
Waste	(US$/t mined)	3.09
Ore	(US$/t mined)	3.24
Transition Waste	(US$/t mined)	3.09
Transition Ore	(US$/t mined)	3.24
Fresh Waste	(US$/t mined)	3.09
Fresh Ore	(US$/t mined)	3.24
Contractor Management fees	(US$/ t milled)	1.18
Grade Control	(US$/ t milled)	1.40
Owner Mining Fixed Cost	(US$/t milled)	2.17
Processing		
Process Feed - CIL	(US$/t milled)	16.10
Process G&A	(US$/t milled)	
Admin G&A	(US$/t milled)	7.41
Ore Rehandling	(US$/t milled)	
Sustaining Capex	(US$/t milled)	0.44
Operating Parameters		
Mining		
Mining Recovery	(%)	98
Ore Dilution	(%)	10
Processing		
Recovery	(%)	82.5
Oxide	(%)	83.0
Transition	(%)	83.0
Fresh	(%)	83.0
Mineral Resource Cut-Off Grade		
Oxide	**(g/t ore)**	**0.49**
Transition	**(g/t ore)**	**0.49**
Fresh	**(g/t ore)**	**0.49**

14.11 Mineral Resource Validation

Grade estimates for each of the block models were validated using a standard best-practise four-point approach, augmented by consideration of the OK versus NN estimates and general reconciliation performance during active mining of relevant deposits. The four-point approach for each model comprised;

- Comparison of input 3D domain model volume against output block model volume, for each deposit model.

- Comparison of the histogram of input capped composite grade distribution against the histogram of output block model grade distribution and analysis of average grade.
- Generation of swath plots – comparison of average grade of input and output gold grades of slices through the block model is the N, E and RL directions and assessment of the degree of grade smoothing.
- Visual interrogation of the model to assess the visual comparison of block grades and drill hole composite grades.

The comparison of block model domain volumes against wireframe domain volumes showed no significant variation such that the block model volumes honour the input wireframe volumes.

The review of input capped composite grades against output block model grades showed reasonable comparison. There is a degree of smoothing of block model grades, as is expected, but is considered reasonable.

Examples of swath plots showing input mean grades and output block model grades by slices in the N, E and RL directions are shown in the figures below.

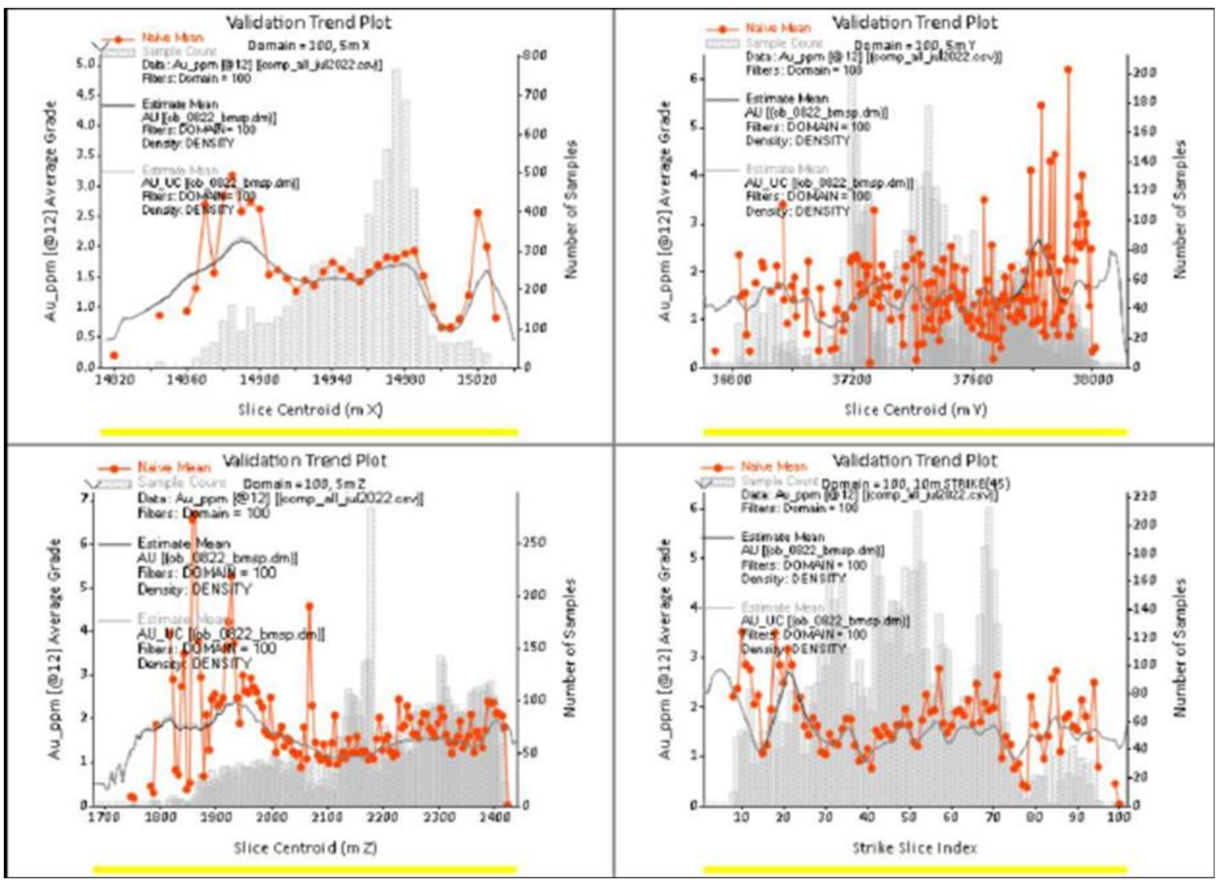


Figure 14-35: Swath Plots – Slice Through the Model in the East, North, RL and Strike Directions – Obra Domain 100

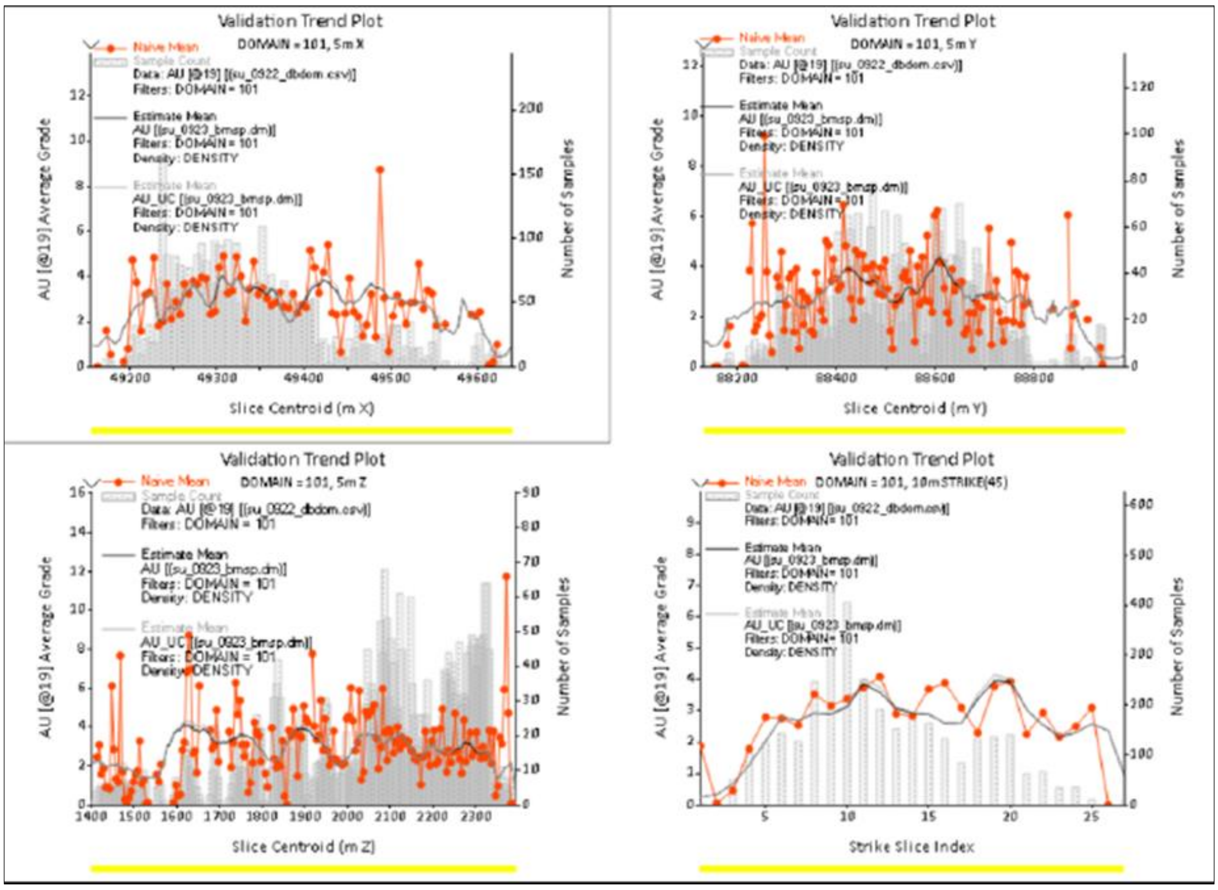


Figure 14-36: Swath Plots – Slice Through the Model in the East, North, RL and Strike Directions – Suraw rbx Domain 101

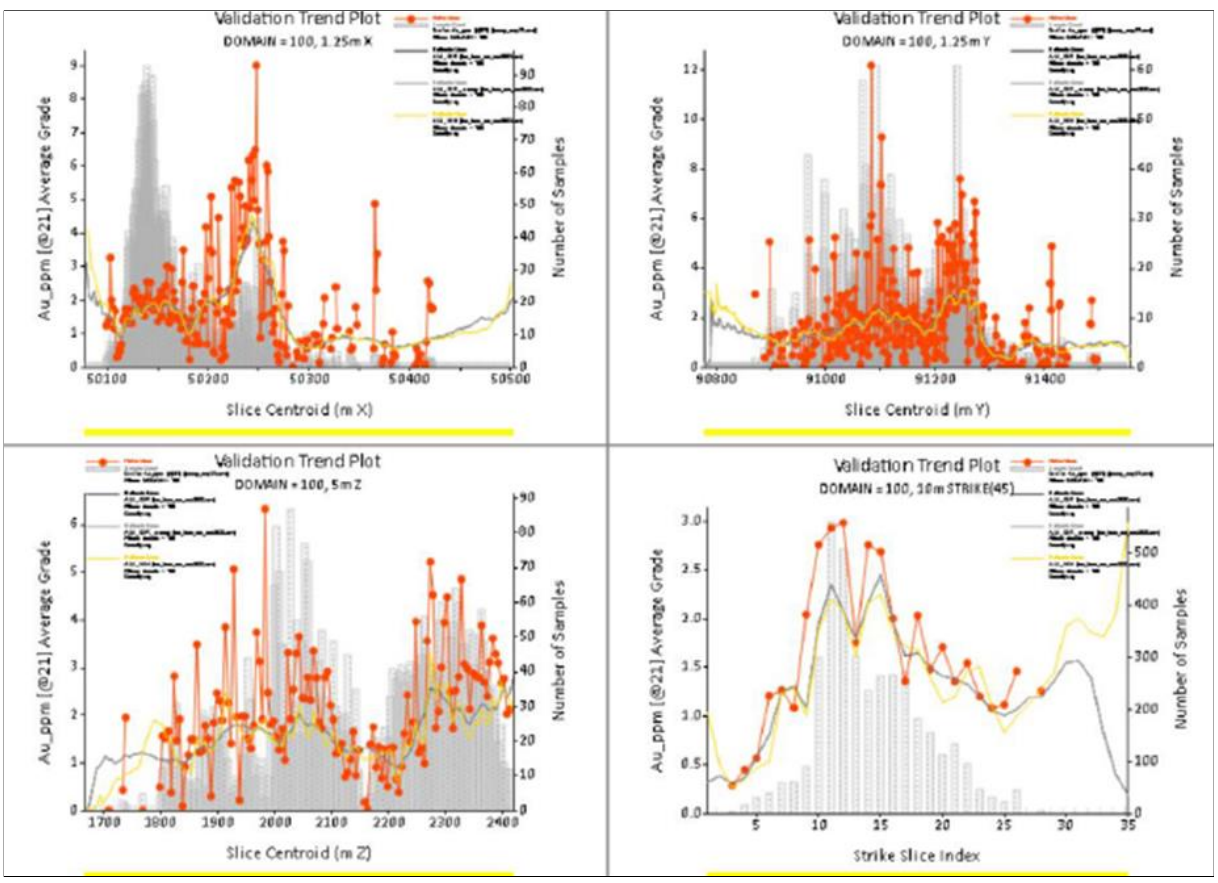


Figure 14-37: Swath Plots – Slice Through the Model in the East, North, RL and Strike Directions – Tano Domain 100

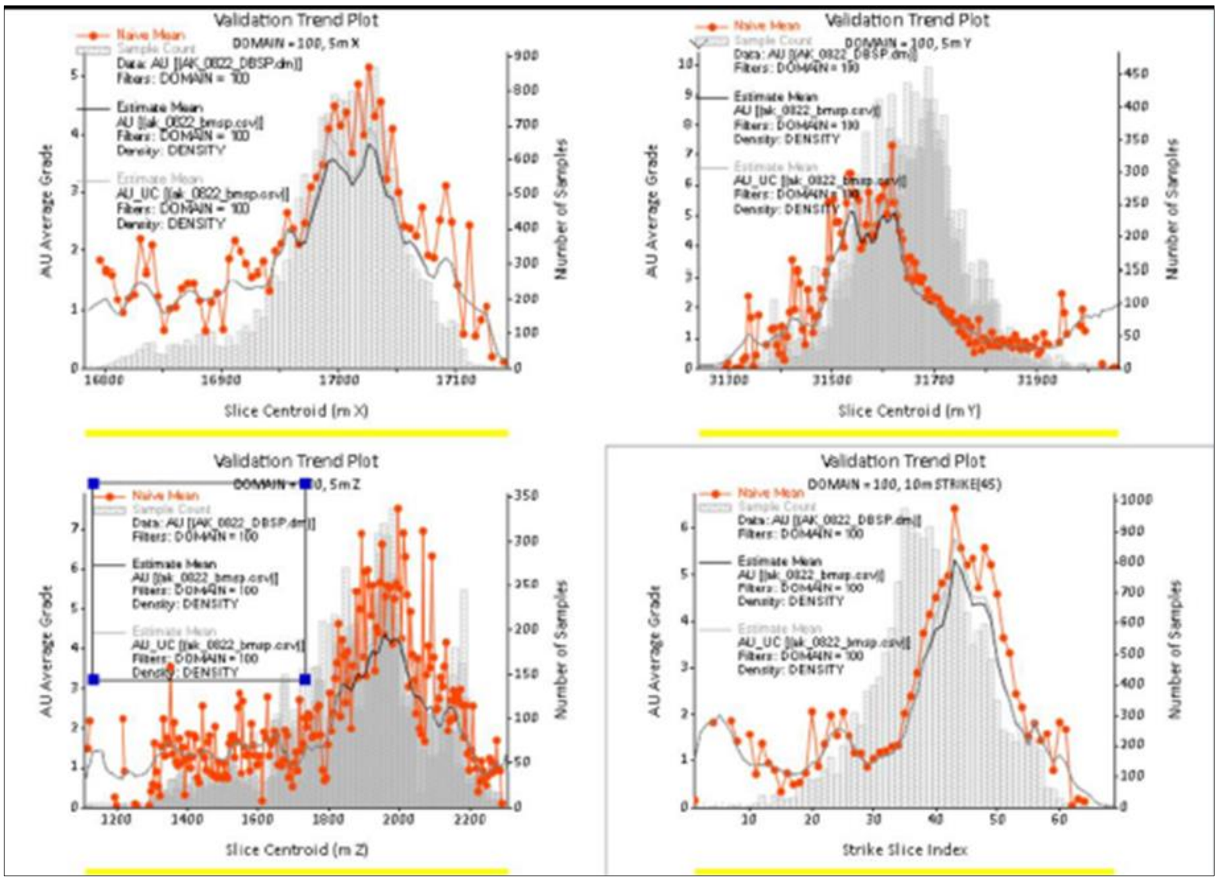


Figure 14-38: Swath Plots – Slice Through the Model in the East, North, RL and Strike Directions – Akwaaba Domain 100

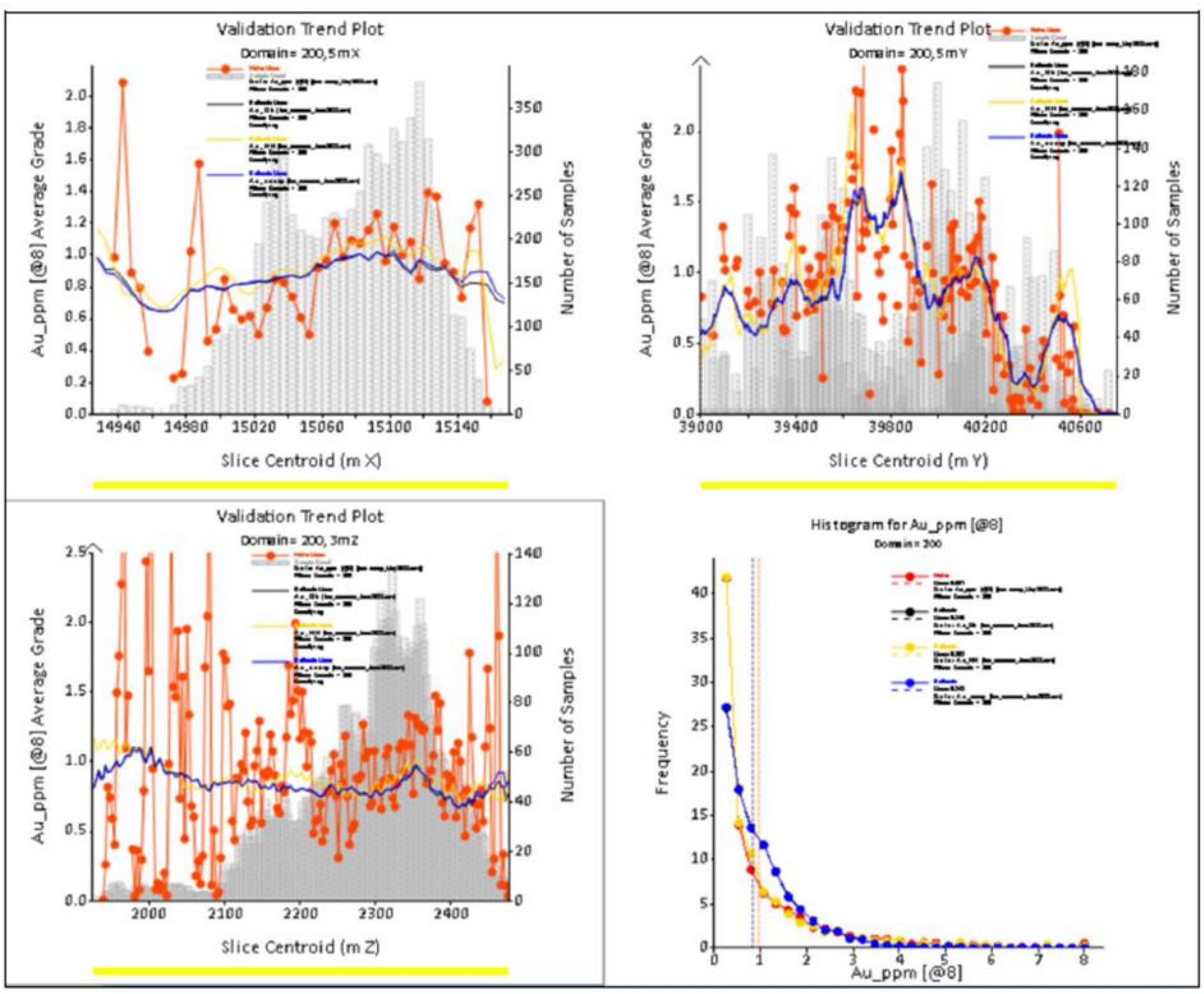


Figure 14-39: Swath Plots – Slice Through the Model in the East, North, RL Directions with Au Histogram – Mamnao rsz Domain 200

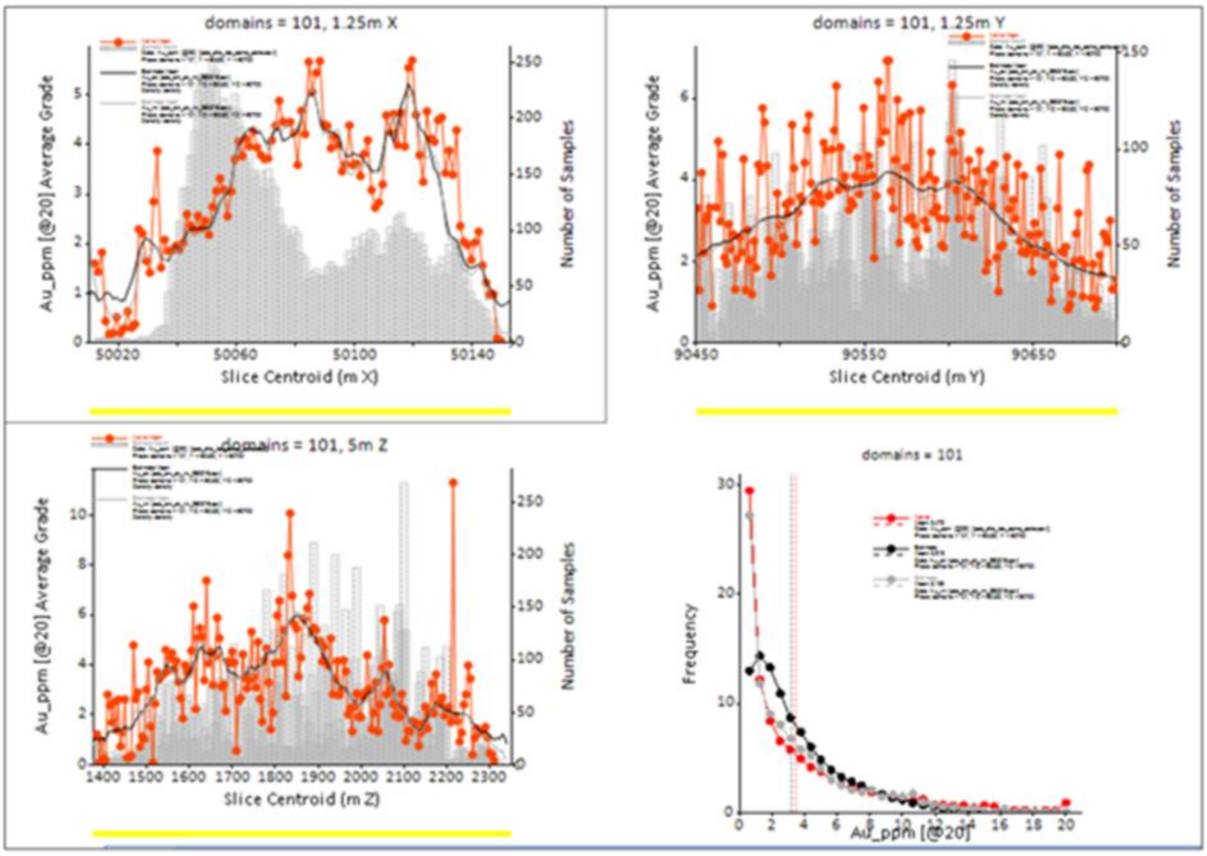


Figure 14-40: Swath Plots – Slice Through the Model in the East, North, RL Directions with Au Histogram – Paboase Domain 101

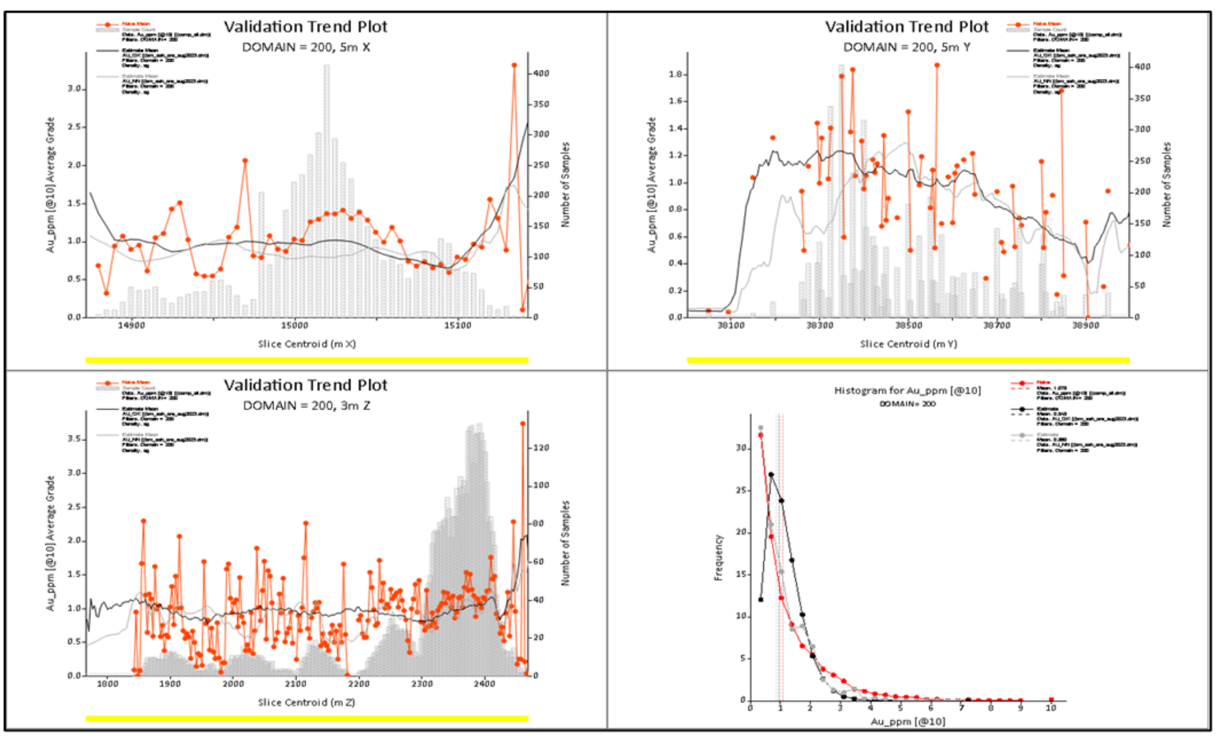


Figure 14-41: Swath Plots – Slice Through the Model in the East, North, RL Directions with Au Histogram – Sariehu Domain 200

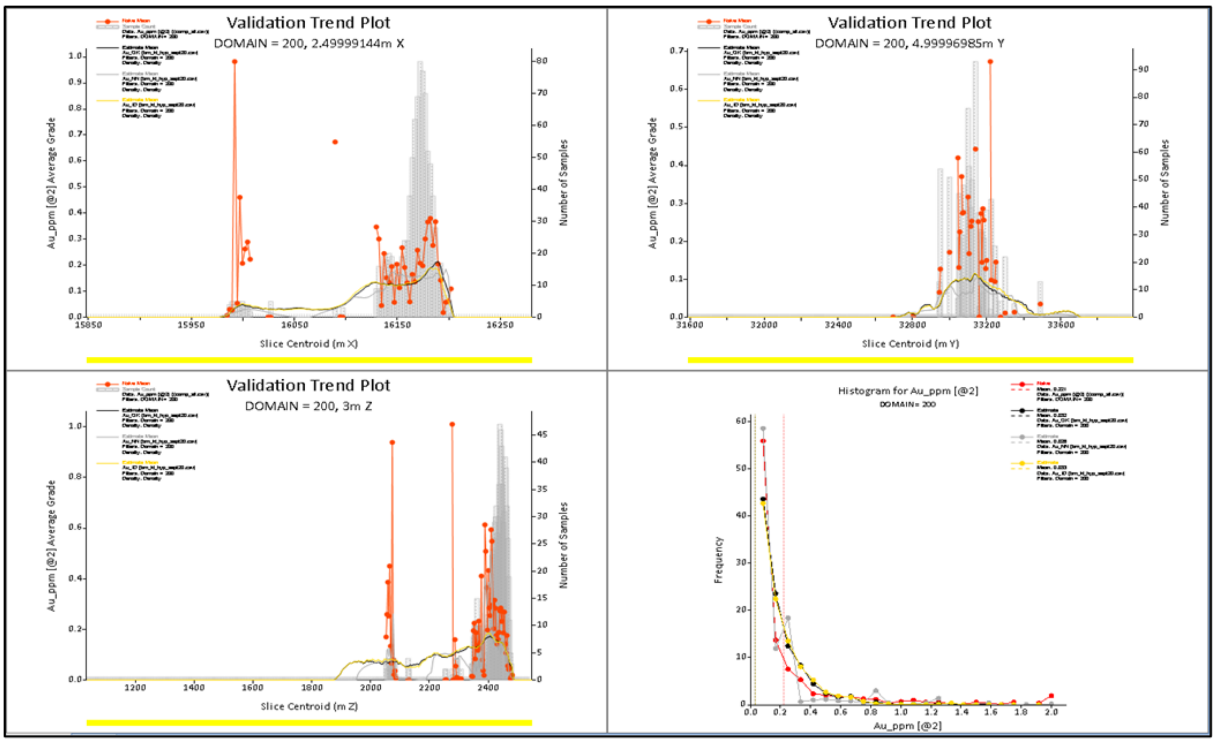


Figure 14-42: Swath Plots – Slice Through the Model in the East, North, RL Directions with Au Histogram – Kolua Domain 200

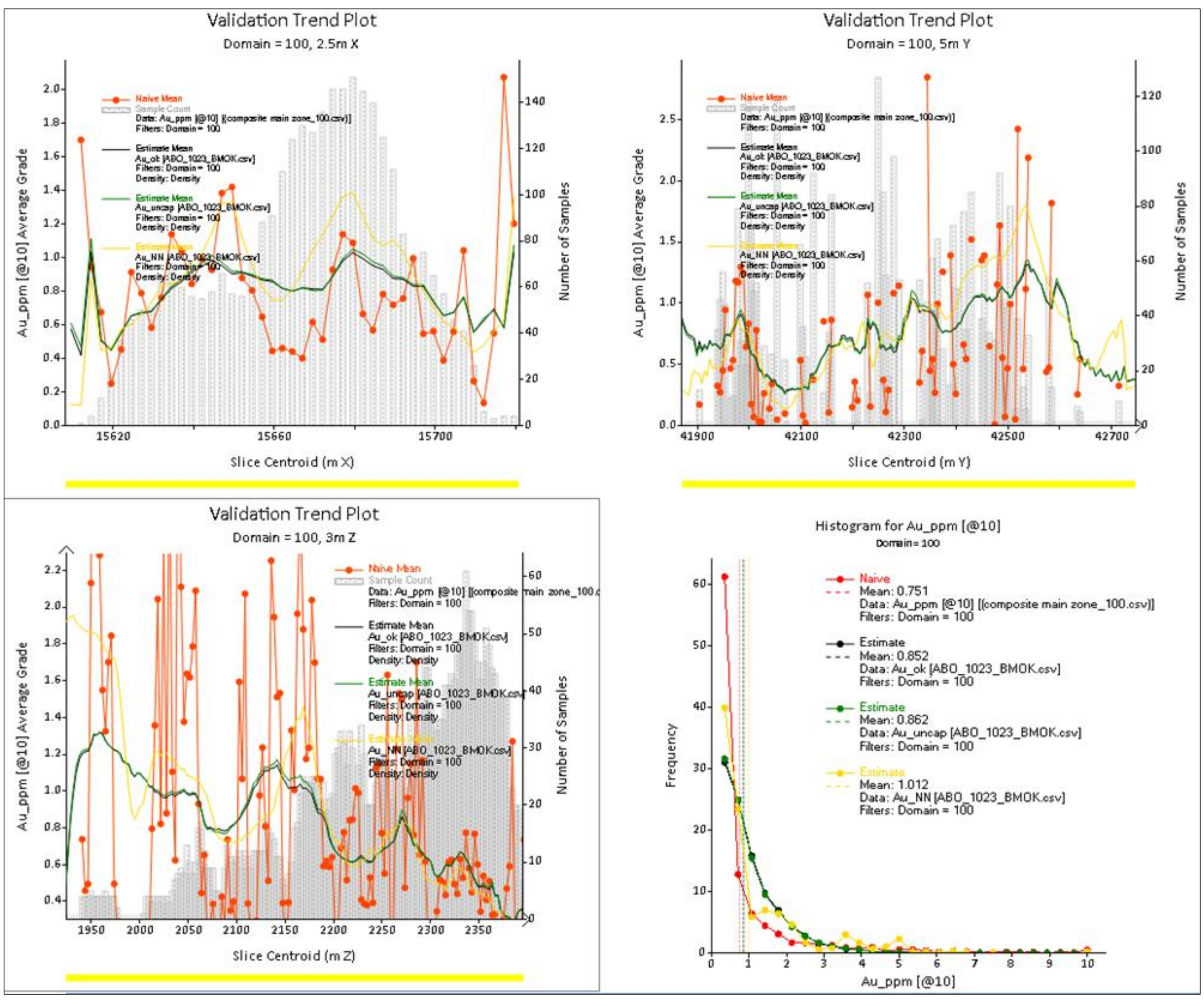


Figure 14-43: Swath Plots – Slice Through the Model in the East, North, RL Directions with Au Histogram – Aboduabo Domain 100

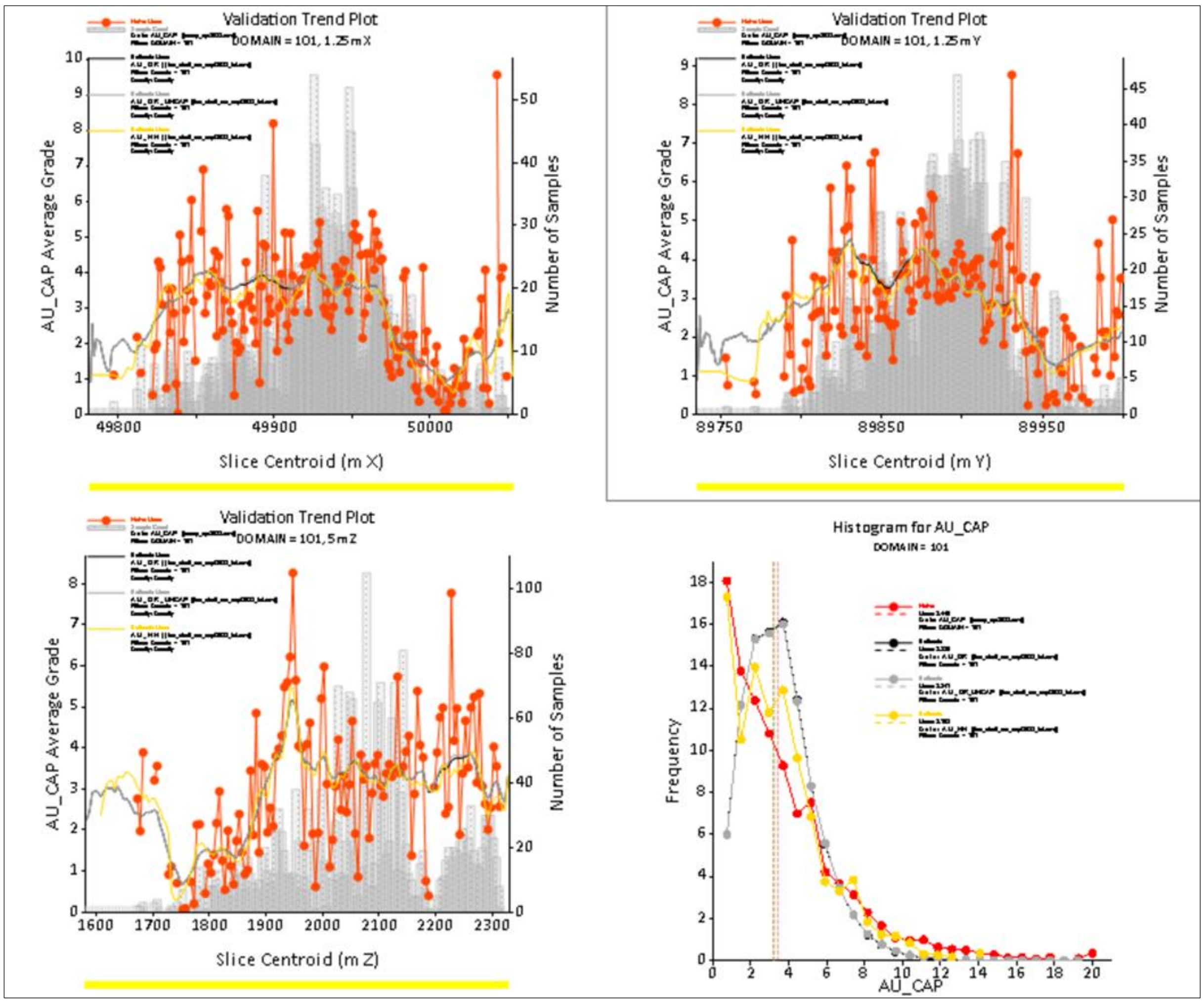


Figure 14-44: Swath Plots – Slice Through the Model in the East, North, RL Directions with Au Histogram – Akoti Domain 101

Visual comparisons of block model grades and input composite grades are shown in the figures below. Block grades are shown >1g/t Au and >0.7g/t Au for underground and open pit deposits respectively, for visualisation purposes.

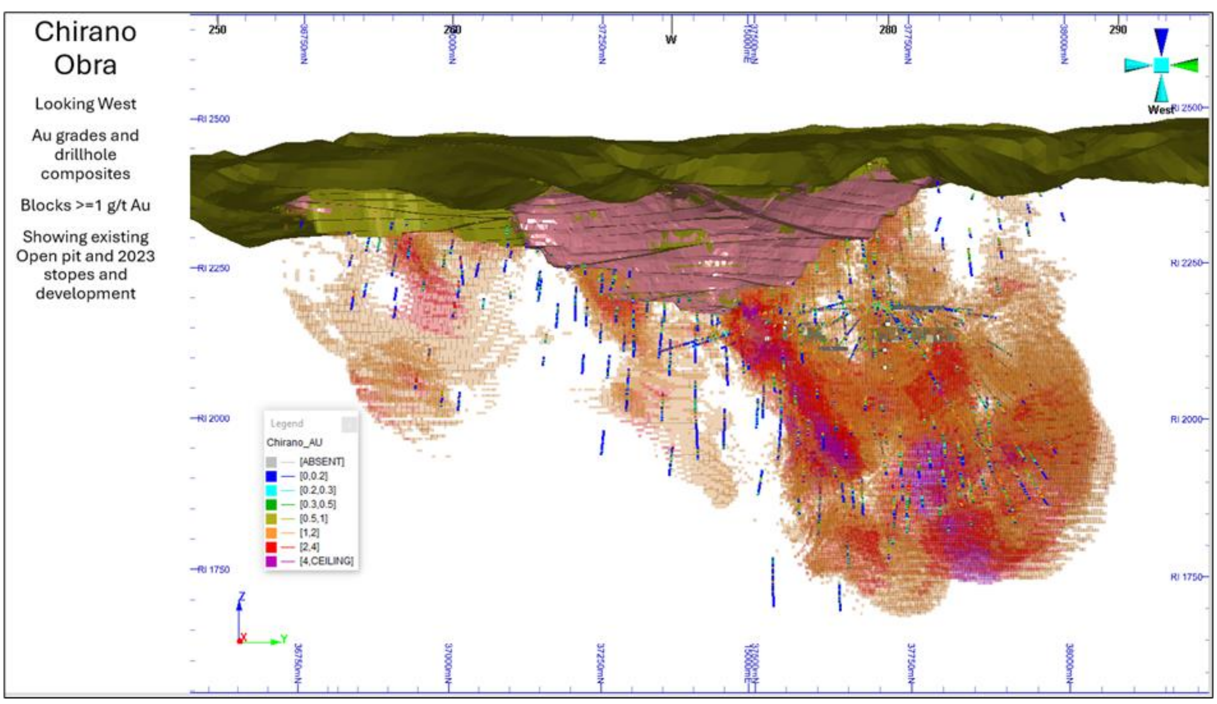


Figure 14-45: Validations Section – Obra Block Model Showing Block Model Au Grades, Input Composite Au Grades

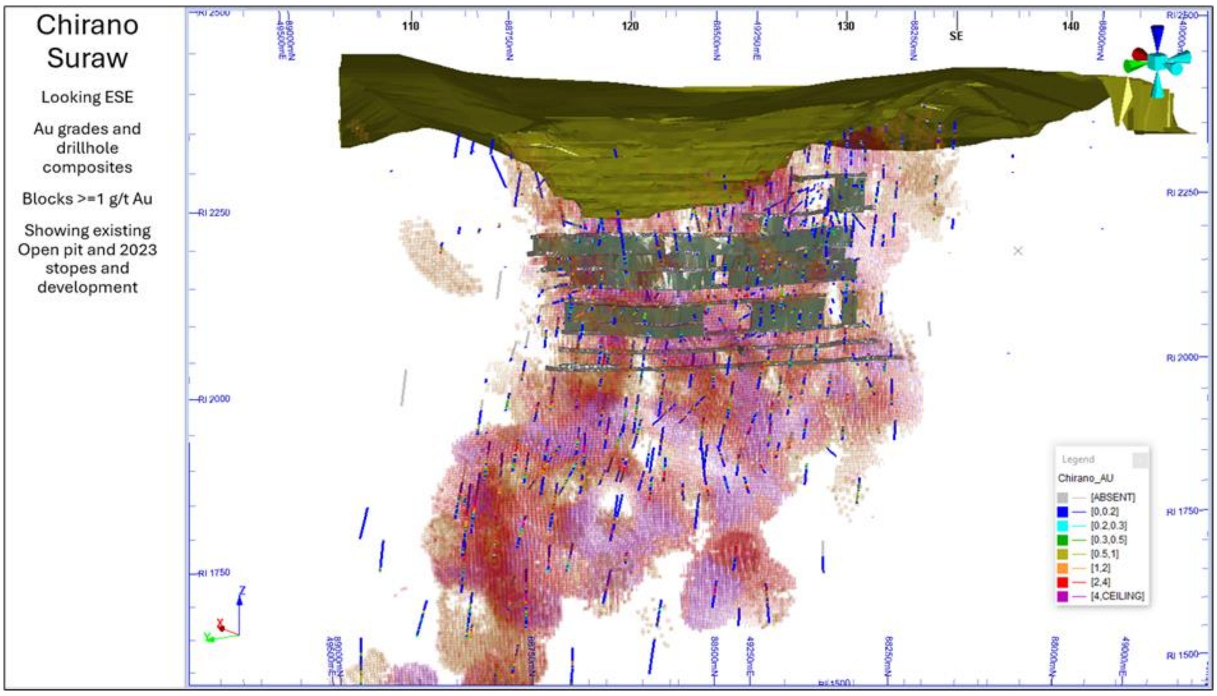


Figure 14-46: Validations Section – Suraw Block Model Showing Block Model Au Grades, Input Composite Au Grades

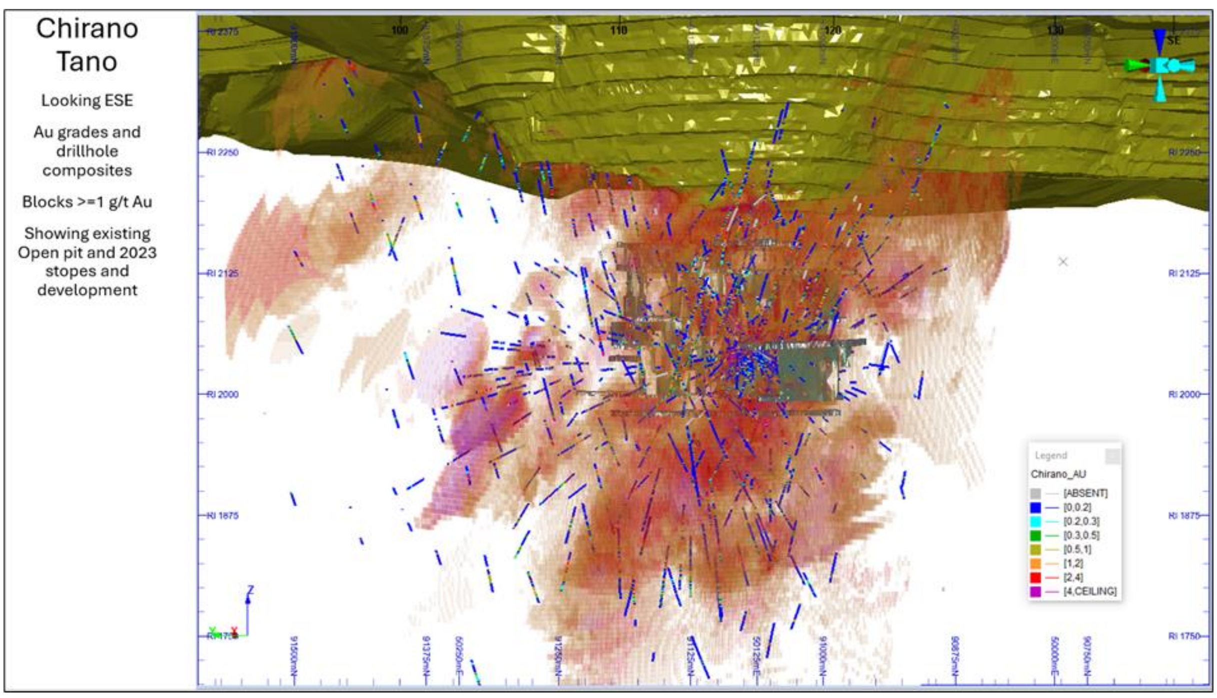


Figure 14-47: Validations Section – Tano Block Model Showing Block Model Au Grades, Input Composite Au Grades

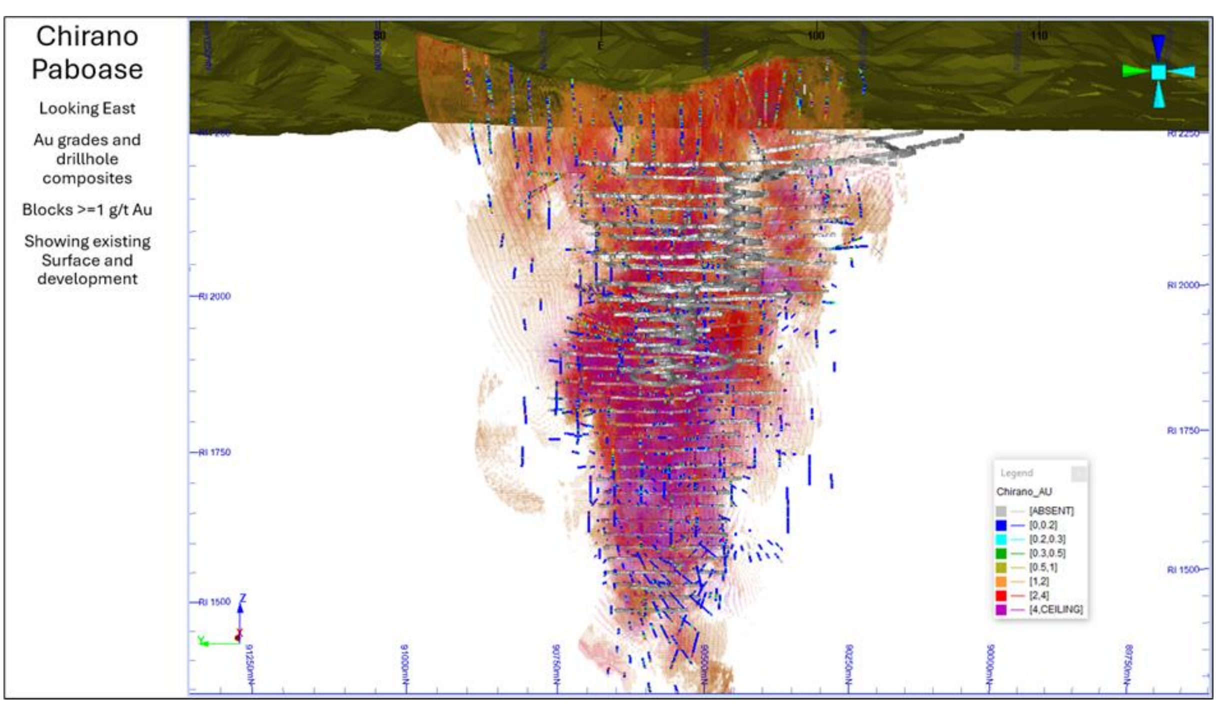


Figure 14-48: Validations Section – Paboase Block Model Showing Block Model Au Grades, Input Composite Au Grades

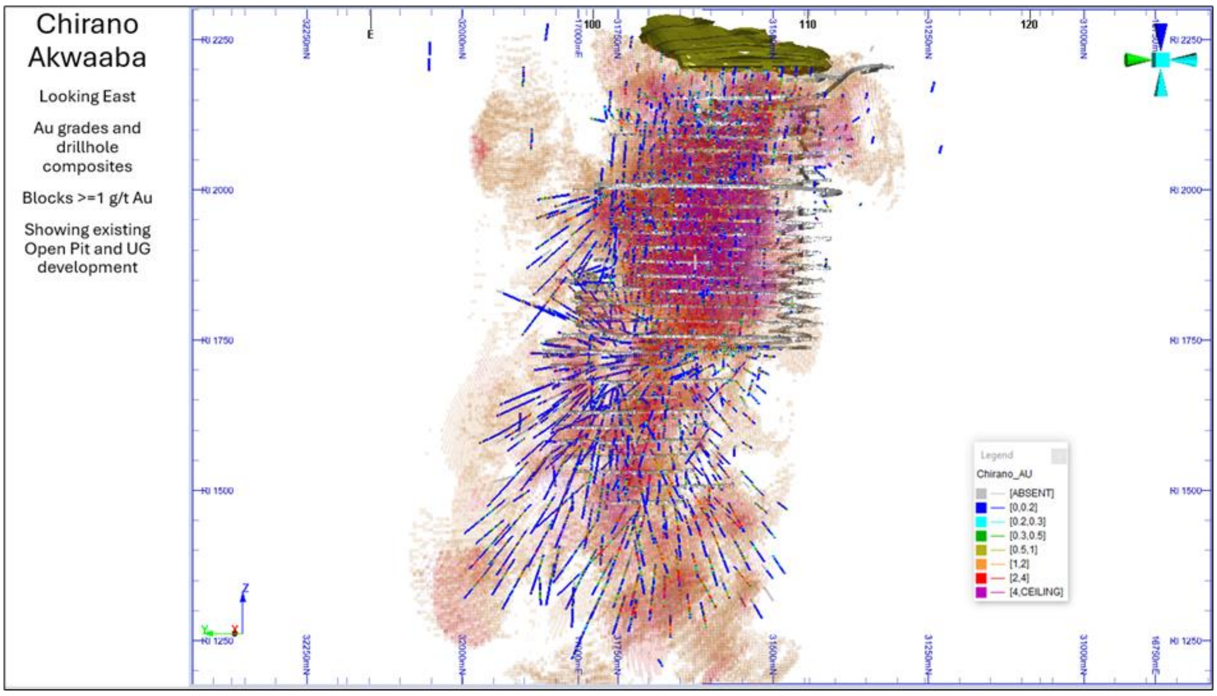


Figure 14-49: Validations Section – Akwaaba Block Model Showing Block Model Au Grades, Input Composite Au Grades

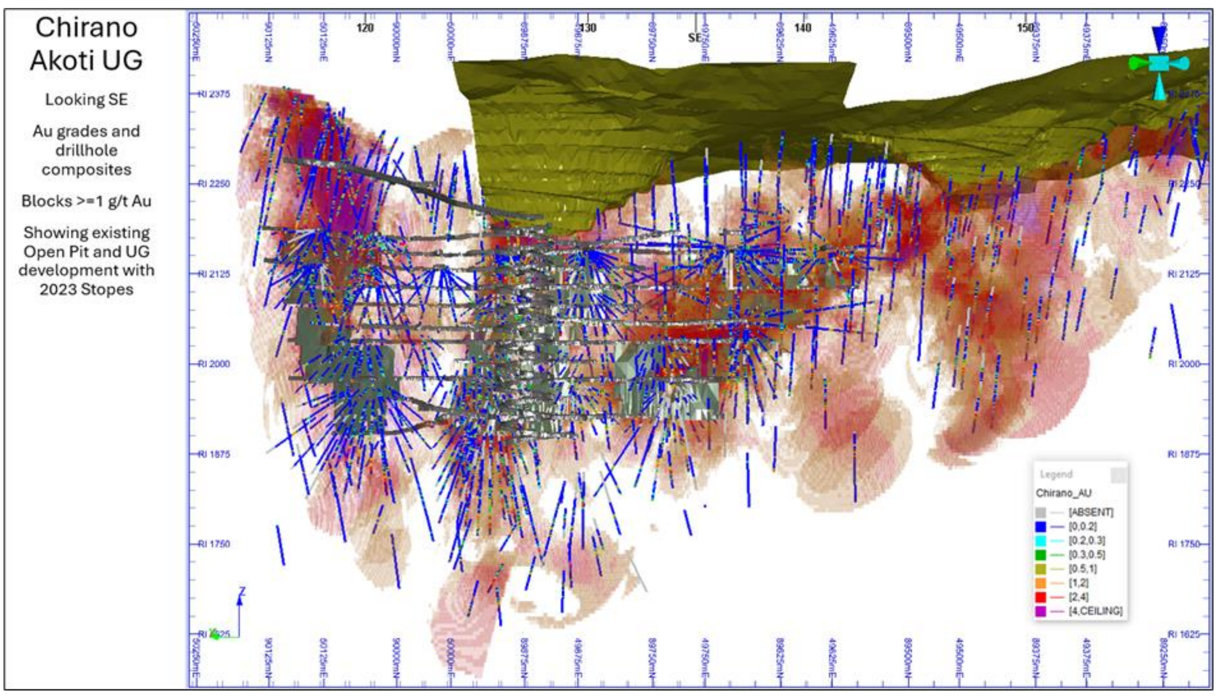


Figure 14-50: Validations Section – Akoti Block Model Showing Block Model Au Grades, Input Composite Au Grades

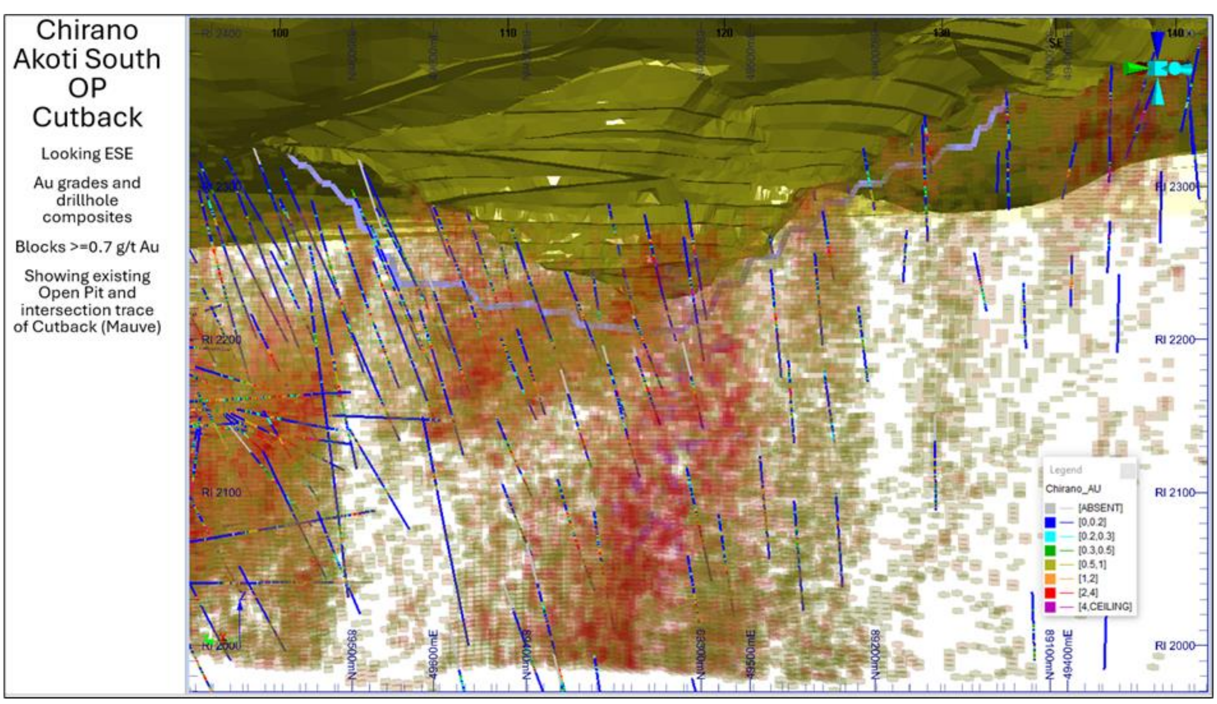


Figure 14-51: Validations Section – Akoti Sth Block Model Showing Block Model Au Grades, Input Composite Au Grades

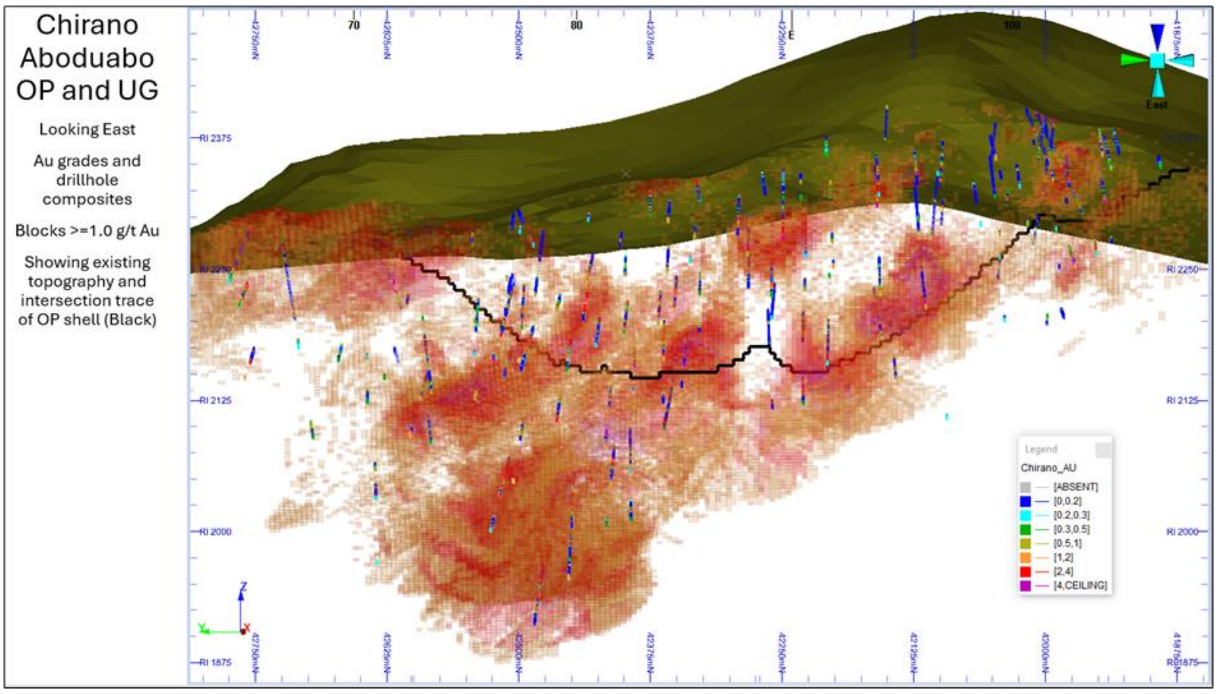


Figure 14-52: Validations Section – Aboduabo Block Model Showing Block Model Au Grades, Input Composite Au Grades

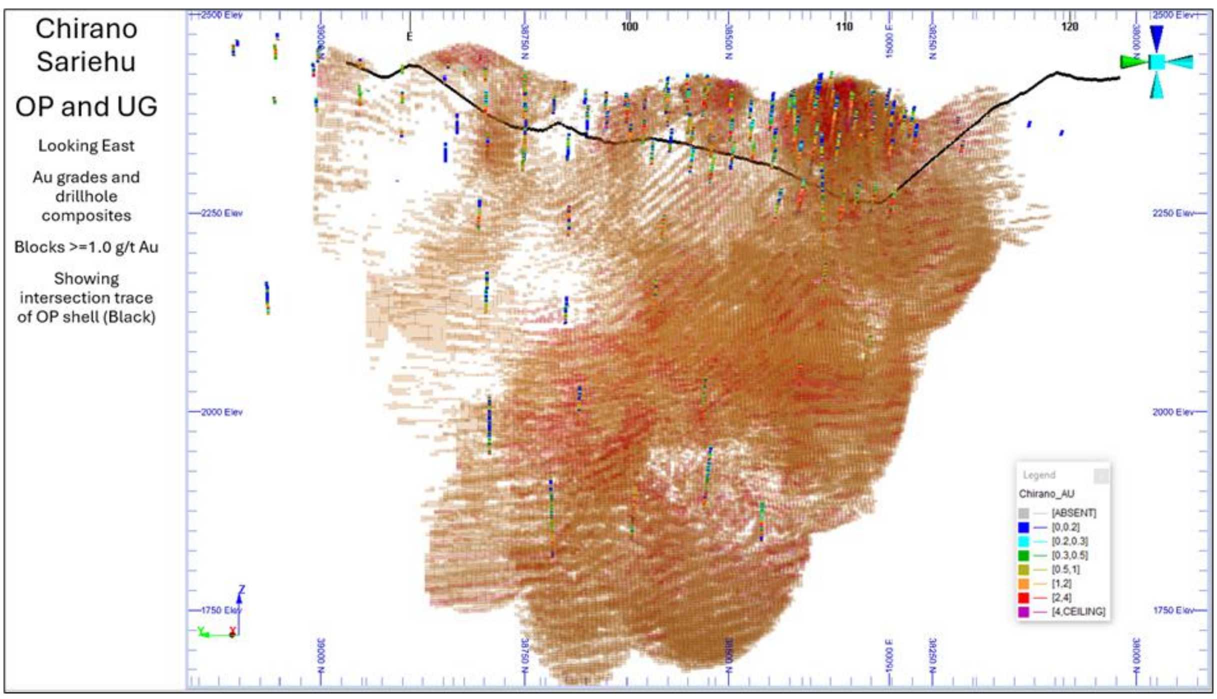


Figure 14-53: Validations Section – Sariehu Block Model Showing Block Model Au Grades, Input Composite Au Grades

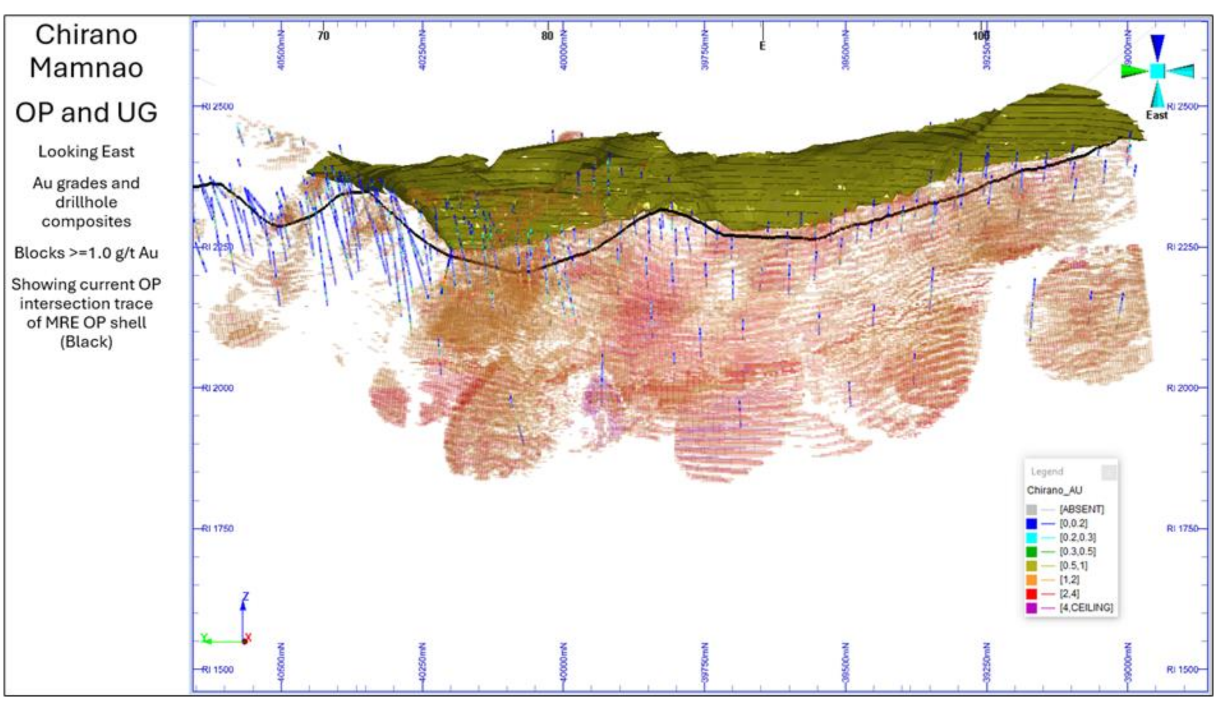


Figure 14-54: Validations Section – Mamnao Block Model Showing Block Model Au Grades, Input Composite Au Grades

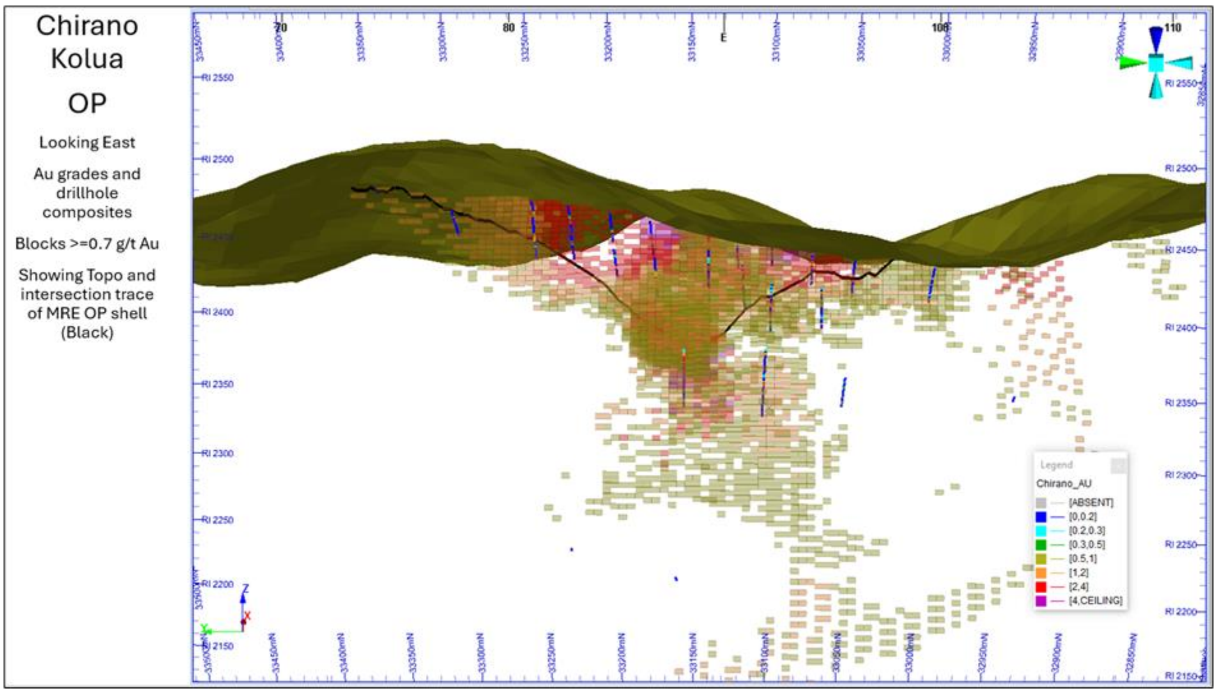


Figure 14-55: Validations Section – Kolua Block Model Showing Block Model Au Grades, Input Composite Au Grades

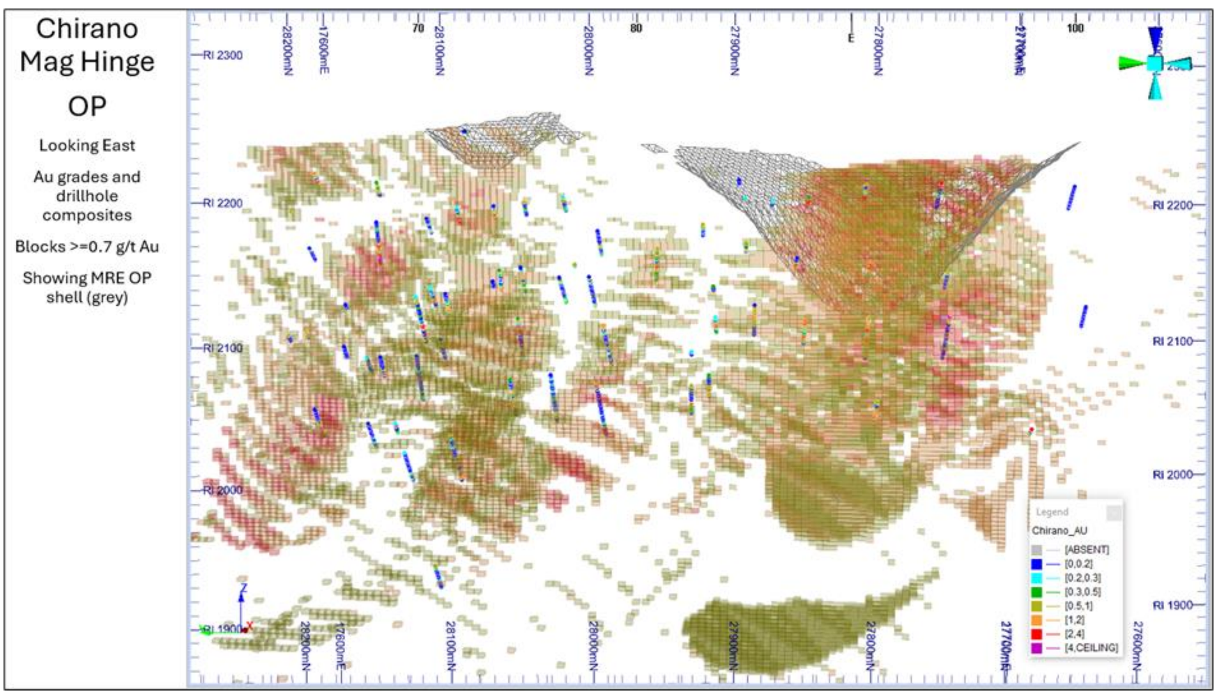


Figure 14-56: Validations Section – Mag Hinge Block Model Showing Block Model Au Grades, Input Composite Au Grades

14.12 Mineral Resource Classification

Mineral Resource classification of each of the block models at Chirano follows an approach which considers data input quality, QA/QC conclusions, geological continuity and confidence and the robustness of the litho-structural models as well as data spacing, informed by several statistical investigations undertaken periodically by Resolute and latterly refined over time, as appropriate, by Asante.

Mineral Resources at Chirano have been classified as Measured Mineral Resources, Indicated Mineral Resources and Inferred Mineral Resources under the CIM Definition Standards.

The following classification criteria is set out,

- Evaluation of input data quality, QAQC, geological continuity and the robustness of the litho-structural models, and;
- Measured Mineral Resources may be classified where the nominal drillhole centres are less than 25m and are covered by grade control drilling;
- Indicated Mineral Resources may be classified where the drillhole spacing is greater than 25m but less than 35m;
- Inferred Mineral Resources may be classified where the spacing is greater than 35m but less than 50m;
- All other blocks are not classified as Mineral Resources but are coded as “potential” to be the subject of further investigation as drill targets for potential upgrade to Mineral Resources at some point in the future.

There is no certainty that blocks coded as "potential" may be upgraded to Mineral Resources with further drilling.

It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. The QP has reviewed and verified the approach to classifying Mineral Resources for each deposit and found it to be sound, clear and auditable. It is the QP's opinion that there is room for some improvement with respect to the application of geostatistical analysis in the classification process e.g., Kriging efficiency (KE) and slope of regression (SoR) which provide indications of how robust and confident an estimate is.

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

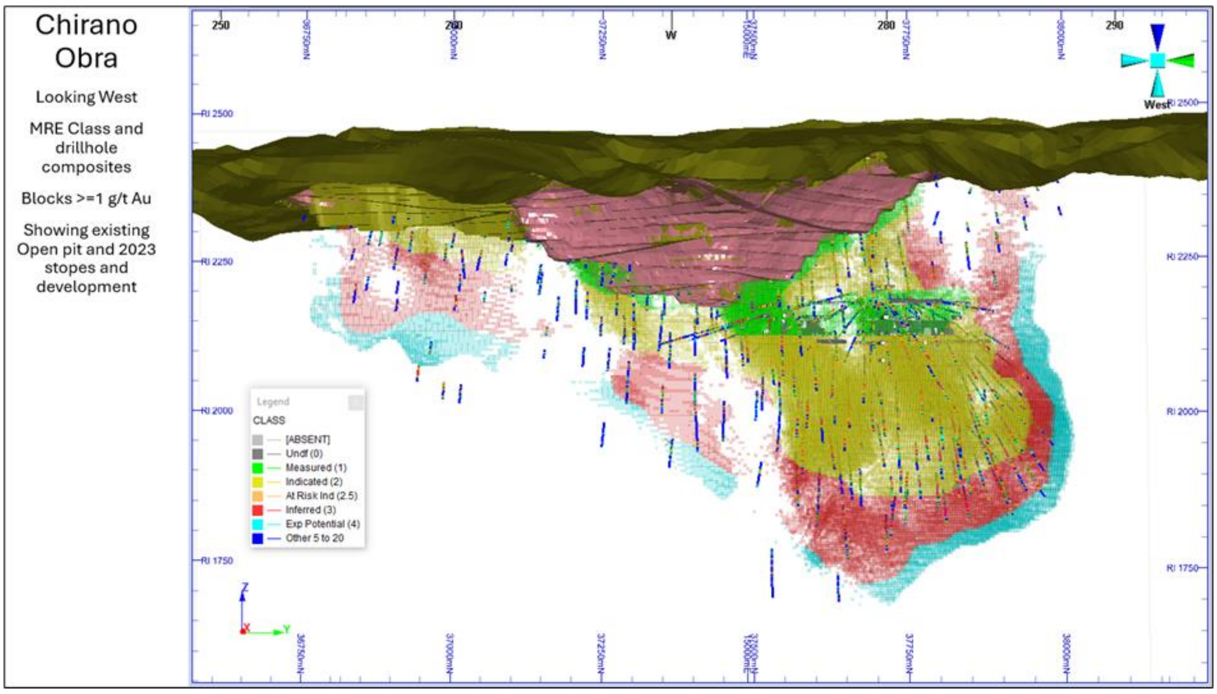


Figure 14-57: Block Model Classification - Obra

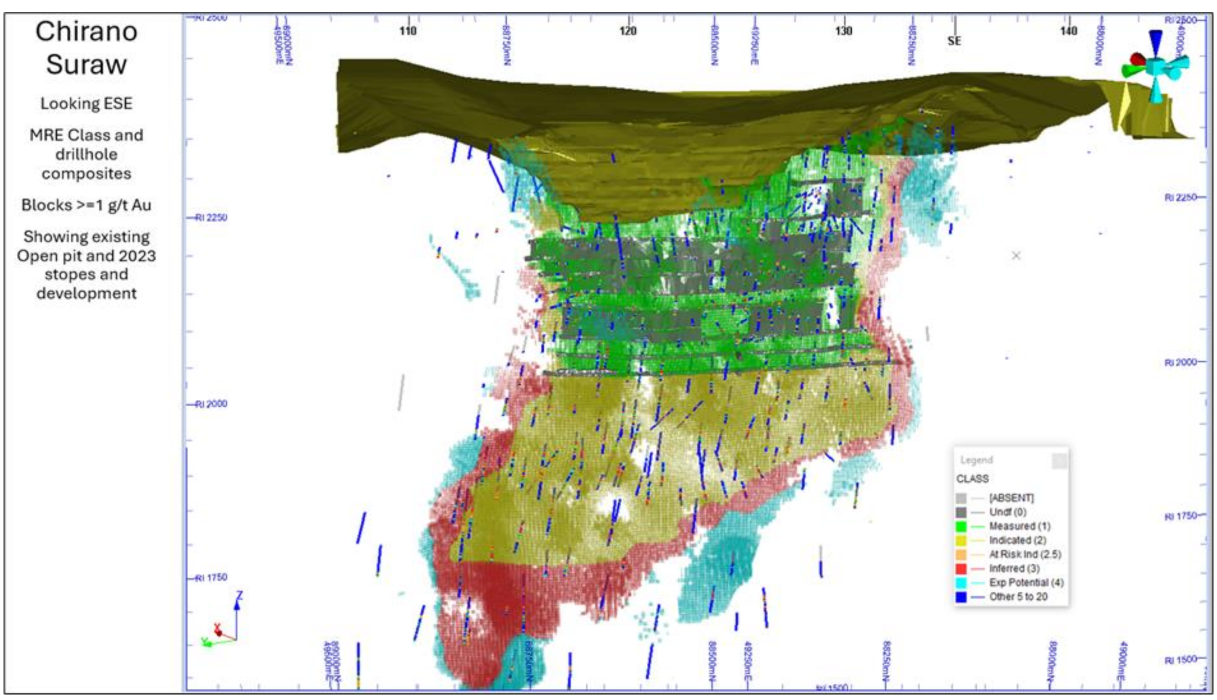


Figure 14-58: Block Model Classification - Suraw

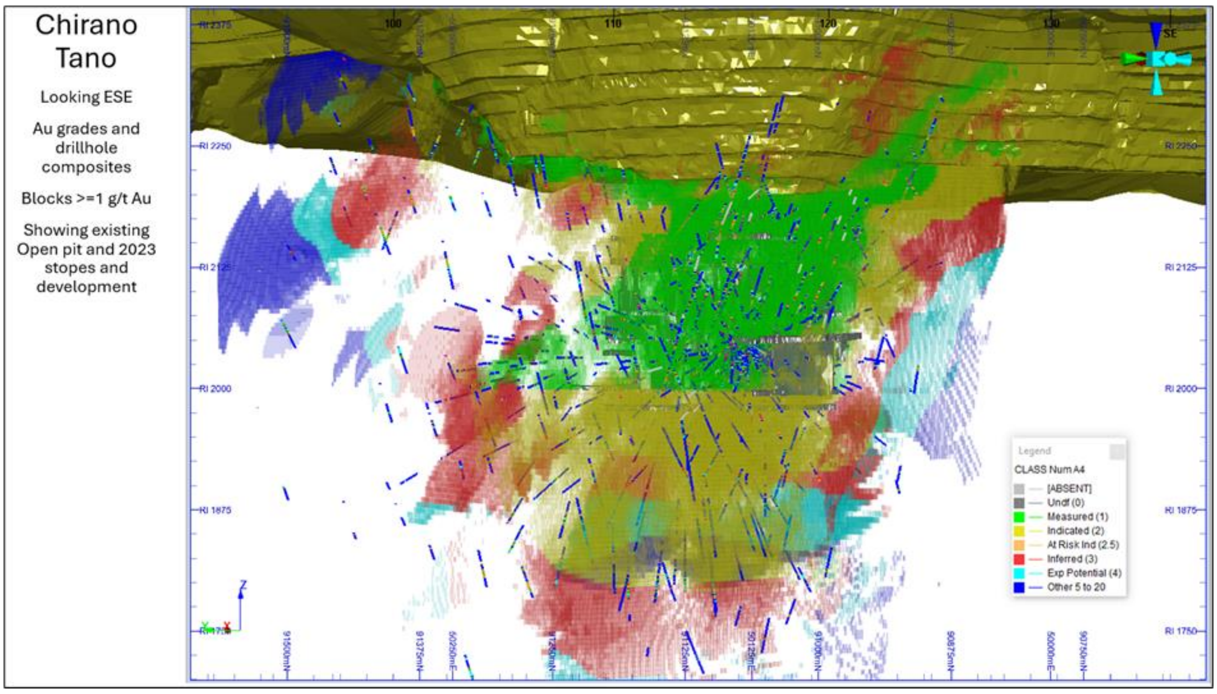


Figure 14-59: Block Model Classification - Tano

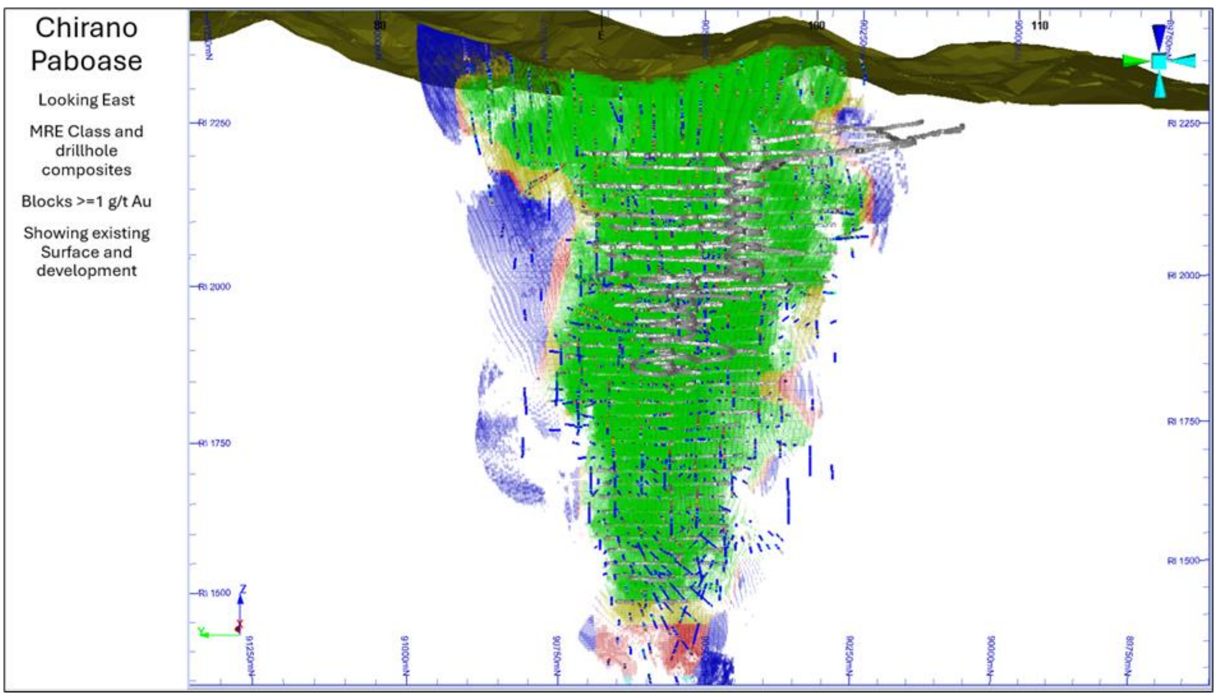


Figure 14-60: Block Model Classification - Paboase

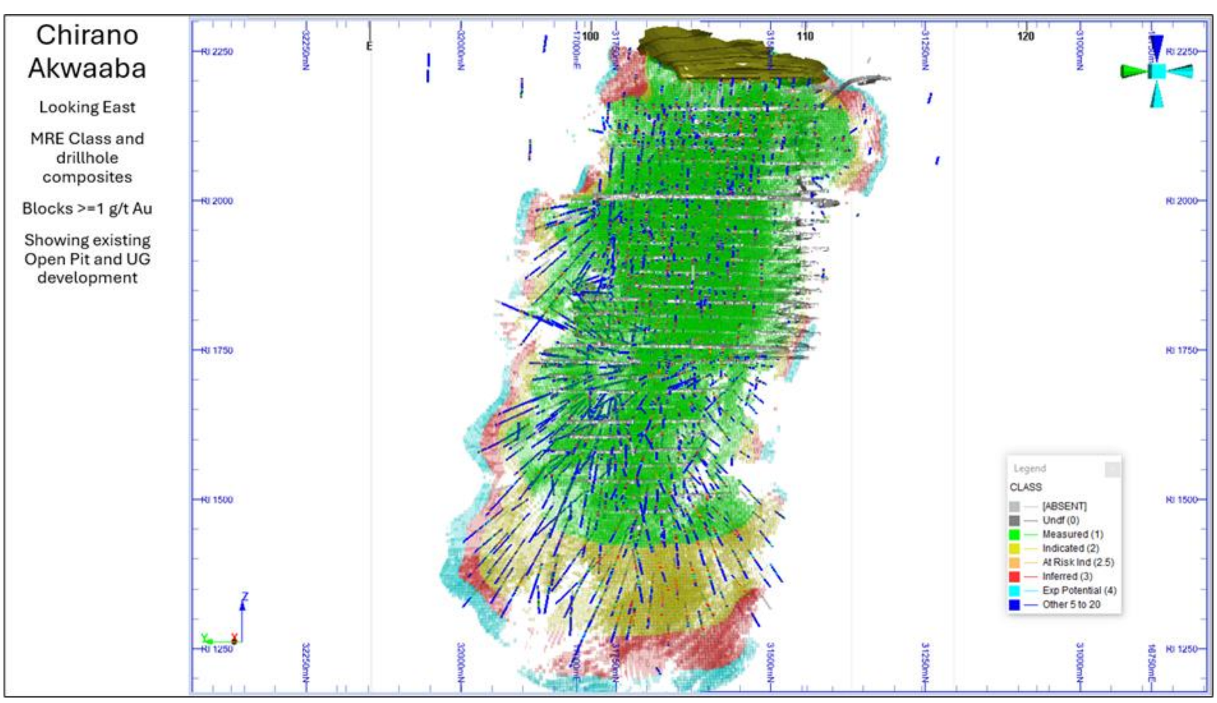


Figure 14-61: Block Model Classification - Akwaaba

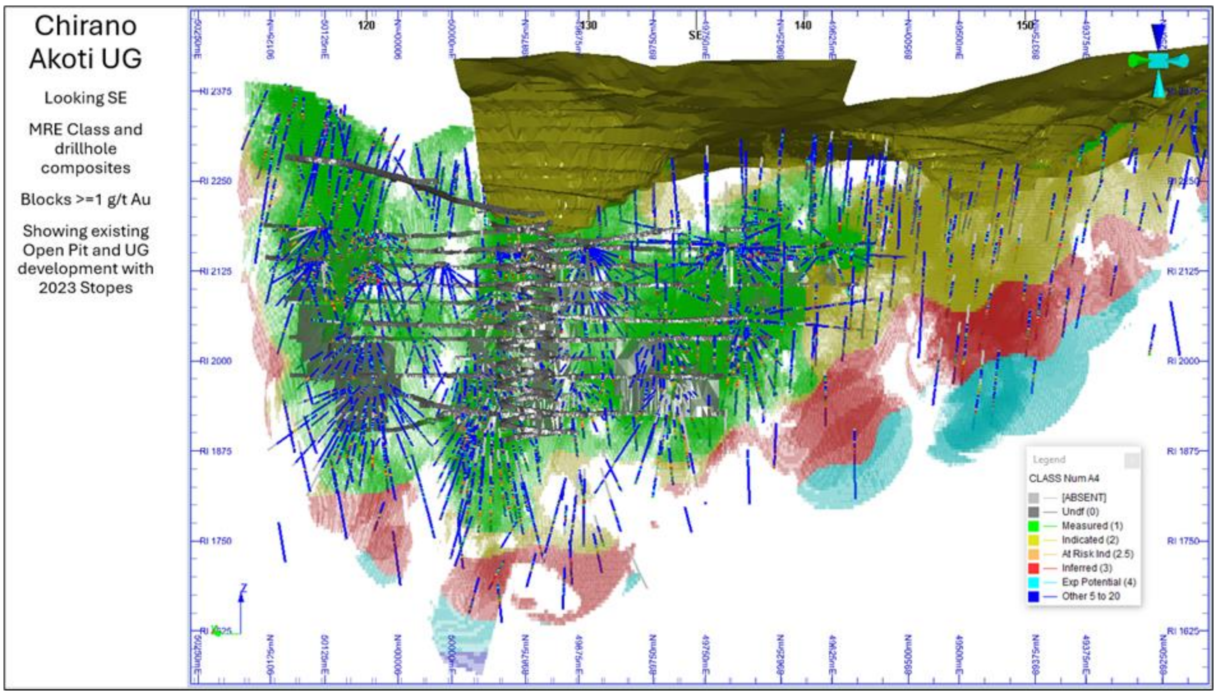


Figure 14-62: Block Model Classification – Akoti UG

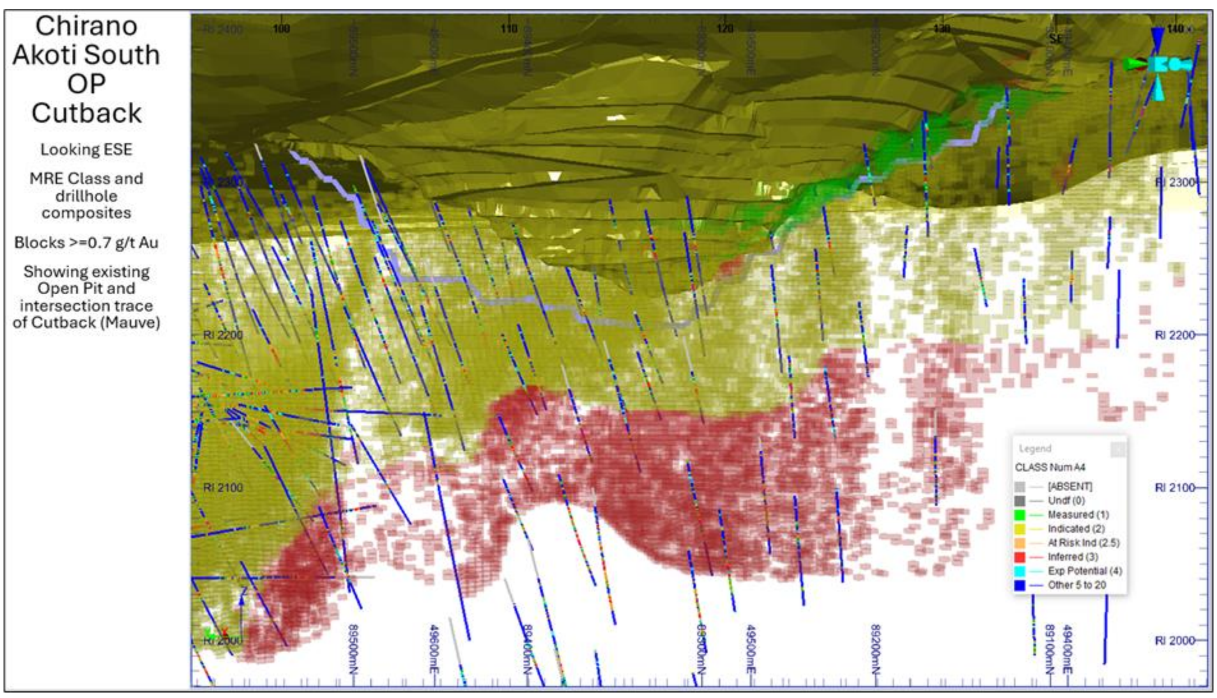


Figure 14-63: Block Model Classification – Akoti Sth

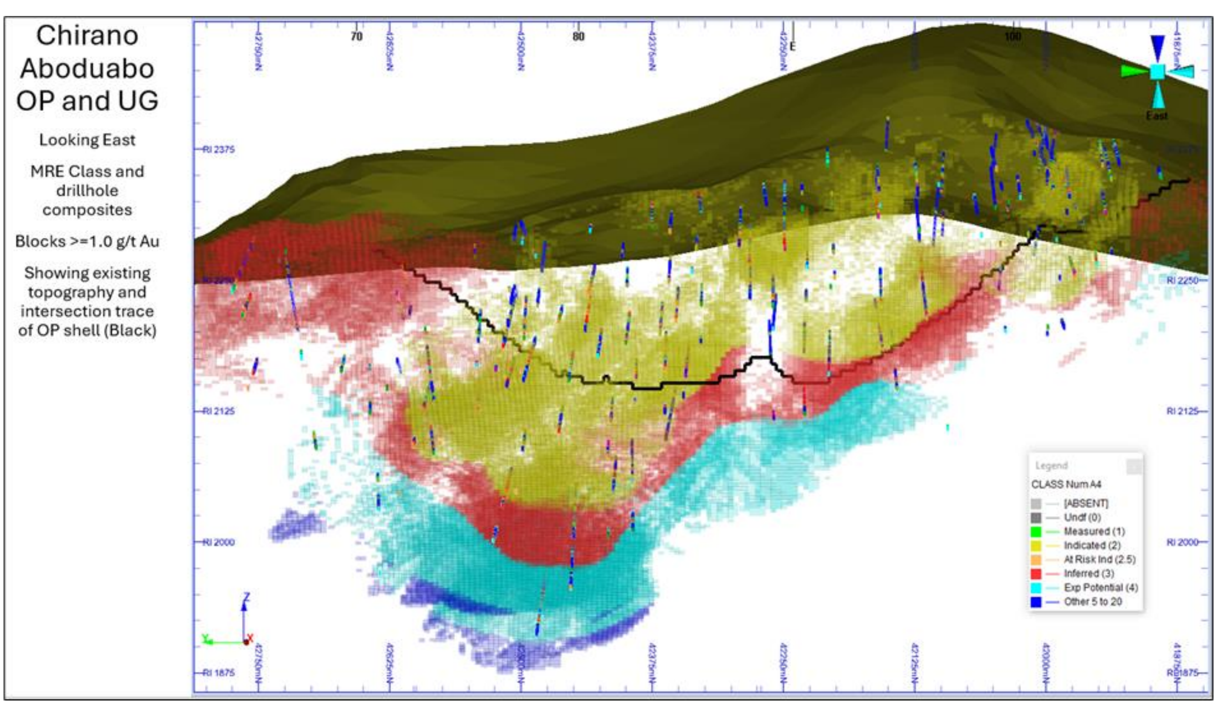


Figure 14-64: Block Model Classification - Aboduabo

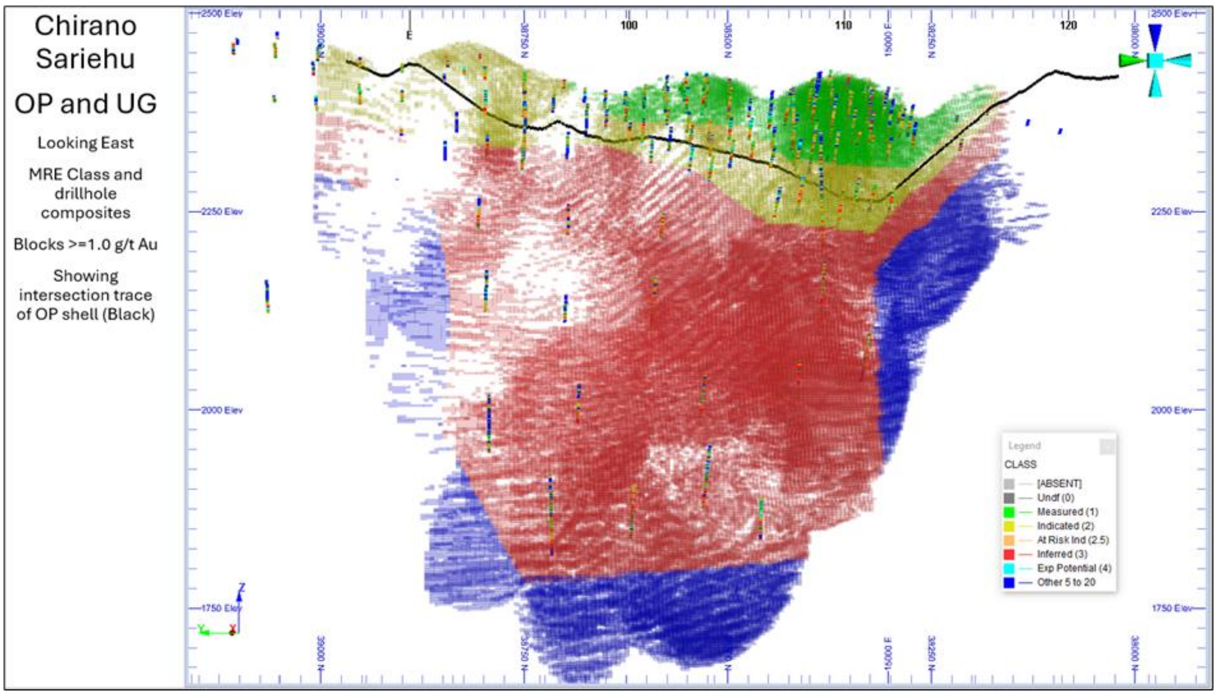


Figure 14-65: Block Model Classification - Sariehu

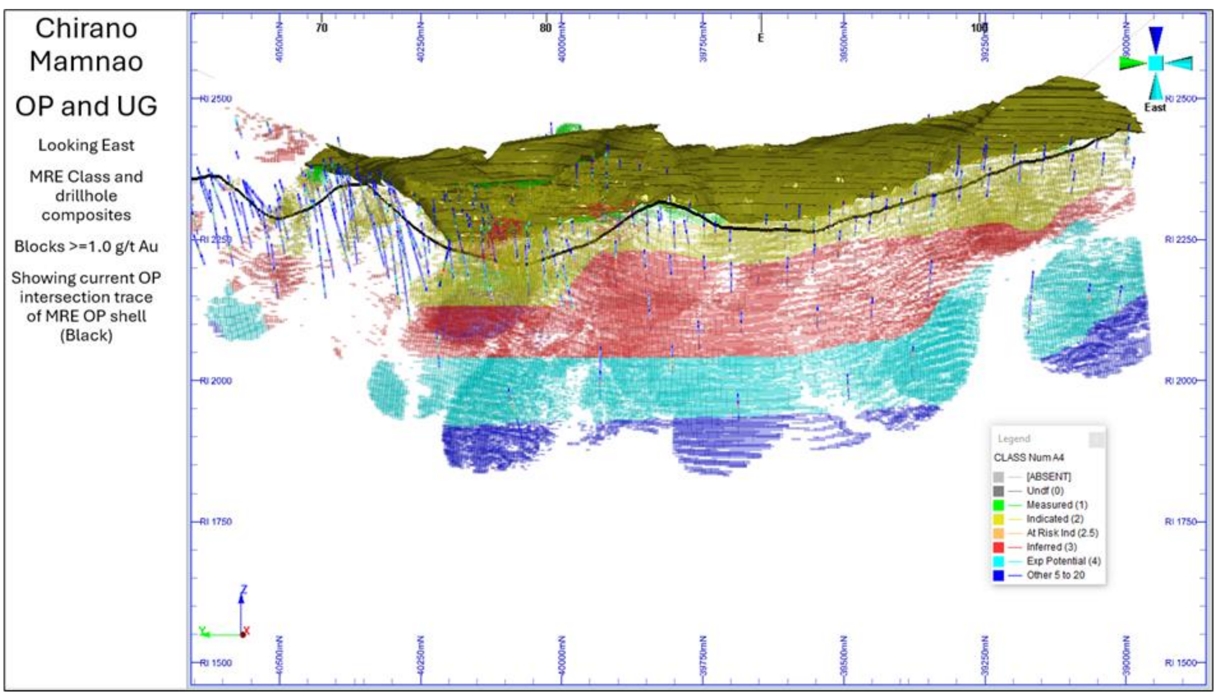


Figure 14-66: Block Model Classification - Mamnao

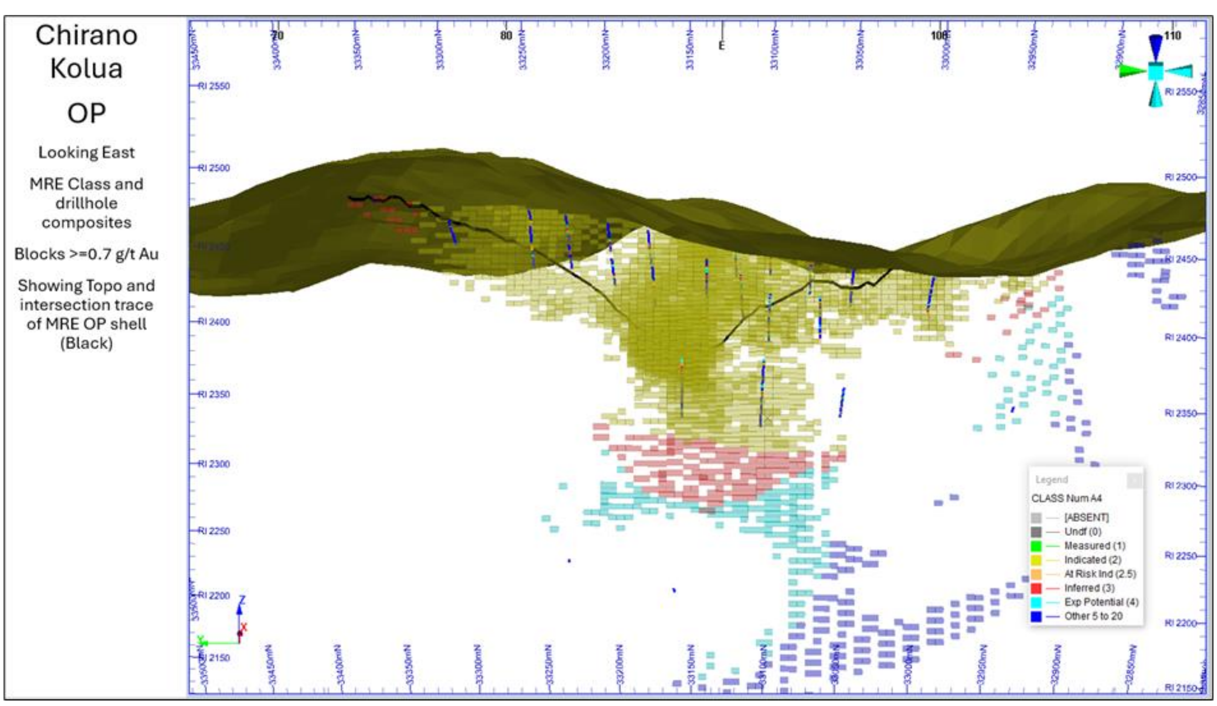


Figure 14-67: Block Model Classification - Kolua

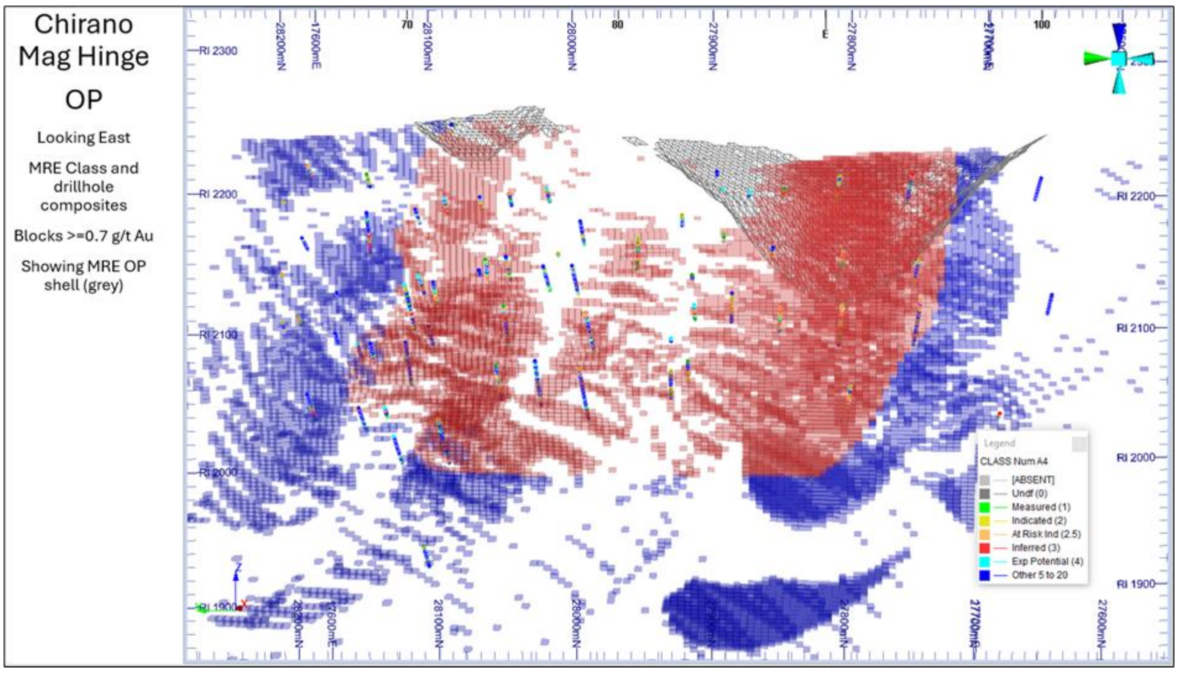


Figure 14-68: Block Model Classification – Mag Hinge

14.12.1 Depletion

2023 Mineral Resource block models have been depleted for production up to 30 December 2023 either via the constraining of block models to end of year pit surfaces, or underground workings, as appropriate.

14.13 Mineral Resource Statements

The Chirano Mineral Resources have been reported according to the guidelines of the JORC Code (2012). The Mineral Resources are reported inclusive of Mineral Reserves. Estimates (tonnes and Au content) for the pits and summaries quoted in this report are on a 100% basis. The QP who has signed off on the Mineral Resource exceeds the minimum requirements established by accredited bodies under international reporting codes. The audited Mineral Resources for the Chirano Underground and Chirano Open Pits (constrained by a Reasonable Prospects for Eventual Economic Extraction (RPEEE) US$1,950 Resource optimised pit shell), as reported at 31 December 2023, are presented in the tables below.

Table 14-11: Chirano Gold Mine – Open Pit Mineral Resource Statement (inclusive of Mineral Reserves) as at 31 December 2023

Open Pit Operation	Resource Classification	Tons (Mt)	Grade (g/t)	Gold (Moz)
Akoti South	Measured	0.11	1.10	0.004
	Indicated	0.84	1.08	0.029
	Measured and Indicated	**0.95**	**1.08**	**0.033**
	Inferred	0.00	0.00	0.000
Obra	Measured	1.87	0.86	0.052
	Indicated	2.00	0.91	0.058
	Measured and Indicated	**3.86**	**0.89**	**0.110**
	Inferred	0.30	0.66	0.006
Mamnao	Measured	0.30	0.99	0.009
	Indicated	4.16	0.98	0.131
	Measured and Indicated	**4.45**	**0.98**	**0.140**
	Inferred	0.22	0.70	0.005
Kolua	Measured	0.00	0.00	0.00
	Indicated	0.11	1.91	0.007
	Measured and Indicated	**0.11**	**1.91**	**0.007**
	Inferred	0.00		0.000
Sariehu	Measured	0.57	0.93	0.017
	Indicated	1.67	0.93	0.050
	Measured and Indicated	**2.24**	**0.93**	**0.067**
	Inferred	0.02	1.03	0.001
Mag Hinge	Measured	0.00	0.00	0.00
	Indicated	0.00	0.00	0.00
	Measured and Indicated	**0.00**	**0.00**	**0.000**
	Inferred	0.53	1.24	0.021
Aboduabo	Measured	0.00	0.00	0.000
	Indicated	3.28	1.39	0.146
	Measured and Indicated	**3.28**	**1.39**	**0.146**
	Inferred	0.64	1.68	0.035
Total Measured Resources		**2.85**	**0.90**	**0.082**
Total Indicated Resources		**12.05**	**1.09**	**0.421**
Total Measured and Indicated Resources		**14.90**	**1.05**	**0.503**
Total Inferred Mineral Resources		**1.71**	**1.23**	**0.068**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of Mineral Reserves.*
4. *1 troy ounce = 31.1034768g.*
5. *Akoti Sth, Kolua, Mag Hinge and Aboduabo open pit Mineral Resources are reported above a cut-off of 0.49g/t Au. Mamnao, Sariehu and Obra open pit Mineral Resources are reported above a cut-off of 0.31g/t Au, 0.22g/t Au and 0.20g/t Au respectively.*
6. *A density of 2.75 t/m³, 2.30 t/m³ and 1.56 t/m³ for fresh, transition and oxidised sediments respectively, have been applied.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*
9. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

Table 14-12: Chirano Gold Mine – Underground Mineral Resource Statement (inclusive of Mineral Reserves) as at 31 December 2023

Underground Operation	Resource Classification	Tons (Mt)	Grade (g/t)	Gold (Moz)
Akwaaba	Measured	1.93	2.22	0.138
	Indicated	0.67	1.69	0.036
	Measured and Indicated	**2.59**	**2.08**	**0.174**
	Inferred	0.22	1.64	0.011
Obra	Measured	1.46	1.92	0.090
	Indicated	7.16	2.01	0.464
	Measured and Indicated	**8.62**	**2.00**	**0.554**
	Inferred	3.08	1.88	0.171
Suraw	Measured	1.11	2.51	0.089
	Indicated	2.94	2.30	0.217
	Measured and Indicated	**4.05**	**2.35**	**0.306**
	Inferred	1.26	2.80	0.114
Akoti	Measured	2.23	1.98	0.142
	Indicated	1.08	1.93	0.067
	Measured and Indicated	**3.30**	**1.97**	**0.209**
	Inferred	0.65	1.76	0.037
Tano	Measured	1.11	1.95	0.069
	Indicated	1.66	1.74	0.093
	Measured and Indicated	**2.76**	**1.82**	**0.162**
	Inferred	0.85	2.01	0.055
Paboase	Measured	0.09	2.07	0.006
	Indicated	0.08	2.19	0.006
	Measured and Indicated	**0.16**	**2.13**	**0.011**
	Inferred	0.06	1.89	0.004
Sariehu	Measured	-	-	-
	Indicated	0.51	1.41	0.023
	Measured and Indicated	**0.51**	**1.41**	**0.023**
	Inferred	7.50	1.36	0.328
Mamnao	Measured	-	-	-
	Indicated	1.95	1.43	0.090
	Measured and Indicated	**1.95**	**1.43**	**0.090**
	Inferred	3.76	1.59	0.192
Aboduabo	Measured	-	-	-
	Indicated	1.05	1.66	0.056
	Measured and Indicated	**1.05**	**1.66**	**0.056**
	Inferred	0.92	1.73	0.051
Total Measured Resources		**7.92**	**2.10**	**0.534**
Total Indicated Resources		**17.09**	**1.91**	**1.051**
Total Measured and Indicated Resources		**25.00**	**1.97**	**1.585**
Total Inferred		**18.30**	**1.64**	**0.963**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of Mineral Reserves.*
4. *1 troy ounce = 31.1034768g.*
5. *Akwaaba, Obra, Suraw, Akoti, Tano and Paboase underground Mineral Resources are reported within constraining MSO volumes defined following analysis to determine input cut-off grade input parameters. Cut-off grades calculated were 1.13g/t Au, 1.00g/t Au, 1.03g/t Au, 1.10g/t Au, 1.07g/t Au and 1.34g/t Au respectively.*
6. *A density of 2.75 t/m³, 2.30 t/m³ and 1.56 t/m³ for fresh, transition and oxidised sediments respectively, have been applied.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*
9. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

Table 14-13: Chirano Gold Mine – Total Mineral Resource Statement - Open Pit and Underground (inclusive of Mineral Reserves) as at 31 December 2023

Resource Classification		Tonnage (Mt)	Grade (g/t)	Gold (Moz)
Total	Measured Resources	10.76	1.78	0.617
	Indicated Resources	29.14	1.57	1.472
	Measured and Indicated Resources	**39.90**	**1.63**	**2.088**
	Inferred Resources	20.01	1.60	1.031

Notes

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of Mineral Reserves.*
4. *1 troy ounce = 31.1034768g.*
5. *Akwaaba, Obra, Suraw, Akoti, Tano and Paboase underground Mineral Resources are reported within constraining MSO volumes defined following analysis to determine input cut-off grade input parameters. Cut-off grades calculated were 1.13g/t Au, 1.00g/t Au, 1.03g/t Au, 1.10g/t Au, 1.07g/t Au and 1.34g/t Au respectively.*
6. *A density of 2.75 t/m³, 2.30 t/m³ and 1.56 t/m³ for fresh, transition and oxidised sediments respectively, have been applied.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*
9. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

14.14 Disclosure

Mineral Resources reported in the above sections for each deposit have been thoroughly reviewed by Mr. Malcolm Titley, Principal Consultant of Maja Mining Limited.

Mr. Titley is a Qualified Person as defined in NI 43-101. Maja Mining Limited is independent of Asante.

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

14.15 Risks

As all Mineral Resources are estimates, they are not without inherent geological and grade risk. The Qualified Person believe that these risks are generally low given that there are current mining operations at the investigated Chirano deposits (with the exception of Aboduabo).

Open pit mineral resources are estimated using a lower gold grade mineralisation cut-off ranging from 0.3 to 0.5g/t Au. In some cases, this results in the inclusion of below grade sample intercepts. Ordinary Kriging may result in overestimation of tonnes and metal in areas containing a high (>30%) proportion of 'waste' intercepts. Alternative estimation methods such as Uniform Condition or Multiple Indicator Kriging should be tested and evaluated for these areas, where geological interpretation includes significant internal waste.

Other risks do exist which do not relate to the Mineral Resources. Given that the Project is fully permitted and that there has been previous mining, the Qualified Person does not consider that environmental or permitting risks are likely to have a material impact on the declared LoM of the Chirano Gold Mine. It is also unlikely that the Mineral Resource estimates as detailed in this section will be materially affected by legal, title, taxation, socio-economic, marketing or political factors. The greatest risk to the Mineral Resource estimate, which is not considered to be material, is the social impact of any open pit development or expansions that may be considered in the future.

15. MINERAL RESERVE ESTIMATES

The Mineral Reserve Estimates presented here are based on the December 2023 Mineral Resource Estimates completed by Chirano Gold Mines Limited. Only Measured and Indicated Resources were used in the determination of the Mineral Reserves.

Mineral Resources on which the Mineral Reserves are determined are shown in Table 14-11 and Table 14-12.

15.1 Modifying Factors

In determining the mineral reserves, modifying factors are used to determine the ore that can be extracted economically. Modifying factors are used in mine planning and economic analysis and incorporate technical, economic, financial, social and community parameters to convert mineral resources into mineral reserves.

15.1.1 Technical Modifying Factors

15.1.1.1 Dilution

For each mining operation dilution figures have been assumed based on historical mine to mill reconciliations, stope void surveys (which provide overbreak estimates) and proposed mining methods. A Sub level Cave mining method incurs greater dilution than open stoping. The dilution factors applied for mineral reserve estimates are shown in Table 15-1.

Table 15-1: Mine Dilution Factors

Mine	Akwaaba (%)	Akoti (%)	Tano (%)	Suraw (%)	Obra (%)	Sill pillar Recovery (%)	Open Pits (%)
Dilution	12	12	12	12	12	30	5

15.1.1.2 Mining Recovery

Not all mineral resources are recovered by mining operations. Ore within the resources may be below the economic Cut-off Grade ("CoG"). Additionally, a small percentage of ore is not recovered due to the irregularity of ore shapes which cannot be practically blasted. Some ore is not recovered during the load and haul process. The recovery figure has been estimated for each operation based on the above criteria and based on the Life of Mine design and schedule and is used in reserve calculations. The recovery factors used in the LOM plan are shown in Table 15-2.

Table 15-2: Mine Recovery Factors

Underground Mining Recovery (%)	Underground Pillar Recovery (%)	Open Pit Mining Recovery (%)
95	60	98

15.1.1.3 Mine Planning

For the purposes of mine planning and scheduling, a variety of factors are used for estimating the availability of equipment and expected production targets. These factors are based on equipment lists, along with maintenance reports. The figures are used in determining the quantities and timing of ore extraction. This information feeds into the economic analysis and indirectly determines viability of mining operations, as that impacts mining costs and ultimately the CoG. Table 15-3 shows the mine planning assumptions used for mine scheduling.

Table 15-3: Mine Planning Assumptions

Key Planning Assumptions - Underground		2024 Budget and LOM
Lateral Development	**Units**	**Value**
Development advance per blast	(m)	3.2
Development rate in decline & extras	(m/month)	105
Development rate in high stress drives	(m/month)	25
Monthly capacity per Jumbo development crew	(m/month)	135
Drilling Productivity	**Bit Dia**	**m/day**
Solo rigs drilling	102mm	150
ITH rigs drilling	152mm	35
Stope Mucking & Hauling	**Units**	**No.**
LD 2900 productivity – (Conventional)	(t/day)	1 527
Truck productivity – (Conventional)	(t/day)	431

Key Planning Assumptions - Underground		2024 Budget and LOM
Backfilling	**Unit**	**No.**
Backfilling rate-truck dumped	(t/day/loader)	1 365
Primary Equipment Numbers	**Unit**	**No.**
Jumbo	(#)	11
Solo	(#)	7
2900 Loader	(#)	10
Trucks (UG Haulage)	(#)	24
Primary Equipment	**Availability (%)**	**No.**
Trucks	(#)	70
Jumbos	(#)	70
Solo Rigs	(#)	75
2900 Loaders	(#)	70
Primary Equipment	**Utilization (%)**	**No.**
Trucks	(#)	70
Jumbos	(#)	58
Solo Rigs	(#)	40
2900 Loaders	(#)	63
Key planning Assumptions – Open Pit		**2024 Budget and LOM**
Primary Equipment Numbers	**Unit**	**No.**
Excavator	(#)	4
Drill Rig	(#)	4
Dozer	(#)	4
Trucks	(#)	30
Grader	(#)	4
Primary Equipment Availability	**%**	**No.**
Excavator	(#)	87
Drill Rig	(#)	85
Dozer	(#)	85
Trucks	(#)	85
Grader	(#)	90
Primary Equipment Utilization	**%**	**No.**
Excavator	(#)	83
Drill Rig	(#)	89
Dozer	(#)	89
Trucks	(#)	89
Grader	(#)	90
Scheduling Parameters	**%**	**No.**
Ore tons per month	**(Tons)**	**165 000**

15.1.2 Gold Price

A significant factor in determining Mineral Reserves is the commodity price for the mineral being extracted. For CGML the Mineral Resources were calculated at a gold price of US$1,950/oz Au. However, CGML have used a gold price of US$1,700/oz Au for determining Mineral Reserves. As at the date of this report (March 2024), the spot gold price is US$2,165/oz.

15.1.3 Mining Costs

CGML has a good cost capture process, enabling all costs associated with operations to be accurately determined. The mining costs that have been collected are used in conjunction with updated mine schedules to calculate ongoing mine operating and capital costs. Table 15-4 shows the Life of Mine costs (US$/t ore) used for generating the Mineral Reserves.

Table 15-4: Life of Mine Operating Costs – Underground

Costs Per Ore (US$/t)	Akwaaba	Akoti	Tano	Obra	Suraw	Open Pits (All)
Area	**(US$/t Ore)**	**(US$/t Ore)**	**(US$/t Ore)**	**(US$/t Ore)**	**(US$/t Ore)**	**(US$/t Ore)**
Mining Costs	34.97	33.51	31.85	28.02	29.61	37.5
Process Costs	16.13	16.13	16.13	16.13	16.13	16.13
G&A Costs	7.37	7.37	7.37	7.37	7.37	7.37
Sustaining Capital	4.40	4.40	4.40	4.40	4.40	4.40
Total US$/t Ore	**62.88**	**61.41**	**59.76**	**55.92**	**57.51**	**65.40**

The open pit costs are based on a mining contract entered into with Maxmass, a Ghanian mining contractor. The contract is for open pit mining services. Terms of the contact are based on full LOM pit schedules.

15.2 Cut-off Grades

Using the modifying factors above, cut-off grades are calculated for each mining operation. The CoG is the grade at which a block of ore will generate positive cash flow if mined, processed, and sold as gold. The input parameters to the CoG calculation is shown in Table 15-5 and a summary of the CoG calculation for each mine is shown in Table 15-6.

Table 15-5: Cut-off Grade Calculation Input Parameters

Parameters	Units	Value
Gold Price	(US$/oz)	1 700.00
	(US$/gram)	54.66
Effective Revenue	(US$/oz)	1 496
	(US$/gram)	48.1
Oz factor	(g)	31.1035
Gold Recovery	(%)	88%
Royalties (5.6%)	(US$/oz)	83.776

Table 15-6: Cut-off Grade for Underground Operations

Underground Strategic CoG at US$1 700							
	Akwaaba	**Akoti**	**Tano**	**Suraw**	**Obra**	**Sariehu**	**Mamnao**
Opex Cost Per tonne (US$/t)	**2024 Budget**	**2024 Budget**	**2024 Budget**	**2024 Budget**	**2024 Budget**	**2024 Budget**	**2024 Budget**
Mining Cost	34.97	33.51	31.85	29.61	28.02	29.61	29.61
Process costs	16.13	16.13	16.13	16.13	16.13	16.13	16.13
Site Administration costs	7.37	7.37	7.37	7.37	7.37	7.37	7.37
Sustaining Capital	4.40	4.40	4.40	4.40	4.40	4.40	4.40
Total US$/Ore Tonne	**62.88**	**61.41**	**59.76**	**57.51**	**55.92**	**57.51**	**57.51**
Average Total Mining Cost	**34.97**	**33.51**	**31.9**	**29.6**	**28.02**	**29.61**	**29.61**
Secondary Development		-	-	-	-	-	-
Stoping	29.36	27.32	26.24	24.00	22.41	24.00	24.00
Backfill	0.57	1.15	0.57	0.57	0.57	0.57	0.57
Other (see below)	5.05	5.05	5.05	5.05	5.05	5.05	5.05
Others	**5.05**	**5.05**	**5.05**	**5.05**	**5.05**	**5.05**	**5.05**
Surface haulage (transit to ROM)	3.28	3.3	3.3	3.3	3.3	3.3	3.3
Assay	1.76	1.76	1.76	1.76	1.76	1.76	1.76
						-	-
Costs (US$/Oz)						-	-
Shipment & Refinery	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Royalty (5.6% of effective Revenue)	83.78	83.78	83.78	83.78	83.78	83.78	83.78
Reclamation Costs	3.66	4.9	4.7	2.5	6.9	2.5	2.5
Total US$/Oz Au	**93.75**	**95.0**	**94.8**	**92.6**	**96.9**	**92.6**	**92.6**
Total US$/g Au	3.01	3.1	3.0	3.0	3.1	3.0	3.0
						-	-
Cut-off In Place (g/t)	1.57	1.53	1.49	1.43	1.40	1.43	1.43
Overbreak Dilution (%)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Cut-off Including Dilution (g/t)	**1.39**	**1.36**	**1.33**	**1.27**	**1.24**	**1.27**	**1.27**

Table 15-7: Open Pit Cut-off Grade Calculation

Parameters	Unit	Asante Guidance
Revenue		
Gold Price - Optimisation (Base)	(US$/oz)	1,700
Gold Price - Resource Case (Stretch)	(US$/oz)	1,900
Selling Cost	(US$/oz)	99.76
Refinery and Shipment	(US$/oz)	4.56
Government Royalty	(%)	5.60
Government Royalty	(US$/oz)	95.20
Operating Cost		
Mining		
Waste	(US$/t mined)	3.09
Ore	(US$/t mined)	3.24
Transition Waste	(US$/t mined)	3.09
Transition Ore	(US$/t mined)	3.24
Fresh Waste	(US$/t mined)	3.09
Fresh Ore	(US$/t mined)	3.24
Contractor Management fees	(US$/ t milled)	1.18
Grade Control	(US$/ t milled)	1.40
Owner Mining Fixed Cost	(US$/t milled)	2.17

Parameters	Unit	Asante Guidance
Processing		
Process Feed - CIL	(US$/t milled)	16.10
Process G&A	(US$/t milled)	
Admin G&A	(US$/t milled)	7.41
Ore Rehandling	(US$/t milled)	
Sustaining Capex	(US$/t milled)	0.44
Parameters		
Mining		
Mining Recovery	(%)	98
Ore Dilution	(%)	10
Processing		
Recovery	(%)	82.5
Oxide	(%)	83.0
Transition	(%)	83.0
Fresh	(%)	83.0
Mill Through put # 1	(Mtpa)	2.4
Mill Through put # 2	(Mtpa)	2.7
Mill Throughput	(Mtpa)	3.6
Break even Cut-off Grade		
Whittle		
Break even Cut-off Grade	(g/t ore)	**0.68**
Marginal Cut-off Grade		
Whittle		
Marginal Cut-off Grade		
Oxide	(g/t ore)	**0.56**
Transition	(g/t ore)	0.56
Fresh	(g/t ore)	0.56

15.3 Mine Design

15.3.1 Pit Optimisation

Pit optimisation was carried out using industry standard pit optimisation software (Geovia Whittle 4®) for all the open pits included in the life of mine plan and consequent Mineral Reserve Estimate.

In addition to the cost and revenue parameter summarised in Table 15-7, the slope angles summarised in Table 15-8 were applied during the Whittle optimisation.

Table 15-8: Open Pit Slope Angles Applied During Pit Optimisation

	Oxide East	Oxide West	Transition East	Transition West	Fresh East	Fresh West
Akoti	28	37	28	37	42	52
Obra	37	32	32	37	55	48
Sariehu	28	37	32	37	30	52
Mamnao	29	29	35	35	45	52
Kolua	37	40	37	40	44	51
Aboduabo	29	35	34	43	44	52

All open pit targets were re-optimised as part of the life of mine plan preparation. Asante have adopted a more optimistic view of the gold price, using US$1,700/oz for the pit optimisations. In the previous mine plans prepared by Kinross a gold price of US$1,300/oz was used for pit optimisations. This has led to the expansion and extension of life of a number of the open pits.

15.3.2 Pit Design

Based on the optimum pit shells generated during the pit optimisation exercise detailed pit designs have been completed for all pits included in the mine plan. The pit designs were completed using Geovia Surpac®. This is an industry standard mine planning software tool and the processes followed in preparing the mine plans and schedules are adequate to support the declaration of a Mineral Reserve.

15.3.3 Stope Optimisation

For the underground operations Mineable Shape Optimiser ("MSO") which is a module of the Datamine suite of mine planning software was used to define stope shapes. The input parameters to MSO include items such as cut-off grade, minimum mining width, dilution skin. The parameters used at Chirano for the 2024 LOM plan are tabled below.

Table 15-9: MSO Input Parameters

Item	Unit	Value
Cut-off grade	(g/t)	As per table 15.7
Level spacing	(m)	25
Sections (length of stope block)	(m)	5
Minimum stope width	(m)	3.5
Maximum stope width	(m)	35
Dilution skin	(m)	0 (applied during scheduling)
Resource class inclusion		Measured and Indicated

The stope shapes generated by MSO were then imported in Datamine Studio for more detailed mine planning. The stope shapes were evaluated by the mine planning engineer and edited to remove impractical mining shapes or stopes which are too far away from development or isolated. In addition, in wider parts of the orebody a decision on the mining method (transvers of longitudinal LHOS) was made. Mining methods are discussed in more detail in Section 16.

15.3.4 Underground Development Layout

Underground development layouts were prepared to access the stope shapes discussed above. The development and stope design and scheduling was completed in Datamine Studio® mine planning software.

15.4 Mine Scheduling

Life of mine scheduling for the open pit operations was undertaken using Geovia MineSched® and the underground schedules were generated using Datamine Studio (EPS)®.

Table 15-10: Underground Mine Schedule

TOTAL UNDERGROUND MINE PLAN	Unit	Y-2024	Y-2025	Y-2026	Y-2027	Y-2028	LOM TOTAL
Total Underground							**2024 - 2028**
Development Waste	(m)	7 891	7 207	3 896	1 718	136	**22 809**
Development Ore	(m)	5 060	3 942	3 968	2 581	614	**17 374**
Total Development	(m)	12 951	11 149	7 864	4 299	750	**40 183**
Total Ore	(t)	1 661 513	2 250 367	2 724 106	2 770 527	3 128 685	**12 535 198**
Average Ore Grade	(g/t)	1.94	1.88	1.91	2.36	2.49	**2.15**
Gold	(oz)	103 405	135 772	167 216	210 171	250 890	**867 454**
Total Tonnes (Ore + Waste)	(t)	2 186 478	2 779 102	3 047 912	2 875 324	3 154 053	**14 457 005**
Akwaaba							**2024 - 2028**
Development Waste	(m)	1 119	1 164	73	-	-	**2 552**
Development Ore	(m)	552	432	177	-	-	**1 267**
Total Development	(m)	1 671	1 596	250	-	-	**3 819**
Total Ore	(t)	236 884	232 321	218 735	-	-	**687 940**
Average Ore Grade	(g/t)	1.88	1.91	2.11	-	-	**1.95**
Gold	(oz)	13 895	14 291	14 834	-	-	**43 020**
Total Tonnes (Ore + Waste)	(t)	390 829	364 811	236 700	-	-	**1 063 520**
Akoti							**2024 - 2028**
Development Waste	(m)	1 040	465	-	-	-	**1 673**
Development Ore	(m)	386	480	480	173	-	**1 697**
Total Development	(m)	1 426	945	480	173	-	**3 370**
Total Ore	(t)	134 993	170 797	159 248	186 073	347 890	**999 001**
Average Ore Grade	(g/t)	2.08	1.64	2.41	1.93	2.95	**2.23**
Gold	(oz)	8 489	9 009	9 666	11 552	32 974	**71 690**
Total Tonnes (Ore + Waste)	(t)	198 621	204 608	166 271	187 432	347 890	**1 104 822**
Tano							**2024 - 2028**
Development Waste	(m)	1 065	1 141	466	-	-	**2 956**
Development Ore	(m)	557	333	424	60	-	**1 514**
Total Development	(m)	1 622	1 474	890	60	-	**4 470**
Total Ore	(t)	144 472	306 687	281 325	304 906	-	**1 037 390**
Average Ore Grade	(g/t)	3.88	1.83	2.13	1.97	-	**1.91**
Gold	(oz)	9 509	18 000	16 813	19 263	-	**63 586**
Total Tonnes (Ore + Waste)	(t)	172 072	337 517	292 314	304 906	-	**1 124 232**

TOTAL UNDERGROUND MINE PLAN	Unit	Y-2024	Y-2025	Y-2026	Y-2027	Y-2028	LOM TOTAL
Total Underground							**2024 - 2028**
Suraw							**2024 - 2028**
Development Waste	(m)	2 332	2 047	1 987	1 248	-	**8 276**
Development Ore	(m)	1 031	822	1 172	870	-	**4 154**
Total Development	(m)	3 363	2 869	3 159	2 118	-	**12 430**
Total Ore	(t)	580 026	571 672	746 467	1 136 514	352 267	**3 386 946**
Average Ore Grade	(g/t)	2.14	2.18	4.13	2.65	2.64	**2.33**
Gold	(oz)	39 390	39 999	47 233	96 857	29 896	**253 376**
Total Tonnes (Ore + Waste)	(t)	704 379	744 020	877 124	1 212 243	352 267	**4 016 913**
Obra							**2024 - 2028**
Development Waste	(m)	2 335	2 390	1 370	470	136	**7 352**
Development Ore	(m)	2 534	1 875	1 715	1 478	614	**8 742**
Total Development	(m)	4 869	4 265	3 085	1 948	750	**16 094**
Total Ore	(t)	565 138	968 890	1 318 331	1 143 034	2 428 528	**6 423 921**
Average Ore Grade	(g/t)	2.81	1.64	1.68	1.98	2.39	**2.11**
Gold	(oz)	32 121	54 473	78 669	82 498	188 020	**435 782**
Total Tonnes (Ore + Waste)	(t)	720 577	1 128 146	1 475 503	1 170 743	2 453 896	**6 948 865**

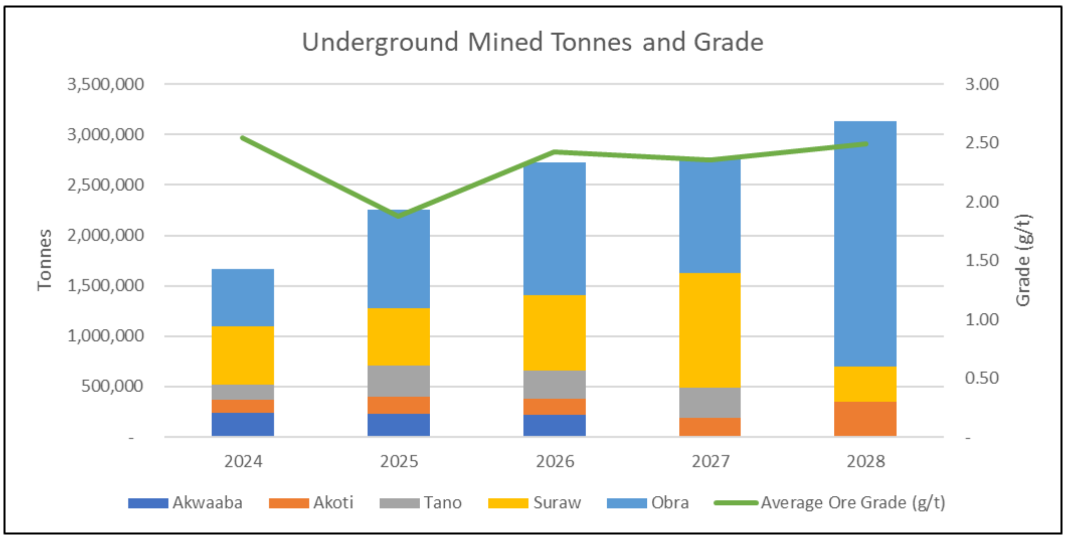


Figure 15-1: Underground Schedule by Mine

Table 15-11: Open Pit Mine Schedule

OPEN PIT		LoM TOTAL	2024 TOTAL	2025 TOTAL	2026 TOTAL
MAMNAO CENTRAL	**Unit**				
Total Ore to Mill	(t)	1,108,440	234,089	874,351	-
Average Grade	(g/t)	1.17	1.06	1.19	-
Stockpile Ore	(t)	237,725	74,104	163,620	-
Average Grade	(g/t)	0.62	0.61	0.62	-
Mineralised Waste	(t)	310,433	115,186	195,248	-
Average Grade	(g/t)	0.45	0.45	0.45	-
Total Ore Mined	(t)	1,346,164	308,193	1,037,971	-
Average Grade	(g/t)	1.07	0.95	1.10	-
Contained Ounces	(Oz)	46,273	9,454	36,819	-
Waste	(t)	8,508,850	5,335,120	3,173,729	-
Total Material	(t)	10,165,447	5,758,499	4,406,949	-
Strip Ratio	(t:t)	6	17	3	
MAMNAO NORTH					
Total Ore to Mill	(t)	155,755	155,755	-	-
Average Grade	(g/t)	1.06	1.06	-	-
Stockpile Ore	(t)	68,637	68,637	-	-
Average Grade	(g/t)	0.59	0.59	-	-
Mineralised Waste	(t)	109,390	109,390	-	-
Average Grade	(g/t)	0.46	0.46	-	-
Total Ore Mined	(t)	224,392	224,392	-	-
Average Grade	(g/t)	0.92	0.92	-	-
Contained Ounces	(Oz)	6,636	6,636	-	-
Waste	(t)	892,938	892,938	-	-
Total Material	(t)	1,226,721	1,226,721	-	-
Strip Ratio	(t:t)	4	4		
SARIEHU					

OPEN PIT		**LoM TOTAL**	**2024 TOTAL**	**2025 TOTAL**	**2026 TOTAL**
Total Ore to Mill	(t)	503,662	503,662	-	-
Average Grade	(g/t)	1.23	1.23	-	-
Stockpile Ore	(t)	66,619	66,619	-	-
Average Grade	(g/t)	0.59	0.59	-	-
Mineralised Waste	(t)	101,269	101,269	-	-
Average Grade	(g/t)	0.45	0.45	-	-
Total Ore Mined	(t)	570,281	570,281	-	-
Average Grade	(g/t)	1.15	1.15	-	-
Contained Ounces	(Oz)	21,168	21,168	-	-
Waste	(t)	681,398	681,398	-	-
Total Material	(t)	1,352,948	1,352,948	-	-
Strip Ratio	(t:t)	1	1		
OBRA SOUTH					
Total Ore to Mill	(t)	603,889	566,501	37,388	-
Average Grade	(g/t)	1.25	1.26	1.17	-
Stockpile Ore	(t)	168,589	154,014	14,575	-
Average Grade	(g/t)	0.59	0.60	0.58	-
Mineralised Waste	(t)	331,283	301,171	30,113	-
Average Grade	(g/t)	0.45	0.45	0.45	-
Total Ore Mined	(t)	772,478	720,515	51,963	-
Average Grade	(g/t)	1.11	1.12	1.01	-
Contained Ounces	(Oz)	27,567	25,887	1,680	-
Waste	(t)	4,725,504	4,569,313	156,191	-
Total Material	(t)	5,829,266	5,590,999	238,266	-
Strip Ratio	(t:t)	6	6	3	
AKOTI SOUTH					
Total Ore to Mill	(t)	743,536	-	271,518	472,018
Average Grade	(g/t)	1.22	-	1.11	1.28
Stockpile Ore	(t)	207,933	-	91,116	116,817
Average Grade	(g/t)	0.59	-	0.59	0.59
Mineralised Waste	(t)	342,265	-	168,512	173,753
Average Grade	(g/t)	0.45	-	0.44	0.45
Total Ore Mined	(t)	951,469	-	362,634	588,834
Average Grade	(g/t)	1.08	-	0.98	1.15
Contained Ounces	(Oz)	33,102	-	11,417	21,686
Waste	(t)	6,098,419	-	4,678,853	1,419,565
Total Material	(t)	7,392,152	-	5,209,999	2,182,153
Strip Ratio	(t:t)	6		13	2
KOLUA					
Total Ore to Mill	(t)	71,193	-	71,193	-
Average Grade	(g/t)	2.27	-	2.27	-
Stockpile Ore	(t)	14,246	-	14,246	-
Average Grade	(g/t)	0.60	-	0.60	-
Mineralised Waste	(t)	41,739	-	41,739	-
Average Grade	(g/t)	0.45	-	0.45	-
Total Ore Mined	(t)	85,439	-	85,439	-
Average Grade	(g/t)	1.99	-	1.99	-
Contained Ounces	(Oz)	5,478	-	5,478	-
Waste	(t)	919,691	-	919,691	-
Total Material	(t)	1,046,869	-	1,046,869	-
Strip Ratio	(t:t)	11		11	
ABODUABO					
Total Ore to Mill	(t)	359,064	157,680	201,384	-
Average Grade	(g/t)	1.44	1.40	1.47	-
Stockpile Ore	(t)	53,712	32,760	20,952	-
Average Grade	(g/t)	0.60	0.60	0.60	-
Mineralised Waste	(t)	83,736	58,032	25,704	-
Average Grade	(g/t)	0.45	0.45	0.46	-
Total Ore Mined	(t)	412,776	190,440	222,336	-
Average Grade	(g/t)	1.33	1.26	1.39	-
Contained Ounces	(Oz)	17,616	7,713	9,903	-
Waste	(t)	4,239,260	2,699,300	1,539,960	-
Total Material	(t)	4,735,772	2,947,772	1,788,000	-
Strip Ratio	(t:t)	10	14	7	
TOTAL PIT					
Total Ore to Mill	**(t)**	**3,545,540**	1,606,602	1,466,921	472,018
Average Grade	**(g/t)**	**1.24**	1.25	1.28	1.32

OPEN PIT		LoM TOTAL	2024 TOTAL	2025 TOTAL	2026 TOTAL
Stockpile Ore	**(t)**	**817 460**	393,246	307,397	116,817
Average Grade	**(g/t)**	**0.59**	0.61	0.61	0.61
Mineralised Waste	**(t)**	**1 320 115**	680,235	466,127	173,753
Average Grade	**(g/t)**	**0.45**	0.46	0.46	0.46
Total Ore Mined	**(t)**	**4,363,000**	1,999,848	1,774,317	588,834
Average Grade	**(g/t)**	**1.15**	1.13	1.14	1.18
Contained Ounces	**(Oz)**	**161,381**	72,342	66,670	22,370
Waste	**(t)**	**27,405,056**	14,176,856	11,826,634	1,419,565
Total Material	**(t)**	**32,309,175**	16,856,939	13,288,084	2,182,153
Strip Ratio	**(t:t)**	6.00	7.09	6.67	2.41

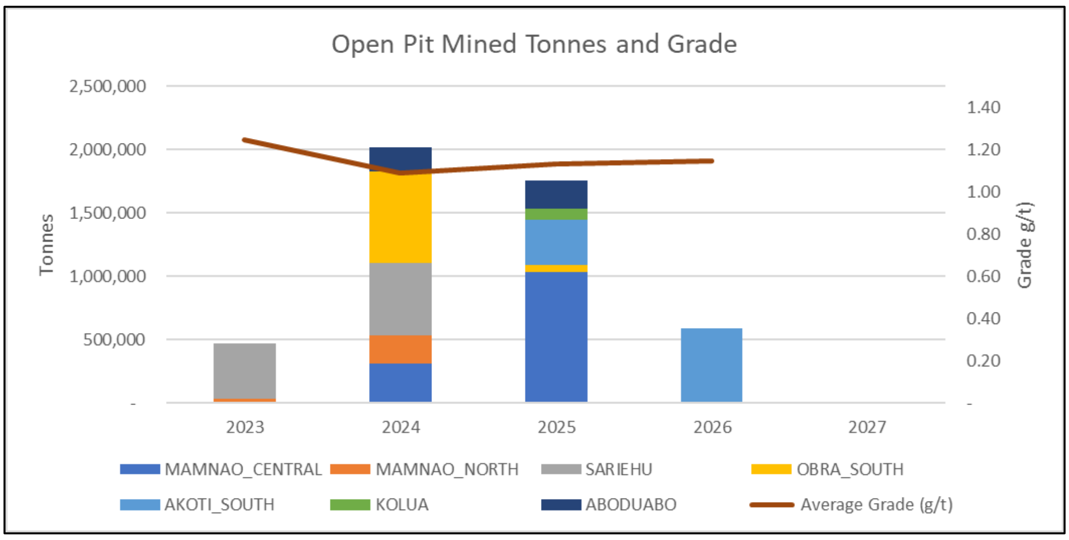


Figure 15-2: Open Pit Schedule by Mine

A combined mining and processing schedule was prepared as input to the financial model. The combined open pit and underground schedule is illustrated in Figure 15-3.

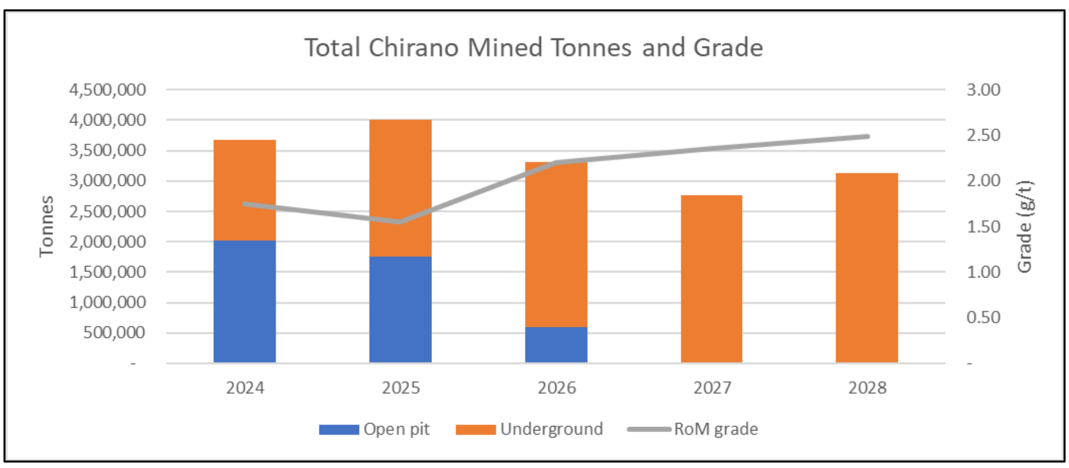


Figure 15-3: Total Chirano Mined Tonnes and Grade

15.5 Mineral Reserve Summary

This Mineral Reserve estimate is based on a depletion date of 31 December 2023. It followed an assessment of the economic viability of the Mineral Resources that were scheduled for depletion before confirming them as Mineral Reserves.

Table 15-12: Mineral Reserve Estimate for Chirano Gold Mine as at 31 December 2023

Classification		Tons (000's)	Au Grade (g/t)	Au Ounces (000's)
Proven	OP	858.9	1.09	30.2
	UG	2864.1	2.26	208.4
	Stockpile(s)	1566.8	0.51	25.6
Sub Total Proven		5289.9	1.55	264.2
Probable	OP	3748.2	1.13	135.7
	UG	9671.1	2.12	659.0
Sub Total Probable		13419.3	1.84	794.7
TOTAL		**18709.2**	**1.76**	**1058.9**
Open Pits	Proven	858.9	1.09	30.2

Classification		Tons (000's)	Au Grade (g/t)	Au Ounces (000's)
	Probable	3748.2	1.13	135.7
Sub Total Open Pits		4607.2	1.12	165.9
Underground	Proven	2864.1	2.26	208.4
	Probable	9671.1	2.12	659.0
Subtotal Underground		12535.2	2.15	867.5
Stockpile(s)	Proven	1566.8	0.51	25.6
	Probable			
Sub Total Stockpile(s)		1566.8	0.51	25.6
Total		**18709.2**	**1.76**	**1058.9**

Notes:

1. *The Mineral Reserve has been reported in accordance with the requirements and guidelines of NI 43-101 and are 100% attributable to CGML.*
2. *Apparent computational errors due to rounding and are not considered significant.*
3. *The Mineral Reserves are reported with appropriate modifying factors of dilution and recovery.*
4. *The Mineral Reserves are reported at the head grade and at delivery to Plant.*
5. *The Mineral Reserves are stated at a price of US1700/oz Au as at 31 December 2023.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves.*
7. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate.*
8. *Quantities are reported in metric tonnes.*
9. *The input studies are to the prescribed level of accuracy.*
10. *The Mineral Reserve estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential exploitation of such Mineral Reserves.*
11. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

The Qualified Person for Mineral Reserves has satisfied himself that the methodology used for estimating and presenting Mineral Reserves herein conform to the requirements and guidelines of NI 43-101 and therefore supports this Mineral Reserve estimate as stated above.

15.6 Mineral Reserve Reconciliation

The previous Mineral Reserves statement dated 31 December 2021 is shown in Table 15-13. Table 15-15 shows a reconciliation of the changes in Mineral Reserves between December 2021 and December 2023.

Table 15-13: Chirano Gold Mine Mineral Reserves as at December 2021

Classification		Tons (000's)	Au Grade (g/t)	Au Ounces (000's)
Proven	OP	2 455.8	1.94	73.3
	UG	2 321.4	2.37	177.2
Stockpile(s)		822.7	0.79	20.9
Sub Total		**5 600.0**	**1.51**	**271.4**
Probable	OP	2 659.3	1.87	75.4
	UG	7 500.6	2.67	642.9
Sub Total		**10 159.9**	**2.20**	**718.3**
TOTAL		**15 759.8**	**1.95**	**989.7**

The mine recorded production has been reconciled against the Mineral Reserve depletion in the period since the previous Mineral Reserve Estimate, 31 December 2021, and 31 December 2023. Table 15-14 shows the reconciliation.

Table 15-14: Reconciliation Between Mineral Reserve Depletion and Mine Production

	Tons (t)	Grade (g/t)	Gold content (oz)
Production	6 152 993	1.39	275 944
Reserve Depletion	6 283 104	1.47	296 797
Discrepancy	98%	95%	93%

Notes:

1. *Production includes mined ore plus change in stockpile inventories over the period.*

The reconciliation shows that ore loss and dilution may be underestimated in the mine plan as the actual tonnes produced by the mine was 2% less than the depleted tonnage from the Mineral Reserve Model. The grade produced was 5% lower than the Mineral Reserve grade. This could be a function of more dilution than planned for or an overestimation of grade in the block model used for Mineral Reserves. In a production environment it is not uncommon to have discrepancies of up to 10% between actual production and the depleted Mineral Reserves, but this should be monitored on an ongoing basis to determine if there is a consistent trend. If the trend continues remedial action should be considered.

Table 15-15: Reconciliation of Mineral Reserves 2021 to 2023

	Opening Balance			Production Depletion			Exploration Change			Engineering Change			Closing Balance		
Classification	Tons (000's)	Grade (g/t Au)	Ounces (000's)	Tons (000's)	Grade (g/t Au)	Ounces (000's)	Tons (000's)	Grade (g/t Au)	Ounces (000's)	Tons (000's)	Grade (g/t Au)	Ounces (000's)	Tons (000's)	Grade (g/t Au)	Ounces (000's)
Proven	4 777.2	1.63	250.5	(6 283.1)	1.47	(296.8)	3 056.2	1.88	184.4	2 172.8	1.44	100.6	3 723.1	1.99	238.7
Probable	10 159.9	2.20	718.3				2 214.5	2.00	142.1	1 044.9	(1.95)	(65.7)	13 419.3	1.84	794.7
Stockpile	822.7	0.79	20.9	-	-	-	-	-	-	744.1	0.19	4.7	1 566.8	0.51	25.6
Subtotal	15 759.8	1.95	989.7	(6 283.1)	1.47	(296.8)	5 270.7	1.93	326.5	3 961.8	0.31	39.6	18 709.2	1.76	1 058.9

Comments

Proven	Production depletion changes and engineering changes
Probable	Positive changes coming from additions through definitive drilling (Additions from Suraw, Obra, Akoti South, Mamnao Ext, Aboduabo)
Stockpile	Depletion

16. MINING METHODS

16.1 Mining Overview

Open pit mining activities first commenced in 2004 when the project was operated by Red Back Mining. First gold from the project was poured in October 2005. Multiple pits were operated along the full strike length of the deposits, with the first underground operation, Akwaaba, commencing in 2008.

There are currently five operating underground mines. From south to north these are Akwaaba, Suraw, Akoti, Tano and Obra. Paboase ceased operation during 2022. There are currently three open pits operating on the mining lease, which are Mamnao, Obra and Akoti South. Figure 16-1 shows a plan and long section view of mining operations.

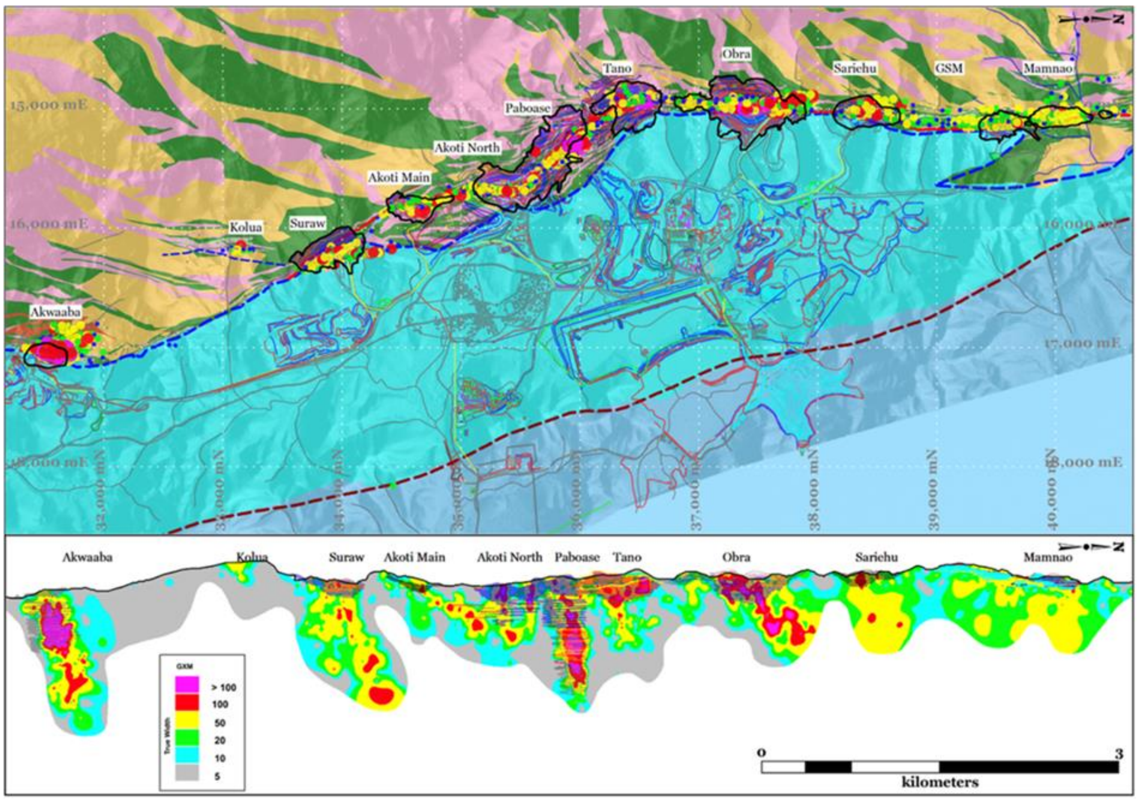


Figure 16-1: Chirano Operations

The average annual mine production rate of all mining for the years 2024 to 2028 is approximately 4Mtpa. Figure 16-2 indicates the Life of Mine gold production based on December 2023 reserves.

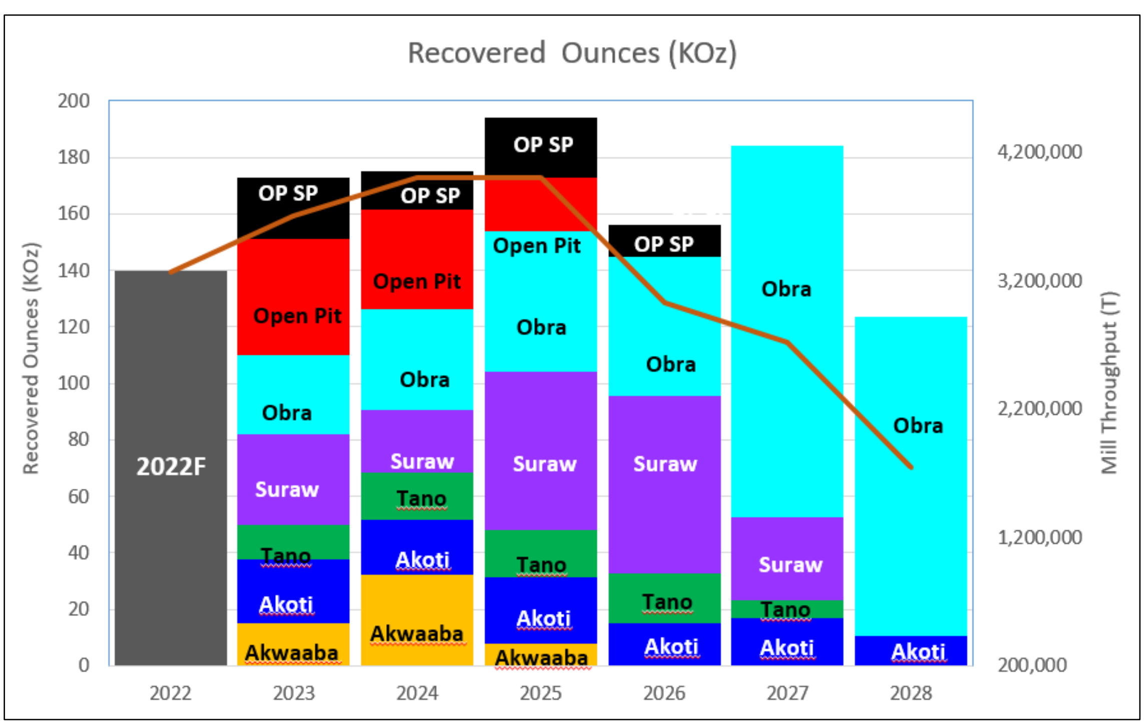


Figure 16-2: LoM Gold Production by Source

(Source: CGML 2023)

16.2 General Mine Design and Infrastructure

The underground mines are designed similarly with the main access to each mine being a 5.5m wide x 6.0m high spiral decline descending at a gradient of 1:7. Access to the ore body is via lateral development extending from the decline at 25m vertical intervals.

At every sublevel, (25m vertically) a 5.5m wide x 6.0m high crosscut access is established. A stockpile, sump, escape way and ventilation accesses (fresh and return air) are developed on each level for the efficient management of development, load and haul systems, dewatering, emergency evacuation and ventilation respectively.

A typical level layout is shown in Figure 16-3. Each level is connected to a Return Air Way (RAW) and escape way. The levels also consist of a stockpile, sump and services drive.

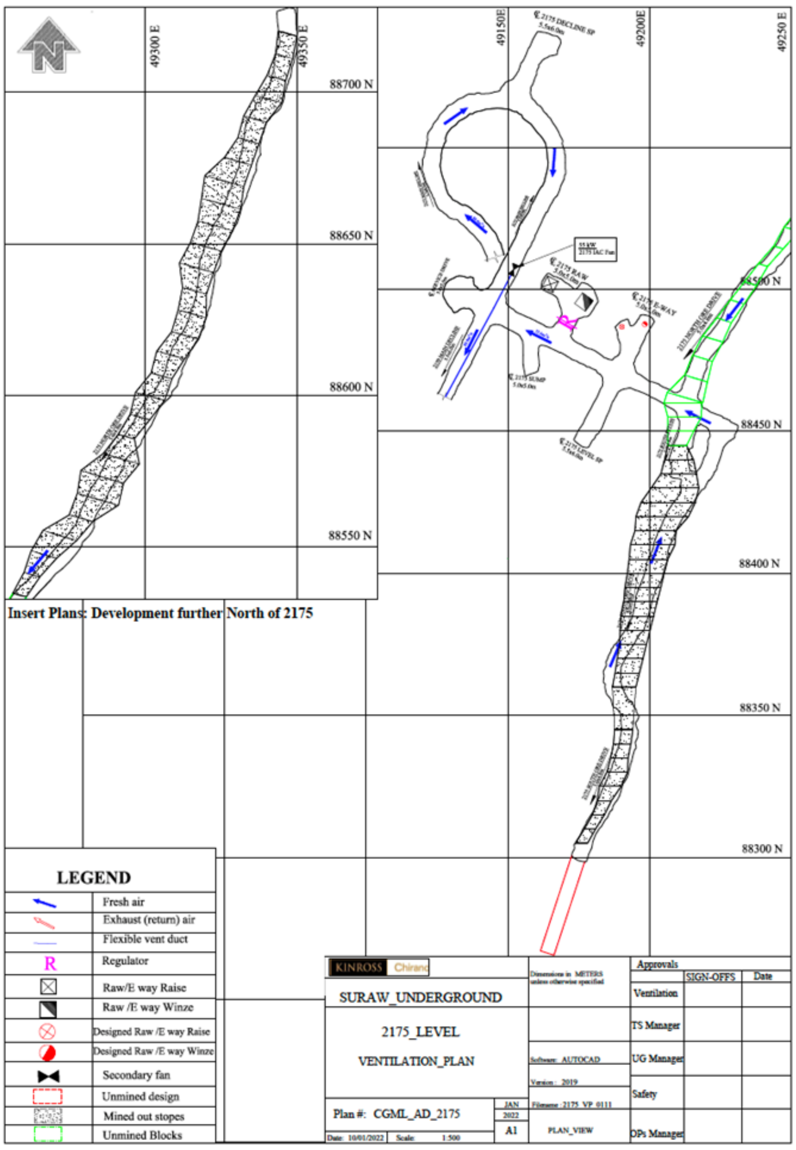


Figure 16-3: Standard Level Plan Design

Ore drives are established off the crosscut, with a nominal dimension of 5m wide x 4.8m high. These ore drives are driven the full strike length of the orebody which varies between the mines. Where the orebody is thicker multiple ore drives are established to facilitate total ore extraction.

Figure 16-4 illustrates the general design of the declines for the underground operations.

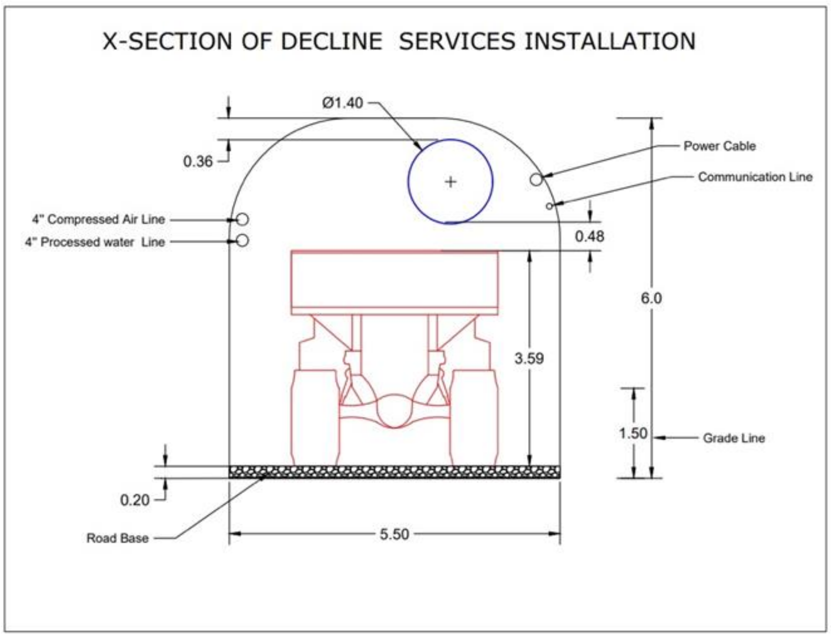


Figure 16-4: General Design of the Mine Decline

(Source: CGML 2022)

Power is supplied to each mine via a 11kV main feeder from surface. 2MVA stepdown transformers (11kV to 1kV) are installed on every 4th level (100m vertically). Power is then fed from these transformers to each intermediate level for distribution to the working headings via the Electrical Distribution Board (EDB).

Mine dewatering utilises mono pumps and flygt pumps. Water is collected in dedicated sumps on each level and fed via bore holes or polypipes into settling dams. Settled clear water is fed to the mono pumps for mine discharge to surface. Mine water is generally placed into large water catchments (old pits), where is then recycled into the mine for operational use. The typical power and dewatering systems are shown in Figure 16-5.

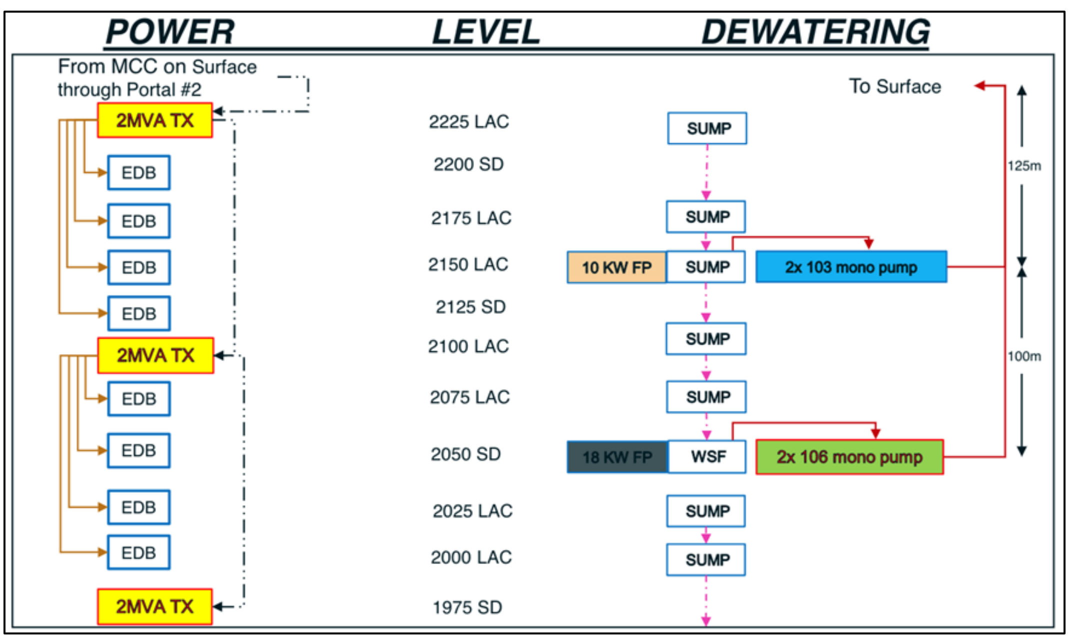


Figure 16-5: Mine Power and Dewatering

(Source: CGML 2022)

All mines are equipped with Leaky Feeder radio communication systems. Mobile equipment is fitted with fixed radios and management personnel are also equipped with handheld devices.

16.2.1 Mining Personnel and Systems

The mine Technical Services team is well established and equipped. As at the end of 2023 the technical services department consisted of 79 personnel. This includes Survey, Ventilation, Geology, Geotechnical and Mine Planning for the underground and open pit operations. In addition, operations consist of 83 personnel in the surface mines and 246 personnel for underground.

Chirano is operating with modern systems and technologies. Software includes Datamine, Micromine, Leapfrog, Surpac and Datamine Supervisor. Ventilation planning is managed with the use of Ventsim modelling software. Underground survey voids are measured using drone technology and a Cavity Monitoring System. All mine development is guided by fixed lasers for line and gradient.

Technical services personnel operate on a variety of rosters and is generally dependent on their home location. The standard for all personnel is for 2 days on, they get one day off. All personnel work a 12-hour shift. Underground personnel work a roster of 4 days, 4 nights and 4 off.

16.3 Geotechnical Considerations

16.3.1 Open Pit

RonDave Engineering Solutions (RES) Limited (Ghana) has had input into the geotechnical review of the planned operations at the Chirano. The review was to give a geotechnical overview based on the list below in fulfilment of the requirements for Asante's NI 43-101 reporting for the 2023/2024 reporting cycle relating to:

- The geotechnical conditions existing in the individual mines.
- Review of previous study and test work conducted and its relevance to the current mine design.
- The rockmass classification system used.
- The rock properties of the individual mines.
- Description of geotechnical design parameters applied in mine designs.
- Description of geotechnical design process i.e. are designs based on modelling, empirical rules, benchmarking.

The key focus of the review is the current operating open pit (Sariehu, Obra and the Mamnao Pits). These pits have extensively been mined previously and with pit wall slope exposures. All the operational pits and those already mined-out have been observed to have similar geological and geotechnical conditions. Assessment of the rockmass conditions and other geotechnical design parameters of the operational pits and underground mining blocks incorporated into the mine designs resulting in significant improvement in both pit slope and underground stope stability are discussed in detail below.

16.3.1.1 Geotechnical Conditions in the Open Pits

The open pit operation are located over approximately 6km along the Chirano shear, which trends N-S and in general dips steeply to the west. The orebody consists of the Chirano granite (quartz dolerite intruded by diorite and dolerite). It is massive and moderately jointed creating rock blocks at some places. Some foliated shear zones are also noted within the granite which tends to strike 10° to 15° east of the foliation. The width of the orebody varies along the shear.

Exposures in the pits have shown a predominance of mafic rocks (Basalt and Dolerite) to the west (hangingwall) and a thin slice of mafic rock (up to 15m thick), then the Tarkwaian arkose to the east (footwall). The hangingwall granitoid and mafic volcanics are massive with foliation planes present. The footwall bedding orientation of the Tarkwaian sediments is approximately N-S strike with low to moderate easterly dip (42°/113°). The footwall and hanging wall are foliated and heavily on the footwall. The presence of the foliation planes and cross joints has created various sizes of rock block/slabs on the pit walls. These rock block/slabs occasionally become unstable as mining progresses down dip. Shears have also been exposed in the pits striking N-S and dipping towards the west with dip/dip direction of (64°/242°) as shown in Figure 16-6 . The Chirano Shear dips approximately 11 degrees shallower than the foliation.

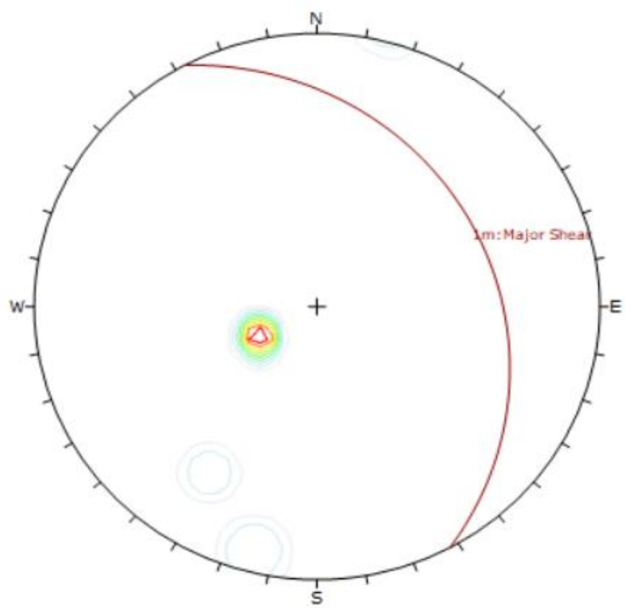


Figure 16-6: Major Shear Striking North-South

Main structures: Obra faults to the west (16°/117° and 7°/250°) and east (30°/243° and 20°/225°) Figure 16-7, and the CSZ on the east and must be considered in any design.

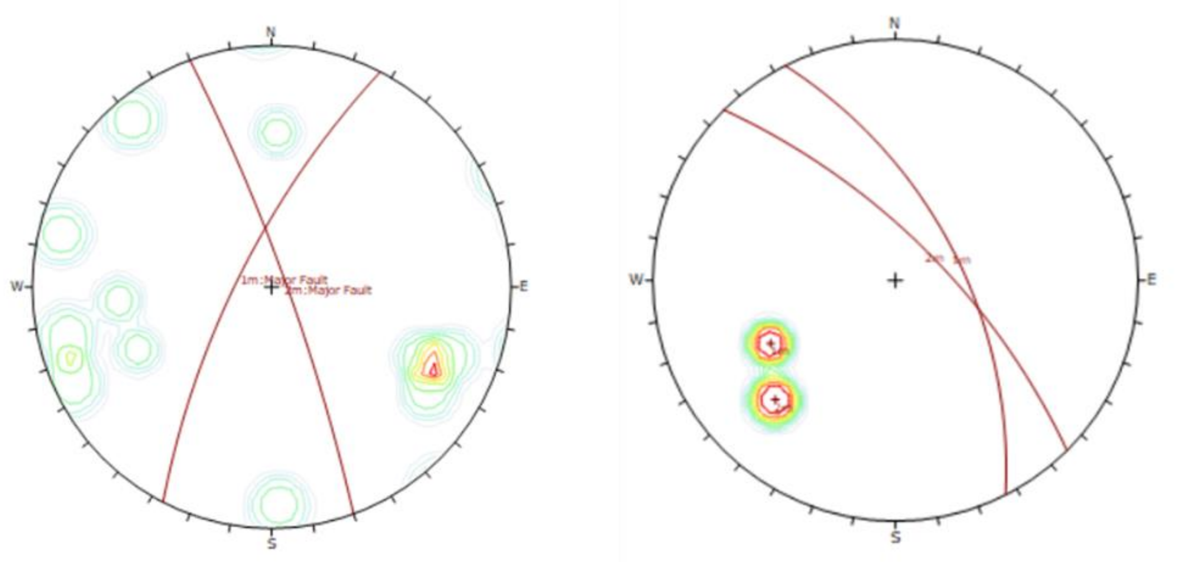


Figure 16-7: Two Faults to the West Obra Pit and East Obra Pit

Weathering is variable across the pits. The following general trends have been identified:

- Weathering in shear zones on granite/mafic contacts is deeper than in the surrounding rocks;
- The weathering profile generally mimics the topographic contours but is generally less undulating. As a result, the weathered zone is generally thicker under hills and thinner under gullies. The depth of weathering therefore can range from approximately 10m under gullies to 50m under hills. The depth of weathering in all rock types appears to be similar with deeper weathering sometimes seen in the foliated mafic slivers;
- The zone from weathered to fresh rock is generally transitional over approximately 9-10m.

Open pit mining started in 2005 and consists of a series of small to medium sized excavations. Eight pits have previously been mined since 2005 with three of them (Mamnao Central/South, Sariehu and Obra south) recently undergoing cutbacks. Obra south and Sariehu pits are currently operational. Various minor to multiple bench scale failures have been recorded in some of the pits during operations. Four such failures occurred in the eastern walls, where the Chirano Shear is prevalent in the pit wall, and three in the western wall. These instability issues were recognised at an early stage and carefully managed to attain a zero injury to personnel and damage to equipment. Table 16-1 lists the open pits and summarises the types of failure. Failure modes normally observed in the pits are planar sliding and flexural toppling.

Table 16-1: Open Pits and Summary of the Types of Failure

Pit	Scale of Failure	Mode	Date
Obra (South Pit)	Multiple bench	Toppling	2006
Tano	Multiple bench Multiple bench	Wedge/Planar failure Wedge failure	March 2008 October 2016
Sariehu	Multiple bench	Toppling	February 2010
Akwaaba	Multiple bench and pit floor	Structurally controlled failure owing to sublevel caving mining method	December 2010 - current
Mamnao South	Multiple bench	Toppling	May 2011
Paboase South	Bench	Circular	August 2012
Akoti North & Extended	Bench	Planar failure	
Mamnao Central	Multiple bench	Circular	November 2022

16.3.1.2 Review of Previous Study and Test Work Conducted

Previous studies and test work carried out by AMC Consultants Pty Limited (2007), SRK and those of the Chirano Geotechnical staff were reviewed during the assessment of the open pits. Recent mining in the pits has revealed the presence of faults and shears that have the potential to cause rock instability in the pits. The presence of fault and shearing at some locations has resulted in low cohesion amongst the individual rock blocks hence making them less stable. Steeper bench face angles than the dip of the shears are being designed and implemented leading to stable slopes during mining. Constant in=pit mapping assists in identifying faults and shears and allows continuous improvement to dench designs and safety factors in current operations.

16.3.1.3 Rock Properties of the Open Pit

The material properties from the test conducted by AMC Consultants Pty Limited (2007) and summarised in Table 16-2 are recommended to serve as the guideline for future designs. Figure 16-8 shows pictures of the rock samples after being crushed during the test. The rock samples were observed to fail along discontinuities confirming planar sliding and flexure toppling failures experienced in the pits.

Table 16-2: Rock Properties

Sample No.	Borehole ID	Core Tray No.	Lithology	Alteration	Location	UCS (Mpa)	Failure Mode	Failure Angle (°)	Young's Modulus (GPa)			Poisson's Ratio			UTS (Mpa)
									$E_{Tangent}$	E_{Secant}	$E_{Average}$	$V_{Tangent}$	V_{Secant}	$V_{Average}$	
1-A	CHRC 995D	392.62~393.06	Basalt	Not Altered	Hangingwall	147	Bs & Bi	48	98.2	106.4	98.1	0.3235	0.353	0.3234	11
3-A	CHRC 995D	390.30~390.70	Basalt	Not Altered	Hangingwall	196	A		97	71.1	96.4	0.2935	0.2732	0.2928	17
6-A	CHRC 995D	400.30~400.81	Basalt	Not Altered	Hangingwall	42	Bs	25	94.2	136.5	94.1	0.3243	0.5823	0.3359	11
7-A	CHRC 995D	419.95~420.21	Dolerite	Slight	Hangingwall	273	Bs	27	96	102	95.9	0.28	0.2738	0.2804	
10-A	CHRC 995D	379.43~379.66	Dolerite	Not Altered	Hangingwall	194	Bs & Bi	29	101.3	115	101.1	0.361	0.397	0.3608	13
12-C	CHRC 995D	368.52~368.79	Dolerite	Not Altered	Hangingwall	230	Bi	35	106.4	98.6	106.3	0.3259	0.3141	0.3257	
14-C	CHRC 995D	252.07~252.54	Trondhjemite	Moderate	Hangingwall	191	C		88.8	90.3	88.8	0.2181	0.2244	0.2182	19
16-C	CHRC 995D	252.87~253.30	Trondhjemite	Moderate	Hangingwall	232	C		87.1	89.7	87.1	0.2425	0.2479	0.2425	12
18	CHRC 995D	262.95~263.36	Trondhjemite	Moderate	Hangingwall	130	Bs	25	61.4	72.1	60.5	0.2082	0.1846	0.2123	23
19-A	CHRC 995D	541.00~541.55	Conglomerate+Sandstone	Not Altered	Footwall	146	A		81.5	86	81.5	0.1813	0.2063	0.1816	
22-A	CHRC 995D	548.95~548.28	Conglomerate	Not Altered	Footwall	221	Bi	25	80.5	86.3	80.5	0.1933	0.2189	0.1933	24
24-A	CHRC 995D	557.70~558.12	Conglomerate	Not Altered	Footwall	222	C		74.6	79.1	74.6	0.2377	0.2284	0.2392	17
25-A	CHRC 995D	527.23~527.49	Sandstone	Not Altered	Footwall	214	Bi	35	78.3	84.9	78.3	0.2449	0.2554	0.2451	17
26-C	CHRC 995D	527.55~527.78	Sandstone	Not Altered	Footwall	278	C		77.1	83.7	77	0.2576	0.2434	0.2599	11
30-C	CHRC 995D	474.84~475.37	Breccia	Strong	Ore Zone	229	A & C		85.1	92.8	84.9	0.2826	0.272	0.2835	22
32-A	CHRC 995D	480.63~480.87	Breccia	Strong	Ore Zone	302	C		82.8	85.2	82.8	0.3307	0.3011	0.3326	23
34-C	CHRC 995D	488.47~488.78	Breccia	Strong	Ore Zone	391	C		84.9	78.4	84.9	0.3146	0.2848	0.3148	24
35-A	CHRC 995D	491.76~492.14	Altered Dolerite	Strong	Ore Zone	272	C		82.1	79	82	0.3429	0.3046	0.3437	
38-C	CHRC 995D	498.87~499.11	Altered Dolerite	Strong	Ore Zone	154	A & B	25	90.5	96.5	90.5	0.3447	0.3733	0.3446	
42-C	CHRC 995D	497.05~497.88	Altered Dolerite	Strong	Ore Zone	192	Bs	30	86	85.7	86	0.3041	0.3022	0.3041	

Notes:

1. *Failure Modes: A: Axial splitting B: Shear (Bi for shear through intact rock and Bs for shear along structure) C: Multiple cracking.*
2. *The samples were tested using INSTRON machine.*
3. *The angles were measured between the loading axis and the failure plane.*

Figure 16-8: Rock Samples Crushed after Test

16.3.1.4 Description of Geotechnical Design Parameters Applied in the Chirano Open Pit Design

For each geotechnical domain, potential failure modes are assessed, and slopes are designed with acceptable margins. This approach has indeed enhanced slope stability on the mine.

As part of the open pit expansion, Sariehu, Obra and Mamnao pits have been re-designed for cutback; and stability of the slopes being validated using the Slide 2D RocScience software. The geometry of the models was defined by section through the designed pit shells. From the Slide 2D model, saprolite slope angle should not exceed 35˚ and the fresh not exceeding 78˚. The minimum berm width must not be less than 5m, in line with regulations. Table 16-3, Table 16-4 and Table 16-5 indicate the recommended stable open pit parameters for Obra, Sariehu and Mamnao pits.

Table 16-3: Recommended Slope Angles for the Obra Pit

Obra Pit		Oxide		Fresh	
Resource	**Units**	**West**	**East**	**West**	**East**
Bench Height	(m)	12	12	18	18
Berm Width	(m)	5	5	7	7
Batter Angle	(˚)	45	45	75	75
Inter Ramp Wall Angle	(˚)	**35**	**35**	**57**	**57**

Table 16-4: Recommended Slope Angles for the Sariehu Pit

Sariehu Pit		Oxide		Fresh	
Resource	**Units**	**West**	**East**	**West**	**East**
Bench Height	(m)	12	12	18	18
Berm Width	(m)	5	5	7.5	7.5
Batter Angle	(˚)	45	45	78	78
Inter Ramp Wall Angle	(˚)	**35**	**35**	**58**	**58**

Table 16-5: Recommended Slope Angles for the Mamnao Pits

Mamnao Pit		Oxide		Fresh	
Resource	**Units**	**West**	**East**	**West**	**East**
Bench Height	(m)	12	12	18	18
Berm Width	(m)	5	5	7.5	7.5
Batter Angle	(˚)	45	45	77	77
Inter Ramp Wall Angle	(˚)	**35**	**35**	**57**	**57**

16.3.1.5 Description of Geotechnical Design Process

The geotechnical design process considered the prevailing rockmass conditions in the individual pits, the available geotechnical mapping and logging data, outcome of the pit slope assessments and results of the slope wall monitoring to determine stable pit design parameters. Limit equilibrium analysis is carried out to assess slope stability and the influence of water on the bench stack in the transition and lower sections of the oxides at both the east and the west wall. The west wall is heavily impacted by both underground water and surface inflows.

16.3.2 Underground

16.3.2.1 Geotechnical Conditions Existing in the Underground Mining Blocks

The historical performance of both Sublevel stoping (Paboase and Akwaaba mines) and Long Hole Open Stoping (Akwaaba, Tano, Akoti, Suraw and Obra mines) on the Chirano mine has been generally successful. The effect of shears/fault zones close to the orebodies on stope stability has properly been managed through an efficient and effective geotechnical approach. Stopes voids created are backfilled to prevent stope wall failures. In some cases, rib pillars and sill pillars are left in-between stopes to control stope spans and enhance stope stability.

The Obra orebody is bounded by two main structures. On the west is the Obra fault and on the east is the Chirano Shear Zone (CSZ). Other shears and splay faults are also present. The fault when weak can unravel/slough. The orebody is foliated, the foliation planes together with the cross joints present form rock blocks and slabs within the orebody. The rockmass condition in the south is more competent than the north.

The Suraw orebody is competent with only a minor shear present. The thin shear runs through the orebody, and it is exposed at the back of the ore drive made within it. Foliation planes are present within the orebody and their intersection with other joints have created rock blocks/slabs at some locations, see Figure 16-9.

Figure 16-9: Suraw 2125 Ore Drive

The Akwaaba orebody is associated with the Chirano Shear, 20cm to 50cm wide, grey to black fault gouge. The orebody is variably foliated creating rock blocks/slabs with other intersecting joints, see Figure 16-10 The rockmass at the north is more competent and stable than the rockmass at the south resulting in the adoption of Long Hole Open Stoping in the north and Sublevel Caving (SLC) in the south.

Figure 16-10: Akwaaba 1575 Ore Drive

The Tano orebody is mainly associated with the fault gorge on the east. The orebody is jointed creating rock blocks/slabs. These rock blocks/slabs in the presence of the fault can be less stable however this is mitigated by the existing ground support regime, see Figure 16-11. Generally, the ore drives have been stable as a result of the existing ground support system of welded mesh and split sets. At some locations fibre reinforced shotcrete is used as aerial support. Mining at the upper mine of Tano is completed. Development of the lower section of Tano is in progress.

Figure 16-11: Tano 2125 Ore Drive

The Akoti north orebody is associated with a fault zone which strikes about 35º at the south and about 5º at the north of the deposit and is hosted within quartz dolerite. At both ends of the deposit, the main fault surface within the lode horizon is sub-vertical and extremely planar. A minor volume of the fault zone is intruded by tonalite that locally forms an intrusive breccia with dolerite. Mining within the Akoti north is completed. Development towards the south for mining the Akoti south orebody is in progress.

16.3.2.2 Review of Previous Study and Test Work Conducted

Previous studies and test works conducted by various Consultants (SRK Consulting (UK) Limited) and those of the Chirano Geotechnical Staff were reviewed during the assessment of the underground mines. It can be confirmed that the information gathered, and the results of the test works are still relevant to the current mine and geotechnical designs.

Recent mining at Obra, Akwaaba and Tano has revealed the impact of faults and shears on stope stability but with the implementation of effective ground control system and monitoring currently on site there has been no major safety issue and production delays by the presence of the faults/shears.

Investigation currently carried out on the stability of crown pillars in the various mines confirmed a stable crown pillar thickness of 25m minimum as earlier indicated by SRK.

In-situ stress measurement conducted at Akwaaba 220m below ground surface by Golder-RMT in 2010 and the reviewed measurements by SRK were analysed. An empirical formula for the stress gradient (K) was used to generate suitable maximum horizontal in-situ stress magnitudes for all the levels of the Akwaaba mine. The in-situ stress magnitude for Akwaaba using the empirical approach compared very well with those provided by SRK, Table 16-6.

Table 16-6: Akwaaba Mine In-situ Stress Magnitude

Level (mRL)	Elevation (m)	Height Diff (m)	Calculations Using Empirical Approach				Calculated Stress Gradient by SRK		
			Vertical Stress (Mpa)	K	Horizontal Stress (Mpa)-Max	Horizontal Stress (Mpa)-Min	Vertical Stress (Mpa)	Horizontal Stress (Mpa)-Max	Horizontal Stress (Mpa)-Min
Akwaaba Portal ('mRL)	**2240**						**0.028**	**0.0484**	**0.0328**
2200 'mRL	2200	40	1.08	2.84	3.07	2.07	1.12	1.94	1.31
2175 'mRL	2175	65	1.75	2.63	4.61	3.18	1.82	3.15	2.13
2150 'mRL	2150	90	2.43	2.50	6.06	4.25	2.52	4.36	2.95
2125 'mRL	2125	115	3.10	2.40	7.45	5.28	3.22	5.57	3.77
2100 'mRL	2100	140	3.78	2.33	8.79	6.28	3.92	6.78	4.59
2075 'mRL	2075	165	4.45	2.27	10.09	7.27	4.62	7.99	5.41
2050 'mRL	2050	190	5.13	2.22	11.36	8.24	5.32	9.20	6.23
2025 'mRL	2025	215	5.80	2.17	12.60	9.20	6.02	10.41	7.05
2000 'mRL	2000	240	6.47	2.13	13.82	10.15	6.72	11.62	7.87
1975 'mRL	1975	265	7.15	2.10	15.02	11.08	7.42	12.83	8.69
1950 'mRL	1950	290	7.82	2.07	16.20	12.01	8.12	14.04	9.51
1925 'mRL	1925	315	8.50	2.04	17.37	12.93	8.82	15.25	10.33
1900 'mRL	1900	340	9.17	2.02	18.52	13.84	9.52	16.46	11.15
1875 'mRL	1875	365	9.85	2.00	19.65	14.75	10.22	17.67	11.97
1850 'mRL	1850	390	10.52	1.97	20.78	15.65	10.92	18.88	12.79

Level (mRL)	Elevation (m)	Height Diff (m)	Calculations Using Empirical Approach				Calculated Stress Gradient by SRK		
			Vertical Stress (Mpa)	K	Horizontal Stress (Mpa)-Max	Horizontal Stress (Mpa)-Min	Vertical Stress (Mpa)	Horizontal Stress (Mpa)-Max	Horizontal Stress (Mpa)-Min
1825 'mRL	1825	415	11.20	1.96	21.89	16.54	11.62	20.09	13.61
1800 'mRL	1800	440	11.87	1.94	22.99	17.43	12.32	21.30	14.43
1775 'mRL	1775	465	12.54	1.92	24.09	18.32	13.02	22.51	15.25
1750 'mRL	1750	490	13.22	1.90	25.17	19.19	13.72	23.72	16.07
1725 'mRL	1725	515	13.89	1.89	26.24	20.07	14.42	24.93	16.89
1700 'mRL	1700	540	14.57	1.87	27.31	20.94	15.12	26.14	17.71
1675 'mRL	1675	565	15.24	1.86	28.37	21.81	15.82	27.35	18.53
1650 'mRL	1650	590	15.92	1.85	29.42	22.67	16.52	28.56	19.35
1625 'mRL	1625	615	16.59	1.84	30.46	23.53	17.22	29.77	20.17
1600 'mRL	1600	640	17.27	1.82	31.50	24.38	17.92	30.98	20.99
1575 'mRL	1575	665	17.94	1.81	32.53	25.24	18.62	32.19	21.81
1550 'mRL	1550	690	18.61	1.80	33.55	26.08	19.32	33.40	22.63
1525 'mRL	1525	715	19.29	1.79	34.57	26.93	20.02	34.61	23.45
1500 'mRL	1500	740	19.96	1.78	35.59	27.77	20.72	35.82	24.27
1475 'mRL	1475	765	20.64	1.77	36.59	28.62	21.42	37.03	25.09
Future Mining Horizon									
1450 'mRL	1450	790	21.31	1.76	37.59	29.45	22.12	38.24	25.91
1425 'mRL	1425	815	21.99	1.76	38.59	30.29	22.82	39.45	26.73
1400 'mRL	1400	840	22.66	1.75	39.58	31.12	23.52	40.66	27.55
1375 'mRL	1375	865	23.34	1.74	40.57	31.95	24.22	41.87	28.37
1350 'mRL	1350	890	24.01	1.73	41.55	32.78	24.92	43.08	29.19
1325 'mRL	1325	915	24.68	1.72	42.53	33.61	25.62	44.29	30.01
1300 'mRL	1300	940	25.36	1.72	43.51	34.43	26.32	45.50	30.83

16.3.2.3 Rock Properties

The Uniaxial Compressive Strength (UCS) of the various rock types measured at Obra and Tano mines are as shown on Table 16-7 and Table 16-8.

Table 16-7: Uniaxial Compressive Strength (UCS) of the Various Rock Types Measured at Obra Mine

Borehole ID	Depth (m)		Domain	Rock Type	UCS (Mpa)
	From	To			
OBRA CHRC 2768 D	435.10	435.20	HW	Diorite	152.87
	472.35	472.45			155.92
	452.48	452.58		Tonalite	175.00
	462.10	462.20			186.80
	472.35	472.40		Diorite	163.21
	492.77	492.87			147.06
	511.20	511.30			142.68
	520.84	520.94		Tonalite	154.45
	528.21	528.31		Dolerite	130.90
	542.55	542.65			132.48
	583.46	583.56	OZ	Tonalite	157.96
	602.49	602.59			118.47
	608.57	608.67			130.45
	618.20	618.25			147.06
	626.54	626.64		Dolerite	161.02
	636.10	636.20		Tonalite	152.87
	643.45	643.55			152.87
	646.10	646.20			163.57
	657.10	657.20		Dolerite	152.87
	659.10	659.20			146.55
OBRA CHRC 2886 D	342.30	342.40	HW	Diorite	140.38
	372.48	372.58		Dolerite	196.82
	390.11	390.20			138.79
	404.10	404.20		Tonalite	93.91
	410.15	410.25		Dolerite	110.04
	435.50	435.60		Tonalite	110.22
	455.13	455.23			59.68
	567.56	567.66		Diorite	115.44
	582.71	582.81		Tonalite	120.10
	591.48	591.58		Dolerite	106.77
	599.35	599.45		Diorite	95.86

Borehole ID	Depth (m)		Domain	Rock Type	UCS (Mpa)
	From	To			
	601.52	601.62			116.10
	604.20	604.30			82.82
	610.39	610.49		Quartz Dolerite	94.72
	617.84	617.94			86.49
	623.19	623.29	OZ	Quartz Dolerite	117.97
	628.33	628.43		Quartz Porphyry	151.32
	634.70	634.80			106.88
	637.85	637.95		Quartz Dolerite	126.75
	639.54	639.64			115.10
	643.21	643.31		Tonalite	87.71
	651.18	651.28		Quartz Dolerite	99.76
	648.74	648.84		Tonalite	108.50
	654.96	655.06		Quartz Porphyry	102.47
	658.25	658.35		Diorite	104.16
	662.00	662.10	FW	Quartz Dolerite	84.40

Table 16-8: Uniaxial Compressive Strength (UCS) of the Various Rock Types Measured at Tano Mines

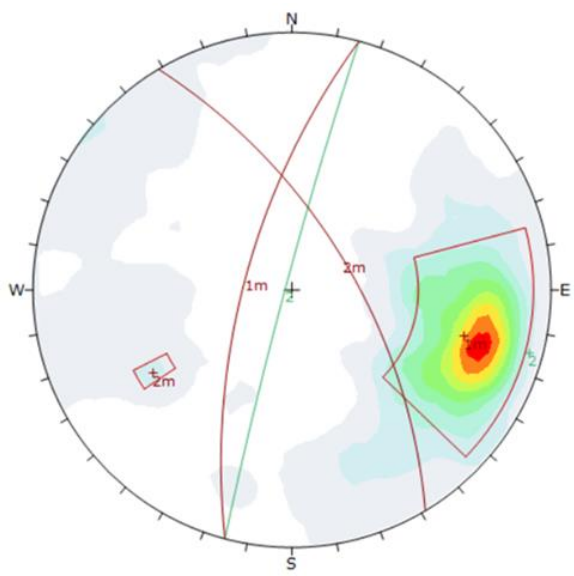
Borehole ID	Depth (m)		Domain	Rock Type	UCS (Mpa)
	From	To			
TANO 1950-CHDD2772	2.70	2.80	HW	Tonalite	151.10
	5.78	5.88			125.80
	12.12	12.22			146.50
	15.39	15.49			151.80
	26.32	26.42			130.70
	31.75	31.85			151.10
	37.20	37.30			146.20
	45.75	45.85		Diorite	155.40
	56.20	56.30		Dolerite	147.70
	64.29	64.39			158.00
	69.18	69.19			148.21
	75.48	75.49		Diorite	148.00
	85.07	85.17			162.27
	86.17	86.27			157.12
	96.82	96.92			106.90
	101.22	101.32			150.10
	106.69	106.79			155.90
	111.72	111.82			158.10
	124.56	124.66			127.70
	125.84	125.94			153.50
	135.07	135.17		Tonalite	137.20
	145.55	145.65	OZ		146.60
	147.14	147.24			154.20
	156.98	157.08	OZ	Dolerite	147.40
	162.05	162.15			152.60
	167.82	167.92			164.80

16.3.2.4 Rockmass Classification System

Geology across Chirano mine consists of the Metavolcanics (Dolerites, Basalts and Gabbro), Metasediments Greywackes, Siltstones and Phyllites), Tarkwaian sediments (Arkose, Sandstones) and Granitoids (Tonalite intruding the Mafic and the Tarkwaian contact). The Chirano Shear Zone and its splay structures are the main structural controls on localisation of gold within the Chirano mine.

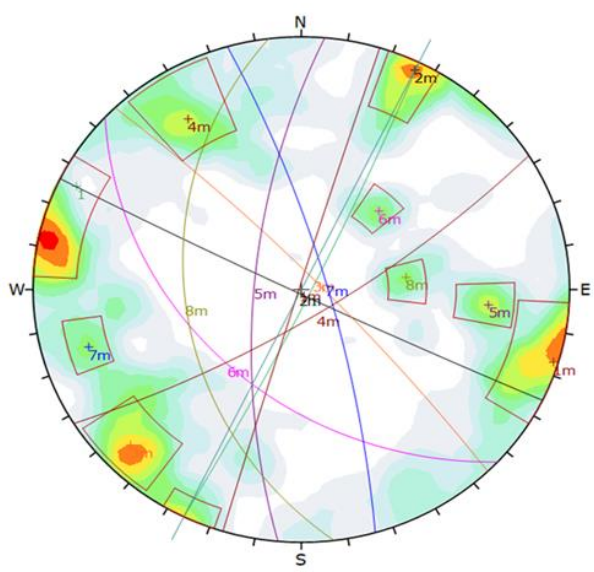
Rockmass properties for the individual mining blocks were thus derived from detailed face mapping of exposures in the footwall drives, access crosscuts, ore drives and the orebody hangingwall. Rock strength measurement for various domains was carried out at the laboratory.

Mapping in the mining blocks (Akwaaba, Tano, Suraw, Akoti and Obra) involved the window method where geotechnical parameters were assigned to the overall rockmass (including details of the principal joint sets) which was broadly consistent along each exposure. The discontinuities measured in the individual mining blocks were analysed using the Rocscience DIPS Software Package on a stereographic projection to know the number of joint sets present. Figure 16-12 to Figure 16-16 illustrate the joint sets captured on stereographic projection for Akwaaba, Tano, Suraw, Akoti and Obra mining blocks respectively.



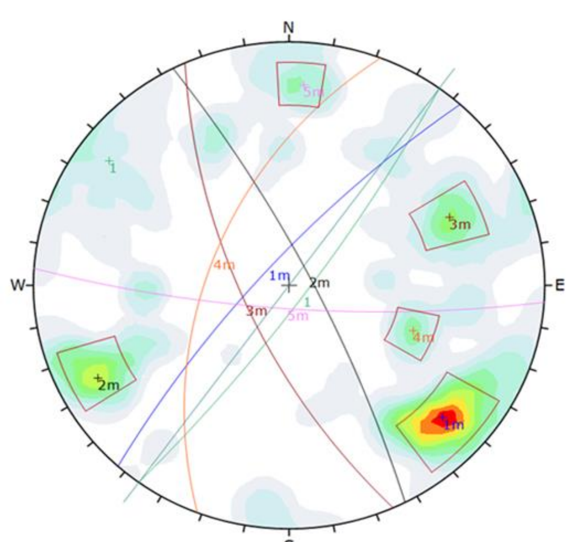
ID	Dip (°)	Dip Dir (°)
Ji	69	285
J2	64	059

Figure 16-12: Stereographic Projection of Joints Formed on the Walls of the Ore Drive at Akwaaba



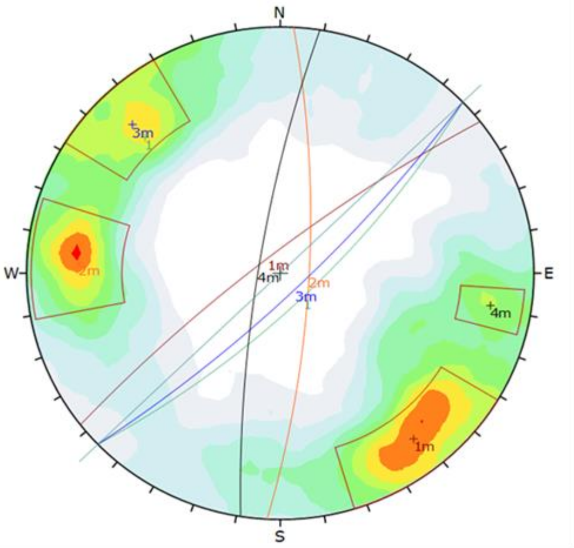
ID	Dip (°)	Dip Dir (°)
Ji	89	287
J2	88	206
J3	83	046
J4	77	148
J5	70	275
J6	46	223
J7	79	074
J8	43	263

Figure 16-13: Stereographic Projection of Joints Formed on the Walls of the Ore Drive at Tano



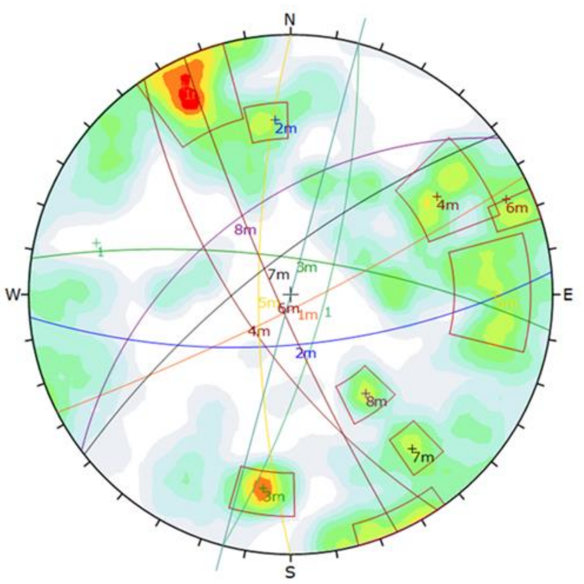
ID	Dip (°)	Dip Dir (°)
Ji	73	312
J2	80	063
J3	69	246
J4	55	291
J5	79	184

Figure 16-14: Stereographic Projection of Joints Formed on the Walls of the Ore Drive at Suraw



ID	Dip (°)	Dip Dir (°)
Ji	81	322
J2	77	93
J3	80	136
J4	80	279

Figure 16-15: Stereographic Projection of Joints Formed on the Walls of the Ore Drive at Akoti



ID	Dip (°)	Dip Dir (°)
Ji	84	153
J2	68	175
J3	74	008
J4	68	236
J5	76	270
J6	84	246
J7	74	322
J8	51	323

Figure 16-16: Stereographic Projection of Joints Formed on the Walls of the Ore Drive at Obra

In addition, geotechnical logging of selected exploration core was carried out. The geotechnical parameters were logged to provide sufficient data to determine independent determination of all the major rockmass classification systems. The data collected permitted the characterisation of the rockmass using the Norwegian Geotechnical Institute (NGI) Rock Tunnelling Index (Q and Q'), Barton et al 1974 and Grimstad et al., 1993; Geological Strength index (GSI), Hoek et al, 1998, and the Rock Quality Designation (RQD) systems. Table 16-9 shows the summary of the rockmass parameters for the domains.

Table 16-9: Summary of the Rockmass Parameters for the Domains

Mine	Location	Young's Modulus (GPa)	Intact Uniaxial Compressive Strength)MPa)	Tunnelling/ Rockmass Quality Index (MPa)	Geological Strength Index	Rock Quality Designation (%)
Akwaaba Underground	Footwall	78.4	243	32.5	55-60	86
	Orebody	83.6	225	27.9	50-55	80
	Hangingwall	92.0	184	25	55-60	77
	Hangingwall Shear			0.3		
Tano Underground	Footwall	12.56	110	25	25	55
	Orebody	21.3	176	24	24	50
	Hangingwall	17.91	148	13	13	45
Suraw Underground	Footwall	16.6	105	21	21	57
	Orebody	7.03	74	20	20	48
	Hangingwall	44.67	98	14	14	55
	Shear/Eastern Fault	5.48	20			40
Akoti Underground	Footwall	70.00	185	28.67	28.67	67
	Orebody	73.00	200	26.67	26.67	65
	Hangingwall	76.00	120	25.67	25.67	63

Mine	Location	Young's Modulus (GPa)	Intact Uniaxial Compressive Strength)MPa)	Tunnelling/ Rockmass Quality Index (MPa)	Geological Strength Index	Rock Quality Designation (%)
	Hangingwall Shear		20	0.4	0.4	38
Obra Underground	Footwall	52.07	203	18.8	18.8	70
	Orebody	18.55	137	6.4	6.4	54
	Hangingwall	52.07	203	19.2	19.2	70

Generally, 'fair' to 'good' rockmass conditions exist in many areas of the mine, with poorer conditions locally associated with shears and faults. The shearing which is predominantly associated with the orebodies are usually in multiples, sub-parallel to the orebodies and random linking or continuous shears. The rockmass quality of the orebodies consists of Q in the range of 6.4 – 27.9. The shear is classified as 'very poor' to 'poor' with a Q' value of 0.3 – 0.4.

16.3.2.5 Description of Geotechnical Design Parameters Applied in the Chirana Open Stope Design

The stope design evaluation considered all existing and current geotechnical data and underground observations. Ultimately, the established rockmass properties for each of the domains (major rock types per mining block) was used as an input to an empirical stope design method. Additional inputs to account for stress were reviewed against numerical models, and the impact of prevailing structure was based on underground reviews. A summary of the stope designs for transverse and longitudinal methods is provided in Table 16-10.

Table 16-10: Summary Longitudinal and Transverse Stope Design for Chirano Mine

Mining Block	Orebody Width (m)	Stope Type	Stope Dimensions			Comments
			Vertical Height (m)	Strike Length (m)	Stope Width (m)	
Akwaaba	4-25 (10)	Longitudinal	25-50	70-100	4-15	Stope strike length may depend on stope performance. Double lift of 50m height to be re-assessed for stopes below 1450 mRL
		Sublevel Caving	25	100-140	5-15	
Tano	4-25 (14)	Longitudinal	25-50	70-100	5-15	Stope strike length may depend on stope performance. Shorter stope length will be mined in a poor rockmass condition or when the orebody is consistently wider (>15)
Suraw	3-20 (9)	Longitudinal	25-50	70-100	3-15	Stope strike length may depend on stope performance. Shorter stope length will be mined in u poor rockmass condition or when the orebody is consistently wider (>15)
Akoti	3-18 (6.7)	Longitudinal	25-50	100	3-15	Transverse Open Stoping to be applied for orebody width greater than 18m at Akoti
Obra	3-15	Longitudinal	25-30	70	3-15	Stope strike length may depend on stope performance. Shorter stope length will be mined in u poor rockmass condition or when the orebody is consistently wider (>15)
	15-80	Transverse	25-30	10-20	15-80	Stope width mined may depend on stope performance

Based on review of stope performance, empirical assessment, and ground support requirements, the recommended range of orebody width in longitudinal stoping areas is 10m to 15m (HW to FW distance). This is based on drive placement to manage the shear and fault zones and the ability to support the stope back using cable bolting.

In areas of thicker shear and fault zones (>0.3m) along the longitudinal stope contacts, tactical adjustments in the form of reduced strike spans and re-slotting may be required. In the more adverse areas (stacked stopes, presence of weak shear) double sublevel heights (50m or more) should not be mined.

Stoping Sequence: Extraction sequencing of the stopes is unique to each mining block. Current sequence on ore extraction is based on level-by-level extraction for both the Long Hole longitudinal open stope and Sublevel Caving mining methods, whilst the primary-secondary-primary method of sequencing is used for the transverse open stoping method. Description of Geotechnical Design Process.

When designing the Open Stoping mining method, the Empirical Analysis approach using the Modified Stability Graph is used.

The Modified Stability Graph (MSG), shown in Figure 16-17, is used to give an indication of stope stability based on the stope dimensions. The MSG is based on the stope face hydraulic radius (HR), which accounts for the geometry of the stope surface, and the modified stability number, N', which defines the rockmass' ability to stand up in given ground conditions. Plotting these two variables against each other on the MSG gives an indication of the likely stability of the stope in question, which is based on case histories of stope stability amalgamated by Nickson (1992) and Potvin (1998).

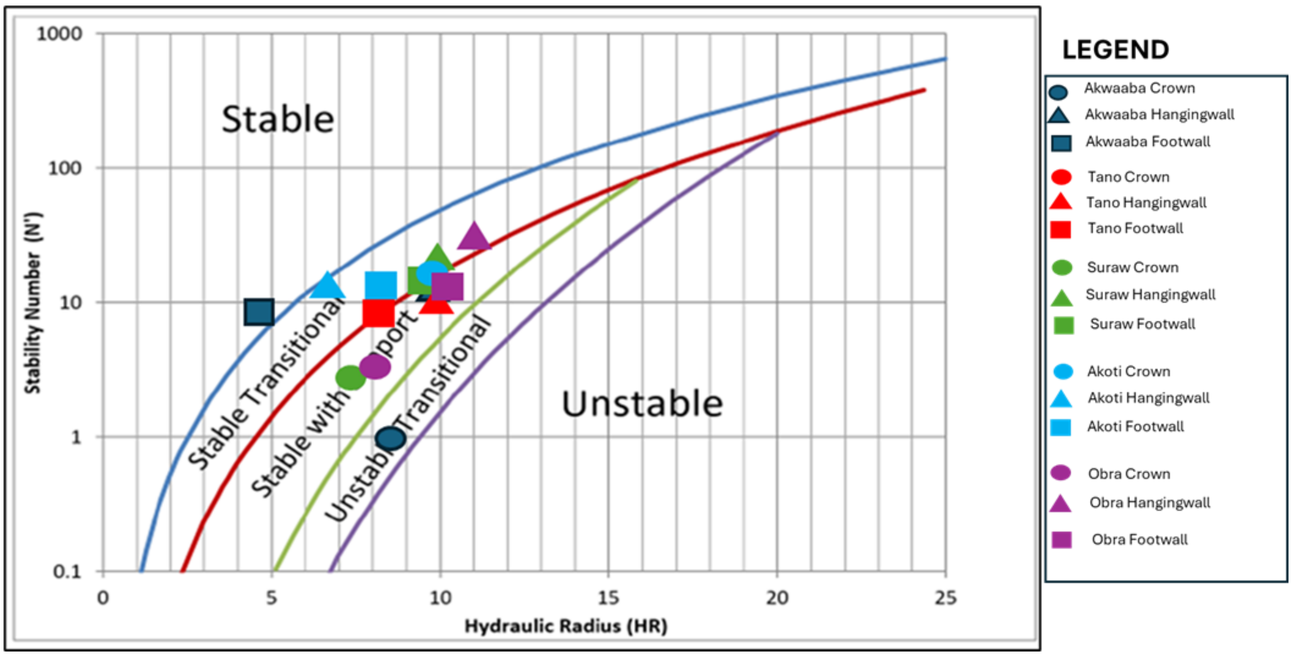


Figure 16-17: The Modified Stability Graph Used to Indicate Stope Stability

The variables HR and N' are defined as follows:

$$HR\ (m) = \frac{\text{Stope Area}\ (m^2)}{\text{Stope Perimeter}\ (m)}$$

$$N' = Q' \times A \times B \times C$$

Where:

Q' = RQD/Jn x Jr/Ja

A = Rock Stress Factor

B = Joint Orientation Factor

C = Gravity Adjustment Factor

Figure 16-18 shows the charts used for the determination of factors A, B and C.

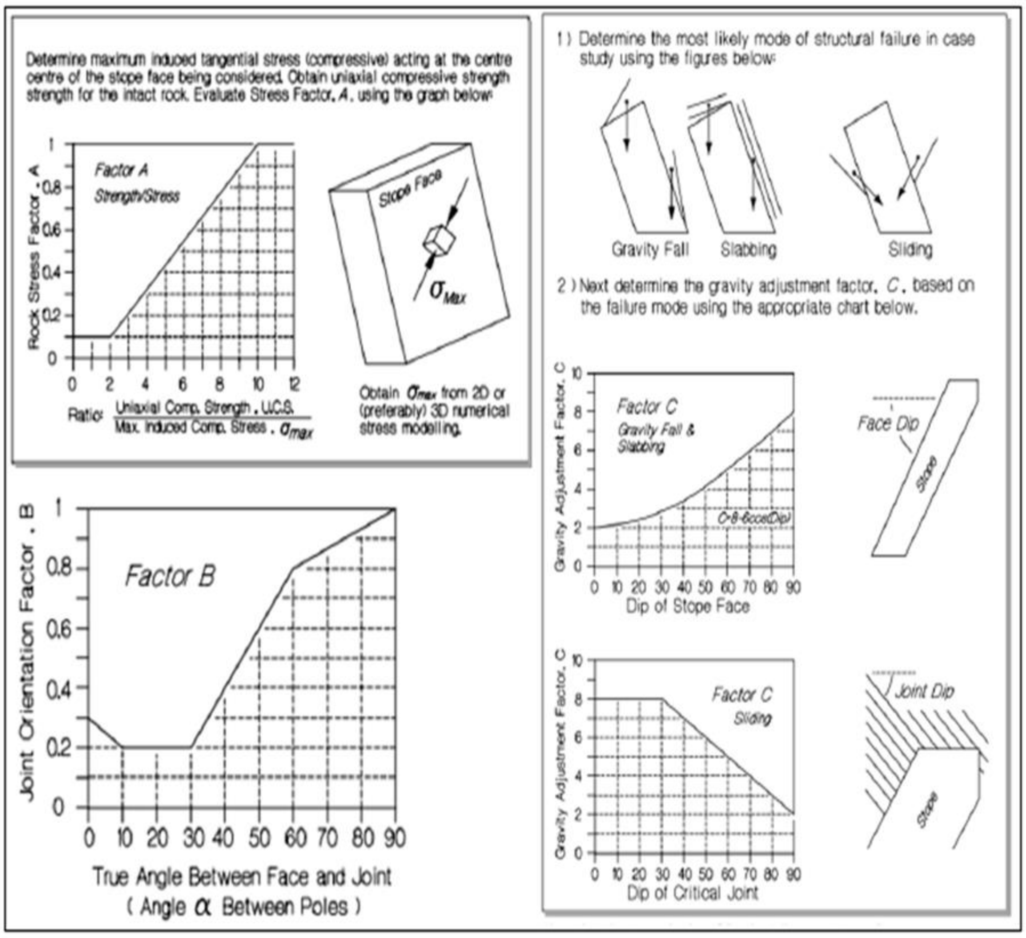


Figure 16-18: Charts for the Determination of Factors A, B and C in the Calculation of N'

The Rock Stress Factor (A) requires the UCS and principal stress (sigma 1) to be determined. The principal stresses were determined using the Rocscience RS2 Software Package for the analysis. The Joint Orientation Factor (B) requires the definition of the major joint sets, which are identified by analysing the structural data using the programme DIPS. The B factor is calculated by determining the angle between the stope face and a major joint set; the joint set with the lowest B factor is used. The structural data is either split into the three main domains (HW, FW and OZ), or can be grouped and analysed as a whole. In the case where all domain is grouped as a whole all identified joint sets are used for the analysis of each part of the stope (HW, FW and OZ/Back).

The Gravity Adjustment Factor (C) looks at the effect of gravity, slabbing and sliding on the stope stability, with reference to the major joint sets and the stope face orientation. The type of failure with the lowest C is selected for the calculation of N'.

Stope Parameters: The stope design parameters determined using the methods described above are tabled below.

Table 16-11: Stope Design Parameters

Block	Mining Method	Wall Reinforcement with Cable Bolt	N'				HRs for Stopes				Stope Dimensions	
											Longitudinal	Transverse
			Crown	HW	FW	Sidewall	Crown	HW	FW	Sidewall	L x W x H (M^3)	L x W x H (M3)
Akwaaba	Longhole Open Stoping	Unsupported	1	7.3-14.9	9.5		2.5-4.5	5.1-9.7	2.5-4.5		40-60*4-15*25	
		Supported					7.5	11.9	7.5		40-100*4-15*25-50	
	Sublevel Caving	Supported									40-140*4-15*25-50	
Tano	Longhole Open Stoping	Unsupported	5,8-18.3	12.5	15.1		5.3-7.6		7.2		80 x 3-15 x 25 (m^3)	
		Supported					6.8-10	6.8-9.6	8.3			
Suraw	Longhole Open Stoping	Unsupported	0.8-5.8	7.9-22.4	10.5-11.8		4.2-7.4	7.6-10.9	8.8-9.1		25-70*3-15*25-50	
		Supported										
Akoti	Longhole Open Stoping	Unsupported	5,8-18.3	14.5	19.3		5.3-7.6	<6.8	8.4		80 x 3-15 x 25 (m^3)	
		Supported					6.8-10	6.8-9.6	11.3			
Obra	Longhole Open Stoping	Unsupported	2.3-6.3	11.3-46.3	5.8-19.1	2.3-6.3	5.8-8-1	9.0-11.9	7.4-10.4	5.8-8.1	40-60*3-15*25-30	10*15-80*25-30
		Supported									50-100*3-15*25-30	20*15-80*25-30

Sill Pillars: For the upper sill pillars at the upper section of the mining Blocks, approximately 80% of queried points showed an SF between 1.0 and 1.5, with just 1.6% of points showing an SF below 1.0. For the lower sill pillars, approximately 60% of the points showed an SF above 1.5, with 1.2% of points showing an SF below 1.0. This suggests that, on average, the stability of the lower sill pillar is higher than that of the upper sill pillar; however, the very low percentage of the pillar masses that show SF values below 1.0 indicates low potential for instability in both pillars. The addition of support into the backs of the ore drives in the backs of the stopes will help to reinforce the stope back and reduce the potential for instability in the sill pillars.

Footwall Development Location and Stability: The FW drives in the mine layouts are placed approximately 30m from the orebody. The analysis of the 1.5 and 1.0 SF isobars in the RS2 model showed a maximum distance of 1.0 isobar from the orebody was 22m, with a mean of 12m. This indicates that approximately 30m from the orebody is appropriate to achieve an acceptable SF for the FW drives.

Support for Drives: Analysis using a modified support chart based on Q indicated a minimum bolt spacing of 1.5m in the footwall development with weld mesh. The slightly lower rockmass condition of the orebody demands that bolts spacing should be tightened up to 1.2m with weldmesh when split sets (tensile capacity of 6 to 9 tonnes) are used. Longer bolts spacing of 1.5m can be applied when higher capacity bolts (15 tonnes or more) are applied. Bolt length should be 2.4m long. Weldmesh can be replaced by fibre reinforced shotcrete in which case the bolt spacing may be increased by 25-30% if the rockmass condition allows.

The rock support should be extended from the roof down to the grade line of the development for a minimum support regime.

Stope Dilution: Stope dilution estimates for the stopes is depended on the mining methods being employed underground; the LRS, LOS, TOS and SLC, and are based on improved mechanisation and improved mining controls such as:

- Higher orebody drill definition and understanding of shear/fault structures.
- Improved geology control in ore development.
- Correct selection and installation of ground support.
- Improved drilling accuracy and blasting practices (development and stoping).
- Strict adherence to stope designs.
- Reduction in stope backfill cycle times and use of cemented rock Fill in transverse open stopes.

For all open stopes, the current historical dilution is approximately 12% maximum, and it is expected to continue. The allowable dilution for Sublevel Caving and Sill pillar extraction 25% and 30% maximum respectively.

Backfill System: The main backfill system being placed in mined out stopes at Chirano is the Unconsolidated Rock Fill (URF). The URF material is generated from the waste development headings underground. The backfill material is transferred to the mined-out stopes, Longitudinal Retreat Open stope, by either a Front-End Loader (FEL)/Scoop tram or a dump truck or both. The dumped material is spread in the stope void using FEL. Waste fill ore passes are also in use to fill the voids from surface were deemed necessary.

Cemented Rock Fill (CRF) system is being planned for the Obra mine from 2150mRL and below mainly at areas where the orebody width has been identified to be wide, width greater than 15m. The wider orebody is designed for the Primary-Secondary Transverse Open Stoping method where the primary mined-out stopes are backfilled with CRF. During CRF placement into stope voids underground, cement slurry will be batched from surface either at the batch plant and transferred into a primary surface cement slurry tank or manually in the primary surface tank. The cement slurry will then be transferred through a reticulation system from surface to underground into a cement secondary slurry tank at a location close to the stopes. The cement slurry in the secondary slurry tank is then pumped through a sprinkler installed in the roof of a CRF mixing sump onto a development waste rock material (with size not greater than 400mm) placed on the floor of the sump close-by. The cement slurry and the waste rock material are mixed in the sump using FEL and the composite transferred into the stope void prepared for backfilling by the FEL.

16.3.3 Hydrology

In 2015 African Environmental Research and Consulting Company (AERCC) was commissioned by Chirano Gold Mines Ltd to conduct profile sampling of some water impoundments and waterways. Independent testing was also conducted on the quality of underground dewatering at Akwaaba and Paboase. Generally, the report indicated high level of compliance to EPA and internationally set permissible standards of pH and dissolved constituent allowable to be discharged into the environment except slightly elevated levels of Ca and, faecal coliform that was attributed to human activities and are easily controllable.

Earlier in 2004, Knight Piesold (KP) undertook a study on potential Acid Mine Drain (AMD) by sampling all the open pit waste dumps and some tailings material for testing. The main conclusion of the geochemical characterisation of the waste rock from the Project was that all the waste rock samples were classified as Non-Acid Forming. Indications are that there should be no risk of acid mine drainage from the various waste dumps, and it will be permissible to discharge runoff and percolation from the waste dump directly into the local waterways, via settlement ponds, without chemical treatment. Test work on tailings samples indicated that they would have moderate sulphide content (approximately 1%) with a high neutralising capacity and would be classified as non-acid forming.

Rain and ground water control and management in open pit is via pit-floor sumps from which water is pumped into silt traps and from there discharged into a natural drainage from where it flows into a second dammed off area (the Suraw Pond). The mines only pump water from Suraw Pond for operational purposes when pit lakes and the underground recirculation water do not meet operational requirement for the mine. The water in the pond is sampled and analysed monthly for metals, hydrocarbons and microbial contamination.

Heavy rainfall may occasionally flood the working floors in some of the pits, but pumping capacity is generally sufficient to dry this within 24 hours. Drain sumps are regularly created in one-half of the pits to control such occurrence.

Underground water management system is made up of series of WT 103 Mono pumps that pump into successive levels before it reaches the surface. The main pumps deliver approximately 20 l/sec per pump. These pumps are set in series and deliver their contents through HDPE pipes via rising mains and into lined water storage facilities at the surface where hydrocarbons, potential heavy metals and other constituents are collected and removed in an oil trap and silt is precipitated using flocculants. Clean water is pumped back into storage tanks from which the underground water requirements are supplied.

The 2017 and 2018 integration of underground water reticulation with surface storage facilities created the opportunity for storage of excess water from underground operations. However, due to the development of portals at Suraw and existing ones at Tano and Obra it meant that the water reservoirs in these inactive pits had to be phased out. Operational water quality is analysed monthly by the Environment and Community Relations Department to ensure that dissolved constituents in the water are not above the prescribed safe threshold by the Ghana Environmental Agency (EPA) before it is ever discharged into the natural environment.

A first hydrogeological study for the underground Akwaaba Mine was carried out by GCS of South Africa (2008-2009). A follow-up study was carried-out by SRK (UK) to include the Paboase Underground mine. Two reports were issued by SRK (Groundwater Inflow and Mine Water Inflow Management, Akwaaba and Paboase Underground Mines, Chirano Project, Ghana, August 2010 and Paboase Underground Project Hydrogeological Impact Assessment, June 2010).

The host rock of the Chirano ore zone is generally impermeable with water flow mainly controlled by penetrative joint systems. The Chirano Shear at Akwaaba did not show-up as a major water conduit. A conservative estimate gave a high of 16,000 litres per day at both Akwaaba and Paboase and dewatering infrastructure was designed to handle such amounts with ease. Historical and current data do not suggest any potential for underground flooding.

16.3.4 Underground Mine Development

The five underground projects are fully mechanized mines utilizing a fleet of eleven Sandvik twin boom jumbos in conjunction with seven Caterpillar R2900 and three Sandvik loaders to facilitate high speed development. The loaders, in addition to mucking the face, are combined with a fleet of 24 Volvo (35t) trucks to transport the ore and development waste. In addition to standard development equipment there is a large fleet of ancillary equipment available at the operation, including three graders, seven Integrated Tool Handlers (ITH), seven production drills. At the date of this report mining activities are currently active in all the underground operations.

Ground support is installed as part of the development cycle. Split sets of 2.4m x 47mm with 300 x 300mm combi plate with wire mesh/shotcrete are installed as primary support. 3m galvanised split sets are installed in permanent openings as secondary support in addition to the primary support. Large excavations, such as intersections, are supported with long cable tendons as additional reinforcement. Ground support layouts are issued for every mine development plan issued for construction. Geotechnical engineers are responsible to reviewing and designing ground support.

16.3.5 Underground Mine Production

Once ore drives are developed to both the northern and southern extent of the orebody, slot raises are created to allow production mining to commence. Slot raises are developed utilising a fleet of 3 Cubex ITH drills. After blasting the slots, long holes are drilled between sub-levels in a series of ring/fan patterns using Sandvik up hole production drill rigs.

The Chirano operations use Long Hole Open Stoping ("LHOS") as their primary ore production method. The voids created from ore extraction are filled using unconsolidated waste rock fill. The fill material is sourced from general mine development waste and when required the fill is sourced from surface mining activities and is back hauled underground or delivered underground via a series of interconnecting waste passes. Concurrent introduction of unconsolidated waste rock is introduced into stope voids to prevent the stope walls spalling.

Ore drives are developed to the full extents of the mineralisation, with a vertical slot established at the ends using the Cubex drill. Ring drilling is completed with the long hole drills, and the rings are charged and blasted individually, retreating to the crosscut. At the crosscut a mass blast of multiple rings is fired. The mines are transitioning to a bottom up SLOS mining method and fully sequenced to maximise extraction. Figure 16-19 shows a schematic of the SLOS mining method. Bulk emulsion explosive is used in production rings, due to its capability for higher quality assurance and success in Sub-Level Open Stoping mining. Ring charging using bulk emulsion has a rapid turnaround time and it is unaffected by water in the ground. Drilling and blasting are carried out regularly as permitted by the Inspectorate Division of the Minerals Commission.

The quantity of ore extracted from draw points is closely monitored to ensure that dilution is minimized.

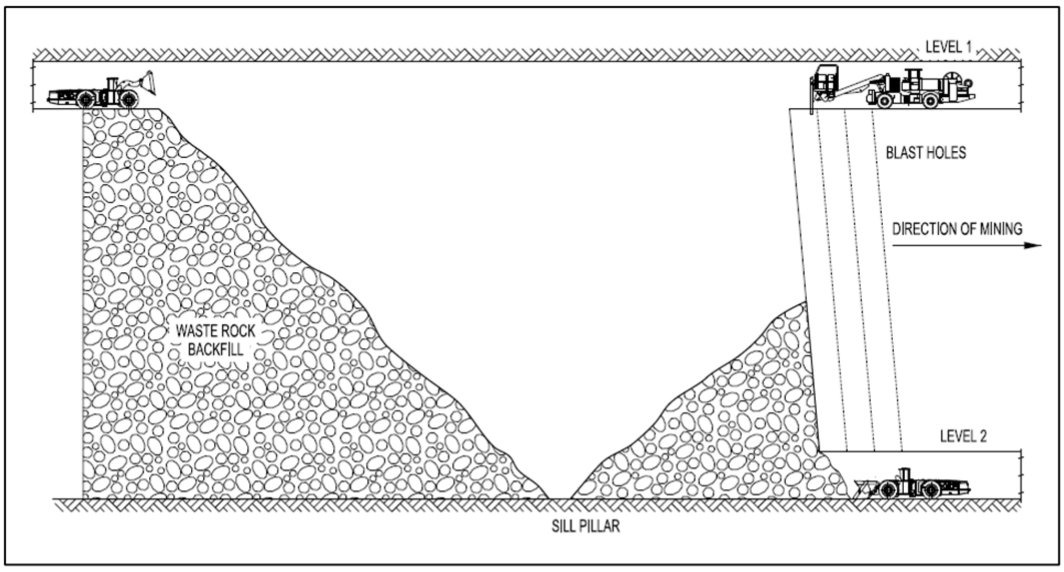


Figure 16-19: Schematic of Typical Sublevel Open Stoping Arrangement

(Source: Bara 2024)

Ore is trammed along the ore drives to an underground stockpile where it is loaded onto 40 tonne Volvo trucks for haulage to the surface stockpiles. Ore is stockpiled on surface either within the vicinity of the portal or at the top of the open pit ramps. It is then rehandled to the ROM pad for blending as mill feed.

16.4 Akwaaba Underground Mine

16.4.1 Akwaaba Mining Method

The Akwaaba underground operation currently employs a SLOS method. The upper part of the sublevel open stoping has been mined using sublevel cave separated by a sill pillar. Recent drilling confirmed the existence of a Hanging wall splay west of the Main orebody. Further drilling is being carried out to determine the extent and continuity of the main orebody and hanging wall splay.

The open stope consists of 24m sublevels with bottom-up stoping approach whereby a mined-out level is backfilled before the next upper level is mined.

The Akwaaba mine is in the advanced stage of mining and currently host reserves up to the 1400 level. Potential for further mining activities below 1400 level is being assessed. Figure 16-20 shows a long section looking West of Akwaaba Underground mine.

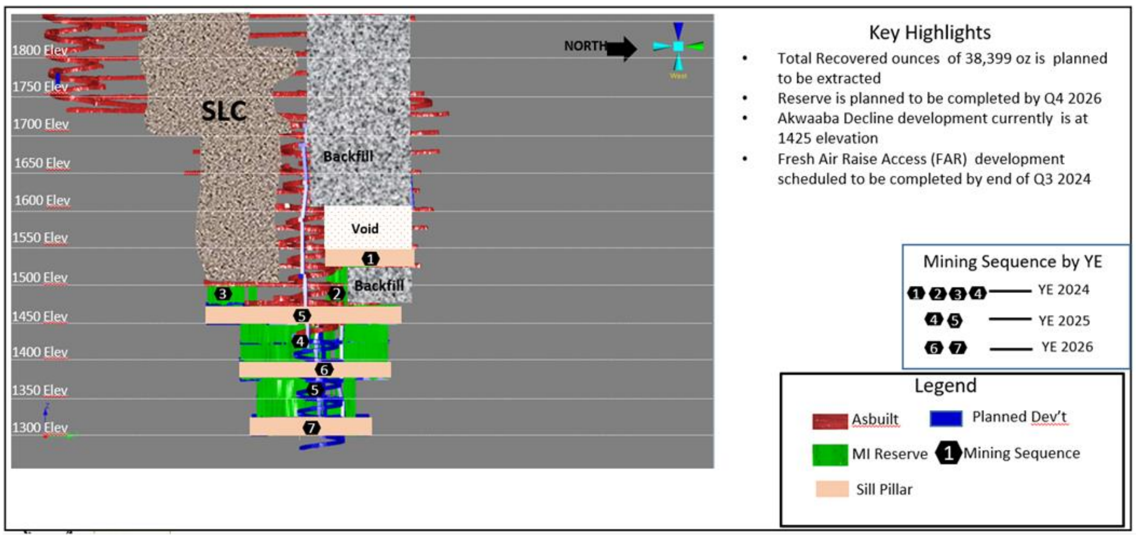


Figure 16-20: Long Section View of Akwaaba Underground Mine

16.4.2 Akwaaba Ventilation

The Underground mine utilises 2 x 550kW axial flow fans for its primary exhaust system. The fans are located at the top of the 5m return air raise. Fresh air enters the mine via the 5.5m x 6m decline and through the dedicated 5m fresh air raise, as shown in Figure 16-21. Regulators and ventilation doors are used on the levels to ensure that adequate air flow is reaching production faces.

Primary ventilation is supported with secondary fans and ventilation bags on the production levels and at development faces. 2 x 110kW auxiliary fans located 20m to the level access forces fresh air through ventilation bags to the draw points and development ends to reduce waiting times after blasting and ensure safe working conditions for underground operations.

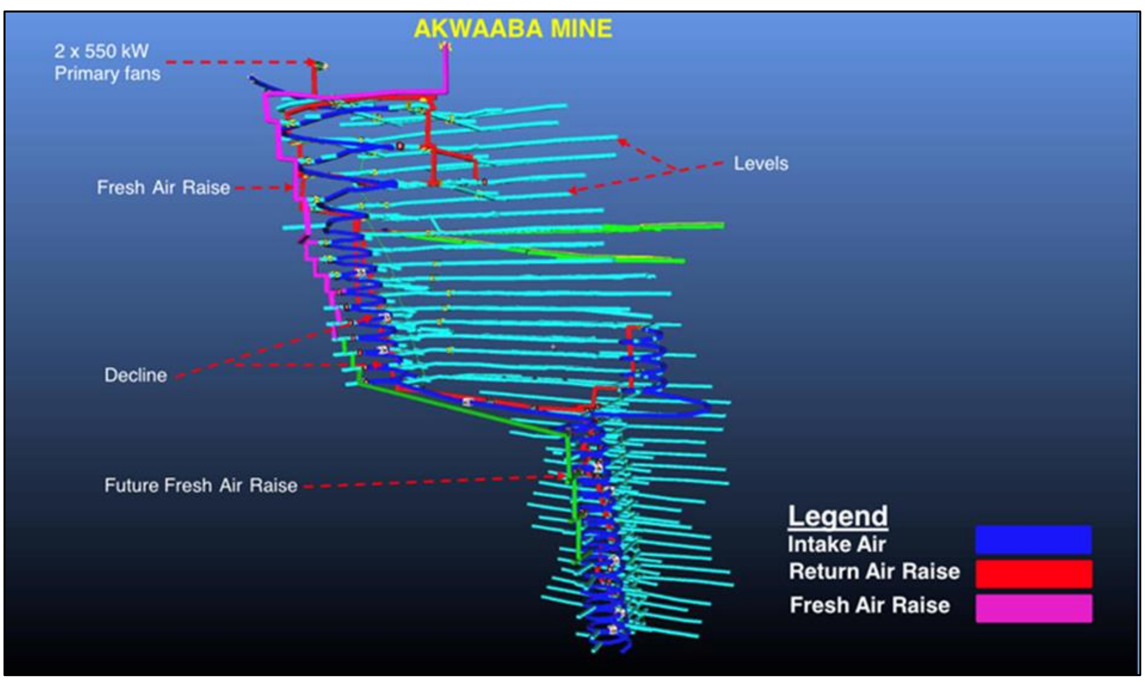


Figure 16-21: Isometric View of the Akwaaba Underground Ventilation Plan

(Source: CGML 2022)

The amount of air supplied underground is calculated based on the number of diesel machines used. Air factor of 0.06m3/s x kW is used internationally to determined total air required by each diesel unit. Twenty percent (20%) of the calculated quantity is added to cater for humans and other miscellaneous heat sources (secondary fans, pumps, electrical stations etc).

16.5 Tano Underground Mine

16.5.1 Tano Mining Method

The main access ramp development is currently from Paboase 1950mRL towards surface. The mine is planned primarily to use the sublevel open stoping mining method. Tano underground consists of 50m and 25m sublevels with bottom-up stoping approach whereby a mined-out level is backfilled before the next upper level is mined.

Figure 16-22 shows the current layout of the various phases to be mined in the Tano underground mine.

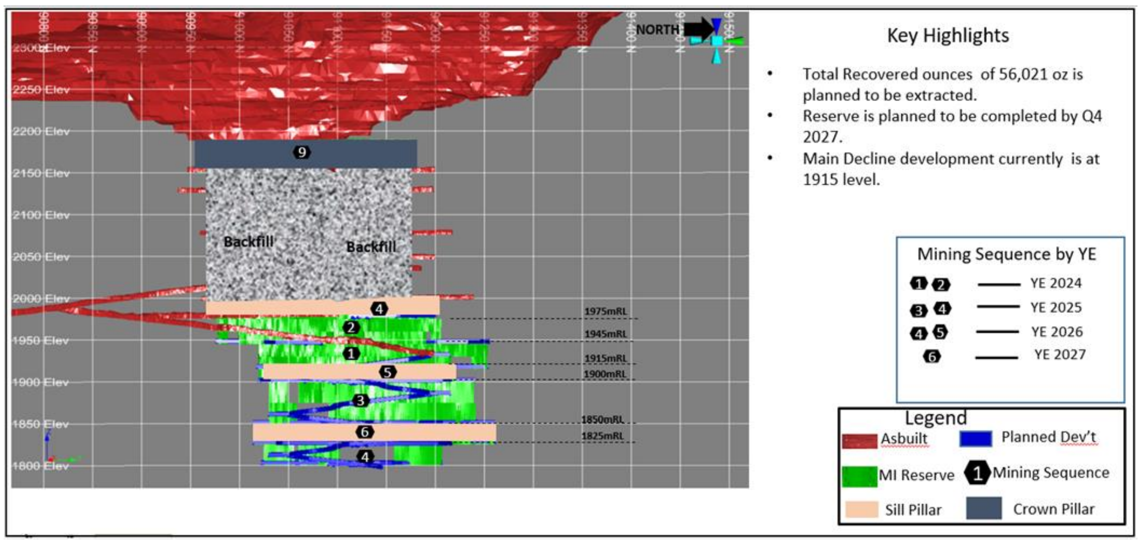


Figure 16-22: Long Section View of Tano Underground Mine

(Source: CGML 2024)

16.5.2 Tano Ventilation

Fresh air intake to Tano underground is via a 4.1 diameter raise from surface. 2 x 110kW force fans are installed at the level accesses to force fresh air through ventilation bags to the draw points and development ends to reduce waiting times after blasting and ensure safe working conditions for underground operations. Exhaust air is also upcasted via the Paboase 1950 RAR. Preparation is ongoing to install 2 x 315 kW Swedvent fans connected in parallel on top of the 4.1m diameter raise to serve as the main exhaust fans. Figure 16-23 shows current Tano ventilation plan.

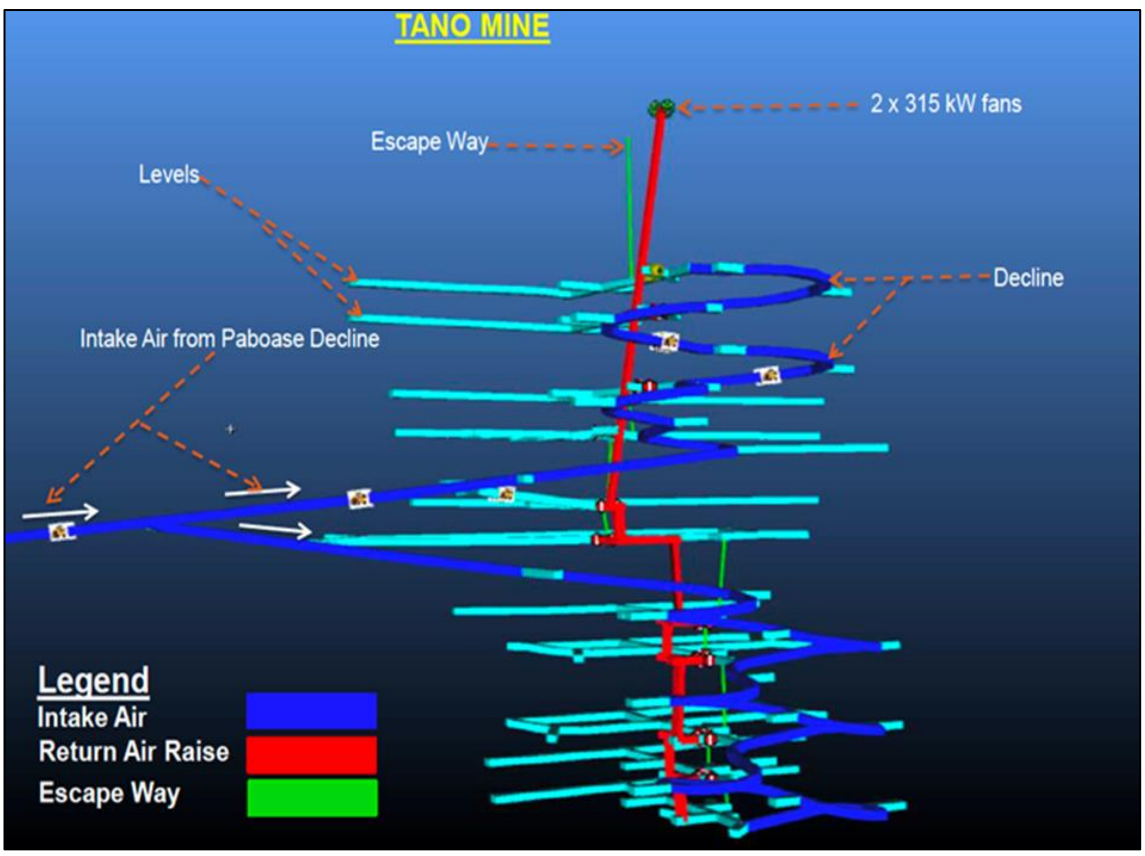


Figure 16-23: View of the Tano Ventilation Plan

16.6 Akoti Underground Mine

16.6.1 Akoti Mining Methods

The Akoti underground mine primarily uses the SLOS mining method. The stoping is undertaken in three distinct zones, north, central and south. The Akoti layout consists of 25m sublevels with bottom-up stoping approach whereby a mined out level is backfilled before the next upper level is mined. To ensure the stability of the open voids, waste rock is used to tightly fill the mined-out stopes. Figure 16-24 shows a long section looking West of the Akoti underground mine.

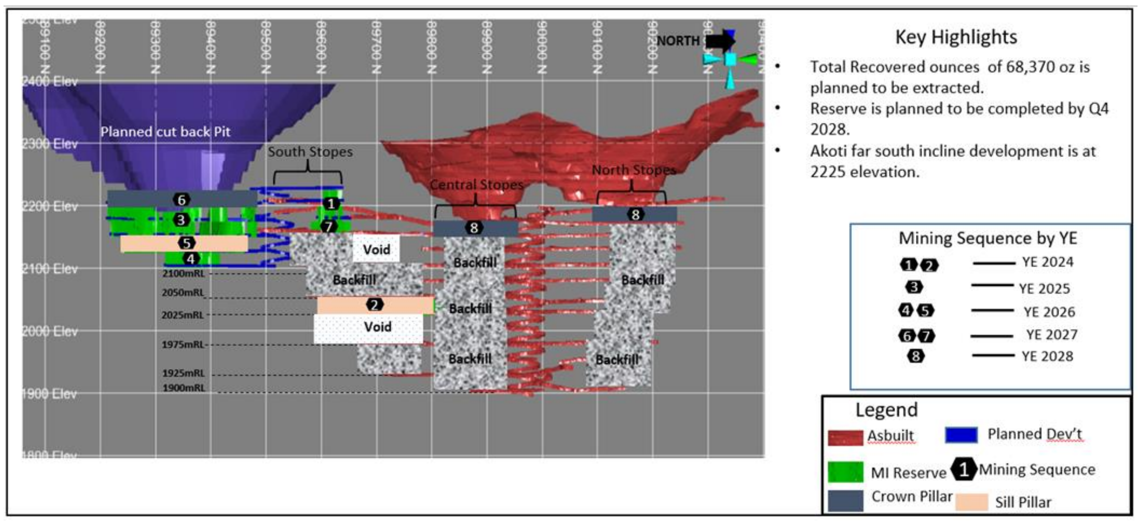


Figure 16-24: Long Section View of Akoti Underground Mine

(Source: CGML 2024)

16.6.2 Akoti Ventilation

The Akoti underground has a similar ventilation layout and network underground. The mine is ventilated by 2 x 315kw Swedvent fans installed on the Akoti portal.

Figure 16-25 shows the Akoti exhaust fans arrangement. Fresh air intake into the Akoti underground is via the two Paboase portals.

Figure 16-25: Akoti 2x315kw Exhaust Swedvent Fans

(Source: CGML 2024)

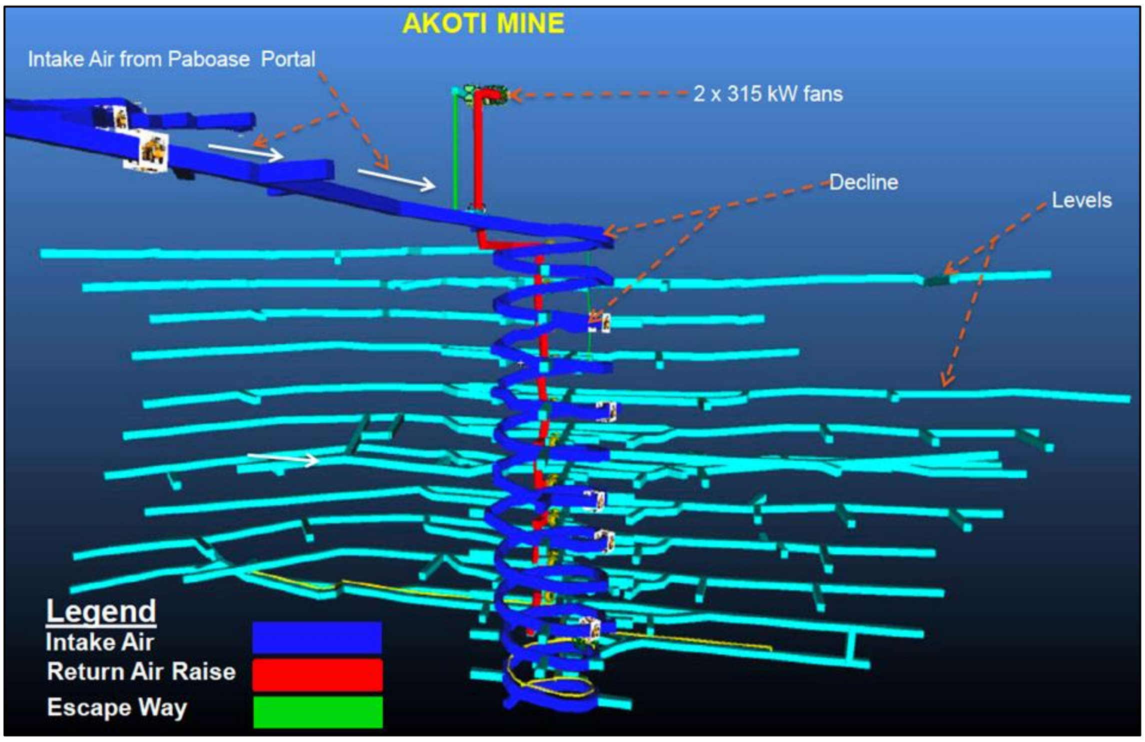


Figure 16-26: Akoti Ventilation Circuit

(Source: CGML 2024)

16.7 Suraw Underground Mine

16.7.1 Suraw Mining Method

Suraw underground project commenced stoping in 2021. It reached its annual target of approximately 70ktpm in 2023. The Suraw underground consists of 50m sublevels with bottom-up stoping approach whereby a mined-out level is backfilled before the next upper level is mined.

Two portals are developed at the surface. The main portal is used for the main travel access into the underground mine and the second portal (a short adit into the pit wall) hosts both the ventilation return air raise (RAW) and escape way used for emergency evacuation of personnel only, see Figure 16-27. A fresh air raise and waste pass is planned to be developed from the surface and linked to the underground workings.

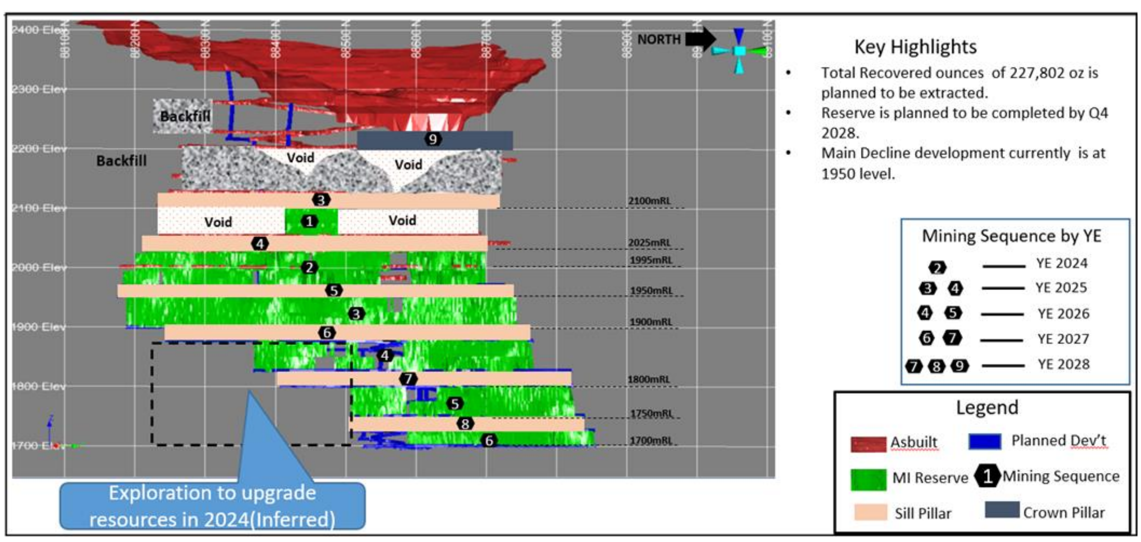


Figure 16-27: Long Section View of Suraw Underground Mine

(Source: CGML 2024)

16.7.2 Suraw Ventilation

Similarly, the Suraw underground mine employs the exhaust ventilation mechanism to exhaust contaminated air from the mine, 2 x 315kW axial flow fans of sufficient size and capacity are used to exhaust the contaminated air from the mine. The fans are located at the return air portal connecting to a 5-metre return air raise. Fresh air enters the mine via the 5.5m x 6.0m decline as shown in Figure 16-28. Regulators and ventilation doors are used on the levels to ensure that adequate air flow is reaching production faces.

Primary ventilation is supported with secondary fans and ventilation bags on the production levels and at development faces. 2 x 110kW auxiliary fans located 20m to the level access forces fresh air through ventilation bags to the draw points and development ends to reduce waiting times after blasting and ensure safe working conditions for underground operations.

Figure 16-28: Suraw Portal Layout

(Source: CGML 2024)

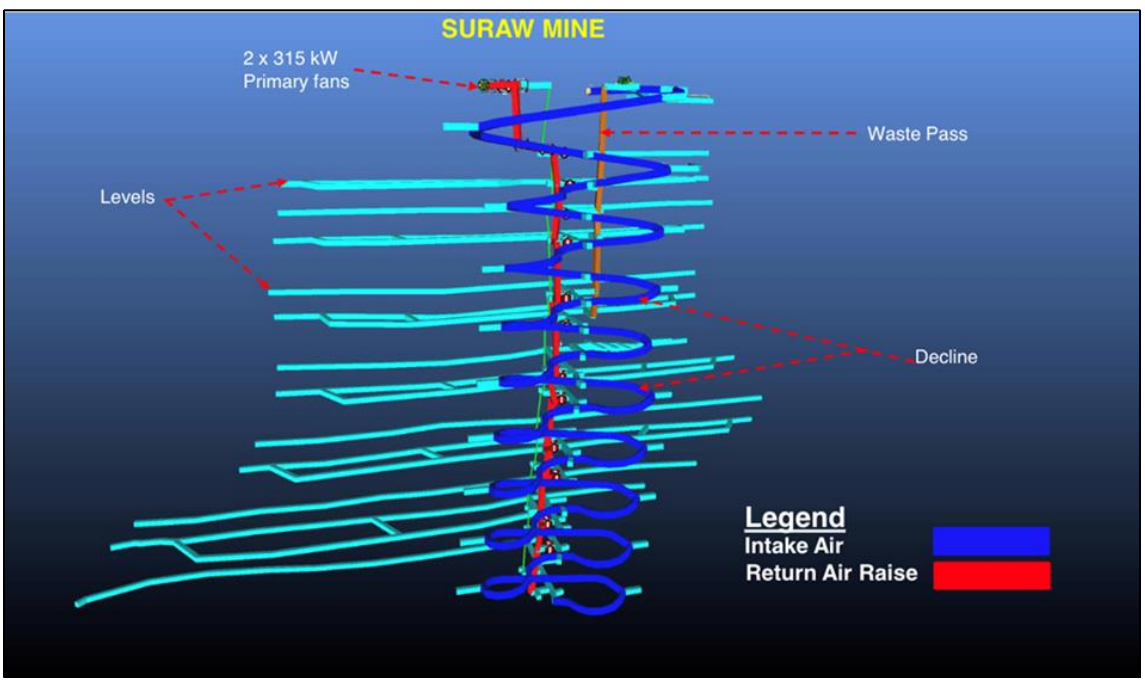


Figure 16-29: Suraw Ventilation System

(Source: CGML 2024)

16.8 Obra Underground Mine

16.8.1 Obra Mining Method

Obra underground is currently the newest underground project which commenced development in 2021. It will become a significant contributor to the main production stream in year 2023. Obra Underground will consist of 50m sublevels with bottom-up stoping approach whereby a mined-out level is backfilled before the next upper level is mined.

The portal serves as the primary access ramp for personnel and equipment and doubles as the fresh air intake for the mine. Primary ventilation fans and an escape way is being established and connected to the various underground workings. A dedicated fresh air raise has been planned to connect from surface to the underground sublevels for future ventilation requirement. A backfill pass is also planned to connect from surface to the various sublevels for stope backfilling. Figure 16-30 shows the planned LoM for Obra.

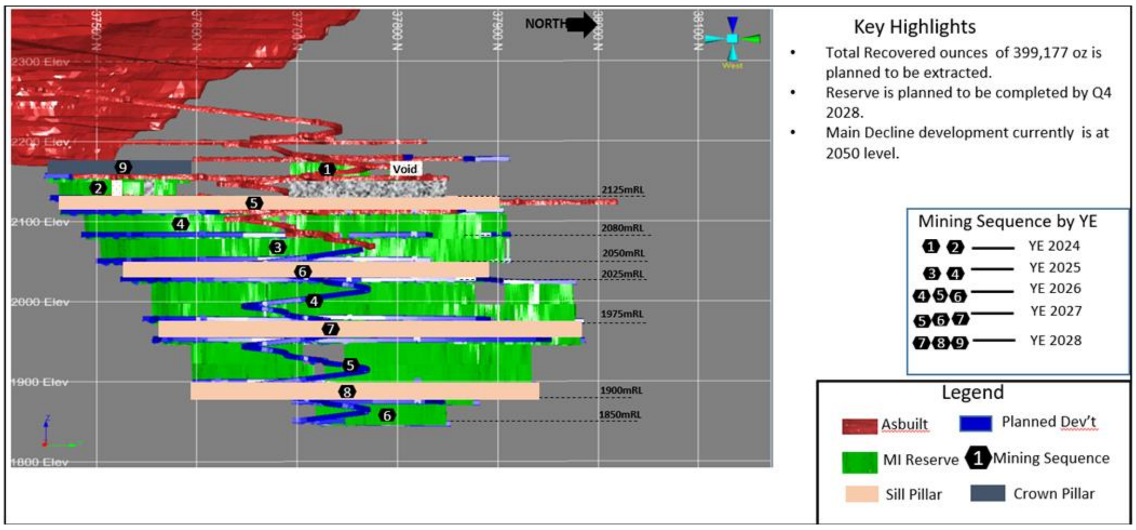


Figure 16-30: Long Section View of Obra Underground Mine

(Source: CGML 2024)

16.8.2 Obra Ventilation

The Obra underground mine is currently ventilated using two primary exhaust fans of 315 kW power. Figure 16-31 shows the Obra primary ventilation network.

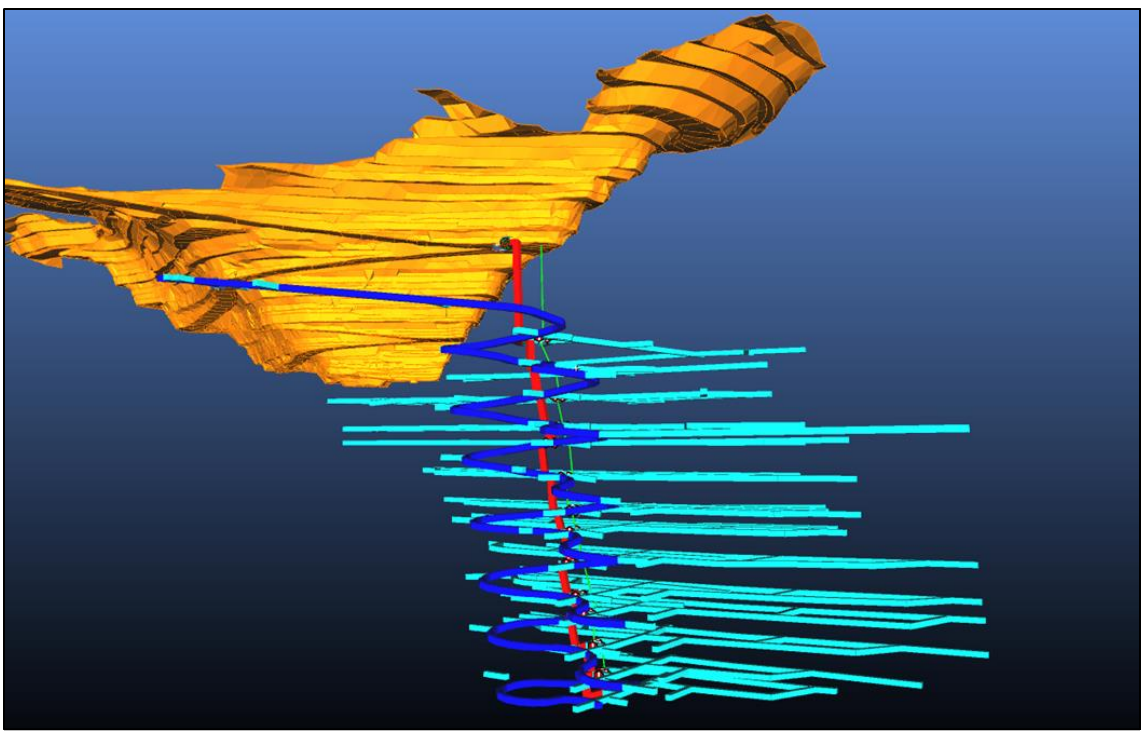


Figure 16-31: Obra Mine Ventilation Network

(Source: CGML 2024)

A typical level layout and secondary ventilation arrangements are illustrated in Figure 16-31. The secondary fan depends on the primary fans supplying air from surface via the decline. These fans mainly supply air to the drives and the stopes which are in operation. The secondary fans are connected with ventilation ducts which convey the fresh air to the workings.

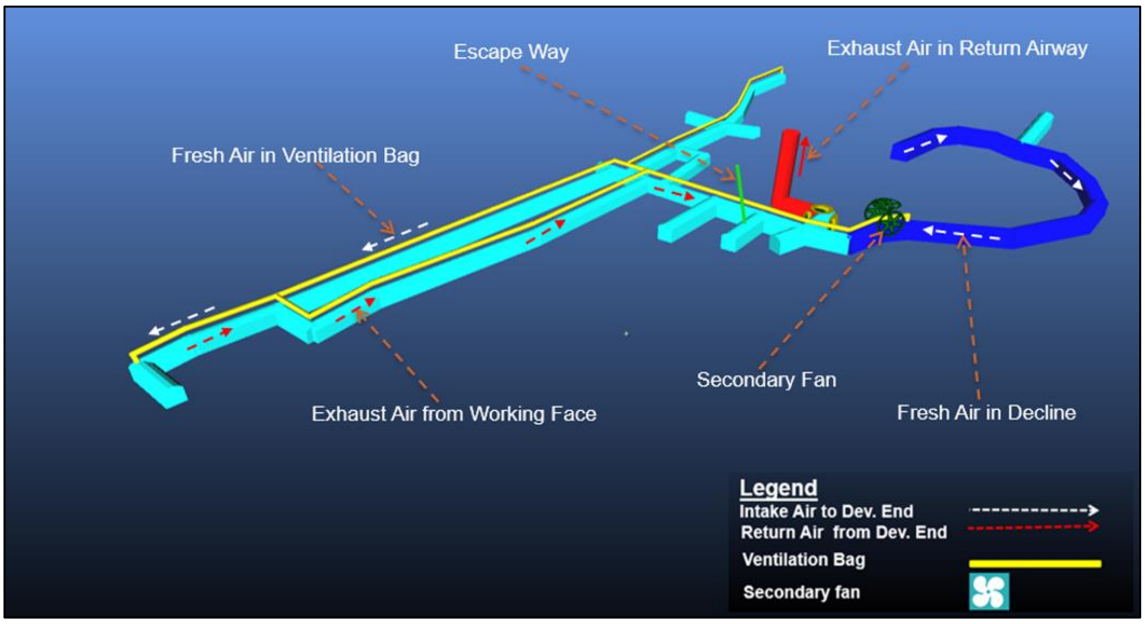


Figure 16-32: Typical Secondary Ventilation Arrangement

(Source: CGML 2024)

The Force-Exhaust overlap is a modified secondary ventilation network used to ventilate longer development ends prior to establishing through ventilation. Two secondary fans are employed to operate concurrently with one serving as an exhaust fan while the other serves as a force fan. A typical example of such installation is currently done at Obra mine and is illustrated in Figure 16-32.

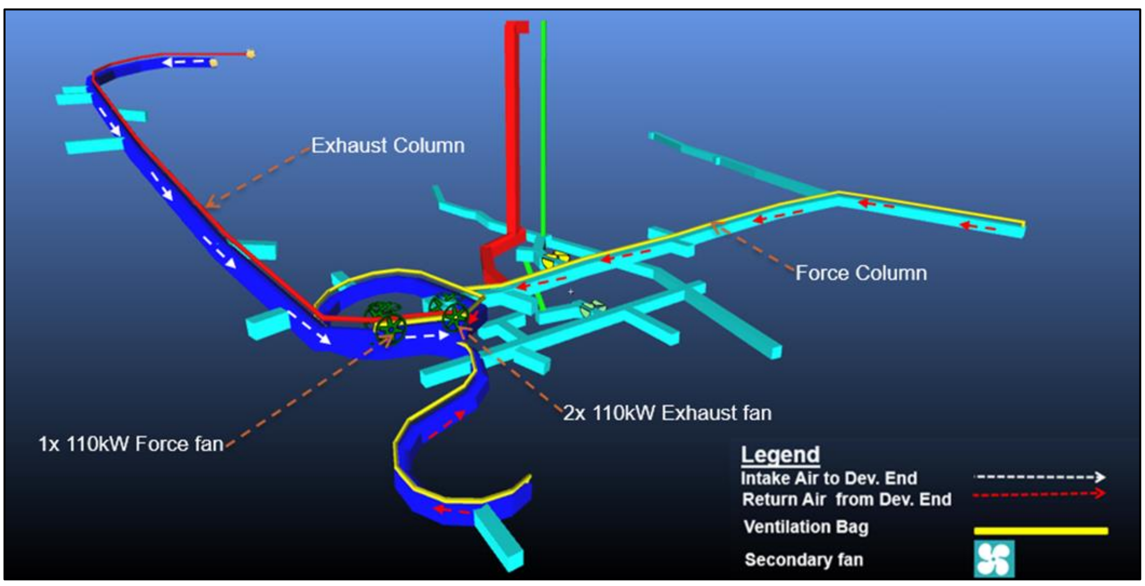


Figure 16-33: Force – Exhaust Overlap Secondary Ventilation Arrangement

(Source: CGML 2024)

16.9 Mamnao Open Pit

The Mamnao pit consists of three previous pits, Mamnao South, Mamnao Central and Mamnao North. Mamnao South has been completed to plan. A second cutback is in progress for the extension of Mamnao Central. Mamnao North has been initiated and will remain as a separate, smaller pit. The pits are in the northern part of the Chirano mine site.

The design of the Central and South Mamnao pits indicates that together the pits are about 1.2km long, extended along the North-South direction. The width of the pits varies approximately between 200-300m and the depth ranges between 120-200m. The pit highwalls on the East and West walls consist of weathered material, mainly regolith because of tropical weathering (i.e., Laterite, Saprolite, and transition zone), in the upper benches and fresh rocks in the lower benches.

Based on the proposed pit design the bench height is 12m in oxides, and 18m in fresh rock. The designed bench face angles for benches in the weathered rock is 45˚ and 77˚ in fresh rocks. This configuration has resulted in inter-ramp slope angles of 35˚ in oxide and 57˚ in the fresh rocks. Figure 16-34 illustrates the proposed pit designs for the Mamnao pits.

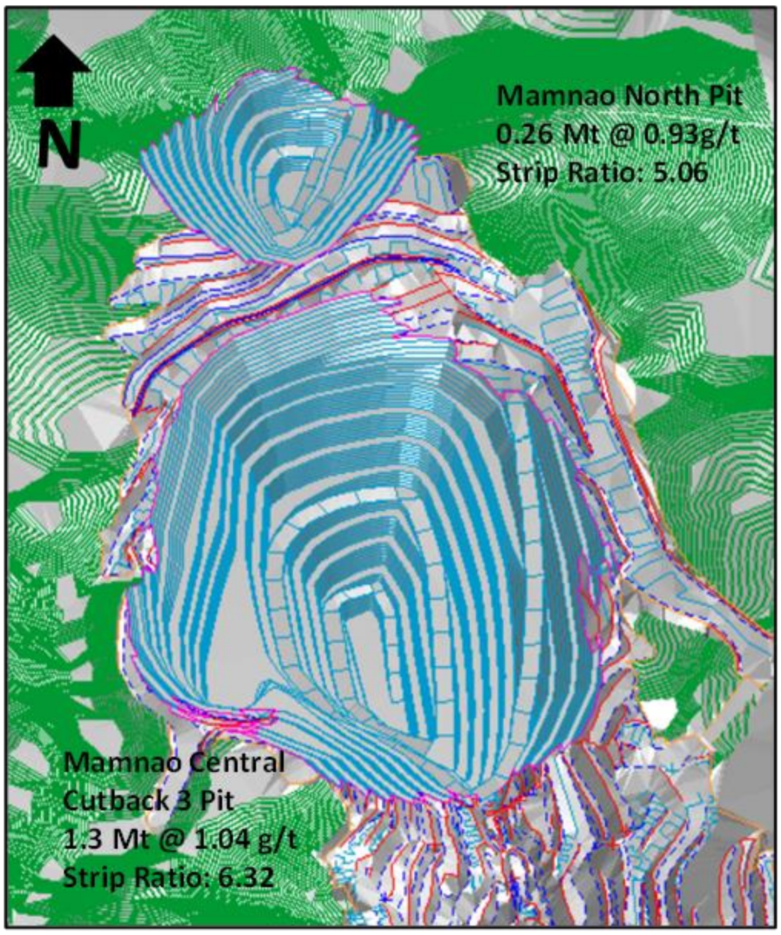


Figure 16-34: Mamnao Pit Design

The Mining physicals resulting from the Mamnao pit design are tabled below.

Table 16-12: Mamnao Pit Design Physical Quantities

Mamnao Central	Unit	Total
Total Ore Mined	(t)	1 346 164
Average Grade	(g/t)	1.04
Contained Ounces	(Oz)	44 857
Waste	(t)	8 508 850
Total Material	(t)	10 165 447
Strip Ratio	(t:t)	6.3
Mamnao North		
Total Ore Mined	(t)	257 098
Average Grade	(g/t)	0.93
Contained Ounces	(Oz)	7 724
Waste	(t)	1 300 699
Total Material	(t)	1 680 721
Strip Ratio	(t:t)	5.1

16.10 Sariehu Open Pit

The Sariehu pit is an expansion of the previously mined open pit at Sariehu. Consequently, the strip ratio is low at 2.43 t ore /t waste. The final pit design has a length of 830m and width of 440m. Based on the proposed pit design the bench height is 12m in oxides and transition material and 18m in fresh rock. The designed bench face angles for benches in the weathered and fresh rock are 45° and 78° respectively. This configuration has resulted in inter-ramp slope angles of 35° in oxide and 58° in the fresh rocks. Figure 16-35 illustrates the proposed pit design for Sariehu pit. Table 16-13 shows the physical quantities resulting from the Sariehu pit design.

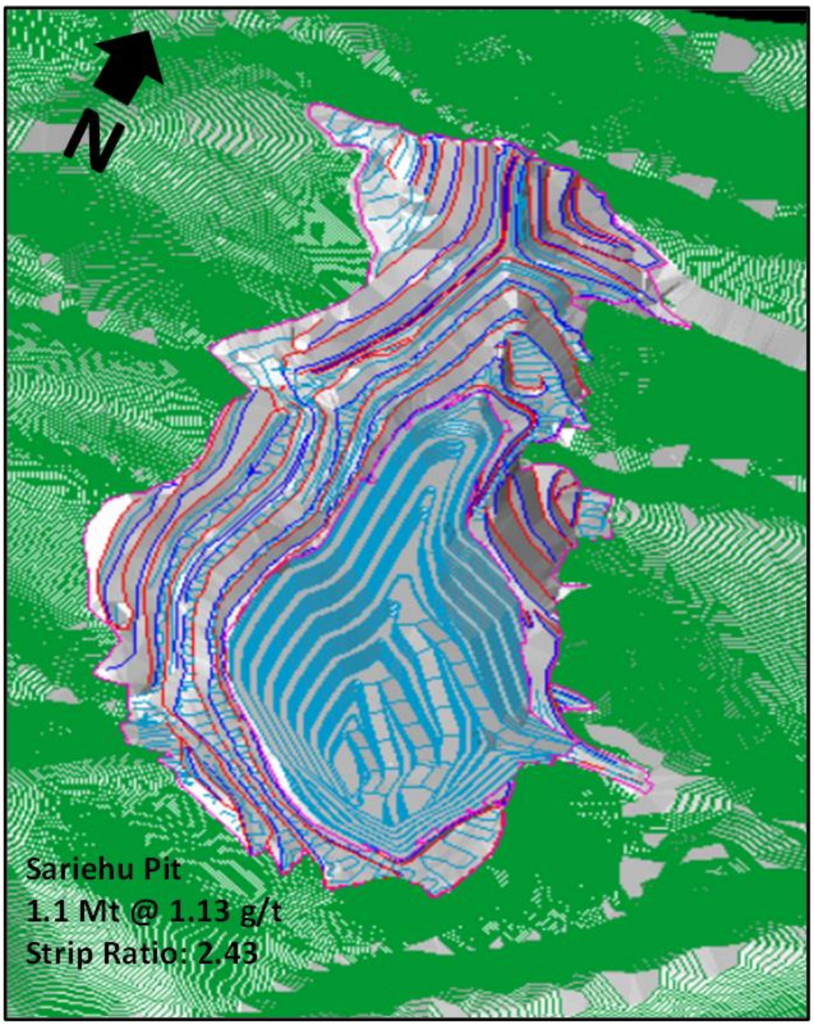


Figure 16-35: Sariehu Pit Design

Table 16-13: Sariehu Pit Design Physical Quantities

Sariehu	Unit	Total
Total Ore Mined	(t)	570 821
Average Grade	(g/t)	1.15
Contained Ounces	(Oz)	21 168
Waste	(t)	681 398
Total Material	(t)	1 352 948
Strip Ratio	(t:t)	1.2

16.11 Obra Pit

The Obra open pit recommenced mining with pre-stripping of waste in late 2023 and will produce ore in 2024 and 2025. The pit design consists of a cutback to the southern end of the existing Obra open pit. The Bench heights in the Obra mine design are 12m in oxide and 18m in fresh rock. The bench face angles applied are 45^{o} in oxide and transition material and 75^{o} in fresh rock. This combined with 5m to 8m berms in oxide and 7m berms in fresh rock result in Inter Ramp slope angles of 35^{o} in oxide and 57^{o} in the fresh rock. Figure 16-36 illustrates the proposed pit design for Obra pit. Table 16-14 shows the physical quantities resulting from the Obra pit design.

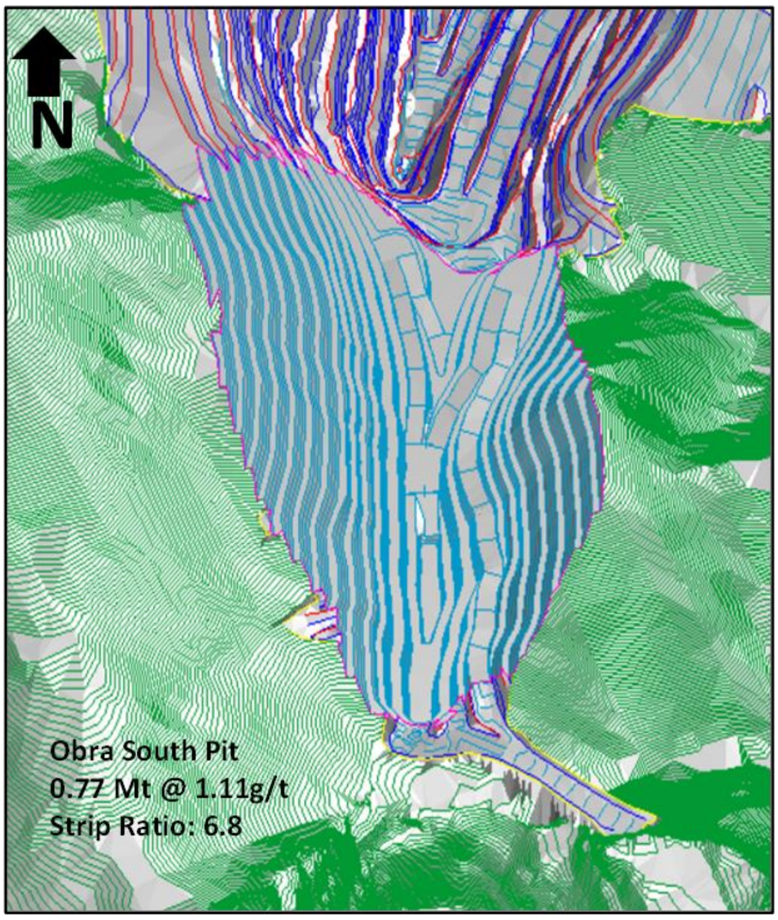


Figure 16-36: Obra Pit Design

Table 16-14: Obra Pit Design Physical Quantities

Obra	Unit	Total
Total Ore Mined	(t)	772 478
Average Grade	(g/t)	1.11
Contained Ounces	(Oz)	27 567
Waste	(t)	5 004 309
Total Material	(t)	6 108 265
Strip Ratio	(t:t)	6.5

16.12 Akoti South Pit

The Akoti pit design consists of the deepening of the pit by approximately 40m. This requires the cutting back of the West wall as well as the North and South ends of the pit. A new ramp system will be established in the West wall of the pit providing access from surface. Table 16-15 shows the slope designs used in the Akoti South pit design.

Table 16-15: Slope Design for Akoti South Pit

Resource	Units	Oxide		Fresh		Transition	
		West	East	West	East	West	East
Bench Height	(m)	9	9	9	9	9	9
Berm Width	(m)	5	5	5	5	5	5
Bench Berm Spacing	(#)	1	1	1	1	1	1
Batter Angle	(˚)	52	52	78	78	52	52
Inter Ramp Wall Angle	(˚)	37	37	52	52	37	37
Wall Height	(m)	54	50	100	100	37	15
Road Width	(m)		14		14		14
Passes through Wall	(#)		2		2.5		1
Overall Wall Angle	(˚)	37	28	52	42	37	28

Figure 16-37 shows the pit design for Akoti South, while Table 16-16 summarises the physical quantities resulting from the pit design.

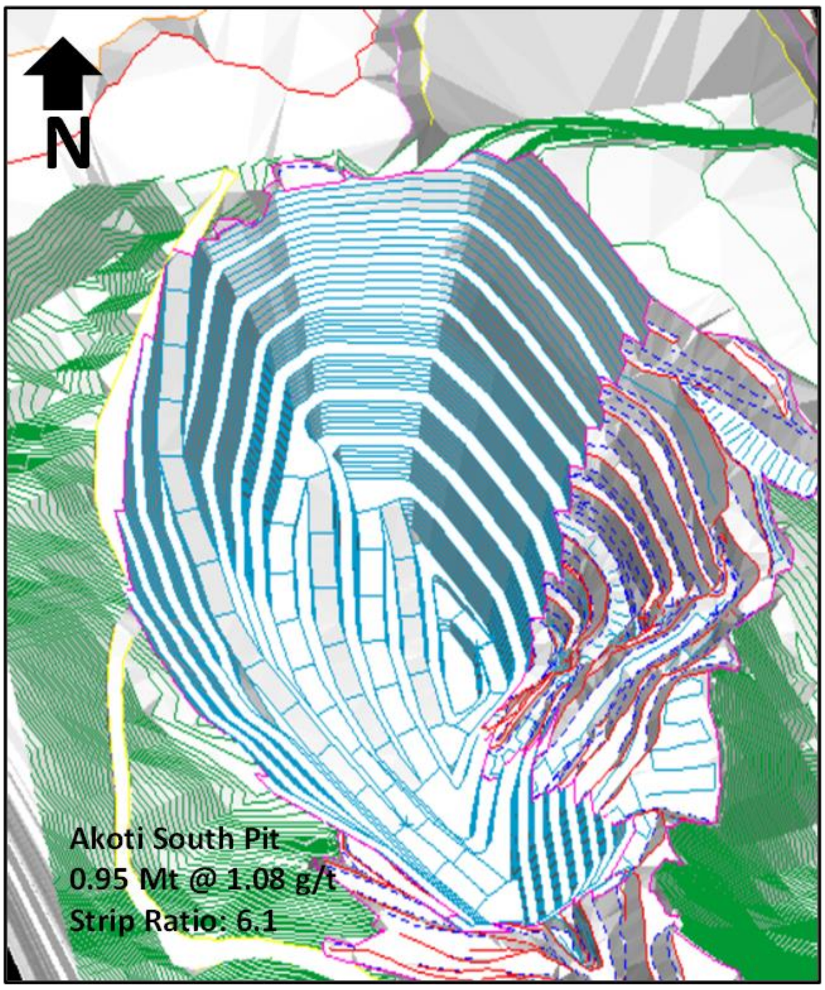


Figure 16-37: Akoti South Pit Design

Table 16-16: Akoti South Pit Design Physical Quantities

AKOTI SOUTH	Unit	Total
Total Ore Mined	(t)	951 469
Average Grade	(g/t)	1.08
Contained Ounces	(Oz)	33 102
Waste	(t)	6 098 419
Total Material	(t)	7 392 152
Strip Ratio	(t:t)	6.4

16.13 Aboduabo Pit

The Aboduabo pit is a new open pit which will be developed in 2024. The pit is situated approximately 5km North of the process plant. The pit will be developed and operated in a similar fashion to the existing open pits at Chirano using conventional drill, blast, load and haul practices and operated by the same mining contractor. The haul road from Mamnao will be extended by 2km to access Aboduabo. The final pit design at Aboduabo consists of three separate pits along the strike of the orebody. The parameters used for the slope design at Aboduabo are tabled below.

Table 16-17: Slope Design for Aboduabo Pit

Resource	Units	Oxide		Fresh		Transition	
		West	East	West	East	West	East
Bench Height	(m)	12	12	12	12	12	12
Berm Width	(m)	5	5	5	5	5	5
Bench Berm Spacing	(#)	1	1	1	1	1	1
Batter Angle	(˚)	45	45	72	72	55	55
Inter Ramp Wall Angle	(˚)	35	35	53	53	42	42
Wall Height	(m)	54	51	118	47	120	40
Road Width	(m)		14		14		14
Passes through Wall	(#)		2		1		1
Overall Wall Angle	(˚)	35	29	52	44	43	34

Figure 16-38 shows the pit design for Aboduabo, while Table 16-18 summarises the physical quantities resulting from the pit design.

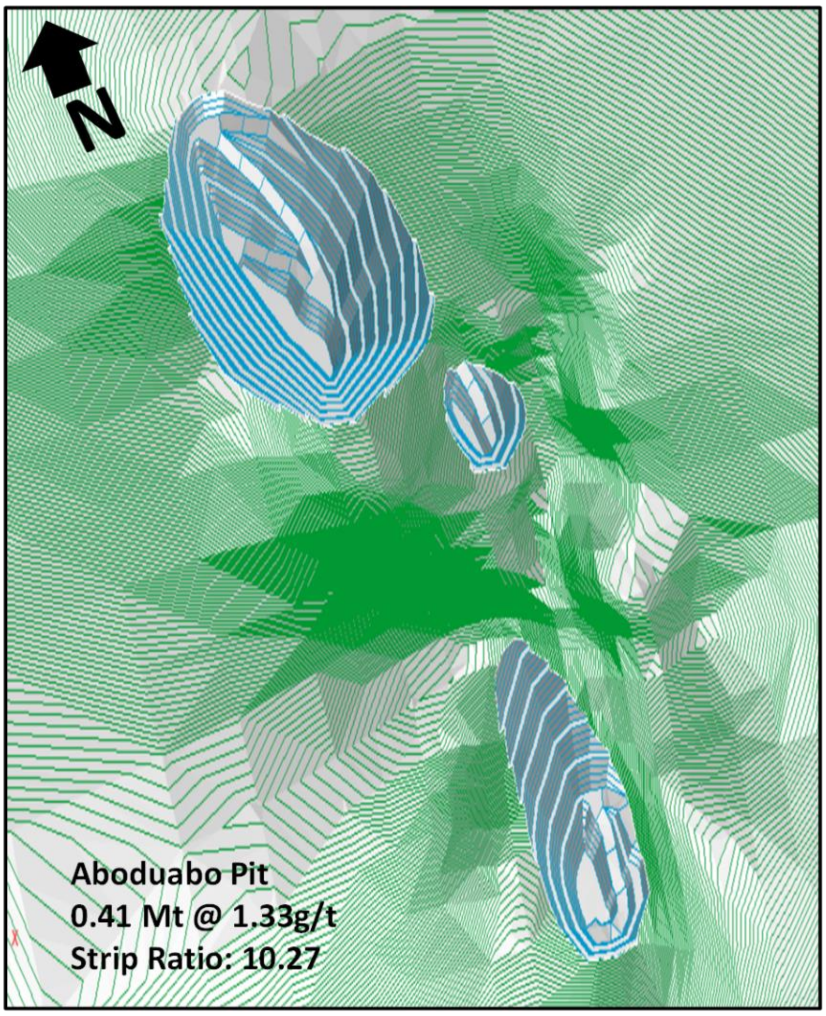


Figure 16-38: Aboduabo Pit Design

Table 16-18: Aboduabo Pit Design

Aboduabo	Unit	Total
Total Ore Mined	(t)	412 776
Average Grade	(g/t)	1.33
Contained Ounces	(Oz)	17 616
Waste	(t)	4 239 260
Total Material	(t)	4 735 772
Strip Ratio	(t:t)	10.3

16.14 Kolua Pit

The Kolua orebody is located approximately 6k South of the processing plant, between Suraw and Akwaaba orebodies. The current design is for a small open pit to be developed in 2025. The overall slope angles used in the Kolua design are tabled below.

Table 16-19: Kolua Pit Slope Angles

Material	Slopes	
	West	East
Oxide	40	37
Transition	40	37
Fresh	51	44

Figure 16-39 shows the pit design for Kolua, while Table 16-20 summarises the physical quantities resulting from the pit design.

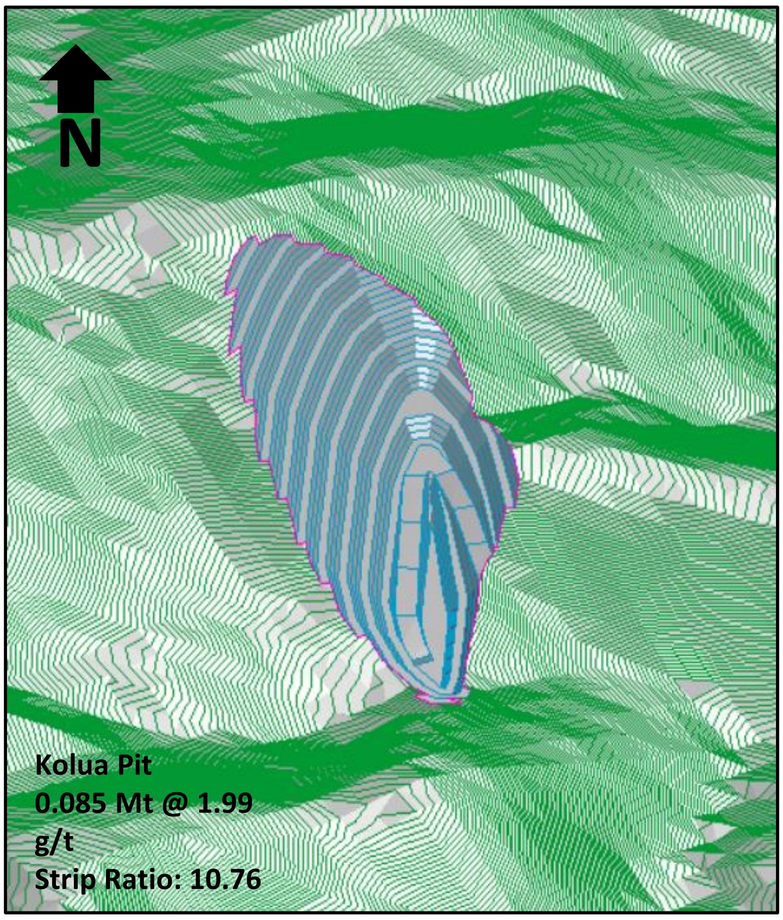


Figure 16-39: Kolua Pit Design

Table 16-20: Kolua Pit Design Physical Quantities

Kolua	Unit	Total
Total Ore Mined (t)	(t)	85 439
Average Grade (g/t)	(g/t)	1.99
Contained Ounces (Oz)	(Oz)	5 478
Waste (t)	(t)	919 691
Total Material (t)	(t)	1 046 869
Strip Ratio	(t:t)	10.8

16.15 Obra, Sariehu and Mamnao Underground Mine (North Mine)

The orebodies to the North of the processing plant at Chirano include Obra, Sariehu and Mamnao. Obra, which is recently commenced production from underground, is near the processing plant. Both Sariehu and Mamnao open pits are included in the 2024 life of mine plan, however both orebodies show promise of potential underground operations below the economic limits of open pit mining. In addition to the current underground mine plan for Obra, conceptual mine plans have been developed for the exploitation of Sariehu and Mamnao by underground mining.

As part of the mine planning process for Obra a study was completed to evaluate the installation of a conveyor belt in a decline from underground at Obra, on the 2115mamsl elevation, directly to the processing plant. The conveyor haulage system will be designed so that it can be extended to access both Sariehu and Mamnao orebodies in the future, thereby negating the requirement of trucking ore to and on surface to the processing plant. Figure 16-40 below shows a view, looking West, of the envisaged mine designs including conveyor system.

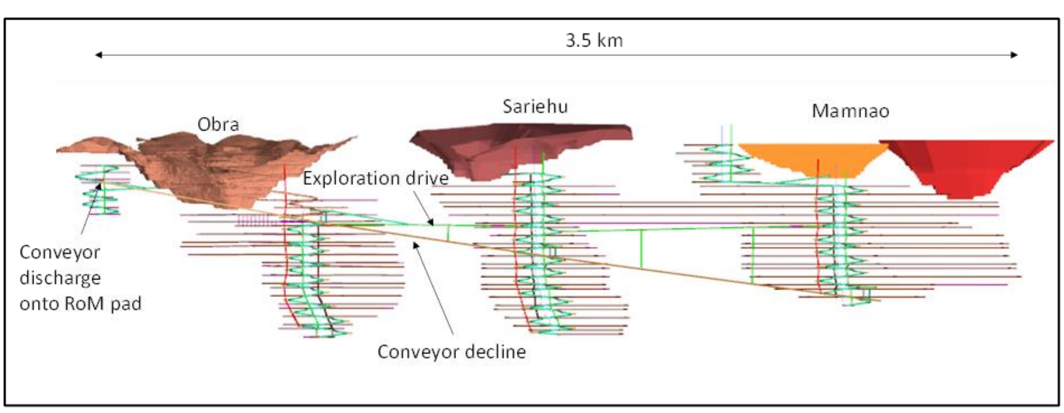


Figure 16-40: Potential Chirano North Underground Mine

(Source: Bara 2024)

The conveyor decline and exploration drive, developed from Obra on the 2115mamsl elevation, will provide multiple accesses to the Sariehu and Mamnao orebodies, facilitating mining flexibility and improved production ramp up profiles. Conceptual mining schedules have shown that the three orebodies, when combined referred to as the North Mine, could support a production rate of approximately 3 million tonnes per annum.

The Sariehu and Mamnao underground mining is currently not included in the life of mine plan for Mineral Reserves and is discussed here only to demonstrate potential life of mine upside if drilling is successful in converting inferred resources to indicated.

16.16 Open Pit Operations

Mining of the open pits is being undertaken by Maxmass Limited, a Ghanian mining contractor. A contract was signed with Maxmass in May 2021 for the completion of open pit mining. The contract is for full services for Load and Haul and Drill & Blast services from the pits to the ROM pad.

16.17 Explosives Management

Explosives used by the mine are sourced from Maxam main Depot at Tarkwa. The transportation, storage and usage of explosives in Ghana are governed by the Mining and Minerals (Explosives) Regulations, 2012, LI 2177, and CGML comply with handling explosives for its operations.

Supply of explosives for the blasting activities is contracted to Maxam Ghana Limited, a licenced explosives company in the country. For the purpose of storing explosives on the mine, Chirano has constructed the required explosives magazine to keep detonators, blasting initiators and other blasting accessories. A 30T ISO tanker is installed for storage of bulk emulsion. The day-to-day running of the facility is managed by MAXAM with Chirano having oversight responsibility.

A nominal area of 1.3 hectares has been earmarked for the explosives magazine. The magazine area is located away from the processing plant site and approximately 1km north of the mine services area. The site is fenced, wire meshed, lighted with 24-hour security together with CCTV camera system and operated in accordance with Minerals and Mining (Explosives) Regulations 2012, L.I.2177.

Mobile Mixing Units (MMU) trucks are used in the transportation of the emulsion-based product to the blast sites, while explosives and accessories are transported in approved light vehicles. The vehicles are lined with aluminium, and the box containing the explosives completely sealed and securely locked. Vehicles transporting explosives on site are under the supervision of a holder of certificate of competency according to the explosives regulations, with two appropriate flags one at the front and one at back. High explosives and detonators are transported separately.

Transportation is also carried out with security escort vehicle to ensure that the correct routes are adhered to.

Charging of blast holes and blasting are carried out only during daytime by the open pit operations. Blasting notices are posted on appropriately located notice boards within the surrounding communities to warn the public of impending blasting operations.

Every blast is monitored to ensure that air overpressures and vibration levels measured at a structure in any community nearest to the blast site fall within the Inspectorate Division’s recommended values of 117 dB (A) and 2 mm/sec respectively.

Underground operations conduct blasting at approximately 6:30am/pm for both shifts.

16.18 Waste Rock Disposal

Chirano Life of Mine (LoM) plan waste generation is based on the 2023 Strategic Business Plan (SBP). Over the Life of Mine, an estimated 27,405 million tons of waste is expected to be generated from the open pit operations. This waste is expected to be reused for backfilling of some of the pits (to daylight) as proposed in the Environmental Impact Statement (EIS) and some used for constructing tailings storage facilities (TSF). There will be progressive rehabilitation of disturbed areas in the course of mining.

Waste mined from Mamnao and Sariehu (proposed mining operation) will be dumped on the North Waste Dump and its extension towards the south. Waste rock from Akoti will be dumped on the existing Akoti Waste Dump while Obra waste rock will be used to backfill the Tano pit (Central Waste Pass area).

Most of the waste rock will be end dumped utilising a managed tip head. The top surfaces will be flat to gently sloping. Due to the mining schedule most of the waste at the end of mine life will be fresh rock and this fresh rock will comprise the final surface. Therefore, an adequate quantity of oxidized material (subsoil and/or laterite), which is generally obtained at the beginning of the mine life, will be segregated from the rest of the waste material for rehabilitation purposes. It is planned to spread a layer of approximately 50cm of topsoil and subsoil (and/or laterite) to cover the fresh rock forming the surface of the dumps in line with Chicano's commitment in the EIS (2004) and best practices.

The waste dump slopes will be up to 55m high and will require reshaping towards the end of waste dump life. During the last stages of the placement of waste into each dump, the outer edges will be constructed from the base face in up to 10m lifts with setbacks of 10m between lifts.

The waste dump batters are cut to slopes of 1V:3H and shaped to minimize concentration of surface runoff. Benches will be built at 10m wide and slope back into the waste dump at a minimum grade of 2% with a lateral grade of 1% to rock fill drains at 200m centres.

17. RECOVERY METHODS

17.1 Overall Process Description

The Chirano Plant has a design throughput capacity of 3.6Mtpa using a comminution circuit comprised of a three-stage crushing circuit that produces a crushed product for a two-stage ball milling circuit. A standard carbon-in-leach (CIL) process is used for gold extraction. The previous NI 43-101 report dated 15 May 2023 has a detailed process description of the plant. This chapter will discuss the current plant performance and describe the current plant modifications and future plant modifications with the objective of optimizing the gold recovery and increasing the plant throughput.

17.2 Current Chirano Plant Performance

Table 17-1 shows the monthly key performance areas of crushing and milling effective utilisation, milled tonnage, gold recovery at head grade, cyanide, and lime consumptions, and the blend of underground ore to open pit ore and reclaimed stockpile, from August 2022 to September 2023. The table also gives the 2023 average of the plant's key performance areas and the previous 2022 reported averages.

Table 17-1: Current Performance of the Chirano Process Plant (August 2022 to September 2023)

	CRUSHING CIRCUIT		**MILLING CIRCUIT**									
Month	**Avail (%)**	**Effect Utilisation (%)**	**Avail (%)**	**Effect Utilisation (%)**	**Tons Milled (t)**	**Head Grade (g/t)**	**Recovery (%)**	**Lime (kg/t)**	**Cyanide (kg/t)**	**Ore Supply Blend**		
Aug-22	90.88	84.46	73.37	87.53	291 672	1.31	87.49	1.24	0.27	44% Underground ore, 31% Open Pit and 25% Rehandled		
Sep-22	86.57	77.48	95.33	90.50	271 369	1.43	88.58	1.25	0.27	47% Underground ore, 29% Open Pit and 24% Rehandled		
Oct-22	91.86	82.62	90.01	86.05	275 893	1.18	88.13	10.2	0.28	44% Underground ore, 26% Open Pit and 27% Rehandled, and 3% Oxide		
Nov-22	81.18	73.16	95.05	88.24	265 070	1.41	89.06	1.01	0.28	50% Underground ore, 23% Open Pit, 12% Rehandled, and 15% Oxide		
Dec-22	87.65	76.45	93.77	87.59	284 817	1.46	89.02	1.09	0.22	42.3% Underground ore, 41.3% Open Pit, 8.1% Rehandled, 4.9% Oxide, and 3.3% Broken Boulders		
Jan-23	86.36	74.09	92.99	87.36	271 434	1.42	87.37	1.05	0.21	45.5% Underground Ore, 54.1% Open Pit, and 0.4% Oxide		
Feb-23	86.49	75.92	94.69	88.55	259 492	1.48	86.40	1.07	0.25	39% Underground Ore, and 61% Open Pit		
Mar-23	89.81	78.30	95.22	90.78	296 057	1.48	85.52	1.10	0.26	38% Underground Ore, and 62% Open Pit		
Apr-23	85.56	74.46	88.22	83.42	265 469	1.41	84.66	1.12	0.24	43% Underground Ore, and 55% Open Pit, and 2% Oxide		
May-23	84.53	74.00	92.99	89.05	273 204	1.50	83.22	1.23	0.25	45.3% Underground Ore, 52.4% Open Pit, and 2.3% Oxide		
Jun-23	87.53	74.34	94.82	92.99	288 610	1.59	85.41	1.07	0.25	47% Underground Ore, 49% Open Pit, and 4% Oxide		
Jul-23	84.27	73.41	95.04	92.84	293 477	1.61	85.77	1.06	0.22	45.9% Underground Ore, 49% Open Pit, 4.2% Oxide, and 0.9% Broken Boulders		
Aug-23	91.02	83.80	94.96	93.53	311 525	1.43	85.20	1.07	0.26	37.1% Underground Ore, 58% Open Pit, 4% Oxide, and 0.9% Broken Boulders		
Sep-23	93.88	74.36	95.34	91.76	247 515	1.32	85.60	1.16	0.27	54.8% Underground Ore, 36.6% Open Pit, 5.5% Oxide, and 3.1% Broken Boulders		
Avg-23	**87.76**	**76.92**	**93.70**	**89.30**	**278 257**	**1.43**	**86.53**	**1.11**	**0.25**	**45% Underground Ore**	**45% Open Pit Ore**	**10% Rehandled Ore**
Avg-22	**87.50**	**75.63**	**93.55**	**89.45**	**294 312**	**1.36**	**87.08**	**1.47**	**0.21**	**47% Underground Ore**	**17% Open Pit Ore**	**37% Rehandled Ore**

17.2.1 Ore Supply

Since Asante took over the management of CGML in August 2022 the Chirano plant has treated ore at an average of 3.34Mtpa from the various underground mines and open pits as a blended feedstock comprised of 95% fresh ore and 5% oxide ore. Underground ore has been supplied to the plant from the mines of Akwaaba, Suraw, Akoti, Tano, and Obra. The Paboase underground mine ceased operation in November 2022. The Mamnao open pit mine and more recently the Sariehu open pit mine have supplied ore to the plant.

In 2022 the average proportion of underground ore in the plant feed was 84% (47% UG ore plus 37% rehandle) and 17% open pit ore. In comparison, the average proportion of underground ore in the 2023 plant feed reduced to 45%, and the open pit ore increased to 45%. From October 2022 the rehandle ore supply diminished from 25% to depletion by January 2023. The remaining 10% proportion of the plant feed has been supplemented with oxide ore. Operationally in 2023, there was no excess crushed ore conveyed to the rehandle stockpile as the mine ore supply did not exceed the mill feed rate.

17.2.2 Crusher Plant and Milling Plant Utilisations

Table 17-1 shows similar average crusher plant and average milling plant effective utilisations for 2022 and 2023. The 76% average effective crusher plant utilisation exceeds the industry standard of 70%. The 89% average milling plant effective utilisation is below the industry standard of 91.3%.

Consistent and reliable availability of electrical power remains a risk to production throughput. Backup generators are installed to ensure continuous operation of critical components in the process.

The reason for the lower effective mill utilisation in 2023 was attributed to a scheduled mill reline in May and unscheduled downtime for the replacement of a trunnion bearing on Mill #2, the secondary ball mill. The consequence of the extended downtime on Mill #2 was to operate the primary mill at a reduced mill feed rate. The reduction in primary milling feed rate has resulted in an average mill feed rate of 427 tph for 2023 compared to the higher 2022 milling feed rate of 451 tph. Extrapolating these milling feed rates to an annual plant throughput resulted in 2022 achieving a milling rate of 3.50Mtpa which is at the plant design capacity. The lower 2023 annual milling rate of 3.31Mtpa is due to the extended unscheduled downtime of Mill #2.

17.2.3 Plant Head Grade and Overall Gold Recovery

Table 17-1 shows there is a minor difference between the 2022 plant feed head grade of 1.37g/t Au and the 2023 head grade of 1.43g/t Au. There is a marginally higher recovery difference of 0.6% in the 2022 gold recovery at 87.1% and 86.5% gold recovery. Over the two years, the average gold recovery is 86.7% with a standard deviation of 1.6%.

17.3 Current Chirano Plant Modifications

17.3.1 Gravity Circuit

In December 2023 the gravity circuit in the milling plant was commissioned. A QS48 Knelson centrifugal gravity concentrator has been installed. Feed to the QS48 Knelson gravity concentrator is taken from the feed inlet ports to three cyclones on the secondary cyclone distributor amounting to 30% of the mill discharge. A scalping vibrating screen with 2mm x 8.8mm slotted panels removes the oversize material from the Knelson feed. The concentrate from the Knelson is periodically discharged to a Gekko 2000 Intensive Leach Reactor from which the pregnant leach solution is collected for electrowinning with a dedicated electrowinning cell supplied by Gekko. The tailings from the Knelson concentrate and the by-pass feed during the flushing cycle combine and gravitate to the mill discharge hopper. The gravity gold recovery is predicted to reduce the feed gold grade to the CIL by 10%.

17.3.2 Pebble Crusher

Reference to the Overall flowsheet in Figure 17-1 the pebble crusher was installed in the milling circuit in Q2 2023.

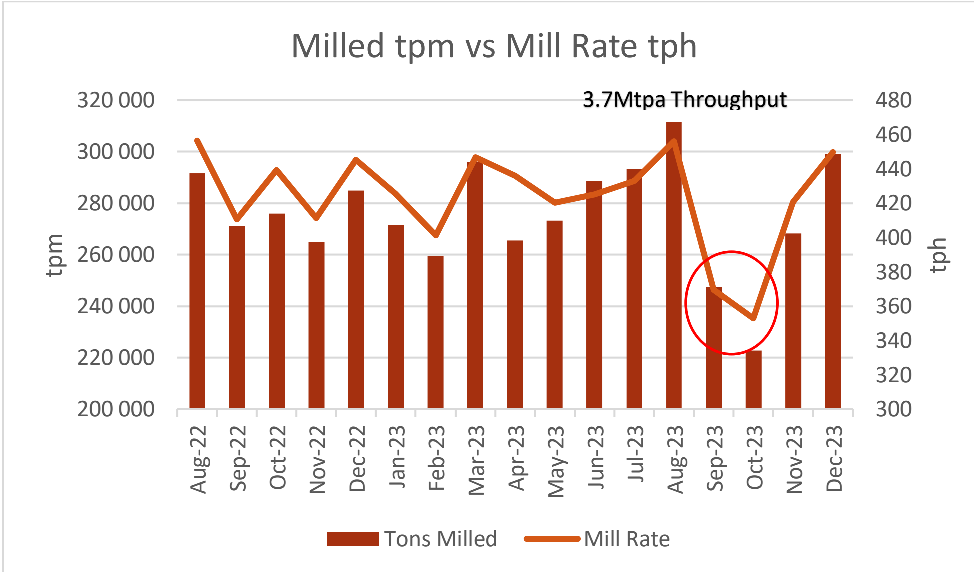


Figure 17-1: Mill Throughput TPM vs Mill Rate TPH

Figure 17-1 shows the monthly plant throughput rate ramped up to the equivalent of a 3.7 Mtpa throughput in August 2023 with the inclusion of the pebble crusher in the milling circuit. The Q2 2024 scheduled modifications to the discharge grates in the primary mill by increasing the open area for more pebble release from the mill, for in-circuit size reduction with pebble crushing will be beneficial to increasing the milling rate. The unscheduled downtime of the secondary mill bearing failure in September was the caused for the reduction in the monthly plant throughput rate in September and October as stated in 17.2.2 Crusher Plant and Milling Plant Utilisations.

17.3.3 Pressure Swing Adsorption (PSA) Oxygen Plant

In December 2023 the PSA Oxygen Plant was commissioned to deliver 10 tons of oxygen per day to the leaching circuit.

17.4 Future Chirano Plant Modifications

17.4.1 Shear Reactor Circuit Q1 2024

The 10tpd PSA plant when in operation will introduce oxygen to spargers in the leach tanks and to the 3200m^3 pre-leach tank to achieve dissolved oxygen (DO) concentrations in the DO range of 15-20ppm. The installation of a shear reactor to the 3200m^3 pre-leach tank using oxygen generated from the new PSA pressure plant will improve the oxygen transfer efficiency.

17.4.2 Pre-leach and CIL Agitators Upgrade Q2 2024

The 10tpd oxygen PSA plant will also supply oxygen to the spargers in the three 1200m^3 CIL tanks after the pre-leach tank. Currently, the pre-leach tank and the CIL tank agitation utilize the air generated from the spargers at the base of the tanks to maintain solids suspension. The replacement of air with oxygen will necessitate the replacement of the existing agitators with stronger-powered new agitators. The existing 130 kilo-watt pre-leach agitator will be replaced with a 160 kilo-watt dual impellor agitator and three of the CIL 55 kilo-watt agitators will be replaced with 75 kilo-watt dual impellor agitators. The efficient oxygen transfer taking place in the pre-leach tank with the shear reactor and the replacement of air with oxygen in the preceding three CIL tanks will improve the gold leaching kinetics and improve the cyanide consumption.

17.4.3 Mill Cyclones Upgrade Q2 2024

Cyclone simulations have been done to assess the improved classification performance in the secondary milling circuit. Simulations are targeting a mill throughput rate of 520tph and mill product size of P80 75µm with a 50 % reduction in the circulating load of cyclone underflow. New gMax 15 cyclone clusters will replace the existing gMax20 cyclone clusters. The objective of this cyclone replacement is to contribute to the mill throughput of 4.0Mtpa at the following operating criteria:

- Dilution of the cyclone feed densities to a maximum of 60% solids w/w.
- A primary mill discharge slurry PSD of 35% -75µm particle size.

17.4.4 Fine Tertiary Cone Crusher H1 2024

The existing crusher plant is operating with three Sandvik CH6600 Hydrocone crushers in parallel with the oversize reporting to a closed-circuit double deck screen. The bottom decks of the primary screens operate with a split screen surface of 25 square aperture and 22mm square screen panels, 40% and 60% respectively to produce a mill feed size F80 14.5mm. When the fine tertiary cone crusher is installed the bottom deck panels will be changed to 17mm apertures to achieve a mill feed size F_{80} 12.5mm.

Operationally, the primary mill has been operated at 510tph when there is a high percentage of fine material in the feed. A 510tph mill feed rate is equivalent to a mill throughput of 4.0Mtpa. The fine material originating in the primary mill feed is from the proportion of oxide material or the fragmentation of the mined fresh material. The planned operation strategy is to replace the existing middle tertiary cone crusher with the larger Sandvik CH865i Hydrocone crusher at a smaller closed-side setting to generate additional fine material in the mill feed. The 510tph primary mill feed rate can be maintained with a 10% increase in the crushed fines content in the mill feed plus the generated fines from crushing the re-circulating pebbles.

17.5 Existing Plant Circuits Updated

The existing Chirano process plant circuits have been updated to include a gravity circuit and an intensive leach reactor with a dedicated electrowinning cell.

- Primary crushing of run-of-mine (ROM) material in open circuit.
- Secondary and Tertiary crushing in closed circuit with screening.
- Mill feed surge bin with an overflow feed to a dead stockpile for mechanical reclaim.
- Open circuit primary ball mill operating with two parallel secondary ball mills in closed with cyclones.
- Gravity circuit installed on bleed stream of secondary will discharge with scalping screen to remove oversize.
- In-circuit crushing of the primary mill scats.
- Trash screening and thickening of cyclone overflow before leaching.
- Gold leaching in a single pre-leach tank followed by nine CIL tanks.
- Two Zadra elution circuits with dedicated acid wash columns and regeneration kilns.
- An intensive leach reactor for the gravity concentrates and dedicated pregnant solution tank.
- Gold room housing three elution eluate electrowinning cells and a gravity electrowinning cell.
- Carbon screening of the CIL tails followed by disposal of tailings to a clay lined TSF.

Figure 17-2 shows the overall flow sheet of the Chirano process plant with the inclusion of the gravity circuit.

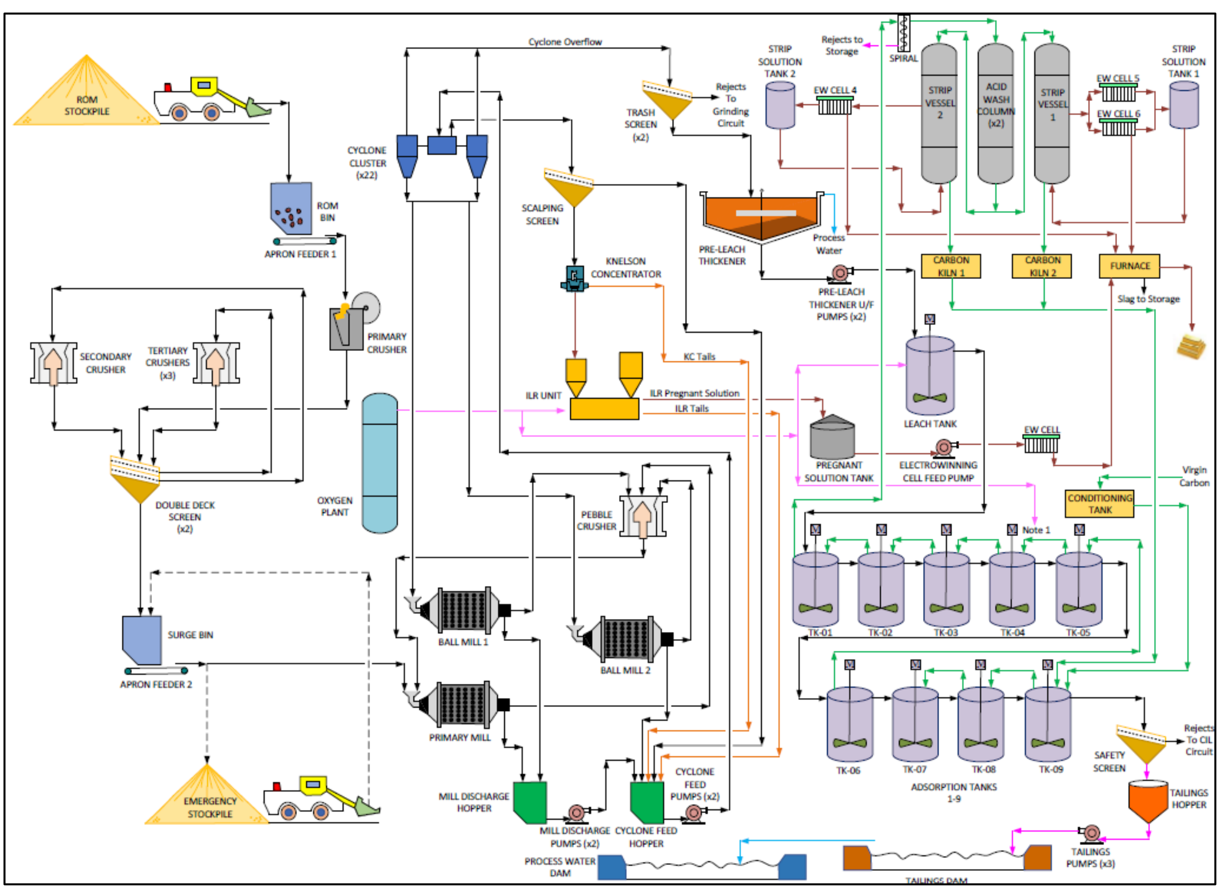


Figure 17-2: Chirano Process Plant Overall Flowsheet

Table 17-2: Chirano Process Plant Major Equipment

Equipment Description	No of Units	Specifications	Power (kW)
Primary jaw crusher	1	Metso C150	200
Secondary cone crusher	1	Sandvik S660/CS660 Hydrocone	315
Tertiary cone crushers	3	Sandvik H660/CH660 Hydrocone	315
Crusher screens	2	Sandvik XS 144 Double deck	2x30 drives
SAG mill converted to Primary ball mill	1	Grate discharge; 6.00 m diameter; inside shell: 5.70m EGL	2,900
Secondary ball mill #1	1	Overflow; 4.88 diameter; inside shell; 6.83m EGL	2,500
SAG mill converted to Secondary ball mill #2	1	Converted to overflow; 6.10m diameter; inside shell: 7.00m EGL	2,500
Gravity circuit	1 1 1	Knelson QS48 Concentrator Gekko 2000 ILR Gekko E/W Cell with 15 cathodes and anodes	
Pre-leach trash screen	2	Horizontal vibratory, 2.10m (width) x 4.88m (length); aperture 0.8mm x 8.8mm	2x8 drives/screen
Pre-leach thickener	1	18m diameter; high rate	11 (hydraulic)
CIL pre-leach tank	1	158 m diameter x 17.4m height; flat bottom; 3,200m3 live volume	
CIL pre-leach tank agitator	1	Lightning; dual hydrofoil impeller	132
CIL tanks	9	12m diameter x 12m height; flat bottom; 1300m^3 live volume	
CIL tank agitators	9	Lightning; dual hydrofoil impeller	55
Acid wash column	2	5t carbon capacity, 13m^3 total volume, mild steel butyl rubber lined	
Elution column	2	5t carbon capacity, 13m^3 total volume, 304 SS	
Regeneration kiln	1	Horizontal tube; tube 321SS, 250kg/h	Diesel
Regeneration kiln	1	Horizontal tube; tube 321SS, 250kg/h	Diesel
Elution electrowinning cells	2	13 cathode, 12 anode; 316 SS; 0.85m (width) x 0.85m (height) x 1.5m (length); cathode baskets; rectifier/cell 750 A	
Elution electrowinning cells	1	22 cathode, 21 anode; 316 SS; 1.00m (width) x 1.00m (height) x 1.5m (length); cathode baskets; rectifier 6,000 A	

17.6 Process Description

During operation, slurry is delivered to the primary cyclone feed distributor for classification in the individual operating hydrocyclones. A portion of this slurry passes through the open valves of the three 150mm pipelines from the Primary Cyclone Feed Distributor to the Scalping Screen Feed Box. For the normal operation of the gravity circuit, the dart valve installed in the scalping screen feed box on the slurry by-pass pipeline to the Cyclone Feed Hopper is closed.

17.6.1 Gravity Circuit

During the concentrating cycle, the valve feeding the concentrator is open. The valve is closed during the concentrate flush cycle and the slurry passes through the bypass pipe that diverts slurry directly to the Knelson concentrator tail pipe feeding the Cyclone Feed Hopper. Concentrates flushed from Knelson concentrator are delivered to the ILR feed cone.

17.6.2 Intensive Leach Reactor

Concentrate from the Knelson concentrator is delivered to the ILR feed cone and excess water overflows to the ILR area sump. The load cell measures the mass in the ILR feed cone and a timer circuit opens and shuts the feed valve to feed the desired flow rate into the ILR drum. The ILR drum rotates clockwise and excess solution overflows to the ILR drum discharge hopper to be pumped for recirculation back to the ILR drum via the ILR solution cone.

Cyanide addition at ILR drum discharge hopper is ratio controlled by an actuated valve from the ILR drum solids feed rate from the ILR feed cone. Water addition to the circuit is controlled via a load cell on the ILR solution cone that controls the opening and closing of the water make up valve on the raw water supply pipeline to the ILR unit.

The Goldilox feeder transfers a set quantity of Goldilox powder to the ILR drum discharge hopper to be circulated in the ILR unit to accelerate the leaching process. The ILR Drum Drive variable speed motor ensures the ILR drum rotates around a horizontal axis fast enough to ensure the reagent solution is mixed through the solids. The solids are agitated only enough to keep the mass moving from feed to outlet. Reagent solution passes through the ILR drum at a controlled rate. The low-density leach allows high levels of fresh reagent to be passed through the solids. Either hydrogen peroxide or oxygen is added to the ILR drum via the hydrogen peroxide delivery valve or via the sparger in the ILR recirculation pipeline.

The flocculant reagent control valve opens to deliver flocculant slurry to the ILR drum discharge hopper from the flocculant mixing tank. The ILR recirculation pump circulates the flocculant slurry to the ILR drum via the solution recirculation control valve for the effective mixing of the ILR solids with the flocculant slurry. Settling of the coarser particles occurs in the ILR drum and the overflowing decant solution from the ILR drum is pumped to the ILR solution cone when the ILR drum position proximity switch stops the ILR drum at a position to allow the draining of the solution into the ILR drum discharge hopper via the ILR drum drain valve.

The caustic supply valve opens to deliver the caustic solution to a determined set point. The accumulated pregnant solution in the ILR solution cone is drained into the ILR drum discharge hopper via the ILR Solution Cone Drain Valve or the ILR Solution Cone Decant Valve. The pregnant leach solution is then pumped to the ILR Pregnant solution tank via the Solution Isolation Valve and ILR Pregnant Solution Isolation Valve.

After the ILR batch process, any residual solids in the ILR solution cone and the solids in the ILR drum are drained into the ILR drum discharge hopper to be emptied into the ILR area sump. The ILR area sump pump transfers the ILR tails to the cyclone feed hopper.

17.6.3 Electrowinning

The ILR electrowinning cell feed pump delivers gold-bearing pregnant solution from the ILR pregnant solution tank to the ILR electrowinning cell. The ILR electrowinning cell feed pump also transfers barren solution to the CIL circuit of the processing plant. The sludge is directed to the sludge settling tank.

17.7 Reagents

17.7.1 Flocculant

Flocculant solution is added to the ILR drum discharge hopper from a flocculant mixing tank supplied by Gekko located at the ILR area. The operation of the flocculant control valve pneumatically operates the ILR flocculant dosing pump to deliver the premixed flocculant solution to the ILR drum discharge hopper for a set duration.

17.7.2 Goldilox

The Goldilox feeder via a screw feeder delivers Goldilox powder which is a leach accelerant into the ILR drum discharge hopper from the Goldilox storage hopper.

17.7.3 Hydrogen Peroxide

Hydrogen Peroxide solution which is a leach oxidant is added to the ILR drum from the hydrogen peroxide tank located at the ILR area. The hydrogen peroxide solution may be used interchangeably with oxygen (leach oxidant) in each ILR batch.

17.7.4 Caustic Soda

The diluted caustic soda solution is distributed from the storage tank in the plant.

17.7.5 Sodium Cyanide

The diluted sodium cyanide solution is distributed from the cyanide storage tank in the plant.

17.8 Plant Process Services

17.8.1 Raw Water

Dedicated raw water pumps transfer raw water from the in-plant raw water pond discharge manifold to the gravity circuit.

17.8.2 Process Water

The process water pipeline installed for the gravity circuit is tied-in to the process water reticulation. The process water will be used for the scalping screen as spray water, and hosing water within the plant area.

17.8.3 Compressed Air

The compressed air for the gravity circuit is supplied by the air compressors located in the plant air compressor facility. The compressed air is passed through air dryers and filter systems before being routed to the ILR Area Instrument Air Receiver.

18. PROJECT INFRASTRUCTURE

18.1 Introduction

The Chirano Gold Mines Limited infrastructure constructed as part of the development and operations is shown in Figure 18-1. Most of the components of the infrastructure were constructed at the start-up of the mine. Descriptions of the primary components of the infrastructure are presented below.

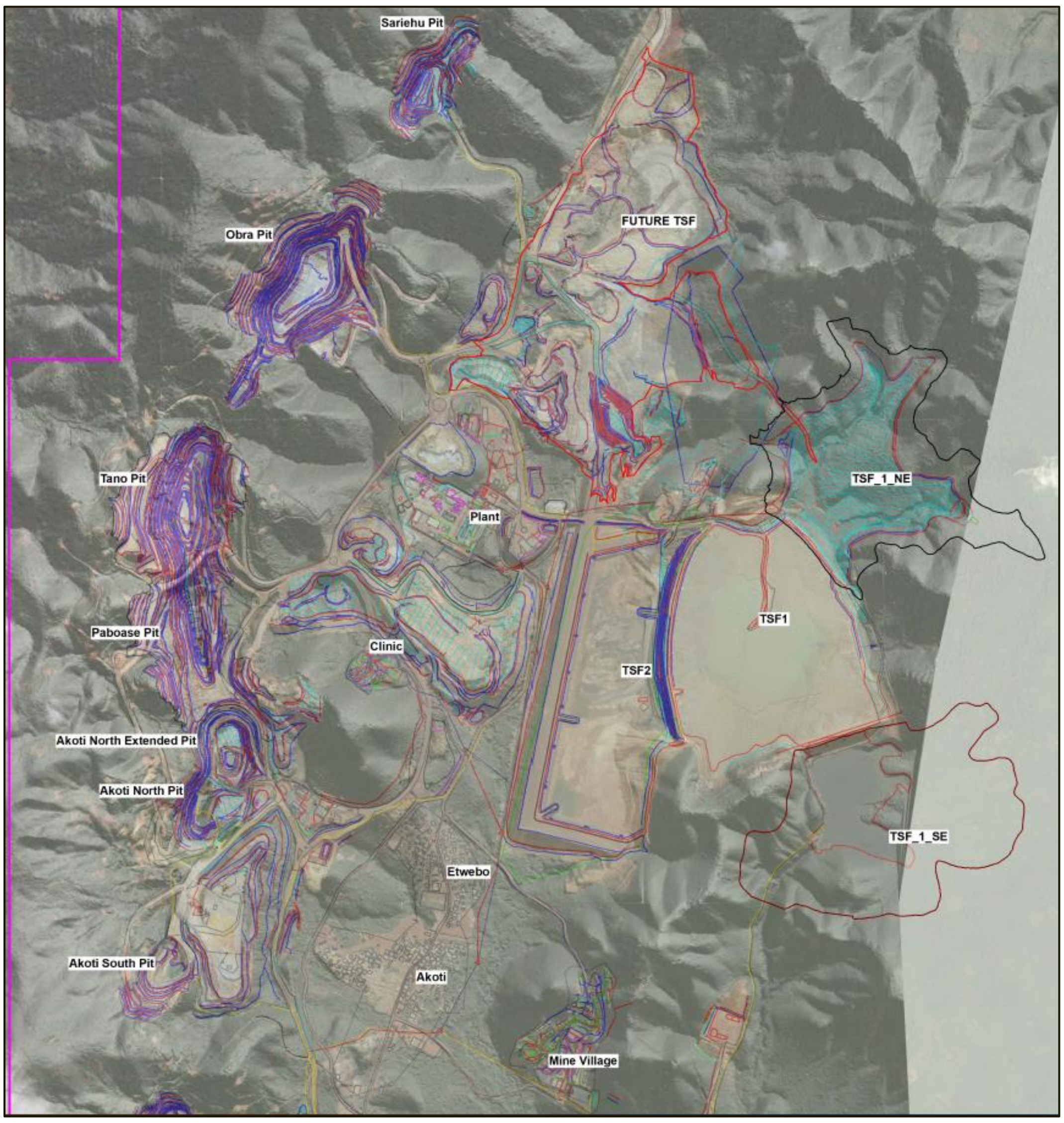


Figure 18-1: Chirano Gold Mine's Infrastructure

18.2 Roads

18.2.1 Main Access to CGML Area

The CGML area can be accessed from two directions by the following existing sealed public roads:

- Kumasi-Bibiani Road to the northeast.
- Kumasi-Obuasi Road to the southeast.

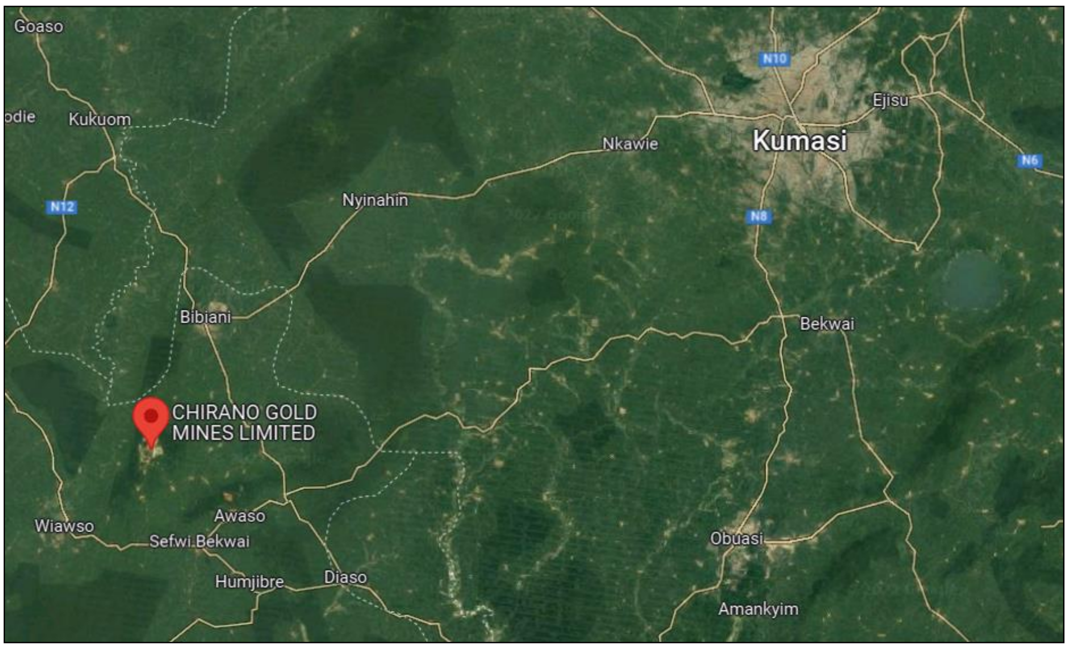


Figure 18-2: Access Roads to CGML

Roads from both directions become gravel roads, in mostly good condition, before reaching the CGML area. Road upgrades and maintenance have been observed of these roads.

The existing gravel road from Ntrentrenso (otherwise known as Bedii Nkwanta) to the CGML has been widened over its entire length of 15km, providing the main means of access to the mine site and associated infrastructure.

This road passes through the villages of Ntrentrenso, Paboase and Etwebo-Akoti. Consultation with the inhabitants of Ntrentrenso and Paboase has resulted in the road alignment remaining as original. Although bypass routes for these two villages were considered and designed, the preference by the inhabitants is not to have the road bypass their villages.

The access road is 6m wide, sheeted with laterite and has 2 metre shoulders. Approximately 16 minor creek crossings and 3 major ones occur along the length of this road, and upstream drains and culverts have been provided on cross slopes and are extended as required.

Access roads within the mining area were constructed to an average width of 6m using in-situ material and waste rock similar to haul roads.

18.2.2 Haul Roads

The haul roads have been designed for the use of Articulated Dump Trucks (“ADT”) and light vehicle traffic associated with the mining operations. The design of the haul roads was constrained by the steep topography within the CGML area, and the maximum allowable haul road grade was fixed at 10%. In addition, the design remained cognisant of the Forest Reserve boundaries and routes have been designed to minimise the disruption to the forested areas and the streams (tributaries of the Suraw River).

The haul roads developed in the CGML area are 30m wide (running width) to safely accommodate haul trucks traffic with a maximum grade of 10 % and have been constructed using in-situ material. The haul roads are maintained on a continuous basis to ensure safe, efficient haulage operations and to minimize fugitive dust emissions.

All roads have been constructed with adequate drainage controls and best management practices to minimize sediment impacts to the local environment. Mine roads are private with restricted access enforced through mine security.

The haul road lengths from the various pits or underground mine portals are given in Table 18-1.

Table 18-1: Length of Haul Roads

Chirano Pits / Portals	Distance (km)
Akoti South	3.1
Akwaaba	6.7
Mamnao Central	3.3
Mamnao South	3.6
Obra	0.7
Sariehu	1.7
Suraw	4.2

Chirano Pits / Portals	Distance (km)
Tano	1.2
Kolua	6.1
Aboduabo	5.2

18.3 Mobile Equipment

Sufficient mobile equipment for the efficient running of the operations is in place comprising of heavy mining equipment, light vehicles, light trucks, cranes, forklifts, buses and generators. Currently 112 light vehicles are allocated to specific users within each department as required.

The current underground heavy mobile equipment fleet is summarised in Table 18-2. Further to these equipment, 13 ancillary mobile equipment also forms part of the underground fleet and comprise of Agi trucks, personnel carriers, charge trucks, compactor, shotcrete machines, scaling machine, backhoe loader, telehandler, rescue fire truck and a forklift.

Table 18-2: Underground Heavy Mobile Equipment

Type	Quantity	Manufacturer
Development Jumbo's	9	Sandvik
Production Drill Rigs	6	Sandvik
ITH Drills	3	Cubex
Loaders	10	Sandvik (3) CAT (7)
IT Loaders	7	Volvo
Graders	3	CAT
ADT’s	25	Volvo

The replacement strategy followed by CGML on their ADT’s includes a transfer of the ADT from the underground mining operations to the surface mining operations when the said ADT becomes no longer suitable or effective for underground use.

The heavy mining equipment utilised for the open pit mining operations, performed by the surface mining team, are maintained by CGML employees. The current CGML surface heavy mining equipment is summarised in Table 18-3.

Table 18-3: Surface Heavy Mobile Equipment

Type	Quantity	Manufacturer
Excavators	4	CAT
Loaders	2	CAT
Graders	2	CAT
Dozers	3	CAT
Compactor	2	CAT
ADT's	5	Volvo
Loaders (Plant)	6	CAT (5) Volvo (1)
Bobcat (Plant)	1	CAT
Cranes	5	Terex (3) Grove (1) Zoomlion (1)
Dozer (Exploration)	1	CAT

The surface ancillary mobile equipment is summarised in Table 18-5.

Table 18-4: Surface Ancillary Mobile Equipment

Type	Quantity	Manufacturer
Fuel Bowser	1	Volvo
Lighting Plant	10	Real Mining (8) Atlas Copco (2)
Service Truck	1	Volvo
Hiab Truck	1	Volvo
Telehandler	1	Manitou
Forklift	1	CAT
Loader	1	CAT
Welding Genset	4	Lincoln (2) Miller (2)
Compressor	5	Atlas Copco (3) Chicago Compressor (2)
Concrete Mixer	1	Davino

Type	Quantity	Manufacturer
Compactor	1	Bomag
Utilift	2	Ford (1) Manitou (1)
Fire Tender	1	Volvo
Backhoe Loader	2	Volvo (1) SDLG (1)

18.4 Ancillary Facilities

Ancillary facilities at the CGML include equipment refuelling stations, maintenance workshops, explosives magazine, mine services area, utilities, staff accommodations, and storm water control facilities. The mine services area is located immediately north of the plant site and includes the administration office, heavy mining equipment (HME) workshop, light vehicle workshop, wash bays, mine water services, refuelling stations, and mine control facilities.

18.4.1 Mining Equipment Workshops

There are 4 different workshops at the CGML, each dedicated for a specific fleet of mobile machinery. These workshops are:

- Surface operations heavy mining equipment (HME) workshop.
- Paboase heavy mining underground equipment (HMUE) workshop.
- Light vehicles workshop.
- Open pit mining contractor's (Maxmass) workshop.

18.4.1.1 Surface Operations HME Workshop

The surface HME is a clad steel framed building with three workshop bays to suit the nominated surface heavy mining equipment. In line with best practice, the workshop area has a concrete floor sloping to the entry side with drains collecting directed runoff which is diverted into an oil-interceptor.

The facilities at the workshop include but are not limited to the following: offices, ablutions, tyre bay, wash bay, welders' workshop, stores and laydown yard.

The heavy vehicle wash bay has been constructed of a heavily reinforced concrete slab, kerbed and contoured to drain to a sump. Steel access platforms have also been constructed on either side of the wash bay. The wash bay has an oil-interceptor fitted with an oil skimmer and silt trap with provision for clean-out. Generated waste oil is regularly collected by EPA certified contractors.

Figure 18-3: Surface HME Workshop

18.4.1.2 Paboase HMUE Workshop

The Paboase HMUE workshop is equipped with modern facilities and is sited at the Paboase underground area, to the south-west of the plant site. The workshop is a clad steel framed building with 5 workshop bays and 2 lubrication bays to suit the nominated underground heavy mining equipment. The workshop area has a concrete floor with sloping aprons to entry and exit sides with drains collecting directed runoff and diverted into oil-interceptor prior to discharge.

The facilities at the workshop include but are not limited to the following: offices, ablutions, tyre bay, welders' workshop, electrical workshop, repair bay, drill bit sharpening workshop, stores and a laydown yard. Surface operations, technical services and exploration personnel have offices at Paboase underground area. A lamp room and laundry are also situated at the Paboase underground area.

Various OEM and contractors such as Sandvik, Mantrac, HGS (hydraulic hoses), amongst others, have stores at the Paboase underground area to support the mine in maintenance and repair parts.

Figure 18-4: HMUE Workshop at Paboase Underground

18.4.1.3 Light Vehicle Workshop

The light vehicle workshop site is located to the north of the plant site. The workshop is a brick and clad steel framed building with 4 workshop bays to suit the nominated light vehicles. The workshop area has a concrete floor sloping to the entry side with drains collecting directed runoff which is diverted into an oil-interceptor prior to discharge.

The facilities at the workshop include but are not limited to the following: offices, ablutions, wash bay, and stores.

Figure 18-5: Light Vehicle Workshop

18.4.1.4 Open Pit Mining Contractor Workshop

MAXMASS, the mining contractor, has a workshop site located to the west of the plant site. The workshop has a clad steel framed roof supported by containerised offices. The workshop area has a concrete floor sloping to the entry side with drains collecting directed runoff.

The facilities at the workshop include but are not limited to the following: offices, ablutions, wash bay, welding bay and stores. These facilities are owned by CGML.

Figure 18-6: Mining Contractor's Workshop

18.4.2 Accommodation

Residential accommodation is provided at CGML in three main areas:

- John Seaward Village (Mine Village) which covers approximately 20.5ha.
- Exploration Camp which covers approximately 3.5ha.
- Paboase Camp which covers approximately 3ha.

Commissary, canteen and bar facilities are provided at the Mine Village and Paboase Camp. There are also a swimming pool, gymnasium and tennis court at the Mine Village. Table 18-5, Table 18-6 and Table 18-7 summarises the number of units and rooms available at each of the accommodation areas.

Table 18-5: John Seaward Village (Mine Village) Accommodation

Unit Type	No. of Units	No. of Rooms
2 Bedroom Apartment	10	20
3 Bedroom Apartment	2	6
3 Bedroom Apartment (guests' accommodation)	3	9
Duplex (D1A, D1B, D2A, D2B, D3A, D3B, D4A, D4B, D5A, D5B)	5	10
Duplex (DU1 – DU4)	2	4
Duplex (D1A – DB4)	2	8
Duplex (DE1 – DE4)	1	4
Duplex (D1 – D7)	3	7
Double Room	12	96
Single Man Unit	18	118
20-Man Housing Unit	1	20
Total	**59**	**302**

Table 18-6: Exploration Camp Accommodation

Unit Type	No. of Units	No. of Rooms
4 Bedroom Apartment	2	8
Shared Housing	12	72
Total	**14**	**80**

Table 18-7: Paboase Camp Accommodation

Unit Type	No. of Units	No. of Rooms
8-Man Housing Unit (Shared Housing)	5	40
Single Man Unit (en suite)	3	48
VIP (en suite)	1	10
Total	**9**	**98**

Figure 18-7: Mine Village

18.4.3 Potable Water

There are six potable water and sewage treatment plants on site. These facilities are found at the mine village, processing plant, exploration camp, Paboase camp, Akwaaba and Paboase underground area.

Potable water is used for drinking, ablutions, laboratory, buildings and safety showers, and is sourced from nine boreholes. The borehole water is treated by chlorination and ultraviolet sterilization before being distributed to the various areas. Nimaqua 6600 advanced water purification systems are used for the potable water treatment.

Grey water and sewage generated on the mine from the urinal, water closets, kitchens and laundry report at the sewage treatment plants for treatment. Wastewater and sewerage from the mine are treated using Utileco's BIOCAT™ ST compact sewage treatment plants. These technologically advanced systems use the Eco-Bio™ process to rapidly decontaminate sewage water to meet compliance with European Union and EPA discharge guidelines. The treated effluent is discharged into rock fill soak-away.

18.4.4 Medical Centre – Clinic

The medical centre (clinic) facility provides health care services to the workforce, twenty-four hours daily. The facility also attends to emergency medical cases from the community. The facility is located at the Exploration Camp and has been equipped with medical equipment, a laboratory and radiology unit, as well as with two ambulances.

18.4.5 General and Plant Administration

A general administration building of approximately 100m² and a plant administration building of approximately 160m² have been constructed at the plant site area. Both structures have been provided with potable water, electricity with an uninterruptible power supply and amenities connected to a sewage treatment plant. Two core sheds are situated opposite the mine administration building.

Figure 18-8: Mine Administration Building

Figure 18-9: Core Shed

18.4.6 Plant Warehouse and Workshop

The plant warehouse /workshop building is a 6.5 metres high fully clad steel framed building with an approximate area of 386m^2, plus an office mezzanine of approximately 64m^2. The workshop is equipped with welding outlets, tools, compressed air and work benches. The warehouse has an outdoor fenced enclosure for a lay down storage area of approximately 2,000m^2.

18.4.7 Fuel Storage and Fuelling Stations

Zen Petroleum Limited has been contracted by CGML to operate the fuel farms and to supply diesel fuel for mining equipment and machinery, fleet of light vehicles as well as the gensets that provide back-up power in times of power outages.

At the main fuel farm, situated at the mine services area, there are two above ground fuel storage tanks: 15KT01 with capacity of 500,000 litres and 15TK02 with capacity of 50,000 litres. The fuel farm also has two office rooms, a store, a place of convenience, and a 45,000 litres capacity raw water tank connected to a hydrant, firefighting gun, and two drums of Ansulite fire foam. The two bulk storage tanks are installed within a bunded area with a capacity to contain 110% of the capacities of the two tanks.

There are also two satellite fuel farms at Akwaaba and the Paboase underground area with 61,900 litres and 61,000 litres capacities respectively. All tanks have been installed within a containment area to prevent ground spillage in the event of a tank leak.

Figure 18-10: Fuel Farm at the Mine Services Area

18.4.8 Explosive Magazine

Explosives are strategic items that are monitored by the national security apparatus from the source to the final destination and use. Explosives used by the mine are sourced from the Maxam main depot at Tarkwa.

An explosives magazine has been constructed on area of approximately 1.3Ha. The magazine area is located away from the plant site, and approximately 1km north of the mine services area. The site is fenced, bunded, well-lit with 24-hour security and operated in accordance with Minerals and Mining (Explosives) Regulations, 2012, (LI 2177).

The supply and preparation of explosives / emulsion required is contracted to MAXAM, a reputable explosives manufacturer and supplier.

18.5 Power Supply and Distribution

CGML utilises power supplied primarily by a gas turbine power plant built on site, which is owned and operated by Genser Energy, through a power sales and purchase agreement. The turbines utilise natural gas as a fuel source, which is supplied through a pipeline from Atuabo gas plant 272km from the mine site.

The Electricity Corporation of Ghana supplies power through the national grid. The mine is also connected to the national grid through an onsite substation, which acts as a back-up power supply. The mine further has an 18MW diesel power plant on site which serves as the second back-up power supply for the process plant.

CGML also has a further six diesel powered standby generators, situated at the Paboase underground area. These six generators are grouped into three sets with two generators per set and are rated 2250 kVA, 2135 kVA and 2080kVA respectively. The back-up power is required to ensure continuity of processing and underground mining operations without interruptions as far as reasonably practicable.

The largest users of energy are the crushing and grinding circuit, followed closely by processing and underground. Smaller consumers include accommodation and office areas. CGML has a max power demand of approximately 19.6MW and an average monthly consumption of 12.8GWh.

Figure 18-11: Gensets at the Processing Plant

18.6 Fire Protection and Suppression

CGML concentrates on prevention measures whilst maintaining a response capability in managing fires and explosives on site. Fire prevention measures include regular maintenance of equipment (e.g. hydraulic hose replacement, cleaning of engines, electrical fault finding), housekeeping (e.g. removal of Class A fire hazards) and education of employees in fire awareness, prevention and response. Firefighting equipment such as fire tenders, raw water tanks connected to fire hydrants and fire extinguishers are provided on site to deal with fire outbreaks. There are also early fire detection systems installed in offices and accommodation units to pre-empt fire outbreaks.

18.7 Communication

Communication on site consists of several media options:

- Internal phones services include an IP telephony system in all office and a UHF handheld, and vehicle-mounted 2-way radios are used for communication between personnel of various departments particularly personnel in production.
- Mobile communication services are provided by MTN and Vodafone for voice and data. There is also ISDN lines for fixed telephone services. In addition to that, there are two emergency satellite phones available for use in the event of a total GSM outage by the two service providers.
- Dedicated internet services are through 45mbps bandwidth primary service from Vodafone and 10mbps backup from MTN. There is also an 8MB MPLS/IPLC for all corporate traffic through Vodafone.

18.8 Underground Infrastructure

18.8.1 Portals

The main portals for the underground mines are similar. The mine's portals are necessary to protect miners and others accessing the mines as well as provide robust access points to the underground mines. The portals are serving as the primary access ramp and travel way for personnel and equipment and doubling as the fresh air intake for the mines.

At the portals, there are a security control point and a lamp room for selected personnel. A tag board can also be found at the portals where underground personnel are required to lock their access tags as a measure to indicate when persons are still underground.

18.8.2 Mine Dewatering

To make judicious use of underground water, each of the underground mines has surface water storage facilities (WSF). Water obtained from the underground dewatering is pumped into the WSF for sediment settlement and then pumped from the WSF to header tanks, from where it is gravity fed back down the mine for activities such as drilling, and dust suppression. Excess water is either pumped to the plant to supplement process water requirements or to the Sariehu Pit Lake for storage.

Pump stations, working in sequence, have been established for dewatering the underground mines. The pump stations are equipped with either two or three 110kW Mono WT 106 challenger pump sets. To provide surge capacity and ensure an efficient dewatering system, modified level extended sumps have been planned for every 100m of vertical development and is equipped with either one or two 55kW Mono WT 103 challenger pump sets. Flygt or vertical spindle pumps are used to feed the Mono pumps from the various on-level sumps. Figure 18-12 indicates the mine dewatering single line flow diagram of Akwaaba Mine, which is like the other underground mines and Table 18-8 the designed and installed specifications of the mono pumps.

The design of the ore processing plant enables recycling of large amount of the water from the Tailings Storage Facility (TSF) for its re-use and are regularly supplemented with water from the Sariehu Pit Lake. The Pit Lake is replenished mostly from rainfall and run-off from its catchment area.

Table 18-8: Mono Pumps Specifications

Pump	Manufacturer's Specs		Installed Specs	
	Head (m)	Flow Rate (l/s)	Head (m)	Flow Rate (l/s)
103 Mono	180	20	150	15
106 Mono	360	20	225	12.5

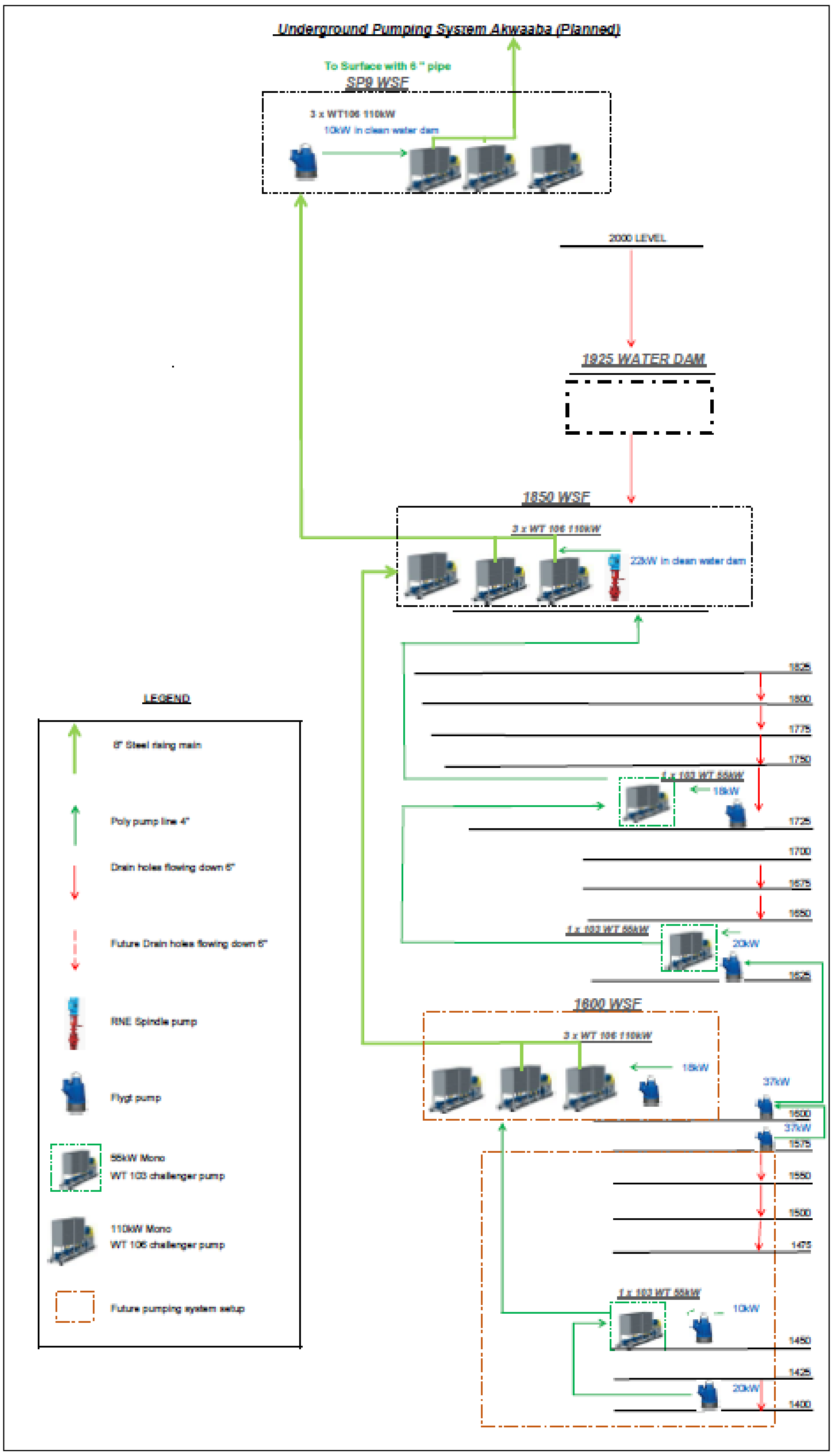


Figure 18-12: Underground Pumping System at Akwaaba

18.8.3 Electrical Reticulation

Electrical power is supplied to the underground mines through the portals from an 11kV overhead power line. At the portals, power is taken off for the main ventilation fans (1000V) and the communication hut (240V). The 11kV HV Cables are run through service holes to the underground transformers. The underground transformers will step down the voltage to 1000V for use by the underground equipment. The 1000V HV cables are also run through the service holes to the various levels.

18.8.4 Compressed Air

Compressed air for underground use is supplied by Atlas Copco GA200 compressors which are installed close to the portal of each mine. These compressors are delivering compressed air at a 36m^3/min (capacity) at a nominal pressure of 9.5 bar(e).

18.8.5 Refuge Chambers

CGML use mobile refuge chambers supplied by MineARC. The refuge chamber locations vary depending on the position of development faces. The primary reason for refuge chambers is to provide refuge in the event of an emergency underground. Various sizes of the refuge chambers are available at the mine and are selected based on the number of employees working in that specific area. Table 18-9 indicates the current underground refuge chambers as well as their location and capacity.

Each refuge chamber is equipped with the following items:

- Rear escape hatch.
- Clear set of user instructions.
- Fresh bottled water.
- Gas detection tubes or monitor.
- O2 and CO2 scrubbers.
- Filtered and silenced mine compressed air.
- Medical grade oxygen cylinders.
- Oxygen candle.
- Battery backup power for 36 hours.
- 2-way radio units always tuned to channel 1.

Table 18-9: Current U/G Refuge Chambers and Location

Mine	Location	Capacity
Akoti	2150 INCL	4-Man
	SP 6	12-Man
Paboase	2025 LAC	4-Man
Tano	2125 SER DRIV	4-Man
	1945 DECL SP	12-Man
Akwaaba	1525 DD CUBBY	12-Man
	1500 E/WAY	12-Man
	1450 DECL SP	12-Man
Suraw	2050 DECL SP	30-Man
	2025 SAFETY CUBBY	4-Man
	1965 E/WAY	12-Man
Obra	2175 DD CUBBY	4-Man
	2150 DD CUBBY	12-Man
	2110 CUBBY	4-Man
	2080 DECL SP	12-Man

18.9 Mine Ventilation

18.9.1 Surface (Primary) Ventilation

Primary ventilation is the supply of bulk air through larger excavations such as portals to ventilate all sections of the decline till the last through ventilation (LTV). CGML utilizes an exhaust ventilation system where used and contaminated air from the underground workings is exhausted through a ventilation raise to surface. The contaminated air is exhausted mechanically using two axial flow fans connected in parallel. Table 18-10 indicates the current installed primary ventilation fans and their specifications.

The primary fans are installed with indicator lights. These indicator lights are positioned at the various portals. A green light indicates the fan is running and a red light that the fan is off. All underground personnel have been educated on the functions of the indicator lights.

Table 18-10: Current Installed Primary Ventilation Fans

Mine	Make	Size (kW)	Installed Quantity	Duty Quantity	Maximum Pressure (kPa)	Maximum Quantity (m^3/s)
Paboase	Swedvent	315	2	2	3	100
Akoti	Swedvent	315	2	1	3	100
Suraw	Epiroc	315	2	2	3	100
Akwaaba	Howden	550	2	1	2	360
Tano	Swedvent	315	2	1	3	100
Obra	Epiroc	315	2	1	3	100

18.9.2 Underground (Secondary) Ventilation

The secondary fan depends on the primary fans supplying air from surface via the decline system. These fans mainly supply air to the drives and the stopes which are in operation. The secondary fans are connected to ventilation ducts which convey the fresh air to the workings.

Various secondary fan sizes are available at CGML, i.e. 2x110kW, 2x90kW, 2x55kW, 45kW, 37kW, 15kW and 4kW fans. For development and stoping, the 2x110kW, 2x90kW and 2x55kW are used. The other fans are used for non-diesel equipment activities such as diamond drilling and ITH drilling.

18.10 Underground Communications

Communication in each of the underground mines is provided via handheld radios or fixed radios installed in both light and heavy-duty equipment.

18.11 Engineering and Maintenance Labour

The engineering and maintenance department comprise of the following sub-departments:

- Fixed Plant.
- Project and Construction.
- HME.
- HMUE.
- Transport.

Figure 18-13 indicates the organisational chart for the engineering and maintenance management and superintendent team. Most of the employees work on a 2:1 roster (4 weeks on and 2 weeks off or 6 weeks on and 3 weeks off).

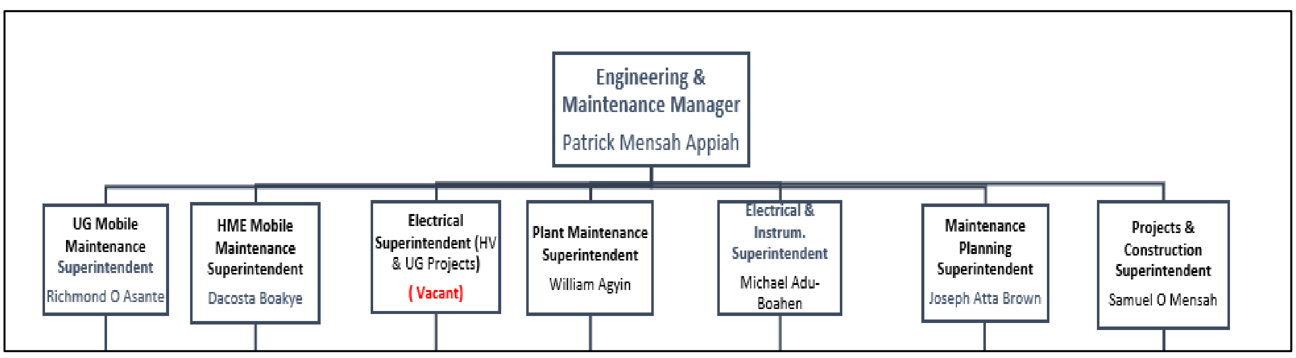


Figure 18-13: Organisational Chart, Engineering and Maintenance

18.12 Planned Maintenance

CGML' planned maintenance system is well established and in line with what is expected from a mine of this size. CGML uses Oracle's JD Edwards software for their planned maintenance. Compliance to the planned maintenance is high and random internal quality audits are performed by the QC/QA team. Maintenance analyses are also performed and reported monthly. The 2023 average availability for excavators and ADTs were 56% and 65% against a budget of 80% and 80% respectively.

18.13 Tailings Storage Facility

Knight Piesold Consulting produced a memorandum on 11 November 2023 to Asante Gold Corporation on which is reported below.

18.13.1 Introduction

The Mine operates the South Extension of the Tailings Storage Facility 1 (herein referred to as TSF 1 SE). The TSF 1 SE was commissioned in February 2022 and receives tailings from the Mine's conventional Carbon-In-Leach (CIL) operation. The facility is located approximately 2.0km Southeast of the Process Plant.

18.13.2 Facility Description

The TSF 1 SE is a downstream raised facility. It is enclosed by three confining embankments and natural high grounds. These are the:

- TSF 1 WSFE, as the northern boundary / internal embankment for the impoundment.
- South Embankment (SE).
- Southeast Embankment (SEE).

The TSF 1 SE embankments were constructed, using zoned earth fill materials comprising an upstream low permeable Zone A layer, a Zone J transition layer and a downstream structural Zone C layer and rip rap on the upstream slope face of Zone A embankments.

The facility comprises two external embankments namely South and Southeast/Southeast extension. Embankments and one internal embankment WSF/TSF Divide Embankment which divides the South. Extension from TSF 1. Three internal saddles embankments were also constructed at the east basin extension valleys. The facility has been constructed to its ultimate permitted elevation of 2312.0 mRL.

The absolute height of the embankments is presented in Table 18-11.

Table 18-11: TSF 1 SE Embankment Heights

Embankment	Crest Elevation (mRL)	Height (m)
WSF Embankment	2312.0	31
South Embankment	2312.0	38
Southeast Embankment	2312.0	22

18.13.3 Available Tailings Storage Capacity and Life of Mine Throughputs

The approximate tailings storage capacity of TSF 1 SE is 13.8 million tonnes (Mt), as presented in the tailings facility storage capacity curve in Figure 18-14.

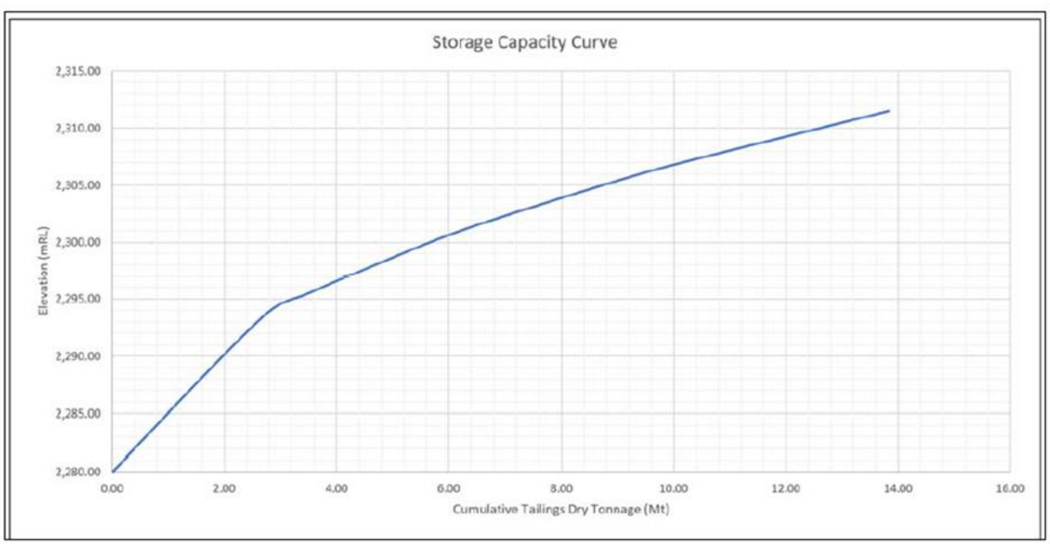


Figure 18-14: TSF 1 SE Storage Capacity Curve

The tailings solids (solid waste) accumulated into the TSF 1 SE from February 2022 to September 2023 is estimated at approximately 5.4 million tonnes (Mt). Thus, the remaining storage capacity is 8.4 Mt.

Based on the Life of Mine (LoM) throughputs as projected by the Mine and presented in Table 18-12, the facility can provide tailings storage for an additional 25 months, from October 2023, or approximately until October 2025.

Table 18-12: LoM Throughputs Year 2024-2025

Year	Annual Throughput (t)	Cumulative LoM (t)
Y-2024	4,002,519	4,002,519
Y-2025	4,002,517	8,005036

Beyond this period, a new facility will be required to store the remaining 11.5Mt LoM tailings presented in Table 18-13. The North waste rock dump area located north of the process plant has been earmarked for the new facility.

Table 18-13: LoM Throughputs Beyond Year 2025

Year	Annual Throughput (t)	Cumulative LoM (t)
Y-2026	4,00,518	4,002,518
Y-2027	4,00,517	8,005,035
Y-2028	4,00,517	12,007,552
Y-2029	4,00,518	16,010,070
Y-2030	4,00,518	20,012,588
Y-2031	4,00,517	24,015,106
Y-2032	2,858,401	26,873,507

CGML have engaged Knight Piésold Ghana (KP) for the design of additional tailings storage facilities. A site location study was completed by KP in 2023. The study considered the options illustrated in Figure 18-15 below.

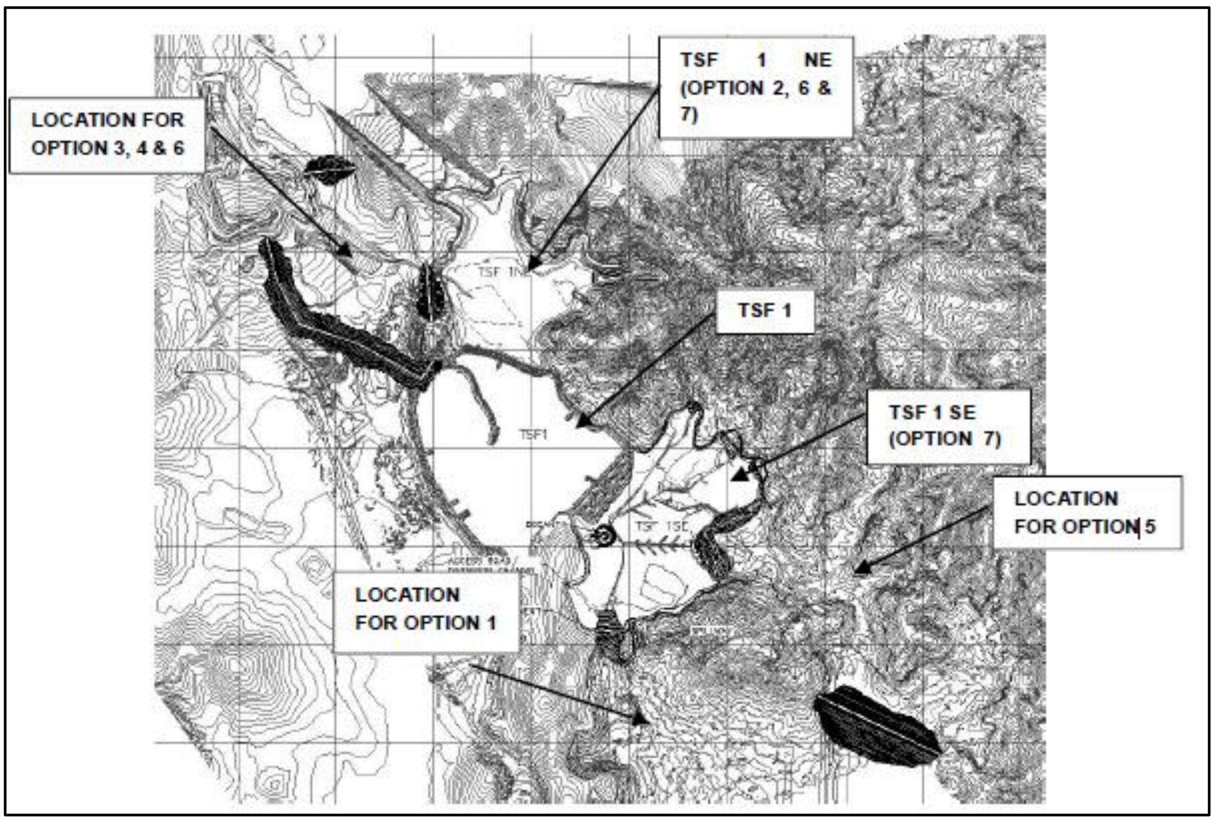


Figure 18-15: Additional Tailings Facility Location Options

Conceptual designs were developed for each option. The following parameters were considered in the selection process:

- ESG
  - Impact on surface water.
  - Impact on groundwater.
  - Biodiversity loss.
  - Impacts on soils, landforms, land use.
  - Permitting.
  - Visual impacts.
  - Proximity of communities to TSF.
  - Alternative land acquisition.
  - Community livelihoods (farmlands, businesses etc.).
  - Resettlement effort
  - Post Resettlement impact (Social ties, livelihoods restoration etc.)
  - Compliance Requirements (GISTM).
- Technical
  - Storage Efficiency.
  - Storage Capacity.
  - Water management: Length of diversion drains and upstream catchment area.
  - Availability of Construction materials.
  - Maximum height of tailings dam.
  - Potential for expansion.

    - Elevation difference between plant and crest of TSF.
    - Resource Impact.
    - Waste Rock Management.
- Commercial
    - Basin preparation cost.
    - Fill quantities placement cost.
    - Cost of river diversion.
    - Infrastructure relocation cost.
    - Cost of resettlement.
    - TSF raise cost.
    - Cost of rockfill transportation.

Option 3, which considers the development of the new TSF at the North waste dump area to abut the TSF1 and TSF 1 NE, came out as the preferred alternative. CGML re currently in the process of completing more detailed design of this facility.

19. MARKET STUDIES AND CONTRACTS

19.1 Introduction

The primary commodity produced by CGML at its operations is gold. Table 19-1 shows the budgeted LoM gold production from 2024 to 2028.

Table 19-1: LoM Gold Production

Year	2024	2025	2026	2027	2028	Total LoM
Gold Produced (Oz)	164 502	177 848	186 688	204 206	234 303	967 547

19.2 Marketing Contracts

CGML entered a refining contract with MKS Pamp SA, on 6 January 2013. MKS is a Swiss based company for the refining, sampling and assaying for gold. Terms of the contract are confidential and are not reported in this document for confidentiality reasons.

The company also entered a refining contract with Istanbul Altin Rafinerisi on 11 October 2023. Istanbul Altin Rafinerisi is a Turkey based company for the refining, sampling and assaying for gold.

Terms of the contract are confidential and are not reported in this document for confidentiality reasons.

19.3 Pricing

Resource estimates were undertaken as a gold price of US$1,950/oz. Reserves were calculated at a gold price of US$1,700/oz. As at the date of this report the 3-year trailing average is US$1,730/oz. In 2023 the average realised price for gold sales was US$1,934/oz.

Table 19-2: Consensus gold price prediction by major banks (Source: Axi.com)

Source / Year	2024	2025	2030	2040
Bloomberg	$1,913.63 - $2,224.22	$1,709.47 - $2,727.94	*	*
The World Bank	$1,950	*	*	*
JP Morgan Chase & Co	$2,175	*	*	*
Goldman Sachs	$2,050	$1,970 - $2,050	*	*
ING	$2,031	*	*	*

** Price prediction not provided from this source for this year*

CGML have a assumed a flat gold price of US$1,900/oz in the LoM financial model.

19.4 Product Specification

Product specifications is defined in the refining contract.

19.5 Shipping Storage and Distribution

MKS and IGR have a “Door to Door” contract with Brinks Global Services International Inc for the transport of doré to the MKS refinery in Switzerland.

19.6 QP Opinion on Gold Price Applied

The realised gold prices as discussed in Section 19.3 is considered by the QP to be appropriate for economic evaluation of the project, considering the average gold price in 2023 and the predictions by the major banks tabled above.

20. ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL COMMUNITY IMPACT

20.1 Introduction

Chirano poured its first gold in 2005 after obtaining permits, licences and certificates from relevant regulators, legislative bodies and governmental agencies and signing a Social Responsibility Agreement ("SRA") in 2004 with catchment communities and traditional authorities represented by the Community Consultative Committee. CGML has subsequently conducted Environmental Impacts Assessments ("EIAs") for project expansions and submitted Environmental Management Plans ("EMPs") triennially to the Environmental Protection Agency ("EPA") in compliance with the requirements of the Environmental Impacts Assessments regulations, 1999 (LI 1652). The mine complies with the requirements of Minerals and Mining (Health, Safety and Technical) regulations (LI 2182) by acquiring mining operating permits annually through submissions of updated Mine operating plans ("MOP"). CGML also complies with other permit requirements from relevant regulatory bodies and carries out environmental and social monitoring within their operations and catchment communities to ensure good environmental stewardship and community sustainability. This chapter summarises CGML environmental management practices including permitting and environmental and social monitoring programmes.

20.2 Ghanaian Policy, Legal and Regulatory Framework

Ghana has well-established mining-related policies, laws, guidelines, and regulations to promote and regulate the extraction of minerals in the country. These policies, regulations and guidelines are to ensure environmental and social sustainability, effective and safe extraction of minerals and to guide social issues such as labour and employment, compensations, resettlement etc. Those policies, regulations and guidelines applicable to CGML operations are tabulated in Table 20-1.

Table 20-1: Legal Framework of Mining-Related Projects in Ghana

Category	Title	
Constitution	Constitution of the Republic of Ghana, 1992	
Policies	Minerals and Mining Policy, 2014	Ghana Climate Change Policy, 2013
	National Environmental Policy, 2012	Ghana Forest and Wildlife Policy, 2012
	National Water Policy, 2007	Buffer Zone Policy, 2013
	National Land Policy, 1999	
Acts	Environmental Protection Agency, 1994 (Act 490)	Local Governance Act, 2016 (Act 936)
	Minerals and Mining Act, 2006 (Act 703)	Minerals Development Fund Act, 2016 (Act 912)
	Public Health Act, 2012 (Act 851)	Minerals Income Investment Fund Act, 2018 (Act 978)
	Water Resources Commission Act, 1996 (Act 522)	Forestry Commission Act, 1999 (Act 571)
Regulations	Environmental Assessment Regulations, 1999 (LI 1652)	Minerals and Mining (General) Regulations, 2012 (LI 2173)
	Fees and Charges (Amendment) Instrument, 2019 (LI 2386)	Minerals and Mining (Support Services) Regulations, 2012 (LI 2174)
	Minerals and Mining (Local Content and Local Participation) Regulations, 2020 (LI 2431)	Minerals and Mining (Licensing) Regulations, 2012 (LI 2176)
	Minerals and Mining (Mineral Operations-Tracking of Earth Moving and Mining Equipment) Regulations 2020 (LI 2404)	Minerals and Mining (Explosives) Regulations, 2012 (LI 2177)
	Minerals and Mining (Local Content and Local Participation) Regulations, 2020 (LI 2431)	Mineral (Royalties) Regulations, 1987 (LI 1349)
	Minerals and Mining (Health, Safety and Technical) Regulations, 2012 (LI 2182)	Wildlife Conservation (Amendment) Regulations, 1989 (LI 1452)
	Minerals and Mining (Compensation and Resettlement) Regulations, 2012 (LI 2175)	Water Use Regulations, 2001 (LI 1692)
Standards and Guidelines	Ghana Standard for Environment and Health Protection - Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236: 2019)	Ghana Standard for Environmental Protection - Requirements for Effluent Discharge (GS 1212: 2019)
	Ghana Standard for Health Protection - Requirements for Ambient Noise Control (GS 1222: 2018)	Ghana Standard for Water Quality - Specification for Drinking Water (GS 175: 2017)
	Environmental Guidelines for Mining in Production Forests in Ghana (2001)	Mining and Environmental Guidelines, 1994
	Global Industry Standard on Tailings Management (GISTM), 2020	

(Source: Geosystems Consulting, 2022)

20.3 Project Permitting Process in Ghana

Permitting and Permit approvals in Mining are under the coordination of the Minerals Commission ("MinCom") with the support of the EPA, the Water Resources Commission ("WRC") and the Forestry Commission ("FC") (for companies operating with production forest reserves). The generalised process is as follows:

- Project Registration/Notification with the Approving Agent by the proponent.
- Initial Project Assessment/Review by respective agency.
- Environmental-related impacts review and advice by the EPA.
- Health and Safety and Technical reviews by the Inspectorate Division of MinCom.
- Forestry-related impacts and advice by the FC.
- Water Rights approval by the WRC.
- Mine Closure and relinquishment/surrendering of Title Rights to MinCom in collaboration with the EPA and in consultation with the local government and the local traditional authorities.

20.3.1 Chirano Mine Permitting Process

Chirano operates with four key permits aside the mining lease. These are the Mine Operating Permit, the Environmental Permit, the Water Use Permit and the Forest Entry Permit. Other permits that are specific to project expansion or special/critical projects also exist. The Tailings Storage Facilities, since 2014 have been given special environmental permits from the EPA. The current operational TSF, TSF 1 South Extension, was permitted in 2021. Other areas of the project that require environmental permitting are the underground complex for which an Environmental Impacts Assessment is ongoing.

Water Use permit has three components which has been increased to four in 2023, these are the water abstraction for domestic use, water abstraction for production water abstraction through pit dewatering and (recently added) water abstraction from the TSF sumps. Permit for explosive storage and use have also been obtained from the Minerals Commission. Currently, all permits are up to date. Some permits have not yet been obtained even though payments have been made to the relevant regulator. Table 20-2 shows the CGML permits register.

The Environment Health and Community Relations department is responsible for permit acquisition for the mine. The department initiates and manages the permitting process through preparation of EIS, EMPs, applications, etc and submitting same to the relevant permitting agencies. The MOP is renewed annually, Water Use Permits triennially, while the Environmental Permits are renewed upon permit expiration. However, the mine is required to revise and submit an EMP triennially to the EPA. Permits for the acquisition, onsite storage and use of explosives is handled by the explosive's supplier, Maxam. An Environmental Permit was issued in 2015 to CGML for prospecting and underground exploration activity on its Chirano Concession. CGML was granted another Environmental Permit in 2015 to continue operating the existing Fuel Depot located at Chirano mine site which was previously operated by Shell Ghana Limited.

Chirano remains in full compliance with the principles of the Cyanide Management Code and standards of practice and was recertified in November 2016 by the International Cyanide Management Institute ("ICMI") following initial certification in August 2014. CGML was recertified as ICMC compliant on 3 April 2020 for three years following the Code Recertification Audit in November 2019. Cyanide-related facilities are under constant surveillance to ensure protection of workers, the community, and the environment, including primary environmental receptors of air, water (surface water and groundwater), soil, flora and fauna in line with ICMC certification obligations. The Ghana National Fire Service issued the yearly-renewable Fire Service Certificate, and this is renewed when it expires.

Table 20-2: Chirano Permits Register as at November 2023

Permit Type	Status	Issuing Body	Issue Date	Expiry Date	Remarks/Progress Report
Environmental Certificates	In place	Environmental Protection Agency	24-Jun-23	23-Jan-26	EMP for the mine submitted to EPA
Mining Lease	In Place	Ministry of Lands & Natural Resources	22-Dec-19	22-Dec-34	The lease is for a 15-year period
Mining Permit (Open Pit & UG)	In Place	Minerals Commission	17-Feb-23	31-Dec-23	Renewable annually
Water Use Permit (Groundwater Abstraction)	In Place	Water Resources Commission	01-Jan-23	31-Dec-25	Renewable every 3 years
Water Use Permit (Surface Abstraction for Processing)	In Place	Water Resources Commission	01-Jan-23	31-Dec-25	Renewable every 3 years
Water Use Permit (Pit Dewatering)	In Place	Water Resources Commission	01-Jan-23	31-Dec-25	Renewable every 3 years

Permit Type	Status	Issuing Body	Issue Date	Expiry Date	Remarks/Progress Report
Water Use Permit (TSF Sumps abstraction)	In Place	Water Resources Commission	01-Jan-23	31- Dec-25	Renewable every 3 years
Forest Entry Permit	In Place	Forestry Commission	9-May-22	9-May-23	Renewable annually

(Source: Geosystems Consulting, 2023)

20.3.2 Minerals Commission Permitting Process

20.3.2.1 Mine Operating Permit

Chirano mine operates under a 15-year mining lease granted by the Minister of Lands and Natural Resources on 23 December 2019 and a Mine Operating Permit which is renewed annually. The processes for acquiring the Mine Operating Permit are stated in Regulation 8 of the Minerals and Mining (Health, Safety and Technical) Regulations, 2012, (LI 2182). The Holder of a mining lease will have to apply to the Inspectorate Division of the Minerals Commission before commencement of mining and submit a Main Mining Operating Plan (MOP) based on which the Chief Inspector of Mines will issue a Mine Operating Permit. Regulation 9 of LI 2182 details the content of the MOP. Thereafter a Yearly MOP will be submitted for approval and a Mining operating permit granted. Currently CGML has an operating permit that will expire at the end of 2023 and thereafter the MOP will be updated, and the Operating Permit renewed.

20.3.2.2 Explosives Permit and Blasting License

The Transportation, storage and use of explosives are regulated by Minerals and Mining (Explosives) Regulations, 2012, (LI 2177). CGML explosives management has been contracted to the explosive's supplier, Maxam. However, CGML mining personnel who are required to have blasting licences for their operations are managed by the Mine Manager. The CGML procedure for obtaining a blasting certificate is through training sessions for all prospective candidates and thereafter through an examination by the Inspector of Mines. Those who pass the examination are given a 5-year blasting licence specific to either surface or underground operations.

20.3.2.3 Exploration Licences

Chirano currently has 4 sites where active exploration is ongoing. The four sites are Ahwiam, Anansu, Amafie, and Chirano North. The permitting status of each exploration site is provided in Table 20-3. The responsible person is the Exploration Manager

Table 20-3: Chirano Exploration Permits as at 2023

No.	Permit Type	Status	Issuing Body	Issue Date	Expiry Date	Progress Report	Renewal Date	Remarks
1	Environmental Permit Amafie	In Place	EPA	07-Feb-23	06-Feb-25	No Action Required	06-Nov-24	Renewable every two years
2	Environmental Permit -- Chirano North	In Place	EPA	11-Aug-23	10-Aug-25	No Action Required	09-May-25	Renewable every two years
3	Environmental Permit-Ahwiam	In Place	EPA	19-Apr-22	18-Apr-24	No Action Required	18-Jan-24	Renewable every two years
4	Environmental Permit-Anansu	In Place	EPA	27-Oct-21	26-Oct-23	Renewal Initiated	26-Jul-23	Renewable every two years

20.3.3 EPA Permitting Process

Environmental permitting in Ghana is mandated by Environmental Protection Agency Act, 1994 (Act 490) and the procedure is guided by the Environmental Assessments Regulations, 1999 (LI 1652). The LI provides the necessary specific and complete legal backing for the EIA procedure/system in Ghana and has three (3) distinct parts with a total of 30 regulations and five (5) schedules.

20.3.3.1 Environmental Impacts Assessment

The administrative procedures for environmental permitting in Ghana are through the conduct of an EIA and the preparation and submission of an EIS to the EPA who after review will grant an Environmental permit for an initial period of 18 months. The environmental permit will then have to be renewed after this period.

20.3.3.2 Environmental Management Plan

Once an environmental permit is granted for the project, the Owner is enjoined to prepare and present an EMP within 18 months of commencement of operations and thereafter every 3 years according to Regulation 24 of LI 1652. The EMP details the operational impacts of the project on the physical, biological and socioeconomic environments and provide information on how these impacts are managed during operations. The EMP also contains an Environmental action plan, Occupational Health and safety action plan and Rehabilitation and Decommissioning plan.

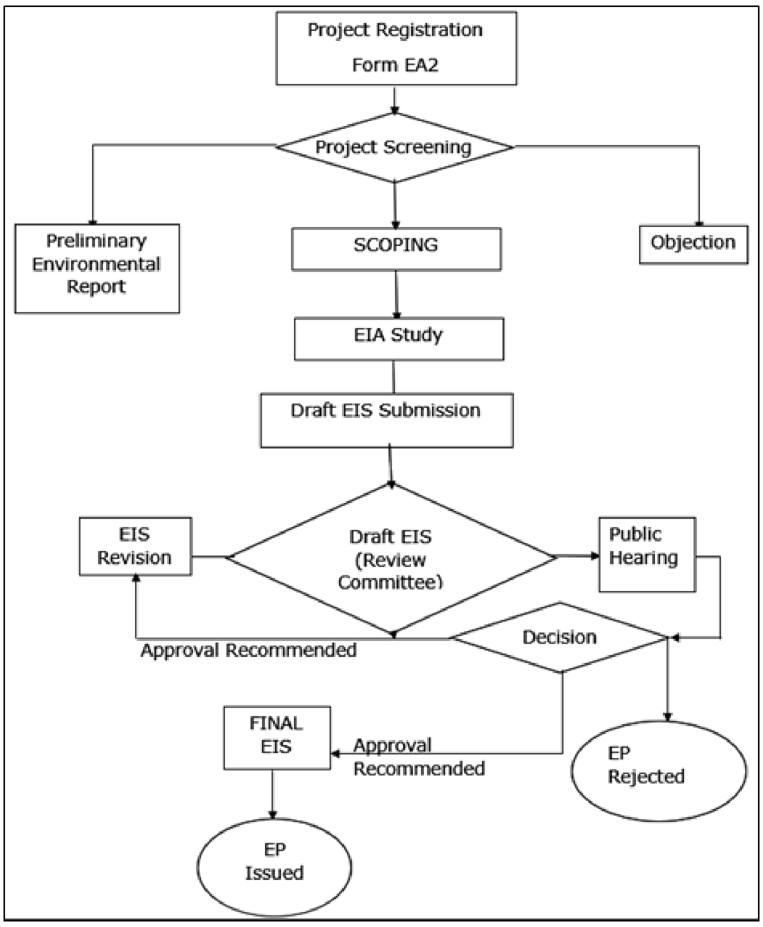


Figure 20-1: Administrative Flow Chart of EIA Procedures in Ghana

(Source: Geosystems Consulting, 2022)

20.4 Stakeholder Engagement

Consultation of the members of the public who are likely to be affected by the operations of a proposed project is a requirement of the EIA process (LI 1652 Regulation 12(k)). This Public consultation process is also called Stakeholder engagements or public participation process (“PPP”). Stakeholder consultation is a major component of the EIA process and is generally completed to guide impact assessments on those issues of most concern and inform Project planners and decision-makers on the sustainability of the project. Effective stakeholder consultation helps build trust and credibility, provides a platform for effective information management, and facilitates the development of positive, long-term relationships with the Project proponent, its neighbours, and other stakeholders in the quest for sustainable Project development and implementation.

20.4.1 Guiding Principles of Stakeholder Engagement

The consultation approach is guided by the core values of the International Association of Public Participation (IAP2) which are built on the following tenets:

- The public should have a say in decisions about actions that could affect their lives.
- Public participation includes the understanding that the public’s contribution may influence decisions.
- Public participation promotes sustainable decisions by recognising and communicating the needs and interests of all participants, including decision-makers.
- Public participation seeks and facilitates the involvement of those potentially affected by or interested in a decision.
- Public participation provides participants with the information they need to engage in a meaningful way; and
- Public participation provides feedback to participants on how their inputs affect a decision.

20.4.2 Engagement Objectives

The general objective of Stakeholder consultations is to share detailed project information with Project stakeholders and solicit their views, inputs and concerns regarding the Project. It is also to inform stakeholders, including the communities in the Project area, about the project’s potential impacts and to recommend mitigation measures while encouraging their active involvement in the EIA process and the Project.

20.4.3 Stakeholder Identification

The initial EIS for Chirano was completed and submitted to the EPA by the Environment Division of SGS Laboratory Services Ghana Limited (SGS) in February 2004 on behalf of Redback Mining NL, the then Project Owner. As part of the EIA, a detailed PPP was completed and presented as a chapter in the EIS. Thereafter several stakeholder engagements have taken place as part of the EIAs done for project expansions, special projects and some socioeconomic studies carried out at various times as social monitoring programmes. CGML continues to engage the stakeholders through the CCC and through regular perception studies conducted by the mine.

Two broad classifications of stakeholders are: Government and Non-governmental stakeholders.

20.4.4 Governmental Group Stakeholders

Governmental or Institutional stakeholders include the host administrative authorities, Bibiani-Anhwiaso-Bekwai Municipal Assembly and Sefwi Wiawso Municipal Assembly. The regulatory stakeholders are Inspectorate Division of the Minerals Commission, Environmental Protection Agency, Water Resources Commission and Forestry Commission. Other governmental bodies like the Lands commission, Geological survey, Ghana National Fire Service, Ghana Police Service, etc are also consulted during the implementation of any expansion project.

20.4.4.1 Minerals Commission

MinCom is a government agency established under Article 269 of the 1992 Constitution and the Minerals Commission Act 1993, Act 450. MinCom as the main promotional and regulatory body for the minerals sector in Ghana is responsible for "the regulation and management of the utilization of the mineral resources of Ghana and the coordination and implementation of policies relating to mining. It also ensures compliance with Ghana's Mining and Mineral Laws and Regulation through effective monitoring.

20.4.4.2 Forestry Commission

The FC is a public service institution, set up subject to the provisions of the 1992 Constitution. The FC was re-established by Act 571 of 1999 to bring under the Commission the main public bodies and agencies implementing the functions of protection, development, management and regulation of forests and wildlife resources and to provide for related matters. The FC is to provide services that guarantee the conservation, sustainable management and development of Ghana's forests and wildlife resources for the maintenance of environmental quality and to optimize their contribution to national socio-economic development for the benefit of all segments of society

20.4.4.3 Environmental Protection Agency

The EPA is the leading public body for protecting and improving the environment in Ghana. The mission of the EPA of Ghana is to co-manage, protect and enhance the country's environment as well as seek common solutions to global environmental problems. The accomplishment of the mission is to be achieved inter alia through research, scientific, technological, and innovative approaches, and good partnerships.

20.4.5 Non-Governmental Stakeholders

Non-Governmental and non-regulatory key stakeholders include:

- Senior Leadership Team of Asante Gold Corporation.
- The Board of Directors of Chirano Gold Mines.
- Employees of Chirano Gold Mines.
- Host-Communities and The Opinion Leaders.
- Local Traditional Authorities: Custodians of lands and overlords of the locality.
- The Community Consultative Committee of Chirano Gold Mines.

20.4.6 Community Consultative Committee

CGML, as part of its CSR towards the communities established, in 2004, a CCC to liaise between the Company and its various stakeholders and established a Trust Fund with the following objectives:

- To promote Cooperation and Understanding between CGML and its various stakeholders.
- To ensure that the Company lives up to its CSR to the communities and the country at large.

Membership consists of the traditional authorities (3 paramount chiefs and selected sub-chiefs) and leaders of catchment communities and PACs, governing municipal assemblies and some departments within the assembles.

The CCC meets quarterly and is the most effective means of engaging stakeholders outside formal stakeholder engagements. During CCC meetings CGML General Manager and Heads of Departments update the committee on developments in the operations of the mine. Outstanding and contentious issues are solved through sub committees such as the Alternative Dispute Resolutions (ADR) Committee.

20.5 Environmental Baseline

The environmental baseline provided in this report is based on the specialised studies conducted for the first EIA in 2009 with updated studies carried out by different Specialists (Golder, (2016), Geosystems (2017)) during the years of operations.

20.5.1 Climate

CGML project area falls within the wet semi-equatorial climatic zone of Ghana. It is characterised by an annual double maxima rainfall pattern occurring in the months of March to July and from September to mid-November. The annual mean air temperature is about 26.9°C. In general, March is the hottest month of the year with a mean temperature of 28.3°C. August is the coolest month with a mean temperature of 25.3°C. 3.2.

20.5.2 Air Quality

CGML's concession area is entirely rural and ambient air quality is considered good within the context of the region. As a characteristic of this geographical part of the continent, the area is under the influence of the dust-laden Harmattan winds. This seasonal particulate pollution occurs principally during the three months of the dry season, from December to February. Review of representative of baseline levels across the CGML operational area indicates that current annual baseline levels are below the guideline levels recommended by the Ghana EPA, although short-term peaks may occur.

20.5.3 Hydrology and Surface Water Quality

CGML Project Area lies partly within the Suraw sub-basin of the Tano river basin and partly in the main Ankobra basin. These two major rivers drain the southwestern parts of Ghana into the Atlantic Ocean. The Project Area is drained principally by the main Suraw River and its tributaries. Smaller catchments include the Mamnao stream in the north and the Paboase stream to the south. The streams and rivers draining the Project Area receive flow contributions, which originate from sites where future mining activities will be developed. Therefore, the main mining area is comprised of headwaters for these tributaries. Within the Project Area, most of these water bodies are devoid of major pollution problems. They are used, mainly during the rainy season, as sources of potable water by the inhabitants of the settlements located near their banks. These streams are very seasonal, and dry completely except during exceptionally wet years. Most settlements have access to an alternative source of water.

The hydrological resources of CGML have been characterised through direct observations of the surface water catchment and physical state of relevant streams at relevant locations within the Project Area and by the assessment of surface water flow by the measurement of instantaneous discharges and use of the area ratio method in relation to the catchment area of the Tano River at Wiawso and Ankobra River at Ankwaso. Results of sampled water analyses have been compared to the WHO guidelines for drinking water purposes and the EPA proposed effluent guidelines. The following was recorded:

- The pH was generally near neutral to slightly acidic with values ranging from 5.2 to 7.4 and a mean of 6.5.
- Apparent colour and turbidity were high for most of the samples and exceeded the WHO guideline values.
- Levels of suspended solids were high, though a few samples had concentrations below the 20-ppm quoted by the WHO guideline values.
- Concentrations of nutrients were low and close to the natural background for all the water samples analysed.
- Concentrations of total iron (Fe) were high (0.02 to 831ppm) and exceeded the WHO guideline values of 0.10ppm. The most recent maximum discharge value proposed by the Ghanaian EPA is 10.0ppm.
- Manganese (Mn), aluminium (Al) and zinc (Zn) were also detected in concentrations higher than the WHO guidelines values. Very low concentrations of arsenic (As) were found in most of the samples and for all the sampling periods. This shows that the surface-waters of the Project Area are contaminated by both total and faecal coliforms and, hence, not fit for human consumption without prior treatment. These coliforms may have several origins: 1) poor or non-existent sewage systems for all the settlements, 2) extensive bathing in the streams and 3) zoological.

20.5.4 Hydrogeology and Groundwater Quality

Studies have identified two aquifer units at Chirano:

Shallow aquifer: located in the weathered rock of the Oxide Zone and the Transition Zone, it is heterogeneous and unconfined, with permeability varying from 10-9 to 10-7ms-1 (Golder, 2013).

Deep aquifer: located in the unweathered Fresh Zone and, where not differentiated by rock type, the deep aquifer has a permeability range of 10-7m/s (unfractured) to 10-6m/s (shear zone and karstified sediments) (Golder, 2013) and transmissivity range of 1.3 m^2/d to 16.5 m^2/d (volcanics) and m^2/d (sediments) (GCS, 2009). The water table in the shallow groundwater, mimics the topography. The deeper aquifer based on analysis of existing boreholes are about 26 – 38mbgl and appears to flow in the south-westerly direction similar to the shallow aquifer.

Natural discharges (or springs) were not identified in any parts of the Project Area. The flow regime direction is considered to follow the natural topography from the hill to the valley bottom. Use of groundwater resources, mainly for domestic purposes, is common in the Bibiani-Anhwiaso-Bekwai Municipality. All the main villages of the Project Area have access to at least one borehole equipped with hand-activated pump. Results of groundwater analysis undertaken as part of the baseline survey exhibit values for pH ranging from 5.5-7.8, a medium hardness, a medium to high alkalinity and a low mineral content, except that at Paboase which recorded low values for both hardness and alkalinity. Of fifteen heavy metals analysed, iron, manganese and zinc were detected in the majority (93%) of the samples analysed. Arsenic was also detected in some of the samples (approximately 43%). Concentrations of iron and occasionally manganese were higher than the level recommended for potable water as proposed by GWCL (Fe: 0.30ppm Mn: 0.10ppm) or WHO (Fe: 0.10ppm Mn: 0.05ppm). Concentration of arsenic was generally well below GWCL and WHO guideline values (0.010ppm). Microbiological examination of the boreholes used for drinking purposes revealed the presence of total and faecal coliforms. These boreholes can be considered from a microbiological point of view nonacceptable for human consumption without prior treatment.

20.5.5 The Ecological Environment

The entire CGML Project Area falls within the Celtis-Triplochiton association of Taylor (1952). Its vegetation has been classified by Taylor (1952) as “Semi-deciduous” and by Hall & Swain (1981) as “Moist Semi-deciduous - South East Subtype” - MS (SE). Structurally, the forest sub-type is characterised by a 3-layered tree strata, a shrub layer and an herbaceous layer. The vegetation type and habitat conditions of the Tano Suraw and Tano Suraw Extension Forest Reserves (TSFR and TSEFR) are identical. In addition, both Forest Reserves have some significant portions that have been degraded through logging, hunting and farming. The TSFR has a history of extensive encroachment or illegal farming by cocoa farmers and fire outbreaks sometimes initiated by hunters. Notwithstanding the obvious degradation, there is still very good forest rated Grade 3 on the hilly and steep slopes in the Reserves.

No “Black star” species were encountered in the TSFR areas inspected or surveyed neither were any reported as being on record by the District Forestry Office. No areas in the entire CGML Project Area are listed as protected, as provenance areas, as special biological or institutional research plots. Outside the Forest Reserves, the vegetation of the Project Area has been considerably disturbed through human activities, such as farming and logging.

Fauna surveys of the two Forest Reserves indicate that the area has relatively good faunistic diversity for both avifauna (birds) and mammals. Twenty faunal species of conservation concern were confirmed or were considered likely to occur within the project area. All of these are protected under legislation, except for an un-identified shrew species and the Allen’s River Frog. The Near-Threatened Allen’s River Frog, which was recorded during the 2015 baseline surveys, is of priority conservation concern for the impact assessment, followed by the Slender-tailed squirrel (Data Deficient) which was also observed during the baseline survey. Tree Pangolin (Vulnerable), which is considered to have a high likelihood of occurrence within Tano-Suraw Extension Forest Reserve, was also of significant concern for the impact assessment.

20.5.6 The Soils of the Project Area

The soil resources of the CGML concession area were mapped at a detailed level inside and outside the Forest Reserves and the soils described in detail according to the FAO (1990) method. The soils were further evaluated for their suitability for agricultural production as prescribed by the FAO (1976). The intensive farming activities for both plantation crops, mostly cocoa, and food crops, mostly plantain, cocoyam and maize, outside the Forest Reserves, and forest degradation, slash and burn farming activities and other human activities have influenced the natural conditions of the soils and have resulted in nutrient depletion, soil erosion and land degradation in some parts of the Project Area. The study encountered seven different soil units belonging to two main soils Association (Atukrom and Bekwai), which have developed on weathered products of Lower and Upper Birimian rocks and colluvio-alluvial sediments along the valleys. Soils of the former cover the whole of the western portions of the Project Area under the Tano Suraw Forest Reserve, are generally heavy-textured, deep to very deep (150-200cm), are acidic in reaction, occur on steep to very steep mountain slopes, liable to erosion if vegetation is cleared and should not be cultivated. The soils of the Bekwai Association are separated from the Atukrom Association by the valley of the Suraw River. They are generally medium to heavy textured, gravely and acidic in reaction and are moderately to marginally suitable for agricultural production.

20.5.7 Land Use

The Project Area falls within the cocoa-based farming system of the Semi- Deciduous Forest zone of Ghana. Both agricultural and non-agricultural land uses are found within the Project Area. The non-agricultural land uses include human settlements and undeveloped inland swamps with swamp vegetation. Outside the Forest Reserves, agriculture is the predominant form of land use with most people living in the area depending on farming for their livelihood and as the principal means of employment.

20.6 Social Baseline

CGML operational areas lie within three paramountcies (Anhwiaso, Wiawso and Chirano), and two municipalities (Bibiani-Anhwiaso-Bekwai and Wiawso) with 20 catchment communities (Etwebo, Akoti, Paboase, Lawerkrom, Kwanikrom, Ntrentreso, Appiakrom, Ahwiaa, Futa, Nsuosua, Anglo, Kwawkrom, Anyinasie, Surano A, Akaaso, New Obrayeko, Chirano, Subiri, Aboduabo and Chine).

20.6.1 Project Affected Communities

Six (6) communities are identified as Project Affected Communities (PACs), these are Akoti, Etwebo, Paboase, Kwawkrom, Obrayako (resettled community), Aboduabo and Chine. The closest communities are Kwawkrom, Etwebo and Akoti, which are about 1km or less from the TSF complex. The local chiefs or “Odikros” of the six communities fall under three paramount chiefs. The Chiefs of Akoti and Paboase, pay allegiance to the Sefwi Wiawso paramount chief, Kwawkrom, Obrayeko and Etwebo pay allegiance to Chirano paramount Chief, whilst the chiefs of Aboduabo and Chine pay allegiance to the Ahwiaso paramount chief.

20.6.2 General Socio-Economic Baseline of Selected Local Communities

CGML conducts periodic socioeconomic and perceptions studies within its catchment communities to assess the impacts of mining on these communities. The most recent study was conducted in 2017 by Geosystems (Geosystems, 2017). Another study is currently being conducted. The results of the 2017 study are summarised below:

20.6.2.1 Literacy and Skills Training

Literacy levels in the sampled communities were very low. Results indicate that three out of every ten respondents were literate thus about 70% of the sampled respondents were illiterate (could not read or write the English language). The statistics was worse when disaggregated on gender basis. Only one out of every ten females was literate while for the male gender, five out of every ten males were literate. On community basis, the big communities of Akoti, Chirano, Etwebo and Paboase had close to a hundred percent school enrolment levels while the small communities of Kwanikrom, Kwawkrom and New Obrayeko had less than average.

Of the 30% literate respondents, majority (45%) had obtained the middle school level certificate. Close to 14% had been educated to tertiary level (including teacher and nursing trainees as well as University Graduates) while the Senior High School (SHS) graduate constituted about 21%. There were about 2.4% who had been educated to the tertiary level and about 1.2% having obtained some vocational education. The study further revealed that, about 87% of the children of school going age who were not in school had been enrolled into such skills acquisition schemes. Also, all persons who had dropped out of JHS and SHS, were now apprentices learning one trade or the other.

20.6.2.2 Housing Tenancy and Type

About 75.6% of the respondents stayed in their own houses. This was expected given the very low rate of immigration into the area. Tenants who by definition have leased the house for longer periods accounted for 10.7% while renters who have short-term lease of one or three months accounted for 9.6% with caretakers being in the minority with less than 5%. The tenants were mostly CGML Staff while the renters were often workers of some CGML’s subcontractors.

The housing types identified were detached, semi-detached and compound houses. Most of the houses were found to be semi-detached (36%), followed by detached (33.8%) and the compound houses accounting for the remaining 30.2%.

20.6.2.3 Sanitation

The study found that about 75.4% of the sampled population use communal dumpsites where skip containers have been placed to collect solid waste. Also, 14.2% of the respondents use the burning method of solid waste management. Normally refuse dump sites are located at the outskirts of the community. However, with the expansion of these communities, the approved dumpsites are now within the community, for instance, in Paboase the communal dumpsite is located at the outskirt of the old town but within the environs of the new site just before the CGML Paboase camp. Hence, the management of these dumpsites have become a huge challenge to the leaders of these communities.

It was observed that open defecating and the use of pit latrine were the most dominant means used. In Chirano, for instance, about 53.1% of the respondents used pit latrines while 31.7% patronize the two KVIPs (one for the school) with remaining 15.2% using WC or aqua privy type of toilets. To those using the pit latrine and KVIP, the condition of the toilet facilities was unsatisfactory.

20.6.2.4 Education

Evidence on the ground indicates that CGML has not only provided a number of educational infrastructure but also a number of scholarship schemes. For instance, the educational facilities provided by CGML for Akoti, were 1 Primary and School. Etwebo has 1 basic education facilities including: 1 Primary School; Paboase has 1 Primary and School and rehabilitation of Chirano R/C School and ICT/Library center library. Kwawkrom has been provided with a 2-unit KG block.

20.6.2.5 Health

In general, CHPS compounds are the main health facility patronized by majority (72.0%) of the population while 17.1% attend the various community clinics available with 10.9% accessing the services of the hospital either in Wiawso or Bekwai. All the health facilities identified were public owned with the exception of the drug stores/chemical shops in Akoti/Etwebo and Paboase.

20.6.2.6 Economic Activities

The Agricultural sector employed more than 78.5% of the labour force in the sampled communities followed by the services sector which employed 9.1%. followed by the Industrial and Mining sectors with 5.7% and 3.8% respectively.

Farming is the major activity of most respondents and they do so on subsistence level. Food crop such as plantain, cassava, cocoyam, yam, oil palm, etc are cultivated by most of the respondents. There were few livestock farmers in Etwebo and Paboase communities.

20.7 Environmental and Social Impacts Identified

All phases of mining operations have potential to impact on the external environment. The mine has, through scientific modelling and qualitative analyses, identified potential impacts to the external environment and developed methods to manage these impacts. This chapter provides information on the impacts and their management plan as provided in CGML current EMP (2020-2023).

20.7.1 Potential Releases into the External Environmental Media

20.7.1.1 Air

Potential releases into air from operations include the following:

- Gaseous emissions such as carbon monoxide, carbon dioxide, nitrogen dioxide, and nitrous fumes from open cut and underground mining activities such as blasting and emissions from machinery.
- Hydrogen cyanide gas at the Tailings Storage Facility, mixing areas and on top of CIL tanks.
- Smoke from incineration of waste at Process plant; e.g. clinical waste, wood, papers and cardboards Noise from blasting activities; processing plant; loading, haulage and dumping of mineralised material and waste rock by heavy mining equipment; drilling activities; and vehicular movement.
- Dust from:
    - Ore stockpiling and crushing at the ROM Pad.
    - Haulage trucks on the haul road.
    - Fugitive dust from bare or un-vegetated lands.
    - Vehicular movement.
    - Mining and exploration drilling activities.
    - Vegetation clearing and topsoil stockpiling.

- Dust storms from pits, haul roads.

20.7.1.2 Water

Key potential releases into surface and underground water sources as a result of mining activities include but not limited to the following:

- Sediment load from exploration drilling, pit or underground dewatering, run-off from haul and access roads, and run-offs from fresh topsoil stockpiles, and waste rocks.
- Spillages of fuel, oil, and liquid reagents.
- Cyanide-laden Tailings leaks/spills from HDPE pipeline.
- Tailings from TSF failure or dam break.
- Leakages of sewage from septic tank.
- Accidental spillages of fuel and chemical in transit to and from mine site.

20.7.1.3 Land

Potential impacts on the land medium from mining activities include but not limited to the following:

- Leakages from sewage storage (septic tanks).
- Spillages of fuel, oil, and liquid reagents.
- Accidental spillages of fuel and chemical in transit to and from mine site.
- Tailings deposition through TSF failure or dam break.
- Silt wash down from active mining areas.
- Solid waste disposal; e.g. waste rock, used tyres, cans and tins, pieces of metal, and plastic containers.
- Vibration from blasting activities.

20.7.2 Potential Releases into the External Environment

20.7.2.1 Atmospheric Emissions

Generally, potential sources of dust generation on the mine include but not limited to the following activities:

- Drilling and blasting.
- Loading and hauling of mineralised material and waste rock.
- Topsoil stripping and dumping.
- Movement of other mobile equipment and vehicles.
- Crushing of mineralised material.
- Stacking of crushed mineralised material at the ROM pad.

20.7.2.2 Dust

Inhalation of dust is likely to cause health problems such as lungs and respiratory diseases. In plants, crop yields are reduced due to decrease in photosynthetic activity. CGML is implementing measures for the control of dust such as regular watering of mine access roads and community roads by water bowsers/tankers, control of vehicles speed limit, and installation of dust scrubbers in the crushing circuit of the mill. The ROC plant also has sprinklers that suppress dust. In addition, regular monitoring of airborne particulates is undertaken at thirteen locations across the mine. Use of appropriate PPE is being enforced in high-risk dust prone areas. The level of dust pollution in underground operations is highly dependent upon the quality of ventilation. This is being achieved through the use of water sprays on blasted material before loading and hauling. Water is also applied at the point sources of dust (i.e., high speed drills and cutters) at or near the point of contact between metal and stone, thus not allowing the dust into the air in the first place.

20.7.2.3 Fumes and Gases

Some of the dangerous gases which occur underground as result of combustion from diesel engine equipment include Carbon Monoxide, Nitrogen Dioxide, Nitrous Fumes, and Carbon Dioxide and radioactive gases. These gases can be very harmful when inhaled in quantities exceeding threshold limit values and may even result in fatality. Underground booster fans are being used to ventilate the mine. Airflow and contaminant analysis is carried out on a regular basis to ensure a satisfactory system is operating and working conditions are safe. Workers are evacuated from areas where blasting is being carried out and are only allowed to return when ventilation is adequate. There are monthly measurements of fumes from equipment and vehicle exhaust to determine the level of poisonous gases for corrective action to be taken. Catalytic converters are fitted on equipment and vehicles to lessen the amount of harmful gases they emit. Regular servicing of equipment and vehicles is being undertaken to ensure machine efficiency and reduction in levels of gaseous emissions.

Fresh air raises have been developed closer to all workings to ensure that there is sufficient fresh air at all workings at all times to take control of all gaseous emissions. Regular gas monitoring is ongoing and will continue and forms part of standard operating practice for the underground operation. Exclusion zone of 500m is maintained before detonation of explosives at the open pit to ward off encroachers against looming dangers associated with blasting.

20.7.2.4 Noise

Mining, hauling and processing activities associated with operations may increase the general level of noise in the project area. Noise monitoring done at nights covering Etwebo-Akoti community was within an average range of 74.78 dB and 78.92dB. Specific instructions are issued to drivers to avoid over-speeding, so road speed checks are conducted to ensure compliance. CGML also ensures regular supply of ear mufflers/plugs and their proper use by the employees and contractors through induction and training programs. Assessment has identified noise arising from blasting operations as the main source of impact requiring specific mitigation measures. Therefore, CGML is implementing a blasting programme to ensure that both noise (air over pressure) and vibration are minimized. Specific mitigation measures consist of:

- Earth mass above the underground workings will serve as damping material and will attenuate the effect of noise and blast induced vibration.
- Establishment of a safe blasting perimeter of 500m around all blasting sites.
- Posting of blasting times on community notice boards.
- Monitoring, as a best practice requires, noise levels for every blast on site and around other active project areas.
- Deliberate planting of intervening trees as part of waste rock dump rehabilitation to dampen noise emanating from the load-haul and dumping activities.

20.7.3 Solid Waste Generation

Various types of wastes are generated on the mine site during operations. These include but not limited to the waste rock from mining activities, tailings slurry from ore processing, disused tyres, scrap metals, food waste from kitchens, sewage, metal containers and tins, split sets, waste oil, filters, cartons, cardboards, and boxes.

20.7.4 Blast Induced Vibration

CGML is concerned with the blast induced vibration impacts especially on buildings and structures in the communities around the mine. In line with this, appropriate blast hole charges and delay times are being used to reduce this phenomenon to environmentally acceptable levels. This involves:

- Use of delay blasting to reduce amount of explosive detonated at any time.
- Use of stemming material of sufficient length and quality.
- Avoidance, as much as possible, of explosive firing without confinement.
- Reduce the amount of charge per delay using separate delays for each blast hole to minimize the blast induced vibration phenomenon Reduction in number of blast holes.
- Observation of favourable weather condition before blasting; and
- Carrying out periodic monitoring of the ground vibration resulting from its blasting activities.

20.7.5 Visual Intrusion

Some portions of the secondary forest and other vegetation cover have been cleared for the development of mining infrastructure in the Project area. Though some project components such as the underground site and its associated infrastructure are not visible to the nearby communities, others such as the waste rock dumps and the tailings storage facility are visible to the Akoti-Etwebo community. Clearing of vegetation is restricted to areas required for the project and its allied facilities to minimize visual intrusion. CGML proposes long-term measures to minimize this effect:

- There is permitting system in place for Vegetation Clearance and Tree Felling.
- All the waste rock dumps will be sloped to fit in with the natural terrain. Meanwhile, ground cover is being established on waste rock dumps that are easily visible to the community.
- Where feasible, fast growing tree species are planted along the roads to minimize the visual impact.

- As part of the CGML reclamation plan, rehabilitation and re-vegetation of sites to be disturbed by mining activities start at an early stage thus minimizing long term impact on the landscape of the area.

The eastern slope of Suraw waste rock dump has been revegetated with a mixture of both indigenous and exotic species after ground cover establishment. The tailings dam walls are progressively stabilized with the establishment of ground covers during operations as the raising of dam walls allow. The 45 Hectare TSF2 has successfully been rehabilitated with both indigenous and exotic species that are doing very well and has become a model TSF rehabilitated site.

20.7.6 Fly Rock

Fly rock from blasting activities can impact on local infrastructure and individuals close to the mining site. As a requirement and in order to ensure the safety of personnel and equipment the following measures are undertaken to enforce the above requirements:

- All personnel are cleared within 500m blast exclusion zone, and guards posted at vantage points to ensure non-encroachment of personnel in the blasting zone.
- No equipment is parked within 300 meters in the blasting area.
- Every blast is posted on site notice boards at least four hours before the blast.
- Red flags are hoisted on routes leading to blasting areas to alert the community of impending blast. This practice has been communicated to the community as part of company community education on blasting.
- Blast notice boards have been installed in nearby communities and these are updated whenever there is a blast.
- Audible siren is blown as a precursor to every blast.

20.7.7 Socioeconomic Impacts

The presence of CGML has brought about profound socio-economic transformation of the communities in the catchment area and beyond. Since 2010, CGML has spent approximately US$250 million (CGML, 2021) in the local area and the region. CGML interventions on Education, Health, Water and Sanitation and Capacity building has all contributed to a positive turnaround in the lives of the people. Some notable areas that have been impacted include:

Employment: The company employs a substantial number of staff from the local communities. This has significantly contributed to the reduction of unemployment by providing a means of livelihood to many families. Currently, about 40% of staff are from communities in the catchment area, with priority given to locals when they qualify for a vacancy. Over 500 people from the communities have also been engaged by companies which provide services to the company as contractors.

Population Growth: The population of the area started to grow several decades ago due to settler farmers moving into the area. In addition to natural population growth, mineworkers from various parts of the country have settled in the area, contributing to the growth of trading and other commercial activities. This has resulted in the expansion of these communities as residents build accommodation to rent out to staff. The high rate of population growth has resulted in a high youth population, with consequent unmet demand for jobs.

Quality Healthcare: The provision of health facilities and medical supplies, and the malaria control program have brought quality health care to the doorstep of the people. Quality healthcare has a strong link to the economic wellbeing of people. Scarce resources are no longer expended on ailments that used to plague the area, such as malaria, gastrointestinal tract infection, etc.

Education: The provision of educational infrastructure, learning items, sponsorship packages awarded students, extra classes and many other interventions made towards education has led to an increased pass rate among basic school students from the area. It was difficult for the Mine, in the Converting Environmental Liability into a Viable, Functional Self-Sustaining Asset beginning, to find qualified people from the communities to fill some positions. Many years on, the youth have taken advantage of the educational interventions to become more employable.

Local Contractors: CGML's policy of awarding contracts to companies indigenous to Sefwi has improved on the economic well-being of residents. All projects undertaken in the communities are awarded to local contractors who in turn hire locals.

Transportation and Commercial Activities: The routine maintenance of roads in the local communities has resulted in a rise in the number of commercial vehicles operating in the area. Residents now have easy access to vehicles to travel to and from their communities for trading and other activities.

Provision of Social Amenities: Through its Corporate Responsibility projects, all the towns in the catchment area have access to clean potable water, a necessity of live, humane places of convenience and sanitation services. The company has also funded the extension of electricity from the national grid into some communities, transforming the socio-economic wellbeing of the people.

Sport and Recreation: There is an increase in sports and recreational activities following the rehabilitation of community football parks. CGML also organizes on an annual basis inter-community football competition for the communities within the area. Beyond recreation, it has the added effect of fostering unity among residents. The continuous existence of Chirano Gold Mines Limited in the area will further consolidate these socio-economic gains in the years to come.

Land Compensation: Absolute counting was introduced during the first phase of compensation from October 2004 to June 2007. Farm produce was counted one by one by the enumeration team in the presence of the farmers. From July 2007 however, the acreage method was adopted based on several deliberations with chiefs, farmers' representatives, and opinion leaders. With the acreage method, assessment is based on the land size occupied by the crops. Payments to affected farmers are done through the banks. Since the inception of the mine, the Company executed more than 4,150 crop compensation agreements covering an area of 2,000 acres. Farmers have been assessed and received fair compensation for their crops for a total cost of over US$6.5M.

Provision of Institutional Services: Several services have been established in the area since CGML began operations including telecommunications (MTN and Vodafone), banking through ATMs, Insurance companies and stable electrical power.

20.8 Environmental and Social Monitoring

CGML conducts environmental and social monitoring not just to be compliant with permitting conditions but to ensure good environmental stewardship. For this reason, CGML has developed an Environmental Management Plan which is renewed periodically to guide the monitoring programs of the mine. The objectives of the monitoring plan are summarised as:

- Verify and support compliance with applicable state, cooperate and local environmental laws, regulations and permits.
- Monitor environmental components predicted to be significantly affected, and to measure changes that occur.
- Establish baselines and characterize trends in the physical, chemical and biological condition of effluent and environmental media.
- Assess the adequacy of environmental monitoring such as selected monitoring locations, schedule, monitoring methods, as well as required supervision, and to suggest improvement, if appropriate, in the light of the results.
- Identify potential environmental problems and evaluate the need for remedial actions or measures to mitigate the problem.
- Detect, characterize and report unplanned releases.
- Evaluate the effectiveness of effluent treatment and control and pollution abatement program; Determine compliance with commitments made in environmental impact statements, environmental assessments, documented safety analyses, or other official CGML documents.
- Ensure that environmental management is being performed effectively in accordance with technical requirement and relevant laws and regulations. This Environmental Monitoring Plan (EMP) explains the rationale and design.

The information provided in this section is derived from the 2021 environmental Monitoring report which has been submitted to the EPA this report in fulfilment of regulatory requirements of Regulation 25(1) of the Environmental Assessment Regulation 1999 (LI 1652).

20.8.1 Environmental Monitoring

20.8.1.1 Air Quality

Dust Emission Monitoring: Ambient air quality monitoring is routinely done on the mine site to evaluate the effects of particulate dust on human health and on the environment. The effect of particulates on human health and the environment varies with the physical and chemical make-up of the particulates; the finer the particles, the greater its propensity to get to the delicate portions of the respiratory system. The effect of dust on the environment has to do mainly with aesthetics as it degrades the value of infrastructure. The areas monitored included both operational and non-operational or residential sites. The operational sites included the ROM Pad, Processing Plant, Akwaaba

Underground area, Paboase Underground area, Exploration Pad, Rock Crusher Plant and Fuel Farm/Heavy Mining Equipment workshop. The Non-operational sites comprised the Mine Village, Exploration Camp, Paboase Camp, Paboase, Akoti and Etwebo Communities. Parameters monitored are Total Suspended Particulate Matter (TSP), which generically refers to all the particulate matter in the atmosphere, and PM10 as required by EPA's Akoben Environmental Performance framework. The PM10 on the other hand refers to fraction of the TSP with size equal or less than 10 micrometres. All locations mentioned above were monitored routinely and reported to EPA and other regulatory authorities monthly. All locations were within EPA's ambient air quality threshold limits for industrial/operational areas (TSP: 230ug/m^3 and PM10:70ug/m^3) and residential/non-operational areas (TSP: 150ug/m^3 and PM10: 70ug/m^3). Mitigation measures undertaken to address potential significant impacts of dust emissions in line with EPA's Environmental Certificate on the mine included but not limited to the following:

- Restricting clearing of vegetation to only areas needed for operations in order to limit the company's footprints of wind-blown surfaces that result in fugitive dust.
- Dust suppression on public roads leading to the mine site and haul roads.
- Progressive rehabilitation of non-active but exposed surfaces and maintaining vegetative cover around facilities such as Tailing Dams.
- Enforcement of posted vehicular speed limits through regular spot checks on all mine access roads and haul roads in addition to speed ramps at certain portions.
- Implementation of Planned Maintenance of fleet of all equipment/machinery and light vehicles.
- Use of scrubber units in the crushing circuit at the Process Plant.

Emissions of Fumes and Gases: Carbon monoxide and nitrous fumes levels in the exhaust of equipment used for underground operations are monitored at the main decline to ensure levels of these gases in the equipment exhaust are within threshold limit. This is to ensure air quality at the underground operation is clean and safe for employees to work within. These gases can be harmful when inhaled in quantities exceeding threshold limit values and could result in asphyxia especially in confined spaces. They are generated through exhausts from various diesel engines used underground. Measures undertaken to reduce the emission of fumes and gases in the underground operations include the following:

- Installation of booster fans to improve mine ventilation.
- Fitting of catalytic converters on equipment and vehicles to lessen the amount of harmful gases they emitted.
- Enforcement of Planned maintenance of equipment and vehicles to enhance their efficiency.
- Provision of Refuge Chambers.
- Water blasting activities to suppress dust and create congenial working environment.
- Use of appropriate respiratory protective devices at active working faces where there is a possibility of harmful gases or fumes.
- Periodic measurement of gases and fumes by the Occupational Hygienist.

20.8.1.2 Noise and Vibration

Noise and Blast induced vibration are monitored for the open pit operations at Akoti South Pit. The following measures have been implemented to reduce the impact of noise, vibration and fly rock:

- Conducted review of all mandatory hearing protection use zones for compliance.
- Appropriate maintenance of machinery and equipment.
- Ensuring that the noisy areas are designated as 'Hearing Protection Zone'.
- Ensuring sufficient information, training, instruction and supervision are given to workers.
- Choice of appropriate work equipment emitting the least possible noise.
- Insulation – creation of barrier between the source of noise and receiver.
- Blast notice boards have been set up in the communities which are updated daily to show when and where blasting would occur.
- Providing workers with hearing protection such as earmuffs and plugs.

20.8.1.3 Water Quality Monitoring

Surface water, groundwater, potable/drinking water as well as effluents quality are monitored monthly to evaluate the effect of the company's activities on them. The focus of the water quality monitoring is targeted towards achieving the following objectives:

- Compliance monitoring to conform to EPA Surface Water quality standards.
- Surveillance monitoring to pre-empt and forewarn of any potential seepages and/or pollution.
- Health monitoring designed to ensure the safety of drinking water sources of the company and the community.

- To guarantee the health and safety of downstream users.

Water samples are collected monthly and analysed for all monitoring sites within and around the project area. The monitoring sites covered included but not limited to the potable drinking water supply, wastewater treatment plant, Tailings Storage Facility, community bores supplied by the company, and surface drainage within the project area. Analysis of the water samples are performed by SGS environmental laboratory for regulatory reporting and an in- house Environmental Laboratory for emergencies. The company's operations have not caused any significant impact on water resources, public health or the environment. CGML is thus in full compliance with EPA and Water Resources Commission's standards and permit conditions.

20.8.1.4 Surface Water

CGML is drained principally by the main Suraw and Mamnao streams which are tributaries of the Tano and Ankobra rivers respectively. Mamnao stream is located in the north and the Paboase stream to the south of the operation. As a result, control monitoring stations which are outside the zone of impact of the mining operation have been established upstream for Suraw (S1) and Mamnao (MR1) except Paboase stream who's upstream remains a base flow and only emerges outside the company's operational area. Compliance monitoring was carried out at Suraw stream Abstraction Point (SR1), Paboase stream at Paboase Village (AKW2), and Mamnao stream (MR2) about 0.5km downstream of Mamnao Central Pit to determine the quality of water leaving the operations into the environment. Except for Total Suspended Solids (TSS) and Colour which exceeded the EPA Discharge Guidelines during rainy seasons. Otherwise, all other analytical results obtained indicated that all parameters tested for were within the Ghana EPA Mining Surface Water Quality Guidelines.

In 2023 CGML commenced surface water monitoring around Aboduabo community and its environs to provide a surface water baseline in support of the proposed Aboduabo Open pit project. In all, 7 sampling locations have been established on the Ekye, Chine, Aboduabo and Ankobra streams according to the EPA AKoben guidelines. Sample results have not recorded high values of any parameters that could be cause of concern.

Mined-out Pits: Water quality monitoring is carried out in some inactive pits namely Sariehu, Akoti North, Suraw and Mamnao Central and results returned confirmed that there are no Acid Mine Drainage (AMD) concerns on site.

Waste Rock Dumps: Silt Traps/Sediment Control Dams have been constructed at the toe of waste dumps which collect silt-laden runoff water. These containments allow settling of silt and improve the quality of storm water that flows in the streams and water bodies on the mine site. Water samples are taken from the Silt Traps at the toe of Tano, Obra and Akoti waste rock dumps to determine the potential level of some heavy metals namely Arsenic, Cadmium, Copper and Mercury. Results also confirmed that there are no acid mine drainage issues from the sampled waste rock dumps.

Control Boreholes: Monitoring boreholes have been drilled at the downstream toes of TSF2, TSF1NE and TSF1 SE from which water samples are collected on monthly basis to check the possibility of tailings seepage escaping from the facilities to contaminate groundwater. Sample results show that all parameters analysed are within Ghana EPA Water Quality and Best Applicable International Standards.

Company Potable Water: CGML monitors company drinking water sources monthly for potability; with water quality monitoring done at the Mine Village, Exploration Camp, Akwaaba Area, Paboase Camp, Paboase Underground Area and Process Plant. All the water quality results for the potable water sampled at the various sites on the mine are within the GWCL Drinking Water Standards and EPA Drinking Water Quality Guidelines.

Community Borehole Water: Boreholes provided by CGML for the communities for potable water are monitored to ensure the water quality has not been compromised. All parameters analysed are within the WHO Drinking Water Guidelines, except for pH at G4 and G6 which have been found to be slightly lower than the minimum Guideline for drinking water and which also do not have any health implications. However, this trend is in line with the baseline hydrological studies of the groundwater quality in the company's mining lease. This could be as a result of geochemical characteristics of the project area which reflects in the background readings (pH values) and not as a result of Chirano Gold Mines operations.

Effluents: Quality of effluents from equipment washing bays, sewage treatment plants and all other water discharges across the mine are monitored to ensure their quality was within EPA Effluent Guidelines. Important parameters tested on these samples include pH, TSS, Turbidity, and Oil and Grease. Oil interceptors usually contain traces of oil on the surface of the chambers that represents a localized contamination. Except for occasional exceedance of Total Suspended Solids (TSS) at few monitoring points, all parameters monitored at effluent compliance points are, generally in compliance with the Ghanaian EPA Effluent Discharge Guidelines- Mining Sector.

20.8.2 Social Monitoring

CGML carries out periodic perception studies within the catchment communities to monitor social impacts on the communities as a result of CGML operations. The objectives of such studies include:

- Undertake a situational analysis of the current socio-economic characteristics of selected catchment communities and understand its dynamics pertaining to the role of CGML.
- Inform CGML on the perceptions of citizens of the selected communities on the impact of CGML operations on their socio-economic wellbeing.
- Ascertain the relevance of CGML in the social, economic and human fibre of the communities;
- Recommend to CGML a management plan for mitigating the perceived negative impacts based on historically implemented policies (international best practices).
- Itemize the benefits and negative effects of CGML operations from the views of citizens in mine communities to feed into the social closure plan of the Mine; and
- Understanding people's perceptions regarding the sustainability of the communities with the departure/closure of CGML.

The outcomes of the most recent socioeconomic and perceptions studies are summarised below:

20.8.2.1 Community Fears, Aspirations and Needs

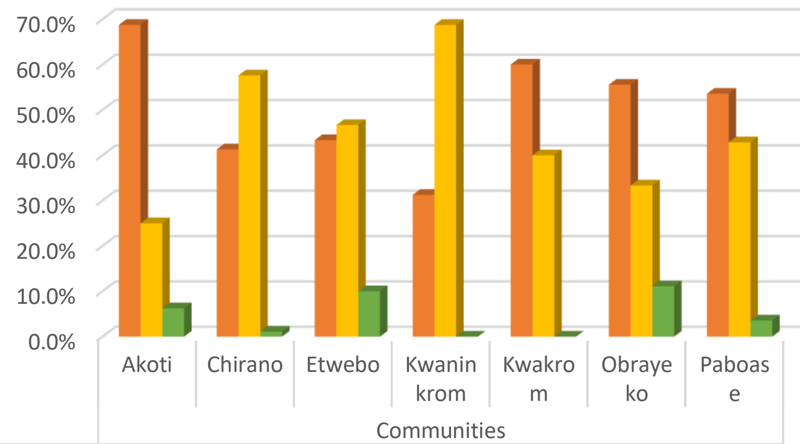
According to some respondents, members in the community have no security fear except the fear of theft or having their items stolen which generally are not reported. This was confirmed by the District Police Command as available statistic indicated that theft was the least reported case in the district. It was also observed that the fear of high price hikes which is associated to the mining operations were mostly unjustified in the rural areas. In the urban centres however, the concerns ranged from increased rents, increased housing values, increase food prices and the overall increase in the cost of living.

Respondents feared job insecurity and a reduction in employment opportunities for the communities. While some expressed this through concern over the future, others feared that the impact will be immediate. The loss of job and employment opportunities, according to some, will most likely result in the breakdown of relationships, difficulty in taking care of their families and breakdown in social order.

20.8.2.2 Quality of Life

About 49.8% approximately half of the sampled respondents held the opinion that the quality of life within their communities was good. Meaning that they could afford the basic necessities of life such as food, clothing and shelter. The education and health needs of their family was well catered for. Though they have little or no savings. On the other hand, 46.3% held the view that quality of life was poor and fact is, it had worsened over the past five years. To these individuals, the cost of living had become so high and unbearable. Their monthly incomes could not last till the end of the month and constant increases in utility prices and food stuff meant that they could not even meet their basic needs. Majority of the respondents who believed the quality of life was good were gainfully employed while majority of persons who held the opinion that quality of life was poor were mostly subsistence farmers who were engaged in other menial jobs during the off seasons.

On community basis, 68.8% of the respondents in Kwanikrom held the view that the quality of life was good. This was the highest proportion of such respondents. The least proportion was recorded in Akoti (25%). On the other hand, Akoti recorded the highest proportion of respondents saying that the quality of life was poor. In Chirano, about 57.6% of the sampled respondents believed that the quality of life was good while 41.3% said it was poor. As shown in Figure 20-2, there was almost a 50-50 split between respondents who alleged that quality of life in the community had worsened and those who believed that it was good. In Kwawkrom, it was a 60-40 split in favour of those who held the opinion that quality of life was poor.



	Akoti	Chirano	Etwebo	Kwanin krom	Kwakro m	Obraye ko	Paboas e
Poor %	68.8%	41.3%	43.3%	31.3%	60.0%	55.6%	53.6%
Good %	25.0%	57.6%	46.7%	68.8%	40.0%	33.3%	42.9%
Very Good %	6.3%	1.1%	10.0%	0.0%	0.0%	11.1%	3.6%

Figure 20-2: Rating of Quality of Life

(Source: Field Study, August 2017)

Some of the positive commentary on the impact of CGML on local development were:

- CGML has helped improving our roads.
- CGML has provided some Infrastructure.
- CGML has provided some job opportunities with improved household income.
- CGML has provided some scholarships to school children.

The main disappointments related to lack of greater employment creation. For instance, comments such as:

- ‘The Mine is not employing our youth and they have taken our farmland.’
- ‘A few infrastructures have been provided but we need money in our pocket.’
- ‘What they have done is not enough.’
- ‘The Local economy has not improved significantly and our expectations have not been met.’

20.8.2.3 Social Interventions Undertaken by CGML in 2023

Key social intervention carried out by CGML in the catchment communities in 2023 include:

- Resolution of an over decade old court litigation on crop compensation through the ADR process led by the CCC-ADR team. 15 litigant farmers have finally been paid their compensation.
- Typhoid awareness creation, typhoid testing and treatment carried out at the catchment communities.
- Sponsorship of 14 students from catchment communities for TVET education in various Technical schools.
- Organised leadership training for opinion Leaders in the catchment communities.
- Renovation of GES Office complex at Sefwi Wiawso.
- Donations of money, in conjunction with CGML to support Bibiani College of Health at Anwhiaso after a fire breakout at their campus.

Key Issues:

- Issues of Gbrayako Resettled community demanding review of resettlement agreements.
- Court litigation overcompensation of cocoa farms within the forest reserve which are deemed illegal by the Forestry Commission.
- Constant harassment by an individual farmer.

21. CAPITAL AND OPERATING COSTS

21.1 Basis of Cost Estimate

21.1.1 Base Date and Terms

The mining cost estimate for the Chirano Gold Mine is based on costs and information as of February 2024. All monetary values are presented United States Dollars (US$) and in real money terms, free of escalation or inflation.

21.1.2 Estimating Methodology

The capital and operating cost estimates have been determined through the application of current actual mine costs and budgets, quotations to bills of quantities, material take offs and estimate quantities. Most of the capital cost and operating cost is related to the mine design and mine plan physicals, the quantities of which were computationally modelled and scheduled in three-dimensional space.

21.1.3 Exclusions

No specific exclusions are noted for capital or operating cost. No provisions have however been allowed for escalation of any costs over LoM as the capital and operating cost estimate is in real terms.

21.2 Capital Costs

21.2.1 Definition of Capital Cost

Capital costs have been defined in terms of non-sustaining capital cost and sustaining capital cost. Non-sustaining capital cost include:

- Primary, initial, mine development.
- Construction of new infrastructure, facilities and mobile equipment.

Sustaining capital includes:

- Process plant upgrades and repairs.
- Surface infrastructure upgrades.
- Equipment replacements.
- Capital repairs.

21.2.2 Structure of Estimate

The capital estimate structure is as per the definition of capital cost discussed in the preceding section.

21.2.3 Summary of Capital Estimate

A summary of the Total Capital Cost is presented in Table 21-1. The table presents the Non-Sustaining Capital, Sustaining Capital and Total Capital.

Table 21-1: Summary of Capital Cost

Cost Centre	Non-Sustaining Capital Cost (US$)	Sustaining Capital Cost (US$)	Total (US$)
Underground Development	45,308,917		45,308,917
Underground infrastructure-Chirano	19,600,878		19,600,878
Tailings Facility	25,000,000		25,000,000
Aboduabo Haul Road Construction	1,000,000		1,000,000
Aboduabo Crop Compensation	2,000,000		2,000,000
Light Vehicles Replacement	1,100,000	761,745	1,861,745
Plant Engineering Capital Repairs		6,843,495	6,843,495
Water Storage Facility		1,653,107	1,653,107
Mobile Equipment/Replacement		23,278,060	23,278,060
Process Plant upgrade/Infrastructure	200,000	4,310,000	4,510,000

Cost Centre	Non-Sustaining Capital Cost (US$)	Sustaining Capital Cost (US$)	Total (US$)
Capital Repairs		49,463,007	49,463,007
Total	**94,209,796**	**86,309,414**	**180,519,210**

21.2.4 Capital Cost Cashflow

Capital expenditure through LoM is presented in Figure 21-1. The capital cashflow expenditure was approximated through the distributing the total capital costs over periods provided by the mining plan and implementation schedule.

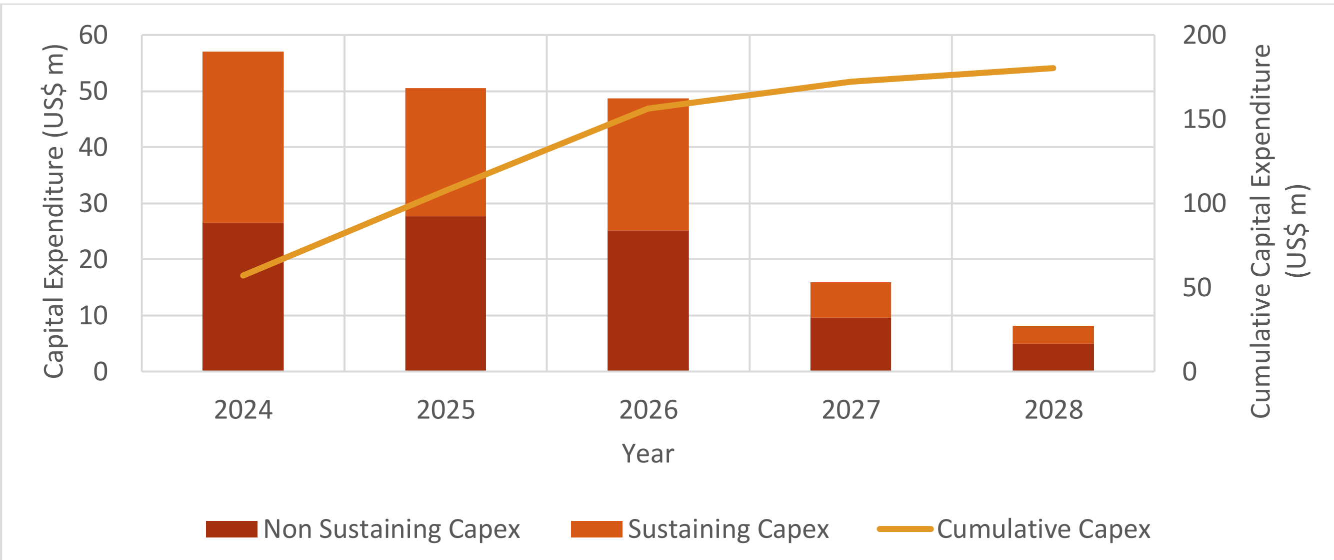


Figure 21-1: Capital Cost Cashflow and Cumulative Capital Cost

(Source: Bara 2024)

21.3 Operating Costs

21.3.1 Definition of Operating Cost

Direct operating costs have been defined as the cost all activities related to mining, processing and site administration, including;

- All mining costs relating to the contract mining of ore and waste from the open pits.
- All mining costs relating to ore mining of from the underground sources, including the cost of consumables (explosives, drilling consumables, fuel, etc.), labour and power.
- Treatment costs relating to the processing plant, including the cost of reagents, labour and power required to process the ore from open pit and underground sources.
- Site supervision and administration cost, including the cost for technical services and mine management labour.
- Royalties, relating to the payment of a percentage of revenue for Government and Forestry royalties due.

In addition to the above direct operating costs, additional costs considered as extra-over costs include:

- Rehabilitation / Reclamation Costs.
- Exploration costs.

21.3.2 Structure of Estimate

The operating cost estimate has been structured according to activity type, namely;

- Mining.
- Processing.
- Site Administration.
- Exploration.

21.3.3 Summary of Operating Cost Estimate

The operating cost estimate is presented in Table 21-2. The table presents the life of mine total and the unit operating cost per tonne milled and per ounce of gold recovered, by activity.

Table 21-2: Summary of Operating Cost

Operating Cost Centre	LOM Total (US$)	Cost/t ROM (US$)	Cost/oz Au (US$)
Open Pit Mining	207,971,133	11.12	215
Underground Mining	425,645,352	22.75	440
Processing	281,412,510	15.04	291
Site Administration	118,109,157	6.31	122
Royalties	102,947,013	5.50	106
less capitalised mining cost	-45,308,913		-47
Cash Costs	**1,090,776,251**	**58.30**	**1,127**
Exploration	28,781,249	1.54	30
Reclamation Costs	42,013,260	2.25	43
Total Operating Costs	**1,161,570,760**	**62.09**	**1,201**

Open pit mining costs have been determined through application of actual open pit contractor costs to physical drivers such as waste and ore tonnes mined from the pit. Similarly, underground mining costs have been determined through application of actual underground mine costs to physicals drivers such as access development metres and production tonnes.

Processing costs have been determined through application of actual costs obtained from the operational processing plant to the physical ore tonnes reporting to the plant as per the mine plan.

Site administration costs have been determined through application of actual site costs over the remaining LoM period.

Royalty costs include payment of a percentage of revenues for Government and Forestry royalties due. Forestry royalties equate to 0.6% of revenue, while the Ghanaian government leverages 5% of revenue as a royalty. In addition, growth and stability levies of 1% of gold production during 2024 and 2025 is included.

21.3.4 Operating Cash Cost Cashflow

Life of mine operating cost cashflow per annum presented in Figure 21 2 with the unit cash operating cost per tonne on the secondary axis. The operating cost cashflow is largely estimated by applying unit rates to the mine production schedule, with fixed costs applied over the life of mine where appropriate. Figure 21-3 shows the operating cost cashflow and cost per ounce of gold produced over the life of mine.

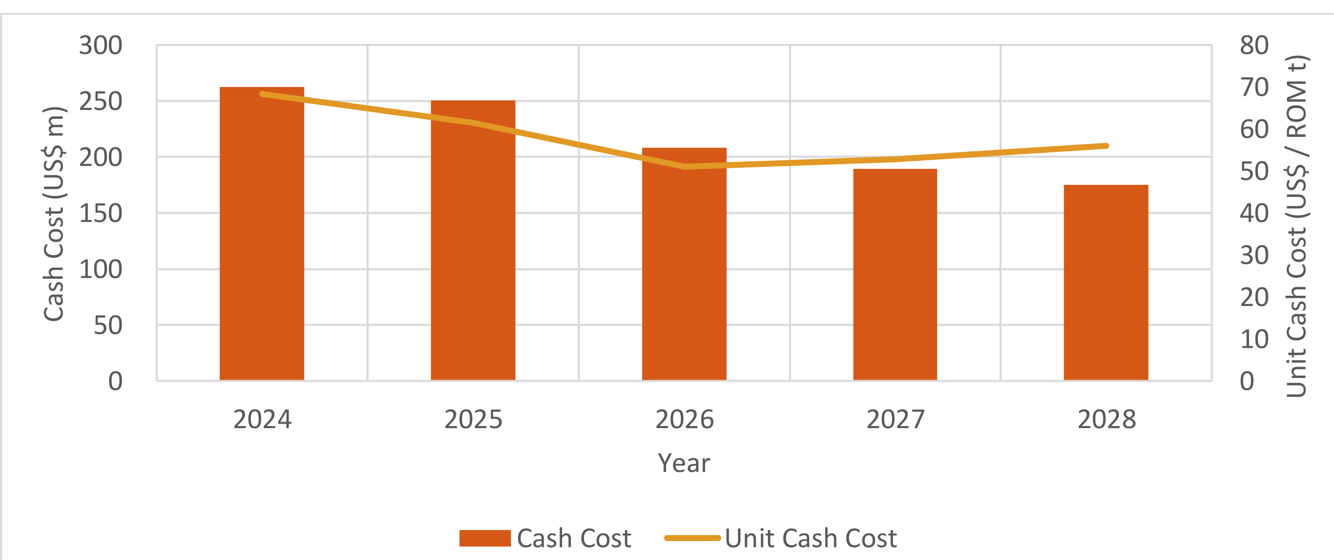


Figure 21-2: Operating Cost Cashflow and Unit Operating Cost

(Source: Bara 2024)

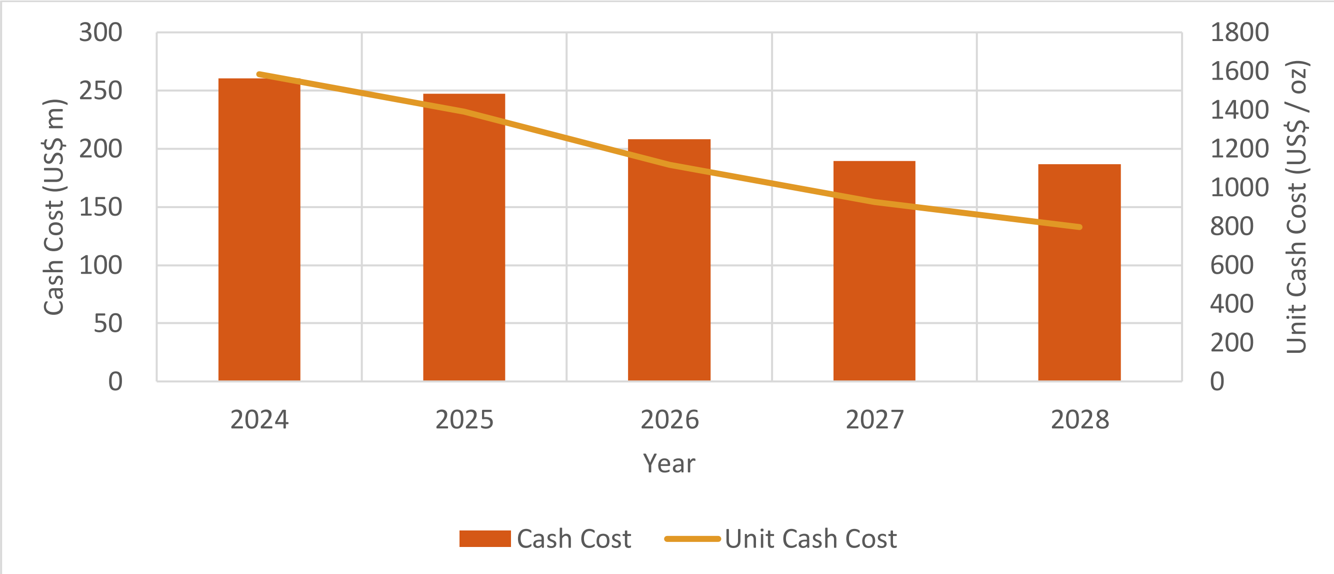


Figure 21-3: Operating Cost Cashflow and Unit Operating Cost per Ounce

(Source: Bara 2024)

22. ECONOMIC ANALYSIS

22.1 Evaluation Methodology

The economic evaluation of Chirano Gold Mine was undertaken through a discount cashflow (DCF) modelling approach. This approach includes determining cashflows through deduction of capital and operating costs from operational revenues. The resulting cashflows are used to determine key financial metrics such as payback period, peak funding requirement, net present value (NPV) and internal rate of return (IRR).

22.2 Revenue

The revenue was calculated by applying the gold price to the respective quantity of gold recovered from the processing facility. The sales pricing of gold applied in the evaluation is based on a consistent gold price assumption of US$1,900 per troy ounce.

Assumed physicals and process recovery which drive the calculation of revenue is presented in Table 22-1. A total revenue of US$1,8 billion has been calculated over the life of mine.

Table 22-1: Calculation of Revenue

Description	Unit	Value
Processed Tonnes	(t)	18 709 201
Processed Gold (Au) Content	(oz)	1 053 759
Processed Gold (Au) Grade	(g/t Au)	1.75
Process Recovery (LOM Average)	(%)	92%
Recovered Content	(oz)	967 547
Troy Ounces Sold	(oz)	967 547
Gold Price (LOM Average)	(US$/oz)	1 900
Total Revenue	**(US$)**	**1 838 339 512**

22.2.1 Tax

Taxation calculations are based on a 35% mining corporate tax rate with a 20 per cent deductibility rate on capital additions claimable as depreciation. A summary of the tax calculation is presented in Table 22-2.

Table 22-2: Calculation of Project Tax

Description	Unit	Value
Profit Before Tax	(US$)	717 345 490
Less: Capital Allowance Utilised	(US$)	-199 599 605
Taxable Income	(US$)	517 745 885
Corporate Income Tax Rate	(%)	35
Cash Income Taxes	(US$)	181 211 060

22.2.2 Discounted Cashflow Analysis

A discounted cashflow was developed based on the consolidated mining and processing schedule. The mining and processing schedule and life of mine cashflow is tabled below.

Table 22-3: Chirano LOM Production Schedule and Cashflow

DETAILS	Units	2024	2025	2026	2027	2028	2029	2030	LOM
Underground									
Ore Mined	(t)	1,661,513	2,250,367	2,724,106	2,770,527	3,128,685	0	0	12,535,198
Grade	(g/t)	1.94	1.88	1.91	2.36	2.49	0.00	0.00	2.15
Mined	(oz)	103,405	135,772	167,216	210,171	250,890	0	0	867,454
Total Development	(m)	12,951	11,149	7,864	4,299	750	0	0	37,013
Open Pit									
Ore Mined	(t)	1,999,848	1,774,317	588,834	0	0	0	0	4,363,000
Grade	(g/t)	1.13	1.14	1.18	0.00	0.00	0.00	0.00	1.15
Mined	(oz)	72,342	66,670	22,370	0	0	0	0	161,381
Waste Mined	(t)	14,857,091	10,953,766	1,593,318	0	0	0	0	27,404,176
Total Open Pit	(t)	16,856,939	12,728,084	2,182,153	0	0	0	0	31,767,175
Processing									
Ore Milled	(t)	3,842,314	4,077,096	4,077,096	3,584,010	3,128,685	0	0	18,709,201
Grade	(g/t)	1.47	1.49	1.56	1.93	2.49	0.00	0.00	1.75
Milled	(oz)	181,748	194,763	204,272	222,086	250,890	0	0	1,053,759
Recovery	(%)	90%	91%	91%	92%	93%	0%	0%	92%
Recovered	(oz)	164,502	177,848	186,688	204,206	234,303	0	0	967,547
Financials									
Gold Sales	(US$)	**312,553,390**	**337,911,694**	**354,706,663**	**387,991,203**	**445,176,562**	**0**	**0**	**1,838,339,512**
Total Mining	(US$)	175,235,049	157,303,398	114,110,940	95,469,343	91,497,756	0	0	633,616,485
Total Processing	(US$)	58,569,442	61,112,494	61,112,494	53,721,525	46,896,554	0	0	281,412,510
Total Site Administration	(US$)	23,621,831	23,621,831	23,621,831	23,621,831	23,621,831	0	0	118,109,157
PCBA	(US$)	**257,426,322**	**242,037,723**	**198,845,266**	**172,812,699**	**162,016,142**	**0**	**0**	**1,033,138,152**
Less Capitalised:	(US$)	-15,400,113	-13,754,700	-10,406,700	-5,325,800	-421,600	0	0	-45,308,913
Production Cost	(US$)	**242,026,209**	**228,283,023**	**188,438,566**	**167,486,899**	**161,594,542**	**0**	**0**	**987,829,238**
Royalties	(US$)	17,502,990	18,923,055	19,863,573	21,727,507	24,929,887	0	0	102,947,013
Operating Cashflow	(US$)	43,633,567	81,314,991	142,404,525	194,776,797	256,652,132	0	0	718,782,012
Total Cash Cost	(US$/oz)	1,584	1,390	1,116	927	796	0	0	1,128
AISC	(US$/oz)	1,822	1,553	1,268	981	821	0	0	1,246
AIC	(US$/oz)	2,008	1,731	1,403	1,028	844	0	0	1,352
Exploration	(US$)	9,390,625	9,390,625	4,000,000	4,000,000	2,000,000	0	0	28,781,249
Capital Expenditure	(US$)	57,048,509	50,496,529	48,753,070	15,903,759	8,317,338	0	0	180,519,204
Cashflow before tax	(US$)	-13,414,942	30,818,462	93,651,455	178,873,037	248,334,795	0	0	538,262,808
Growth & Stability Levy	(US$)	-3,016,401	-3,379,117	0	0	0	0	0	-6,395,518
Reclamation	(US$)	5,295,358	-175,878	-1,424,158	-1,337,639	-1,303,950	-24,556,834	-16,420,801	-39,923,903
Corporate Income Tax	(US$)	-2,114,564	-13,789,735	-34,710,250	-53,404,560	-77,191,902	0	0	-181,211,011

DETAILS	Units	2024	2025	2026	2027	2028	2029	2030	LOM
Net Operating Cashflow	(US$)	43,797,960	63,970,261	106,270,117	140,034,597	178,156,281	-24,556,834	-16,420,801	489,162,224
Free Cashflow-After Tax	(US$)	-13,250,549	13,473,732	57,517,047	124,130,838	169,838,943	-24,556,834	-16,420,801	308,643,019
DF @ 5.0%	(US$)	0.952	0.907	0.864	0.823	0.784	0.746	0.711	
Discounted Cashflow After Tax	(US$)	-12,619,571	12,221,072	49,685,388	102,122,748	133,073,256	-18,324,688	-11,669,957	253,126,096

Note: Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability

A summary of the results of the discount cashflow analysis is presented in Table 22-4. The table shows that the post-tax NPV is US$253 million at a discount rate of 5% Post-tax cashflow is presented in

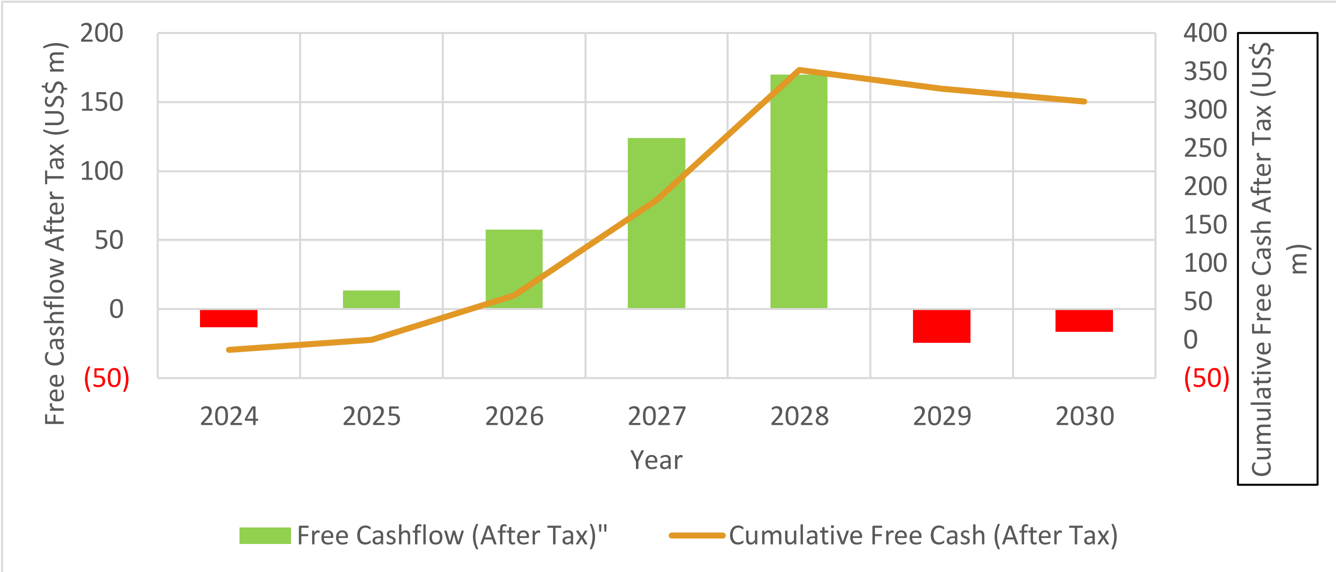


Figure 22-1.

Table 22-4: Summary of Discount Cashflow Analysis

Metrics	Units	Value (LOM/Avg)
Physicals		
Tonnes Milled	(t)	18,709,201
Gold Produced	(oz)	967,547
Recovered Grade	(g/t)	1.61
Life of Mine (Incl. Closure)	(years)	7
Capital Cost		
Non-Sustaining Capital Cost	(US$)	94,209,796
Sustaining Capital Cost	(US$)	86,309,414
Total Capital Cost	(US$)	180,519,210
Operating Cost		
Total Operating Cost	(US$)	1,161,570,760
Cash Cost	(US$/t ROM)	62.09
AISC	(US$/t ROM)	66.70
AISC	(US$/oz)	1,290
Economics		
Revenue	(US$)	1,838,339,512
EBITDA	(US$)	676,768,752
Free Cashflow (After Tax)	(US$)	308,643,019
Post-Tax NPV_5	(US$)	253,126,096
Operating Margin	(%)	37

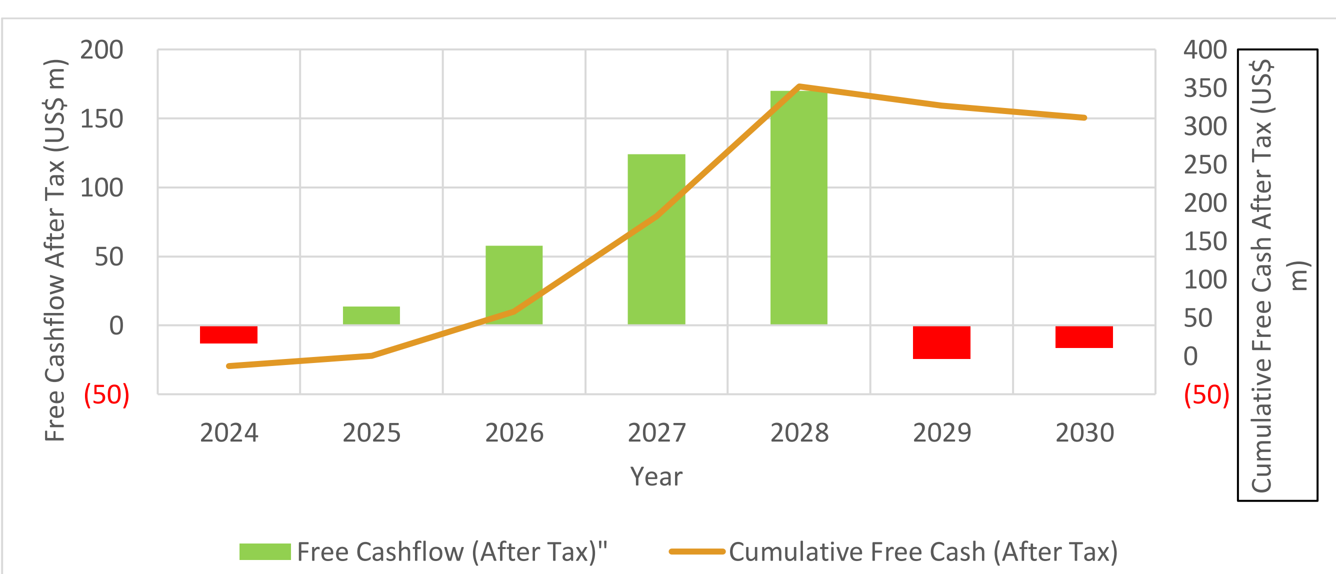


Figure 22-1: Post Tax Project Cashflow Over LoM

(Source: CGML 2024)

22.2.3 Sensitivity Analysis

A sensitivity analysis was performed on the financial model to determine the effect of likely variances on the capital cost, operating cost and revenue on project. The analysis determined that the project is mostly sensitive to changes in revenue and operating cost. The results of the analysis are presented in Figure 22-2. The figure presents post-tax NPV in relation to changes in capital cost, operating cost, and revenue respectively.

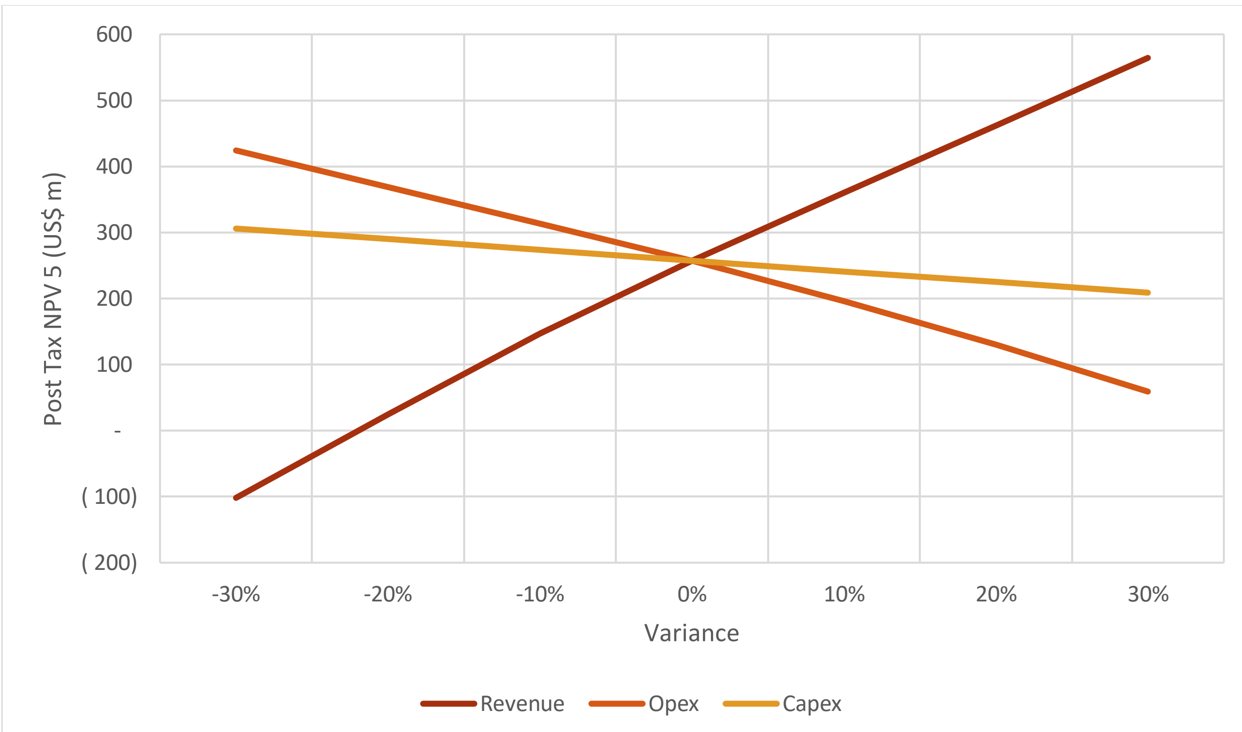


Figure 22-2: Post Tax NPV Sensitivity

(Source: BARA 2024)

23. ADJACENT PROPERTIES

23.1 Bibiani Gold Mine

The closest mine to the Chirano Gold Mine is the Bibiani Mine situated approximately 37km by road to the north-east. The Bibiani Mine is also owned and operated by Asante (Figure 23-1) and the latest Resource Estimate was compiled by Snowden Optiro in February 2022 (Asante Gold Corporation, NI 43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa; 31 August 2022). Bibiani has Measured and Indicated Resource of 31.57Mt @ 2.24g/t Au for 2.286Moz Au as at 28 February 2022. The Inferred Resource reported was 4.02Mt @ 2.74g/t Au for 0.358Moz Au.

Asante has a 100% equity interest in the Bibiani Project, through its subsidiary company Mensin Gold Bibiani Limited and in the Exploitation Permit on which it is based. MGBL is a 100% owned Ghana incorporated subsidiary of Asante, the parent company, which is based in Canada. The Ghana Government has a 10% free carried interest in the Bibiani Mining Lease.

The Bibiani Gold Mine has a long history of gold mining, with commercial production starting in the early 1900s, continuing intermittently up to 2012 and historic production of near 5Moz Au. Bibiani Project is also situated in the western Ashanti region of Ghana. The concessions lie 80km southwest of the Ashanti capital, Kumasi. The Bibiani Mine is located at approximately 6˚27’ latitude north and 2˚17’ longitude west.

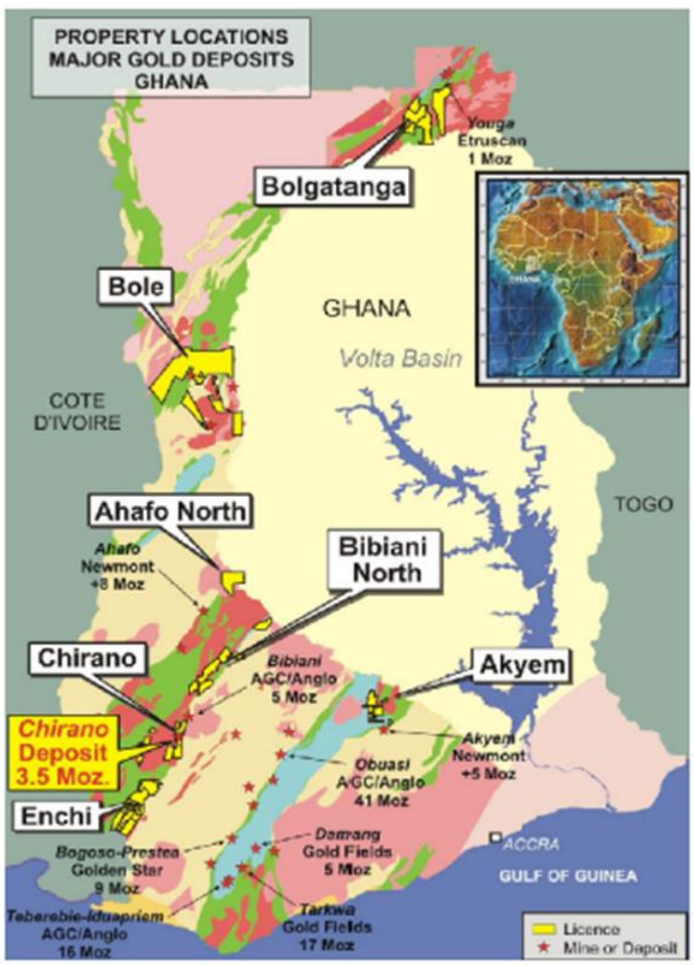


Figure 23-1: Position of Bibiani Mine in Relation to Chirano Gold Mine

(Source: Technical Report on the Chirano Gold Mine, 2009)

The Author has visited Bibiani Mine and its related mineralised deposits owned by Asante and can therefore verify the information extracted from public sources. Properties adjacent to the Chirano Gold Mine operation have however had no material impact on the Mineral Resources as reported in this Technical Report.

23.2 Enchi Gold Project

The Enchi Gold project owned by Newcore Gold (TSX-V: NCAU; OTCQX: NCAUF) lies approximately 50km south of Chirano Gold Mine. It is situated on the same regional structure as Chirano Gold Mine with comparable geology, alteration and mineralisation. The Enchi Gold Project hosts an Inferred Mineral Resource of 70.4Mt @ 0.62g/t Au for 1.4Moz Au. The 216km² land package covers 40km along the same Bibiani Shear that is important to both the neighbouring Chirano and Bibiani mineral deposits. The property remains substantially underexplored, with several geochemical and geophysical anomalies yet to be investigated with more detailed exploration.

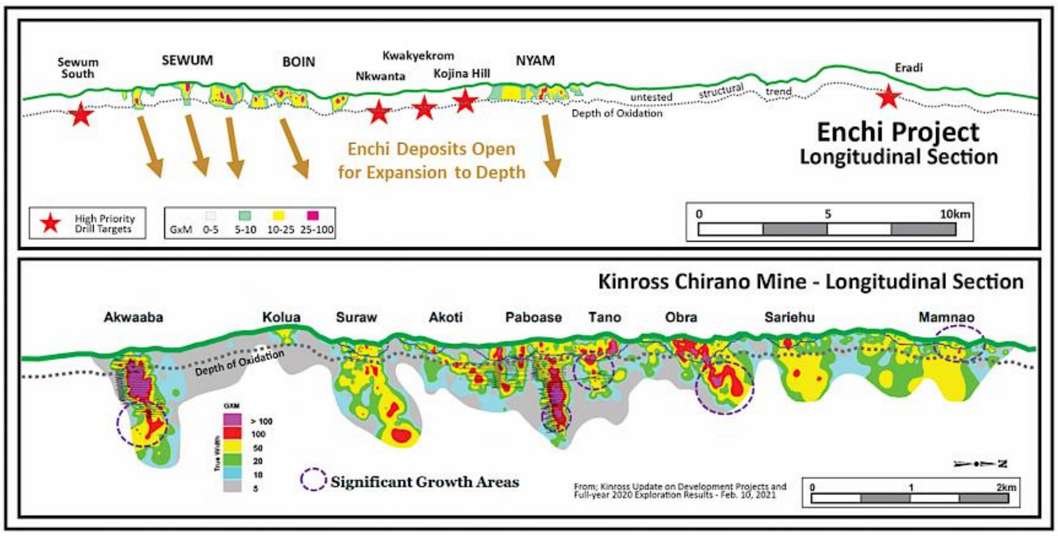


Figure 23-2: Similarities between Enchi Gold Project and Chirano Gold Mine

(Source: Newcore 2021)

Information has been extracted from Newcore Gold – "NI 43-101 Technical Report, Preliminary Economic Assessment for the Enchi Gold Project, Enchi, Ghana; 8 June 2021."

The Chirano Gold Mine hosts plunging zones of high-grade gold mineralization (see diagram above). The Chirano zones are like those found at Enchi, including known zones Sewum, Boin, Nyam and Kwakyekrom. Like Chirano, the zones at Enchi have broad lower grade gold at surface with higher grade core structure extending to depth.

The Author has not visited the Enchi Gold Project, or its related mineralised deposits owned by Newcore Gold and cannot verify the information extracted from public sources. Properties adjacent to the Chirano Operation have however had no material impact on the Mineral Resources as reported in this Technical Report.

24. OTHER RELEVANT DATA AND INFORMATION

24.1 General Comment

The Authors of this Chirano Technical Report were also involved in the compilation of the previous NI 43-101 Technical Report: *Amended NI 43-101 Technical Report, Chirano Gold Mine, Ghana, West Africa*" with Effective Date: 31 December 2021 and Issue Date: 15 May 2023. The authors are also concurrently updating the NI 43-101 Technical Report (31 August 2022) for the Bibiani Mine sanctioned by Asante.

The Chirano Gold Mine is a well-established mining operation that is in production and therefore has all the necessary operational processes, facilities and management in place and fully functional. The purchase by Asante in 2022 is in fulfilment of a wider strategy to consolidate the potential gold resources of this region of the Sefwi Gold belt and to benefit from economies of scale between the two sizable mining operations.

To the Authors knowledge there remains no other relevant data or information that would affect the readers understanding of the Chirano Gold Mine that is not covered in the Technical Report.

24.2 Asante Key Social Investments

The slide extracted from the Asante Investor Presentation given on 15 January 2024 and found on the Corporate Website summarises the Company's current social responsibility activities.

Figure 24-1: Asante Key Social Investments – January 2024

24.3 Security

No further security measures are required on the Chirano Gold Mine Project site.

24.4 Logistics

Fully developed logistics and supply chain management processes and procedures are already in place at the Chirano Gold Mine.

25. INTERPRETATION AND CONCLUSIONS

The Authors and QPs involved in the compilation of this Technical Report on the Chirano Gold Mine have submitted inputs to the conclusion and recommendations relevant to their specific sections and pertaining to the visited operations. The Chirano Gold Mine has a long history of exploration and mining and as such is considered a well-developed, well maintained, brownfields mining project. At the issue date, processing, underground mining and open pit mine production, infrastructure and other related Company processes were well established with ongoing successful gold production.

25.1 Mineral Titles and Agreements

The mineral rights for the Chirano Gold Mine, which include the Mining Lease and the Prospecting Licenses, granted under the Minerals and Mining Act 2006 (Act 703) are in good standing. The Chirano Gold Mine holds the relevant mining lease, surface rights, major approvals and permits required for the ongoing mining operations.

CGML is subject to a 5% royalty on gross revenue payable quarterly to the Government of Ghana.

25.2 Geology and Exploration

The Chirano Gold Mine mineralisation is part of a well explored regional structure and is not the only deposit of its type in the region. The nature of the mineralisation style and setting continues to be investigated, analysed and understood supporting the geological inputs into declared Mineral Resource. Historical and current exploration has identified numerous potential extensions and parallel mineralised zones that could result in positive resource expansion both for the current underground operations and the new development of open pits on additional mineralised bodies that have been identified.

Exploration completed to date on near mine and regional targets is exercised to acceptable industry standards and is appropriately planned to the style of deposits investigated. The Authors are of the opinion that there remains significant potential for resource additions and extensions both near mine and on a more regional level as is indicated by the successful recent addition of the Aboduabo project mineralised deposit in 2023.

The Authors conclude that the Company strategy and publicly declared commitment to maintain ongoing exploration and tighter spaced infill drilling is warranted and will continue to enlarge, upgrade and reduce potential risk for the current and future Mineral Resource additions and estimations.

25.3 Sample Preparation, Analysis and Security

The QP from Bara Consulting has reviewed current Standard Operating Procedures ("SOPs") in relation to sampling, sample preparation, analysis and security and reviewed sampling practises on site during the October 2023 site visit (see Section 12.1). In addition, Quality Control and Quality Assurance ("QAQC") program protocols and procedures, monthly reports and relevant datasets were also reviewed.

The QP has conducted spot checks on the QAQC datasets via referencing original assay certificates, has reviewed the QA/QC program analysis completed by Chirano over time via review of monthly QAQC reporting and has reviewed control plots for SRMs and blanks as well as duplicate graphs. The QAQC dataset covers sampling completed over project areas, Akoti, Akoti North, Akoti South, Akwaaba, Obra, Paboase, Suraw, Sariehu, Mamnao and Tano.

Overall, the results of the QAQC program implemented over the reporting period suggest that there was no issue with sample contamination during the sample preparation stage of sample batches. Analytical accuracy is considered high with no appreciable bias. Umpire analysis suggests good correlation between primary and umpire samples to suggest the ALS Laboratory precision to be acceptable. There is good precision exhibited in RC and umpire assaying, with DD assays exhibiting some higher-grade duplicate bias (overstating relative to primary assay), with +-36% uncertainty on DD data. The reason for variance is likely attributable to spatial variability rather than issues in sampling methodology.

Results from an historical assessment of variability returned precision values closer to that of field RC samples, suggesting an element of inherent field variance.

The QP considers that the overall assessment of the QAQC data is positive and provides confidence in the veracity of the gold assays used in downstream Mineral Resource evaluation.

The QP is of the opinion that the density determination process that was conducted is appropriate for the deposit types and is consistent with industry best-practice.

It is the opinion of the QP that the adequacy of the sample preparation, security and analytical procedures for the Chirano Gold Mine deposits under investigation, and the results of the QA/QC program in place between January 2022 and December 2023 suggest data is acceptable for use in downstream Mineral Resource evaluation.

25.4 Mineral Resources

Mineral Resources disclosed herein have either been prepared by the Company in 2022 and 2023 where additional drilling data has been incorporated into Mineral Resource updates or are those prepared in 2020 and for which there is no new drilling and as such are disclosed herein following depletion for mining activity.

All Mineral Resource estimates have been prepared under the JORC Code (2012) using accepted industry practices and have been classified and reported in accordance with the JORC Code. There are no material differences between the definitions of Measured, Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012).

The QP has reviewed the Mineral Resources for the Chirano operations and was afforded sufficient access to supporting data, block models and Chirano employees responsible for generating and reporting the Mineral Resource estimates to follow the process through exploratory data analysis, estimation, classification, and reporting. The site visit afforded an opportunity to review and gain sufficient understanding of the on mine data collection and management processes, and the current geological interpretations.

The QP did not identify any material issues with the Mineral Resource estimations and in general considers the standard procedures, and internal controls in place at Chirano to be transparent and robust. QP validations of the Mineral Resources agree with those undertaken by Chirano and the QP concludes that the estimates are a reasonable representation of the grade distributions evident by the composite database informing the estimates.

25.5 Mineral Reserves

The six underground and three open pit mines have had a long history of mining activities. The mineralised deposits are well understood with over a decade of historic mining. Extensive diamond drilling has been completed at operations to further define resources. Mining methods have proven to be appropriate for the mineralisation and mining costs are established via contractual agreements or well-established accounting systems.

Cut off grades have been determined via a robust process for each of the mining operations and detailed mine plans exist for LoM operations.

The US$1,700/oz gold price used for reserve calculations is well under the three-year trailing average and is deemed conservative.

The QP is of the opinion that the Mineral Reserve estimates are appropriate and are supported by all information provided by CGML for review.

25.6 Mining Method

All open pit mines are developed using traditional drill and blast, load and haul. A Ghanaian mining contractor has been engaged based on a schedule of rates to complete the pits. The mining contractor supplies all mobile machinery, personnel and maintenance facilities.

Underground mines are operated by Chirano Gold Mine employees. At fleet of modern trackless equipment is operated by CGML. It was noted that all mobile machinery is at the upper range of equipment sizing, thus does not allow for narrower development in areas of narrower mineralisation.

Underground mining operations have been using a combination of Sub Level Cave (SLC) and Sub Level Open Stoping (SLOS). The SLC operation works in conjunction with waste fill to ensure wall stability and to allow for a high degree of ore recovery. The SLOS mining is generally using a bottom-up approach, with each mining block filled, prior to the level above being excavated. Due to the higher dilution incurred with SLC, the newer operations are utilising the SLOS method. This method is appropriate for the size and geometry of mineralisation.

A Technical Services department is well equipped and adequate mine systems are established to manage short- and long-term planning, ensuring a continuity of ore supply to the process plant.

25.7 Processing

The improvement in overall gold recovery from the plant modifications of gravity concentration and the future pre-oxidation with a shear reactor will be measured from the baseline of the previous 2022 and 2023 plant performance.

The 2024 scheduled installation of a more efficient secondary mill cyclone classification coupled with a finer mill feed size from the installation of larger tertiary cone crusher will give better operational control at the 510tph mill feed rate in the ramp-up to 4.0Mtpa.

The uprating of the tank agitation with high powered mixing in the pre-oxidation tank and the CIL tanks together with the replacement of air sparging with oxygen in the tanks will improve the efficiency of the gold dissolution and cyanide consumption.

The ramp-up to 4.0Mtpa plant throughput could be constrained by the construction completion date of the new tailing's storage facility extending into Q1 2026.

Consistent and reliable availability of the GENSER gas generated electrical power supply will increase the effective plant utilisation resulting in additional milled tonnage to the plant throughput.

The planned unit process efficiencies of the 2024 plant modifications will realise a 1% to 3% overall gold recovery in plant performance.

25.8 Environment, Permitting and Social

CGML has acquired all the necessary permits to continue to operate the mine and its ancillary facilities. The Mine lease has been renewed and is valid until 2034. CGML is aware of all procedures required to renew permits, certificates and licences that will enable the mine to operate in compliance with all the requirements of the requisite Acts, legislative instruments and guidelines provided by the regulatory agencies.

CGML maintains and regularly updates its environmental and social baseline to enable efficient impacts assessments and mitigations.

CGML conducts Environmental and Social monitoring not only for compliance with permitting conditions but to ensure good environmental stewardship. Environmental parameters are monitored within the mining areas and the communities to evaluate the levels of impacts caused by the mining activities.

25.9 Infrastructure

The Chirano Gold Mine is a well-established operation that has been producing gold since 2005. All infrastructure is in place and planning for upgrades and expansions is well advanced for current and future operations.

All infrastructure is well maintained via the maintenance department. The limited new infrastructure required has been adequately provided for in capital estimates.

25.10 Economic Analysis Outcomes

The discounted cashflow model prepared by CGML and reviewed by BARA Consulting for the current operations demonstrates that the Project remains robust under the current techno-economic assumptions described in the Report. The analysis supports the declared Mineral Reserve and returns positive economic physicals and an attractive operating margin (37%).

25.11 Opportunities

Chirano has extensive Inferred and Unclassified material that could be upgraded with additional geological and exploration effort into Measured and Indicated Resources in the short to medium term. The Inferred Resources reported include 20.01Mt at a grade of 1.6g/t Au for an additional 1.03Moz Au.

26. RECOMMENDATIONS

26.1 Geology and Exploration

The technical review has shown CGML is a viable operation but has a short LoM. To extend the LoM the emphasis must be on both mine-site and regional exploration. The fact that Asante now has both the Chirano and Bibiani shear zones within its extended adjoining mining and exploration licences is a real opportunity to exploit both well understood geological structures as future mineral deposit sources to both mining operations. The Company must maintain its declared commitment to all exploration endeavours.

26.2 Sample Preparation, Analysis and Security

Diamond drill hole sample assays do exhibit some higher-grade duplicate bias (overstating relative to primary assay), with +-36% uncertainty on DD data. The reason for variance is likely attributable to spatial variability rather than issues in sampling methodology. In the past the Chirano site team has investigated this via the submission of a re-split of coarse rejects for both the original sample and the duplicate sample. Results for this study returned precision values closer to that of field RC samples, suggesting an element of inherent field variance. Efforts should be made to understand this further and consider any remedies to improve precision of core field duplicates.

26.3 Mineral Resources

Underground mineral resources are well understood and appropriately modelled and estimated. However, due to multiple ore feed sources to the mill, detailed reconciliation at a deposit level is complex and the results difficult to apply on short term intervals (monthly). Further work to improve the monthly reconciliation process is recommended.

Open pit mineral resources are estimated using a lower gold grade mineralisation cut-off ranging from 0.3 to 0.5g/t Au. In some cases, this results in the inclusion of below grade sample intercepts. Ordinary Kriging may result in overestimation of tonnes and metal in areas containing a high (>30%) proportion of 'waste' intercepts. Alternative estimation methods such as Uniform Condition or Multiple Indicator Kriging should be tested and evaluated for these areas, where geological interpretation includes significant internal waste.

26.4 Mining

The CGML short LoM remains the biggest challenge. CGML needs to focus on increasing the intensity of underground infill drilling to timeously convert Inferred Mineral Resources to the Indicated Mineral resource category to extend mine life.

The storage of water in open pits (Tano, Obra) that occurs vertically above current and proposed underground mining operations is cause for concern and it is recommended that CGML implement necessary measures to reduce or mitigate the inherent risk of unwanted inflows of water into underground workings.

Section 16.15 outlines the underground development requirements and proposed operations of the North Mine which connects the potential underground reserves of three adjacent mineralized bodies; Obra, Sariehu and Mamnao. However, both Sariehu and Mamnao require extensive additional infill drilling to prove up the potential underground mineral reserves to allow this inter-connected North Mine concept to become an efficiency-driven operational reality.

26.5 Processing

Orway Mineral Consultants sized the original SAB milling circuit for the Greenfields project before the Brownfields conversion to the existing tertiary crushing and two-stage ball milling circuit. The planned ramp up to 4.0Mtpa includes cyclone modifications on the secondary mills and a larger tertiary cone crusher to reduce the mill feed size to a P80 12.5mm to target a P80 75µm mill product size. Specialist Milling consultants have comminution simulation expertise to evaluate the Chirano milling circuit capacity requirements by applying the work indices of the LoM blend of underground ore and pit ore to target the P80 75µm mill product size at the 4.0Mtpa mill throughput rate.

26.6 Infrastructure

It is recommended that CGML give the new TSF project and associated design, planning and implementation high priority if the mining throughputs as required by the LoM schedule are to be realized.

26.7 Economic Analysis

All possible operational synergies with the neighbouring, Asante owned, Bibiani Gold Mine must be implemented.

27. CERTIFICATES OF QUALIFIED PERSONS

David Michael Begg

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30 June 2011, Part 8.1.

a) Name, Address, Occupation

David Michael Begg.
38 Gemsbok Street, Scarborough, Western Cape, 7985, South Africa.
Director: dMb Management Services Pty Ltd.

b) Title And Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Chirano Gold Mines Limited, Ghana, West Africa.
Effective Date – 31 December 2023.

c) Qualifications

Honours Degree in Geology from University of Cape Town (UCT) (BSc Hons Geology). Registered with the Geological Society for South Africa (GSSA). I am a Professional Natural Scientist (Pr.Sci.Nat).
Registered with the South African Council of Natural Scientific Professions (SACNASP).
Registered with the South African Institute of Mining & Metallurgy (SAIMM).
I have over 30 years' gold experience in exploration and mining operations; senior and executive management; project planning and execution; technical due diligence; mineral resource and reserve estimation.
I have read the definition of "qualified person" set out by National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43- 101) and past relevant work experience I am a "Qualified Person" for the purpose of NI 43-101.

d) Site Inspection

I most recently visited the Chirano Gold Mine in October and November 2023

e) Responsibilities

I am personally responsible for Sections 1-10, 20, 23-26 and for the overall compilation of all other Sections of this NI 43-101 document in collaboration with relevant Qualified Persons and specified additional technical experts.

f) Independence

I am currently Director of dMb Management Services Pty Ltd and I am independent of the issuer as described in section 1.5 of NI 43-101.

g) Prior Involvement

I have been involved with Asante Gold Corporation previously in the compilation of the previous NI 43-101 Technical Reports for the Kubi Gold Project, the Bibiani Gold Project and the Chirano Gold Project, Ghana, West Africa. Therefore, I have had prior involvement in the Project that is the subject of this updated Technical Report. I am independent of the issuer as described in section 1.5 of NI 43-101.

h) Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i) Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

David Michael Begg
BSc (Hons) Geology. Pr.Sci.Nat, GSSA, SACNASP, SAIMM
Director, dMb Management Services (Pty) Ltd
Date: 30 April 2024

CERTIFICATE OF QUALIFIED PERSON

Clive Wyndham Brown

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30 June 2011, Part 8.1.

a. Name, Address, Occupation

Clive Wyndham Brown.
40 Groenekloof Road, Hilton, Kwazulu-Natal, South Africa.
Principal Mining Engineer, BARA International.

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Chirano Gold Mines Limited, Ghana, West Africa.
Effective Date – 31 December 2023.

c. Qualifications

Bsc (Eng) Mining University of the Witwatersrand.
Pr. Eng. (Engineering Council of South Africa).
Fellow of South African Institute of Mining and Metallurgy.
I have 30 years of experience in mining operations, management, technical services and mineral reserve estimation. More than five years of this experience has been directly in gold mining.

I have read the definition of “qualified person” set out by National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional associations and relevant work experience. I am a “Qualified Person” for the purpose of NI 43-101.

d. Site Inspection

I have visited the Chirano Gold Project in November 2023.

e. Responsibilities

I am responsible for Section 15-16, 18.1 to 18.12, 21and 22 NI 43-101 document.

f. Independence

I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g. Prior Involvement

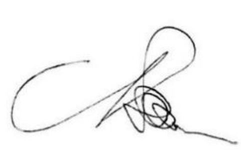
I have been involved with Asante Gold Corporation previously in the compilation of the previous NI 43-101 Technical Reports for the Kubi Gold Project, the Bibiani Gold Project and the Chirano Gold Project, Ghana, West Africa. Therefore, I have had prior involvement in the Project that is the subject of this updated Technical Report.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.



Clive Wyndham Brown
Bsc (Eng) Mining, Pr.Eng, FSAIMM
Partner & Principal Consultant, Bara International
Date: 30 April 2024

CERTIFICATE OF QUALIFIED PERSON

Glenn Bezuidenhout

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30 June 2011, Part 8.1.

a) Name, Address, Occupation

Glenn Bezuidenhout.
50 Fisant Avenue, Boskriun, Randburg, 2188, South Africa.
Senior Process Consultant and Director of GB Independent Consulting (Pty) Ltd.

b) Title and Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Chirano Gold Mines Limited, Ghana, West Africa.
Effective Date – 31 December 2023.

c) Qualifications

I am a Fellow of the South African Institute of Mining and Metallurgy – FSAIMM nr. 705704.
I graduated from the Witwatersrand Technicon of Johannesburg, South Africa with a National Diploma in Extractive Metallurgy (1979).
I am a practicing process engineer and have practiced in my profession continuously since 1979, and my relevant experience for the purpose of this Technical Report is as follows:
30 years of engineering involvement on 18 mineral processing and mining projects and 13 years' operations experience.
Seven continuous years of gold operational experience in South Africa including refractory ore processing in Barberton and conventional CIL and heap leaching on the Witwatersrand.
Since 2012 gold study experience in Central and West Africa as a process consultant on Esaase, Obotan, Ahafo South in Ghana, New Liberty and Dugbe in Liberia, Kibali in the DRC, Yaramoko in Burkina Faso, Kalana and Fekola in Mali, including B2 Gold's Otjikoto Gold Plant in Namibia (2013).
Gold project experience as a lead process engineer and commissioning manager on the Perseus Edikan Project in Ghana (2011) and the Aureus New Liberty Gold Project in Liberia (2015).
I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past work experience, I fulfil the requirements of a Qualified Person as defined in NI 43-101.

d) Site Inspection

Date of visit to the Chirano Gold Project was November 2023.

e) Responsibilities

I am responsible for and have contributed to this Technical Report and the following sections of this Technical Report: Section 13, Section 17, 18.13 and part of Section 25-27.

f) Independence

I am independent of the issuer as described in section 1.5 of NI 43-101.

g) Prior Involvement

I have been involved with Asante Gold Corporation previously in the compilation of the previous NI 43-101 Technical Reports for the Chirano Gold Project, Ghana, West Africa. Therefore, I have had prior involvement in the Project that is the subject of this updated Technical Report.

h) Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i) Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Glenn Bezuidenhout
Nat Dip, (Ex Met), FSAIMM
Senior Process Consultant and Director of GB Independent Consulting (Pty) Ltd
Date: 30 April 2024

CERTIFICATE OF QUALIFIED PERSON

Galen White

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30 June 2011, Part 8.1.

a) Name, Address, Occupation

Galen White.

32 Swindon Road, Horsham, West Sussex, RH12 2HD, UK.

Director and Principal Consultant, Bara Consulting UK Limited.

b) Title And Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Chirano Gold Mines Limited, Ghana, West Africa.

Effective Date – 31 December 2023.

c) Qualifications

Honours Degree in Geology from University of Portsmouth, UK (BSc Hons Geology).
Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM).
Fellow of the Geological Society of London (FGSL).
I have over 25 years' gold experience in exploration and mining operations; senior and executive management consulting roles; project planning and execution; technical due diligence and mineral resource evaluation.
I have read the definition of "qualified person" set out by National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43- 101) and past relevant work experience I am a "Qualified Person" for the purpose of NI 43-101.

d) Site Inspection

I visited the Chirano Gold Project that is the subject of this Technical Report, in October 2023.

e) Responsibilities

I am responsible for Sections 11-12 of this NI 43-101 document.

f) Independence

I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g) Prior Involvement

I have not been involved with Asante Gold Corporation on the Chirano Gold Project prior to this Technical Report.

h) Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i) Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Galen White
BSc (Hons) Geology, FAusIMM, FGSL
Partner & Principal Consultant, Bara Consulting UK Limited
Date: 30 April 2024

CERTIFICATE OF QUALIFIED PERSON

Malcolm Titley

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30 June 2011, Part 8.1.

a) Name, Address, Occupation

Malcolm Titley.
33b Moffat Avenue, Hillside, Bulawayo, Zimbabwe
Director and Principal Consultant, Maja Mining Limited.

b) Title And Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Chirano Gold Mines Limited, Ghana, West Africa.
Effective Date – 31 December 2023.

c) Qualifications

Degree in Geology and Chemistry from University of Cape Town, South Africa (BSc)
Member of the Australasian Institute of Mining and Metallurgy (MAusIMM)
Member of the Australian Institute of Geologists (MAIG)
I have over 42 years of mining and consulting experience. Over 20 years directly related to gold mineral resource estimation and gold mining production; senior and executive mine management and consulting roles; technical due diligence and mine business improvement.
I have read the definition of "qualified person" set out by National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43- 101) and past relevant work experience I am a "Qualified Person" for the purpose of NI 43-101

d) Site Inspection

I visited the Chirano Gold Project that is the subject of this Technical Report, in May 2022 and again in July 2022.

e) Responsibilities

I am responsible for Section 14 of this NI 43-101 document.

f) Independence

I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g) Prior Involvement

I was involved with Asante Gold Corporation on the Chirano Gold Project during 2022 conducting mineral resource estimation reviews and training, including implementation of business improvement initiatives.

h) Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i) Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Malcolm Titley
BSc Geology & Chemistry, MAusIMM, MAIG
Director & Principal Consultant, Maja Mining Limited
Date 30 April 2024

28. REFERENCES

Item 2.1

Perseus' Edikan mine (Measured and Indicated Mineral Resource of 2.1Moz Au: www.perseusmining.com

Asanko Mine (Measured and Indicated Mineral Resource 3.5Moz Au; www.galianogold.com

Item 2.2

"NI 43-101 Technical Report, Chirano Gold Mine, Ghana, West Africa" with Effective Date: 31 December 2021 and Issue Date: 30 September 2023. Compiled by dMb Management Services, BARA International, Snowden Optiro and GB Independent Consulting.

'Amended NI 43-101 Technical Report, Chirano Gold Mine, Ghana, West Africa" with Effective Date: 31 December 2021 and Issue Date: 15 May 2023. Amended by dMb Management Services with consent from BARA International, Snowden Optiro and GB Independent Consulting.

The Geometry and Structural Analysis of the Gold Deposits of Chirano Mine* K. Ackun-Wood, J.S.Y. Kuma and J. A. Yendaw Chirano Gold Mines Limited, Kinross Company, Chirano, Ghana University of Mines and Technology, P.O. Box 237, Tarkwa, Ghana

2022 Year End Mineral Resource and Mineral Reserve Report (CGML)

Mine Operating Plan 2023 (CGML)

Geotechnical Audit of Chirano Gold Mine December 2021 (Maple Geoscience 2021)

Knight Piésold Ghana Ltd. Re: Multi-Criteria Accounts Assessment (MAA) for Tailings Storage Alternatives Assessment for Extended Life of Mine. 15 September 2023 File No.: AC301-00011/123 Cont. No.: AC23-0097

Knight Piésold. (2018). Tailings Storage Facility 1 North Extension Stage 2 *Detailed Design (AC301- 00011/108).* Knight Piésold.

Knight Piésold. (2021). Tailings Storage Facility 1 South Extension *Detailed Design Report (AC301- 00011/120)*. Knight Piésold .

The World Bank Group : climateknowledgeportal.worldbank.org

Asante Gold Corporation, Update Presentation; January 15, 2024; West African Gold Producer. Mine Operations – Project development – Exploration. https://www.asantegold.com

Item 3 and Item 7.3

Professor Kim Hein, Principal Consultant and Director of *KAAH Geoservices*, Netherlands.

2022_Rpt009 Part 1 – Geology and Structure of the Chirano-Bibiani Goldfields.

2022_Rpt009 Part 2 – Geology and Structure of the Chirano Goldfield.

TK2112_Chirano Structural Geology and Targeting Final Draft Tektonik 17 July 2022a

Item 8

Precambrian Research: *Episodic Collisional Orogenesis and Lower Crustal Exhumation during the Palaeoproterozoic Eburnean Orogeny: Evidence from the Sefwi Greenstone Belt, West African Craton; H.B. Macfarlane et al.*

Item 7.3.9.1

"*Feasibility Study Report, Chirano Gold Mine Limited, Ghana, West Africa; Chirano North, Aboduabo Project; Application for Mining Lease, PL2/56.*"

Items 10 and Items 14

2017, Asante Internal Document, Standard_43_DD Logging & Sampling Procedures.pdf

2017, Asante Internal Document, Standard_24_RC Splitting & QAQC Procedures.pdf

2022, 2023, Asante Monthly Database Reports (Jan 22 to Sept 23).pdfs

2023, Asante Internal Document, Presentation Overview Chirano October 2023.pptx

2023, Asante Internal Document, Mineral Resource Report, Akoti_Model_Update_sept2023.pdf

2022, Asante Internal Document, Mineral Resource Report, Mamnao_bm updates_July2022.pdf

2017, Asante Internal Document, Mineral Resource Report, Obra_model_update_jan2017.pdf

2023, Asante Internal Document, Mineral Resource Report, Report- Aboduabo_September 2023.pdf

2022, Asante Internal Document, Mineral Resource Report, Report - Obra bm_aug2022.pdf

2022, Asante Internal Document, Mineral Resource Report, Report - Akwaaba_bm_aug2022.pdf

2023, Asante Internal Document, Mineral Resource Report, Report - Suraw_bm_sept2023.pdf

2022, Asante Internal Document, Mineral Resource Report, Report - Tano_bm_April2022.pdf

2020, Asante Internal Document, Mineral Resource Report, Summary Report - Paboase_Sept2020.pdf

2022, NI 43-101 Technical Report, Technical-Report-NI 43-101-Chirano-Gold-Mine-Ghana-West-Africa-Sept.30-2022

2023, NI 43-101 Technical Report, Amended NI 43-101 Chirano Gold Mine Ltd - 15 May 2023

Item 16.3.2.6

Nickson (1992) and Potvin (1998) – *Amalgamated Case Histories of Stope Stability.*

Item 18.13

Knight Piesold Consulting *memorandum* on 11 November 2023 to Asante Gold Corporation. Item 18.13