ASANTE GOLD CORPORATION

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

NI 43-101 Technical Report And Updated Mineral Resource Estimate

MENSIN GOLD BIBIANI 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, 2188g
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.

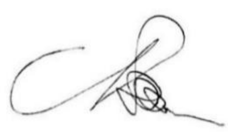
Issued by:	***dMb Management Services (Pty) Ltd***
Doc ref:	*Bibiani Gold Project 2023*
Date:	*30 April 2024*
Number of copies:	*2*

DATE AND SIGNATURE PAGE

This Report titled - "NI 43-101 Technical Report and Updated Mineral Resource Estimate, Mensin Gold Bibiani 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.

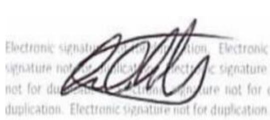
The Qualified Persons responsible for this Report are:

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

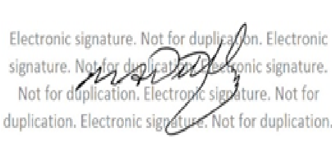


Clive Wyndham Brown
Bsc (Eng) Mining, Pr.Eng, FSAIMM
Partner & Principal Consultant, Bara International
Date: 30 April 2024

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") on Mensin Gold Bibiani Limited ("MGBL") which operates the Bibiani Gold Mine ("Bibiani", "Bibiani Gold Mine" or "Project") was sanctioned on behalf of Asante Gold Corporation ("Asante" or the "Company"), a gold exploration and development company with a high-quality portfolio of mineral assets in Ghana. 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 Bibiani Gold Mine.

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"). This updated 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 and operational improvements as well as ongoing exploration disclosures made by Asante since previous technical report submissions.

The Company took ownership of MGBL in August 2021. After a period of processing plant refurbishment and open pit preparation the Project commenced with processing operations and re-vitalised open pit mining in February 2022 having received the required regulatory Environmental Permit (EPE/EIA/568) and Mine Operating Permit (No. 0000714/22). Bibiani has a Life of Mine ("LoM"), including the underground reserves, of eight years. Opportunity remains in the successful conversion of extensive Inferred Resources.

The main components of the current Project include:

- Open pit operations currently within the Main Pit and Grasshopper mineralised deposits.
- Russell Pit is currently in the LoM mine plan for 2025.
- Supporting extensive infrastructure, including the 3.0Mtpa refurbished milling and processing plant and tailings storage facility planned to be increased to 4.0Mtpa from 2026.
- Ongoing strategic regional and mine site exploration and structural re-interpretation, with particular attention to the extensions of Bibiani mineralised trend towards and between the neighbouring Chirano mineralised trend, both covered by current Asante Prospecting Licences.
- Inclusion into the Mineral Resource Estimate, since the last publication, of the Grasshopper, Russell and Elizabeth Hill mineralised deposits.
- Revised Life-of-Mine strategy to finalise the detail underground mining design, currently at pre-feasibility level, to bankable feasibility level in early 2024 and commence with underground development and mining operations of the Bibiani Main orebody in 2025/26.
- Continued focus of geological and exploration programs to convert available Inferred Resources to higher categories of confidence whilst sustaining the increase production profile.

This Technical Report and updated MRE supersedes the earlier NI 43-101 Technical Report:

"*NI 43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa*", with Effective Date: 28 February 2022 and Signature Date: 31 August 2022.

Chirano Gold Mine Limited ("CGML"), incorporated in Ghana, which owns and operates the neighbouring Chirano 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 International (BVI) (UK), 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, the Ivory Coast to the west and Togo to the east. Ghana has an area of approximately 239,000km² and an estimated population of 32 million people. English is both the official and commercial language while Twi is the most widely spoken language.

The MGBL mining and exploration concessions are situated in the Sefwi-Bibiani Belt which is in the Western North Region of Ghana approximately 250km from the capital Accra and 80km from the Ashanti regional capital of Kumasi (Figure 1-1). This prolific granite-greenstone terrane is the second-most significant gold-bearing belt in Ghana after the Ashanti Belt to the east.

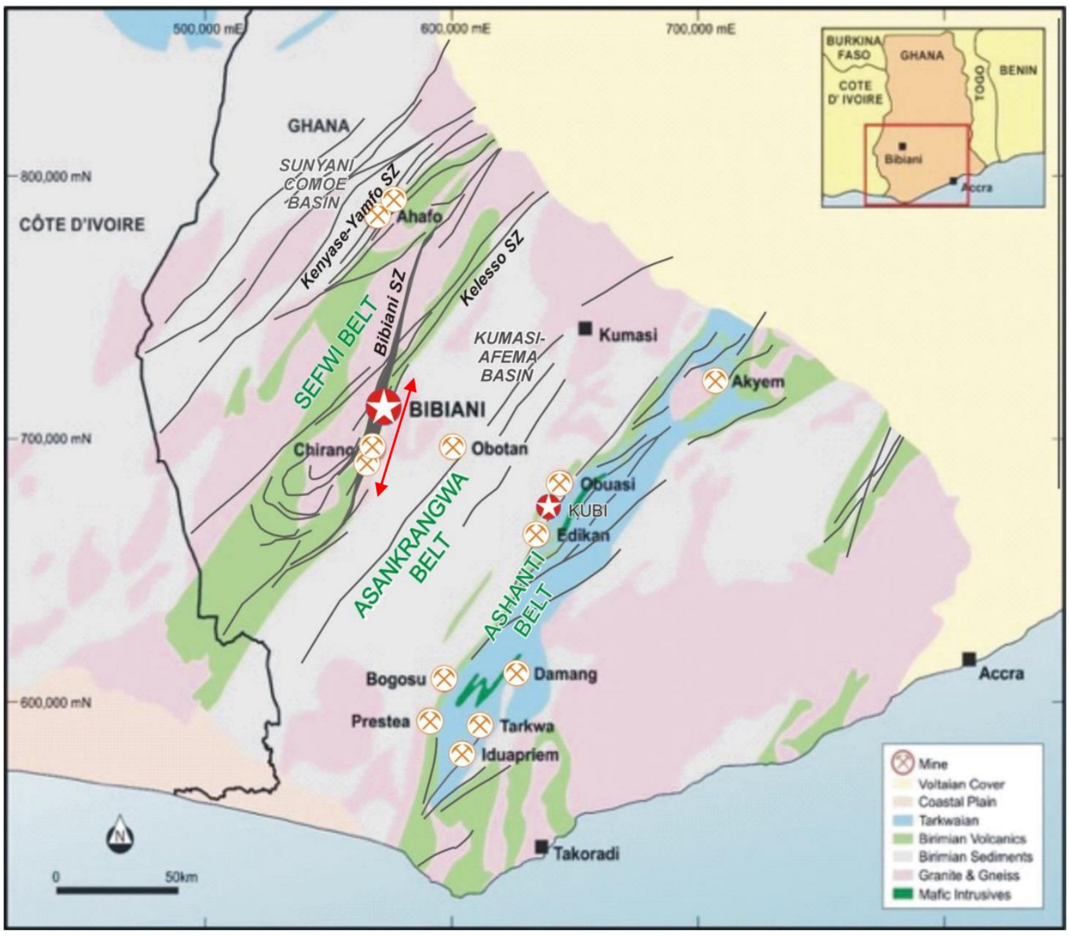


Figure 1-1: Location of Bibiani Gold Mine within Western North Region of Ghana

(Source: Asante 2023)

1.3 Property Description and Ownership

The Project is managed and operated by Mensin Gold Bibiani 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. The Ghanaian Government carries a 10% non-equity free carry in the Bibiani Mine.

All mining leases carry a 10% free carried interest in favour of the Ghanaian government under Section 43(1) of the Minerals and Mining Act, 2006. The Company is also subject to a 5% royalty on gross revenue of all MGBL gold production based on monthly gold prices and payable to the Government of Ghana.

A summary of information regarding the Bibiani Gold Mine is given in the Table below and covered in more detail in Section 4.

Table 1-1: Mensin Gold Bibiani Limited - Information of Ownership

Detail	Description
Holding Company (Owner)	Asante Gold Corporation 90%, Government of Ghana 10%
Registered Address	17 Jungle Avenue, East Legon, Accra, Ghana PO Box CT 6217, Cantonments Post Office, Accra, Ghana
Site Address	Post Office Box 98 Bibiani, Western North Region Tel: +233 (0) 322 085 000
Executive Vice President & Country Director (Asante)	Mr Frederick Attakumah
General Manager (MGBL)	Mr Samuel Takyi

MGBL holds one Mining Lease, as well as two Prospecting Licences, which collectively make up the MGBL tenements and span 30km strike length hosted in the Kumasi-Afema Basin sediments adjacent to the Sefwi Belt volcanic and volcaniclastic assemblage. The Mining Lease concessions cover an area of approximately 49.82km^2.

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

Table 1-2: Mensin Gold Bibiani Limited – Mining Lease

Tenement Name	Licence Category	Title Ownership	Status of Licence/ Expiration Date	Licence Area (km²)
PL.2/15 LVB/WR.615/97	Mining Lease	Mensin Gold Bibiani, Ghana – 100%	Valid 18 May 2027	49.82

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

The Bibiani Gold Mine has been exploited since 1892 and a summary of the history is given in the Table below:

Table 1-3: History of Mensin Gold Bibiani Limited

Date	Interested Party & Primary Activity
1892 – 1913	Exploitation of the shallow oxide mineralisation.
1927 – 1958	Mining activities continued and was developed and operated by foreign investors until it was nationalised in 1958.
1958 – 1973	Underground mining by the State Gold Mining Company.
1973 - 1995	GLAMC and IGR carried out tailings reclamation and surface exploration yielding positive results for open pit mining around the historic underground Bibiani Mine.
1995 – 2008	Ashanti Goldfields/AngloGold Ashanti (AGA) – redeveloped the mine as an open pit operation with a modern processing plant.
2008 – 2013	Central African Gold (CAG)/Noble Mineral Resources.
2014 – 2021	Mine owned and operated by Mensin Gold Bibiani, a subsidiary of Resolute Mining Limited, which conducted significant exploration on the Project during this period.
2021 – Present	August 2021 Asante finalises purchase the Bibiani Gold Mine. The Mine is owned by MGBL (RGD No. CS506392014 incorporated in Ghana), a wholly owned subsidiary of Asante Gold Corporation. Open pit mining and processing has been ongoing since February 2022.

1.5 Geology and Mineralisation

The geology of Ghana is dominated by metavolcanic Paleoproterozoic Birimian Supergroup (2.25 – 2.06 billion years) sequences 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 had 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 Chirano (2.08Moz, Asante).

On a regional scale, MGBL is located on the eastern limb of the West African Precambrian Shield which is a cratonised complex of Archaean basement (Section 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 gold deposits at Bibiani are structurally controlled mesothermal lode-type deposits. The mineralisation is associated with quartz veins and quartz stockworks which are hosted within a sequence of Lower Birimian fine to medium grained turbiditic sandstones. The sedimentary turbidite sequence is tightly folded, with west-dipping axial planes and localised development of steep west-northwest dipping shear zones which have acted as conduits for the initial gold mineralisation. Gold is closely associated with arsenopyrite and pyrite. Sericite alteration is also commonly observed, both along mineralised structures, and associated with the felsic intrusives. High-grade veins often occur within graphitic shales which generally contain significant sedimentary/metamorphic pyrite.

Intense historical data analysis, geological mapping, core relogging and re-interpretation and structural analysis has been ongoing in the last two-year period by the MGBL and Asante geological team with the contracted input of Professor Kim Hein, Principal Consultant and Director of KAAH Geoservices based out of the Netherlands. This work is described in more detail in Section 7.

1.6 Status of Exploration, Development and Operations

Exploration is at a very advanced stage. The known mineralised open pits and underground resources have been defined by extensive geological input and continuous drilling over many years. Geological mapping, geochemical sampling and modern geophysical surveys continue to advance knowledge of the mineralization and controls along the Bibiani Shear Zone ("BSZ").

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 to Reserves at Walsh, Strauss, Grasshopper and Russell mineralised deposits. The Bibiani Mine encompasses multiple defined and explored mineralised deposits along a 10km strike hosted by a series of defined structural targets.

Bibiani is a well-established, sizable mine in a mining-friendly jurisdiction. It maintains excellent infrastructure with access to power grid and highways. It has existing high-quality infrastructure including a 3.0Mtpa CIL mill achieving circa 85% gold recovery. It is a producing asset with an operating track record which began in 2005. Prior to change of ownership Bibiani produced approximately 5Moz Au. Since taking control in August 2021 and commencing production in February 2022 Asante has produced approximately 122koz up to the end of 2023 mainly from the Main, Strauss, Walsh and Grasshopper Pits. The Grasshopper pit was commissioned in late 2023.

The operations are managed by an experienced management team with strong links to the community. The operation benefits from strong exploration prospectivity and potential to convert existing inferred and unclassified resources.

The Table below summarises the tonnages mined to December 2023 from these deposits.

Table 1-4: Bibiani Gold Mine Production Statistics -2022/2023

MINING	Year	Ore Mined (t)	Grade (g/t)	Contained Gold (oz)
Bibiani Main	2022	290,258	1.57	14,642
	2023	1,507,734	1.61	78,198
Walsh	2022	821,876	1.71	45,210
	2023	532,302	1.65	28,280
Strauss	2022	115,504	1.19	4,406
	2023	Nil	Nil	Nil
Grasshopper	2022	Nil	Nil	Nil
	2023	168,729	0.91	4,939
TOTAL	**2022**	**1,227,638**	**1.63**	**64,258**
	2023	**2,208,765**	**1.57**	**111,417**
PROCESSING	**Year**	**Ore Processed (t)**	**Grade (g/t)**	**Gold Sold (oz)**
TOTAL	**2022**	**1,261,994**	**1.65**	**48,889**
	2023	**2,254,134**	**1.51**	**74,339**

In the previous NI 43-101 Technical Report (2022) it was reported that the Project short term plan would require a diversion of approximately 13km of the Bibiani-Goaso Highway and, in addition, a phased Resettlement Action Plan ("RAP") to allow the lateral expansion of the Main Pit and Walsh open pit operations to continue as per the LoM plan. Adaptations to that original mine plan in the last two years have resulted in the rescheduling of these requirements. This is discussed further under Items 15 and 20.

As at November 2023, MBGL had a workforce of 495 directly under its employment in all relevant operational departments. Out of this number the following are fixed term employees: 4 expatriate workers, 152 senior staff and line managers, 298 junior staff. Also included are 43 short term employees.

In addition to this, various contract companies on the mine site employ 1,655 workers on permanent and casual basis.

1.7 Sample Preparation, Analysis and Security

The QP has reviewed sample preparation, analysis and security protocols and procedures used on site at Bibiani and observed data collection activities during a site visit to the project. The sampling and assaying QAQC program procedures, QAQC datasets, plots and graphs were reviewed, and spot checks undertaken of digital assay data against laboratory certificates.

The QP has reviewed the information and commentary contained in the 2022 Technical Report, some of which has been reproduced in this technical report and remains current and is in agreement with previous QP as to the confidence that can be applied to historic data, which is considered acceptable for use in current Mineral Resource evaluation at Bibiani.

1.8 Metallurgical Test Work

In 2023 two preliminary test work programs were conducted by Intertek in Tarkwa, Ghana on ore samples from the Bibiani Main Pit and the Russell Pit. Initiation and oversight of the metallurgical test work was done by Asante. The two test reports have been presented as preliminary to this study by Asante. The objective of the test work campaign was the gold extraction by sulphide ore treatment using flotation processing to produce a concentrate from re-grinding followed by intensive leaching. Leaching tests representing conventional CIL were done to show the comparative improvement in gold recovery using the flotation process route. Gravity gold recovery tests were not included in the test work programs.

The two Main Pit composite samples, high grade and low grade, were taken from stockpiles by the geologists and are not representative of this ore body. The summarised preliminary test results from the Main Pit flotation and leach test work programs are an indication of gold recovery. The sulphide ore treatment test route on the high-grade sample produced an 93.1% overall gold recovery result without gravity gold recovery. In comparison, the result of the direct cyanide route on the high-grade sample was an 86.6% overall gold recovery at a grind size of P80 75µm and without gravity recovery.

The same test work program was undertaken on thirteen core samples from the Russell Pit. The average normalised recovery for the sulphide ore treatment of the Russell Pit sample composites is 90.2% which exceeds the 81.8% optimised leach recovery with 50g/t lead nitrate addition for a conventional CIL process. Both process test routes did not include gravity gold extraction tests.

The 2015 ALS Phase 1 and ALS Phase 2 variability test work results for sulphide ore treatment on 15 core samples from the Main Pit have been used as definitive for this study. The results present a normalised overall gold recovery range of 85.1% to 92.6% with a corresponding head grade range of 1.96g/t to 8.83g/t and the normalised average overall gold recovery is 89.1% that excludes gravity gold recovery. In comparison the 2015 ALS Phase 2 variability CIL leach tests on the gravity tails produced sulphide ore overall gold extraction results ranging from 65.5% to 93.6% at an average of 71.5%. The average gravity gold recovery for the 14 variability sample composites was 34% with a recovery range of 20% to 56% gold recovery.

The sulphide ore treatment overall gold recovery calculated from the ALS test work is understated as it does not represent the plant flow sheet that includes a gravity circuit with a separate gold extraction stream. The overall gold recovery differential is 2.9% for excluding the gravity extraction step from the test work flowsheet and is additional to the 89.1% average normalised overall gold recovery from the 2015 ALS variability test work results. A sulphide ore treatment average overall gold recovery of 92.0% for the Main Pit ore is declared.

1.9 Mineral Resource Estimates ("MREs")

Asante has adopted a revised LoM plan which now encompasses the intention to develop and expand mining operations into underground resources that occur below the open pit operations. Therefore, this Technical Report will be declaring Mineral Resources prepared and reviewed for open pit and underground mining.

Both open pit and underground Mineral Resources have been prepared under the direction of Competent Persons (CPs) 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 Mineral Resources are reported exclusive of any Mineral Reserves that may be derived from them. Estimates (tonnes and 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 has the minimum requirements established by international mining codes. The Audited Mineral Resources for the Bibiani Gold Mine underground and open pit deposits are reported at 31 December 2023 and are presented in Table 1-5 and Table 1-6.

To satisfy reasonable prospects of eventual economic extraction (RPEEE), Open Pit Mineral Resources have been reported using a cut-off grade of 0.5g/t Au inside conceptual pit shells. Underground Mineral Resources have been reported using a cut-off grade of 0.8g/t Au informing the definition of MSO shapes with which to constrain Mineral Resources amenable to underground mining. A gold price of US$1,950 was input into cut-off grade calculations.

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

Table 1-5: Total Mineral Resource Inventory for the Bibiani Gold Mine, as at 31 December 2023

	Category	Open Pit			Underground			Total		
		Tons (Kt)	**Au (g/t)**	**Au (Koz)**	**Tons (Kt)**	**Au (g/t)**	**Au (Koz)**	**Tons (Kt)**	**Au (g/t)**	**Au (Koz)**
Resources (Inclusive)	Measured	179	1.30	7	49	1.49	2	228	1.34	10
	Indicated	15,856	2.27	1,155	17,678	2.33	1,325	33,534	2.30	2,481
	M & I	**16,035**	**2.26**	**1,162**	**17,727**	**1.33**	**1,327**	**33,762**	**2.30**	**2,490**
	Inferred	**19**	**1.12**	**1**	**15,158**	**2.36**	**1,151**	**15,178**	**2.36**	**1,152**
Reserves	Proven	180	1.24	10	20	1.44	1	200	1.26	10
	Probable	15,100	2.10	1,020	12,120	2.35	920	27,220	2.21	1,940
	P & P	**15,280**	**2.09**	**1,030**	**12,140**	**2.35**	**921**	**27,420**	**2.21**	**1,950**

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 any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1035g.*
5. *A 0.5g/t gold reporting cut-off has been applied for OP Mineral Resources, constrained within a conceptual pit shell using US$1,950 gold price to satisfy RPEEE requirements.*
6. *UG Mineral Resources are reported within conceptual MSO shapes prepared using a US$1,950 gold price and a cut-off grade of 0.80g/t Au to satisfy RPEEE requirements.*
7. *Density values of 2.75t/m^3, 2.50t/m^3 and 2.00t/m^3 have been applied to blocks flagged as fresh, transition and oxidised sediments respectively, for all block models.*
8. *Geological losses and depletions have been applied.*
9. *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.*
10. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

Table 1-6: Mineral Resource Statement by Deposit, Bibiani Gold Mine, as at 31 December 2023

Deposit	Classification	Tonnes (Kt)	Au Grade (g/t)	Au Content (Kozs)	Density
Main Pit (OP)	Measured				
	Indicated	13,581	2.36	1,030	2.74
	Measured and Indicated	**13,581**	**2.36**	**1,030**	
	Inferred	0	3.66	0	2.75
Main Pit (UG)	Measured				
	Indicated	17,403	2.34	1,311	2.75
	Measured and Indicated	**17,403**	**2.34**	**1,311**	
	Inferred	14,794	2.37	1,126	2.75
Satellite Pits (Walsh & Strauss) (UG)	Measured	49	1.49	2	2.52
	Indicated	275	1.59	14	2.71
	Measured and Indicated	**324**	**1.57**	**16**	
	Inferred	364	2.16	25	2.75
Russell (OP)	Measured				
	Indicated	2,069	1.80	119	2.58
	Measured and Indicated	**2,069**	**1.80**	**119**	
	Inferred	0	0.64	0	2.74
Grasshopper (OP)	Measured	179	1.30	7	2.53
	Indicated	91	1.01	3	2.25
	Measured and Indicated	**270**	**1.20**	**10**	
	Inferred	0	0.68	0	2.50
Elizabeth Hill (OP)	Measured				
	Indicated	115	0.90	3	2.00
	Measured and Indicated	**115**	**0.90**	**3**	
	Inferred	19	1.12	1	2.00

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 any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1035g.*
5. *A 0.5g/t gold reporting cut-off has been applied for OP Mineral Resources, constrained within a conceptual pit shell using US$1,950 gold price to satisfy RPEEE requirements.*
6. *UG Mineral Resources are reported within conceptual MSO shapes using a US$1,950 gold price and a cut-off grade of 0.80g/t Au to satisfy RPEEE requirements.*
7. *Density values of 2.75t/m³, 2.50t/m³ and 2.00t/m³ have been applied to blocks flagged as fresh, transition and oxidised sediments respectively, for all block models.*
8. *Geological losses and depletions have been applied.*
9. *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.*
10. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

1.10 Mineral Reserve Estimates (“MRev”)

The Mineral Reserve Estimate has been prepared by Bara Consulting (Section 15) using the Canadian Institute of Mining, Metallurgy and Petroleum definitions and guidelines adopted as of May 2014 (CIM, 2014) and procedures for classifying the reported Mineral Reserves were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101.

The Mineral Reserves were derived from the Mineral Resource block models and estimates that are presented in Section 14. The Mineral Reserves are based on the Measured and Indicated Mineral Resources that have been identified as being economically extractable and which incorporate mining losses and the addition of waste dilution. The mine designs supporting the Mineral Reserve are based on pit optimisations for open pit deposits and stope shapes for underground using US$1,700/oz Au price. The Mineral Reserve Estimate is stated as at 31 December 2023 and is summarised in Table 1-7.

Table 1-7: Summary of MGBL Mineral Reserve as at 31 December 2023

Item	Tonnes (Mt)	Grade (g/t)	Contained Gold (Moz)
Open pit			
Proven Mineral Reserves	0.18	1.24	0.01
Probable Mineral Reserves	15.10	2.10	1.02
Underground			
Proven Mineral Reserves	0.02	1.44	0.00
Probable Mineral Reserves	12.12	2.35	0.92
Total Bibiani			
Proven Mineral Reserves	**0.20**	**1.26**	**0.01**
Probable Mineral Reserves	**27.22**	**2.21**	**1.94**
Total Mineral Reserves	**27.42**	**2.21**	**1.95**

Notes

1. *The Mineral Reserve has been reported in accordance with the requirements and guidelines of NI-43101 and are 90% attributable to Asante (10% Ghanaian Government).*
2. *Apparent computational errors due to rounding 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 as at 31st December 2023.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves.*
7. *Only Measured and Indicated Mineral Resources have been converted to Ore Reserves.*
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.*

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 is of the opinion that the declared Mineral Reserves are compliant with CIM reporting standards and can therefore be included into the NI 43-101 Technical Report.

1.11 LoM Mining Methods

Mining at Bibiani continues to be by conventional open pit mining methods, making use of conventional drill, blast, load and haul methods and the proposed underground mine. The open pit mining operation is undertaken by a mining contractor (PW Mining International, Ghana Limited) and commenced mining operations in February 2022. The 2022 Mineral Reserve estimate published in the previous NI 43-101 Technical Report therefore included only resources specific to the open pit mining strategy at that time.

However, during 2023 Asante commissioned an underground scoping study, initially considering only mining below the optimum open pit. The objective was to commence with underground mining earlier in the mine life and from a higher elevation than previously anticipated. This new underground strategy has been shown to present an opportunity to mine at lower cost per ounce than the deeper portions of the open pit which required higher strip ratios with associated increased mining costs. The planned underground mining method will be predominantly mechanised long hole stoping with waste rock backfill along with limited areas of mechanised cut and fill.

Asante has completed a mine plan for the underground mining operation to a prefeasibility level of detail. This plan considers commencing underground mining at a higher elevation than the final Cut4/5 open pit design, thereby reducing the open pit mine life, as previously reported, but bringing in underground production in conjunction with open pit mining from both Main pit and various Satellite pits from 2026 on.

The location of the pits and underground mine in relation to the mine infrastructure is shown below.

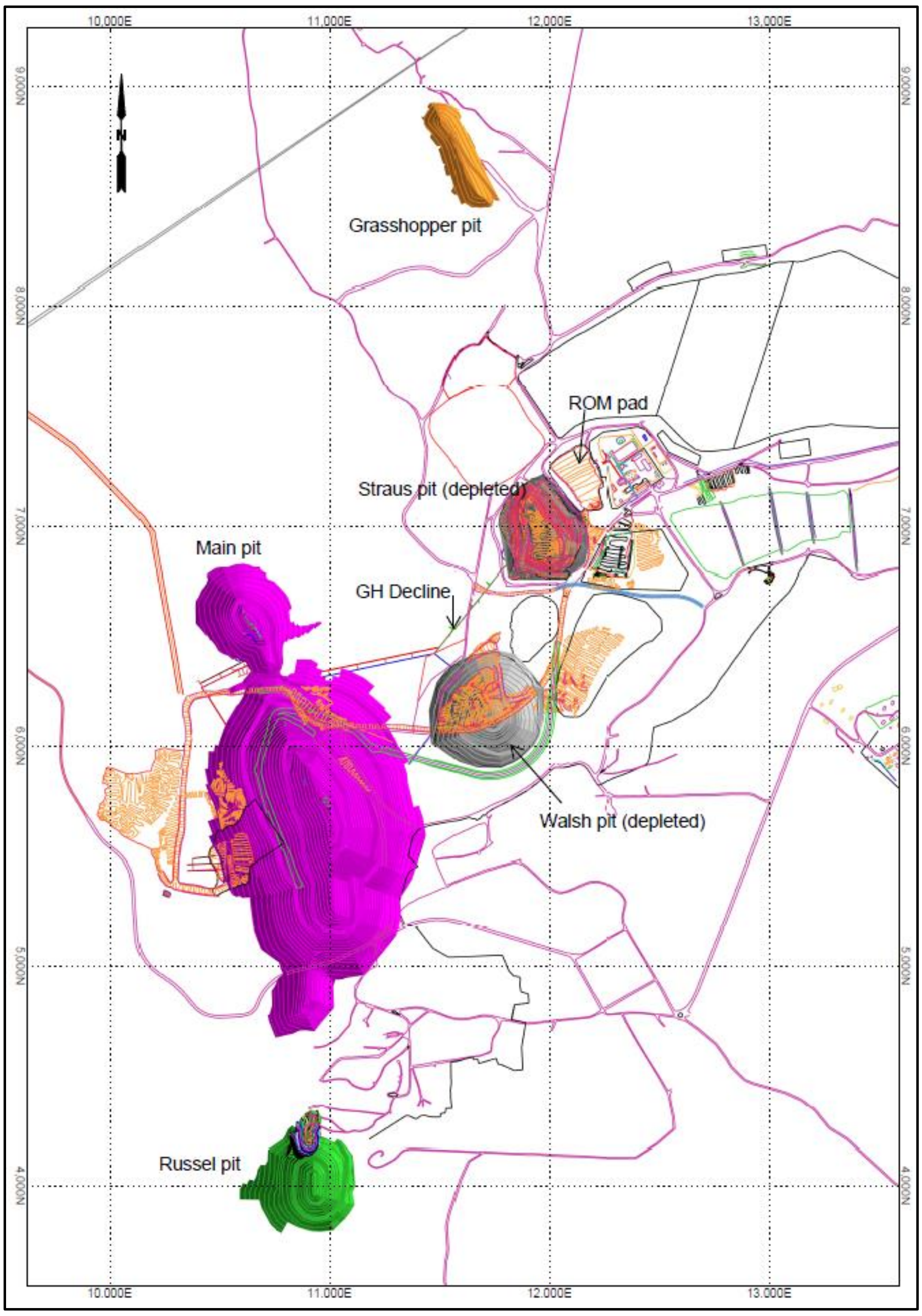


Figure 1-2: Location of Bibiani Project Open Pits

(Source: Bara, 2024)

The total material mined from open pits reaches a maximum of approximately 7.5Mtpm with an average LoM strip ratio of 14.1. The design and schedule for the combined open pit and underground operation results in a mining inventory of 25.17Mt at 2.18g/t Au containing 1.76Moz Au. The LoM is 4 years at a steady state of 4.0Mtpa from 2026 to 2029 with a tail off over three years for a total Life of Mine of 8 years. The mine schedule is illustrated in the figures below.

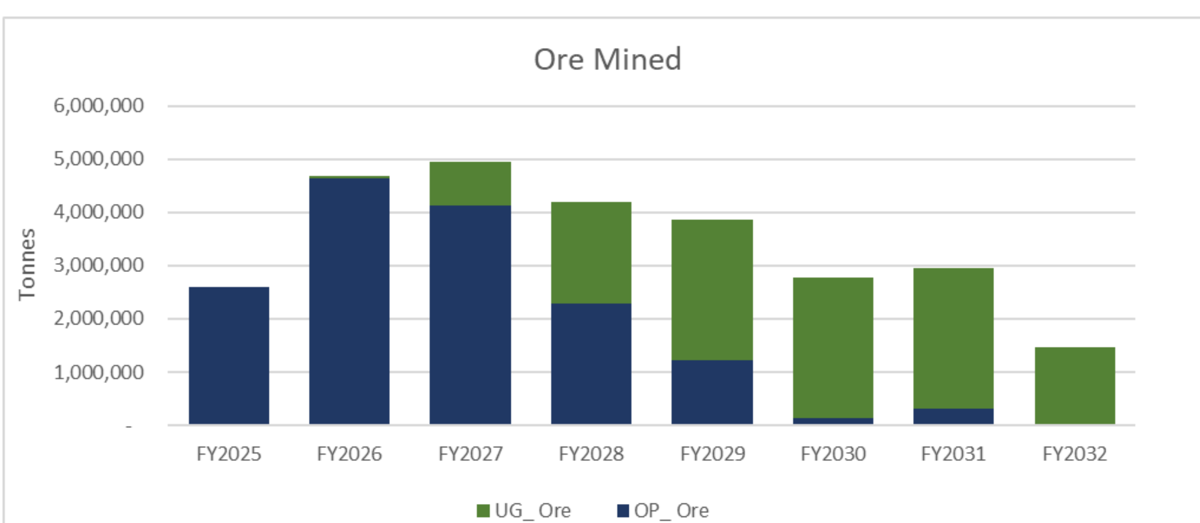


Figure 1-3: Total Material Mined Schedule

(Source: Bara, 2024)

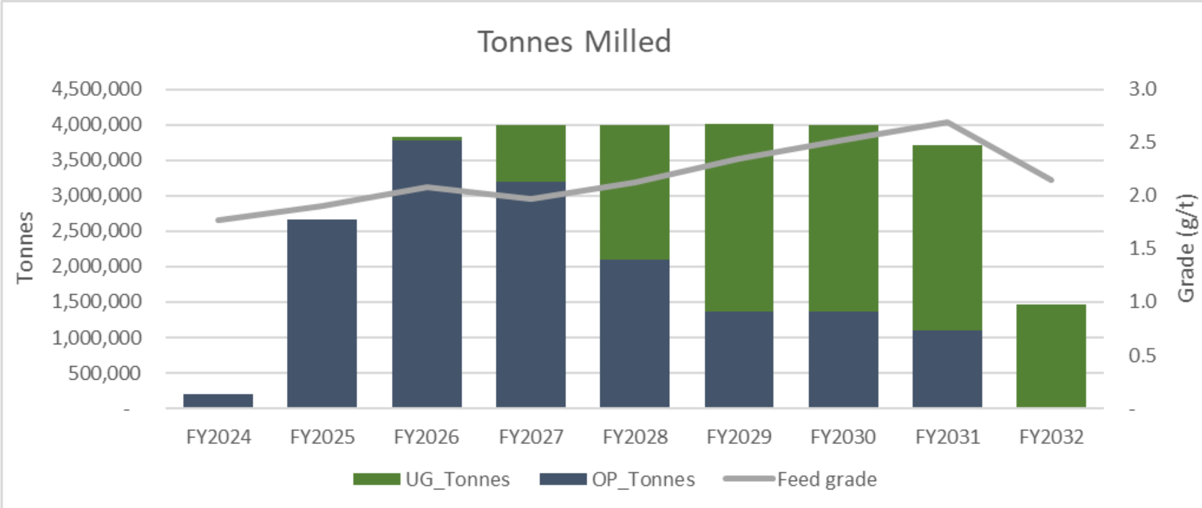


Figure 1-4: LoM Processing Schedule

(Source: Bara, 2024)

1.12 Diamond Drilling and Exploration

MGBL have 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 Section 10. MGBL is active with several resource definition and resource extension drilling exercises to increase LoM mineral resources for the Bibiani Main Pit and future underground extension, Walsh and Strauss open pit and potential underground extensions and the recently investigated Grasshopper and Russell South mineralised deposits. The additional resources have been included into the LoM production schedule in the last two-year period and form part of the revised Mineral Resource Estimate in this Technical Report.

Exploration at Bibiani is at a very advanced stage and has been ongoing since the late 1990's. It has culminated in the discovery of numerous surface gold deposits and the exploitation from underground of the Bibiani Main Pit 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 drilling carried out, since ownership by Asante in August 2021, has occurred on most of the target mineralised deposits within the Bibiani Mining Lease and Prospecting License areas. MGBL has completed a total of DD 24,307m, RC 17,509m and RCD 9,958m over the various target deposits.

1.13 Mineral Processing

The previous Bibiani NI 43-101 Technical Report for Asante (2022) stated the process flowsheet would be modified in November 2022 with the inclusion of a new sulphide treatment circuit, which has subsequently been postponed. The results of the 2015 ALS test work program reported in Chapter 13 of this NI 43-101 Technical Report and the 2023 preliminary test work result on the Main Pit and the Russell Pit undertaken by Asante support the fresh ore gold recovery from the developed sulphide ore process flowsheet. The sulphide treatment circuit consists of the following unit processes:

- Rougher flotation of the mill circuit product stream with tank flotation cells.
- Re-grinding of the scavenger concentrates with a vertical mill using ceramic media.
- Concentrate thickening.
- Intensive cyanidation of the re-grind concentrates with separate tank stages for shear reactor pre-oxidation and pre-leaching with cyanide.
- Carbon in pulp contactor tanks.
- Flotation reagent mixing.

The previous Bibiani NI 43-101 Technical Report stated that Asante would schedule the implementation of future process improvements and upgrades to the plant to improve the efficiency of gold extraction and increase the plant throughput capacity. The phased implementation of these modifications has been re-scheduled as follows:

- **Phase 1A** – the re-commissioning of the existing plant at 2.4Mtpa was completed in June 2022 on schedule.
- **Phase 1B** – implementation of the sulphide treatment circuit at 4.0Mtpa is rescheduled for Q4 2024.

- **Phase 2** - increase throughput rate to 2.7 Mtpa by adding pebble crushing to the SAG milling circuit is re-scheduled to Q2 2024.
- **Phase 3** - install a second crusher which will be a jaw crusher for fragmentation control to increase mill annual throughput to 3.0 Mtpa. The second crusher is re-scheduled for Q2 2024.
- **Phase 4** – install a secondary cone crusher on the SAG mill feed to improve RoM fragmentation and to increase the mill throughput to 3.8 Mtpa is rescheduled for Q2 2024. The mill product grind size would coarsen from P80 75µm to P80 106µm.
- **Phase 5** – install an additional CIL tank to maintain a minimum of 24hr leaching time at a throughput of 4.0Mtpa by Q1 2025, which is on schedule.

Since the plant start-up in June 2022 plant modifications have been implemented to improve the gold recovery and reduce reagent consumption. A 10tpd PSA oxygen plant was commissioned in October 2023 and a shear reactor was installed in November 2023 on the leach feed to reduce the hydrogen peroxide consumption in the leach, increase the dissolved oxygen concentration and improve the gold dissolution.

Plant throughput performance pertains to the operations period from the commencement of re-commissioning in June 2022 to October 2023. From the start of commissioning in June 2022 the mill throughput rate ramped up to 230ktpm, at a plant availability of 89%, exceeding the 200ktpm design throughput. The 230ktpm mill throughput rate was maintained until January 2023. From February 2023 to October 2023 the mill throughput rate went below 200ktpm averaging 179ktpm with an 87% plant availability due to challenges caused by delayed projects.

The 230ktpm mill throughput rate from November 2022 to January 2023 relates to the blended mill feed of Walsh Pit as the major portion and Main Pit South with Strauss Pit as the minor portion.

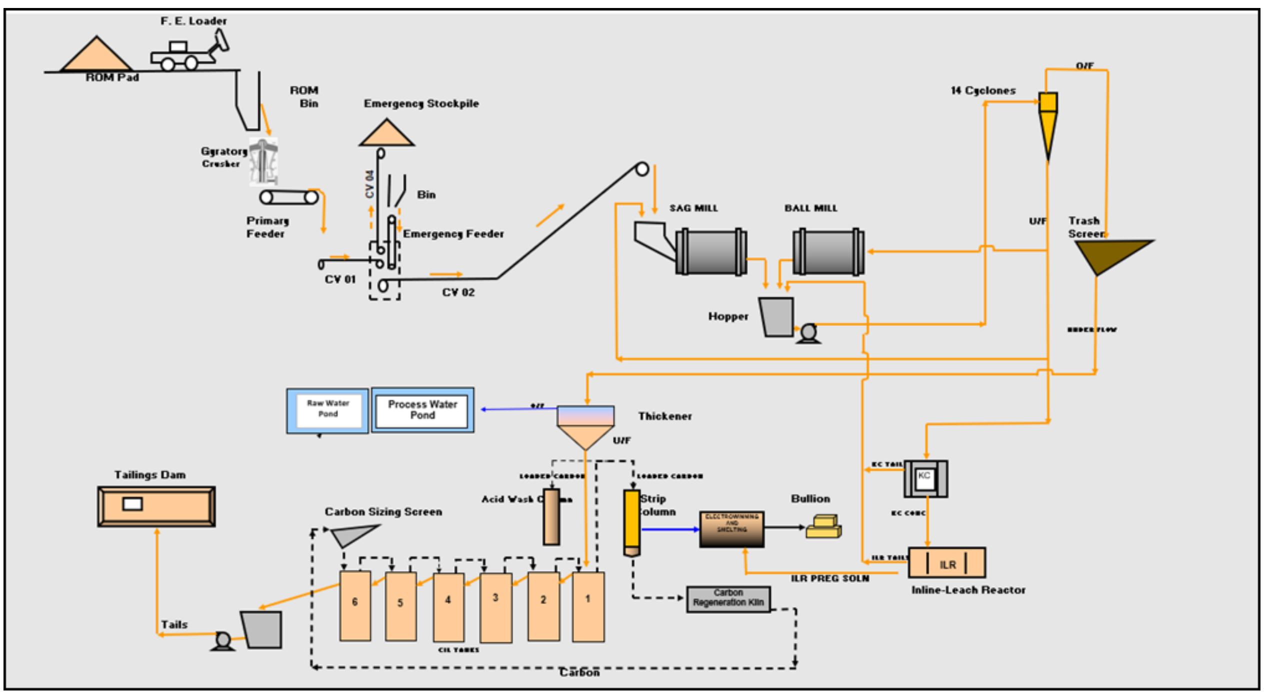


Figure 1-5: Schematic Flowchart of Bibiani Processing Plant

(Source: MGBL 2023)

1.14 Infrastructure

The Bibiani Mine historically operated as both an open pit and an underground mine. The surface infrastructure constructed to support both the open pit and the underground mine is largely still in place and has been well maintained during an extended period of care and maintenance by the various owners of the project. The existing infrastructure consists of:

- Site access and internal roads.
- Site security arrangements.
- Buildings including camps, offices, stores, workshops.
- Stormwater arrangements and water collection dams.
- Electrical supply and site reticulation.
- Sewerage handling facilities.
- Waste dumps.
- Tailings storage facility.

Asante has revised the earlier 2022 LoM plan to revisit the underground of the Main Pit sooner than originally planned and has completed a prefeasibility study on the underground mine which has quantified the mine life, production rate, infrastructure requirements as well as capital and operating costs for underground mining. The scoping study has also considered the appropriate transition point between open pit and underground mining.

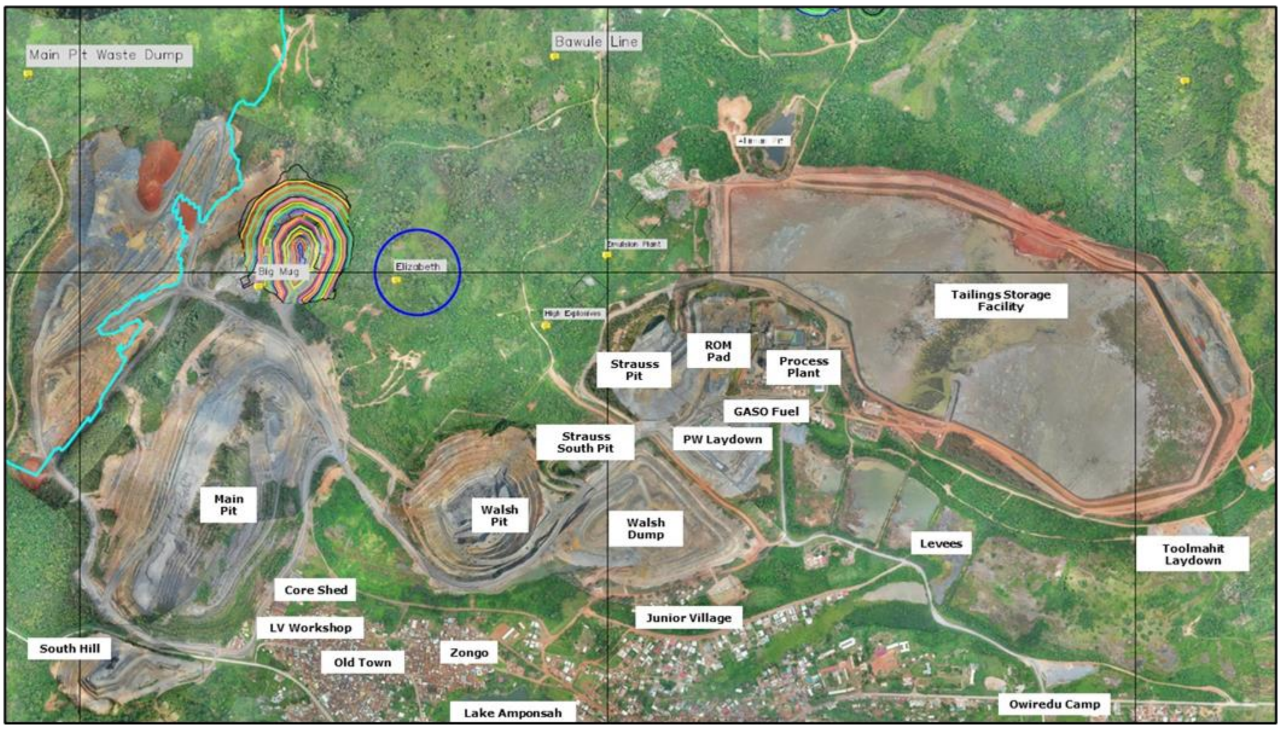


Figure 1-6: Bibiani Gold Mine - Site Infrastructure Plan

(Source: MGBL 2023)

1.15 Environmental Studies, Permitting and Social Impact

MGBL consists of decommissioned underground workings and open pits which were previously mined from 1891 to 2013 and thereafter went into care and maintenance. MGBL obtained an environmental permit in July 2021 to commence underground (UG) mining and processing operations from 2021 to 2023. This environmental permit covered the proposed underground mining operations, ore processing and related operations, the Tailings Storage Facility, workshops etc. The MGBL open pit operations comply with all applicable Ghanaian legislations particularly the Environmental Assessment Regulations 1999 (LI 1652). As required by the LI 1652 MGBL has duly registered the Project with the EPA and filed a Scoping Report and draft Terms of Reference submitted on the 17 January 2022.

The LoM Plan of the project requires the diversion of 13km of the Bibiani-Goaso Highway to the unplanned area enclave of Bibiani Lineso Junction to Tanodumase Junction. The cutbacks of the Main and Walsh pit would also require the resettlement of parts of Bibiani Zongo and Bibiani Old Town communities that would be impacted by the mining and related activities around the pit.

In compliance with the requirements of the Environmental Assessment Regulations, 1999, (LI 1652), and under the direction of the EPA upon completion of the EPA Form 2a, MGBL appointed Geosystems Consulting Ltd to carry out an Environmental Impact Assessment (EIA) and submit an EIS to the EPA to enable the grant of an environmental Permit for the project. The EIS was submitted in December 2021 and Environmental Permit (Permit No. EPA/EIA/568) was issued to MGBL on 21 February 2022 which expired on 20 August 2023 to commence Open pit mining at Main Pit, Strauss Pit and Walsh pit and to carry out diversion of portions of the Bibiani-Goaso Road. MGBL has since submitted an Environmental Management Plan to the EPA as required by LI 1652.

1.16 Capital Cost Estimate

A summary of the Total Capital Cost is presented in Table 1-8. The table presents the Non-Sustaining Capital, Sustaining Capital and Total Capital.

Table 1-8: MGBL Capital Cost Summary

Cost Centre	Non-Sustaining Capital Cost (US$000)	Sustaining Capital Cost (US$000)	Total (US$000)
UG Project Capital - Non-sustaining	172 785		172 785
Plant non-sustaining	13 889		13 889

Cost Centre	Non-Sustaining Capital Cost (US$000)	Sustaining Capital Cost (US$000)	Total (US$000)
Exploration - Non sustaining	15 352		15 352
Resettlement CAPEX	73 405		73 405
Road Diversion CAPEX	45 059		45 059
Mine Access Road	3 211		3 211
Road Detour	974		974
Sulphide Recovery Project	30 762		30 762
Plant Sustaining Capital		23 248	23 248
Process Engineering costs		2 077	2 077
Capitalised Mining Cost (Stripping Asset)		385 038	385 038
Light Vehicle Purchase		1 718	1 718
Security Infrastructure Upgrade		936	936
IT Infrastructure Upgrade		264	264
Capital UG - Sustaining		58 002	58 002
Exploration - Sustaining		7 417	7 417
Crop Compensation		4 800	4 800
Mine Services Capex		3 969	3 969
Total	**355 437**	**487 468**	**842 905**

1.17 Operating Cost Estimate

The operating cost estimate is presented in Table 1-9.

Table 1-9: MGBL Summary of Operating Costs

Operating Cost Centre	LoM Total	Cost/t RoM	Cost/oz Au
	(US$000)	(US$)	(US$)
Mining Cost - Opex OP	371 288	13.32	208.39
Mining Cost - Opex UG	523 298	18.77	293.70
Grade Control & Assaying - OP	20 983	0.75	11.78
Processing Cost	420 797	15.09	236.17
General & Admin Cost	161 916	5.81	90.88
Refinery & Shipment Cost	10 697	0.38	6.00
Royalties	169 471	6.08	95.12
Total Operating Costs	**1 678 449**	**60.00**	**942.04**

1.18 Economic Analysis

A summary of the results of the discount cashflow analysis is presented in Table 1-10. The table shows that the post-tax NPV is US$406 million at a discount rate of 5%.

Table 1-10: MGBL Key Economic Metrics

Description	Unit	Value
Processed Tonnes	(t)	27 877 502
Processed Gold (Au) Content	(oz)	1 962 537
Processed Gold (Au) Grade	(g/t Au)	2.19
Process Recovery (LoM Average)	(%)	91
Recovered Content	(oz)	1 781 717
Troy Ounces Sold	(oz)	1 782 950
Gold Price (LoM Average)	(US$/oz)	1 901
Total Revenue	(US$000)	3 389 398
Life of Mine	(years)	8
Capital Cost		
Non-Sustaining Capital Cost	(US$000)	355 437
Sustaining Capital Cost	(US$000)	487 468
Total Capital Cost	(US$000)	842 905
Operating Cost		
Total Operating Cost	(US$000)	1 678 449
Cash Cost	(US$/t RoM)	60
Cash Cost	(US$/oz)	942
AISC	(US$/t RoM)	78

Description	Unit	Value
AISC	(US$/oz)	1 216
Economics		
EBITDA	(US$000)	1 710 950
Free Cashflow (After Tax)	(US$000)	622 715
Post-Tax NPV (5%)	(US$ million)	464
IRR	%	53
Operating Margin	**(%)**	**50**

1.19 Conclusions and Recommendations

Bibiani holds the relevant mining leases, surface rights, major approvals and permits required for ongoing mining operations and exploration. The TSF is managed under a current contract by Knight Piésold Ghana Limited.

Several consulting geologists have been appointed by MGBL 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 Bibiani 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.

It is the opinion of the QP that the adequacy of the sample preparation, security and analytical procedures for the Bibiani Gold Mine mineralised 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, being of acceptable accuracy and precision.

It is recommended that the process of field duplicate sampling be reviewed given the low repeatability being shown by analysis to date. In addition, QAQC failures, trends and bias issues identified over time and followed up should be documented in monthly QAQC reporting for follow up and resolutions documented in subsequent monthly QAQC reports as appropriate. SOP's where these are modified over time as appropriate should be appropriately date stamped with version control.

Mineral Resources have been defined using a combination of lithology and structure to interpret the orientation and continuity of gold mineralisation at the nominal geological cut-off of around 0.2 to 0.3 g/t Au. This has resulted in the inclusion of sample intercepts below the nominal gold cut-off grade. These intercepts are considered internal dilution or internal waste zones, but in some case due to grade estimation smoothing, portions of these zones may exceed the MRE RPEEE reporting cut-off resulting in minor overestimation of tonnes and gold ounces. It is recommended that further work is completed to better define the mineralisation volume boundaries or to investigate non-linear grade estimation methods to reduce this potential overestimation due to grade smoothing.

The scoping study completed to date for the design, scheduling and implementation of the Main Pit underground operation to meet the LoM requirements of the revised strategy clearly concluded that the underground mining presented an opportunity to mine at lower cost per ounce than the deeper portions of the open pit requiring strip ratios to increase with associated increased mining costs. Asante has already sanctioned the upgrade of this investigation to Bankable Feasibility Study level and it is expected to be completed with some degree of urgency.

The Bibiani mineralised deposits relevant to this Technical Document are mined by active open pit 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 open pit deposits were deemed appropriate for the Company objectives and LoM analyses.

The overall gold recovery differential is 2.9% for excluding the gravity extraction step from the test work flowsheet and is additional to the 89.1% average normalised overall gold recovery from the 2015 ALS variability test work. A sulphide ore treatment average overall gold recovery of 92.0% for the Main Pit ore is declared.

Since the startup of the plant in June 2022 the performance of the conventional CIL plant recovery shows that a >60% monthly Main Pit Ore Supply results in a 65% operations overall gold recovery. At <60% monthly Main Pit ore supply the operations overall gold recovery is 80%. The operations overall gold recoveries include a 35% gravity gold recovery.

Exploration at Bibiani is at a very advanced stage and therefore is considered a well-developed, well maintained, brownfields mining project. 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 mineral assets and operating mines in Ghana, Africa's largest gold producer and is focused on developing high margin gold projects. Asante is currently operating the Bibiani and Chirano Gold Mines, situated approximately 15km apart, and continues with detailed technical studies at its Kubi Gold Project and on other 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.CN)
- Ghana Stock Exchange (GSE:ASG)
- Frankfurt Stock Exchange (FSE: 1A9)
- United States (USOTC: 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, also owned and operated by Asante, shares the same geological gold belt as the Ahafo Mines owned by Newmont (8Moz Au produced to date; www.newmont.com).

The Bibiani Gold Mine ("Bibiani", "Bibiani Gold Mine" or the "Project") is managed and operated by Mensin Gold Bibiani Limited ("MGBL") a wholly owned Ghanaian subsidiary of Asante. Bibiani is a historically significant Ghanaian gold mine situated in the Western North region of the country. The Project has a past production of near 5Moz and is fully permitted with available mining and processing infrastructure on site, consisting of a 3.0Mtpa mill and processing plant and extensive existing underground and surface infrastructure.

The QPs 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.

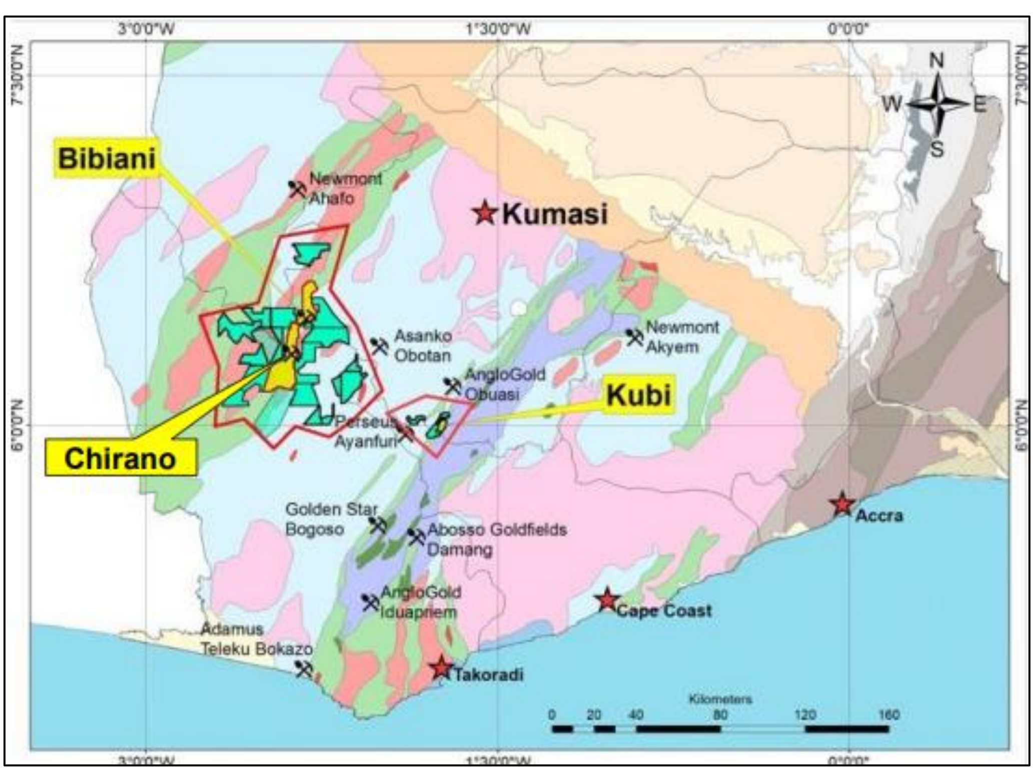


Figure 2-1: Asante Gold Corporation Land Package showing mines and current exploration concessions. Note: Some concessions await Ministerial Approval.

(Source: MGBL 2023)

2.2 Terms of Reference

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

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

“*NI43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa*”, Effective Date: 28 February 2022 and Issue Date: 31 May 2022, compiled by Qualified Persons from dMb Management Services (Pty) Ltd, Bara Consulting (Pty) Ltd and Snowden Optiro (Pty) Ltd.

The Project consists of a multi-deposit complex with essentially six mineralised deposits making up the updated Mineral Resources, both for open pit and underground production, contained in this Technical Report. The MGBL assets are primarily made up of the Bibiani Main Pit, historically a surface and underground mine, with numerous satellite pits along strike to the northeast and southwest along the Bibiani Shear Zone. Satellite mineralised deposits situated on the same geological structure include South Hill, Russell (south of Main Pit), Elizabeth Hill, Big Mug, Little Mug, Pamunu South, Pamunu North and on identified geological splays off the main structure to the northeast includes Walsh, Strauss South, Strauss, Aheman, and Grasshopper. The adjacent Walsh and Strauss Pits have been exploited previously as open pit operations and were further exploited by Asante within the last two years. Grasshopper and Elizabeth Hill have been drilled to a level of confidence to be included in the Mineral Resource Estimate in this updated submission.

MGBL has extensive existing infrastructure, having been both an open pit and later an underground operation historically, including a recently (2021-2022) refurbished and operational carbon-in-leach (“CIL”) processing plant with a current capacity of 3.6Mtpa and final planned capacity by 2025 of 4.0Mtpa. Open pit operations commenced in February 2022 and processing commenced in June 2022, following a 10-month refurbishment and re-construction period. The revised LoM plan with an effective date of 31 December 2023 has open pit mining ceasing in 2030 and underground mining.

2.3 Purpose of Report

The previous NI 43-101 Technical Report released in 2022 was sanctioned and completed in response to Asante taking ownership of MGBL in August 2021, having been on care-and-maintenance for approximately eight years. The main components of the immediate Project strategy at that time, with an expected life-of-mine of 8 years, included a full refurbishment of the 3.0Mtpa milling and processing plant, the tailings storage facility, explosives magazine and auxiliary surface infrastructure. In addition, the preparation and commencement, in alignment with the 2022 LoM Llan, of only open pit operations on the Bibiani Main Pit, the Walsh and Strauss Pits (collectively termed the “Satellite Pits”) and the rehandling of two rock dumps.

However, after the purchase date, Asante embarked on numerous initiatives to expand resources, increase current resource confidence, improve plant processing efficiencies, investigate and evaluate underground mining potential, increase and advance regional exploration and improve general infrastructure.

As previously stated, Asante has subsequently completed a mine plan for the underground mining operation to a prefeasibility level of detail. This plan considers commencing underground mining at a higher elevation than the final Cut4/5 open pit design, thereby reducing the open pit mine life, as previously reported, but bringing in underground production in conjunction with open pit mining from both Main pit and various Satellite pits from 2026 on. This study is currently being upgraded to a Bankable Feasibility level of confidence.

First gold was poured by MGBL in July 2022. Gold production ramp-up is progressing to produce +250koz per annum from 2027 with underground mining to commence in 2025.

This Technical Report is therefore focused on communicating change in all aspects of the Project in the intervening period since Asante’s acquisition (2022/23) and will include, but is not restricted to, technical details of the following:

- Status of current open pit mining and metallurgical processing.
- Upgrades and improvements to the processing flow chart since the last technical report.
- A re-estimate of Mineral Resources and Reserves with an effective date of 31 December 2023, restated to describe the re-engineered LoM strategy that includes underground mining below the Main Pit orebody.

- Detail of the underground mine design and strategy to bring forward underground mining operations below the current Bibiani Main Pit to circa 2025 and to subsequently cease open pit extraction from the Main Pit at a shallower elevation to the original 2030 timeline reported in the 2022 NI 43-101 Technical Report.
- A review therefore of the revised LoM plan, operating and capital costs, and economic analysis.
- 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 & Qualified Persons

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

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

Qualified Person	Company	Site Visit Date(s)	Item/Section	Purpose of Site Visit
David Michael Begg	dMb Management Services (Pty) Ltd	17/10/2023-19/10/2023 26/11/2023-30/11/2023	1-10, 20, 23-27	Principal Author, Geology, exploration and general overview of entire Project.
Malcolm Titley	MAJA Mining (Pty) Ltd	Site visits in 2022.	14	MRE review.
Galen White	Bara International (BVI)	17/10/2023-19/10/2023	11-12	Sample Preparation, Data Verification & MRE review.
Clive Brown	Bara International (BVI)	26/11/2023-30/11/2023	15-16, 18-19, 21-22	Mining & Mineral Reserves, Opex & Capex, Infrastructure.
Glen Bezuidenhout	GB Independent Consulting (Pty) Ltd	26/11/2023-30/11/2023	13, 17	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

MGBL have provided information, reports and data to the Authors in preparing this document which, to the best of MGBL's knowledge and understanding, is complete, accurate and true and MGBL 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.

Exploration information, current operations and LoM planning used in compiling the Technical Report was sourced and derived from updated mine site and corporate reports and personal communications with the Asante and MGBL executive and senior management, mine site employees and associated consultants. Additional sources include the MGBL data room, previous feasibility studies and technical reports, exploration presentations and reports and other specific technical documents relevant to the Bibiani Gold Mine, the current operations, investigations and exploration.

Professor Kim Hein, Principal Consultant & 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 Hein has interpretive input, with permission, into Sections 7,2; 7.3; 8.0; 9.3 which relate to the local geology and interpretation of exploration information.

Mr Joe Baidoe of **RonDave Engineering Solutions** has had input into Section 16.4 dealing with the open pit geotechnical analyses. Mr Baidoe is a Ghanaian resident with more than 25 years of rock engineering experience in mining industries 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 relevant QPs had personal communications and discussions with Mr Baidoe during site visits.

The authors, all of whom have visited the mine site and current 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 Bibiani 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

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

Table 2-2: Summary of QP Site Visits

Qualified Person	Visit Date	Activity
Mr Mike Begg dMb Management Services	16 – 19 October 2023 27 – 30 November 2023	The following activities and visits were carried out: • All the operational open pits were visited. • The newly defined Russell 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 relevant site personnel to discuss and review drilling procedures, sampling practices, general QA/QC protocols and overall data management processes. • The near site independent Intertek Analysis Laboratory was visited and inspected. • The mine roads to and from the numerous mining sites to the processing plant and other relevant infrastructure were travelled and are all in good condition. • The nearby residential and community settlements affected by planned resettlement plan (RAP) were also observed. • The new resettlement plan building site was visited. • The by-pass road was visited.
Mr White Bara Consulting (BVI)	16 – 19 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 discussions and meetings with geological personnel in relation to geological setting, mineralisation styles, deposit portfolio, exploration activity, data collection and Mineral Resource evaluation. • Visit to open pit environs including Main Pit and satellite deposits, for ground truthing. • Review of workflows for data collection, inspection of geological plans, sections and presentations, including review of the 2022 litho-structural model interpretation. • Inspection of core processing facilities and inspection of selected drill core from Main Pit and Russell deposits. • Review of database structure, validation processes and assay QA/QC. • Review of Mineral Resource modelling processes, assumptions, and estimation methodologies. • Visit to the Intertek Laboratory situated close to the Bibiani Mine.
Mr Clive Brown Bara Consulting (BVI)	27 – 30 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.

Qualified Person	Visit Date	Activity
		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 Glenn Bezuidenhout GB Independent Consulting (Pty) Ltd	27 – 30 November 2023	For the NI 43-101 Technical Report for Bibiani 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 entire Bibiani plant and had a meeting with the plant superintendent. A list of process and metallurgical information was requested and received. • Visited the TSF and requested and received latest Knight Piésold Site audit reports.

All references and information sources are listed in Section 28.

2.7 Effective Date and Declaration

The Issue Date of this 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

Abbreviation/ Unit of Measurement	Description	Abbreviation/ Unit of Measurement	Description
kW	Kilowatt	TSF	Tailings Storage Facility
ℓ	Litre	TSX	Toronto Stock Exchange
kℓ	Kilolitre	µm	Micron
LOI	Loss on Ignition	US$	United States Dollars
LpM	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 MGBL. 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, has had input into 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 239,000 km². 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 MGBL 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

(Source: MGBL 2023)

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 growing rapidly.

4.2 Project Location and Area

The Bibiani Mine is situated in the Western North Region of Ghana Figure 4-2. 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.

The best access to the mine site is from the east along the Kumasi-Bibiani-Sefwi Bekwai tarred highway. The Kumasi airport can be accessed from Accra by a frequent and regular 40-minute flight using various national airlines.

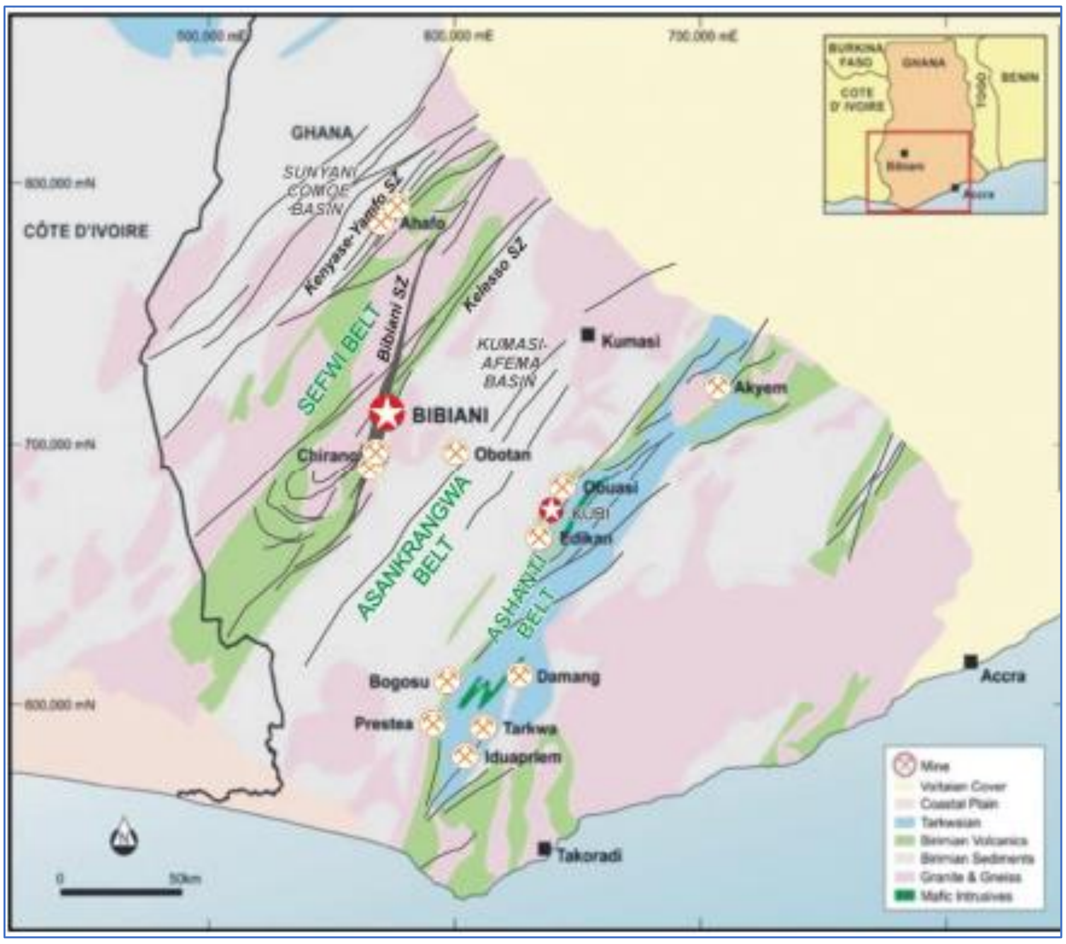


Figure 4-2: Bibiani Mine Location with Respect to Regional Geological Setting and Other Gold Producers

(Source: MGBL 2023)

The MGBL assets are primarily made up of the Bibiani Main Pit, historically a surface and underground mine, with numerous satellite pits along strike to the northeast and southwest along the Bibiani Shear Zone. Satellite mineralised deposits situated on the same geological structure include South Hill, Russell (south of Main Pit), Big Mug, Little Mug, Pamunu South, Pamunu North, Ahyiresu (North of Main Pit) and on identified geological splays off the main structure to the northeast includes Walsh, Strauss South, Strauss, Ahiman, and Grasshopper.

Figure 4-3: Bibiani Gold Mine and Surrounding Satellite Pits and Exploration Targets

(Source: MBGL 2023)

4.3 Licences and Mineral Tenure

MGBL holds one Mining Lease and two Prospecting Licences, which collectively make up the MGBL mineral assets and span over 20km strike length.

4.3.1 Mining Leases and Prospecting Licences

The legal status of the Mining Lease and Prospecting Licences held by MGBL in Ghana in which the Company has an interest has been verified by MGBL staff. As at 31 December 2023, all mineral tenements were in good standing with the Government of Ghana. Furthermore, it has been confirmed that the properties are lawfully accessible for evaluation and mineral production.

The Mining Lease contains an approximate area of 49.82km² lying to the north of Latitudes 6˚25'52", 6˚26'47" and 6˚27'11"; south of Latitudes 6˚29'23" and 6˚26'47"; east of Longitudes 2˚17'46" and 2˚19'14" in the Bibiani-Anhwiaso-Bekwai District of the Western Region of the Republic of Ghana.

Figure 4-4 below shows the land package position and relationship within the MGBL Mining Lease and Prospecting Licences. The land package has been carefully acquired based on identified geological strike extension opportunities to the main mineralised deposits of the Bibiani Mine.

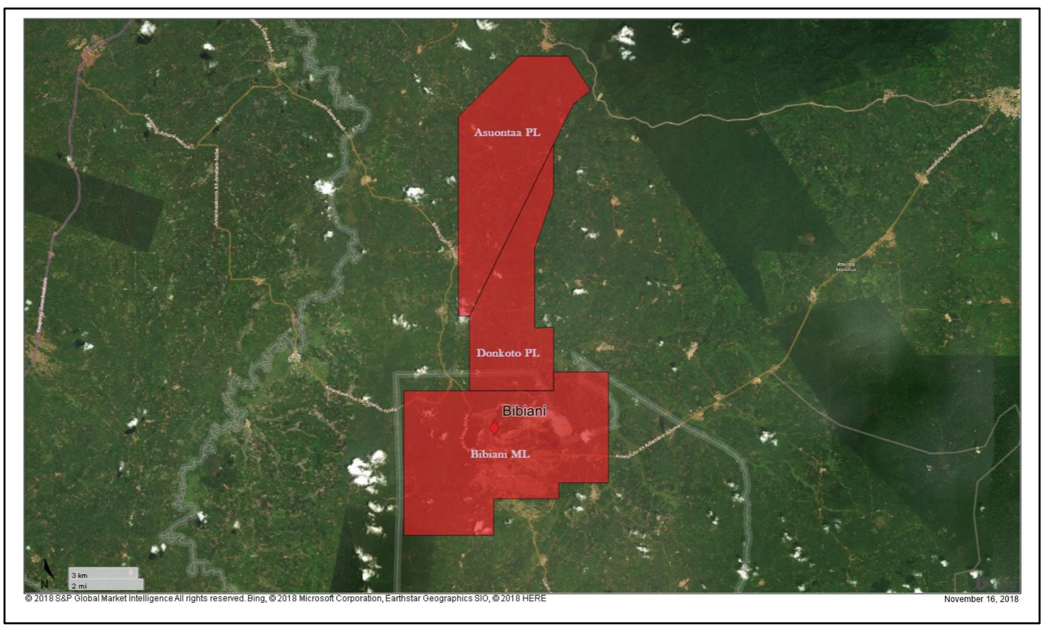


Figure 4-4: Bibiani Prospecting Licence Concession Plan

(Source S&P Global Market Intelligence)

The areas of the mining leases and prospecting licences with respective company owners are tabulated in Table 4-1

Table 4-1: Mensin Gold Bibiani Limited – Summary of Mining and Prospecting Leases

Tenement Number	Type	Permit Name	Holder	Equity Interest	Grant Date Expiry Date	Comment	Area (km²)
PL.2/15 LVB/WR.615/97	Mining Lease	Bibiani	Mensin Gold Bibiani Limited	100%	19 May 1997 18 May 2027	Valid	49.82
PL.6/44	Prospecting Licence	Asuontaa	Mensin Gold Bibiani Limited	100%	16 June 2011 15 June 2012	Renewals Pending. Licences in force pursuant to Section 35 (4) of Minerals Act,2006 (Act 703)	29.30
PL.6/353	Prospecting Licence	Donkoto	Mensin Gold Bibiani Limited	100%	23 June 2011 22 June 2013		19.33
						TOTAL AREA	**98.45**

4.3.2 Mining Legislation and Overview

4.3.2.1 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 first notifying the minister, who refers the case to a tribunal consisting of three persons appointed by the President.

4.3.2.2 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, LI 2173, 2012.
- Minerals and Mining (Support Services) Regulations, LI 2174, 2012.
- Minerals and Mining (Compensation and Settlement) Regulations, LI 2175, 2012.
- Minerals and Mining (Licensing) Regulations, LI 2176, 2012.
- Minerals and Mining (Explosives) Regulations, LI 2177, 2012.
- Minerals and Mining (Health, Safety and Technical) Regulations, LI 2182, 2012.
- Minerals and Mining (Ground Rent) Regulations, LI 2357, 2018.
- Minerals and Mining (Local Content and Local Participation) Regulations, LI 2341, 2020.

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

4.3.2.3 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 generally permit drilling, excavation, or other physical activities on the land, except where such activity is specifically permitted by the licence. It is normally 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.

4.3.2.4 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 150 km2. 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.

4.3.2.5 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 for Lands and Natural Resources 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.

4.4 Agreements, Royalties and Encumbrances

In addition to the 10% non-equity free carry held by the Ghana Government it will receive a royalty on gross revenue of all gold production associated with the development of the Bibiani Mining Lease, of 5%, based on monthly gold prices on the market.

4.5 Environmental Obligations

The MGBL open pit operations comply with all applicable Ghanaian legislations particularly the Environmental Assessment Regulations 1999 (LI 1652). As required by the LI 1652 MGBL has duly registered the Project with the EPA and filed a Scoping Report and draft Terms of Reference submitted on the 17 January 2022.

MGBL has 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, are continually executed to sensitise catchment communities, regulators, local and regional authorities, and traditional leaders on the Project.

4.6 Permits

MGBL also holds the necessary permits for the following:

- Water Abstraction – for both potable and dewatering requirements Valid until 31 December 2024.
- Operation of a fuel dispensing and storage facility.
- On site medical facility permits (Issued by the Ghana Health Facilities Regulatory Agency).
- Municipal Business Operating permit issued by the Bibiani Anhwiaso Bekwai Municipal Assembly.

MGBL received the following updated permits in 2023:

- Environmental Permit (EPA/PR/PN/1237) issued on 24 March 2022 from the Ghana Environmental Protection Agency. Expiry date: 23 March 2024.
- Environmental Permit (EPA/EIA/568) issued on 21 February 2022 from the Ghana Environmental Protection Agency. Expiry date: 20 August 2023.
- Mine Operating Permit (No. 00002521/23) issued on 9 February 2023 from the Minerals Commission, Inspectorate Division. Expiry date: 31 December 2023.

These Permits allow for open pit 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. The Environmental and Mine Operating Permits provide for all aspects of the Bibiani Mine development, including operation and expansion, re-alignment of the National Highway, management of water and tailings, transport and utilization of explosives, mining and processing. This is covered in more detail in Item 20.

4.7 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. In the case of MGBL all concessions belong to three Paramountcy's who have in turn given same right to the relevant Subchiefs to exercise that right in terms of compensation. 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).
- Ground rent payments through the Government's Administrator of Stool Lands.

There are currently seven levees that were historically constructed as tailings storage ponds. In recent times the levees have been used to store and to supply make-up water for the processing plant. Adjacent levees are conjoined but separated by saddles. There is vegetation growing along the embankments which protects them from erosion and subsequent sedimentation. The levees also collect most of the direct runoff drainage from the mine site area.

The Process Water System water circuit is split into Raw, Process and TSF return water. TSF return water is used for process make-up. In operation phase underground dewatering will be continued and the water used in the processing operations.

Boreholes, hand dug wells and public reticulation are the main water sources for the catchment communities as streams and other surface waters in the mine concession have been contaminated in the past by communities and illegal mining operations.

4.8 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 Authors are unaware of any such potential issues that may hinder MGBL's ability to perform operations.

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

5.1 Accessibility

Ghana's capital city, Accra, is serviced by most major international airlines. The nearest city to the mine is Kumasi situated 92km east of Bibiani town and about 250km to the north-west of Accra. The airport in Kumasi, currently being upgraded for international travel, is served by two domestic airlines operating regular 40-minute flights from Accra. Kumasi is a continuously growing metropolitan and the commercial, industrial and cultural capital of the Ashanti region.

The main access to the mine is from the east, along the Kumasi-Bibiani – Sefwi Bekwai Highway. Access to the Bibiani mine gate from the Kumasi Highway is excellent.

The mine is also serviced by two well equipped coastal ports, Tema which lies just to the east of the capital Accra, and Takoradi which lies 180km to the south of Bibiani.

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.

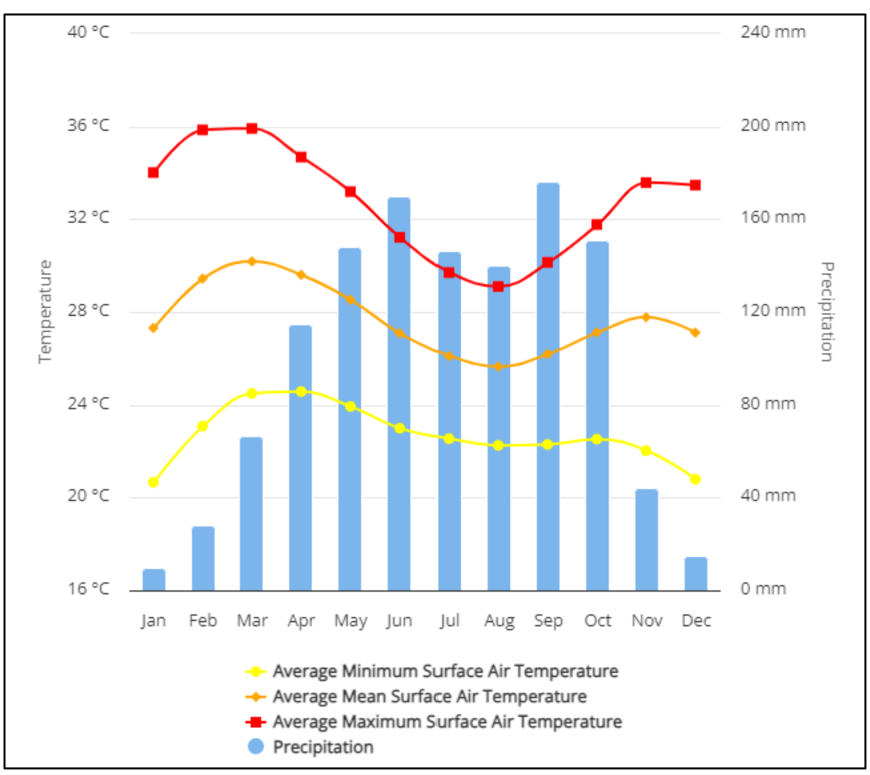


Figure 5-1: Ghana Monthly Climatology – 1991-2020

(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

The Bibiani Gold Mine is situated adjacent to the town of Bibiani, the capital of the Bibiani/Anhwiaso/Bekwai Municipal Assembly, which has an approximate population of 167,000 people (2021 census). The Bibiani Gold mine has been in existence for more than 100 years and therefore skilled labour and other mine related resources are easily available within the nearby region.

MGBL currently has a complete team on site, either permanent or contracted employees, to carry out the open pit mining and the processing plant operations. These teams include senior and executive management, mine management and personnel, accounting and procurement staff, open pit operations management and mining personnel, environmental officers and community liaison personnel, maintenance personnel, geological and technical personnel, plant operations personnel, human resources and camp management. A full contracted security complement is also present. In pit mining operations are handled by a contract mining company (PW Mining International Limited) that was awarded the contract in February 2022.

Since acquiring the Bibiani project, MGBL’s continues to focus on four community development pillars:

- Water and sanitation.
- Community health.
- Education.
- Local economic development.

Local representatives and MGBL staff continue to work together to develop and implement projects around these development goals. In doing so, strong links are being built between the Bibiani community and the Mine to enable a lasting beneficial legacy.

5.4 Infrastructure

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

The mine has a 3Mtpa processing plant that was fully refurbished in 2021/22 and is planned to be expanded to 4.0Mtpa by 2025, tailings storage facility and large open pit mining contractor lay down areas and workshops. All mine related areas are fully secured by a contracted Security Company deployed in all areas of operations. 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 Bibiani mine receives electrical power from the national grid. However, the mine also owns and maintains emergency generators to supplement grid power when required. There are two freshwater dams on the property.

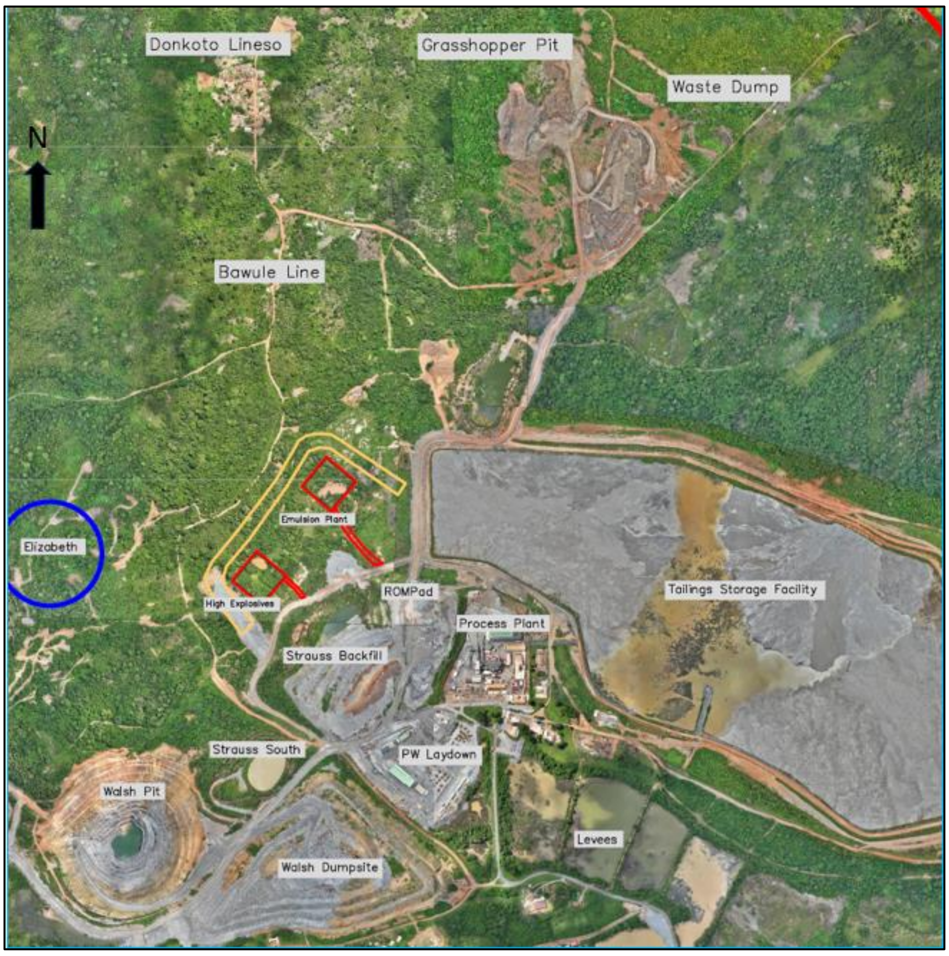


Figure 5-2: Bibiani Gold Mine – Open Pits and Surface Infrastructure

(Source: MGBL 2023)

5.5 Physiography

The physiographic and topographic characteristics are exemplified by the Bibiani range, which trends southwest to northeast from Axim to Sunyani, about 200km. Rugged terrain is characteristic of the range, with high peaks hovering above 600m.

The Bibiani mine site is located on the eastern flank of the Bibiani range, to the north of the Bibiani township. There are both high and low land areas within the project area. The high lands are located to the southwest of the project area, with topography reaching above 500m elevation. The peaks trend to the north-northeast, following the main structural trend in the area. The lower topography of the project is located to the east. The landscape comprises gentle undulating rolling topography formed by weathering processes.

In general, the concession areas have been transformed, having experienced extensive degradation in recent years. The main land uses include secondary forest, subsistence and cash crop farming, and artisanal gold mining.

The upland soils are suitable to produce climatically suited tree and food crops, as well as cereals, legumes and vegetables. Tree crops such as cocoa, coffee, citrus, oil palm, avocado pear and mangoes do well on these soils. Cassava, yams, plantain, banana and maize are successfully grown on these soils.

The mining concession is in five sub-catchments in the Tano River Basin of the southwestern basin system of Ghana. These sub-catchments are the Amponsah, Mpokwampa, Mensin, Kyirayaa, and Pamunu. The five rivers of these catchments flow in a westerly direction into the Tano river; these rivers are seasonal, sometimes drying up in the dry season between December and March.

The Tano river valley is about 3km wide, and comprises the present river channel, a flood plain and a valley slope. The areas beyond the valley feature rolling hills which rise to 40m above the river. The Pamunu river is perennial with many dendritic tributaries and meanders through the flood plain varying in width from a few metres to 50m.

Amponsah and Mpokwampa drain various areas of the mine before joining Mensin. The mine area includes a series of levees to catch flood and run-off water. Overflow from levee 5 also joins Mensin. The surface water resources are not consumed due to the impact from mining operations and domestic waste from the local inhabitants and residential areas. As part of MGBL's water monitoring program, surface water sampling locations have been incorporated into the program to assess the physico-chemical and biological content.

6. HISTORY

6.1 Prior Ownership and Ownership Changes

The Bibiani mineralisation was first prospected and worked in the 1800s on an extensive scale prior to the granting of the first concession in 1891 and has undergone many ownership changes since its discovery. Commercial gold production began in 1902 and ran to 1913, with the mining of surface sediments and oxidised mineralised material at shallow levels. Early mining involved underground methods followed by a period of open pit mining of both oxide material from smaller satellite pits and fresh rock material from the more significant Bibiani Main Pit.

Mining activities recommenced in 1927 as an underground mine, developed and operated by foreign investors until it was nationalised in 1958. The history of exploration and development from 1958 onwards by separate owner is discussed in the following paragraphs.

6.2 Historical Exploration and Development

Historical exploration activities over the Bibiani Concessions have been carried out by various previous owners. Drilling and sampling was completed between 1993 and 2017 by:

- AngloGold Ashanti Limited 1993 – 2005.
- Central African Gold (CAG) 2007 – 2008.
- Noble Mineral Resources (Noble) 2010 – 2012.
- Resolute Mining (Resolute) 2014 – 2021.

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

Table 6-1: Brief History of Bibiani Gold Mine

OWNERSHIP ENTITY	DATES	RELEVANT HISTORICAL ACTIVITIES
Unknown	1902	Mining of surface adits and oxidised material.
	1913	Closed after recovering ±70koz Au
Bibiani Limited	1927	Mining resumed as underground operation under management of Bibiani Limited
State Gold Mining Corporation	1958	Bibiani nationalised. Mined remnants and pillars. Depleted outlined reserves.
	1973	Closed after ±2Moz Au production
Ghana Libya Arab Mining Corporation & International Gold Resources	1980	Late 1980s and early 1990s GLAMC and IGR acquired various rights to the Bibiani mine deposits and respectively embarked on separate tailings reclamation and surface exploration programmes.
		The surface exploration programme yielded a positive feasibility study for the development of an open pit resource around and encompassing the historic underground Bibiani mine.
Ashanti Goldfields Company Limited	1997	Redeveloped the mine as an open pit operation with a modern processing plant. Produced ±1.8Moz of gold from the Main Pit and associated satellite pits.
		The mining was hampered by a failure on the western Bibiani Main Pit wall and operations continued with mineralised material from the smaller satellite pits and low-grade stockpiles.
		A trackless decline was developed in 2004/2005 to access the underground workings for resource estimation and exploration
	2001	Exploration and development programme to investigate the potential to recommence underground mining operations. Surface drilling was conducted with results confirming the presence of gold mineralisation below the existing open pit
	2002	A portal near 3 Level was established at the southern end of the Bibiani Main Pit and a trackless decline was developed with the aim of providing access to the underground workings beneath the pit down to 12 Level for further resource estimation and exploration work.
	2003	Successfully extending the Bibiani Main Pit down to RL75m, a depth of approximately 200m below surface.
	2006	Project up for sale. Bibiani Mine had produced ±4Moz Au over its operational life.
Central African Gold	2007	Continued mining underground and persisted with surface and underground exploration to further improve the underground potential. CAG reported a total of 3,758m of operating and capital development and produced a total of ±354kt at 3g/t Au
	2008	Financial problems forced assets to be handed to principal financier Investec Bank of South Africa.
Noble Mineral Resources	2009	Sale of Shares' agreement to acquire CAGGL from Investec Bank
	2010	SEMS Exploration Services Ltd ("SEMS") to compiles a detailed report on the Bibiani Project, which included a technical review of the geology and a targeting exercise.
		Commenced mining in the satellite open pits to the northeast of the Main Pit
	2012	Coffey Mining specialists based in Perth, Australia submit a Mining Study of the Bibiani Project. Coffey developed Mineral Resources for the Bibiani Main Pit, Elizabeth Hill, Walsh, Strauss and Strauss South deposits

OWNERSHIP ENTITY	DATES	RELEVANT HISTORICAL ACTIVITIES
		Construction commenced on expanding the processing plant to a nominal capacity of 3Mtpa. Never fully completed.
	2013	Declining gold price and subsequent financial difficulties Noble suspends operations at Bibiani in May 2013
Resolute Mining	2014	Focussed primarily on the Bibiani Main Pit deposit from surface and underground positions.
		Resolute commissioned Model Earth Pty Ltd to complete a full geological review of the Bibiani concessions.
		Resolute completed 26,665m of underground and surface diamond drilling at Bibiani with the aim of enhancing the existing 1.7Moz Mineral Resource. The drilling identified numerous broad, moderate to high grade, zones of mineralisation. Surface drilling conducted at the same time had success concentrating on areas directly north of the underground workings
	2016	Optiro produced a mineral resource model. Resolute completed a Feasibility Study. The Study contemplated production of up to 1.2Mtpa from Long Hole Open Stope underground mining. Processing of mineralised material taking place at the refurbished existing processing plant.
		Initial Ore Reserve (JORC Compliant) of 5.4mt at 3.7g/t Au (640koz Au) was declared. LoM (5 years) production was expected to be approximately 560koz Au.
	2017	Second phase of drilling during 2016/17 which included a further 25,400m DD drilling from both underground and surface positions. Included 1,000m drilled at the Walsh and Strauss satellite pits
	2018	Released an updated feasibility study that stated a current JORC compliant Mineral Resources prepared by Optiro (see ASX Announcement dated 18 October 2017) of 21.7Mt at 3.6g/t Au for 2.5Moz Au.
		The QP has not carried out sufficient work to be able to verify these historical estimates and they are not considered relevant to this Technical Report.
	2019	Commissioned Mining Plus to carry out a pit optimisation for the Walsh Pit.
Asante Gold Corporation	2021	August 2021, Asante acquired all Resolute's interest in Mensin Gold Bibiani Limited through the purchase of 100% of the shares of Mensin Bibiani Pty Limited.

6.3 Historical Mineral Resource Estimates

Several Mineral Resource and Mineral Reserve estimations and declarations have been released by the various owners of the Bibiani Gold Mine since 2013. These historically declared Mineral Resources have not been verified by the QPs of this Technical Report and the issuer is not treating the historical estimate as current mineral resources or mineral reserves.

The Mineral Resources contained in this Technical Report are an update on the Mineral Resource Estimate published in the NI 43-101 Technical Report released in August 2022 by Asante (refer Section 14). The remodelled and revised 2022 Mineral Resource Estimate, compiled by Snowden Optiro, was in response to the strategy adopted by Asante Gold Corporation whereby the mineral assets were to be extracted by means of open pit mining techniques as opposed to historical underground mining.

The Mineral Resource Estimate completed on 31 August 2022, and filed on SEDAR, were compiled by Snowden Optiro and prepared under the direction of Competent Persons 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 Mineral Resource Estimate reported is given in Table 6-2 below. The Mineral Resource was reported above a 0.5g/t gold cut-off, a gold price of US$1,950/oz as at 28 February 2022. Open pit mining in all the pits has taken place since this date. Mineral Resources that are not mineral reserves do not have demonstrated economic viability.

Table 6-2: Summary of MGBL Mineral Resource at a 0.5 g/t Au cut-off, as at 28 February 2022

Deposit	Measured and Indicated			Inferred		
	Tonnes (Mt)	Au Grade (g/t)	Au Content (Moz)	Tonnes (Mt)	Au Grade (g/t)	Au Content (Moz)
Bibiani Main Pit	30.20	2.23	2.170	3.90	2.69	0.338
Satellite Pit	1.37	2.62	0.116	0.12	4.57	0.020
Total	**31.57**	**2.24**	**2.286**	**4.02**	**2.74**	**0.358**

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 any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1034768g.*
5. *A 0.5g/t gold cut-off has been applied and constrained by a RPEEE US$1,950 (metal price) Resource pit shell.*
6. *A density of 2.75t/m³, 2.50t/m³ and 2.0 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.*

It is accepted that the MRE was completed in accordance with the best practice guidelines and international mineral reporting codes by suitably qualified persons of Snowden Optiro who are known to the Authors.

This latest Mineral Resource Estimate is the focus of this Technical Report with the effective date 31 December 2023 and is presented in Section 14. The Resources and Reserves declared herein are therefore specific to the planned short to long term extraction of defined Mineral Reserves in both the Bibiani Main Pit and additional nominated Satellite Pits by open pit and underground methods in the future.

6.4 Historical Mineral Reserve Estimates

The historical Mineral Reserve Estimate published in the most recent NI 43-101 Technical report issued by Asante (August 2022) was prepared by Bara Consulting using the Canadian Institute of Mining, Metallurgy and Petroleum definitions and guidelines adopted as of May 2014 (CIM, 2014) and procedures for classifying the reported Mineral Reserves were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101.

The Mineral Reserves were based on the Indicated Mineral Resources identified as being economically extractable and incorporated mining losses and the addition of waste dilution. The mine design supporting the Mineral Reserve was based on an optimum pit shell using an US$1,850/oz Au price. The Mineral Reserve Estimate as at 28 February 2022 are shown in Table 6-3.

Table 6-3: Summary of MGBL Mineral Reserve as at 28 February 2022

Category	Tonnes (Mt)	Grade (g/t)	Contained Gold (Moz)
Proven Mineral Reserves	0.258	2.16	0.018
Probable Mineral Reserves	28.151	2.14	1.932
Total Mineral Reserves	**28.409**	**2.14**	**1.950**

Notes:

1. *The Mineral Reserve was reported in accordance with the requirements and guidelines of NI43-101 and are 90% attributable to Asante (10% Ghanaian Government).*
2. *Apparent computational errors due to rounding are not considered significant.*
3. *The Mineral Reserves were reported with appropriate modifying factors of dilution and recovery.*
4. *The Mineral Reserves were reported at the head grade and at delivery to plant.*
5. *The Mineral Reserves were stated at a price of US$1,850/oz as at 28 February 2022.*
6. *Although stated separately, the Mineral Resources were inclusive of the Mineral Reserves.*
7. *The mine plan underpinning the Mineral Reserves was prepared by MGBL and reviewed by Bara Consulting.*
8. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate.*
9. *Quantities are reported in metric tonnes.*
10. *The input studies are to the prescribed level of accuracy.*
11. *The scheduled production included approximately 4% Inferred Mineral Resource, with most towards the tail end of the production forecast.*
12. *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.*

6.5 Historical Production

Up to 2012, the total gold production from the Bibiani mine and satellite pits was estimated at over 5Moz of gold. Table 6-4 below gives a summary of historical production.

Table 6-4: Bibiani Gold Mine Historical Production

Period	Operator	Production		Grade	Comment
		Mt	Au	g/t	
Initial 65 years	Unknown	7.8 0.5	>2.0Moz	9.5	Underground Mining Surface Mining
Mid 1990s - 2004	Anglogold Ashante		> 1.8Moz		Stopped by slope failure
2007 - 2008	Central African Gold		354kt	3.0	Tailings, UG, oxides
2009 - 2013	Noble Resources		39Koz		Gold price and finances
2014 - 2019	Resolute Mining		Nil		Exploration focus

6.6 Asante Gold Corporation

In August 2021, Asante acquired all Resolute's interest in Mensin Gold Bibiani Limited through the purchase of 100% of the shares of Mensin Bibiani Pty Limited.

Since taking ownership in 2021, and apart from the relevant successful fund raises, Asante has initiated and, in some cases, completed the following infrastructure and operations related projects and drilling exercises:

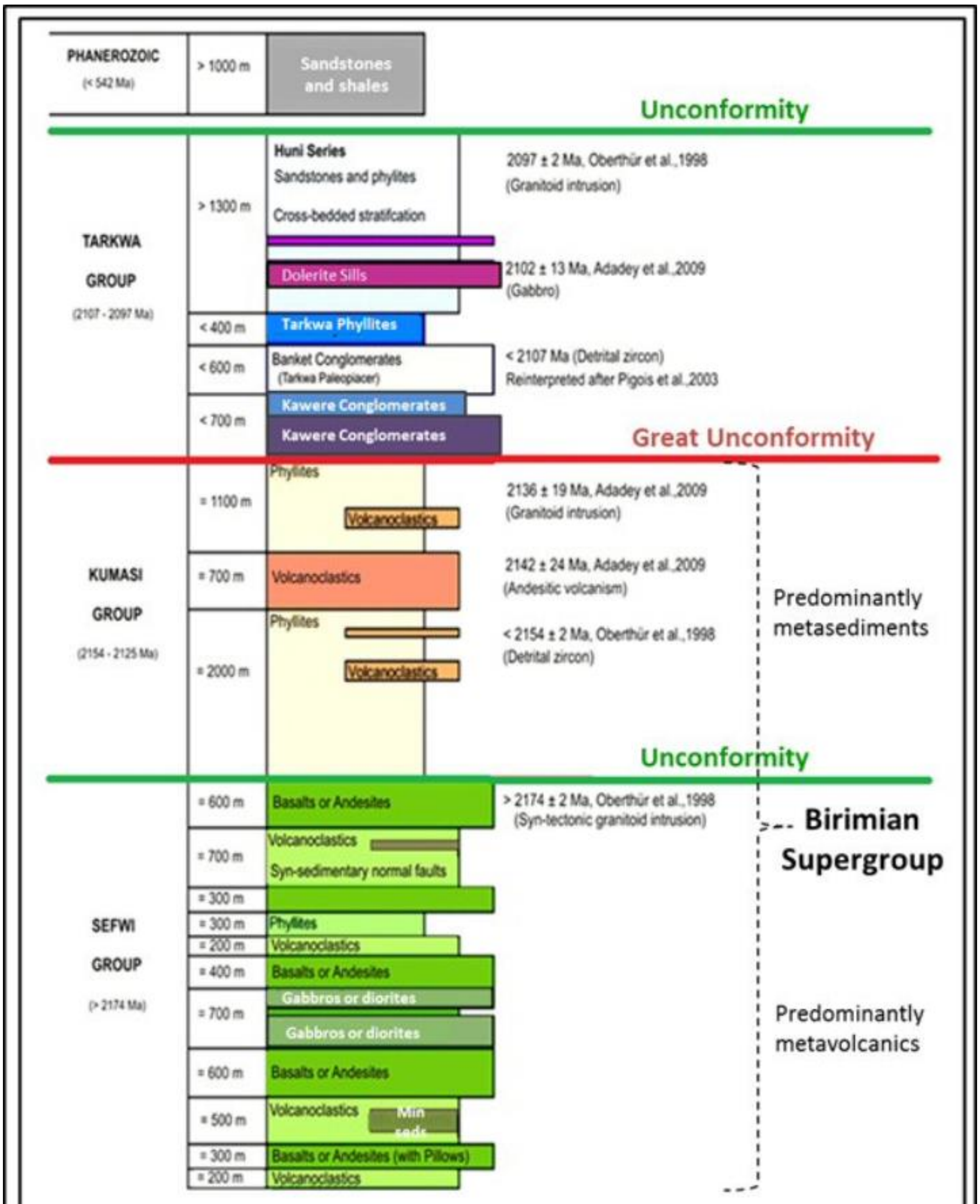
- Upgrading of the existing gyratory crusher is near completion supported by the installation and ongoing construction of an auxiliary crusher to support the throughput increase and increase crusher availability.
- Upgrading and ongoing construction of the expanded elution circuit to improve on elution productivity.
- Installation of 10t oxygen plant and MACH reactor to improve recovery.
- 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.
- General mine infrastructure refurbishments (roads, residential camps, sporting facilities, canteens, workshops, offices, security, etc).
- Pit preparation and successful open pit mining activities and processing operations from the Bibiani Main Pit, and satellite pits, namely Walsh and Strauss (now depleted).
- Ongoing open pit operations still within the expanded Bibiani Main Pit and now also over the Grasshopper mineralised deposit.
- Completed to a Prefeasibility level the design work and related Mineral Resource Estimation on underground operations below Bibiani Main Pit for commencement circa 2025.
- Ongoing ground-based field exploration, geological mapping, sampling and geophysical surveys.
- Exploration drilling completed between August 2021 and the end December 2023 over 10 individual target mineralized areas. (333 drill holes (DD, RC & RCD), 51,412m and 49,831m of samples collected.)

7. GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Geology

On a regional scale, MGBL 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 Figure 7-2. 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 Chirano (Asante); Obuasi and Iduapriem (AngloGold Ashanti); Tarkwa and Damang (Goldfields); Ahafo (Newmont) and Edikan (Perseus). The Bibiani deposit is in the Sefwi-Bibiani belt which is host to over 30Moz Au. Bibiani is the second largest gold occurrence in the region after Newmont's Ahafo deposit.

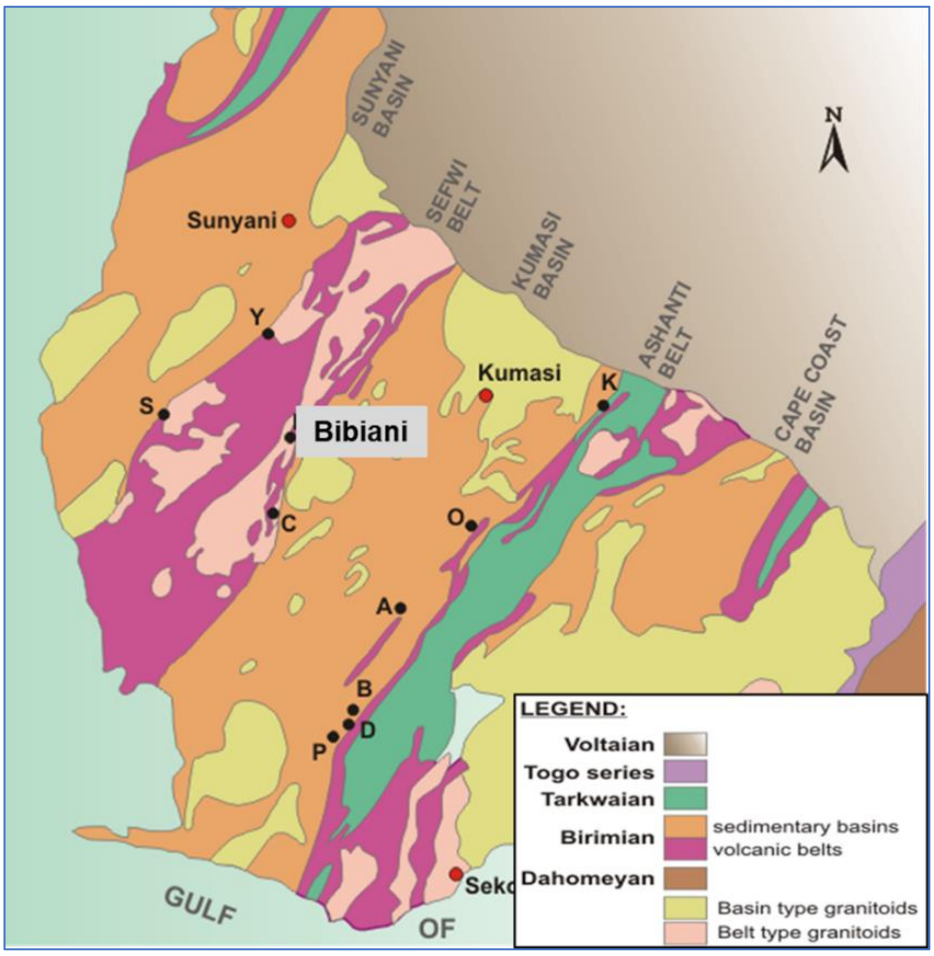


Figure 7-2: Bibiani Project - Regional Geological Setting Within Southwest Ghana

(Source: Geological Survey Department of Ghana 2009)

The Tarkwaian Group, which is not well represented within the Bibiani tenements, is considered to have been deposited as a shallow deltaic sediment sequence within a graben setting and is at least partly coeval with the Birimian Formation.

Structurally, the Bibiani district is dominated by the effects of the multiple deformations of the 2130-1980 Ma Eburnean Orogeny. This is most evident in the N to NNE striking sequence exposed in the pit and surrounding drillholes and is located on the eastern limb of a district-scale antiformal syncline. At least three generations of cleavage are developed but limited detailed geological mapping means the overall kinematics are not yet fully understood. The Sefwi Shear, which juxtaposes the 2150-2100 Ma Kumasi Basin against the older Sefwi Belt volcanics (2250-2170 Ma), is also apparent in widespread folding and faulting across the concession area Figure 7-2.

7.2 Local Geology

The Bibiani mineralized deposit is hosted within the Kumasi-Afema Basin (age 2150-2100Ma), a thick sequence of fine-grained graded turbidites with localised thin interbeds of fine to medium-grained turbiditic sandstones, which lie adjacent to the Sefwi Belt meta-volcanics and volcaniclastic rocks (age 2250-2170Ma). The sedimentary sequence is tightly folded, with west-dipping axial planes and localised development of steep west-northwest dipping shear zones which have acted as conduits for initial gold mineralisation.

The Bibiani mineralized deposit geometry is structurally controlled by a steep north to northeast trending shear corridor 200m to 600m wide within Lower Birimian sediments and close to the eastern contact of the Upper Birimian Figure 7-3. The shear zone is host to quartz infill as massive veins (up to 20m) and quartz stockworks. In the widest parts of individual mineralised deposits, two and locally three individual quartz reefs or lodes can be identified. Two highly graphitic fault zones, historically referred to as pug seams or fissures, are associated with the major shear zone on the foot wall and hanging wall.

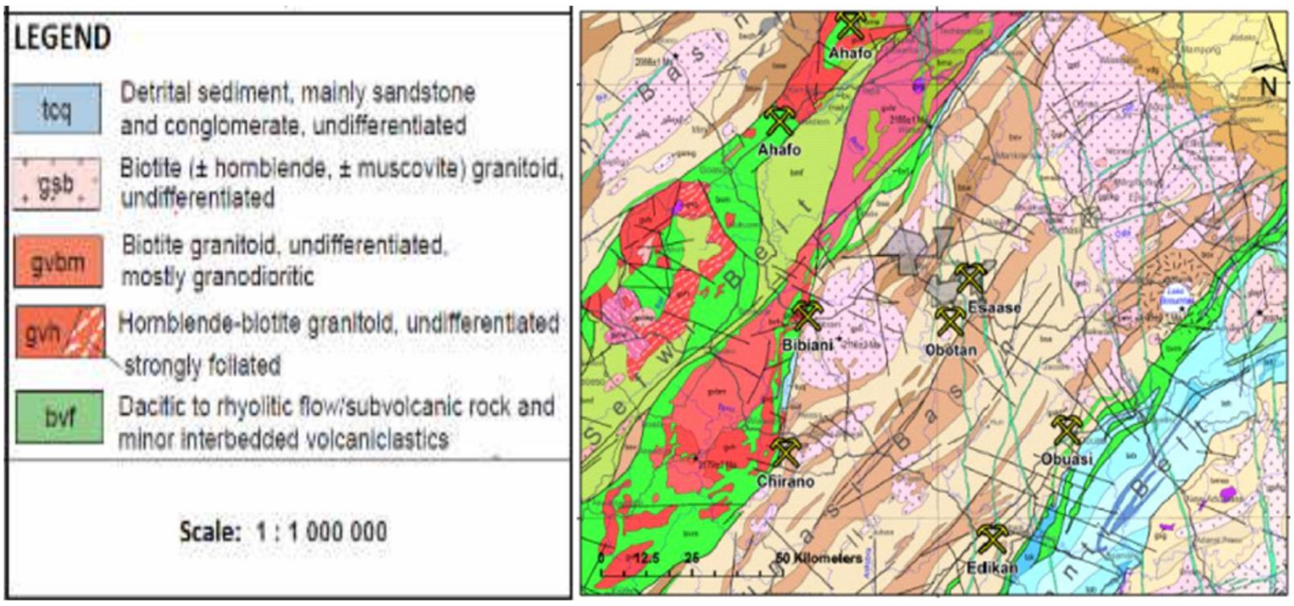


Figure 7-3: Regional Geological Map of Bibiani and Surrounding Areas

(Source: Geological Survey Department of Ghana 2009)

Aside from the historic Bibiani deposit, which has been mined to approximately 800m below surface in certain locations, there are numerous other smaller gold occurrences within the surrounding district, which have been mined on both small- and mechanised -scales Figure 7-4. All these mineralised deposits are currently active exploration targets for Asante. In the last two years of operations a few have been assessed and have been or are in the process of being developed into active open pit mining operations.

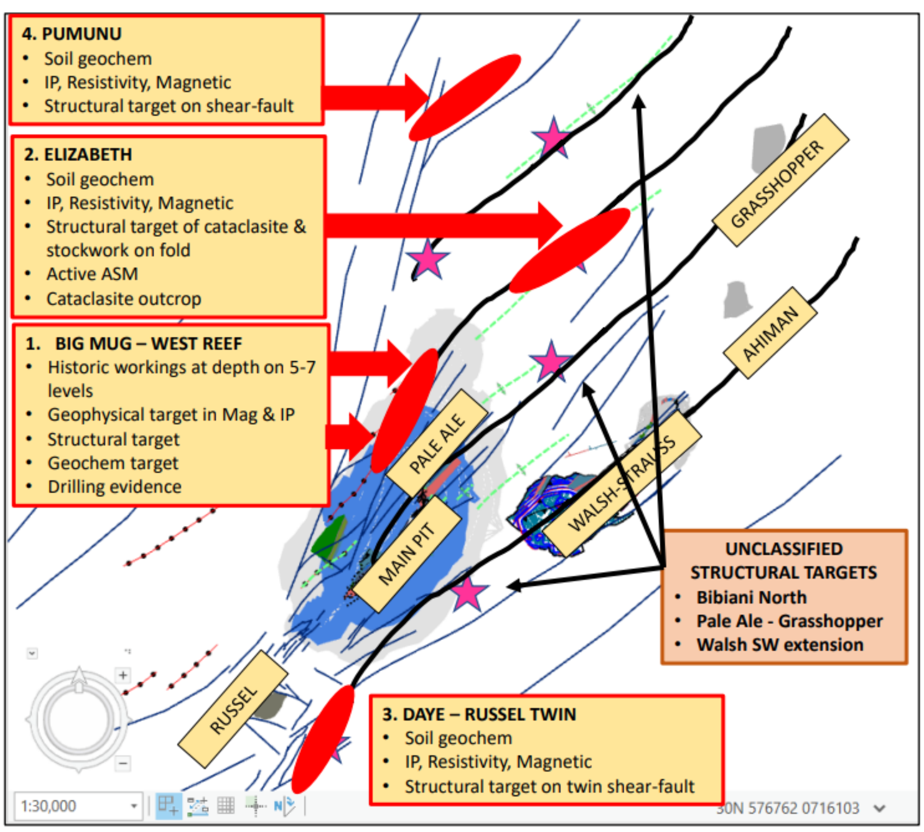


Figure 7-4: Bibiani Project – Localised Structural Interpretation and Adjacent Satellite Mineralised Deposits

(Source: KAAH 2023)

Mineralisation shows a ubiquitous association with quartz-carbonate-sulphide veining and is structurally controlled, consistent with the orogenic/slate-belt model favoured for the majority of West African gold mineralisation.

At least four deformation events are observed locally and can be summarised as follows Figure 7-5.

1. Large scale isoclinal folding and inversion of sedimentary sequences.
2. Further folding with steep axial planes. Development of dominant foliation and localised development of west dipping shear zones and gold mineralisation.
3. Plane of failure switches and the formation of east dipping brittle-ductile faults. The emplacement of tonalite intrusives and high-grade gold bearing quartz veins.
4. Late shallow dipping crenulation cleavage.

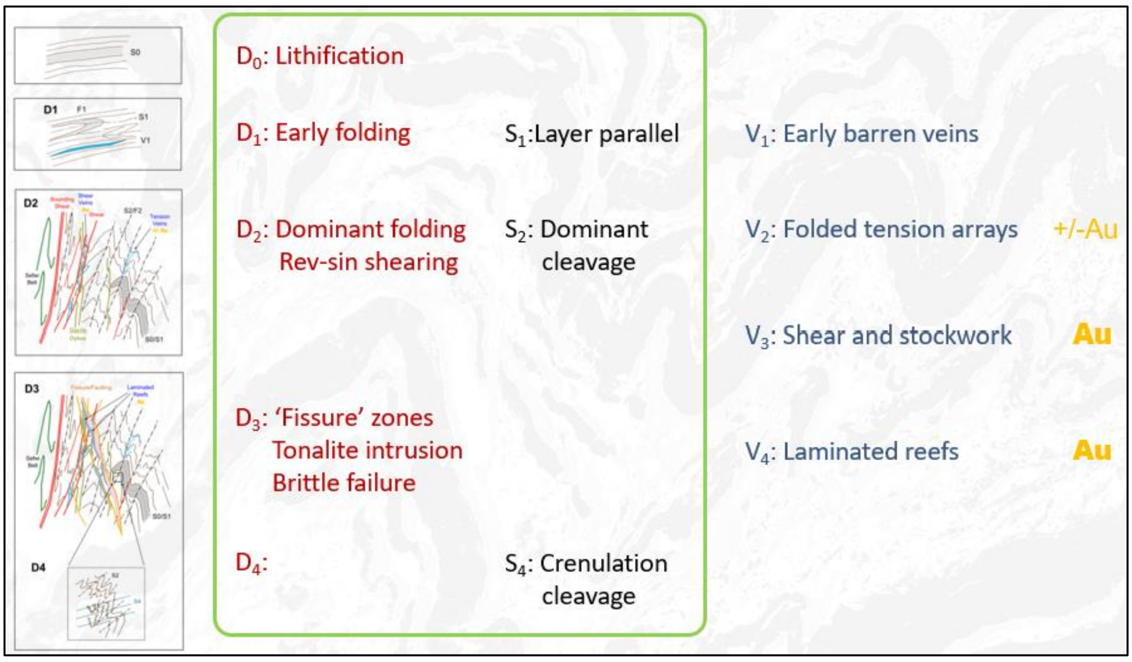


Figure 7-5: Bibiani Relative Deformation Timing and Structural Interpretation

(Source Model Earth 2014)

7.3 Property Geology, Structure and Mineralisation

The Bibiani Project consists of a multi-deposit complex with essentially three mineralised deposits making up the updated Mineral Resources contained in this Technical Report. The MGBL assets are primarily made up of the Bibiani Main Pit, historically a surface and underground mine, with numerous satellite pits along strike to the northeast and southwest along the Bibiani Shear Zone.

Satellite mineralised deposits situated on the same geological structure Figure 7-6 include South Hill, Russell (south of Main Pit), Big Mug, Little Mug, Pamunu South, Pamunu North and on identified geological splays off the main structure to the northeast includes Walsh, Strauss South, Strauss, Ahiman, and Grasshopper. The adjacent Walsh and Strauss Pits have been exploited previously as open pit operations and were further exploited by Asante within the last two years.

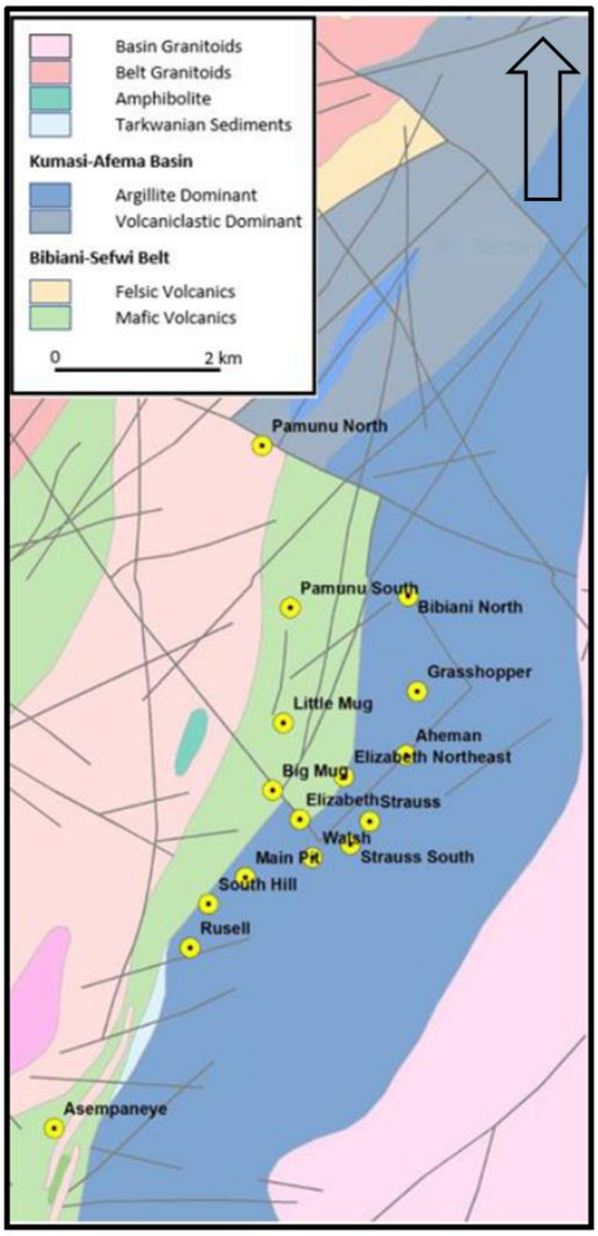


Figure 7-6: Bibiani Project – Location, Geological Setting with Identified Mineralized Deposits

(Source: MGBL 2023)

Professor Kim Hein of KAAH Geoservices, contracted on an ad hoc basis by Asante, has assisted and mentored the MGBL geological team over the last two-year period to carry out intensive re-logging and structural re-interpretation of the local geological environment with the aim of better understanding the tectonic evolution of the Bibiani mine site as a model for further exploration and target generation. The work concluded involved extensive underground and open pit mapping in all accessible underground workings and open pits, as well as orientated re-logging of numerous drill cores (5,134m) for structural and lithological re-interpretation. The work resulted in the formation of a revised structural database in ArcGIS Pro. Underground geology data was validated and analysed using stereographic projection software to the 21 level (-407RL or 660m depth).

The license area is interpreted to be underlain by volcanic/volcaniclastic/sedimentary rocks related to the transition zone between the lower and upper Birimian Supergroup. In the southern part of the license the rocks strike about 20º to 30º E and dip steeply to the southeast. Further to the north the strike changes to between 40ºE and 50ºE.

Underground and surface mapping has shown that the mineralisation is bounded by a series of faults-vein breccia lodes of varying size and gold mineralisation grades. The mapping indicates that there are several cross faults Figure 7-7 that offset the stratigraphy, but there is no clear indication that there is a relationship between these faults and the gold mineralisation. The trend of the Bibiani mineralised deposit appears to continue northwards to the Pamunu River, some 2km to the north of the Bibiani Mine. A parallel splay from the Bibiani trend continues up to the Bibiani North mineralised deposit, which centres about 1km to the north of the Bibiani Mining Lease.

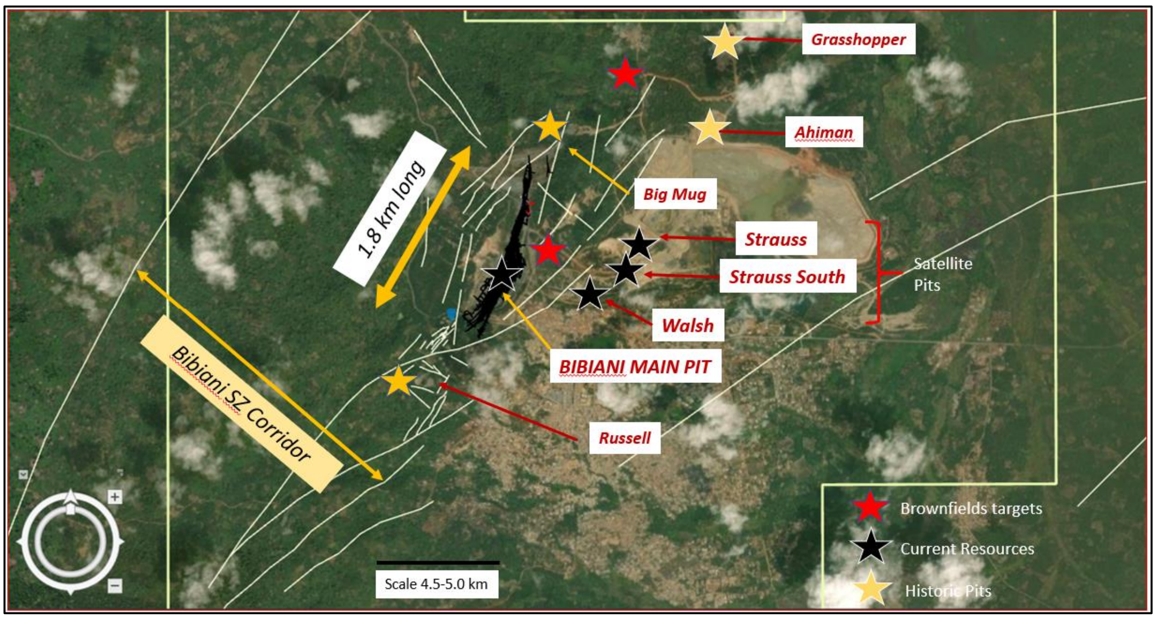


Figure 7-7: Bibiani Project – Localised Structural Interpretation and Adjacent Satellite Mineralised Deposits

(Source: KAAH 2023)

The following sub-sections will discuss broadly the identified and targeted mineralised deposits.

7.3.1 Bibiani Main, Big Mug & South Hill

Most of the geological study has been focused on the Bibiani Main mineralisation, which is hosted by Kumasi Basin turbidites several hundred metres east of the Sefwi Shear. Sediments are metamorphosed to lower greenschist facies, with primary textures well preserved away from altered and high strain zones. Turbidites are generally monotonous, and no marker horizons have yet been discovered, which has limited stratigraphic understanding. Common overturned fining-up sequences and fold vergences together indicate that the sequence exposed in the pit and surrounding drillholes is located on the eastern limb of a district-scale antiformal syncline. At least three generations of cleavage are developed but limited detailed geological mapping means the overall kinematics are not yet fully understood.

The Bibiani Main Zone within the open pit and the underground zone Figure 7-8 is mineralised over a strike length of approximately 2km. At the centre of the mine the deposit strikes 030° to 035° which changes to around 020° at the northern end of the mine. In general, the mineral deposit dips east at 60° to 80°, crossing the regional structural fabric at acute angles.

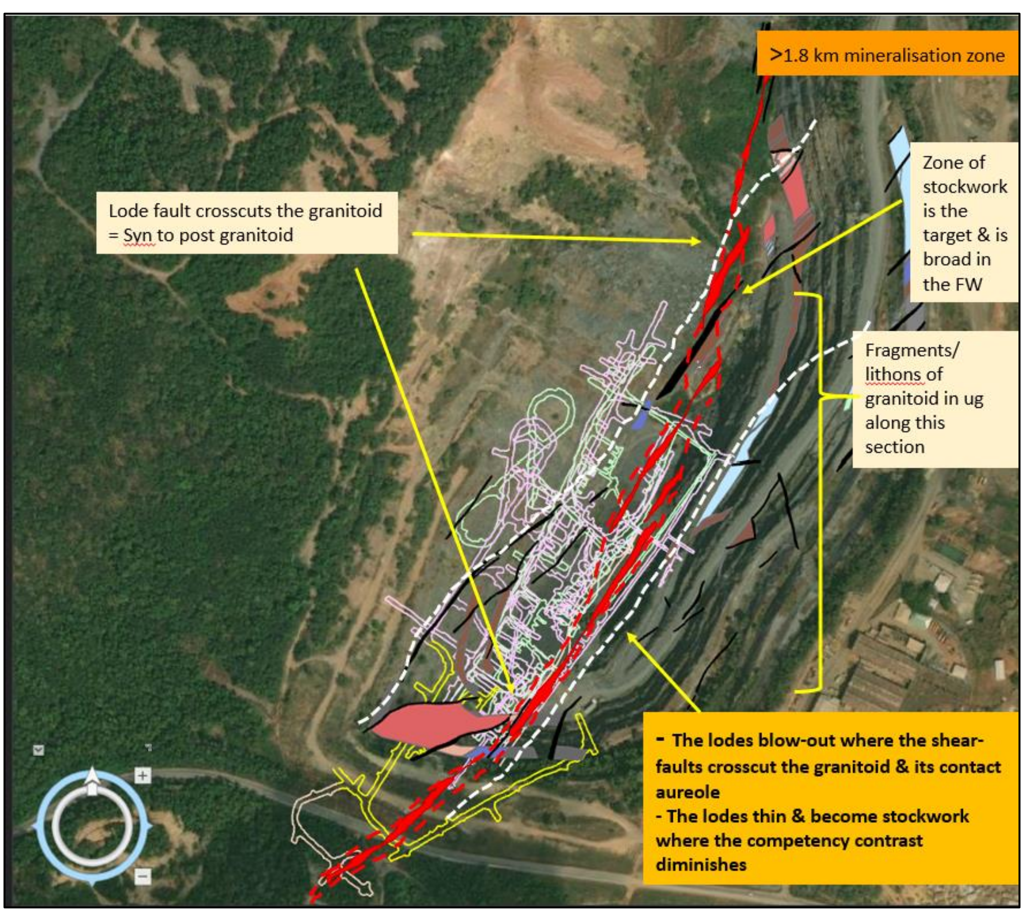


Figure 7-8: Bibiani Project – Bibiani Main Pit Showing UG Workings & Zone of Stockworks

(Source: KAAH, 2023)

Wall rocks adjacent to the quartz veining demonstrate fine-grained disseminated iron-carbonate and sericite alteration with associated sulphide mineralisation. These alteration haloes can also contain gold values up to 2g/t Au.

Some prominent structures measured in the pit walls and berms of the Main Pit include faults, quartz veins, intrusives, dykes, cleavage planes and bedding planes. These structures have significant control on gold mineralization in Bibiani especially extensional faults that serve as conduit for fluid flow and subsequent mineral deposition. Mapping data shows very strong evidence of folding in the metasediments. The metasediments have been pushed up against a competent metavolcanic rock suite resulting in tight and upright folding. Figure 7-9 below illustrates this event.

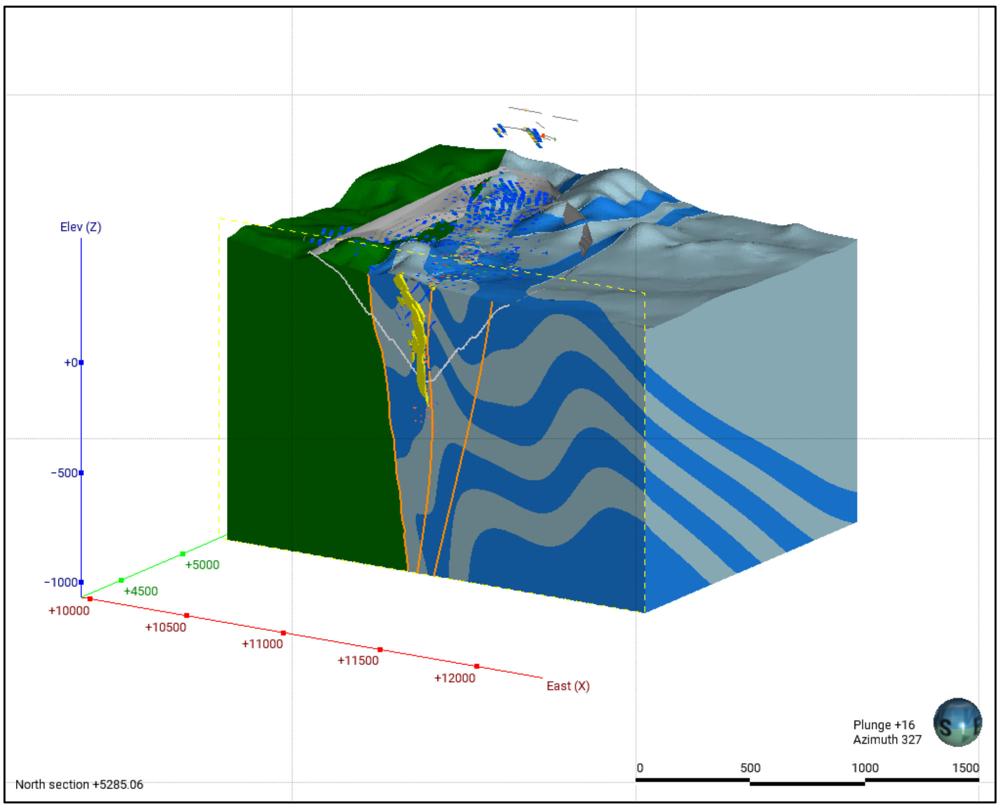


Figure 7-9: Bibiani Project – Bibiani Main Pit Upright Folding and Main Shear Zones against Metavolcanics.

(Source: KAAH, 2023)

Three major faults are the main structural control (seen in red):

- West bounding fault which forms the contact between the metavolcanics and metasediments.
- East bounding fault.
- Central fault.

In summary, the tectonic style is described as progressive slow wrench tectonics. The main failure is over 600m wide trending NNE over several kilometres. En echelon folds and thrust faults form borders to the failure. A combination of transpression with transtension forms pull apart zones allowing the formation of massive quartz cataclasite vein systems. The folding style is described by Professor Hein as flexure-slip. This causes shear faults and stockwork veins along fold limbs. Folds progress to tight isoclinal in the main failure zone.

The cross section below Figure 7-10 through Bibiani illustrates the structural geology as well as the geometry of the lodes within the mineralised deposit. Also displayed in the Figure is drilling results reported from the earlier 2017 exploration programme. The presence of the porphyritic intrusion (pink colour) has also influenced grade distribution within the mineralised lodes.

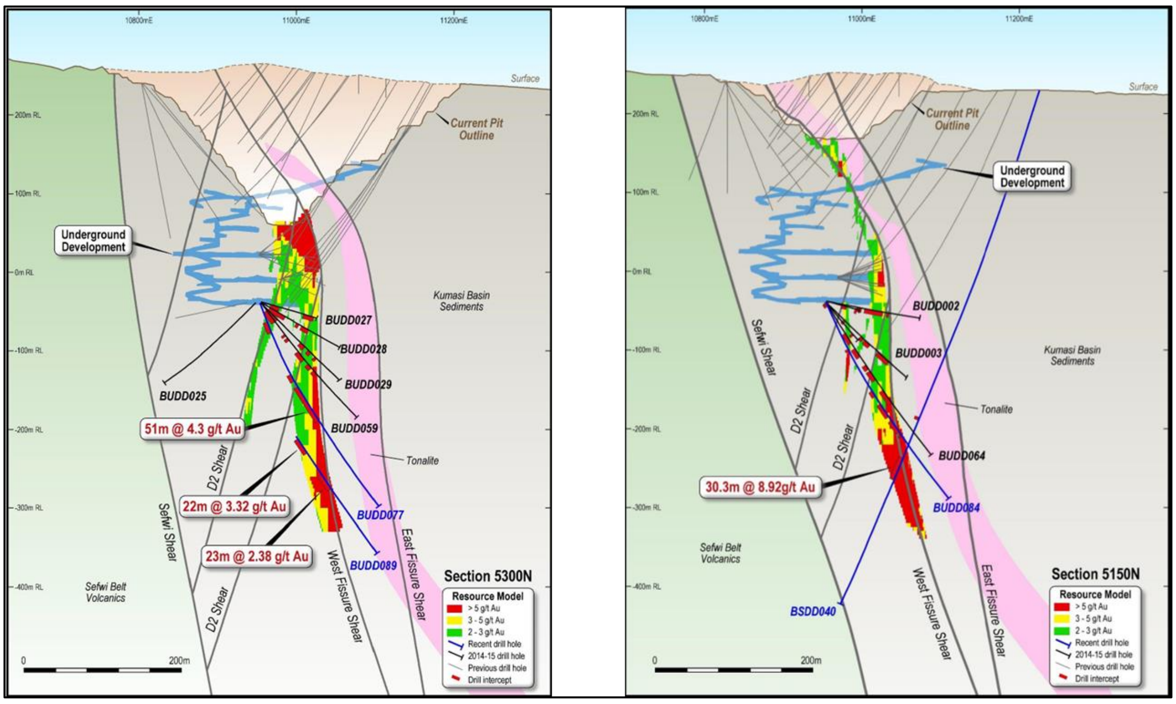


Figure 7-10: Bibiani Project – Typical Cross Sections (5300N & 5150N Looking North) Illustrating the Structure and Geometry of the Bibiani Mineral Deposit

(Source: MGBL 2023)

The total strike length of the Bibiani mineralised trend is around 4,000m, of which only 1,800m has been exploited by historic mining operations. The mineralisation remains open at depth as evidenced by drilling results both past and present.

At Main Pit north, gold mineralization occurs within zones of quartz-ankerite-dolomite veining and gold is strongly associated with arsenopyrite and pyrite. Sericite alteration also commonly observed both along mineralized structures, and in and around the felsic intrusive. High-grade veins often occur within carbon rich shales with significant pyrite mineralization. Most of the gold mineralisation at Bibiani is syn-orogenic and is associated with quartz and quartz-ankerite (Fe-dolomite) veins and quartz stockworks. Both vein types are associated with pyrite ± arsenopyrite. There is a positive relationship between the presence of gold and the presence of arsenopyrite. The maximum arsenopyrite content has been observed to be around 2% to 3%. Microscopic examination confirms that much of the gold occurs along edges or cracks within the sulphide grains. The size of gold grains is typically less than 50 microns, generally observed to be between 1 to 10 microns in size.

A vein model was constructed from re-logged core and the presence of quartz veins shows a very high correlation with mineralisation Figure 7-11.

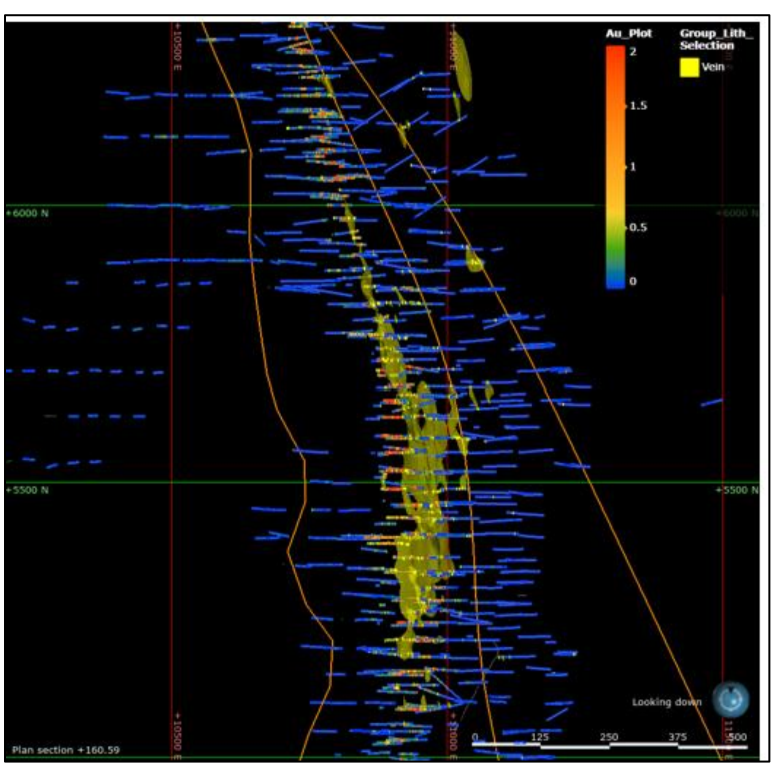


Figure 7-11: Bibiani Main Pit Plan View – Correlation between Quartz Vening and Grade Distribution

(Source: MGBL 2023)

Visible gold can be seen in some mineralised quartz veins. It was noted from historical process plant records that around 15% of the total gold reports to the coarse size fraction, with the Knelson concentrator collecting up to 35% of the total gold recovered in the plant.

Big Mug mineralized deposit is located directly north of the Main Pit, underlain by Birimian metasedimentary rocks in the eastern part and by intercalated metasedimentary and metavolcanic rocks in the western part of the Mining Lease area. Big Mug however does not have the tonalite intrusive at the east of the main pit but rather a less continuous dacite dyke that pre-dates the main deformation (as evidenced by a pervasive cleavage absent from the tonalite).

South Hill mineralization Figure 7-12, located directly south of Main pit, is part of the main Bibiani mineralization trend striking around 45^0 NE and dipping moderately to the SE. The geology includes the Birimian metasediment intruded by granitoids located east of the main lode. Both lithologies appear to be intruded by quartz veins. High grade gold mineralization is concentrated in strongly foliated and silicified metasediment (breccia) located west of the granitoid. Low grade mineralization, on the other hand, is concentrated locally at zones where quartz veins intercept the granitoid thereby creating dilation zones for gold mineralization. Mineral alterations within these rocks include carbon, sericite, silica and sulphides (mainly pyrite).

The mineralized zone exhibits strong shearing and brecciation with abundant quartz veining and increased carbon concentrations which may have structurally contributed to the ore deposition by aiding deformation within the fluid corridor.

Three ore controlling faults zones have been mapped in South Hill. There is a footwall fault on the west of the mineralization and hanging wall on the east as well as a third which lies to the east of the intrusive.

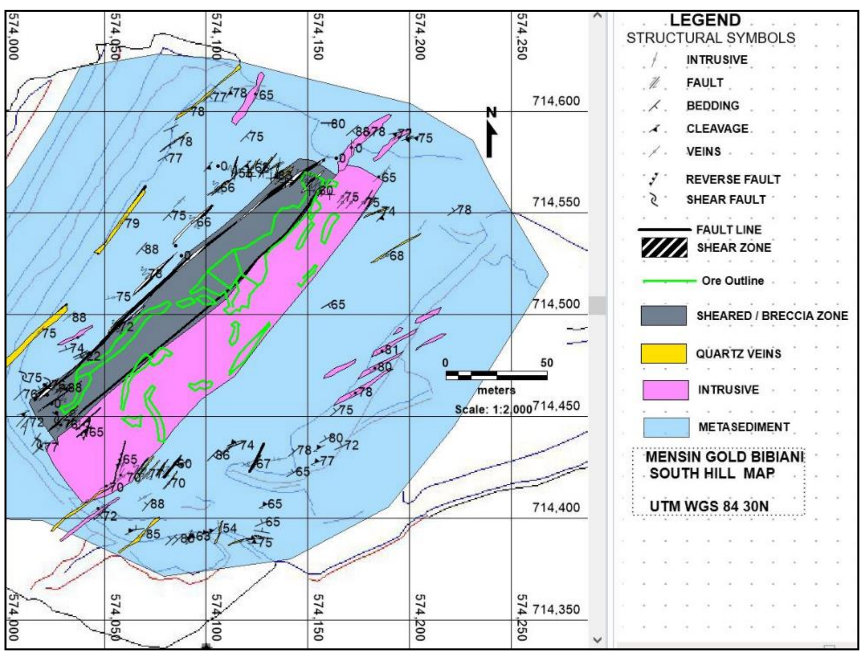


Figure 7-12: South Hill – Mapped Pit Geology, Structure and Mineralization

(Source: MGBL 2023)

7.3.2 Walsh and Strauss

Located immediately east of the Bibiani Main Pit are the Walsh and Strauss satellite pits which have been completely depleted since the last NI 43-101 Technical Report.

Geological work carried out, with the assistance of Professor Hein, on re-logged diamond core and mapping of the open pit indicates that the Walsh deposit is a fault-propagation-fold and vein system or thrust-fold system that formed during the D1 deformation stage.

Lithological information gathered during the recent geological investigations highlighted the following:

- Interbedded graphitic shales, siltstone and volcaniclastic greywacke and possibly turbidites.
- Rare tuffaceous interbeds indicate inputs from distal volcanic eruptions as ash fall.
- Soft-sedimentary deformation features such as slump units and grading upward in sequences in turbidites provided stratigraphic way up or younging direction during logging.
- The sequences were likely deposited in a back arc basin proximal to a volcanic arc in a deltaic to marginal marine environment.

Two structural domains are recognised and include: 1) an upper greenschist facies block moderately deformed and dominated by flexural-slip folding and 2) a lower greenschist-amphibolite facies block that is sheared and contact metamorphosed to hornblende-hornfels facies. The fold-propagation fault system is crosscut by faults that conjugate NE and NW.

Gold mineralisation is hosted in the combined fault-propagation-fold and quartz filled vein system and the conjugate faults. Figure 7-13 below is a typical core intersection from Walsh exploration drilling showing the relationship between faulted shale and mineralised intrusive quartz veins.

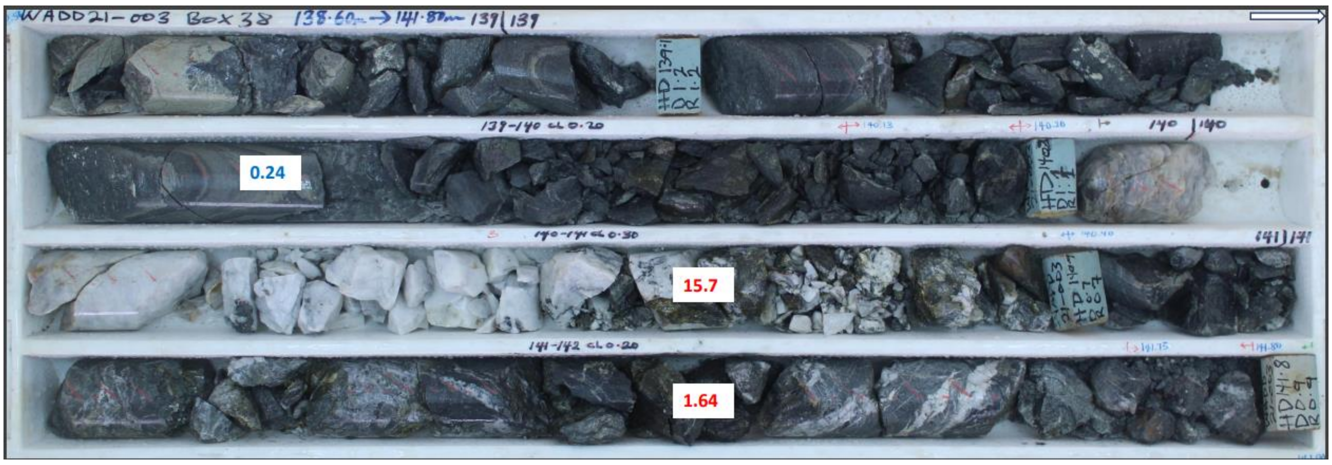


Figure 7-13: Walsh Deposit - Diamond Hole WADD21-003 – Mineralisation Hosted in Faulted Shale with Quartz Veins

(Source: dMb 2023)

Intrusive sills and dykes further complicate the faulted system. The ubiquitous presence of fuchsite may suggest a dewatering of deep seated volcanics indicating a fluid source and associated structural conduits that are very deep.

Both Walsh and Strauss open pits were mined and depleted to the planned open pit elevations by MGBL during 2022 and 2023. Additional exploration is ongoing and future exploitation will be from underground. Figure 7-14 below is a picture of the Walsh Pit. Approximately 1.3Mt was extracted from the Walsh open pit in this period at a mill head grade of 1.71g/t Au (±74koz Au) and approximately 140kt from Strauss open pit at 1.37g/t Au (±6koz Au).

Figure 7-14: Drone Picture of Walsh Pit Looking North

(Source: MultiGeomatics; Land Mining & Engineering Surveyors 2023)

7.3.3 Russell

The deposit is located on the Bibiani Shear Zone approximately 3.8km from the Bibiani Processing Plant and 5km north of the Aboduabo mineralised deposit, which is situated in the neighbouring Asante owned Chirano Gold Mine exploration prospecting license area.

The Russell deposit was historically mined as a small open pit. MBGL has over the last two years continued to explore extensions to the original Russell deposit and has subsequently identified the Russell South Extension. A total of

20,232m of drilling (101 holes) has been completed over the target area, the majority of which drilled to depths less than 300m. The target is supported by geophysics, soil geochemistry and recent regional structural interpretation.

Subsequently the footprint of mineralization has expanded from the original 200m strike to over 500m currently with recent exploration and remains open along strike and at depth. Drill intercepts to date confirm continuity of high-grade mineralization near surface with consistent grades and widths. Recent geological interpretation of the entire Bibiani shear zone architecture by Professor Hein and the MGBL geological team has suggested that the areas mined in the southern extremities of the early Main Pit underground mining operations may in fact be connected to the north-easterly plunge of the Russell mineralised shear zone. This is discussed further in Section 9.

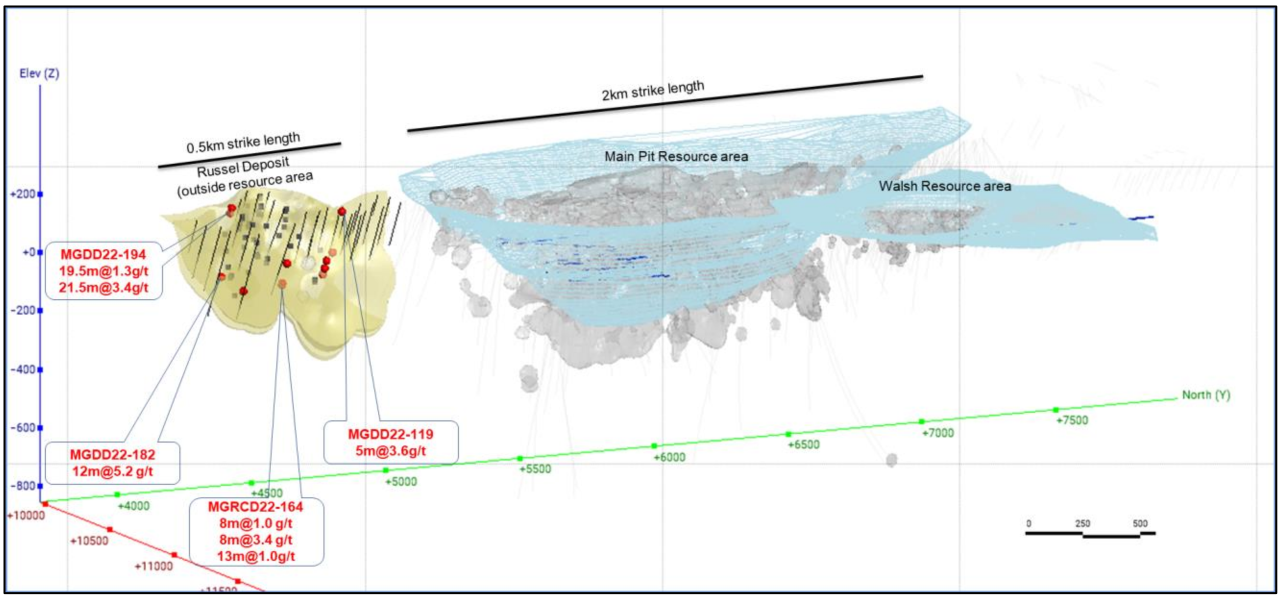


Figure 7-15: Russell and South Russell in Relation to Bibiani Main Pit

(Source: MGBL 2023)

Mineralisation at Russell is hosted in shear zones filled with massive to laminated, stockwork style quartz-ankerite veins with pyrite (+/- arsenopyrite) that crosscut folded metasediments and granitoids. The quartz is affected by pressure dissolution stylolites and grey/black pressure shadows form after the quartz. Subsequently the deposit consists of multiple ore shoots along the strike, similar in characteristics to the Main Pit mineralisation. The footprint of identified mineralisation is about 650m with an average grade of 1.7g/t over a width of circa 8m. Figure 7-16 below shows a typical cross section through the South Russell deposit.

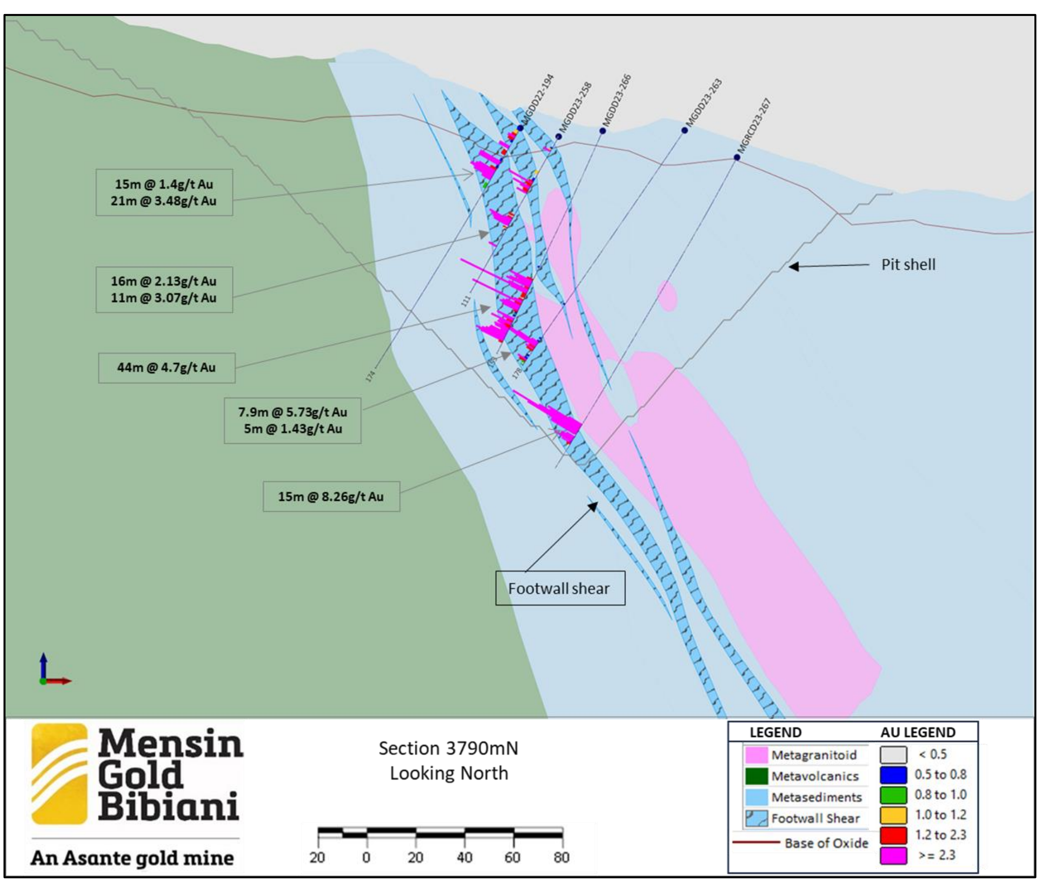


Figure 7-16: South Russell – Typical Cross Section with Significant Intercepts

(Source: MGBL 2023)

Asante put out a News Release in September 2023 declaring a maiden Mineral Resource for the recently drilled South Russell project as an extension of the original historically mined Russell open pit. Metallurgical test work yielded results consistent with current production material. Pit design and relevant permitting processes are underway. A maiden Mineral Resource was reported of 2.5Mt at 1.79g/t yielding 157koz of contained gold in an optimal shell of USD1850/oz gold price. This extended mineralised deposit forms part of the new Mineral Resource Estimate found in Section 14.

7.3.4 Grasshopper and Aheman

The Grasshopper satellite deposit is situated about 0.8km north of the Aheman pit and less than 2km from the Bibiani Processing Plant. Some oxide material was mined historically by earlier operators. The geology of Grasshopper is mainly metasediments (mostly shale, siltstone and sandstone as the protolith) with quartz veins. Felsic intrusives are almost absent within grasshopper pit however a few thin dykes, ranging between 0.5m to 1.0m in width, were mapped striking NNE and proximal to ore mineralization. Quartz veins are prevalent and are mostly deformed into boudins along foliations. Although the quartz veins mapped have varied orientation, the majority strike NNE and dip NSE. The veins are sometimes massive forming stockworks within the metasediments.

Gold mineralization is hosted in deformed metasediments and quartz veins exhibiting some cataclasis, shearing and mostly bounded by well-defined footwall and hanging structures Figure 7-17.

Alteration mapped includes sericite, carbonates (mostly ankerite), silica and generally a low percentages of sulphides explaining the medium to low grade ore mineralization experienced in Grasshopper open pit.

The target is supported by geophysics, soil geochemistry and recent structural interpretation. Mapping of the old workings and artisanal mining excavations began in September 2022. An accelerated resource definition drilling was completed in Q3 2022 and confirmed the consistency of low-grade high tonnage mineralization mainly within the oxide transition material representing a cheaper source of ore with a high recovery rate (>90%). A starter pit at Grasshopper commenced in Q2 2023.

In November 2023 Asante issued a News Release regarding the identified resource extension of the historically mined Grasshopper Pit.

The constrained Indicated Resource of 1.88Mt @ 1.04g/t for 56.5koz of contained gold within an optimal pit shell of $1,850/oz gold price was reported. The MRE for Grasshopper is supported by approximately 1,000m of historical drilling and 8,800m of recent drilling. Further drilling is planned to grow the mineral resources beyond the current pit shell.

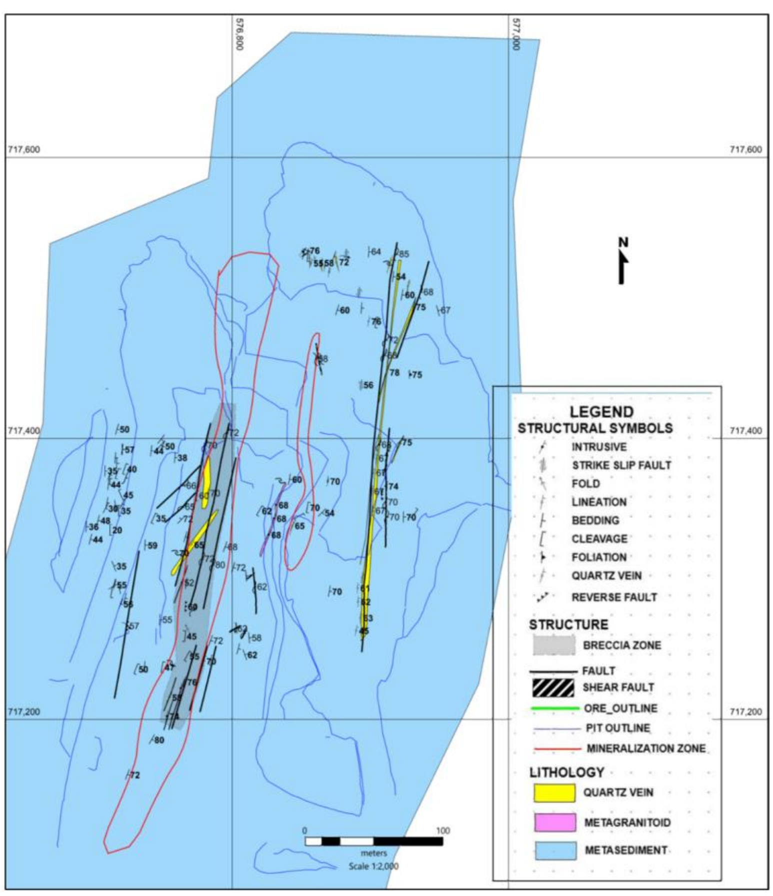


Figure 7-17: Grasshopper Mineralised Deposit - Mapped Geology Structure and Mineralization.

(Source: MGBL 2023)

7.3.5 Elizabeth Hill

The Elizabeth Hill mineralised deposit has an investigated strike length of approximately 1km and lies on a splay structure between the current Walsh Pit and Main Pit. The target is supported by geophysics, soils geochemistry and recent structural interpretation. Mineralisation is hosted along the contact between metasediments and granitoids. Mineralisation is also associated with quartz rich veins within the metasediments and granitoids.

The target is supported by geophysics, soil geochemistry and recent structural interpretation. Mapping of old workings and artisanal mining excavations has been completed.

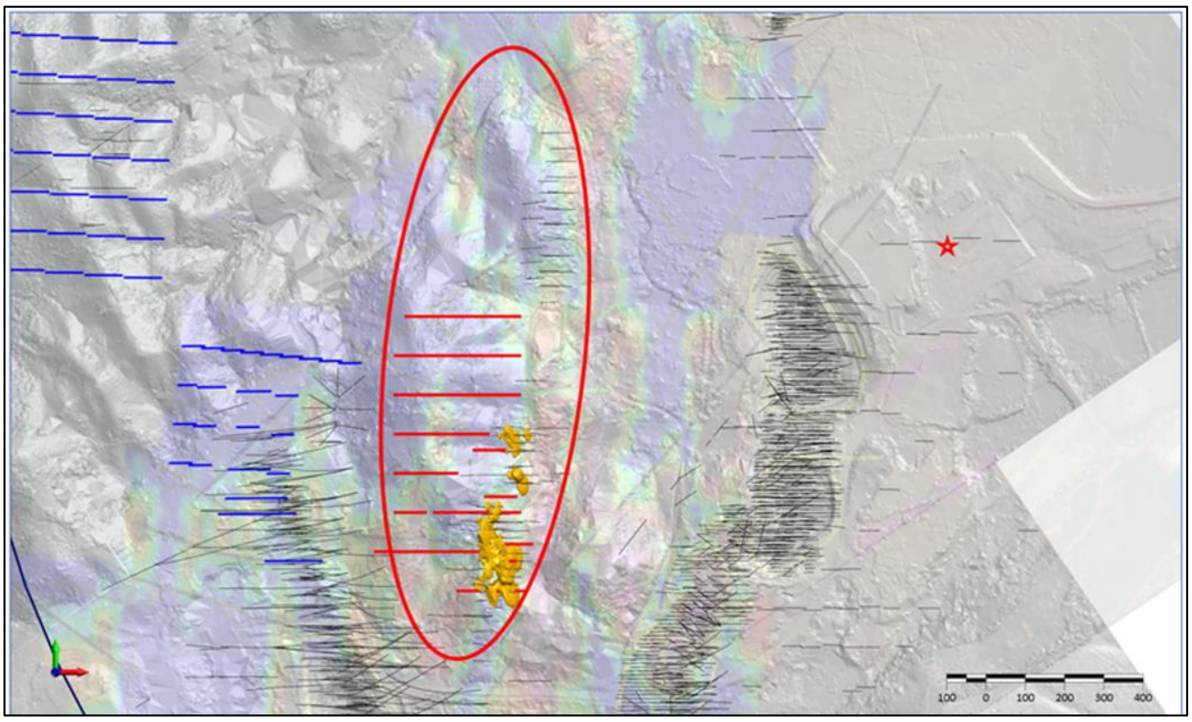


Figure 7-18: Elizabeth Hill Open Pit and Exploration Extension

(Source: MGBL 2023)

8. DEPOSIT TYPES

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 the shear zone between the Lower Birimian sediments 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 and Figure 8-2 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.*

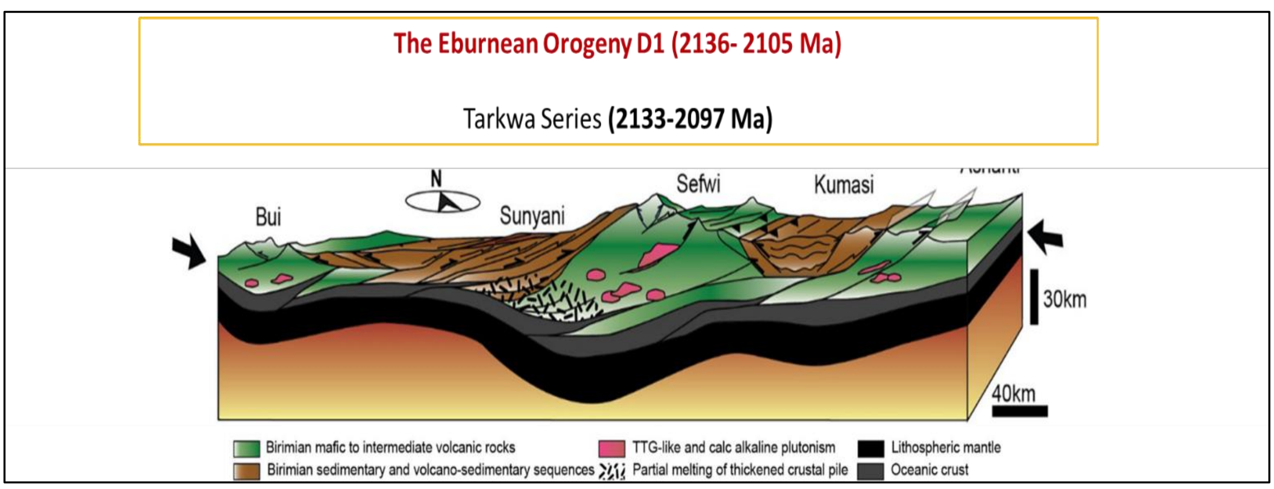


Figure 8-1: Eburnian D1 Orogenic Event - Episodic Collisional Orogenesis and Lower Crustal Exhumation

(Source: Adapted KAAH 2023)

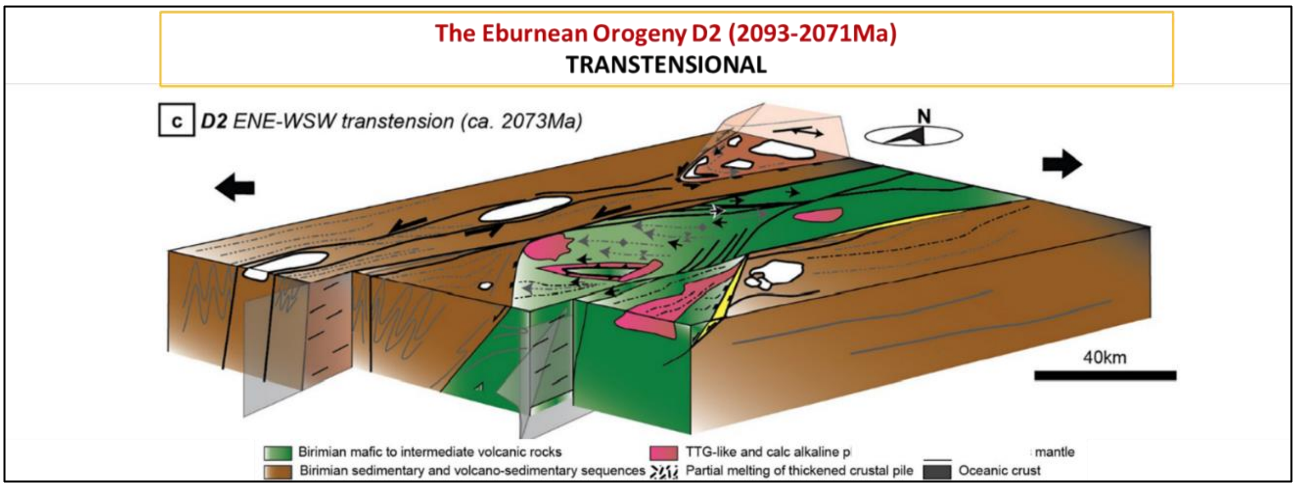


Figure 8-2: Eburnian D2 Orogenic Event - Episodic Collisional Orogenesis and Lower Crustal Exhumation

(Source: Adapted KAAH 2023)

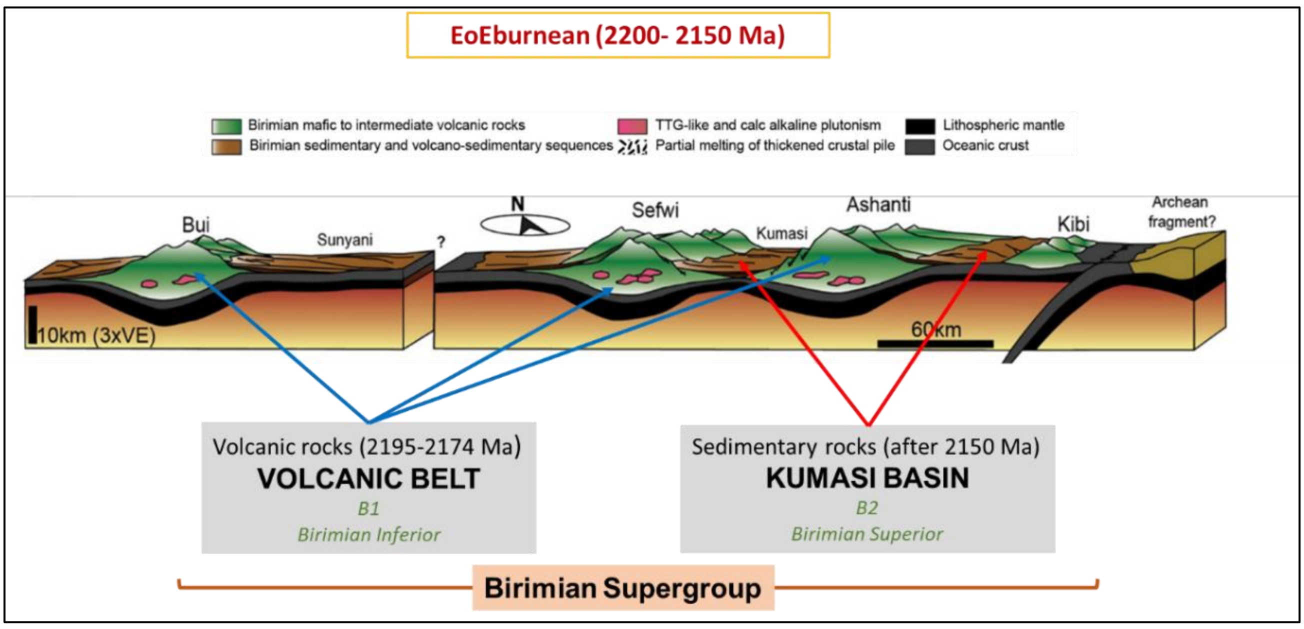


Figure 8-3: Eburnian Orogenic Event – Formation of Ghana Gold Event

(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 Asante take cognisance of this experience and are designed to investigate these deposits accordingly.

9. EXPLORATION

Exploration at Bibiani is at a very advanced stage and has been ongoing since the late 1990’s. It has culminated in the discovery of numerous surface gold deposits and the exploitation from underground of the Bibiani Main Pit 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

Historical exploration activities over the Bibiani Concessions have been carried out by various previous owners over many years. Drilling and sampling was completed between 1993 and 2017 by:

- AngloGold Ashanti Limited (AGA) 1993 – 2005.
- Central African Gold (CAG) 2007 – 2008.
- Noble Mineral Resources (Noble) 2010 – 2012.
- Resolute Mining (Resolute) 2014 – 2017.

9.2 Surveys

9.2.1 Geological Mapping

Field and underground mapping has been undertaken at the target properties by qualified MGBL geologists. Outcrop and visible features have been mapped and locations identified using handheld GPS. Mapping has also been undertaken at the Main pit and the underground workings by MGBL geologist and consultants. Professor Kim Hein was contracted by MGBL over the past two years to assist in the geological mapping exercise and her work program included:

- Physical validation of geology work completed by Model Earth in 2013/14 by detailed geological mapping and structural interpretation of the old Bibiani underground workings from levels 4-9 prior to open pit operations. This resulted in a corrected strato-structural database (1031 data points) created in ArcGis Pro in x,y,z space for importation level by level into Leapfrog™ to allow comparison with the geological resource model.
- A revision and update of the strato-structural model of the Bibiani Main Pit with emphasis on producing an updated structural interpretation that will enhance future mineralised deposit modelling and assist in planned open pit mining operations and grade control.
- Generalised stratigraphy was formalised from re-logging of core.

9.2.2 Trenching

Trenching is undertaken when deemed appropriate to get preliminary information as to the width and structural integrity of possible exploration targets.

Planned and approved programs are sited with a GPS by a geologist or technician, and after pegging, must be ground-truthed by a geologist. The trenches are surveyed by the mine surveyor after or during geological mapping and sampling of the trench. The trenches are dug by using an excavator or manual labour. All dug trenches are barricaded with caution or flagging tapes.

Trench Mapping procedures are briefly described below.

- 1m intervals are marked from start of trench to end using a tape measure or pre-measured stick. A flag is placed at each metre mark using a nail or small stick.
- The trench depth is measured at regular intervals to obtain a continuous contour profile.
- The overall geology and structure are mapped and logged on graph paper at the appropriate scale.

The originating trenching contractor is responsible for reclamation following approval of data entry and QAQC from the exploration geologist.

9.2.3 Geophysical and Geochemical Surveys

Geophysical surveys over the Bibiani concessions have included regional aeromagnetic imaging of the Ashanti Belt and adjacent Kumasi Basin by the Ghana Geological Survey, as well as IP ground geophysical surveying and airborne VTEM and magnetic survey centred over specific targets, ground magnetic surveys for restricted areas, as well as satellite radar images Figure 9-1.

A combined detailed Induced Polarization (IP) and Ground Magnetic (GMAG) surveys commenced on the Bibiani Mining Lease in September 2021. The geophysical survey was conducted by the in-house Asante geophysics team lead by the Chief Geophysicist.

The ongoing program covers a total survey area of about 18km² and comprises 155km of survey lines. The line spacing is 100m and readings are recorded at 25m stations interval in the IP survey and magnetic readings are recorded at a frequency of one hertz which is about a metre long on the ground. The approximate length of lines ranges between 350m-4,500m and are all oriented at 130˚ azimuth.

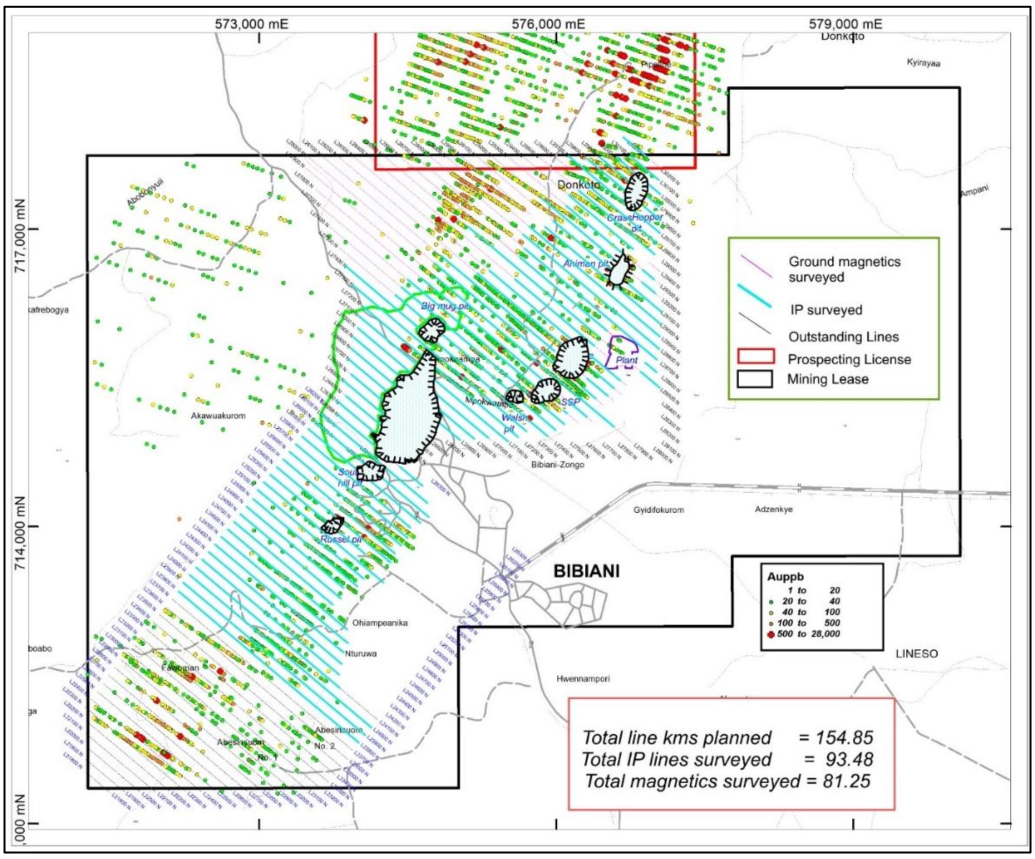


Figure 9-1: Induced Polarisation, Ground Magnetics and Geochemical Surveys Over MGBL Mining Lease Areas.
(Source: Asante 2023)

9.2.3.1 Induced Polarization (IP)

Geophysical lines are orientated in a SE-NW orientation at 130°- 310°. Lines were manually cut in this orientation due to thick vegetation. A 3.6Kw GDD Instrumentation Tx II Induced Polarization transmitter, powered by a Honda EFI70 generator and a state of the art programmable and software-controlled Iris instruments 10 channel Elrec Pro receiver, capable of storing up to 44,000 data points are utilized to acquire and process the data.

Pole - dipole array, with a dipole spacing ‘a’ = 25m, and ‘n’ = 8 dipoles is employed. Survey lines are 100m apart and readings are recorded at 25m intervals. The equipment measures the IP/Resistivity response in the time domain, utilising an 8 second square wave charge cycle (2-seconds positive charge, 2-seconds off, 2-seconds negative charge, 2-seconds off). The delay time used after the charge shuts off is 40 milliseconds and integration time used is 1,260 milliseconds divided into 20 windows.

Raw apparent resistivity and chargeability data are gridded and contoured after editing. A metal factor image is also produced from the chargeability and resistivity data. These recorded parameters have all been found useful in mapping geologic boundaries, and in defining structures and mineralisation.

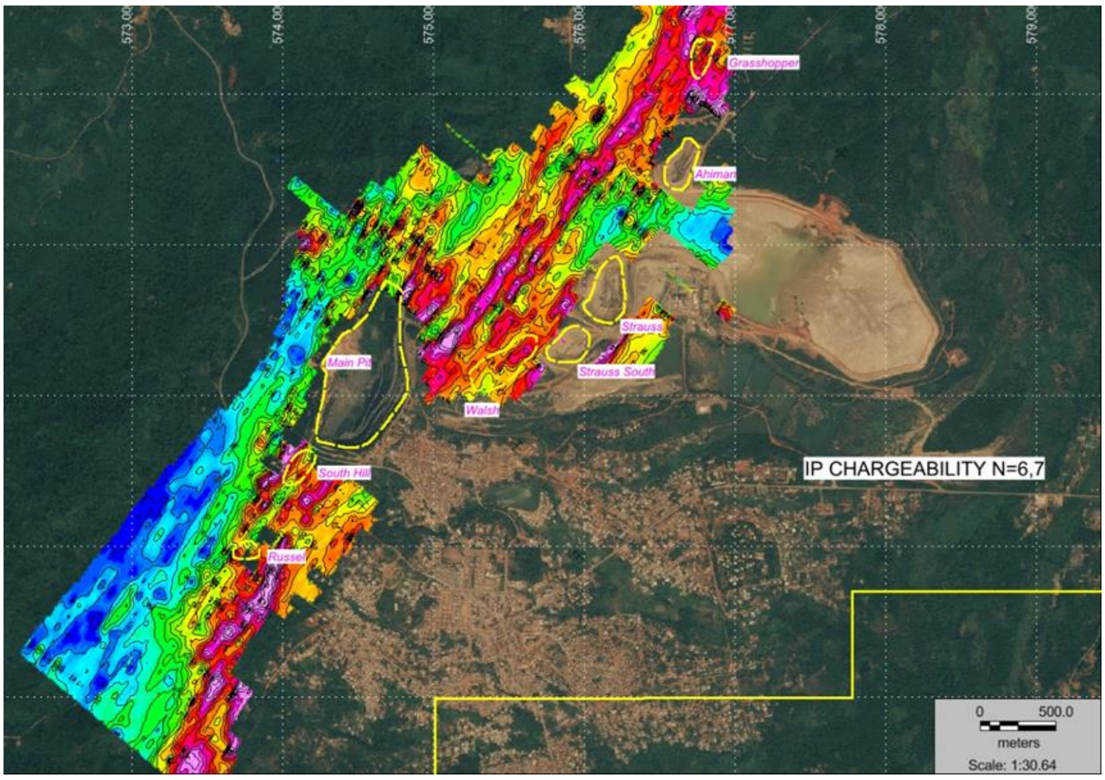


Figure 9-2: Bibiani Mining Lease - Colour contours of IP Chargeability

(Source: Asante 2023)

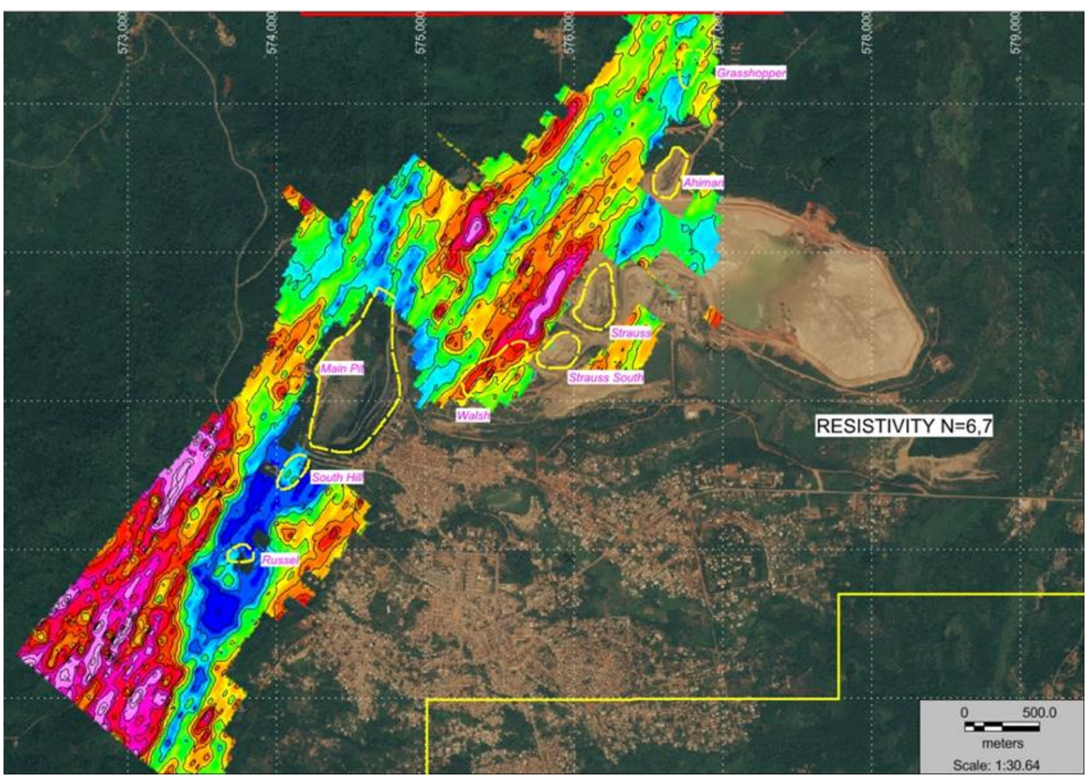


Figure 9-3: Bibiani Mining Lease - Coloured Contours of Apparent Resistivity

(Source: Asante 2023)

9.2.3.2 Ground Magnetics (GMAG)

The ground magnetic survey Figure 9-4 was carried out on the same IP survey lines prepared by line cutting crew with handheld GPS units. The survey utilises three GEM Systems GSM-19 Overhauser magnetometers. Two for the roving and the third was used for the base station recordings. The GSM-19 is a microprocessor controlled "memory mag" with GPS system attached. All readings were recorded into the instrument's memory and downloaded daily at the end of the survey.

The programmable walking mag mode was used, and all waypoints were preloaded unto the magnetometer's memory prior to the commencement of the survey. Readings were recorded at a frequency of one hertz making an average reading interval of about a metre or less on the ground.

A base station was occupied by a magnetometer which recorded diurnal and noise fluctuations in the earth's magnetic field during the traverse readings. It is programmed to cycle at 0.3Hz. The internal quartz clocks on the magnetometers were synchronized daily and used to subtract the base station reading from the traverse reading to remove the effect of diurnal variations. The data from each instrument is dumped daily and diurnal corrections are performed using a software provided by GEM systems. Transfer is by an RS-232 interface and a cable connected to the computer. The dumped data is plotted daily at the end of the day’s work and quality control procedures are performed on the data. The data is thoroughly inspected and manually de-spiked by removing all bad data points.

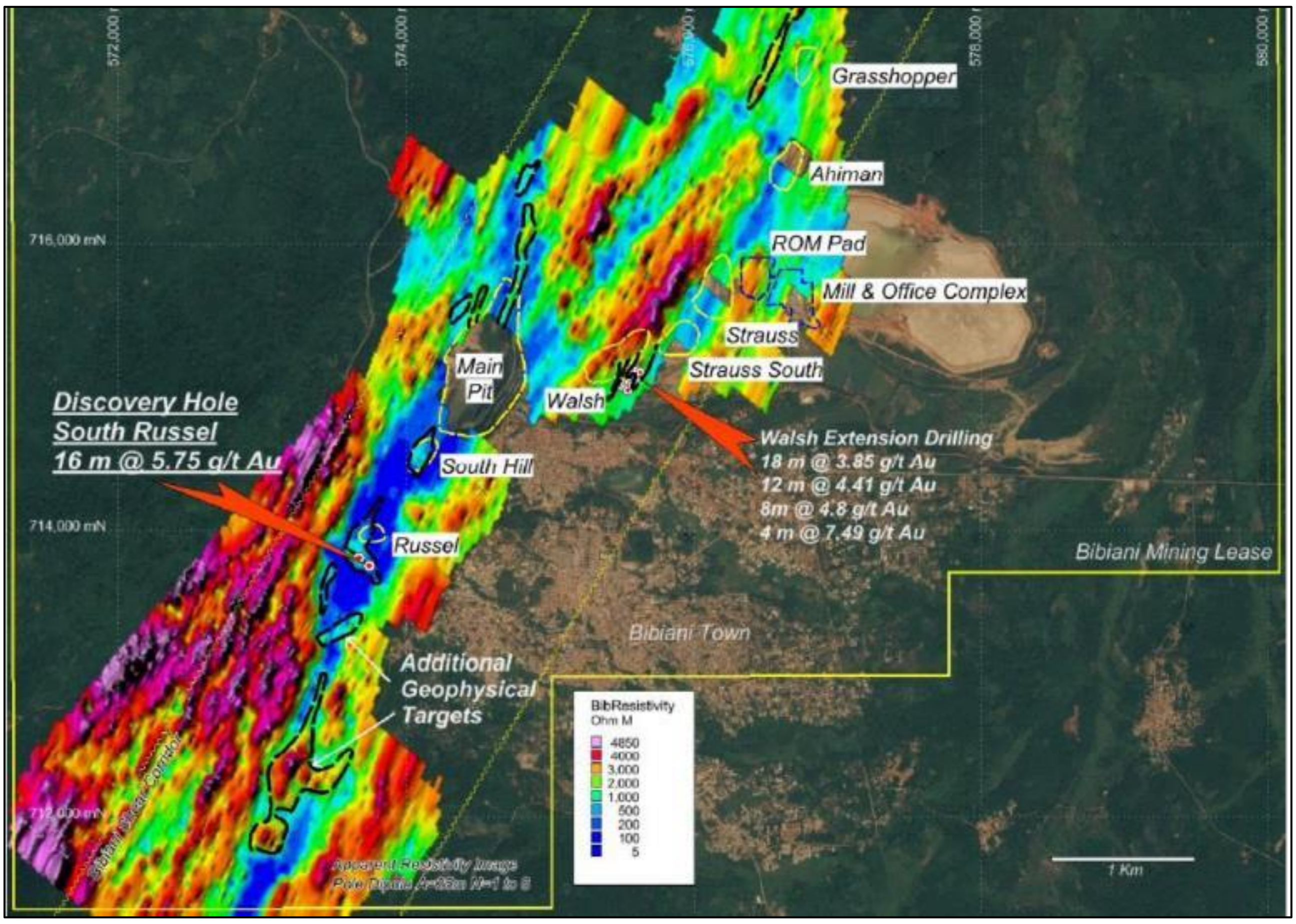


Figure 9-4: MBGL Generative Exploration – Ground Magnetics Survey

(Source: Asante 2023)

The geophysical surveys have also been extended to cover the Bibiani-Chirano Corridor (“BCC”) Figure 9-5. This being possible and essential as Asante now owns the Chirano Gold Mine to the south of the Bibiani concessions. The Figure below illustrates the potential of this corridor. It highlights the position of the Bibiani and Chirano gold occurrences and the newly investigated Aboduabo Project which falls within the Chirano Mining Lease but is hosted by the Bibiani Shear Zone.

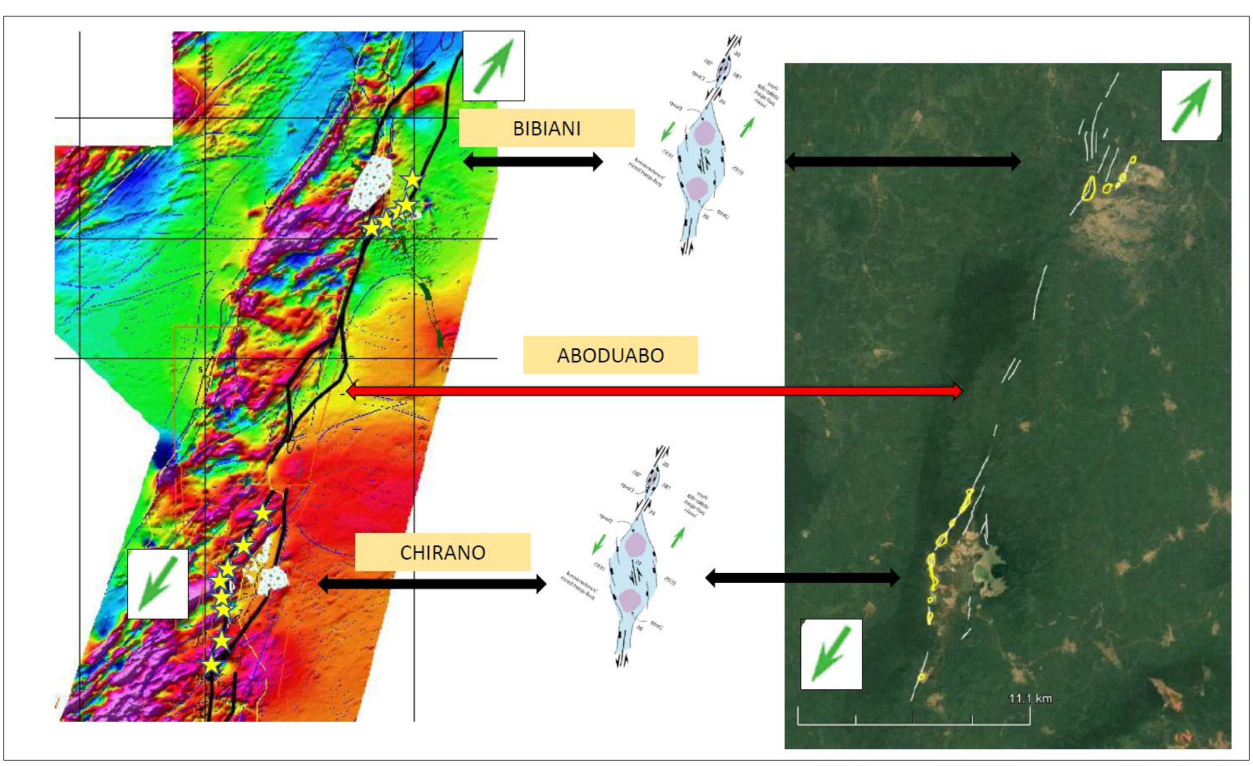


Figure 9-5: Bibiani-Chirano Corridor – Magnetic Survey Coverage and Structural Prospectivity

(Source: MGBL 2023)

9.2.3.3 Geochemical

Historical geochemical surveys were conducted over large parts of the mining lease and were orientated at 110°- 290° with line spacings varying between 100m and 200m apart Figure 9-6. Soil samples were obtained by digging shallow holes of approximately 50cm-60cm deep and manually extracting samples. The comparison between geochemistry and geology shows that elevated gold values frequently appear to be related to porphyritic lithologies. Soil geochemistry anomalies are illustrated in Figure 9-6 below.

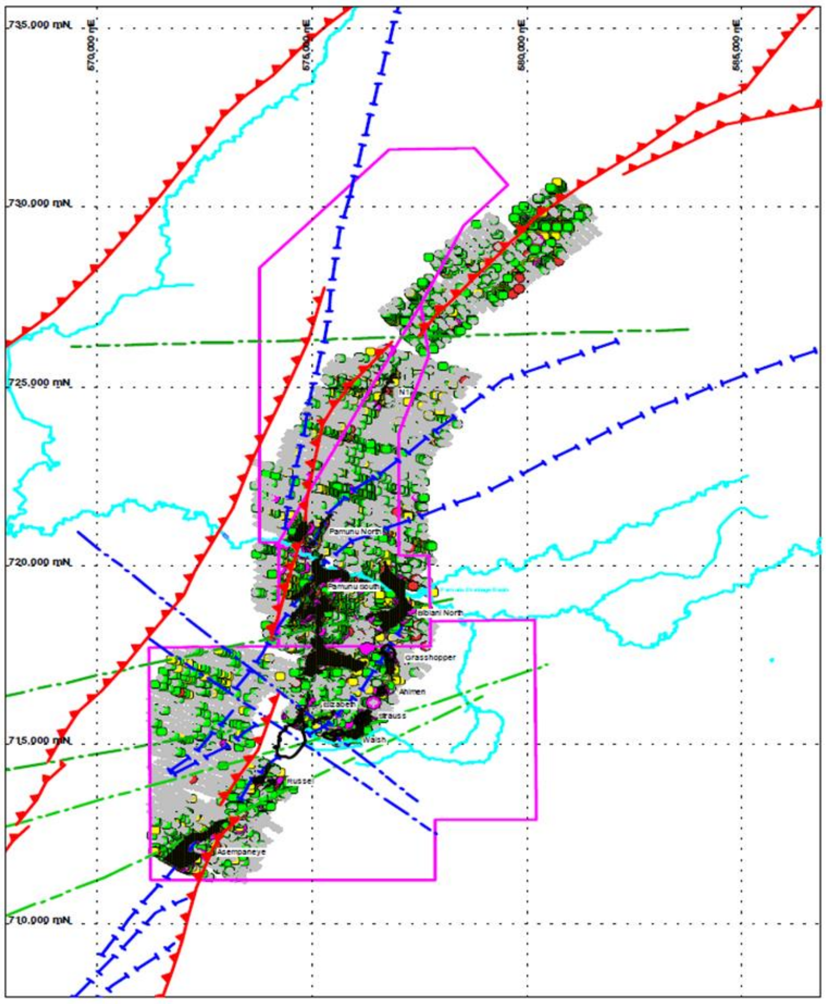


Figure 9-6: Bibiani Mining Lease – Gold in Soil Sample Points Overlain by Historical Structural Interpretation
(Source: MGBL 2023)

Similarly, to the magnetic survey discussed above, the BCC has had extensive geochemical investigations. The Figure below illustrates the gold in soil anomalies that lie within this 52km corridor between the two mining operations.

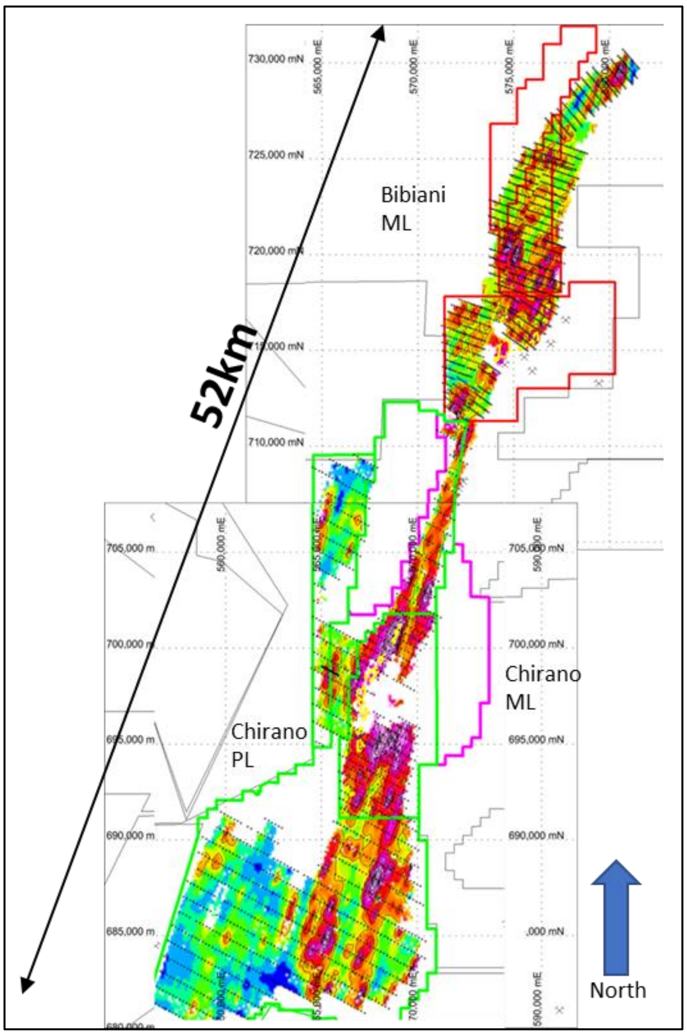


Figure 9-7: Bibiani-Chirano Corridor ("BCC") - Levelled Gold in Soil Anomalies

(Source: Asante 2023)

9.3 Asante Exploration 2022/2023 - Results and Interpretation

The exploration strategy for Asante is to deliver a pipeline of new mineralised deposits from generative programmes that increase the quality of near mine targets and that are within trucking distance of the processing plant infrastructure within the Mining Lease.

Exploration activities since August 2021 through to present day have therefore focused on targeted drilling of known near mine mineralised deposits (Walsh, Strauss, Russell, Russell South, Big Mug, Grasshopper, Elizabeth Hill and Pamunu) on Induced Polarization (IP) and Ground Magnetic (GMAG) surveys over the entire Mining Lease. This exploration initiative was successful in bringing both Walsh and Strauss into early production during 2022/2023. The latest focus has been on the Russell/Russell South oxide extension and the large low grade oxide potential at Grasshopper to the north of the Main Pit.

More than 50,000m of DD and RC drilling has been completed by MGBL in the period August 2021 to December 2023. The interpretations and significant intercept results of this drilling will be discussed further in Section 10.

A target generation exercise was completed on site in February 2022 and among the participants were Professor Kim Hein (Principal Consultant & Director, KAAH Geoservices), Asante's Chief Geophysicist (Mr Douglas MacQuarrie) and mine site geologists. The exercise was based on interpretations of structural mapping of underground workings and borehole logging, geophysical and geochemical data of the entire mining Lease. The following new and historical datasets were reviewed:

- Litho-structural data and model.
- Soil geochemistry.
- IP data for the Mine lease.
- Resistivity data.
- Ground Magnetics.
- MIDAS airborne magnetic data.

A typical ranking system has been generated and the various MGBL identified projects are currently at different stages of exploration activity Figure 9-8.

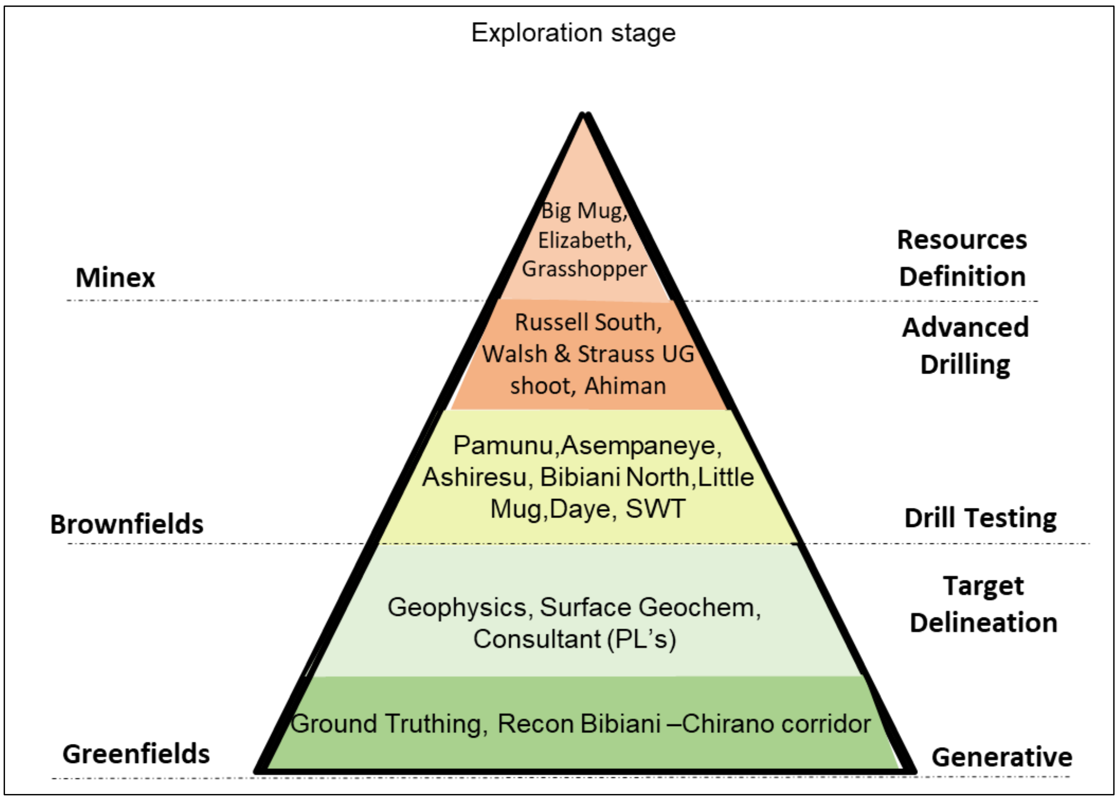


Figure 9-8: MGBL Exploration Strategy and Current Status

(Source: MGBL 2023)

The intensive exploration exercise that has been ongoing since Asante took ownership in August 2021 has been a collaboration of work involving Professor Hein and the Asante/MGBL geological teams and has led to a re-interpretation and better understanding of the complex structural architecture that makes up the highly prospective Bibiani-Chirano Corridor within which the Bibiani mineralised deposits and current mining operations are located. The BCC has been identified and explored over a strike length of greater than 50km and is composed essentially of a series of interconnecting gold bearing faults and shear zones (the relevant Bibiani and Chirano Shear Zones to name two).

The BCC is believed to represent a crustal-scale fossil earthquake zone which collapsed around 2 billion years ago leaking gold bearing fluids up through the multiple interconnecting fault network. The scale of the collapse has been compared to the likes of the Carlin trend (Nevada USA) or the Kalgoorlie-Kambalda Trent (Western Australia).

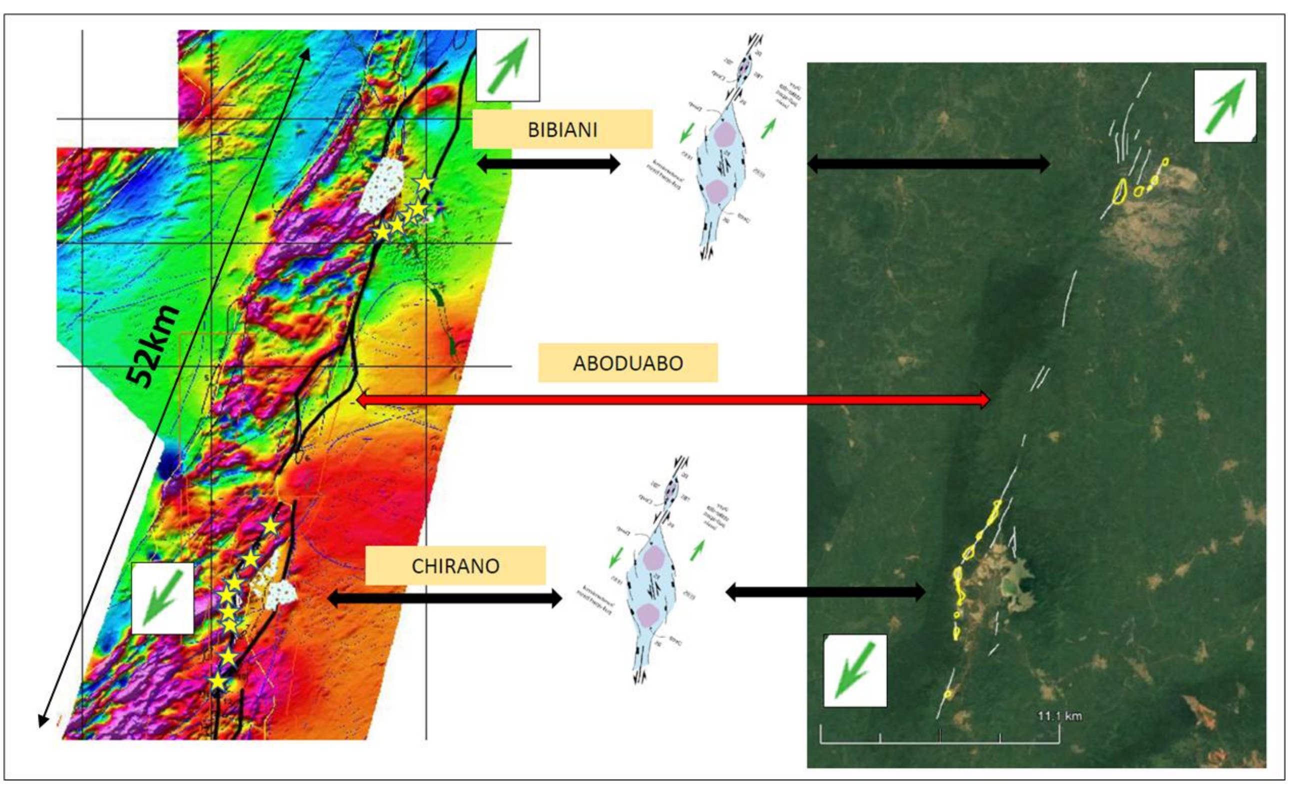


Figure 9-9: Bibiani-Chirano Corridor - Mineralized Deposits and Structural Interpretation

(Source: KAAH, 2023)

A number of targets Figure 9-10 have been identified and work has been planned to investigate these.

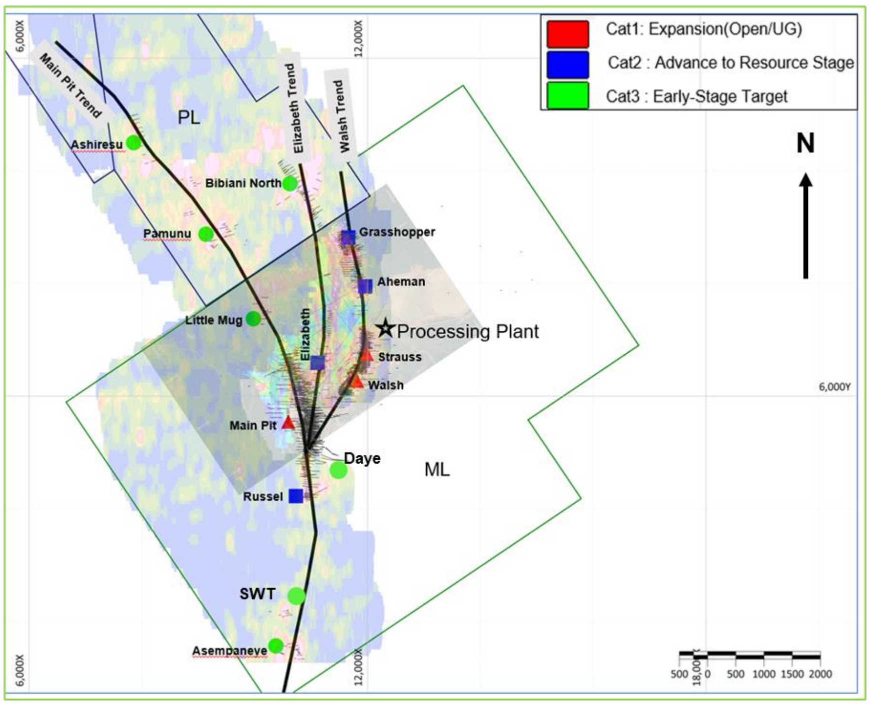


Figure 9-10: MGBL Exploration Targets within the Prospecting License & Mining Permit Areas

(Source: MGBL 2023)

Geophysical and structural geology evaluation is continuing to identify new mineralised targets up and down the BCC. The investigations are also identifying a diversity in the gold metallogenic systems and host rock assemblages both within the Asante-owned Bibiani prospecting licenses and contiguous Chirano prospecting licenses.

9.3.1 Bibiani Main Pit

The Bibiani Main Pit has been a major source of open pit ore production since commencement of operations in early 2022. To date approximately 1.2Mt of ore has been extracted and processed at an average grade of 1.58g/t Au. Exploration over the Main Pit has been mainly detailed geological and structural mapping.

Figure 9-11: Bibiani Main Pit - Current Operations (looking North)

(Source: MGBL 2023)

In 2023 Asante made a strategic change in the Life of Mine Plan which required the technical investigation into re-designing for re-development of the underground potential. Figure 9-12. This revised strategy and the relevant designs and schedules are discussed further and in detail in Sections 15 & 16 of this Technical Report.

The new strategy also required a complete remodelling of the previous Mineral Resources, focused primarily on open pit extraction, for the new model and subsequent Mineral Resource within the Main Pit to properly reflect the economic extraction of the remaining open pit potential and re-model the future economic extraction of the underground mining strategy. This revised Main Pit Mineral Resource, along with the additional mineralized satellite deposits make up the Mineral Resource discussed and presented in Section 14.

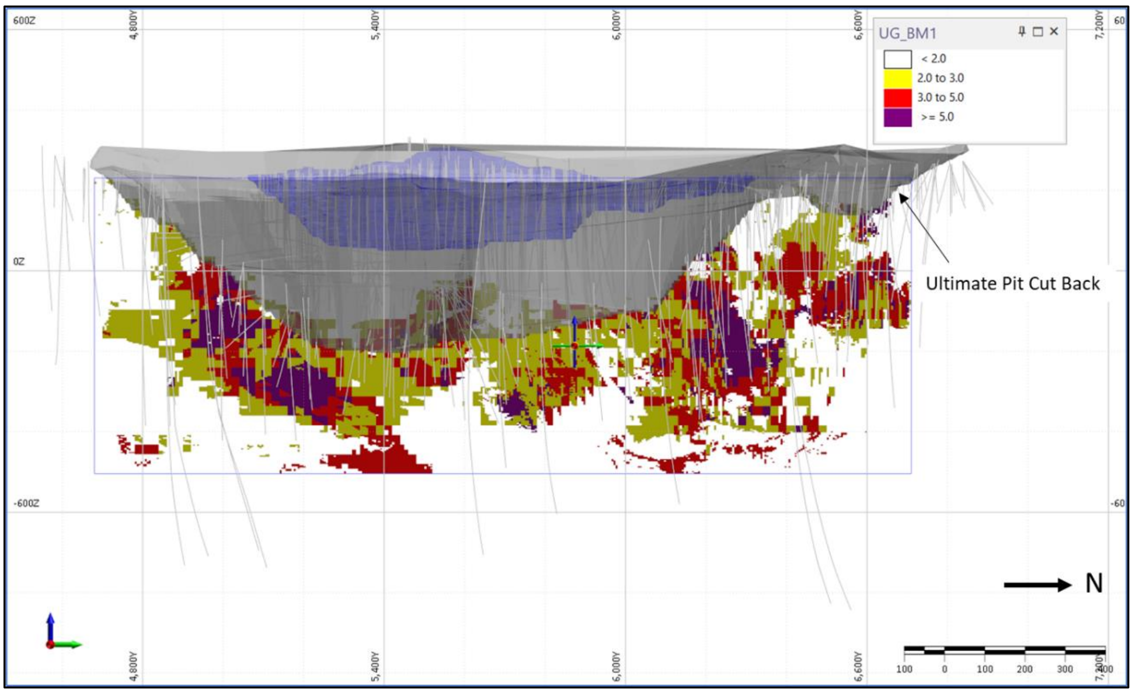


Figure 9-12: Bibiani Main Pit – Longitudinal Section (Looking West) - Target Mineralization (>2g/t Au) Below Pit Shell

(Source: MGBL, 2023)

9.3.2 Walsh/Strauss Satellite Pit

In the period September 2021 to early 2022 both Walsh and Strauss satellite mineralized deposits, located east of the Main Pit and previously exploited by Noble Resources, were extensively drilled and subsequently brought back into open pit production. Walsh and Strauss were both included in the previous Mineral Resource published in February 2022.

Both deposits have been depleted of the declared open pit resources during 2023. Walsh yielded circa 1.3Mt ore at an average grade of 1.71g/t Au and Strauss circa 140kt of ore at an average grade of 1.37g/t Au. The resource at Walsh was successfully increased during the period from 20,000oz Au to over 100,000oz Au.

Professor Hein, during her contracted investigation and reported in an internal report *("Rpt012 – Structural Model of the Walsh Orebody"; April 2023*) evaluated the satellite Walsh/Strauss Pit system concluding that the Walsh deposit is a fault-propagation-fold and vein system or thrust-fold system that formed in D1. The footwall ramp/cataclasite and associated hanging wall faults formed the fluid conduit.

Figure 9-13 below illustrates the ongoing exploration below both mineralized bodies to determine and identify future underground resources that can be exploited in unison with the larger Main Pit underground strategy.

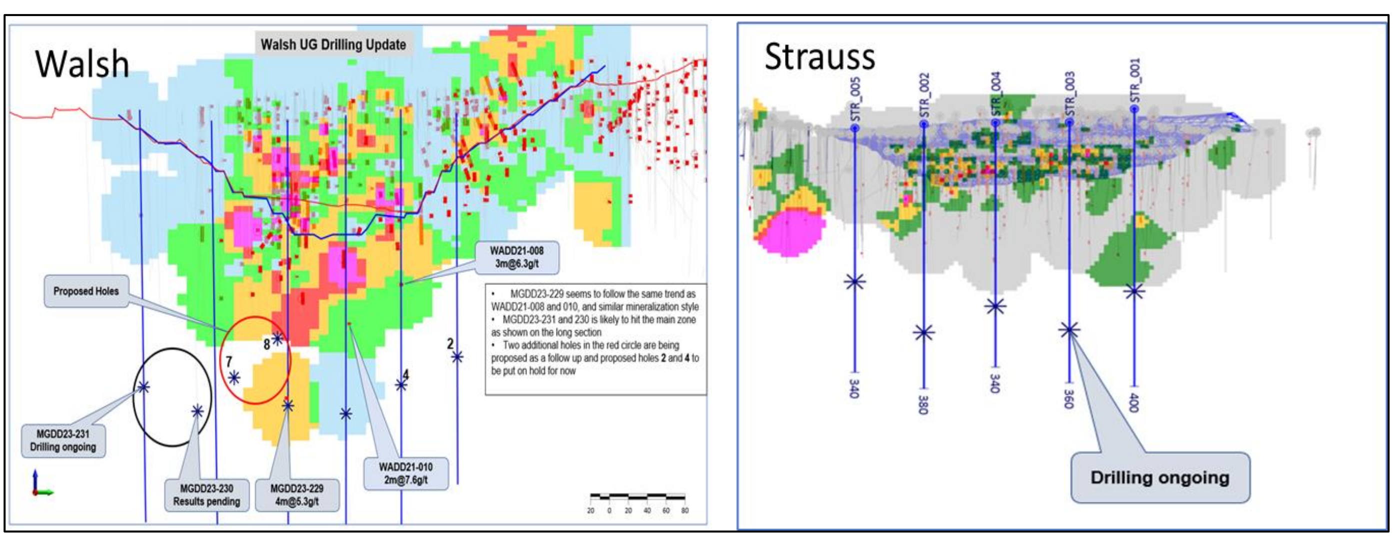


Figure 9-13: Walsh Pit – Recent Drilling and Target Generation Below Proposed Pit Shell

(Source: MGBL 2023)

Current information from recently concluded drilling programmes strongly suggests that both bodies extend to depth and therefore these two targets remain a high priority for continued underground exploration drilling into 2024 Figure 9-14.

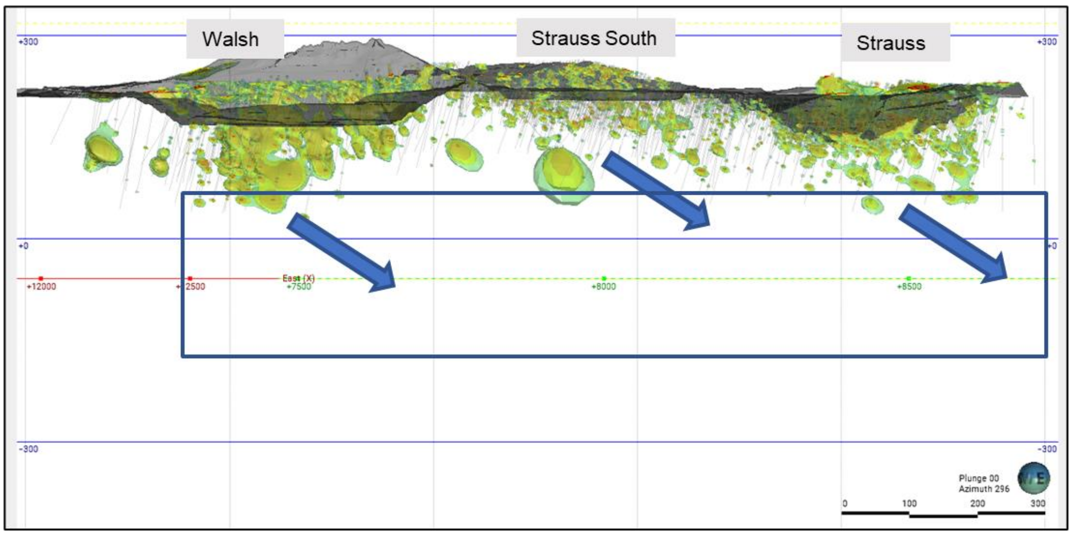


Figure 9-14: Walsh-Strauss (looking West) – Interpretation of Down Dip Extension Exploration Potential

(Source: MGBL 2023)

9.3.3 Russell and Russell South

The Russell mineralized deposit was historically mined as a small satellite open pit. Recent exploration has continued to investigate the down dip potential and the southern extension of the current orebody potential, hence the Russell South exploration drilling programmes.

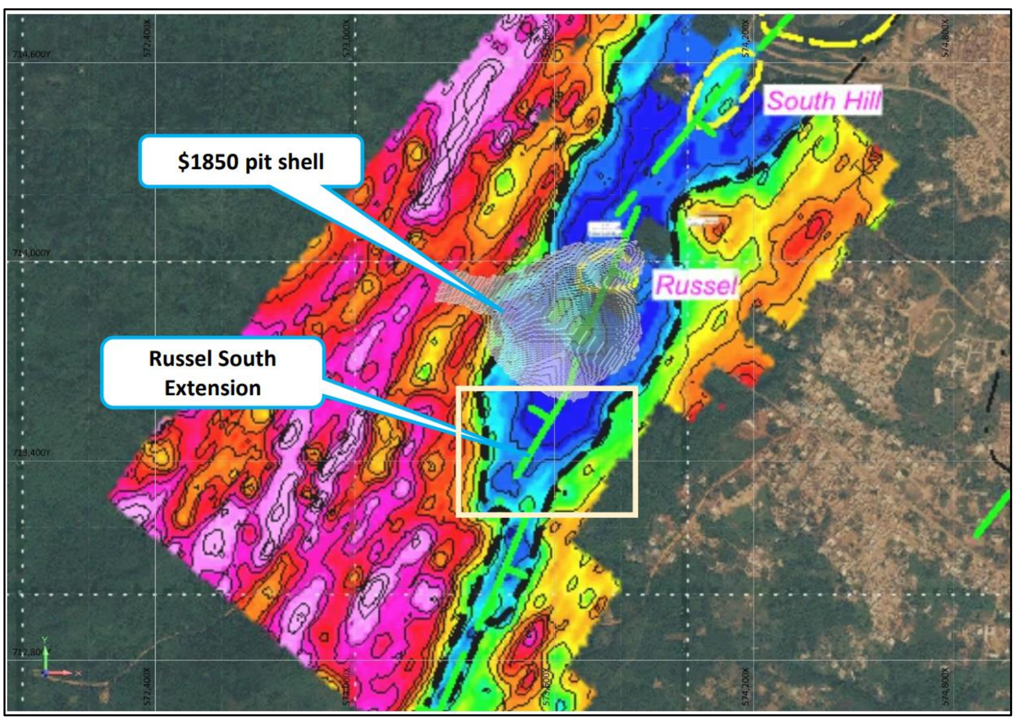


Figure 9-15: Location of Russell South to Historic Russell Satellite Open Pit

(Source: MGBL 2023)

Approximately 9,900m of diamond drilling has been completed into the Russell South target during 2022/2023.

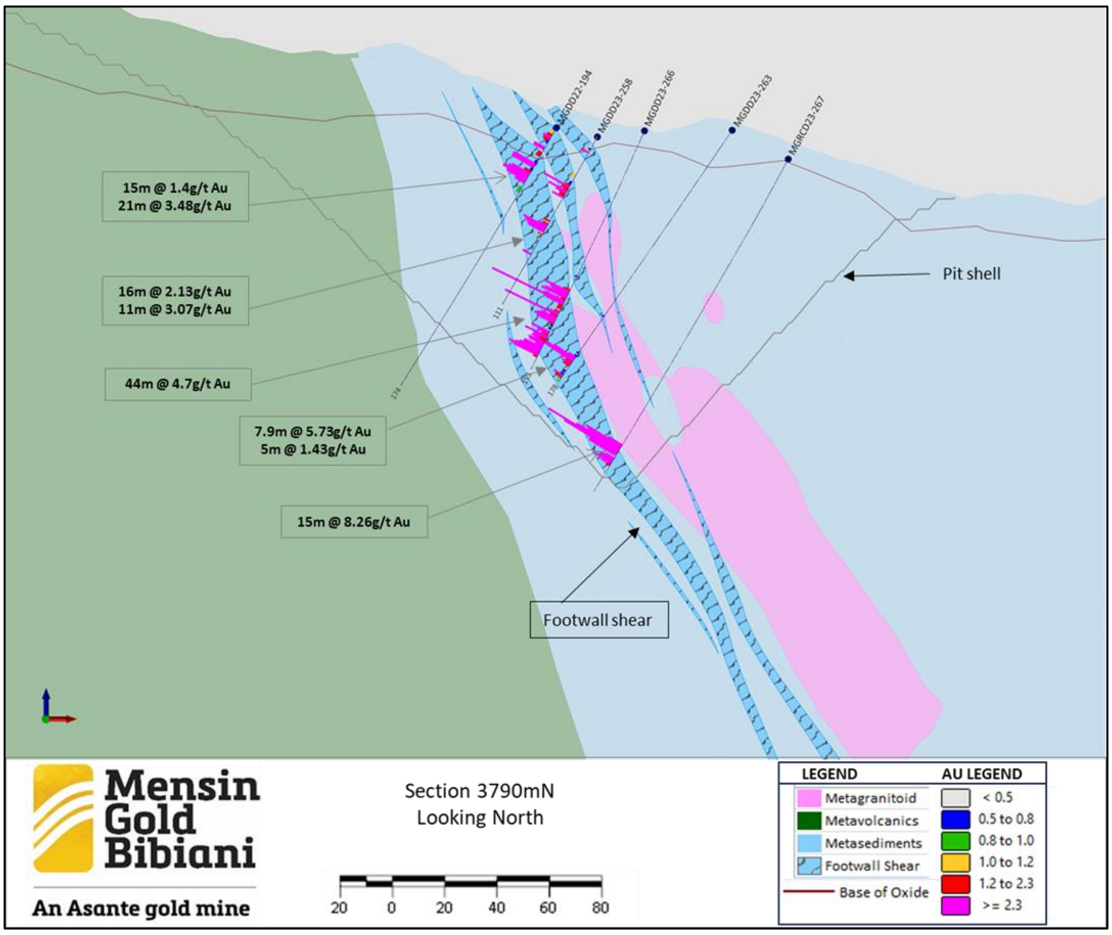


Figure 9-16: Russell South - Typical Drill Section Through Mineralized Body

(Source: MGBL 2023)

The investigated footprint of mineralization has expanded from the initial 200m strike to over 500m and remains open along strike and at depth Figure 9-16. Drill intercepts to date confirm continuity of high-grade near-surface mineralization with consistent grades and widths. Recent drill intercepts incl. 21.5m at 3.37 g/t from 22m down hole.

9.3.4 Grasshopper

In 2022/2023 Grasshopper was identified as a quick source of oxidised material to supplement required ore production blend and to replace the Walsh/Strauss oxide ore sources. A total of 24 DD and 58 RC drill holes were completed for a total of over 8,500m of drilling. As discussed in Section 7 a maiden Mineral Resource was declared by Asante in November 2023. This Mineral Resource has been reviewed and will form part of this Technical Report's Mineral Resource submission.

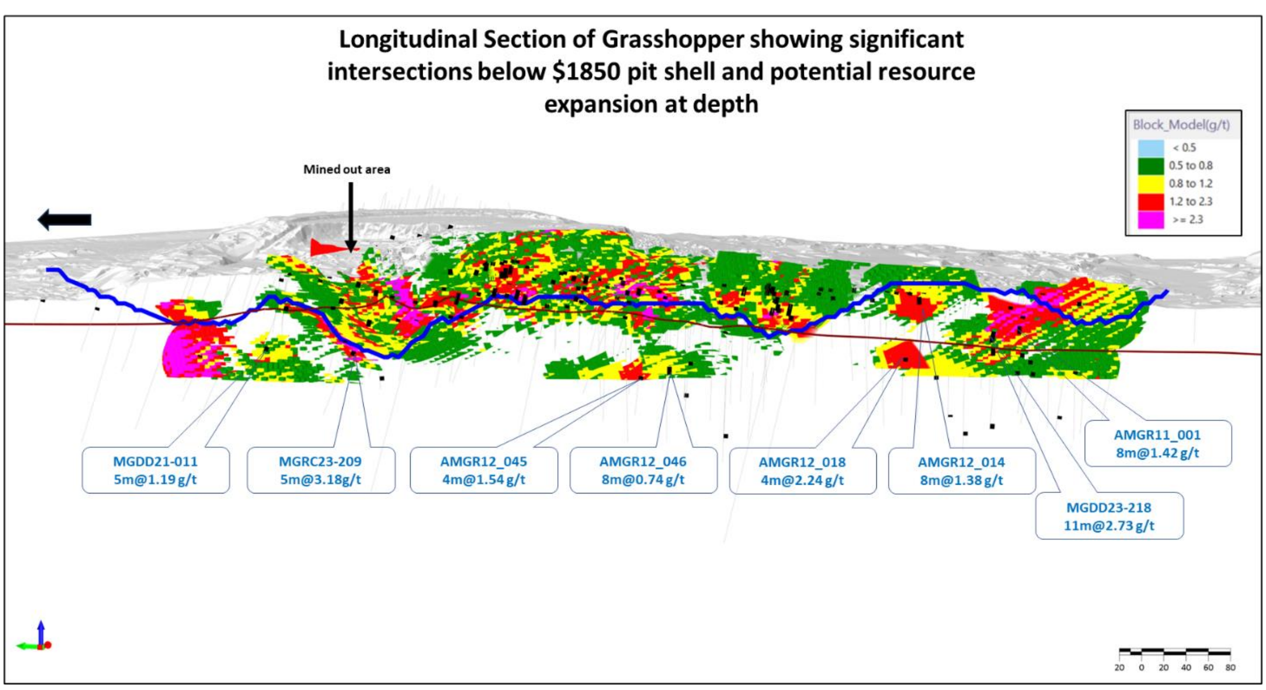


Figure 9-17: Grasshopper - Longitudinal Section with Significant Intercepts below USD1850 Pit Shell

(Source: MGBL 2023)

9.3.5 Generative Exploration

Significant exploration potential Figure 9-18 exists within the Bibiani concessions and along the Bibiani-Chirano Corridor to grow the Mineral Resource inventory beyond current levels to support mine life extension. Numerous identified mineralised deposits and interesting field exploration identified targets exist north and south of the Bibiani Main Zone.

Target generation to fill the 2023 exploration project pipeline has been created after a series of studies, dataset reviews and geological mapping undertaken on the MGBL PL's, specifically the Ahyiresu area. Early-stage drill targets are identified, and these projects will be prioritized for continued drilling programs during 2024/2025.

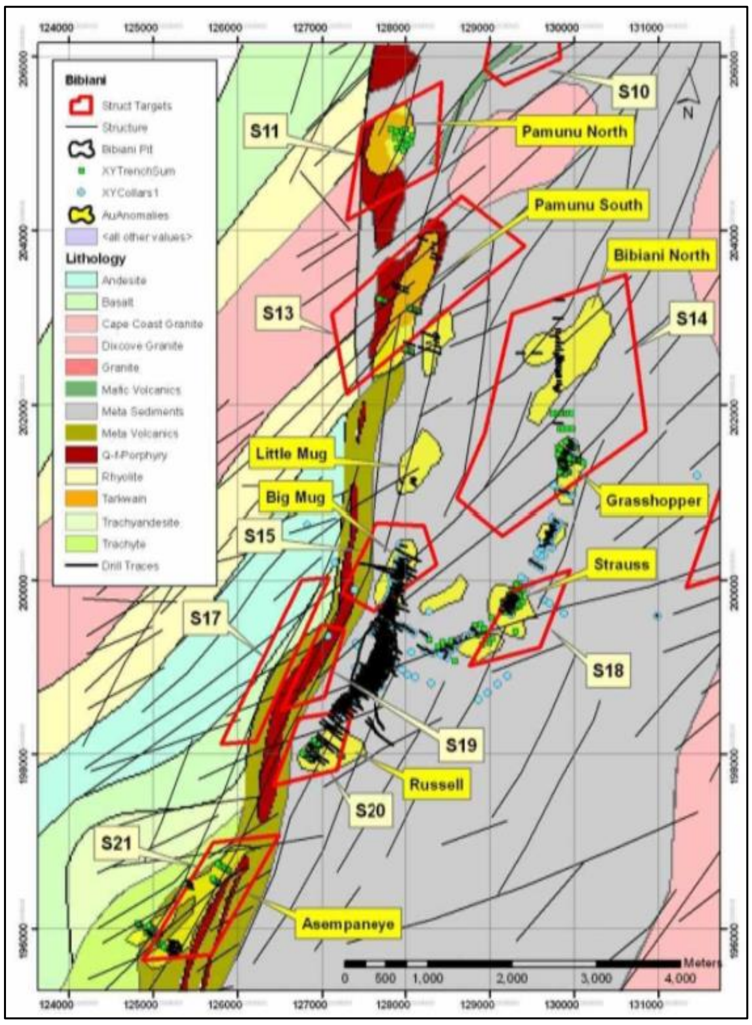


Figure 9-18: Bibiani Project – Exploration Targets

(Source: MGBL 2023)

The Table and associated Figure below, taken from the 2023 MGBL geological department budget presentations, briefly summarises and illustrates additional targets and ranked justification for continued exploration over the next few years.

Table 9-1: MGBL Geological Department – Generative Exploration Targets, Justification and Ranking

Target	Criteria	Rational	Rank
BIG MUG – WEST REEF	• Historic workings at depth on 5-7 levels. • Geophysical target in Mag & IP. • Structural target to depth with a NNE plunge at 30. • Geochem target. • RC drill evidence.	Active mining has exposed the West Reef where preliminary sample work may give results. The West Reef is known historically. Big Mug has & is due to be mined in open pit. THE LOGIC IS TO MOVE FAST TO DELINEATE THESE TARGETS BEFORE THEY ARE OVERTAKEN BY MINING.	1
ELIZABETH HILL	• Soil Geochem. • IP, Resistivity. • Structural target of cataclasite & stockwork on fold. • Active ASM. • Cataclasite outcrop.	Active ASM mining, & the proximity to Big Mug West Reef make this target a natural 2nd choice to fully explore. The target may be similes to Walsh but the presence of resistive bodies suggests intrusive masses &/or cataclasite vein development.	2
DAYE – RUSSELL TWIN	• Soil Geochem. • IP, Resistivity, Magnetic. • Structural target on twin shear-faults.	The extension of Russell to the twin parallel structure tentatively named Daye is logical. Daye is the logical extension of the Main zone in the Main pit. The target probably lunges NE meaning drilling for positive results should begin from the Russell end & work NE.	3
PUMUNU	• Soil Geochem. • IP, Resistivity, Magnetic.	Logical target based on coincident geochem, geophysical & structure attributes.	4

Target	Criteria	Rational	Rank
	• Structural target on shear-faults.		
UNCLASSIFIED STRUCTURAL TARGETS			
Bibiani North Pale Ale – Grasshopper Walsh SW Extension Far SW	Logical extension & repetition of similar targets fold hinges.	Target between the Main Pit & Walsh Pit include targets to the SE from Walsh into depth development. Target in the volcanic units SW of Russell.	5

(Source: MGBL 2023)

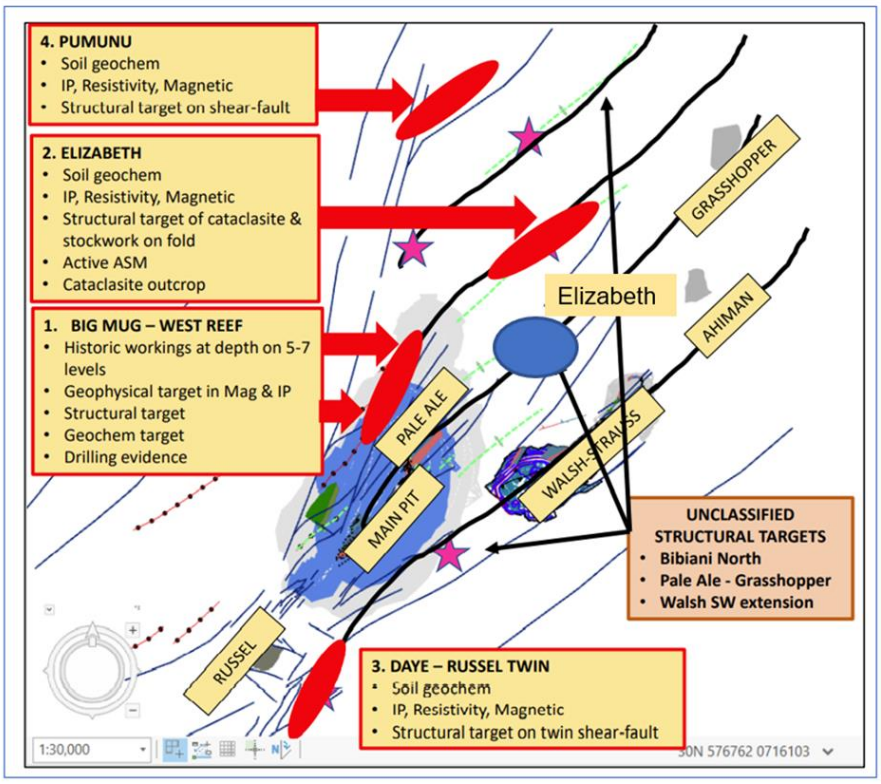


Figure 9-19: MGBL Generative Exploration Targets

(Source: MGBL 2023)

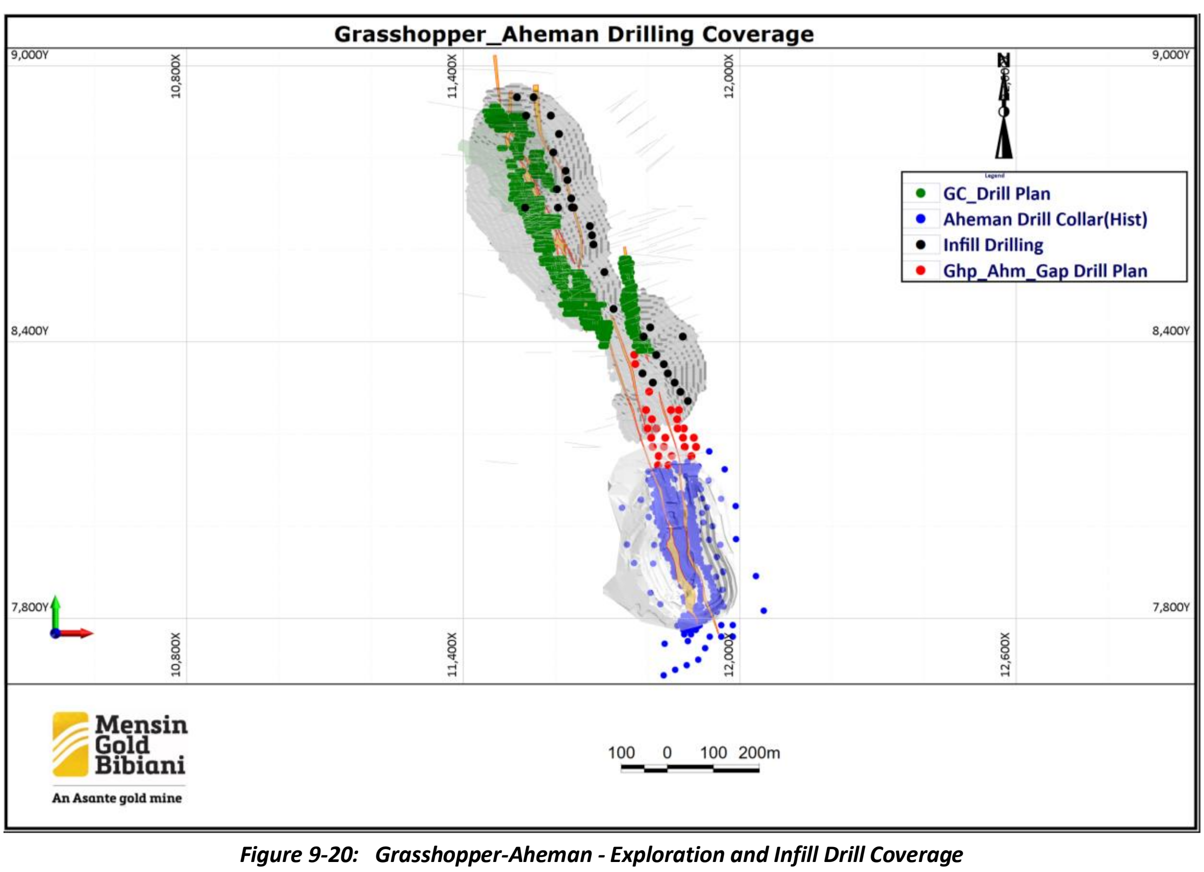


Figure 9-20: Grasshopper-Aheman - Exploration and Infill Drill Coverage

9.4 Sampling Methods and Sample Quality

Sampling programmes have been conducted at the main target properties, including grab, rock and soil sampling, as well as sampling of the RC drill chips and DDH core.

9.4.1 Resolute Historical Data Validation 2014-2015

When Resolute took ownership, it inherited a DataShed SQL database containing all drilling and sampling data for the Project, as well as the historical files in both digital and hardcopy format. To improve the quality of and increase the confidence in the data Resolute initiated a process of data validation and verification to ensure that the most complete data set was available for resource estimation.

9.4.2 Geophysical Surveys

The geophysical survey work is a standard routine method conducted by practicing professionals and thus the integrity of the source survey data would be of an acceptable standard. The greater, extensive regional area has been surveyed. All surveys grid location information is in WGS 84, Zone 30N Universal Transverse Mercator (UTM) coordinates.

9.4.3 Geological Mapping

The geological data points generated from geological mapping exercises are stored in an extensive database. The exercises are considered more as qualitative studies for the geological genesis and interpretation of mineralised deposits within the Bibiani mining and exploration lease areas.

9.4.4 Sampling

Sampling continues to be conducted across the extent of the MGBL tenements as described in Section 4 of this Technical Report. MGBL historically under Resolute has employed and continues to employ the procedures as described in the following sections. The sampling datasets taken over the years appear to be complete and well managed. Drill core sampling and sample results is dealt with in the following section.

9.4.5 MGBL

The sampling methodology and procedures used by MGBL to ensure good quality assurance (QA) and quality control (QC) for data collection are deemed by the Author to follow industry best practice. All exploration drill core, geochemical and other exploration related samples are assayed by external accredited laboratories, namely the recently commissioned on-site laboratory contracted to and managed by Intertek with round robin samples submitted to SGS Tarkwa.

9.4.5.1 Soil Geochemical Sampling

Soil samples are collected at the sampling points (stations) defined by the geologists in local grid or UTM using handheld GPS with accuracy within 4m. The sampling grid or sampling spacing may vary from one place to another and is determined by factors that control mineralisation and the level of information required.

Sampling programs are typically undertaken on 400m x 50m spacing and the sampling lines azimuth is determined by the orientation of the structure suspected to be associated with mineralisation. In some cases, the sampling spacing is be reduced to 200m x 25m or 100m x 25m. Samples are not collected if:

- Sampling point is located on an alluvial channel.
- Sampling point is located on indurate material (duricrust, ferricrete).
- Sampling point is located on an outcrop of fresh or even weathered rock (saprolite and sap-rock).

The vegetation is cut inside a circle ±1.5m in diameter centred on the sampling point. The topsoil is removed to approximately 5cm depth centred on the sampling point. The sampling hole is dug 60cm deep and consists of a circular pit ±20cm in diameter. The sample collection process is as follows:

- The sample is collected over one horizon 5-10cm thick.
- The sample typically is between 2.5-3.0kg.
- In case of field duplicate point, the total sample is between 5kg and 6kg.

- Any gravel above 2cm is manually removed.
- Sample is collected in a plastic bag with the sample ticket inside.
- All the data is carefully recorded. The sample ID recorded in the soil sampling sheet fits with the ID on the sample book and the ID marked on the sample bag.
- The sample bag is properly labelled and closed.
- The soil samples are transported to the core shed.
- The storage area is secured until the samples are delivered to the laboratory.
- QAQC samples are inserted at the core shed and recorded on the soil sample sheet.

9.4.5.2 Trench Sampling

Trench sampling procedures are summarized below.

- The trenches are dug by using an excavator or manual labour.
- Lead technician will complete trench/RC sample sheet and mark bags.
- One technician clears the wall of the trench using a shovel or spade to clean off debris before sampling.
- Sampling is done typically on the north wall of the trench 5-10cm above the bottom of the trench to prevent contamination.
- Using a geologic hammer (pick end) to make a consistent channel approximately 2cm deep along the entire sample metre onto a clean plastic bag ensuring 100% of sample remains on the bag surface. Approximately 5kg sample is taken.
- The sample is poured into the sample bag. Ensuring the bag is clearly marked with the correct sample number and correct tag is inside the bag.
- The trenches are surveyed by the mine surveyor.

9.5 Data Reliability

Asante employs a QA/QC program consistent with NI 43-101 and industry best practices. Surface drilling was conducted by GeoDrill Drilling Services and Toomahit Drill Limited and was supervised by the Asante exploration teams. Asante utilizes accredited laboratories, either ALS-Kumasi, SGS, or the Intertek laboratory in Tarkwa, Ghana. Therefore, data acquired during exploration at Bibiani is considered to be 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.

9.6 Conclusions

The QP is of the opinion that the exploration results from the numerous drilling programs and other exploration methods applied, completed on the existing mineral deposits and over the additional brownfields targets, indicate positive extension potential to the existing mineral deposits on the Bibiani Shear Zone in strike and in depth.

The continued focus by MGBL on mine site and regional exploration is essential to ensure the replenishment of Measured and Indicated Resources necessary to prolong the current LoM strategy. The potential exists to achieve this with the extensions on strike and in depth of explored mineral deposits and with the expanded exploration potential as a result of the purchase of the neighbouring and juxtaposed Chirano Gold Mine with its extensive exploration licences.

10. DRILLING

MGBL have 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. MGBL is active with several resource definition and resource extension drilling exercises to increase LoM mineral resources. The main focus has been on the Bibiani Main Pit and planned underground extension, Walsh and Strauss potential underground extensions and the recently investigated and exploited Grasshopper and Russell South mineralised deposits. The additional resources have been included into the LoM production schedule in the last two-year period and form part of the revised Mineral Resource Estimate in this Technical Report.

MGBL's drilling activities are undertaken by independent drilling contractors (Toomahit and Geodrill Limited) and supervised by the MGBL Exploration Manager and the qualified geological team employed on a fulltime basis by MGBL.

10.1 Historical Drilling

Historically, drilling at Bibiani included Auger (AUG), Rotary Air Blast (RAB) RC, DD and RCD drilling (Table 10-1). Drilling for mineral resource delineation focused on the Bibiani Main Pit and satellite mineralised pits of Walsh, Strauss, Ahiman and Grasshopper, although extensive drilling has also been undertaken at Elizabeth Hill and Russell South mineralised deposits. The most extensive historical drilling was conducted over the Project areas under the management of CAG, Noble and Resolute.

Table 10-1 below summarises all surface and underground drilling and underground channel sampling done prior to the acquisition of MGBL by Asante.

Table 10-1: Historical Type and Extent of Drilling

Type	Auger		DD		RAB		RC		RCD		UG Chan		UG DD	
Company	**Holes (No)**	**Drilled (m)**	**Holes (No)**	**Drilled (m)**	**Holes (No)**	**Drilled (m)**	**Holes (No)**	**Drilled (m)**	**Holes (No)**	**Drilled (m)**	**Holes (No)**	**Drilled (m)**	**Holes (No)**	**Drilled (m)**
NMG	131	294							4	720				
AGA			184	33,941	12	275	450	36,057	169	51,997			80	8,499
CAG			12	902			186	20,867	24	8,630	270	3,273	167	9,342
IGR			2	191			12	1,017						
MGBL (Res)			209	75,457					20	6,159	34	3,568	21	6,583
Noble			50	6,637			3,169	190,290						
Totals	**131**	**294**	**457**	**117,128**	**12**	**275**	**3,817**	**248,231**	**217**	**67,506**	**304**	**6,841**	**268**	**24,424**

Notes:
DD – Diamond Drilling; RC – Reverse Circulation Drilling; RCD – Reverse Circulation & Diamond Drilling; UG Chan – Underground channel Sampling; UG DD – Underground Diamond Drilling.

10.1.1 Resolute Drilling – 2014 to 2017

MGBL as a subsidiary of Resolute Mining completed a Phase 1 drilling program during 2015 which comprised 106 resource drill holes for 26,283m in the Bibiani Main Pit deposit. The drilling included 1,107m PQ core, 17,275m HQ core, 6.631m NQ core and 1,270m RC pre-collars. A total of 23,452 core samples and 953 RC samples were collected with an average length of 1m. Samples were dispatched to Intertek Tarkwa for gold analysis by 25g fire assay technique with AAS instrument finish.

During this same period Resolute located and re-logged and sampled the diamond core for 92 previously completed resource holes including 36 AGA, 54 CAG and 2 Noble drill holes. MGBL collected 3,681 samples with an average length of 1m from these holes.

A Phase 2 drilling program was completed in 2016/17 which included 55 DD holes, a total of 22,884m in the Bibiani Main Pit. The results were included in the updated published 2017 Mineral Resource Estimate which reported a 25% increase in total Indicated Mineral Resource ounces over previous estimates. The drilling included 2,785m PQ, 17,622m HQ and 2,477m NQ core. A total of 22,542 samples were collected with an average length of 1m. Samples were dispatched to Intertek Tarkwa for gold analysis by 25g fire assay technique with AAS instrument finish.

The results of this drilling extended the underground workings to below 750m. It indicated that mineralisation at the time continued approximately 200m below the adopted resource model.

10.2 Asante MGBL Drilling – 2021 to 2023

Exploration drilling carried out by MGBL, since ownership by Asante in August 2021, has occurred on most of the target mineralised deposits within the Bibiani Mining Lease and Prospecting License areas. MGBL has completed a total of DD 24,307m, RC 17,509m and RCD 9,958m over the various target deposits. Table 10-2 below summarises the areas of focus and the total drilling on all deposits between September 2021 and December 2023.

Table 10-2: MGBL Drill Hole Summary Over Total Mine Lease and Prospecting License Area

YEAR		2021			2022			2023			TOTALS		
Targets	**Hole Type**	**Hole (No)**	**Drilled (m)**	**Sampled (m)**	**Hole (No)**	**Drilled (m)**	**Sampled (m)**	**Hole (No)**	**Drilled (m)**	**Sampled (m)**	**Hole (No)**	**Drilled (m)**	**Sampled (m)**
South Russell	DD				34	6 826	6 537	25	4 189	3 983	59	11 016	10 520
	RC	2	478	478	12	1 842	1 826	11	1 126	1 117	25	3 446	3 421
	RCD	3	632	632	12	3 072	2 857	15	3 869	3 571	30	7 573	7 059
Grasshopper	DD	11	1 843	1 842	3	763	755	10	1 227	1 224	24	3 833	3 821
	RC	7	742	741	31	2 288	2 265	20	1 737	1 715	58	4 767	4 721
	RCD				1	201	201				1	201	201
Walsh	DD	20	3 126	3 049				4	1 777	1 689	24	4 903	4 738
	RC	3	315	314							3	315	314
	RCD	8	1 070	1 068							8	1 070	1 068
Main Pit	DD	6	897	696	12	2 099	2 081				18	2 996	2 777
	RC	2	242	242	15	1 781	1 759				17	2 023	2 001
	RCD												
Elizabeth Hill	DD				4	841	840				4	841	840
	RC				22	2 620	2 606				22	2 620	2 606
	RCD												
Little Mug	DD												
	RC				13	1 863	1 844				13	1 863	1 844
	RCD												
Strauss	DD							2	718	687	2	718	687
	RC	8	947	938							8	947	938
	RCD												
Ahiman	DD												
	RC	11	1 195	1 194							11	1 195	1 194
	RCD												
Big Mug	DD												
	RC	1	123	123							1	123	123
	RCD	2	754	749							2	754	749
Pamunu	DD												
	RC							3	210	209	3	210	209
	RCD												
TOTAL		**84**	**12 364**	**12 066**	**159**	**24 195**	**23 571**	**90**	**14 853**	**14 194**	**333**	**51 412**	**49 831**

10.2.1 Russell

Approximately 22,000m of resource definition drilling has been completed over the Russell and Russell South mineralized deposit with the focus of extending the existing mineralised zone into depth for open pit expansion and identifying underground potential Figure 10-1. Multiple ore shoots were identified with a strong high-grade shoot intersected in the footwall domain with an average grade of 8.26g/t Au over an interval of 15m. Metallurgical studies yielded positive results consistent with those already experienced in at Bibiani.

Asante Corporation issued a press release in September 2023 announcing a Maiden Mineral Resource Estimate for the South Russell prospect. This was discussed in Section 7.3.3. The effective date of the Maiden Mineral Resource Estimate (MRE) for South Russell was August 21, 2023. The model was undertaken by the technical team of Mensin Gold Bibiani Limited and reviewed by Kwamina Ackun-Wood, the ex-Exploration Manager and Qualified Person as defined by NI 43-101.

The database used to estimate the Maiden MRE of the Russell deposit consists of 54 diamond drill holes, 77 reverse circulation drill holes and 37 reverse circulations with diamond tails for a total of 20,424.9 metres of drilling. Some of these holes are outside the MRE area and are not used in the estimation process. South Russell forms part of the revised Mineral Resource Estimate found in Section 14.

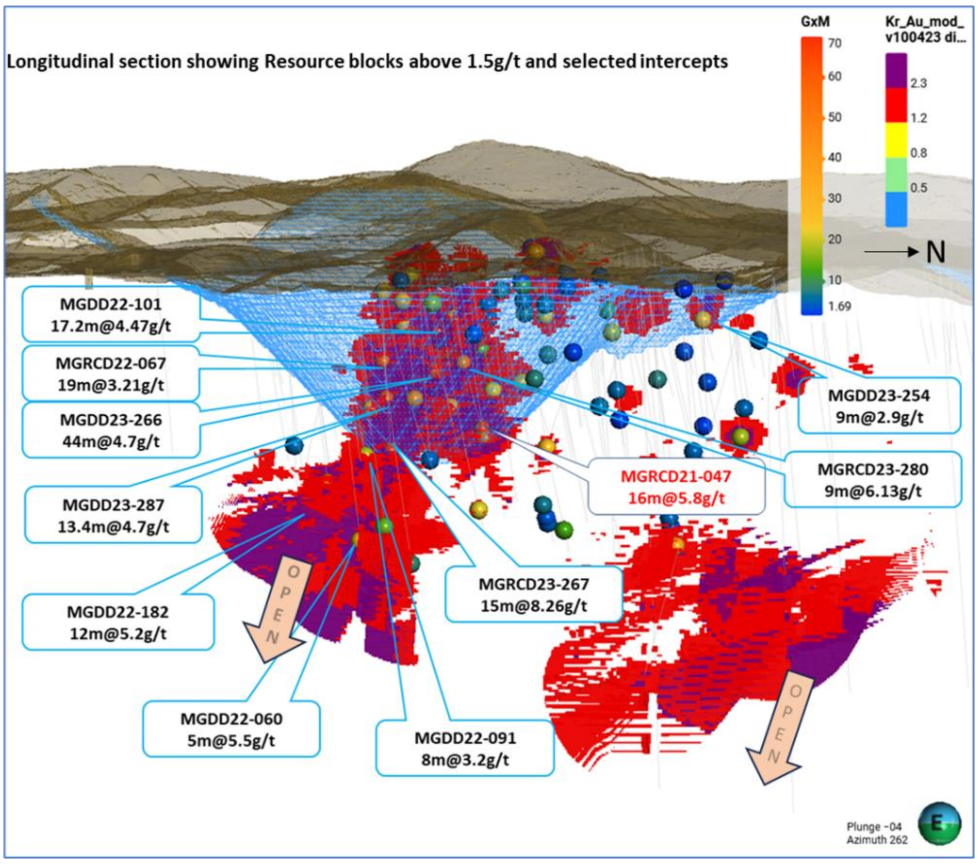


Figure 10-1: Longitudinal Section – Russell/Russell South – Exploration Drilling Intercepts and Downdip Potential

(Source: MGBL 2023)

The Table below list the drill hole locations for the Russell South drilling program.

Table 10-3: Russell South – Drill Hole Locations

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
RUSSELL SOUTH	MGDD22-056	713852.54	573691.74	337.01	153.30	308.2	-58.4	DD
	MGDD22-060	713599.70	573792.40	261.76	320.20	305.1	-61.9	DD
	MGDD22-069	713622.80	573670.68	275.28	231.00	307.9	-60.5	DD
	MGDD22-071	713787.99	573705.45	332.40	158.70	309.2	-65.9	DD
	MGDD22-073	713873.18	573768.13	294.42	180.00	304.7	-60.0	DD
	MGDD22-074	713609.10	573594.51	282.05	139.00	311.0	-57.3	DD
	MGDD22-076	713902.43	573759.63	293.95	120.20	309.5	-59.1	DD
	MGDD22-078	713744.46	573775.24	308.85	250.90	309.9	-59.7	DD
	MGDD22-079	713832.91	573802.76	289.20	221.30	307.3	-60.0	DD
	MGDD22-086	713645.00	573498.66	295.50	111.70	314.3	-59.3	DD
	MGDD22-089	713768.24	573801.04	303.84	282.20	307.9	-60.7	DD
	MGDD22-091	713625.60	573747.41	258.90	250.10	307.2	-58.0	DD
	MGDD22-094	713803.76	573752.74	317.18	198.20	304.3	-60.8	DD
	MGDD22-100	713655.68	573633.22	287.08	184.70	307.3	-60.5	DD
	MGRC21-031	713795.00	573985.17	261.81	308.00	307.3	-59.8	RC
	MGRC21-034	713576.90	573885.86	261.80	170.00	304.1	-60.5	RC
	MGRC22-061	713810.30	573606.60	326.07	90.00	309.0	-60.0	RC
	MGRC22-062	713679.23	573597.85	302.32	125.00	312.3	-60.1	RC
	MGRC22-064	713850.15	573639.73	352.95	120.00	310.8	-61.2	RC
	MGRC22-065	713887.55	573661.52	342.59	100.00	309.8	-61.5	RC
	MGRC22-068	713628.53	573556.50	284.27	114.00	308.0	-59.4	RC
	MGRCD21-032	713527.37	573808.32	273.92	216.00	307.4	-60.8	RCD
	MGRCD21-045	713691.58	573818.75	280.67	199.10	311.4	-60.5	RCD
	MGRCD21-047	713748.37	573737.90	316.00	216.60	316.0	-61.0	RCD
	MGRCD22-048	713800.28	573679.66	334.09	200.00	311.3	-61.2	RCD
	MGRCD22-052	713790.84	573770.90	316.39	176.50	309.4	-61.2	RCD
	MGRCD22-057	713659.96	573789.01	266.35	292.20	307.8	-59.2	RCD
	MGRCD22-058	713679.85	573668.89	269.43	229.10	308.9	-60.3	RCD
	MGRCD22-063	713580.67	573648.41	276.98	199.00	310.0	-60.6	RC
	MGRCD22-066	713731.71	573714.75	309.13	199.90	307.8	-61.0	RC
	MGRCD22-067	713714.74	573634.77	279.23	141.00	310.3	-60.5	RC
	MGRCD22-070	713849.23	573691.54	336.81	153.20	314.6	-59.4	RCD
	MGDD22-101	713754.62	573677.86	305.52	169.00	310.5	-50.6	DD
	MGDD22-102	712845.87	573368.58	311.63	155.80	303.6	-61.2	DD
	MGDD22-103	713640.14	573714.67	264.88	198.20	311.9	-59.4	DD
	MGDD22-104	712881.33	573319.77	328.67	129.30	289.7	-60.2	DD

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
	MGDD22-105	713781.49	573714.59	331.11	196.30	317.5	-61.1	DD
	MGDD22-106	712898.73	573551.37	320.38	153.30	308.2	-59.8	DD
	MGDD22-107	713881.68	574264.91	259.74	199.70	307.5	-51.4	DD
	MGDD22-108	712861.16	573074.64	366.93	124.80	307.2	-59.7	DD
	MGDD22-109	713824.18	573711.44	325.90	152.20	310.4	-61.4	DD
	MGDD22-110	713655.76	573697.17	267.20	252.30	269.1	-59.7	DD
	MGDD22-115	713950.21	573887.71	283.83	195.40	311.0	-60.3	DD
	MGDD22-119	713978.99	573921.53	280.19	213.20	305.4	-61.5	DD
	MGDD22-130	713915.06	573943.67	278.63	288.30	306.4	-61.8	DD
	MGRCD22-132	713825.22	573867.28	272.48	312.70	305.4	-58.2	RCD
	MGRCD22-133	713871.34	573934.44	269.29	301.00	304.9	-59.7	RCD
	MGRCD22-134	713841.78	573902.96	267.91	96.00	306.8	-60.6	RCD
	MGDD22-128	713909.69	573885.78	279.88	228.50	308.7	-60.1	DD
	MGDD22-126	713875.67	573862.81	277.10	238.90	306.9	-62.7	DD
	MGRCD22-164	713774.31	573866.63	280.26	325.00	308.7	-60.7	RCD
	MGDD22-182	713594.47	573731.78	269.78	291.50	306.6	-60.2	DD
	MGRCD22-191	713621.49	573854.87	257.95	366.00	302.7	-59.7	RCD
	MGRCD22-192	713607.70	573832.00	259.49	369.00	302.0	-60.0	RCD
	MGDD22-193	713738.05	573595.79	301.51	148.10	310.6	-60.3	DD
	MGDD22-194	713764.20	573619.47	303.35	174.50	308.9	-59.9	DD
	MGDD22-195	713882.16	573734.91	306.41	191.20	308.7	-60.2	DD
	MGDD22-197	713701.86	573818.78	282.43	324.30	312.7	-62.4	DD
	MGRC22-202	714036.22	573942.98	273.81	166.00	304.3	-56.5	RC
	MGRC22-203	713975.45	573865.15	287.28	200.00	303.0	-62.2	RC
	MGRC22-204	713998.40	573893.80	279.74	200.00	304.0	-61.3	RC
	MGRC22-205	713927.32	573852.14	288.49	187.00	302.6	-57.0	RC
	MGRCD22-206	713888.32	573870.53	277.79	251.10	304.5	-63.5	RCD
	MGDD23-211	714047.02	573972.00	278.09	223.80	307.7	-57.0	DD
	MGDD23-214	713876.33	573683.61	339.06	130.90	309.9	-55.6	DD
	MGDD23-243	713740.48	573882.22	276.68	336.30	309.8	-54.0	DD
	MGDD23-245	713791.70	573792.55	306.07	249.70	310.6	-50.8	DD
	MGDD23-244	713887.56	573837.04	285.31	205.90	302.3	-56.1	DD
	MGDD23-246	713903.82	573920.29	277.77	228.40	309.3	-53.8	DD
	MGDD23-247	713911.79	573769.53	293.60	111.30	312.3	-50.5	DD
	MGDD23-250	713860.94	573840.97	278.06	188.30	303.8	-49.5	DD
	MGRCD23-252	713936.49	573875.50	284.95	179.70	301.3	-58.0	RCD
	MGDD23-253	713971.27	573831.38	290.25	112.30	302.2	-53.0	DD
	MGDD23-254	713995.35	573834.03	288.62	102.00	301.1	-51.5	DD
	MGDD23-255	713489.57	573594.98	276.88	210.30	301.5	-51.4	DD
	MGDD23-256	713738.11	573610.58	296.76	129.30	300.5	-64.0	DD
	MGDD23-257	713648.90	573657.81	278.53	171.40	305.5	-57.4	DD
	MGDD23-258	713746.04	573636.05	298.05	111.40	302.5	-60.7	DD
	MGRCD23-259	713619.33	573692.51	270.37	268.20	302.7	-64.2	RCD
	MGDD23-263	713715.44	573709.98	301.91	177.50	302.8	-55.6	DD
	MGDD23-264	713585.92	573604.45	276.42	147.50	306.3	-62.4	DD
	MGRCD23-265	713585.20	573703.21	271.49	252.10	299.7	-65.3	RCD
	MGDD23-266	713743.80	573667.58	301.58	153.30	300.2	-65.8	DD
	MGRCD23-267	713682.17	573726.88	285.14	282.30	300.7	-61.6	RCD
	MGDD23-269	713736.14	573700.89	303.18	198.20	305.6	-53.4	DD
	MGRCD23-270	713707.02	573766.58	289.01	264.30	298.7	-55.2	RCD
	MGDD23-271	713683.27	573642.56	276.74	148.10	301.3	-64.3	DD
	MGDD23-272	713833.70	573730.78	316.43	210.40	301.6	-61.9	DD
	MGRCD23-273	713822.94	573839.26	278.25	294.90	300.7	-60.4	RCD
	MGRC23-274	713894.80	573638.60	351.80	100.00	300.5	-59.3	RC
	MGRC23-275	713875.66	573712.33	321.09	150.00	295.4	-56.9	RC
	MGRC23-276	713800.64	573649.33	330.50	140.00	296.3	-60.7	RC
	MGRC23-277	713832.11	573658.50	348.64	120.00	300.9	-63.4	RC
	MGRC23-279	713919.20	573644.00	344.46	70.00	308.4	-52.5	RC
	MGDD23-268	713699.02	573652.92	276.41	86.30	307.9	-61.4	DD
	MGRCD23-280	713770.09	573709.75	327.71	231.30	301.6	-55.9	RCD
	MGRCD23-281	713850.57	573759.11	298.44	222.80	305.5	-58.3	RCD
	MGRCD23-282	713939.46	573905.78	282.04	234.50	303.6	-63.6	RCD
	MGRC23-283	714011.76	573878.53	279.76	144.00	302.9	-57.3	RC
	MGRC23-284	714045.91	573855.86	272.09	100.00	306.7	-59.2	RC
	MGRCD23-285	713868.41	573820.01	282.44	210.40	302.3	-57.4	RCD
	MGRCD23-249	713881.08	573953.48	271.47	348.60	303.6	-65.7	RCD
	MGDD23-287	713704.97	573681.37	286.15	192.40	297.6	-58.3	RCD

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
	MGRCD23-288	713946.11	573939.90	280.52	282.00	295.2	-58.1	RCD
	MGRCD23-289	714002.77	573984.95	272.42	225.40	293.3	-58.3	RCD

The Table below lists the significant intercepts recorded from the drilling programs.

Table 10-4: South Russell Drilling – Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g)/t	From (m)	To (m)	Interval (m)	Au (g)/t
SOUTH RUSSELL	MGDD22-056	52.3	55.3	3.0	0.86	90.3	93.3	3.0	2.28
		75	82	7.0	0.91				
	MGDD22-060	279	284	5.0	5.46				
	MGDD22-071	106	109	3.0	0.94				
	MGDD22-073	1.2	8.7	7.5	0.56	118	125	7.0	0.64
		16.2	19.2	3.0	1.23				
	MGDD22-076	57	62	5.0	0.51	89	94	5.0	0.52
	MGDD22-078	208	225	17.0	3.26				
	MGDD22-089	205	209	4.0	0.99	227	230	3.0	0.65
	MGDD22-091	207	215	8.0	3.21	220	223	3.0	1.22
	MGDD22-094	93	96	3.0	0.58				
	MGDD22-101	43	59	16.0	1.06	112	117	5.0	2.75
		71	107	36.0	2.47				
	MGDD22-103	181	191	10.0	1.86				
	MGDD22-105	171	178	7.0	3.26				
	MGRC22-064	75	78	3.0	2.27				
	MGRC22-065	24	41	17.0	0.74	67	70	3.0	0.74
	MGRCD21-047	149	152	3.0	0.59	194	210	16.0	5.75
	MGRCD22-048	111	115	4.0	4.01	121	129	8.0	1.80
	MGRCD22-057	238	242	4.0	0.68				
	MGRCD22-058	123	133	10.0	3.51				
	MGRCD22-067	72	91	19.0	3.18				
	MGRCD22-070	55	62	7.0	1.47	89	94	5.0	0.96
	MGDD22-115	170	178	8.0	1.11				
	MGRCD22-066	129	134	5.0	1.02	174.1	186	11.9	3.22
	MGRCD22-133	269	275	6.0	1.01	280	284	4.0	0.78
	MGDD22-119	1.5	4.5	3.0	0.75	177	182	5.0	3.62
	MGDD22-130	195	200	5.0	0.98	257	261	4.0	0.69
		229	235	6.0	0.56				
	MGRCD22-132	78	81	3.0	0.82	224.2	228	3.8	0.58
	MGDD22-182	216	230	14.0	4.49				
	MGRCD22-164	114	122	8.0	0.98	293	306	13.0	0.98
		195	203	8.0	3.27				
	MGRCD22-191	315	324	9.0	0.94				
	MGRCD22-192	274	283	9.0	1.72				
	MGDD22-194	0	15	15.0	1.40	40	43.5	3.5	0.93
		16.5	37.5	21.0	3.48				
	MGRC22-203	122	125	3.0	1.05				
	MGRC22-204	126	129	3.0	0.78	141	145	4.0	1.23
		134	137	3.0	0.59				
	MGRC22-205	121	130	9.0	0.84				
	MGDD22-197	261	278	17.0	1.27				
	MGRCD22-206	212	215	3.0	1.25				
	MGDD23-214	19.5	24	4.5	8.00	60	69	9.0	3.14
	MGDD23-243	133	136	3.0	0.74	284	288.58	4.6	1.50
	MGDD23-243	211	215	4.0	0.54	301	312	11.0	0.83
	MGDD23-244	60	64	4.0	0.69	171	174	3.0	0.71
		134	138	4.0	1.31				
	MGDD23-247	2	6	4.0	0.81	69	81	12.0	1.60
		43	51	8.0	1.37				
	MGRCD23-249	280	306.6	26.6	1.43				
	MGRCD23-252	49	53	4.0	0.93				
	MGDD23-250	160	165	5.0	1.08				
	MGDD23-253	94	97	3.0	1.07				
	MGDD23-254	50	59	9.0	2.88				
	MGDD23-256	6	28	22.0	1.28	44	51	7.0	0.88
	MGDD23-258	8	11	3.0	1.36	56	67	11.0	3.07
		25	41	16.0	2.12				
	MGDD23-263	157	177.5	20.5	2.70				

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g)/t	From (m)	To (m)	Interval (m)	Au (g)/t
	MGRCD23-265	172	176	4.0	1.29				
	MGDD23-266	102	146	44.0	4.72				
	MGDD23-269	121	149	28.0	2.79	185	191	6.0	0.77
		162	165	3.0	1.92				
	MGRCD23-267	192	207	15.0	8.26				
	MGRCD23-270	219	224	5.0	0.92				
	MGRC23-274	24	27	3.0	0.94				
	MGRC23-275	63	82	19.0	1.63	122	128	6.0	1.38
	MGRC23-277	87	93	6.0	0.98	101	107	6.0	0.84
	MGRC23-276	62	65	3.0	1.65	85	92	7.0	5.33
	MGDD23-272	144	155	11.0	2.41				
	MGRCD23-281	43	46	3.0	0.52				
	MGRCD23-282	13	16	3	0.56	209	214	5	1.01
	MGRC23-284	43	48	5	0.53	52	59	7	0.62
	MGRCD23-280	144	153	9	6.13				
	MGRCD23-285	78	81	3	0.52				
	MGDD23-287	133.2	146.6	13.4	4.69				
	MGRCD23-294	191.4	196	4.6	0.56	206	208.3	2.3	2.02
	MGRCD23-294	249	253	4	0.65				

10.2.2 Grasshopper

More than 8,800m of resource definition drilling was completed over the Grasshopper mineralized deposit. In addition, approximately 1,000m of historical drilling was also completed. The majority of mineralized material is within the oxide-transition zone and expected to return processing recoveries above 90% as already experienced at Bibiani from other current oxide sources. Starter pit mining was commenced in Q2 2023.

Figure 10-2: Grasshopper Starter Pit – Drone Picture looking North (TSF in foreground)

(Source: MultiGeomatics; Land Mining & Engineering Surveyors 2023)

Asante Corporation issued a press release in October 2023 announcing a Maiden Mineral Resource Estimate for the Grasshopper prospect. This was discussed in Section 7.3.4. The effective date of the Maiden Mineral Resource Estimate (MRE) for Grasshopper was November 5, 2022. The model was undertaken by the technical team of Mensin Gold Bibiani Limited and reviewed by Kwamina Ackun-Wood, the ex-Exploration Manager and Qualified Person as defined by NI 43-101.

The Table below lists the drillhole locations for the Grasshopper drilling program.

Table 10-5: Grasshopper – Drill Hole Locations

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
GRASSHOPPER	MGDD21-001	717238.83	576729.86	237.50	162.20	308.5	-51.1	DD
	MGDD21-002	717351.73	576745.36	245.84	161.50	310.3	-50.1	DD

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
	MGDD21-003	717559.88	576807.18	221.06	183.00	313.6	-49.3	DD
	MGDD21-004	717629.75	576719.33	217.14	178.70	309.1	-49.3	DD
	MGDD21-005	717598.47	576753.19	216.71	160.20	311.8	-48.0	DD
	MGDD21-006	717536.60	576684.68	214.30	131.50	310.0	-50.0	DD
	MGDD21-007	717605.60	576896.55	222.00	200.00	307.3	-49.3	DD
	MGDD21-008	717459.59	576768.11	223.83	173.80	310.1	-48.2	DD
	MGDD21-009	717683.30	576809.67	215.69	186.50	304.3	-51.3	DD
	MGDD21-010	717541.28	576979.09	216.08	158.85	316.2	-48.4	DD
	MGDD21-011	717501.21	576932.08	234.35	147.10	307.5	-50.3	DD
	MGRC21-019	717479.76	576591.67	205.41	120.00	306.6	-50.5	RC
	MGRC21-020	717358.76	576586.65	211.48	100.00	310.6	-52.0	RC
	MGRC21-021	717218.13	576588.56	208.10	100.00	310.5	-50.7	RC
	MGRC21-027	717439.53	576886.14	238.05	110.00	311.1	-50.0	RC
	MGRC21-028	717343.38	576850.27	238.01	104.00	309.0	-60.4	RC
	MGRC21-029	717314.87	576829.69	237.12	104.00	309.9	-60.2	RC
	MGRC21-030	717245.15	576791.68	228.38	104.00	307.6	-60.9	RC
	MGDD22-135	717036.14	577006.25	197.69	291.30	309.3	-61.4	DD
	MGRC22-136	717087.62	576774.10	209.26	55.00	305.8	-59.2	RC
	MGRC22-137	717076.11	576753.19	209.02	40.00	305.0	-60.1	RC
	MGRC22-138	717093.24	576793.96	209.20	60.00	305.7	-60.7	RC
	MGRC22-139	717082.71	576812.09	207.62	80.00	305.5	-61.4	RC
	MGRC22-140	717048.85	576757.45	206.47	50.00	305.9	-60.1	RC
	MGRC22-141	717058.27	576776.49	206.86	65.00	305.7	-61.0	RC
	MGRC22-142	717074.40	576793.99	207.75	70.00	305.5	-59.7	RC
	MGRC22-143	717098.39	576824.58	207.33	90.00	304.8	-61.3	RC
	MGRC22-144	717139.44	576806.94	210.71	72.00	305.5	-61.6	RC
	MGRC22-145	717185.79	576766.92	221.49	50.00	305.5	-61.0	RC
	MGRC22-146	717377.09	576879.86	238.34	126.00	305.0	-59.5	RC
	MGRC22-147	717368.15	576857.74	238.39	120.00	305.3	-61.6	RC
	MGRC22-148	717420.77	576851.21	238.48	110.00	305.6	-50.5	RC
	MGRC22-149	717413.95	576860.99	238.51	126.00	304.9	-59.6	RC
	MGRC22-150	717429.11	576872.75	238.40	126.00	308.9	-65.5	RC
	MGRCD22-151	717270.92	576909.47	229.40	201.00	305.7	-62.7	RCD
	MGRC22-152	717400.18	576848.80	238.58	102.00	305.8	-53.4	RC
	MGRC22-153	717382.83	576830.10	240.66	93.00	309.1	-60.0	RC
	MGDD22-154	717374.63	576944.05	234.72	264.30	311.3	-61.6	DD
	MGRC22-155	717364.97	576826.46	241.00	90.00	304.1	-55.2	RC
	MGRC22-156	717304.02	576815.16	236.74	69.00	305.8	-50.5	RC
	MGRC22-157	717337.76	576826.62	239.93	90.00	305.5	-58.8	RC
	MGRC22-158	717274.36	576817.92	232.73	90.00	309.4	-67.2	RC
	MGRC22-159	717521.64	576811.31	223.66	20.00	305.6	-59.9	RC
	MGRC22-160	717486.96	576819.59	224.85	45.00	305.7	-53.0	RC
	MGDD22-161	717057.64	576823.47	205.26	207.30	305.4	-59.4	DD
	MGRC22-183	717432.31	576794.05	226.84	30.00	303.2	-51.5	RC
	MGRC22-184	717464.70	576812.26	226.54	55.00	303.4	-57.2	RC
	MGRC22-185	717483.29	576861.86	234.16	91.00	304.0	-56.6	RC
	MGRC22-186	717233.88	576805.64	223.42	77.00	302.3	-58.8	RC
	MGRC22-187	717243.81	576817.28	223.43	85.00	304.6	-57.1	RC
	MGRC22-188	717222.92	576745.86	233.79	43.00	307.9	-56.8	RC
	MGRC22-189	717237.42	576756.80	236.40	43.00	303.4	-61.0	RC
	MGRC22-190	717212.19	576730.27	230.92	25.00	303.2	-58.2	RC
	MGDD23-210	717336.72	576869.18	237.56	138.00	301.6	-59.2	DD
	MGRC23-207	717353.09	576875.82	237.80	155.00	300.8	-58.4	RC
	MGRC23-209	717429.04	576917.53	242.40	172.00	301.7	-53.0	RC
	MGRC23-208	717550.44	576874.04	239.29	113.00	301.3	-51.5	RC
	MGDD23-212	717403.06	576876.09	238.22	153.00	298.9	-59.6	DD
	MGDD23-213	717328.69	576846.65	237.88	117.40	303.7	-56.8	DD
	MGDD23-215	716954.01	576823.67	197.73	60.50	304.1	-55.9	DD
	MGDD23-216	716838.59	576824.55	190.22	150.30	304.0	-58.3	DD
	MGDD23-217	717122.33	576831.56	208.87	120.40	304.7	-59.3	DD
	MGDD23-218	716892.82	576779.13	195.73	84.50	302.6	-60.8	DD
	MGDD23-219	717202.86	576855.08	221.11	141.20	305.5	-55.2	DD
	MGDD23-220	717293.51	576861.85	235.31	132.40	305.4	-60.6	DD
	MGDD23-221	717281.97	576845.98	234.66	129.00	306.5	-57.7	DD
	MGRC23-223	716936.77	576785.43	197.09	63.00	301.3	-59.3	RC
	MGRC23-224	716918.42	576776.30	196.73	63.00	303.3	-63.0	RC
	MGRC23-225	716863.15	576768.98	193.82	80.00	304.7	-62.6	RC

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
	MGRC23-226	716822.27	576740.98	187.29	46.00	302.9	-60.7	RC
	MGRC23-227	716800.50	576741.53	184.84	53.00	302.2	-61.5	RC
	MGRC23-228	716788.68	576722.08	184.55	32.00	303.9	-60.0	RC
	MGRC23-232	717822.68	576873.14	196.81	60.00	305.9	-51.7	RC
	MGRC23-233	717849.16	576907.10	196.01	60.00	305.9	-51.7	RC
	MGRC23-234	717880.33	576932.57	192.92	60.00	304.7	-51.2	RC
	MGRC23-235	717850.28	576979.88	194.39	80.00	301.4	-51.4	RC
	MGRC23-236	717797.45	576913.16	199.80	80.00	301.0	-52.0	RC
	MGRC23-237	717825.18	576945.15	196.74	80.00	304.0	-51.5	RC
	MGRC23-238	717742.88	576902.33	204.29	60.00	302.7	-52.6	RC
	MGRC23-239	717685.96	576915.41	207.88	100.00	302.1	-50.5	RC
	MGRC23-240	717637.04	576943.42	209.02	130.00	303.1	-51.0	RC
	MGRC23-241	717595.00	576934.77	216.64	120.00	303.4	-49.7	RC
	MGRC23-242	717562.64	576919.68	226.66	130.00	304.3	-51.7	RC

The Table below lists the significant intercepts recorded from the drilling programs.

Table 10-6: Grasshopper – Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g)/t	From (m)	To (m)	Interval (m)	Au (g)/t
GRASSHOPPER	MGDD21-011	130	135	5.0	1.19				
	MGDD22-135	232	235	3.0	0.54				
	MGDD23-210	36	41	5.0	0.50				
	MGDD23-215	11.5	17.5	6.0	1.65				
	MGDD23-216	99	106	7.0	0.79				
	MGDD23-218	57	70	13.0	2.36				
	MGRC21-027	45	48	3.0	1.26				
	MGRC21-029	57	67	10.0	3.46				
	MGRC22-136	26	31	5.0	1.65				
	MGRC22-138	45	53	8.0	3.46				
	MGRC22-141	26	29	3.0	0.80				
	MGRC22-142	52	57	5.0	0.83				
	MGRC22-144	40	44	4.0	1.42				
	MGRC22-147	85	88	3.0	0.55				
	MGRC22-148	70	73	3.0	5.86				
	MGRC22-149	89	92	3.0	0.98				
	MGRC22-152	74	77	3.0	2.14				
	MGRC22-153	7	11	4.0	0.52	57	60	3.0	0.85
	MGRC22-156	47	50	3.0	2.60				
	MGRC22-157	58	67	9.0	1.70				
	MGRC22-158	64	67	3.0	1.11				
	MGRC22-186	48	51	3.0	0.77				
	MGRC23-209	141	146	5.0	3.18				
	MGRC23-232	4	7	3.0	1.46				
	MGRC23-238	27	34	7.0	1.05				
	MGRC23-239	49	52	3.0	2.21				
	MGRC23-240	78	81	3.0	1.08				

10.2.3 Walsh

Recent significant assay results from the drilling conducted over the Walsh mineralized deposit (>6,000m) confirmed the continuity of high-grade shoots to the south-east of the current mined out pit. The plunge or the mineralized zone has been interpreted to be steep (50˚- 55˚E).

The resultant increase in mineral resources has been included in the Mineral Resource Estimate reported in this Technical Report (Section 14). As part of the latest Asante strategy to commence underground mining below the Main Pit, additional investigation into the deeper underground potential of Walsh (and Strauss) is anticipated as the Walsh mineralized body is adjacent to the Main Pit orebody and can be exploited from the same infrastructure.

The Table below lists the drill hole locations for the Walsh drilling program.

Table 10-7: Walsh – Drill Hole Locations

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
WALSH	MGDD21-016	714953.49	575489.46	207.53	150.60	311.3	-59.2	DD
	MGDD21-026	714983.20	575442.64	209.25	192.20	305.2	-60.6	DD
	MGDD21-027	714905.77	575366.52	208.50	153.20	316.5	-66.6	DD
	MGDD21-028	714862.15	575403.46	207.35	147.60	308.0	-59.3	DD
	MGDD21-029	714912.75	575443.50	207.33	150.30	307.6	-59.2	DD
	MGDD21-030	714939.72	575409.32	208.30	138.20	304.5	-58.8	DD
	MGRC21-002	715380.32	575215.30	267.18	100.00	309.2	-50.5	RC
	MGRC21-003	715339.46	575263.82	266.32	100.00	314.6	-49.8	RC
	MGRC21-004	715395.58	575474.57	265.03	115.00	308.9	-51.0	RC
	WADD21-001	715315.95	575645.54	247.40	132.00	304.4	-64.9	DD
	WADD21-002	715089.92	575552.86	221.86	167.80	303.8	-64.4	DD
	WADD21-003	715045.17	575523.14	216.92	180.70	306.7	-65.0	DD
	WADD21-004	715126.16	575578.86	224.20	153.90	313.7	-64.3	DD
	WADD21-005	715023.79	575564.07	216.41	192.70	308.0	-66.1	DD
	WADD21-006	715201.28	575411.25	230.54	76.80	306.7	-63.2	DD
	WADD21-007	714978.88	575536.83	211.33	180.60	307.4	-64.7	DD
	WADD21-008	715103.00	575622.72	223.83	186.20	310.9	-66.3	DD
	WADD21-009	715005.17	575495.23	212.64	192.50	309.1	-65.1	DD
	WADD21-010	715060.40	575598.40	204.50	204.50	307.5	-65.8	DD
	WADD21-011	714978.20	575296.01	210.21	126.20	308.5	-64.6	DD
	WADD21-012	715010.98	575314.81	210.28	186.50	307.3	-65.4	DD
	WADD21-013	715264.40	575435.50	231.94	93.50	309.6	-60.2	DD
	WADD21-014	715037.99	575221.67	211.02	120.20	314.1	-63.9	DD
	WARCD21-001	715259.60	575656.57	245.43	108.70	309.6	-65.5	RCD
	WARCD21-002	715213.93	575611.15	237.85	105.60	305.2	-65.2	RCD
	WARCD21-003	715153.48	575553.18	225.65	124.00	309.8	-65.9	RCD
	WARCD21-004	715115.51	575520.44	223.28	159.60	312.7	-65.5	RCD
	WARCD21-005	715055.80	575431.82	221.60	132.60	307.6	-65.8	RCD
	WARCD21-006	715010.46	575406.68	210.15	144.00	313.9	-66.6	RCD
	WARCD21-007	715091.22	575479.81	223.47	136.00	313.4	-66.0	RCD
	WARCD21-008	714964.50	575364.89	209.15	159.50	306.4	-65.7	RCD
	MGDD23-222	714944.52	575765.52	217.81	444.00	302.0	-55.8	DD
	MGDD23-229	714900.81	575723.45	216.43	461.60	302.4	-52.8	DD
	MGDD23-230	714853.84	575628.39	214.52	435.40	304.3	-55.7	DD
	MGDD23-231	714819.27	575565.91	214.39	435.50	304.2	-55.5	DD

The Table below lists the significant intercepts recorded from the drilling programs.

Table 10-8: Walsh – Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g)/t	From (m)	To (m)	Interval (m)	Au (g)/t
WALSH	WADD21-002	141	159	18	3.85				
	WADD21-003	140	143	3	5.96	160	163	3	4.60
	WADD21-004	137	145	8	4.80				
	WADD21-005	174	186	12	4.41				
	WADD21-007	170	174	4	7.49				
	WADD21-008	173	176	3	6.28				
	WADD21-009	132	135	3	13.54	167	173	6	0.90
	WADD21-014	2.7	5.7	3	0.60				
	WARCD21-001	69	73	4	2.12				
	WARCD21-002	85	94	9	2.98				
	WARCD21-003	112	117	5	2.19				
	WARCD21-004	118	126	8	1.25				
	WARCD21-006	70	73	3	1.16				
	WARCD21-007	105	110	5	1.50	116	121	5	4.85
	MGDD23-229	309	313	4	5.37				

10.2.4 Main Pit

Table 10-9: Main Pit – Drill Hole Locations

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
MAIN_PIT	MGDD22-111	714047.86	574384.16	250.72	200.30	300.8	-52.5	DD
	MGDD21-012	715357.50	574245.81	280.16	150.30	311.6	-51.2	DD
	MGDD21-013	714929.77	574187.36	260.61	150.20	307.5	-52.7	DD
	MGDD21-014	715686.72	574523.43	280.16	100.20	312.5	-51.5	DD

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
	MGDD21-015	714548.29	574343.85	232.53	189.20	319.0	-61.3	DD
	MGDD21-031	714481.89	574272.59	245.27	174.60	313.2	-60.9	DD
	MGDD21-032	714520.04	574225.44	258.28	132.50	313.8	-60.2	DD
	MGDD22-049	714479.65	574175.90	263.00	183.20	306.3	-56.0	DD
	MGDD22-050	714436.58	574169.57	256.59	200.10	301.7	-59.4	DD
	MGDD22-051	714399.89	574119.12	247.96	174.90	300.8	-54.0	DD
	MGDD22-053	714337.37	574164.29	240.76	222.30	303.4	-60.9	DD
	MGDD22-054	714333.85	574089.47	252.64	186.30	302.2	-54.4	DD
	MGDD22-055	714434.28	574118.91	262.21	132.50	309.2	-61.8	DD
	MGDD22-059	714443.51	574209.92	252.27	64.40	307.6	-50.3	DD
	MGDD22-072	714377.23	574163.70	242.22	207.20	297.9	-58.6	DD
	MGDD22-075	714353.73	574093.71	256.36	147.00	303.1	-49.3	DD
	MGDD22-077	714368.73	574108.03	254.79	159.40	302.2	-51.2	DD
	MGDD22-080	714408.57	574199.61	245.01	221.10	307.3	-60.0	DD
	MGRC21-005	715503.38	575026.07	251.87	120.00	309.3	-50.6	RC
	MGRC21-006	715068.94	575083.55	213.46	122.00	309.3	-50.0	RC
	MGRC22-081	714422.46	573952.81	268.93	120.00	309.3	-60.6	RC
	MGRC22-082	714223.78	573949.93	295.54	126.00	308.9	-60.9	RC
	MGRC22-083	714192.98	573986.39	300.46	120.00	309.1	-59.2	RC
	MGRC22-084	714247.90	573912.97	295.45	120.00	294.0	-59.2	RC
	MGRC22-085	714275.35	573868.10	313.93	126.00	311.6	-60.8	RC
	MGRC22-087	714248.59	573845.85	316.31	120.00	310.5	-60.1	RC
	MGRC22-088	714216.47	573877.50	308.83	120.00	318.6	-60.3	RC
	MGRC22-090	714113.26	573921.49	306.43	120.00	307.8	-60.7	RC
	MGRC22-092	714435.70	573918.44	274.01	121.00	308.8	-59.3	RC
	MGRC22-093	714380.32	573914.06	259.73	120.00	306.1	-60.3	RC
	MGRC22-095	714406.53	573888.61	270.05	108.00	309.1	-60.6	RC
	MGRC22-096	714359.91	573883.26	269.90	100.00	311.3	-60.6	RC
	MGRC22-097	714300.83	573917.69	294.39	120.00	311.9	-60.9	RC
	MGRC22-098	714053.77	573988.73	281.35	120.00	307.5	-59.7	RC
	MGRC22-099	714149.23	573878.18	291.45	120.00	310.4	-60.3	RC

Table 10-10: Main Pit – Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g)/t	From (m)	To (m)	Interval (m)	Au (g)/t
MAIN_PIT	MGDD21-015	157	160	3.0	0.52	173	183	10.0	4.83
	MGDD21-031	160	163	3.0	1.00				
	MGDD21-032	105	110	5.0	0.80	117	127	10.0	0.72
	MGDD22-049	107	116	9.0	2.56	147	150	3.0	1.30
	MGDD22-050	112	115	3.0	1.84	139	150	11.0	0.52
	MGDD22-054	128	131	3.0	1.45				
	MGDD22-059	0	4	4.0	0.67				
	MGDD22-072	173	185	12.0	0.83				
	MGDD22-075	16	19	3.0	0.54	121	130	9.0	8.10
	MGDD22-077	91	99	8.0	1.06	127	141	14.0	1.35
	MGDD22-080	147	153	6.0	0.63				
	MGRC22-090	82	85	3.0	0.88				
	MGRC22-095	41	47	6.0	0.68				
	MGRC22-097	22	27	5.0	0.92				

10.3 Other Targets and Significant Intercepts

Other drilling exercises carried out in the period by MGBL are briefly mentioned below. Exploration continues in these areas and further drilling programs are anticipated in 2024.

Table 10-11 below summarises the location and significant intercepts received from selected surface drilling described above in the period August 2021 to December 2023.

The Tables below list the drill locations for the smaller drill programs completed.

Table 10-11: Big Mug, Elizabeth Hill & Strauss Drill Hole Locations

Mineralized Deposit	Hole ID	North (UTM)	East (UTM)	Elevation (UTM)	Depth (m)	Azimuth (True North)	Dip (˚)	Hole Type
BIG MUG	MGRC21-043	715904.16	574689.59	255.79	123.00	128.2	-60.8	RC
	MGRCD21-044	715905.33	574687.52	255.74	486.00	130.3	-67.5	RCD
	MGRCD21-046	716144.43	574818.89	277.60	267.60	132.0	-62.9	RCD
ELIZABETH HILL	MGRC22-129	715581.92	575308.30	256.48	200.00	301.3	-56.6	RC
	MGRC22-131	715549.63	575210.78	261.05	100.00	299.6	-57.5	RC
	MGDD22-162	715672.78	575384.47	241.62	258.10	296.4	-57.6	DD
	MGDD22-163	715617.32	575329.76	254.96	198.30	300.0	-58.9	DD
	MGRC22-165	715667.15	575254.65	286.75	100.00	301.0	-60.3	RC
	MGDD22-166	715790.96	575571.53	230.77	228.00	302.3	-58.3	DD
	MGRC22-167	715686.91	575187.89	295.31	100.00	302.7	-60.3	RC
	MGRC22-168	715718.65	575320.54	274.22	150.00	302.4	-52.4	RC
	MGRC22-169	715757.89	575332.15	262.16	120.00	302.1	-51.9	RC
	MGRC22-170	715591.73	575146.17	289.69	60.00	302.5	-53.0	RC
	MGRC22-171	715766.74	575067.20	266.45	120.00	303.2	-45.3	RC
	MGDD22-172	715633.75	575299.46	263.33	156.40	303.7	-59.1	DD
	MGRC22-173	716099.85	575289.38	368.72	120.00	298.2	-45.9	RC
	MGRC22-174	716184.21	575342.67	371.40	120.00	303.3	-45.5	RC
	MGRC22-175	716016.77	575232.30	351.30	120.00	301.1	-44.5	RC
	MGRC22-176	716124.91	575390.43	347.24	120.00	303.4	-45.0	RC
	MGRC22-177	716267.77	575390.51	341.74	80.00	301.5	-46.0	RC
	MGRC22-178	715937.13	575170.61	341.46	120.00	300.5	-45.7	RC
	MGRC22-179	715795.39	575204.51	328.69	120.00	301.8	-45.1	RC
	MGRC22-180	715850.26	575122.10	300.46	120.00	301.8	-45.9	RC
	MGRC22-181	715793.86	575014.23	291.13	120.00	299.1	-47.0	RC
	MGRC22-196	716053.11	575541.41	260.20	120.00	300.2	-61.0	RC
	MGRC22-198	716132.73	575592.56	249.35	150.00	297.6	-60.5	RC
	MGRC22-199	716010.44	575413.16	292.51	120.00	299.8	-45.6	RC
	MGRC22-200	715974.53	575489.97	273.86	120.00	300.1	-45.3	RC
	MGRC22-201	716098.53	575468.07	296.34	120.00	302.6	-46.3	RC
STRAUSS	MGRC21-007	715700.29	575599.71	223.15	121.00	308.7	-50.7	RC
	MGRC21-008	715714.38	575933.23	214.41	110.00	309.6	-50.4	RC
	MGRC21-009	715566.70	575868.06	215.30	120.00	307.7	-51.2	RC
	MGRC21-010	715818.04	575754.50	226.13	116.00	306.1	-51.0	RC
	MGRC21-011	715873.58	575705.53	227.34	128.00	303.3	-50.3	RC
	MGRC21-012	715843.56	575574.05	240.61	128.00	309.8	-50.9	RC
	MGRC21-013	716110.61	575888.55	220.32	120.00	309.0	-50.3	RC
	MGRC21-025	715504.22	575701.57	236.21	104.00	304.3	-50.7	RC
	MGDD23-248	715506.24	576363.75	213.33	357.50	304.1	-63.4	DD
	MGDD23-251	715432.24	576332.82	212.01	360.50	302.2	-59.6	DD

Table 10-12: Asante Surface Drilling - Selected Significant Intercepts

Project	Hole ID	From (m)	To (m)	Interval (m)	Au (g)/t	From (m)	To (m)	Interval (m)	Au (g)/t
ELIZABETH HILL	MGDD22-163	109	112	3.0	1.95	122	127	5.0	1.67
	MGRC22-129	107	112	5.0	0.66	147	152	5.0	1.66
	MGRC22-167	4	8	4.0	0.60				
BIG MUG	MGRCD21-044	330	345	15.0	0.65	393	399	6.0	1.31
LITTLE MUG	MGRC22-116	23	28	5.0	0.73				
	MGRC22-124	55	64	9.0	1.12				
	MGRC22-125	84	91	7.0	1.02	132	135	3.0	1.37
STRAUSS	MGDD23-248	274	277	3.0	2.89				
	MGDD23-251	200	203	3.0	1.90				

Drilling completed (>3,400m) at the Elizabeth Hill mineralized deposit to investigate potential oxide ore sources, situated on a structural splay between Walsh and the Main Pit, was carried out in support of geophysics and soil geochemistry anomalies received from prior field exploration.

Big Mug and Little Mug mineralized deposits lie along strike north of the main Pit. Fig xx below shows the relationship between these deposits and Main Pit and the anticipated drilling still to be completed.

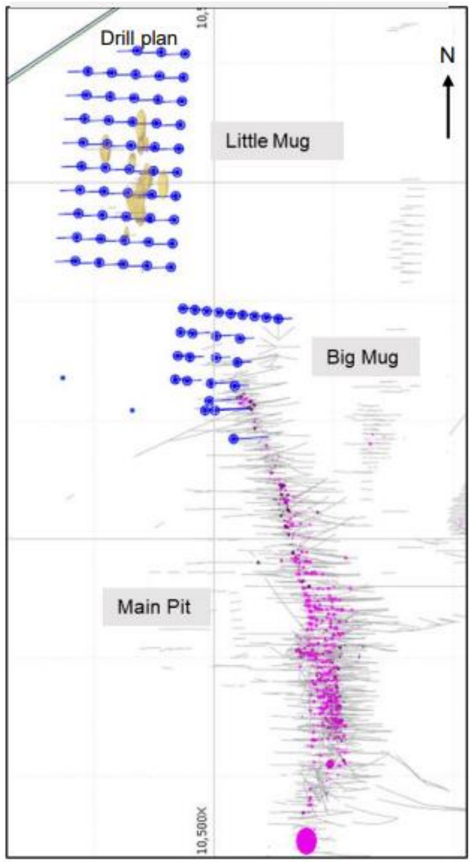


Figure 10-3: Plan View showing position of Big Mug & Little Mug Drilling Targets

Although open pit mining operations at Strauss were terminated in June 2023, due to surface infrastructure constraints, oxide resource extension to the north and depth extensions for potential underground exploitation continue to be investigated. The Figure below illustrates the potential of Strauss at depth below current pit outline. Further drilling is required.

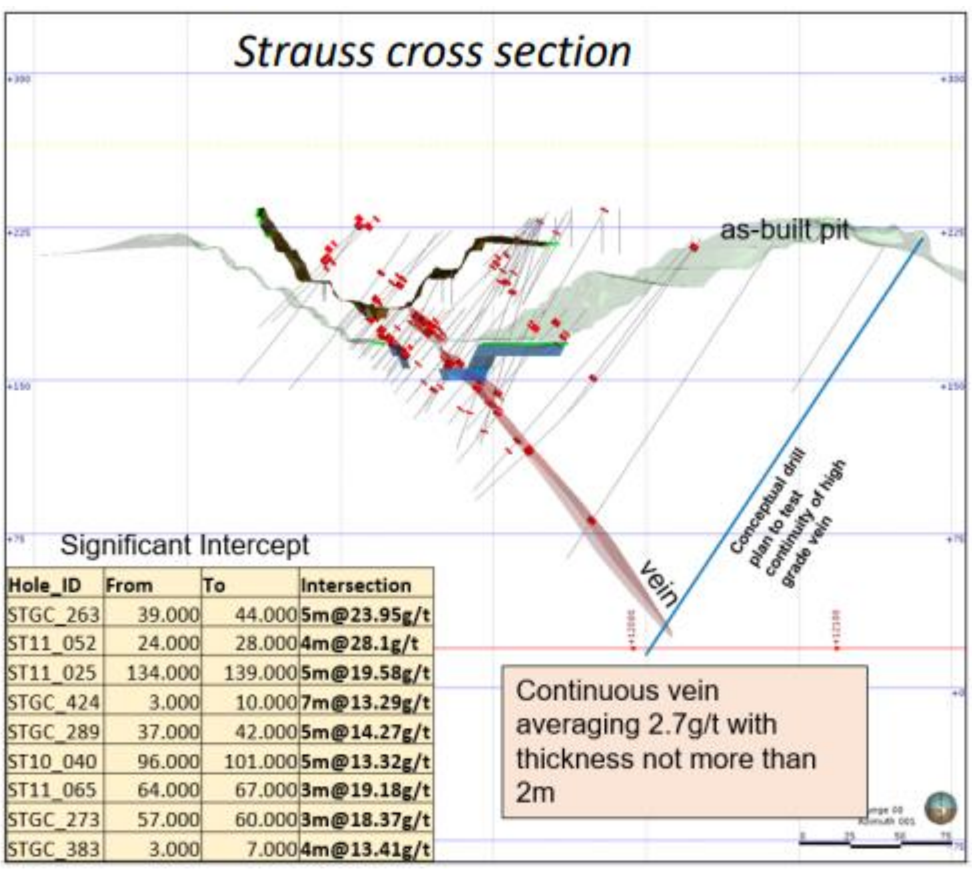


Figure 10-4: Strauss – Cross section of Mineralized Zone

10.4 Drilling Procedures

Drilling procedures described below have been described in the previous NI 43-101 Technical Report released in August 2022. The Author visited the operation in October 2023 and summarises the continued practices, procedures and processes witnessed and discussed with MGBL personnel. All Standard Operating Procedures (SOPs) that control all geological activities were shared and have been discussed with operations personnel.

10.4.1 Drill Hole Location and Rig Setup

Proposed drill hole coordinates are prepared by the geologist and approved by the exploration manager. Drill hole collar locations are marked and surveyed by the site surveyors except for regional drill programs where the drill locations are marked with a GPS. A pegged hole will have the coordinates boldly written on the flagging tape. A total station or gyro azimuth aligner is used to set up and align the drill rig and the dip is checked by supervising geologist and/or supervising drilling technician. Deviations may be approved due to topography challenges or other environmental or social reasons. Drill pads are typically 20m in length, with at least 10m in front of the collar.

Drill pad construction is carefully planned by the site personnel and contractor to ensure best quality safety and operational efficiency and accuracy. All pre-check safety lists are completed before any drilling is initiated. With the platform constructed, the surveyors return to re-mark the proposed collar location and the geologist marks up the orientation of the drill hole (azimuth) with two additional stakes referred to as a front-site and a back-site and finishes by marking the line (created by the three points) with flagging tape for final rig alignment.

Once the drill hole has been completed, the surveyor returns to pick up the “final coordinate” with a total station GPS, or DGPS. This information is mailed to the geologist. It is the responsibility of the logging Geologists to update the database with the final collar coordinates.

Asante employs either the Reflex Eztrac or Sprint Gyro survey equipment for downhole surveys for all RC and DD drillholes. Drillhole information is either manually entered into the equipment’s touch pad or generated in the Imdex hub and synced into the tough pad. The drill crew is responsible for completing the survey. The first survey is collected within the first run (3 rods or 6m) and subsequently at 30m intervals. The last run to end of hole (EOH) must be surveyed.

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

Once the survey has been completed, the result is synced and received by the geologist (Az, Incl, Mag Field and Temp data and QC data). The driller also notes the data in a prepared sheet which is submitted to the drill supervisor or geologist at the end of each drill hole. The geologist is responsible for downloading the raw data from the EZ palm daily. The driller also reports the data via the drill shift report which is signed daily.

10.4.2 Core Recovery and Handling

Core recoveries are calculated at the drilling site 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 in excess of 95%.

The core from the field is transported to the core shed by exploration drivers where it is correctly oriented with the digital orientation tool (Reflex Act III). The core orientation tool and barrel are used for orienting and marking core. The barrel is oriented using the electronic orientation unit prior to the drill run. The full, oriented barrel is then retrieved, the core aligned and marked using a bottom hole convention. The down hole direction is marked on the core at the base. The core is marked with a red permanent marker in the bottom hole position. The core is cleaned and carefully arranged in pre labelled core trays. Manual core breaks are clearly identified by marking the core on both sides of all such breaks with an “X”. To ensure that pieces of core are not lost, rotated end for end, or misplaced in the tray the operator reconstructs the core after it has been placed in the tray. Wooden or plastic block markers are inserted by the driller or technician to record depth.

At the core shed, the technician arranges the core on a V shaped angle iron and draw the orientation line from two or more consecutive orientation marks using red China graph pencil. A straight orientation line from two or more consecutive orientation marks represents high quality orientation and can be used for structural measurements of core. If two sections of broken core cannot be matched, the orientation mark from a subsequent run is used to draw broken line which indicate the orientation quality is low. The core is then marked with a black permanent marker and the core is then arranged back into the core boxes for logging and photographs.

10.4.3 Drill Core Logging and Core Photography

After orientation and metre marking, the core is laid on logging tables, the geologist checks all the boxes to verify the correct box numbering and the correct place for the drilling blocks. Logging is carried out by experienced geologists who record relevant detail of the following:

- Collar records.
- Geological data.
- Alteration data.
- Structural data.
- Mineralization data.

All logging data is captured digitally with a Toughbook or a laptop and then transferred to Maxwell LogChief and later transferred to DataShed5 software.

Data of the drilling blocks is recorded in the geotechnical logging form by the logging geologist. The relevant and essential geotechnical characteristics of the rock mass are recorded to provide necessary data for rock mass classification schemes.

All exploration core is photographed, both dry and wet, with sufficient clarity and scale to allow later review of core blocks, lithology, and structure. The colour and texture of the rock are best seen when the core is wet but the fracture patterns which are important to the geotechnical study are best viewed when the core is dry.

10.4.4 Core Sampling

The sampling methodology and procedures used by MGBL are deemed best practice and are described further in Section 11. All exploration drill core, geochemical and other exploration related samples are assayed by an external accredited laboratory (SGS Tarkwa or Intertek). Internal operational pit sampling, channel sampling and samples derived from GC drilling are assayed at the newly established Intertek Laboratory close to the mine site.

10.5 Factors Influencing the Accuracy of Results

The Author is of the opinion that the drilling programmes continue to be undertaken according to strict industry standard protocols and remain, as previously reported, under the experienced supervision of Paul Abbott, Manager Geology for Asante.

Drilling is still carried out 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 71 world class surface and underground drill rigs and is operated by experienced professional drill crews. Additional drilling is done by Toomahit Drill Limited of Accra.

The data generated is considered suitable for incorporation into geological models and MREs. The drilling programmes are intelligently planned and appropriate for the nature and style of mineralisation. No recovery factors are likely to impact the accuracy or reliability of reported results.

11. SAMPLE PREPARATION, ANALYSIS AND SECURITY

The QP has reviewed sample preparation, analysis and security protocols and procedures used on site at Bibiani and observed data collection activities during a site visit to the project (see Section 2.6). The sampling and assaying QAQC program procedures, QAQC datasets, plots and graphs were reviewed, and spot checks undertaken of digital assay data against laboratory certificates.

The following sections summarise protocols, procedures and data analysis conclusions relating to sampling across the Bibiani Project, both historically (prior to Asante ownership) and more recently (Asante activity following acquisition of the project in 2021). Information and commentary set out below in Section 11.1 relating to historical sampling at Bibiani is summarised from the 2022 Technical Report (dMb Management Services et al, 2022), to which the reader is referred for additional information.

11.1 Historical Sample Preparation, Analysis and Security

In relation to the preparation of the 2022 Technical Report an Optiro QP reviewed available sample preparation and analysis information and data covering drilling activities completed by previous owners of Bibiani: AGA (1993-2005), CAG (2007-2008), Noble (2010-2012). Samples were assayed only at external laboratories by the various owners of the project. Most of the samples were assayed at Ghanaian laboratories of major global assaying companies, such as Intertek, SGS or ALS. As such, these global organisations are subject to international quality accreditation standards such as ISO9000. The assaying programmes were accompanied by umpire testing at intervals. The QP endorsed the QC methods employed by previous owners.

Industry consulting group Coffey completed a review of analysis procedures in 2012 and concluded that Noble data (2010-2012) was collected under industry standard practise but that 1993-2008 data was not verifiable. In 2014 Resolute took ownership of MGBL and implemented a data validation and verification process of available stored historical drillholes to increase confidence in historical data. This process involved cross-checking co-ordinates, surveys, samples, void intervals and assays against the original data sources, including old MS Access databases, MS Excel files, reports, and original laboratory assay certificates, both in hardcopy and digital format.

The validation of the assay data was achieved through recompiling the historical assay data from the original data sources to obtain analytical techniques, job numbers and dates, repeat assays, screen fire assay fractions and laboratory repeats, standards and blanks, as well as resampling and assaying the historical diamond core. The outcome of the assay verification process was that 38% of the assays from the historical drillholes included in the resource estimates comprising the Bibiani inventory at that time were either sampled by or validated by Resolute. Diamond core resampling of 4 historical holes assayed at SGS yielded results that suggested the study demonstrated the veracity of original SGS Bibiani assays.

MGBL under Resolute completed two drilling campaigns totalling 49,000m; Phase 1 in 2014-15 and Phase 2 in 2017. The Optiro QP reviewed QAQC procedures and data relating to these campaigns, including sampling procedures, SRMs, duplicates, blanks, umpire analysis. The Optiro QP concluded that overall assessment of the quality control data was positive and provided confidence in the veracity of gold assays used in subsequent Mineral Resource evaluation.

The QP has reviewed the information and commentary contained in the 2022 Technical Report and is in agreement with previous QP as to the confidence that can be applied to historic data, which is considered acceptable for use in current Mineral Resource evaluation at Bibiani.

11.2 Asante MGBL Sample Preparation, Analysis and Security

The following sub-sections summarise information and data relating to the period January 2022 to August 2023, during which time drilling and sampling programs were implemented under Asante ownership of MGBL, informing the Mineral Resource estimation updates completed by MGBL as set out in Section 14.

11.2.1 Drill Core Photography

All drilled core is photographed with sufficient clarity and scale to allow later review of core blocks, lithology, and structure. The core is photographed both dry and wet. The colour and texture of the rock are best seen when the core is wet but the fracture patterns which are important to the geotechnical study are best viewed when the core is dry. The core is washed with water using a hard-bristle brush.

Digital cameras and processing software are used to make this procedure simple, fast, and efficient. For efficiency and consistency, there is a standard setup that gives a consistent frame, a camera mount, and is compatible with smooth processing of the core boxes. Core boxes are placed in correct order on the table where photos are taken. The interval and box number of each core box is written on the top left corner of the box with a permanent marker. Core photographs are taken after the core has been oriented and returned to the core tray with the reference line facing the bottom edge of the tray so that any structures or fabric in the rock are consistently aligned. The metre marks and core blocks are clearly visible. The drill hole ID, tray number, depths start/end of tray and indication are clearly visible. Photographs are taken ensuring that core boxes are centred and in focus. Photos are stored electronically in folders on the exploration network drive named by the hole number and interval to facilitate sorting.

An example of a core photography core tray box and lighting and a photographed core is shown in the figures below.

Figure 11-1: Bibiani Project - Core Photography Core Tray Box and Lighting

(Source: dMb, 2022)

Figure 11-2: Example of Photographed Core

(Source: Snowden Optiro)

11.2.2 Drill Core Sampling

Sampling is undertaken after geological, structural and geotechnical logging. Sampling intervals are selected by the geologist, and for both HQ and NQ core conform to a minimum sample length of 30cm and maximum of 200cm. The following procedures are followed:

- Cutting is done along the cutting lines on the core making sure core is cut into two equal halves. If the indicated cutting line (parallel to the orientation line) is not exactly 90° in rotation to the orientation line, the core is referred to the orientation crew for correction.
- During the structural logging, if the cutting line is not perpendicular to the dominant fabric so that structures and veins are divided equally between the two halves logging geologists redefine the cutting line.
- Sampling is done using the marked intervals by the logging geologists.

- The half core that does not contain the orientation line is taken and broken into the sample bag with the other half left in the box as archive. When field duplicate samples of core are taken, the remaining half core is sampled, leaving no remaining archive sample.
- Sample bags are legibly labelled with the unique sample numbers and one of the two paper sample tickets containing the sample number placed in it. Sample bag numbers and ticket numbers are matched to ensure that they correspond.
- The drill hole ID, interval, sample type and requested analysis are recorded in the ticket book stub to provide a permanent archive record of the samples.
- Samples of about 2kg - 3kg are collected carefully and placed in plastic bags.
- Insertion of QC samples (standards and blanks) is done by either the project geologist or the supervising geologist.
- Only the indicated standard types by the logging geologist is inserted; making sure there are no swaps and wrong insertions. If the indicated standard is out of stock it is communicated to the project geologist for replacement with a similar one.
- The standard identification sticker (serial number) is removed and attached to the corresponding ticket stub in the ticket book to provide a record of the inserted standard.
- Records of submission must be kept on the assay submission tab table on the exploration network drive as soon as the samples are dispatched.

11.2.3 RC Sampling

Prior to operation, a daily rig inspection sheet is completed. A work area is set up for efficient movement including location of sampling supplies, weight scale, and riffle splitter.

Splitting and sampling procedures are as follows:

- Each sample is collected from the cyclone using a large plastic bag marked with hole ID and sample interval. The sample is weighed to provide an accurate measurement of recovery if available.
- The sample is fed into the 50-50 Jones-type riffle splitter with two trays placed squarely beneath the splitter. The samples are homogenized by passing them through the splitter and recombined at least once into the large bag. This will help to reduce sampling error and improve precision.
- Pour one tray into the reject bag. (18kg).
- The remaining filled tray is evenly poured into the splitter and one tray is poured into the reject bag (or sample bag if duplicate).
- Sample bags are sealed and neatly organized.
- The riffle splitter is cleaned after every sample.
- The remaining bulk samples are organized 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 waste dump by the technicians at the direction of the supervising geologist.

11.2.4 Laboratories

Over the period January 2022 to August 2023 drill core and RC samples were sent by MGBL to the SGS laboratory in Tarkwa (Primary Assay Laboratory, FA50) and Intertek laboratories in Tarkwa (Umpire Analysis, FAA505). SGS Tarkwa and Intertek Tarkwa are ISO accredited. Both labs are accredited for analysis of gold by Fire Assay followed by acid digestion and AAS finish, Analysis of gold by Aqua Regia followed by DiBK extraction and AAS finish, and analysis of gold by Carbon Ashing followed by acid digestion and AAS finish.

Registration and accreditation of the laboratories are as follows:

- Intertek is currently accredited with SANAS for ISO17025. Accreditation No. T0796; and
- SGS is currently accredited with SANAS for ISO/IEC17025. Accreditation No. T0638.

11.2.5 Laboratory Preparation

All exploration/resource development core and RC samples are submitted for both preparation and analysis at SGS in Tarkwa and Intertek laboratories in Tarkwa. Samples are analysed for Au by Fire Assay of a 50g portion of the sample with an AAS finish by both SGS and Intertek.

Core samples submitted to the laboratory are sorted, subjected to sample preparation oven drying at 105ºC for 4 hours and weighed. The samples are firstly crushed in its entirety using Jacques Jaw Crusher, homogenized through rotary splitting device and then crushed through a Boyd Crusher to approximately 2mm. The crushed samples are split to 2kg or less through a linear splitter and excess retained.

RC chip samples are sorted and dried in an oven for 8 hours and weighed. They are then crushed to -2mm using an RSD Boyd crusher and a <1.0kg split is taken. The reject sample is retained in the original bag and stored.

The split-off portion of the sample is then pulverized in a vibrating pulveriser to a grain size of 85% passing 75µm.

Sizing checks are completed at a minimum of 1:50 samples using wet sieving techniques.

For diamond core, coarse duplicates were split by the laboratory after crushing at a rate of 1 in 20 samples. Reverse circulation field duplicates were collected by MGBL personnel prior to dispatch at a rate of 1 in 20 primary samples.

11.2.6 Laboratory Analysis

Samples are analysed for Au by Fire Assays of a 50g portion of the sample with an AAS finish by both SGS and Intertek, under the following process:

11.2.6.1 Sample Preparation and Fusion:

- The pulverized sample is weighed and mixed with a fluxing agent. The flux helps melt the sample, promotes fusion at a reasonable temperature, and aids in separating gangue material from precious metals.
- Lead or nickel is added as a collector.
- The sample is heated in a furnace, resulting in the fusion and formation of a 'button' containing the precious minerals.

11.2.6.2 Cupellation:

- Once the button is separated from the gangue, precious metals are extracted from the collector material through a process called cupellation.
- After cooling, the button is separated from the slag and subjected to cupellation.

11.2.6.3 Sample Digestion:

The sample is digested using reagents like BT, D, A, or AT to break down the matrix and make gold available for analysis.

11.2.6.4 AAS Analysis:

- The digested solution is atomized in a high-temperature flame or graphite furnace, creating gaseous gold atoms.
- A monochromator filters the emitted light, allowing only the wavelength specific to gold's atomic absorption line to pass through.

11.2.6.5 Calibration and Quantification:

- A calibration curve is constructed using standard solutions of known gold concentrations.
- The sample's absorption is compared to this curve to determine the gold concentration.

11.2.6.6 Data Corrections:

- Results obtained from the AAS instrument are corrected for factors such as overall dilution introduced during sample preparation and the catch weight(s) used in the analytical process.
- These corrections ensure the accuracy and precision of the final gold concentration measurement.

11.2.7 Quality Control Insertion

Quality Assurance and Quality Control is an integral part of the entire sampling and assaying procedure at MGBL. It allows the Geology team to measure the reliability of the data and data collection process as well as accuracy and precision ensuring that best practice is followed throughout the drilling, sample preparation and analytical processes.

MGBL has implemented a comprehensive QAQC monitoring system comprising of written procedures and monitoring by Project Geologists together with internal audits.

Standard Reference Materials (standards), Field Duplicates, Check Samples, Check Assays and Blanks are inserted within batches of samples to ensure ongoing quality control. Standards and Blanks are inserted at a minimum of 5% frequency rate. Check Assays (pulp rejects) are collected from the primary laboratory, renumbered, and resubmitted to the secondary laboratory as checks on the original assays. Check Samples (coarse rejects) are collected from the primary laboratory and submitted back to the primary laboratory as checks on the sub-sampling process. Field Duplicates are taken at the riffle splitters to check on the sampling representativity at the splitters, core is also quartered as duplicates samples.

On receipt of assays from the laboratory, the QAQC data from the batch is evaluated by the Database Administrator against set limits. QAQC data that do not meet a standard set of control guidelines are flagged and quarantined for further investigation by the Database Administrator in consultation with members of the core shed team. Batches that failed the set controls are quarantined and are referred for re-assay; these are released only when the QAQC issues are resolved.

11.3 Quality Analysis and Quality Control

Throughout this period, a range of QAQC protocols adhering to industry standards for data acquisition, analytical laboratory work, and analytical controls were implemented. In total 43,168 samples were dispatched to SGS (Tarkwa) and Intertek Minerals Laboratory (Tarkwa) for fire assay. 3,429 quality control samples were included, representing 8% control samples.

This set of quality control samples consisted of 861 certified reference materials, 852 field blanks, and 1716 field duplicates. The primary purpose of including these quality control samples was to ensure the accuracy, precision and thus reliability of the results obtained from the various sample batches submitted to the laboratories.

The breakdown of control samples submitted to each laboratory is as follows:

- SGS – 393 SRMs, 379 Blanks and 1,7196 duplicates.
- Intertek – 468 SRMs and 472 Blanks.

11.3.1 Coarse Blanks

The analysis of the 852 coarse blanks inserted into various batches of samples, as shown in the blank control charts below, suggest contamination in the sample preparation process is not a concern. Assay results returned were, for the most part all below the 0.1ppm Au control limit and 100% of SGS samples and 99% of Intertek samples were below 0.05ppm Au. Instances of isolated spikes were flagged for follow up.

To ensure ongoing quality and reliability, it is recommended to maintain continuous monitoring and evaluation of coarse blank results in future sampling and analysis processes, and in particular documenting failures for follow up and documenting resolutions in monthly QAQC reporting.

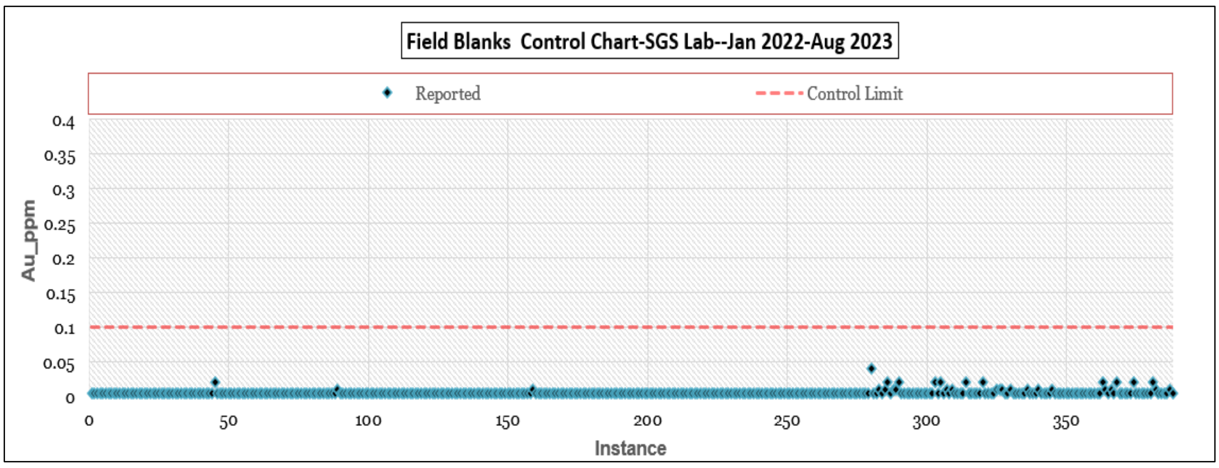


Figure 11-3: Blank Control Chart - SGS

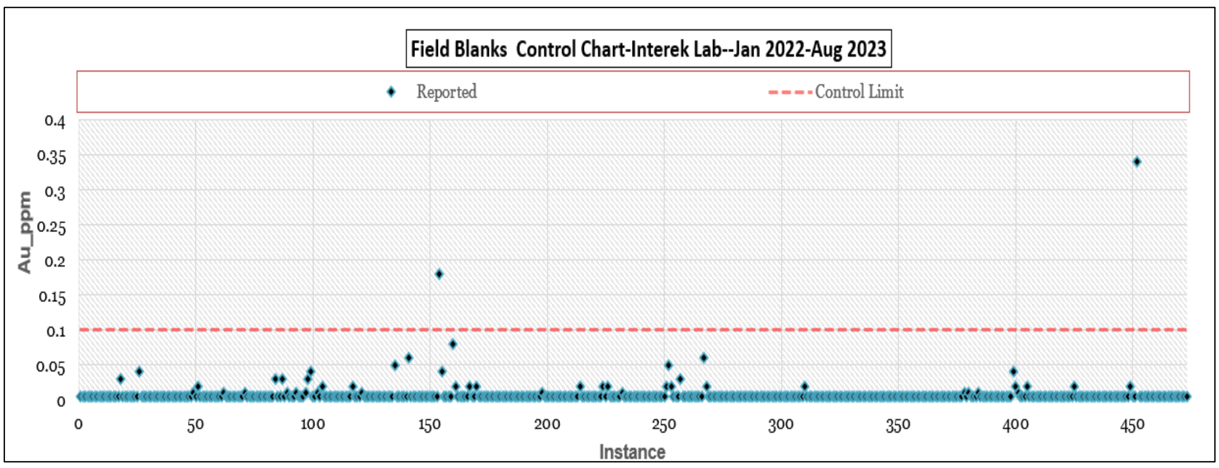


Figure 11-4: Blank Control, Chart - Intertek

11.3.2 Standard Reference Materials

A suite of SRMs is submitted with sample batches, sourced from accredited suppliers Rocklabs Ltd and Geostats Pty Ltd. The samples inserted reflect the range of gold grades seen at Bibiani. The suite of SRMs is set out in Table 11-1.

The results are analysed via the preparation of control plots using certification data (average grade, standard deviation control limits) provided with each batch of SRMs from the supplier. Control plots are created by MGBL for assay results received in any given month and included in monthly QAQC reports.

The criteria for assessing SRM failure are summarized as follows:

- Any standard value falling outside of ±3 standard deviations is considered a failure (indicating inaccuracy).
- Any two or more consecutive values falling between ±2 and ±3 standard deviations on the same side of the mean are also considered failures (indicating bias).
- To address these identified issues, rectify biases, and enhance overall performance, pertinent plots are shared with the relevant laboratory manager and discussion are held to investigate and facilitate performance improvements if required.

Table 11-1: Bibiani SRM Sample Summary Statistics and Insertion Frequency

Reference Material	Expected Values	Standard Deviation	No. of Inserts	Source
Low Grade				
SE114	0.63	0.016	175	Rocklabs Ltd
OxE166	0.652	0.016	84	Rocklabs Ltd
SF100	0.86	0.016	217	Rocklabs Ltd
Medium Grade				
SG84	1.026	0.025	23	Rocklabs Ltd
G908-3	1.03	0.05	15	Geostats Ltd
SG99	1.041	0.019	66	Rocklabs Ltd
G307-4	1.4	0.06	26	Geostats Ltd
G916-1	1.72	0.06	25	Geostats Ltd
Si96	1.801	0.031	133	Rocklabs Ltd
High Grade				

Reference Material	Expected Values	Standard Deviation	No. of Inserts	Source
SJ121	2.715	0.062	85	Rocklabs Ltd
SK120	4.075	0.092	7	Rocklabs Ltd
SL76	5.96	0.192	5	Rocklabs Ltd

The following figures set out control charts for all SRM samples submitted in sample batches between January 2022 and August 2023 for Bibiani.

Table 11-2: CRM Summary Statistics for Standards Submitted to SGS – January 2022 to August 2023

CRM Summary Statistics – SGS Laboratory – January 2022 to August 2023											
Standard	**No. of Standards**	**Au (ppm)**	**Lab Mean**	**Lab StdDev**	**Min Value**	**Max Value**	**Within +/- 3StdDev**	**Within +/- 2StdDev**	**No. of Failures**	**Lab Bias**	**Lab Precision @ 95% Confidence Interval**
G307-4	26	1.4	1.384	0.111	1.27	1.58	100%	73%	0	-1.2%	15.7%
G908-3	15	1.03	1.022	0.011	1.01	1.04	100%	100%	0	-0.8%	2.1%
G916-1	25	1.72	1.662	0.052	1.59	1.78	100%	96%	0	-3.3%	6.2%
OxE166	53	0.652	0.643	0.011	0.60	0.66	96%	96%	2	-1.4%	3.5%
SE114	53	0.634	0.641	0.011	0.60	0.67	100%	96%	0	1.1%	3.5%
SF100	71	0.86	0.851	0.030	0.83	1.03	100%	97%	0	-1.0%	6.9%
SG84	23	1.026	1.027	0.013	1.00	1.04	100%	100%	0	0.1%	2.5%
Si96	69	1.801	1.783	0.036	1.59	1.82	96%	96%	3	-1.0%	3.9%
SJ121	53	2.715	2.774	0.137	1.81	2.87	100%	94%	0	2.2%	9.7%
SL76	5	5.96	5.878	0.020	5.86	5.91	100%	100%	0	-1.4%	0.7%

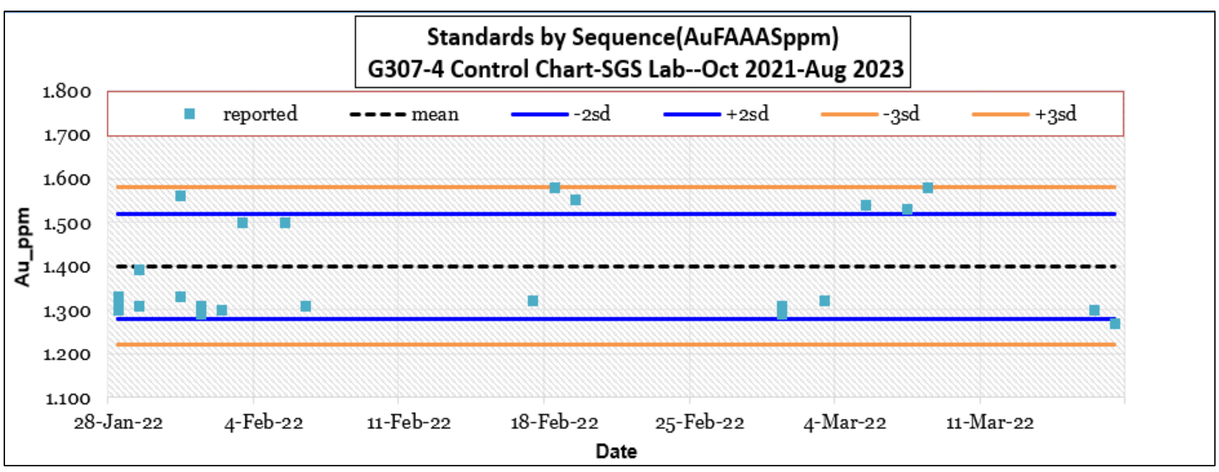


Figure 11-5: CRM G307-4 Control Chart-SGS

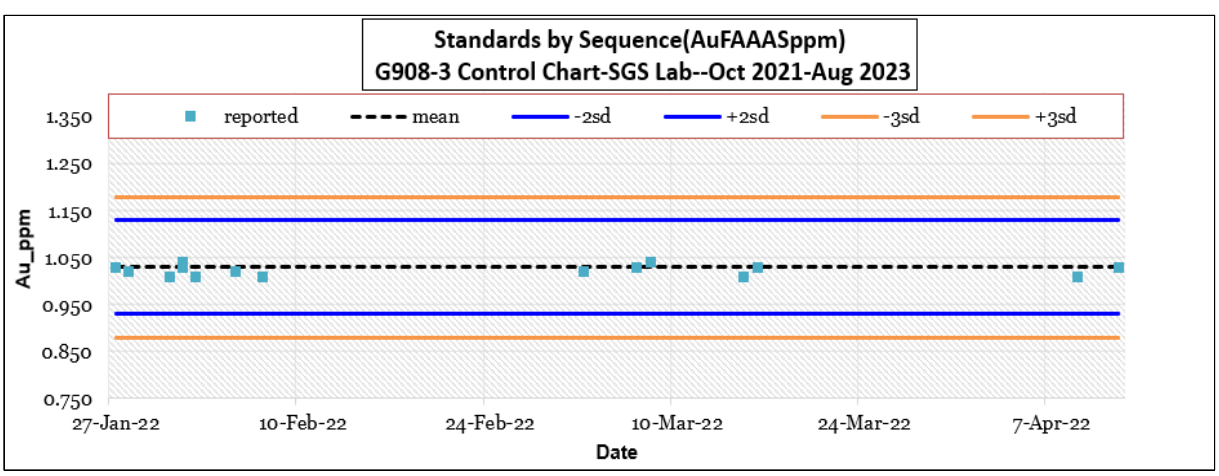


Figure 11-6: CRM G308-3 Control Chart-SGS

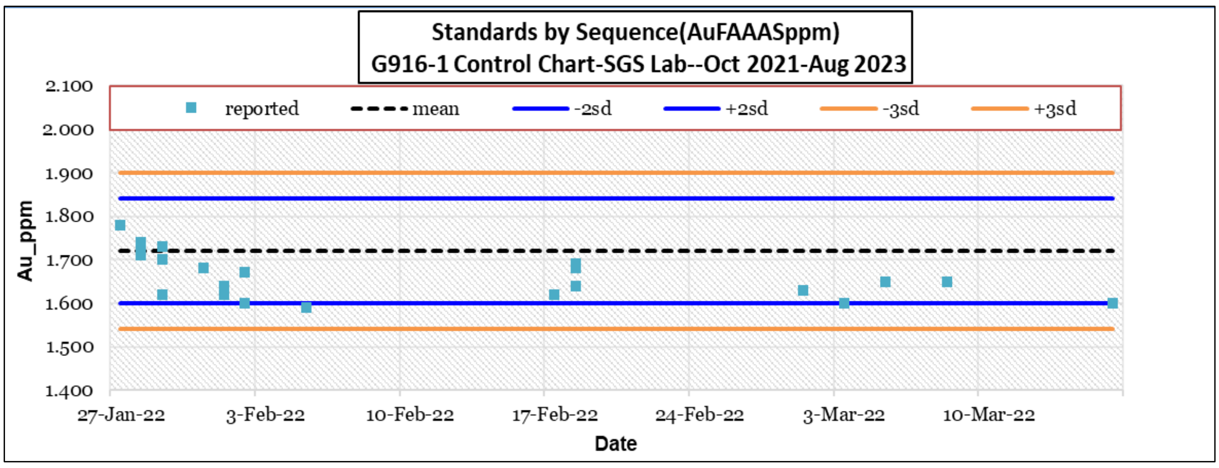


Figure 11-7: CRM G916-1 Control Chart-SGS

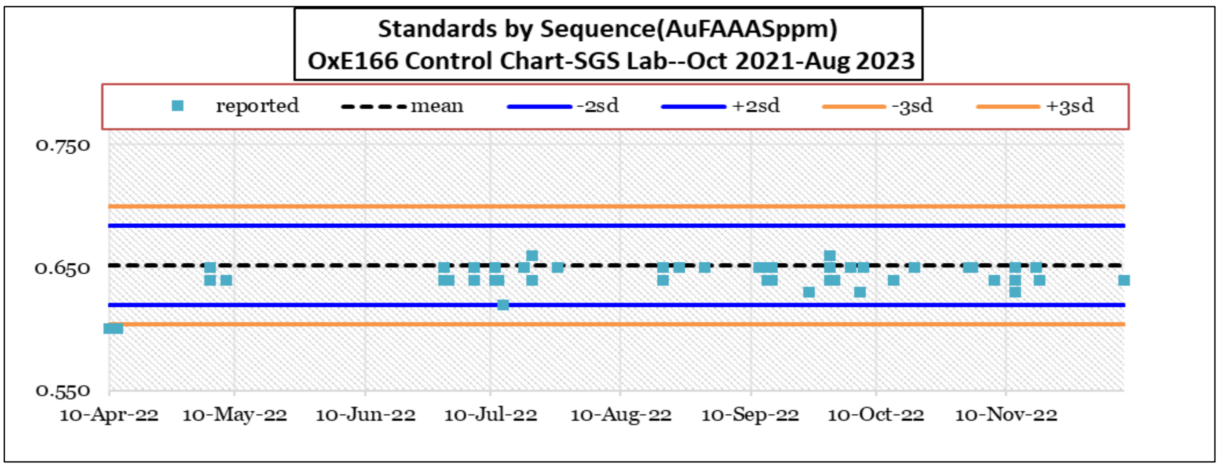


Figure 11-8: CRM OxE166 Control Chart-SGS

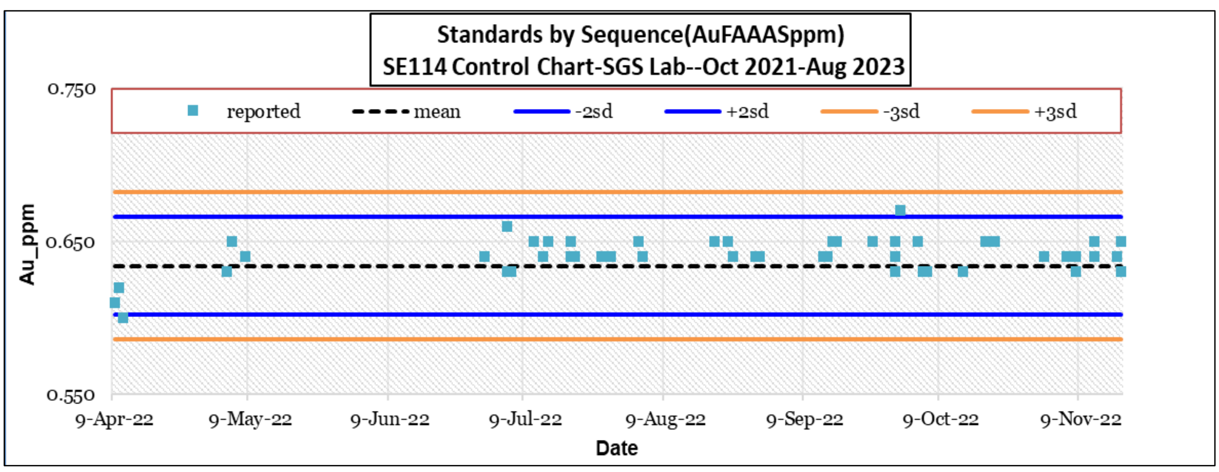


Figure 11-9: CRM SE114 Control Chart-SGS

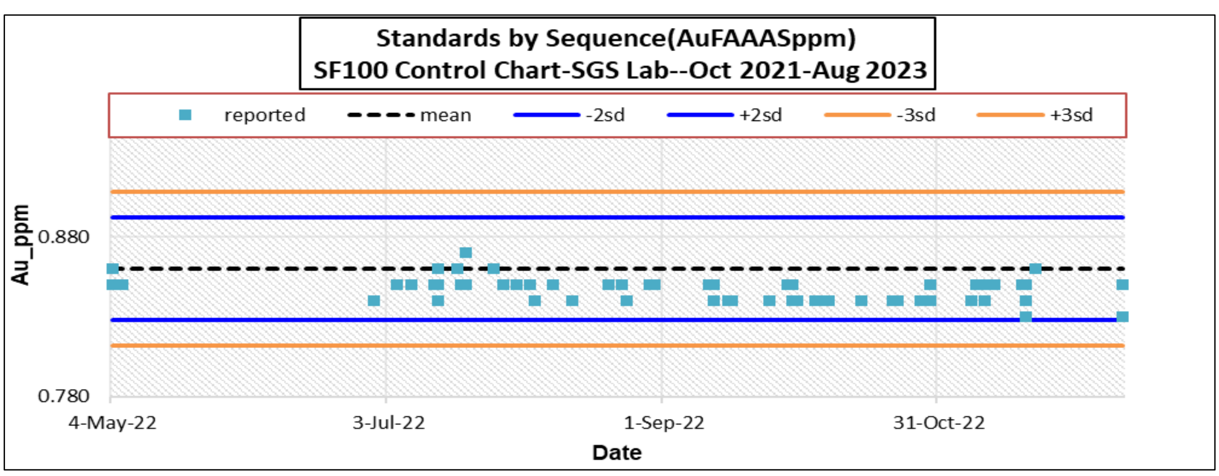


Figure 11-10: CRM SF100 Control Chart-SGS

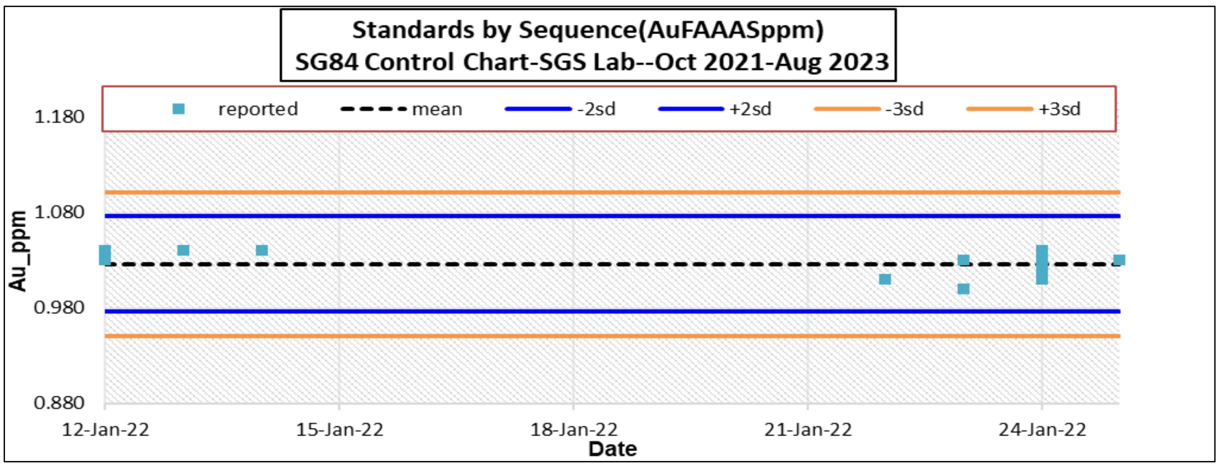


Figure 11-11: CRM SG84 Control Chart-SGS

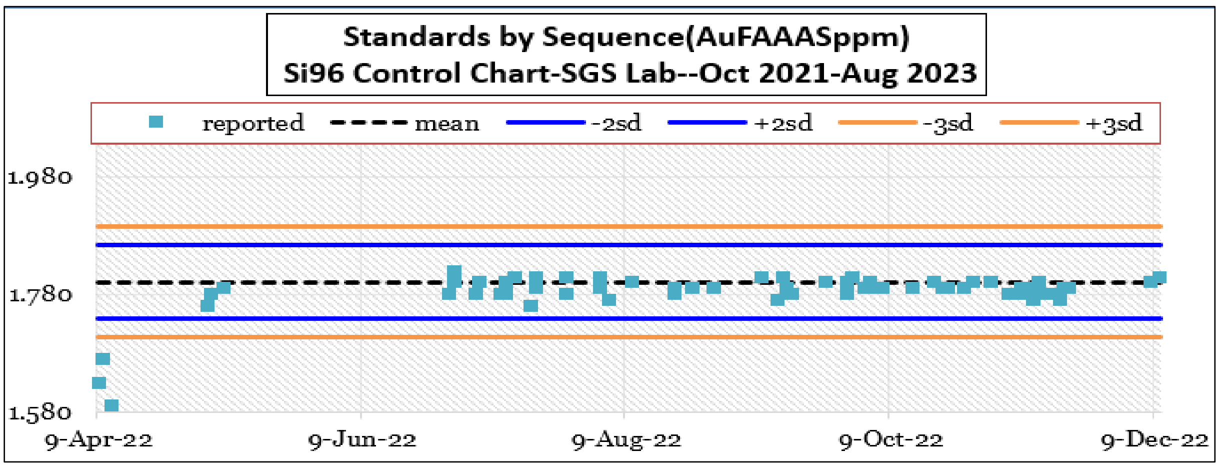


Figure 11-12: CRM Si96 Control Chart-SGS

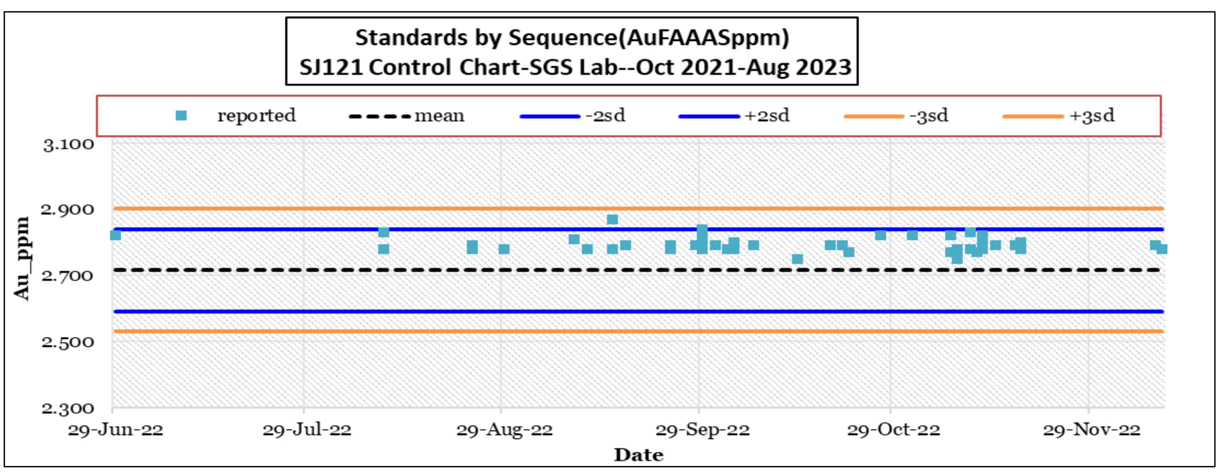


Figure 11-13: CRM SJ121 Control Chart-SGS

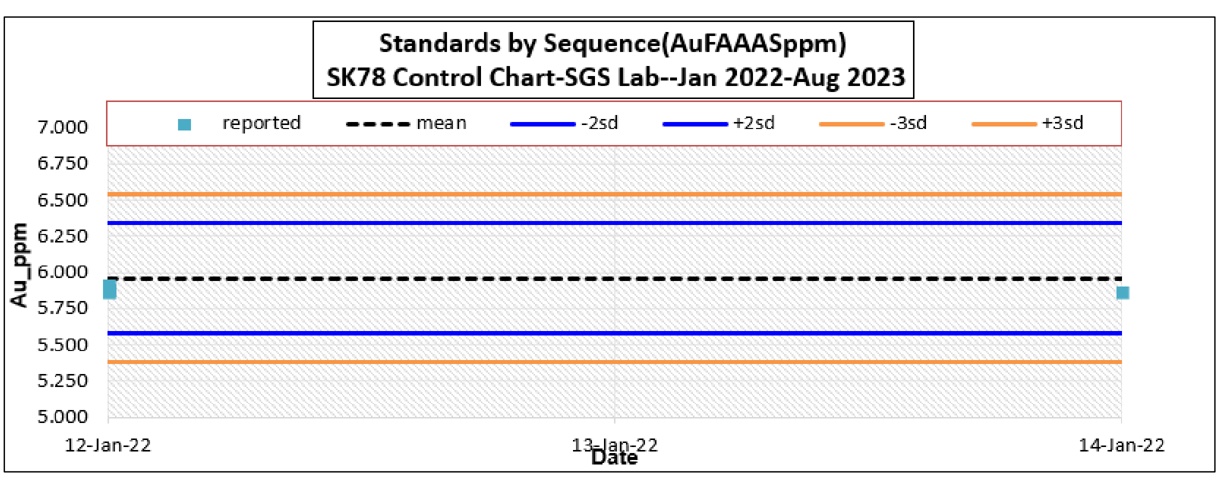


Figure 11-14: CRM SK78 Control Chart-SGS

Table 11-3: CRM Summary Statistics for Standards Submitted to Intertek – January 2022 to August 2023

CRM Summary Statistics – Intertek Laboratory – January 2022 to August 2023											
Standard	**No. of Standards**	**Au (ppm)**	**Lab Mean**	**Lab StdDev**	**Min Value**	**Max Value**	**Within +/- 3StdDev**	**Within +/- 2StdDev**	**No. of Failures**	**Lab Bias**	**Lab Precision @ 95% Confidence Interval**
OxE166	31	0.652	0.665	0.035	0.62	0.78	81%	77%	4	2.0%	10.2%
SE114	122	0.634	0.647	0.014	0.62	0.69	99%	93%	1	2.0%	4.1%
SF100	146	0.86	0.861	0.019	0.82	0.93	99%	95%	1	0.1%	4.2%
SG84	66	1.041	1.038	0.018	1.00	1.07	100%	98%	0	-0.3%	3.3%
Si96	64	1.801	1.806	0.042	1.71	1.94	98%	92%	1	0.3%	4.6%
SJ121	32	2.715	2.716	0.081	2.55	2.85	100%	91%	0	0.0%	5.9%
SL76	7	4.075	4.129	0.089	4.06	4.28	100%	86%	0	1.3%	4.2%

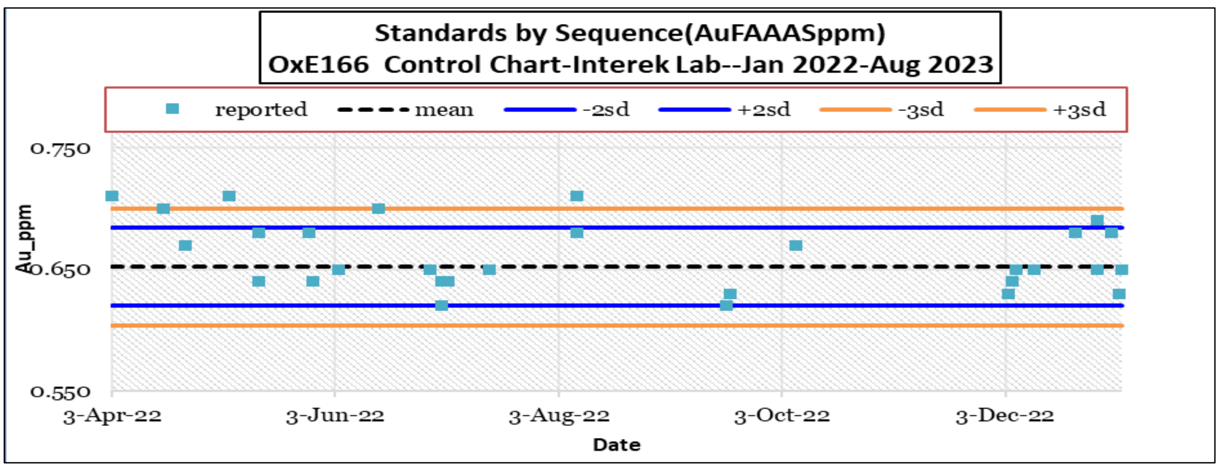


Figure 11-15: CRM OxE166 Control Chart-Intertek

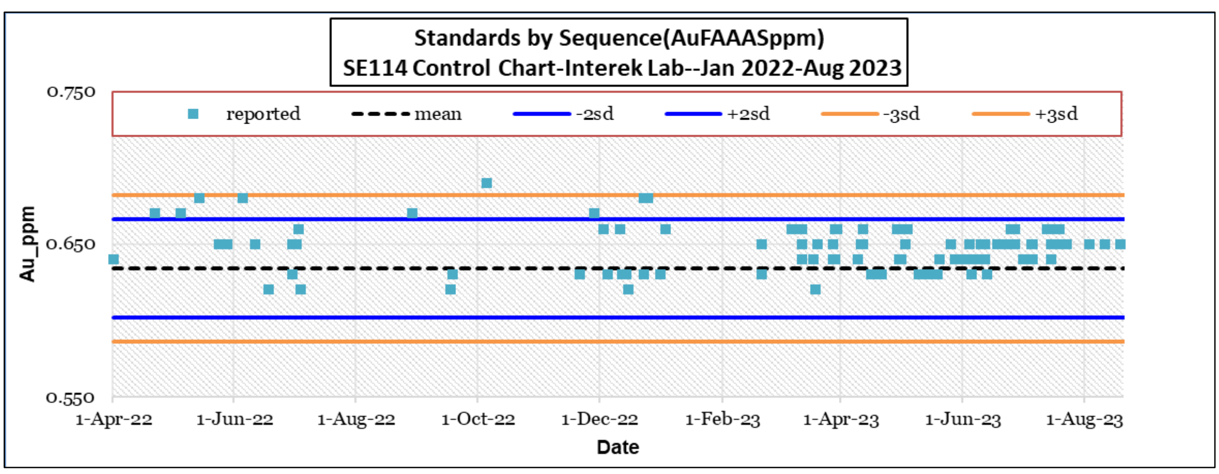


Figure 11-16: CRM SE114 Control Chart-Intertek

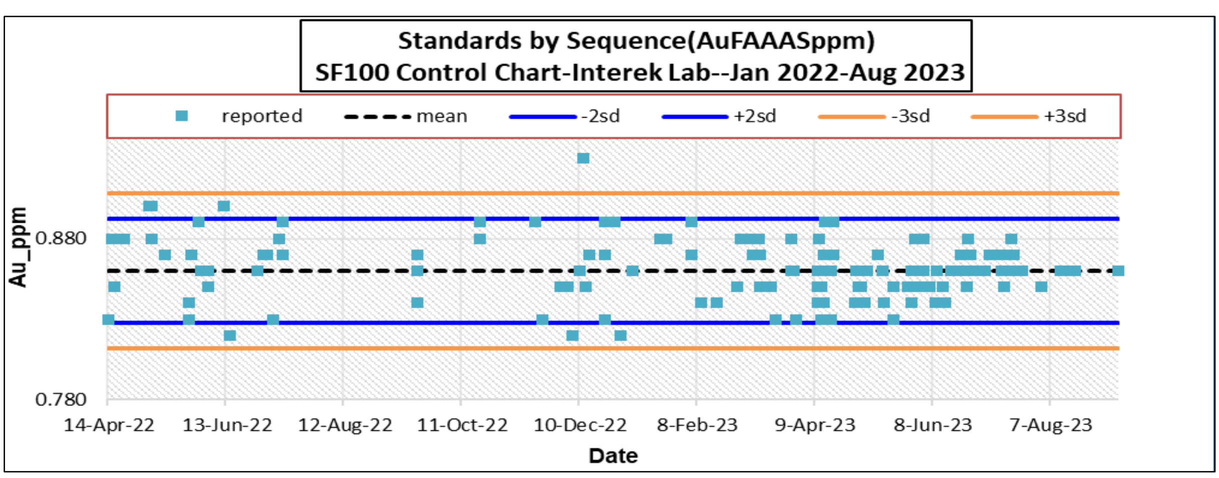


Figure 11-17: CRM SF100 Control Chart-Intertek

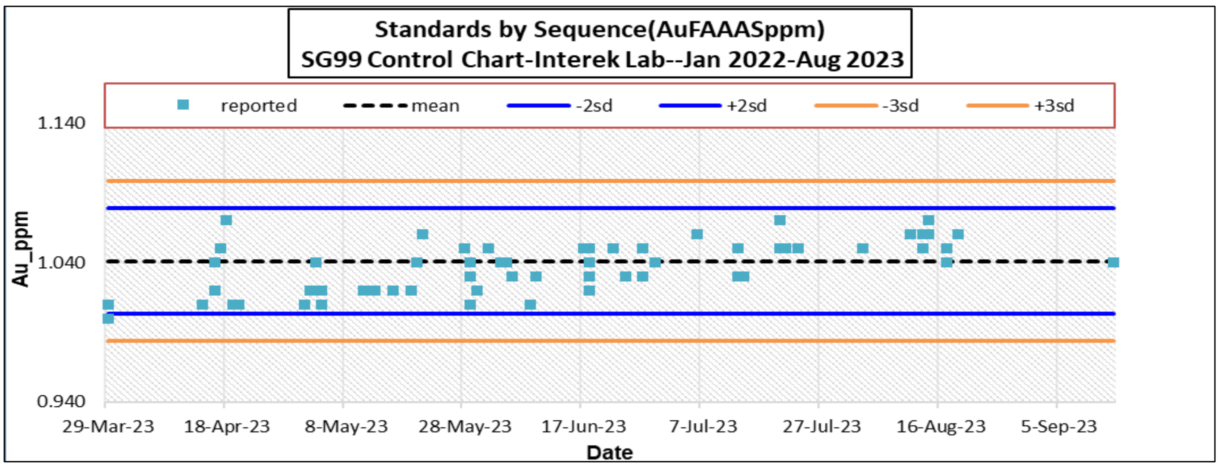


Figure 11-18: CRM SG99 Control Chart-Intertek

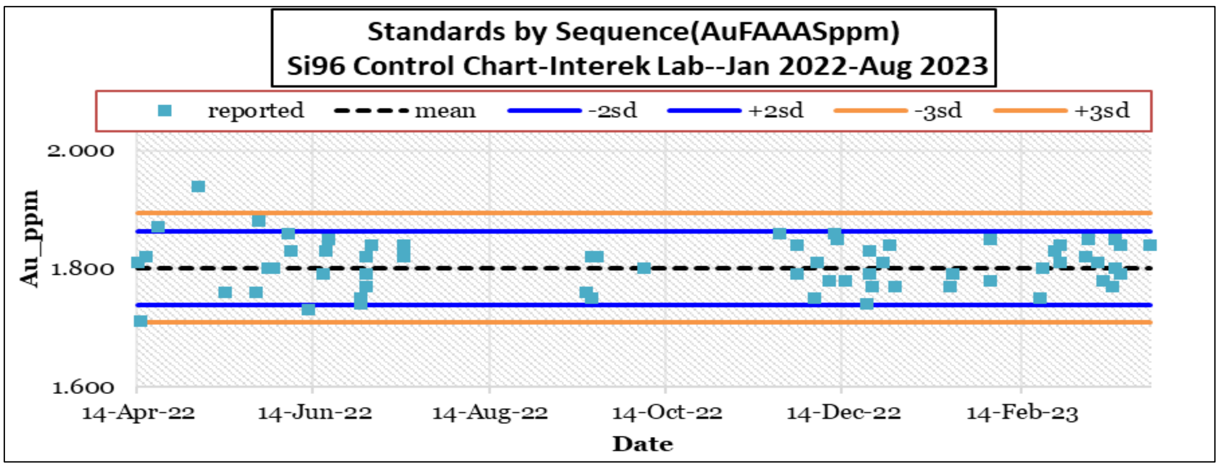


Figure 11-19: CRM Si96 Control Chart-Intertek

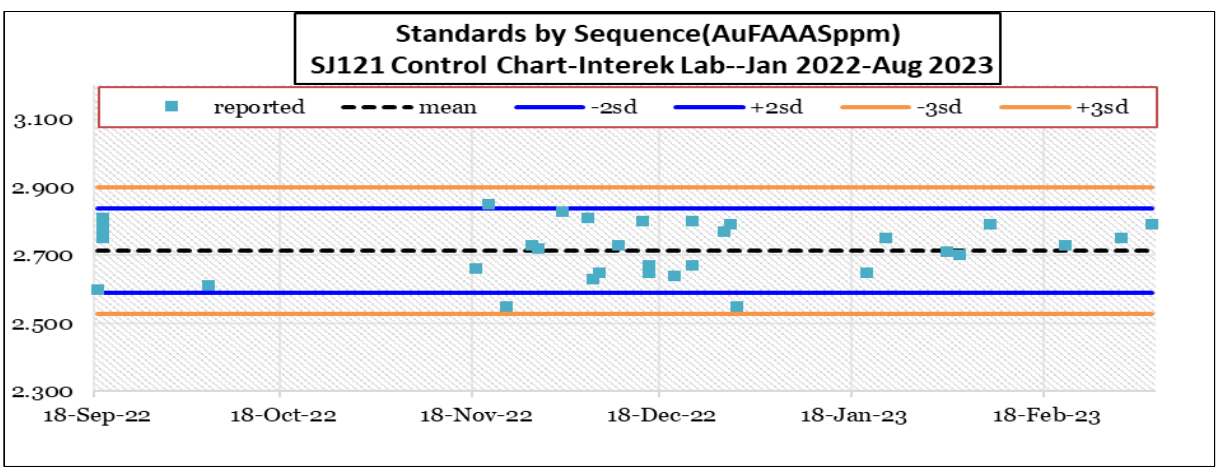


Figure 11-20: CRM SJ121 Control Chart-Intertek

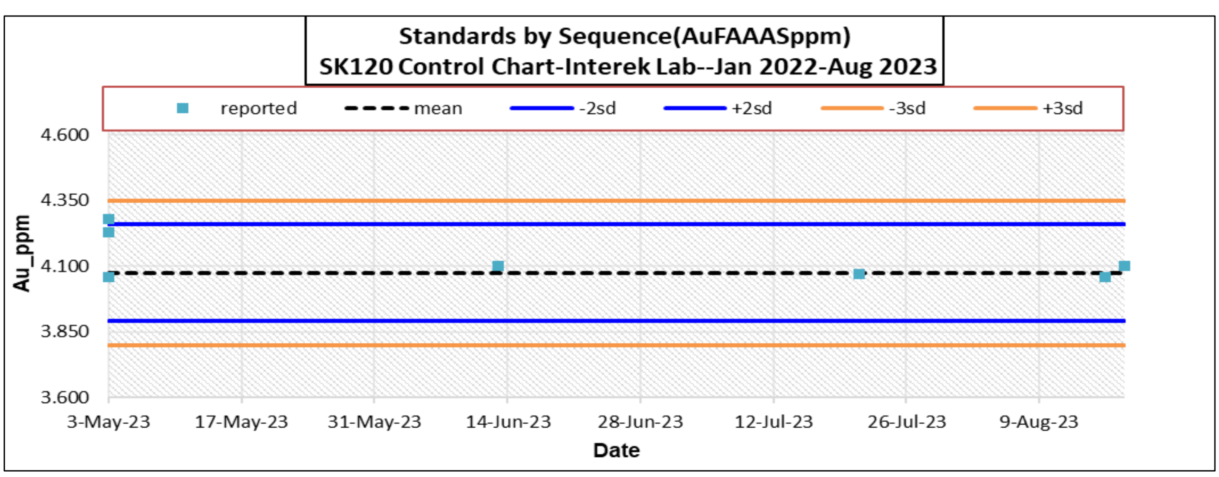


Figure 11-21: CRM SK120 Control Chart-Intertek

The assessment of control plots of Certified Reference Materials (CRMs) sent to the laboratory suggests good precision and the absence of any significant bias, with results largely falling within the 2-standard deviation threshold.

Some points of note include:

- Control plots for SRMs oxE166 and SF100 suggest an element of underreporting relative to the average value, though within acceptable tolerance.
- The control plot for SE114 suggests an element of overreporting relative to the average value, but again this is within acceptable tolerance.
- SRM Si96 returned three failures early in the timeline, which were subsequently followed up with the laboratory.
- SRM SG99 exhibits a degree of analytical drift to over-reporting relative to the average grade. This is within acceptable tolerance but has been followed up with the laboratory (SGS).
- The QP is aware that the Intertek laboratory came to similar conclusions with respect to OxE166, SF100, and Si96 based on their internal QAQC. The is dialogue between MGBL and Intertek to ensure good performance.

11.3.3 Duplicates

Field duplicate samples were routinely submitted in sample batches to both Intertek and SGS. Analysis of the results of scatter plots and precision plots of primary and field duplicate data are shown in Figure 11-22 and Figure 11-23 (RC samples) and Figure 11-24 and Figure 11-25 (diamond core samples). The sample repeatability graph for both datasets is shown in Figure 11-26.

Additionally, the performance of laboratory internal repeat samples and sample re-splits were also analysed. Scatter plots and precision plots of Intertek repeat data are shown in Figure 11-27 and Figure 11-28, and similar data for SGS in Figure 11-29 and Figure 11-30.

Data for laboratory re-splits of the sample primary sample are shown in Figure 11-31 and Figure 11-32 (Intertek) and Figure 11-33 and Figure 11-34 (SGS).

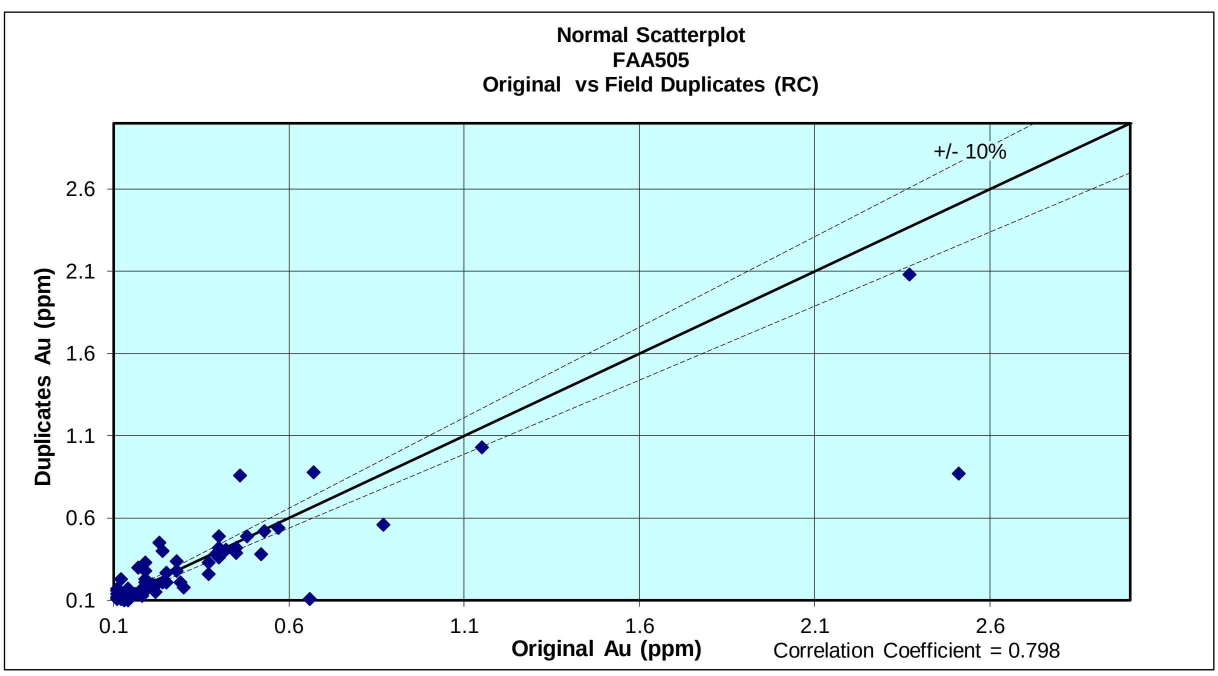


Figure 11-22: Scatter Plot - Original versus Field Duplicate (RC).

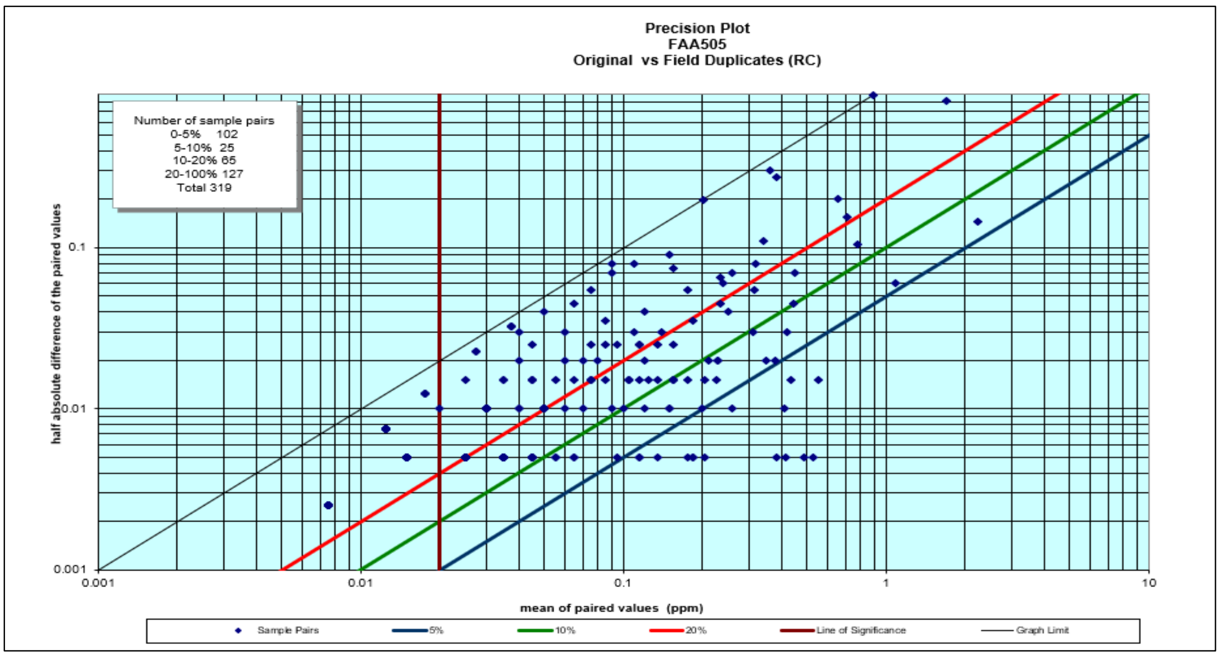


Figure 11-23: Precision Plot - Original versus Field Duplicate (RC)

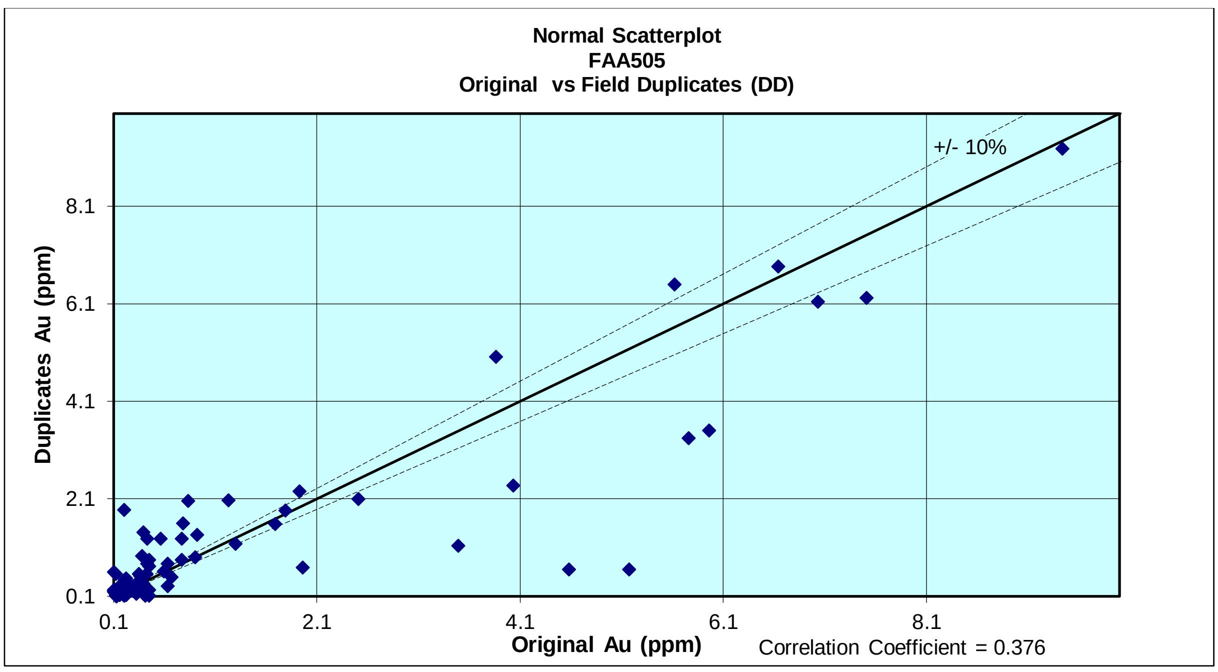


Figure 11-24: Scatter Plot - Original versus Core Field Duplicate (DD)

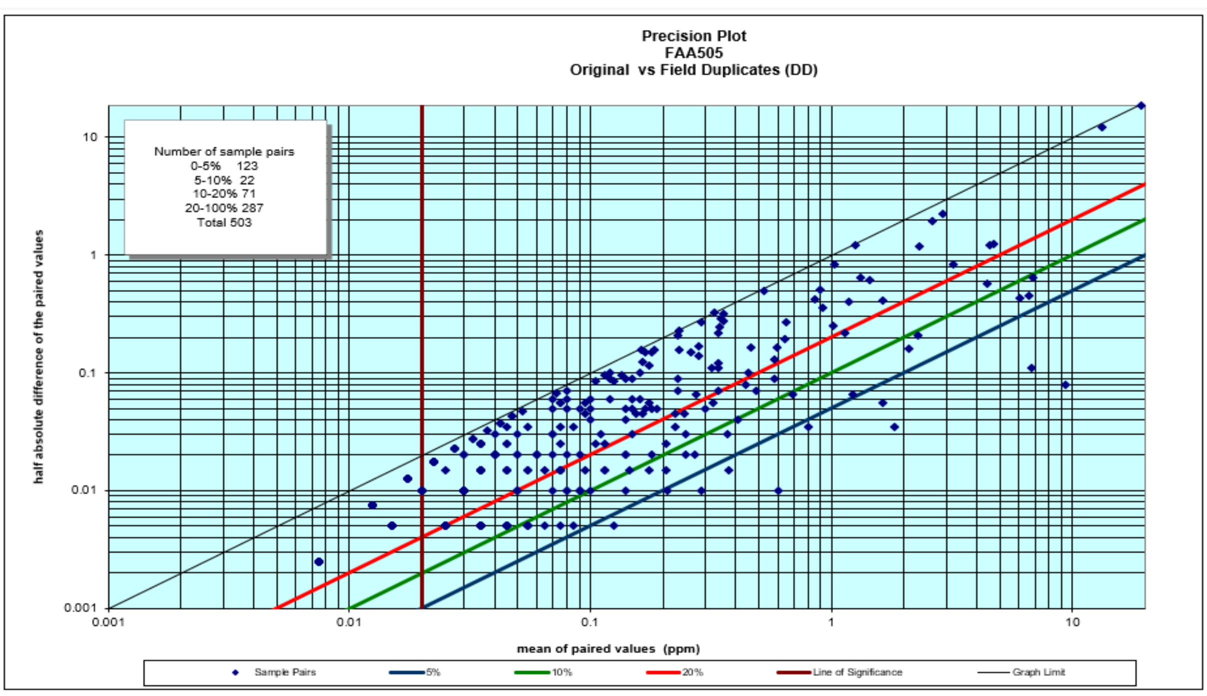


Figure 11-25: Precision Plot - Original versus Core Field Duplicate (DD)

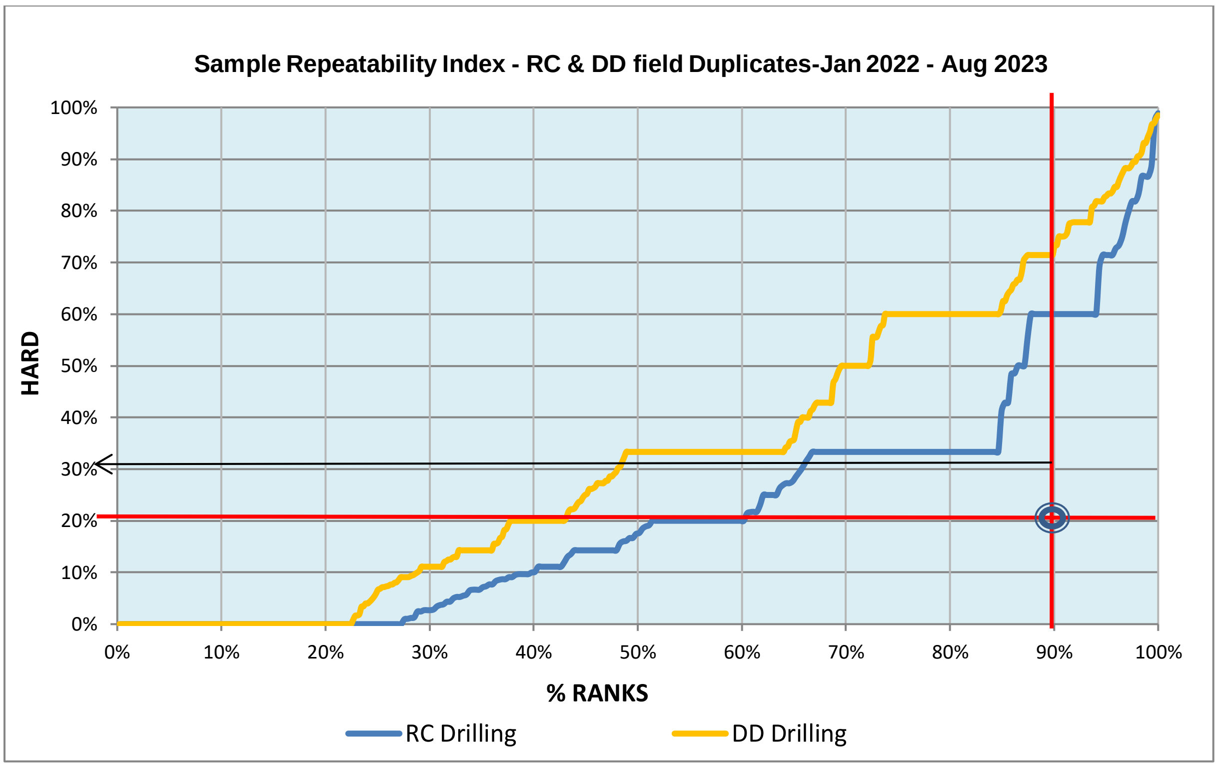


Figure 11-26: Sample Repeatability Index – RC and DD Field Duplicates

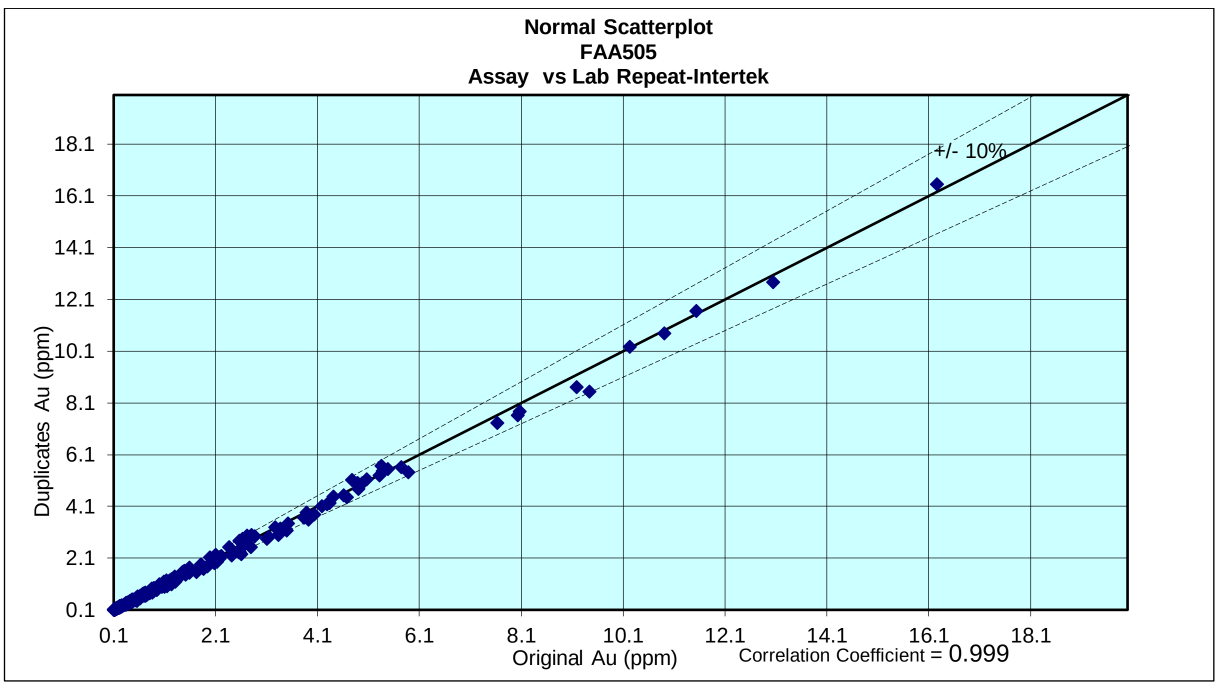


Figure 11-27: Scatter Plot – Primary Assay versus Laboratory Repeat (Intertek)

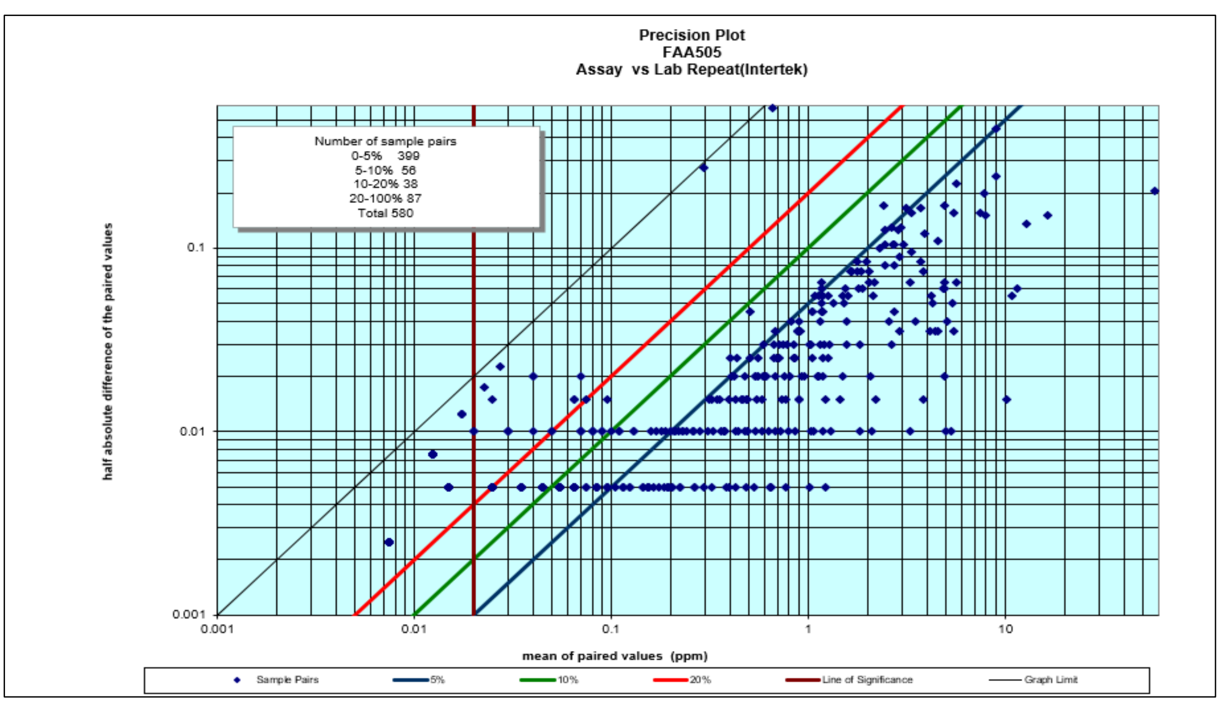


Figure 11-28: Precision Plot – Primary Assay versus Laboratory Repeat (Intertek)

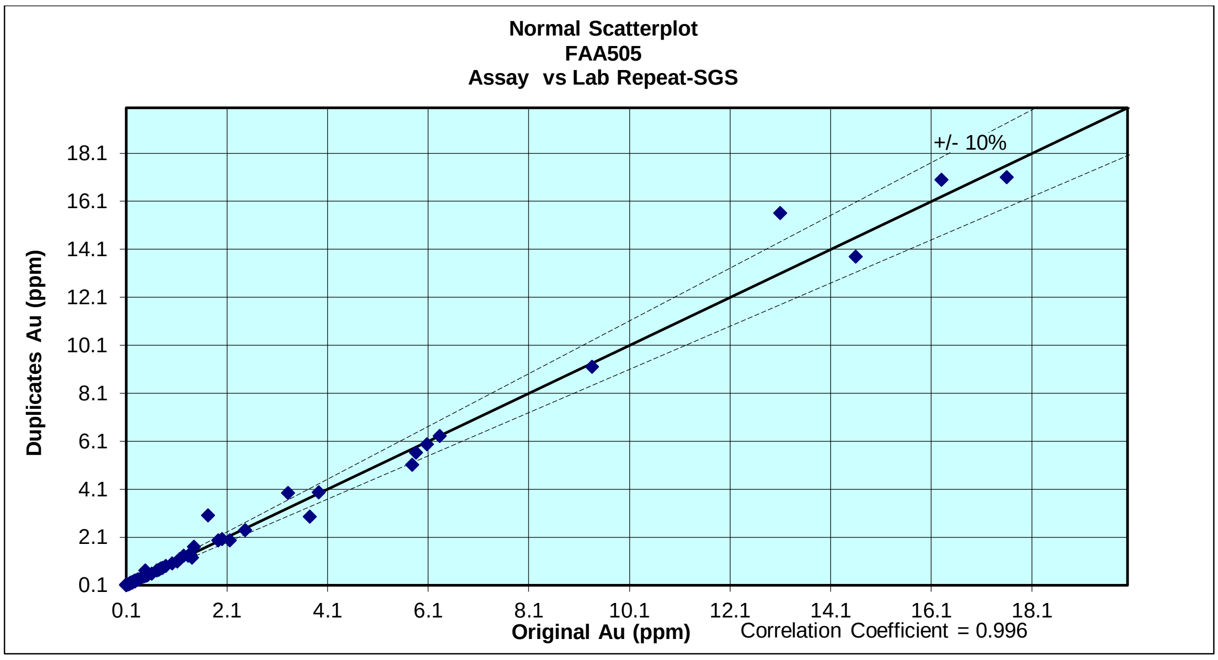


Figure 11-29: Scatter Plot – Primary Assay versus Laboratory Repeat (SGS)

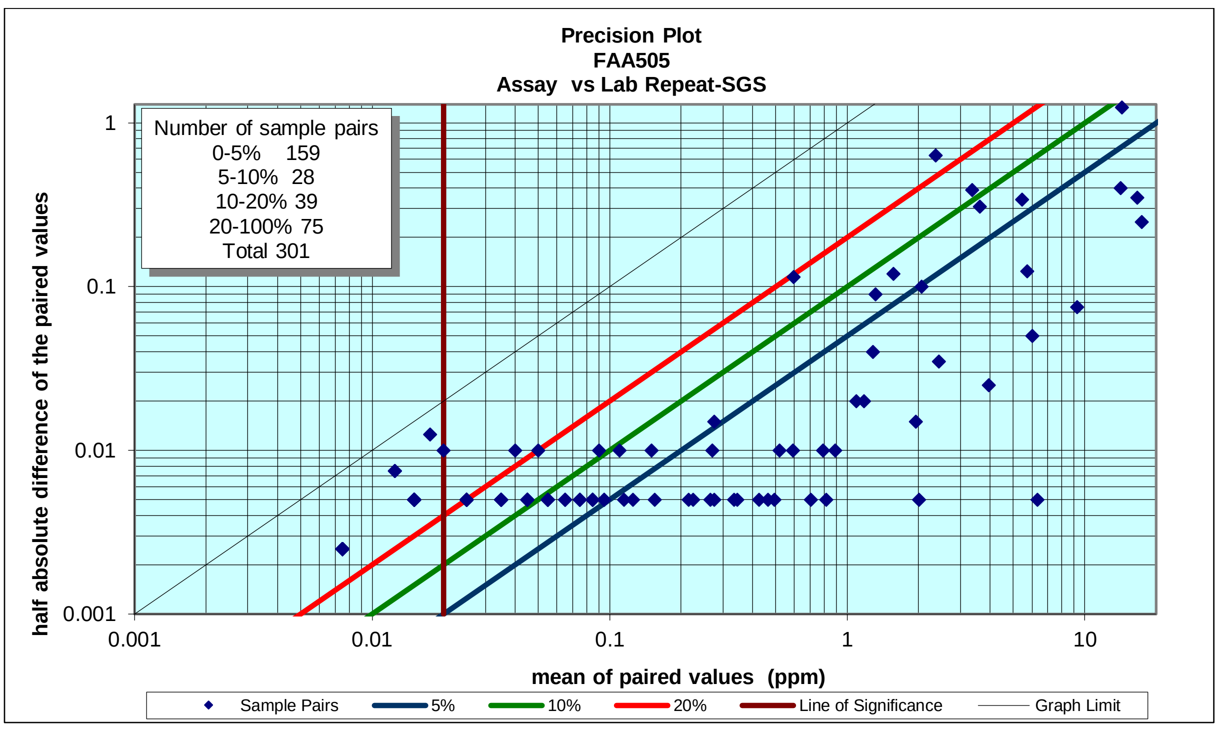


Figure 11-30: Scatter Plot – Primary Assay versus Laboratory Repeat (SGS)

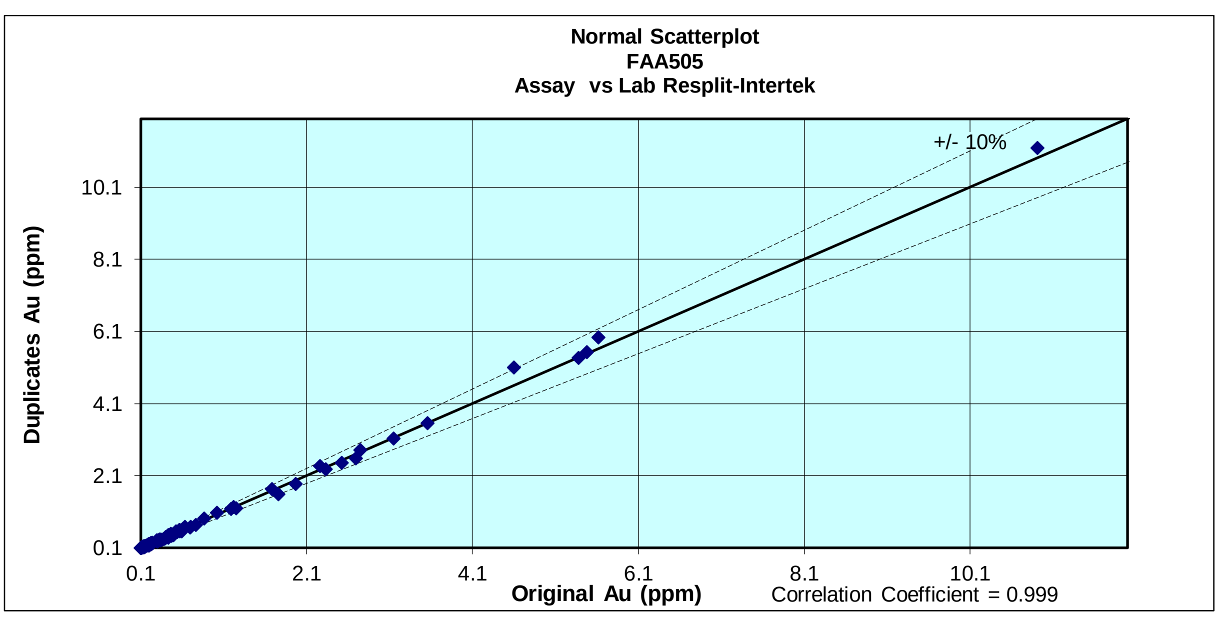


Figure 11-31: Scatter Plot – Primary Assay versus Laboratory Re-split (Intertek)

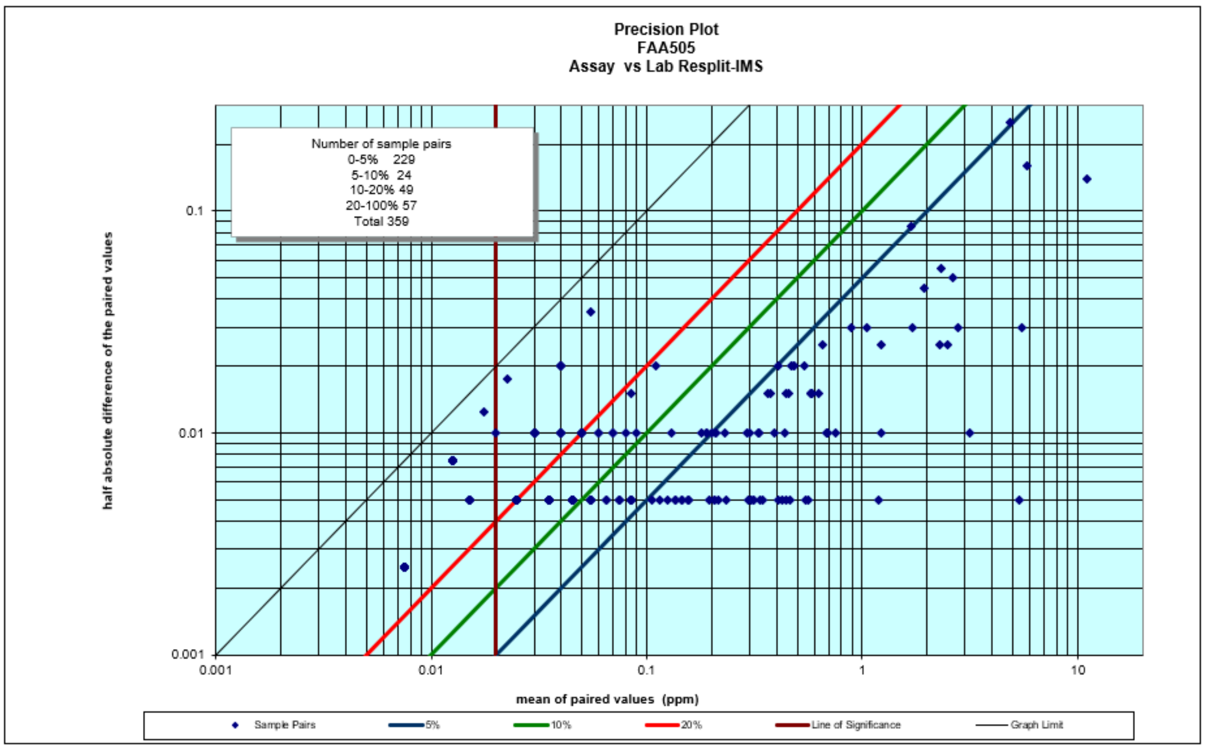


Figure 11-32: Precision Plot – Primary Assay versus Laboratory Re-split (Intertek)

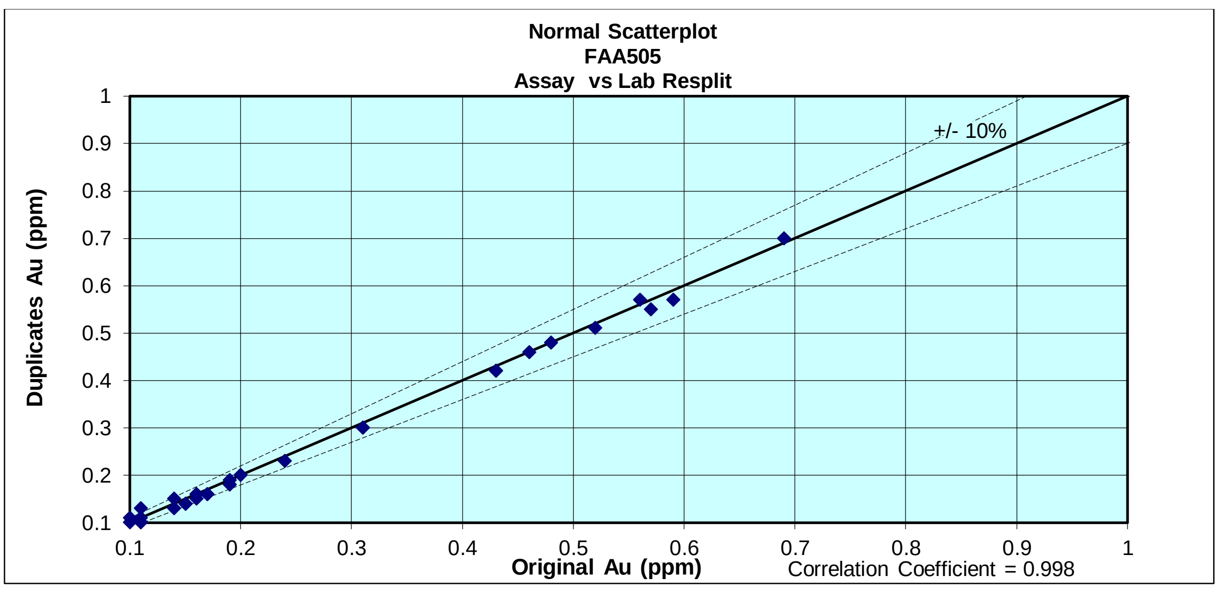


Figure 11-33: Scatter Plot – Primary Assay versus Laboratory Re-split (SGS)

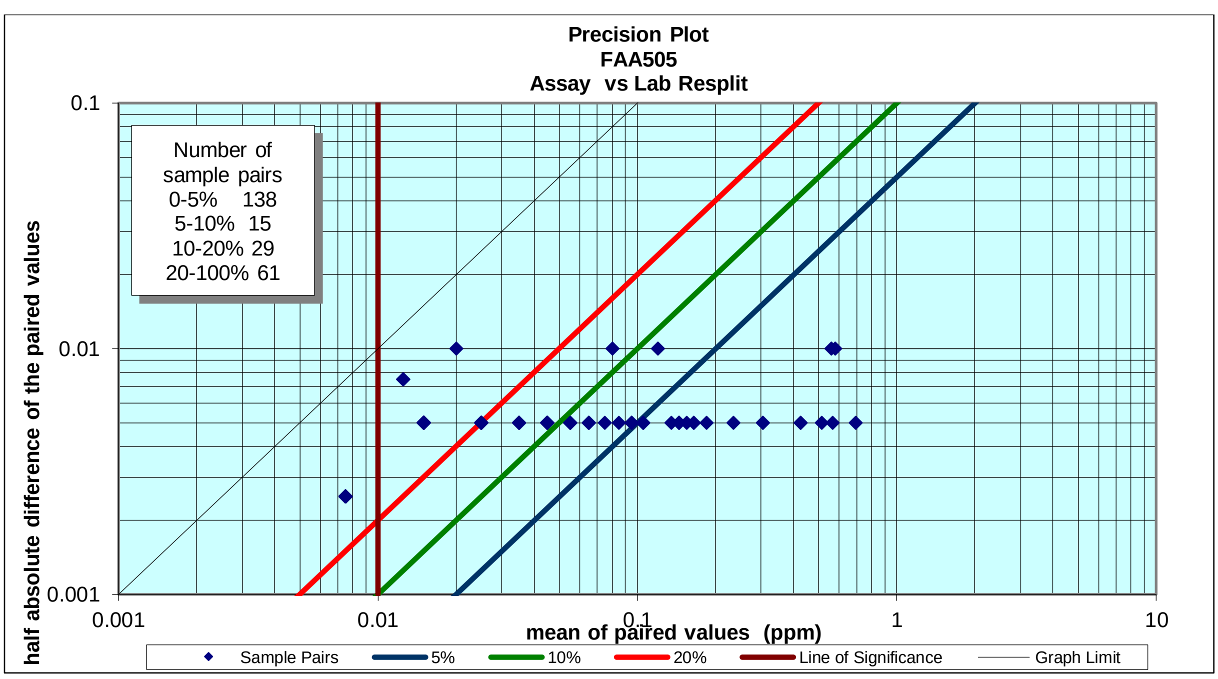


Figure 11-34: Precision Plot – Primary Assay versus Laboratory Re-split (SGS)

The QP makes the following comment with respect to duplicate analysis:

- Analysis of field duplicate data suggests repeatability to be relatively low, with RC data performing better than core data. The repeatability index percentages of 38% (DD) and 52% (RC) of the respective sample populations returning Half Absolute Relative Difference (HARD) of <20% suggest poor repeatability. A generally accepted threshold is 90% of the sample population <20% HARD. The repeatability of field duplicate data should be investigated further, and consideration given to geological and mineralisation characteristics which may give rise to bias, sample support, nuggety characteristics and review of the SOP as required.
- Analysis of laboratory repeat data and re-splits data suggest a robust correlation with strong repeatability within the laboratories.

11.4 Data Management

All data and interpretative inputs to Bibiani Main and Satellite pits Mineral Resource estimates have been checked and verified in accordance with a range of MGBL standard operating procedures (SoPs). Core is logged directly in Logchief using the Panasonic tough book or laptops. This is done as soon as the core becomes available, in this way the data can be immediately exported from Logchief and imported into Micromine to be able to create sections. Core is then marked up, and photographed with geology, bulk density, and geotechnical information. All logging and assay data is stored in a DataShed SQL database managed by MaxGeo, 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 DataShed SQL database 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 Security

The MGBL supervising geologist holds ultimate responsibility for ensuring the security of all samples. To maintain the integrity of the samples, a strict process is followed:

- Samples collected from the drill areas are securely transported to the core shed. At the core shed, they are either bagged (in the case of RC chips) or subjected to sampling for core samples.
- Each set of samples is assigned a unique reference number as part of our meticulous record-keeping process. This reference number is crucial for tracking and accountability.
- Detailed records of sample submission are maintained on the assay submission table, which is accessible through the exploration network drive. These records are documented before the samples are dispatched for analysis.
- To further enhance transparency and accountability, the supervising geologist emails records of the submission to the laboratory manager, with the database administrator included as a recipient.
- Once all necessary analyses for the samples are completed, the sample pulps and coarse reject material are promptly returned to the MGB core shed.
- Throughout the entire submission process to the laboratory, a geologist on duty provides supervision, guaranteeing a high level of oversight.
- The transportation of samples from the core shed to the laboratory is executed meticulously. The samples are collected by the laboratory truck directly from the core shed and transported to the laboratory facilities. This careful handling is critical to maintaining the integrity and reliability of our results.

All samples for dispatch were sealed in bags and the number of packages included in the shipment were recorded as part of the dispatch report. The laboratory was provided with an email and electronic listing of the dispatch advice. The company used for transporting the samples from site to the laboratory was used exclusively, and relevant information regarding the transport company was included in each dispatch report.

All aspects of the sampling and dispatch process were supervised and tracked by MGBL personnel. The procedure for the arrival of a transport vehicle at the Bibiani project site included greeting the vehicle at the site entrance where the driver’s name, registration of the vehicle, and the completion of a site entry permit was completed. The vehicle was then escorted through the project site and MGBL personnel conducted the loading and unloading of sample packages.

11.6 Bulk Density Determination

The samples used for density measurements are representative of the deposit for which mineral resource or reserve estimates are determined.

- Approximately 10cm length of full core and half core is selected by the logging geologist for the density measurement.
- One to three representative sample is taken in each 10m interval of unmineralized core, and two to five samples taken within the mineralised zone.
- Samples are allowed to be air-dried for not less than 10 minutes to get rid of all water that filled the surficial pores during cutting. The samples are cleaned and labelled with the hole ID and depth.

The density measurement sequence consists of the following steps:

- Zero Calibration.
- The tensiometer is installed onto a KT-20 instrument.
- Using a firm grip, the KT-20 is held in the air and measurement taken.
- The sample holder wire is fastened around the sample.
- The sample is then dipped in water for about 5 seconds.
- It is then attached to the tensiometer using a hook provided with the system.
- KT-20 is held, and measurement taken.
- Place the sample in the bucket of clean water.
- Ensure sample is fully submerged.
- Measure reading.
- Results of the density measurement are displayed in g/cm3.
- Record the displayed density on the template.

MGBL utilise a KT-20, an advanced instrument that is used to measure the density of a geological sample. Density measurements are taken using the custom external tensiometer and accessories included with the KT-20 and a water source. The KT-20 calculates the density of the sample through water displacement and the density measurements are displayed on the screen. The Geologist selects a maximum of 12 samples for density measurement in 3 composites per hole comprising:

- Composite 1 – 3 samples before the mineralised zone
- Composite 2 – 5 samples within the mineralised zone; and
- Composite 3 – 3 samples after the mineralised zone.

Where each composite is cut to a length of 10cm for both full and half core. The samples are then air-dried for no less than 10 minutes making sure that all water that filled the superficial pores during cutting evaporates. The samples are then cleaned and labelled with the hole ID and depth. Before the KT-20 instrument is used, it is first calibrated and then installed with a tensiometer. The density is then determined using the following steps:

- The sample is measured by first fastening the sample holder wire around the sample.
- Dipping sample in clean water for 5 seconds making sure the superficial pores are filled with water.
- Attaching the sample to the tensiometer using the hook provided.
- Holding the KT-20 instrument in the air and selecting “Measure” pressing the “OK” button on the instrument.
- Once the measurement is complete, the sample is placed in a bucket of clean water making sure that it is fully submerged and then “Measure” is selected again.
- Results of the density measurement are displayed in g/cm^3.

Figure 11-35 shows a pictorial representation of the density determination process conducted by MGBL Geologists.

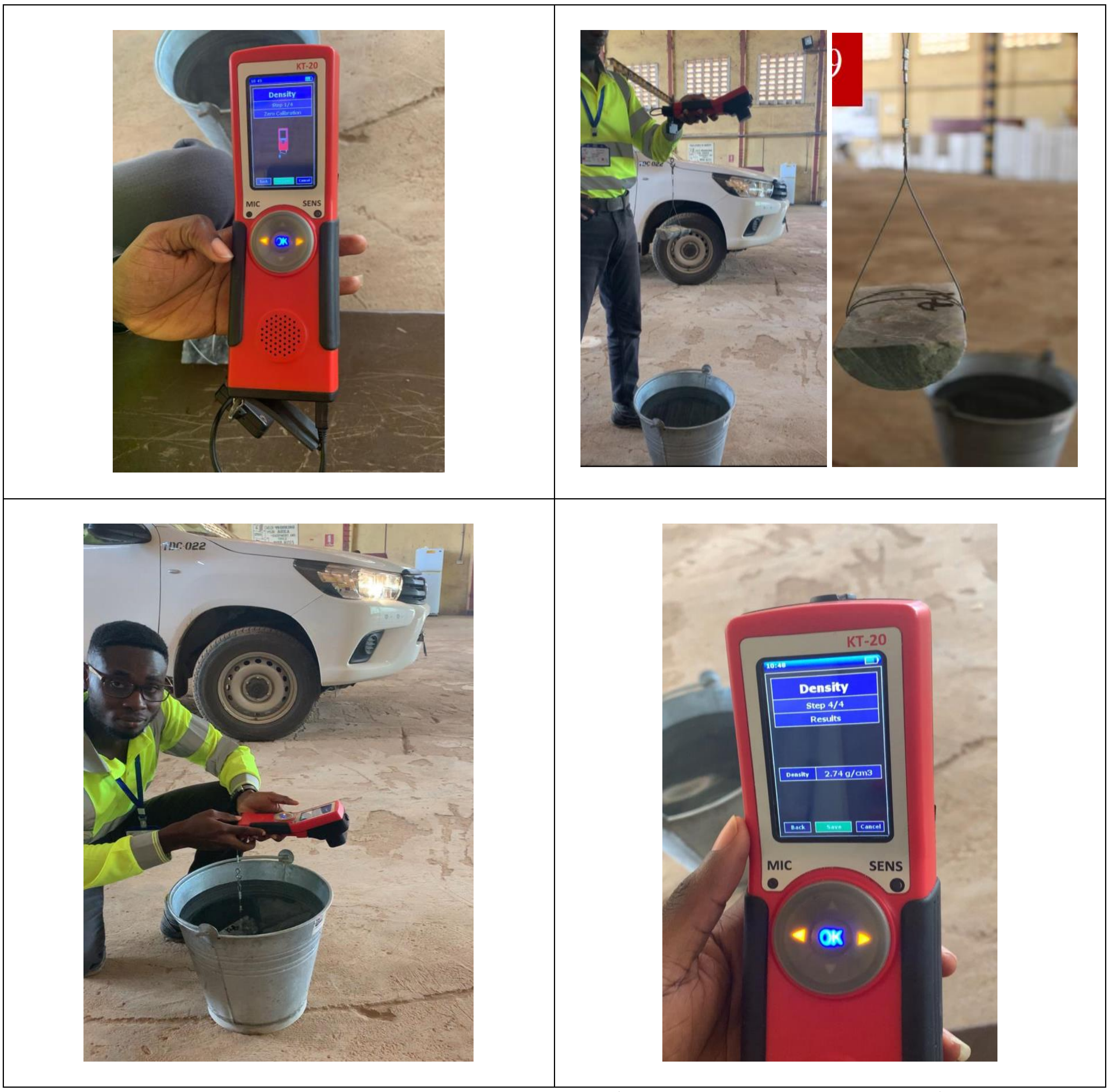


Figure 11-35: Determination of Bulk Density Using Kt-20 (Instantaneous Water Immersion Method)

(Source: Snowden Optiro)

The QP has reviewed the MGBL Density Determination SoP that outlines the density determination method as well as observed the process during the site visit, portrayed in Figure 11-35 and can confirm that it is appropriate for the deposit type and is consistent with industry best-practice.

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 Bibiani 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, being of acceptable accuracy and precision.

It is recommended that the process of field duplicate sampling be reviewed given the low repeatability being shown by analysis to date. In addition, QAQC failures, trends and bias issues identified over time and followed up should be documented in monthly QAQC reporting for follow up and resolutions documented in subsequent monthly QAQC reports as appropriate. SOP's where these are modified over time as appropriate should be appropriately date stamped with version control.

12. DATA VERIFICATION

Mr Galen White (Bara Consulting) visited the Bibiani Gold Mine between 17 and 19 October 2023 for the purposes of completing audit works in relation to geological data collection, sampling and field aspects of 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.
- Visit to open pit environs at Bibiani including Grasshopper, Walsh, Strauss, Main Pit and Russell, ground truthing.
- Review of workflows for data collection, inspection of geological plans and sections.
- Inspection of core processing facilities and inspection of drill core.
- Review of database structure and validation processes.
- Review of Mineral Resource modelling processes, assumptions, and estimation methodologies.
- Visit to the Bibiani Intertek laboratory.

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 MGBL's protocols as adopted from the previous owners.

The QP reviewed the drillhole database and completed spot checks against assay certificates and additional validations included review of drilling, logging, sampling, assaying, QAQC SoPs and database management. MGBL stores and manages all drillhole related data in DataShed SQL database managed by MaxGeo. Data imported electronically from the Core Logger software undergoes built-in validations to check for logging continuity, missing information and other basic checks. Regarding sample storage and security, the QP found the SoPs to be robust and appropriate.

The QP reviewed MGBL's SoPs and it is the QPs opinion that MGBL has produced comprehensive procedure manuals, including SoPs for all activities. The QP also reviewed reports of previous audits undertaken by MGBL and third parties with respect to pit mapping, 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.

12.1 Opinion of Qualified Persons

MGBL's internal protocols governing drilling, logging, sample preparation, sample analysis, sample security, QAQC, data collection and database management measures applied by MGBL and by previous owners of the Bibiani Project are considered consistent with industry norms. 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 MGBL data is appropriately captured and stored and that adequate checks are done to verify the accuracy of the data used for Mineral Resource evaluation and downstream use.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Previous Metallurgical Test Work

The previous NI 43-101 Technical Report dated 31 August 2022 and titled Bibiani Gold Project West Africa for Asante Corporation specifically referenced the test results from the accessible ALS 16335 Phase 1 Metallurgy Report. These test results relate to the Phase 1 drill core samples, B1, B2, and B3 from the Main Pit. In 2022, the reported continuation of this test work campaign on the Mian Pit variability in the ALS 16335 Phase 2 Metallurgy report was not available to undertake a detailed review of the test results of the additional 14 drill core samples.

Details of the Main Pit drill hole depths, sample masses, gold grades, sulphur, and organic carbon analyses are shown in Table 13-1 below.

Table 13-1: Main Pit Drill Hole Sample Intervals for Metallurgical Test Work

Drill Hole Samples for Bibiani Metallurgical Test Work							
Sample ID	**Drill Hole**	**From (m)**	**To (m)**	**Mass (kg)**	**Au (g/)t**	**S (%)**	**Corg (%)**
B1	BUDD007	51	85	58.0	4.06	0.52	0.72
B2	BUDD008	110	128	27.0	5.58	0.98	0.36
B3	BUDD009	35	61	39.0	2.81	0.72	0.45
S13(1)	BUDD021	56	79	26.9	7.24	0.86	0.27
S13(2)	BUDD043	51	64	22.0	8.03	0.86	0.27
CN(1)	BSRD014	352	365	36.4	3.74	0.34	0.24
CN(2)	BSRD015	314	326	32.4	8.30	0.34	0.21
WLN(1)	BSRD014	407	419	18.2	4.29	0.58	0.24
WLN(2)	BSRD014	429	436	10.7	6.75	0.58	0.54
CC(1)	BUDD052	12	22	30.6	0.76	0.26	0.45
CC(2)	BUDD052	67	82	44.3	1.26	0.34	0.63
CC(3)	BUDD051	25	34	31.3	2.89	0.42	0.42
CC(4)	BUDD051	144	173	98.5	3.55	1.36	0.42
SCW(1)	BUDD053	98	127	101.1	3.97	0.70	0.39
SCW(2)	BUDD006	26	35	19.2	5.30	0.80	0.45
SCW(3)	BUDD006	44	55	23.2	2.92	0.56	0.48
SCW(4)	BUDD006	55	78	38.5	3.40	0.76	0.36

In the ALS Phase 1 program the B1, B2, and B3 composites were constituted from 64 underground drill core samples representing the northern and southern mineralisation. The resultant sulphide ore treatment gold recovery averaged 87,4% without the inclusion of gravity gold recovery. The ALS Phase 1 sulphide ore treatment procedure was established for the ALS Phase 2 ore variability test work campaign. In the comparison test work, the gravity gold recovery, which averaged 27,4%, was included in the conventional CIL leached gravity tails gold recovery for an overall average recovery of 80,3%. The ALS Phase 1 and Phase 2 test work was done at a grind size of P80 106µm and 24 hours leaching time for flotation concentrates, flotation tailings and the direct ore leaches.

Table 13-2: ALS Phase 1 Test Work Results

Process	**Unit**	**Float/Conc Leach B1, B2, B3 Average**	**Direct Leach B1, B2, B3 Average**
Head Grade Calc	g/t	3.65	3.57
Direct Leach Recovery with Gravity	%		80.3
Flotation recovery	%	92.7	
Concentrate leach recovery	%	89.7	
Flotation tail recovery	%	58.0	
Overall Recovery		**87.4**	**80.3**

Table 13-3 below shows the sulphide ore treatment results from the ALS Phase 1 and Phase 2 test work. The test work results of the ALS A16335 Phase 2 samples CC (1) and CC (2) have been excluded due to their low respective head grades of 0.76g/t and 1.26g/t.

Table 13-3: Estimation of Main Pit Overall Recovery

Process	**B1**	**B2**	**B3**	**S13 (1)**	**S13 (2)**	**CN (1)**	**CN (2)**	**WLN (1)**	**WLN (2)**	**CC (3)**	**CC (4)**	**SCW (1)**	**SCW (2)**	**SCW (3)**	**SCW (4)**	**Ph2 Ave**
Calc Head Grade (g/t)	1.96	5.08	3.33	3.34	8.33	2.60	8.83	2.83	5.53	2.29	3.39	3.50	5.14	2.53	3.38	3.65
Mass Pull	8.8	7.9	6.2	6.7	9.6	5.6	10.4	6.3	11.9	10.7	12.4	11.5	13.5	12.7	10.5	10.2

(%)																
Flotation Rec (%)	93.1	95.5	92.9	92.7	95.8	88.0	93.3	96.0	94.9	86.4	96.1	94.7	95.6	95.2	93.7	93.3
Conc Leach Rec (%)	87.6	91.8	88.4	88.4	87.6	94.7	97.0	94.2	95.8	88.6	87.8	86.9	89.3	83.6	88.7	90.0
Tails leach Rec (%)	48.7	57.7	67.6	78.1	73.6	92.8	60.6	67.4	69.6	87.2	52.7	69.3	74.1	46.2	68.1	67.6
Overall Recovery (%)	**86.8**	**90.0**	**87.9**	**88.4**	**88.0**	**92.5**	**92.6**	**91.7**	**92.5**	**88.8**	**87.6**	**87.3**	**89.0**	**85.1**	**88.4**	**89.1**

In summary, the ALS Phase 1 and ALS Phase 2 variability test work results for sulphide ore treatment have a normalised overall gold recovery range of 85.1% to 92.6% with a corresponding head grade range of 1.96g/t to 8.83 g/t. The normalised average overall gold recovery is 89.1% for the ALS Phase 1 plus the ALS test work that excludes gravity gold recovery.

In comparison the ALS Phase 2 variability CIL leach tests on the gravity tails produced sulphide ore overall gold extraction results ranging from 65.5% to 93.6% at an average of 71.5%. The average gravity gold recovery for the 14 variability sample composites was 34% with a recovery range of 20% to 56% gold recovery.

The sulphide ore treatment overall gold recovery calculated from the ALS test work is understated by 3% as it does not represent the plant flow sheet that includes a gravity circuit with separate gold extraction. The difference in the overall gold recovery for sulphide ore treatment with a gravity circuit is discussed further in 13.4.2.2 of this Chapter.

13.2 Current Metallurgical Testing – Before the 2022 Plant Start-up

The previous NI 43 101 Technical Report dated 31 August 2022 presented preliminary leach test results from a laboratory testing program conducted by Intertek in Tarkwa, Ghana. Preliminary tests investigated the sensitivity of leaching of sub-samples from a single composite to grind size, dissolved oxygen concentration, lead nitrate addition and cyanide concentration. Gravity concentration has not been included in the tests performed to date.

Nominal conditions during leaching were:

- Sodium cyanide addition 500g/t (except cyanide concentration sensitivity test).
- Activated carbon 10g/l.
- pH 10.5.
- Grind size P80 106µm (except grind size sensitivity test).
- Conditioning time 2 hours.
- DO 20ppm. (except DO concentration sensitivity test).

The optimal leach test results of the composite sample for each sensitivity test have been summarised in Table 13-4.

Table 13-4: Results of Leach Tests

Sample	Grind P80 53(µm)	DO 20ppm	Lead Nitrate 50g/t	NaCN cons 1.0kg/t
Composite	89.5	83.3%	84.4%	85.5%

13.3 Current Metallurgical Testing – After the 2022 Plant Start-up

In 2023 two preliminary test work programs were conducted by Intertek in Tarkwa, Ghana on ore samples from the Bibiani Main Pit and the Russell Pit. Initiation and oversight of the metallurgical test work was done by Asante. The two test reports have been presented as preliminary to this study by Asante. The objective of the test work campaign was the gold extraction from sulphide ore treatment using flotation processing to produce a concentrate for fine grinding followed by intensive leaching. Leaching tests representing conventional CIL were done to show the comparative improvement in gold recovery using the flotation process route. Gravity gold recovery tests were not included in the test work programs.

13.3.1 Gold Recovery Testing (CIL/Flotation) Bibiani Main Pit, November 2023 Intertek

13.3.1.1 Main Pit Samples

The two Main Pit composite samples, high grade and low grade, were taken from stockpiles by the geologists and are not representative of this ore body. The summarised preliminary test results from the Main Pit flotation and leach test work programs are an indication of gold recovery.

13.3.1.2 Main Pit Sample Head Assays – Leach Tests

Table 13-5: Main Pit Leach Composite Sample Head Assays

Assay	Unit	MP HG	MP LG
Au 1 – fire assay	(g/t)	2.57	0.67
Au 2 – fire assay	(g/t)	2.60	0.52
Average Au	(g/t)	2.59	0.60
As	(ppm)	1935	2224
C_{Total}	(%)	2.06	2.79
$C_{Organic}$	(%)	0.43	0.46
S_{Total}	(%)	0.60	0.31
$S_{Sulphide}$	(%)	0.57	0.29

The following observations are made:

- The differences in gold grade between each of the two fire assays indicates there is no coarse gold present.
- Samples contain organic carbon, which could be the source of the preg-robbing.
- Samples contained elevated levels of arsenic and sulphides which indicate the presence of refractory gold associated with pyrite and/or arsenopyrite.

13.3.1.3 Main Pit Sample Head Assays – Flotation Tests

Table 13-6: Flotation Composite Sample Head Assays

Assay	Unit	MP HG	MP LG
Au 1 – fire assay	(g/t)	2.18	0.99
Au 2 – fire assay	(g/t)	2.18	0.99
Average Au	(g/t)	2.18	0.99

The following observations are made:

- The differences in gold grade between each of the two fire assays indicates there is no coarse gold present.
- The arsenic, sulphur and carbon analyses are the same as in Table 13-6.

13.3.1.4 Main Pit Sensitivity Leach Tests

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 (except for cyanide concentration sensitivity tests).
- Activated carbon 10g/l.
- pH 10.5.
- Grind size P80 75µm.
- Conditioning time 2 hours.
- DO 20ppm (except for DO concentration sensitivity tests).

13.3.1.5 Main Pit Flotation Test and Concentrate/Float Tails – Leach Test

Sub-samples were split from each composite and milled to P80 75µm grind size. Batch rougher flotation tests on each composite produced a flotation concentrate that was thoroughly washed to remove residual reagent and fine-milled to P80 25µm. The flotation tails were thoroughly washed and milled to a grind size of P80 45µm. The flotation concentrates and tails products were subjected to 24 hours of cyanide leaching.

FLOTATION TEST

- Grind size P80 75µm.
- 10mls activator (1% copper sulphate solution) agitated for 10 minutes.
- 10mls collector (10% SIBX solution) agitated for 10 minutes.
- 2mls frother agitated for 2 minutes.
- Start flotation and remove concentrate samples at regular 2-minute intervals for 8 minutes total flotation time.

CONCENTRATE LEACH TEST

- 50% solids w/w with Intertek tap water.
- Grind size P80 25µm.
- Sodium cyanide initial 2000g/t.
- Activated carbon 15g/l.
- pH 10.5.
- 0.5 kg/t lead nitrate.

TAILS LEACH TEST

- 50% solids w/w with Intertek tap water.
- Grind size P80 45µm.
- Sodium cyanide initial 500g/t.
- Activated carbon 15g/l.
- pH 10.5.
- 0.5 kg/t lead nitrate.

13.3.1.6 Main Pit Test Work Overall Gold Recovery Results for Flotation and Leaching

The sulphide ore treatment test route on the MP-HG (high grade) sample produced an 93.1% overall gold recovery result without gravity gold recovery. In comparison, the result of the direct cyanide route on the MP-HG sample was an 86.6% overall gold recovery at a grind size of P80 75µm and without gravity recovery. The results are shown in Table 13-7.

Table 13-7: Main Pit Overall Recovery Test Result

Process	Units	Float/Conc Leach MP-HG	Float/Conc Leach MP-LG	Direct Leach MP-HG	Direct Leach MP-LG
Head Grade Assay	(g/t)	2.18	0.99	2.57	2.60
Head Grade Calc	(g/t)	2.30	1.04	0.67	0.52
Direct Leach Recovery (Optimal with 50g/t lead nitrate)				86.6	76.7
Flotation recovery	(%)	95.1	89.7		
Concentrate leach recovery	(%)	95.0	91.4		
Flotation tail recovery	(%)	55	55		
Overall Recovery	**(%)**	**93.1**	**87.8**	**86.6**	**76.7**

13.3.2 Gold Recovery Testing (CIL/Flotation) Russell Pit, November 2023 Intertek

13.3.2.1 Russell Pit Samples

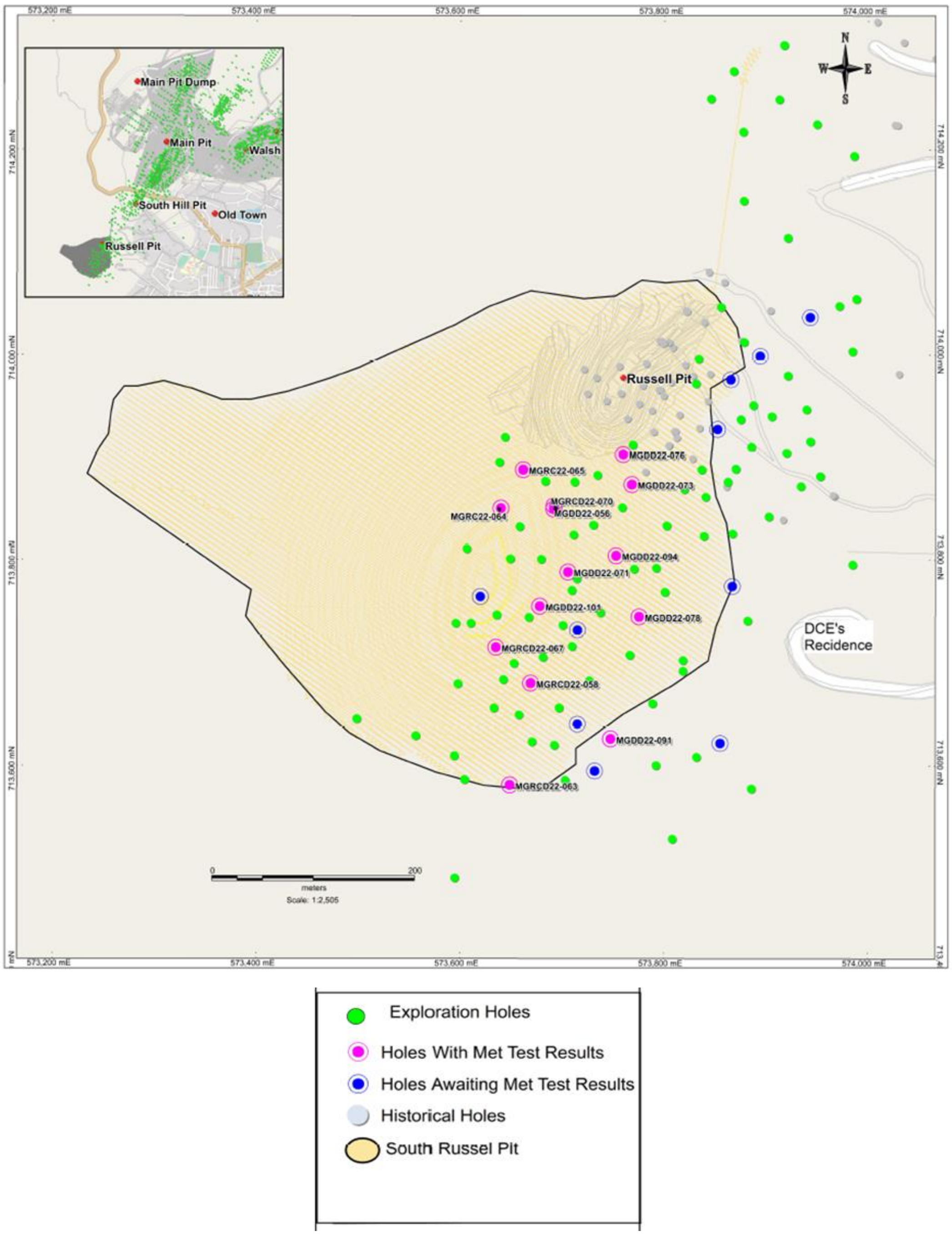


Figure 13-1: Plan View of Russell Pit Met Samples

13.3.2.2 Russell Pit Sample Head Assays – Leach Tests

Table 13-8: Russell Pit Leach Composite Sample Head Assays

Sample	Unit	Fire assay 1	Fire Assay 2	Average
MGBMET (086-091)	(g/t)	1.18	1.16	1.17
MGBMET (100-103)	(g/t)	0.80	0.79	0.80
MGBMET (069-076)	(g/t)	2.64	2.45	2.55
MGBMET (092-095)	(g/t)	1.10	1.08	1.09
MGBMET (104-109)	(g/t)	1.25	1.31	1.28
MGBMET (079-081)	(g/t)	4.70	4.54	4.62
MGBMET (096-098)	(g/t)	1.79	1.89	1.84
MGBMET (052-064)	(g/t)	3.04	3.88	3.46
MGBMET (043-051)	(g/t)	2.26	2.30	2.28
MGBMET (033487-033491)	(g/t)	5.40	4.37	4.89
MGBMET (033472-033476)	(g/t)	1.77	1.56	1.67
MGBMET (065-068)	(g/t)	0.94	0.93	0.94
MGBMET (034-038)	(g/t)	3.09	2.95	3.02

The following observations are made:

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

13.3.2.3 Russell Pit Sample Head Analysis

Table 13-9: Russell Pit Leach Composite Sample Carbon, Sulphur and Arsenic Analysis

Sample	Total C (%)	Total S (%)	TOC (%)	S-S (%)	As (ppm)
MGBMET (086-091)	1.88	0.33	0.45	0.32	2112
MGBMET (100-103)	2.28	0.61	0.20	0.60	711
MGBMET (069-076)	1.64	0.35	0.17	0.34	298
MGBMET (092-095)	1.99	0.25	0.09	0.24	1499
MGBMET (104-109)	1.47	0.24	0.08	0.22	2072
MGBMET (079-081)	2.56	1.18	0.00	1.16	4240
MGBMET (096-098)	1.08	0.28	0.22	0.27	1341
MGBMET (052-064)	2.30	0.87	0.19	0.84	555
MGBMET (024-033)	1.48	0.64	0.18	0.62	1270
MGBMET (043-051)	2.19	0.52	0.13	0.51	1307
MGBMET (033487-033491)	1.14	0.06	0.47	0.03	232
MGBMET (033472-033476)	1.03	0.01	0.37	0.01	2092
MGBMET (065-068)	0.57	0.01	0.29	0.00	2070
MGBMET (034-038)	1.52	0.59	0.20	0.57	476

The following observations are made:

- Samples containing >0.45% organic carbon, could be the source of the preg-robbing.
- Samples contained elevated levels of arsenic and sulphides which indicate the presence of refractory gold associated with pyrite and/or arsenopyrite.

13.3.2.4 Russell Pit Leach Test Work

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. The Main Pit nominal conditions for the leach sensitivity tests were applied to the Russell Pit Samples (refer to 13.3.1.4).

13.3.2.5 Russell Pit Leach Test Results

Table 13-10: Results of Optimised Leach Tests

Grind Size P80 53(µm)	DO 35ppm	Lead Nitrate 50g/t	NaCN cons 1.0kg/t	No Activated Carbon
85.3%	79.8%	81.8%	81.6%	58.5%

The optimal leaching result is an 81.8% gold recovery 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 0.38 kg/t.

The most optimal average recovery result is the P80 53µm average recovery of 85.3% is disregarded as this would require the installation of a new tertiary milling circuit.

13.3.2.6 Russell Pit Preg Robbing Results

Table 13-11 shows the results of the preg-robbing tests done on each composite. The Base Case tests were done at a 24-hour leach with 10g/l activated carbon, 20ppm DO concentration and 500g/t cyanide addition at a grind size P80 75µm for comparison against the Direct Leach tests that were done without activated carbon. This is a comparative leach test that produced a relative Preg Rob Index (PRI) and is not the conventional PRI test t with a spiked gold pregnant solution.

Table 13-11: Russell Pit Preg Robbing Test Results

Sample	Recovery	Base Case	Direct Leach (no carbon)	Preg Rob Index	Total Carbon	Total Organic C
MGBMET (086-091)	%	68.4	40.2	28.2	1.88	0.45
MGBMET (100-103)	%	50.9	23.3	27.7	2.28	0.20
MGBMET (069-076)	%	76.8	65.8	11.0	1.64	0.17
MGBMET (092-095)	%	64.2	62.4	1.8	1.99	0.09
MGBMET (104-109)	%	67.2	42.2	25.0	1.47	0.08
MGBMET (079-081)	%	80.1	58.7	21.4	2.56	0.00

Sample	Recovery	Base Case	Direct Leach (no carbon)	Preg Rob Index	Total Carbon	Total Organic C
MGBMET (096-098)	%	82.1	71.2	10.9	1.08	0.22
MGBMET (052-064)	%	80.9	56.6	24.3	2.30	0.19
MGBMET (043-051)	%	78.3	62.1	16.2	2.19	0.13
MGBMET (033472-033476)	%	88.0	79.0	9.0	1.03	0.37
MGBMET (065-068)	%	91.4	85.0	6.4	0.57	0.29
MGBMET (034-038)	%	80.8	71.2	9.6	1.52	0.20

The 75.5% average leach recovery result for the Base Case test is 17.0% higher than the average 58.5% Direct Leach result without activated carbon.

13.3.2.7 Russell Pit Flotation Rougher Test and Float Concentrate/Float Tails Leach Tests

Sub-samples were split from each composite and milled to P80 75µm grind size. Batch rougher flotation tests on each composite produced a flotation concentrate that was thoroughly washed to remove residual reagent and fine milled to P80 25µm. The flotation tails were thoroughly washed and milled to a grind size of P80 45µm. The flotation concentrates and tails products were subjected to 24 hours of cyanide leaching. The Main Pit test conditions (refer to 13.3.1.5) were applied to the Russell Pit flotation tests, the concentrate leach tests and the flotation tails leach tests.

13.3.2.8 Russell Pit Flotation Test Results

The Russell Pit Flotation Test Results are shown in Table 13-12.

Table 13-12: Russell Pit Flotation Test Results

Sample	Head Assay (g/t)	Calc Head (g/t)	Mass Pull (%)	Concentrate Grade (g/t)	Tails Grade (g/t)	Float Rec (%)	Accountability (%)
MGBMET (086-091)	1.17	1.26	8.8	12.88	0.14	89.8	107.4
MGBMET (100-103)	0.80	1.03	18.1	5.41	0.06	95.2	128.5
MGBMET (069-076)	2.55	2.73	17.7	14.72	0.24	92.8	107.0
MGBMET (092-095)	1.09	0.94	12.2	7.59	0.02	98.1	86.0
MGBMET (104-109)	1.28	1.28	14.6	17.26	0.26	82.7	100.0
MGBMET (079-081)	4.62	3.68	24.4	14.63	0.14	97.1	80.0
MGBMET (096-098)	1.84	1.92	5.5	29.42	0.33	83.7	104
MGBMET (052-064)	3.46	3.53	17.9	18.01	0.37	91.4	102.0
MGBMET (024-033)	2.54	2.55	6.5	37.64	0.10	96.3	101
MGBMET (043-051)	2.28	1.85	9.5	17.49	0.20	90.2	81.0
MGBMET (033472-033476)	1.67	1.21	9.5	10.5	0.26	80.6	73.0
MGBMET (065-068)	0.94	0.85	1.4	17.11	0.62	27.7	90.0
MGBMET (034-038)	3.02	2.67	11.6	22.02	0.14	95.4	88.0

Flotation test work accountabilities of > +/-10% on the composite samples MGBMET (100-103), (092-095), (079-081), (043-051), (033472-033476), and (034-038) are excluded as inaccurate for gold recovery assessments. Composite sample MGBMET was eliminated because the gold recovery is 27.7%.

13.3.2.9 Russell Pit Flotation Concentrate Leach Test Results

The flotation concentrate leach test results are shown in Table 13-13.

Table 13-13: Russell Pit Flotation Concentrate Leach Test Results

Sample	Conc Assay (g/t)	Carbon (g/t)	Tails (g/t)	Gold Solution in Tails (g/t)	Leach Dissolution (%)	Carbon Adsorption (%)	Soluble Gold in Tails (%)
MGBMET (086-091)	12.66	146.2	0.72	0.58	94.4	95.3	4.4
MGBMET (100-103)	5.41	62.4	0.28	0.06	94.8	98.8	1.1
MGBMET (069-076)	14.27	144.4	0.99	0.91	93.1	92.8	6.7
MGBMET (092-095)	7.57	76.2	0.75	0.23	90.1	96.4	3.2
MGBMET (104-109)	7.26	83.0	0.49	0.26	93.3	96.5	3.5
MGBMET (079-081)	14.63	168.6	0.94	0.88	93.6	94.0	5.6
MGBMET (096-098)	29.42	620.6	0.94	0.56	96.8	99.3	0.7

Sample	Conc Assay (g/t)	Carbon (g/t)	Tails (g/t)	Gold Solution in Tails (g/t)	Leach Dissolution (%)	Carbon Adsorption (%)	Soluble Gold in Tails (%)
MGBMET (052-064)	18.01	185.6	1.25	0.72	93.1	99.7	2.7
MGBMET (024-033)	37.64	398.6	3.26	37.64	91.3	97.8	2.0
MGBMET (043-051)	17.49	197.04	1.72	0.49	90.2	97.0	2.7
MGBMET (033472-033476)	10.25	121.0	0.43	0.66	95.8	96.1	3.8
MGBMET (034-038)	22.02	240.2	1.41	0.57	93.6	97.2	2.6

Test work accountabilities of > +/-10% for the leach tests on the composite samples MGBMET (096-098), and (033472-033476), were rejected as inaccurate for gold recovery assessments. The flotation concentrate masses from both tests were less than 180 grams which increased the analytical error of the carbon assay.

The average gold dissolution of the 10 composite samples was 92.7% with 96.3% average carbon adsorption efficiency resulting in a 3.4% average gold solution loss in the tailings.

13.3.2.10 Russell Pit Flotation Tails Leach Test Results

The fine grinding of flotation tails at P80 75µm to a tailings stream grind size of P80 45µm is not relevant to the gold recovery performance of a sulphide ore treatment circuit. The leaching of "as is" flotation tailings at P80 75µm is to economically benefit from the residual cyanide in the leached concentrate tailings for the leaching of the oxide material in the existing conventional CIL plant and to adsorb the gold solution losses in the concentrate tailings from the CIP circuit. The flotation tailings leach results of each of the composite samples have been excluded and an estimated 55% leach recovery has been applied.

13.3.2.11 Russell Pit Overall Gold Recovery of Russell Pit Sulphide Ore Treatment

The summary of the results on the flotation and concentrate leaches on the composite samples are summarised in the Table 13-14.

Table 13-14: Estimation of Russell Pit Sulphide Treatment Overall Recovery

Sample	Unit	086-091	069-076	104 109	096-098	052-064	024-033	Ave
Head Assay	(g/t)	1.17	2.55	1.28	1.84	3.46	2.54	2.14
Calc Head Grade	(g/t)	1.26	2.73	1.28	1.92	3.53	2.55	2.21
Mass Pull	(%)	8.8	17.7	14.6	5.5	17.9	6.5	11.8
Float Rec	(%)	89.8	92.8	82.7	83.7	91.4	96.3	89.5
Conc Leach Rec	(%)	94.4	93.1	93.3	96.8	93.1	91.3	93.7
Est Tails Leach Rec	(%)	55	55	55	55	55	55	55
Normalised Overall Recovery	**(%)**	**90.8**	**90.8**	**88.2**	**90.6**	**90.4**	**90.5**	**90.2**

The flotation tests results on the composite samples MGBMET (100-103), (092-095), (079-081), (043-051), (033472-033476), and (034-038) were excluded on flotation test accountability accuracy and the flotation test on composite sample MGBMET was eliminated because the gold recovery was 27.7%. The average flotation recovery of 89.5% produces a rougher concentrate grade of 13.68g/t from a mass pull of 11.8% after 8 minutes of batch flotation residence time.

The concentrate leach results for composites samples MGBMET (100-103), (092-095), (079-081), (043-051), (033472-033476), and (034-038) were also excluded from the overall gold recovery for each composite sample. The average concentrate leach recovery of 93.7% accepts the 3.2% gold solution loss is adsorbed by the activated carbon in the existing CIL circuit.

The tailings leach results of each of the composite samples have been excluded due to the economic impracticality of P80 45µm fine grind size. An estimated 55% leach recovery has been applied.

The average normalised recovery for the sulphide ore treatment of the Russell Pit sample composites is 90.2% which exceeds the 81.8% optimised leach recovery with 50g/t lead nitrate addition for a conventional CIL process. Both process test routes did not include gravity gold extraction tests.

13.4 Bibiani Gold Plant Recovery

13.4.1 Bibiani Plant Conventional CIL Recoveries 2022 to 2023

The Bibiani plant gold recoveries from June 2022 to October 2023 are shown in Figure 13-2. From these plant performance results the 2022 monthly average gold recovery was 80,44% at a head grade of 1.58 g/t and the 2023 monthly average gold recovery was 70.35% at a head grade of 1.48 g/t. The monthly gold recovery averages for 2022 and 2023 are plotted in Figure 13-3.

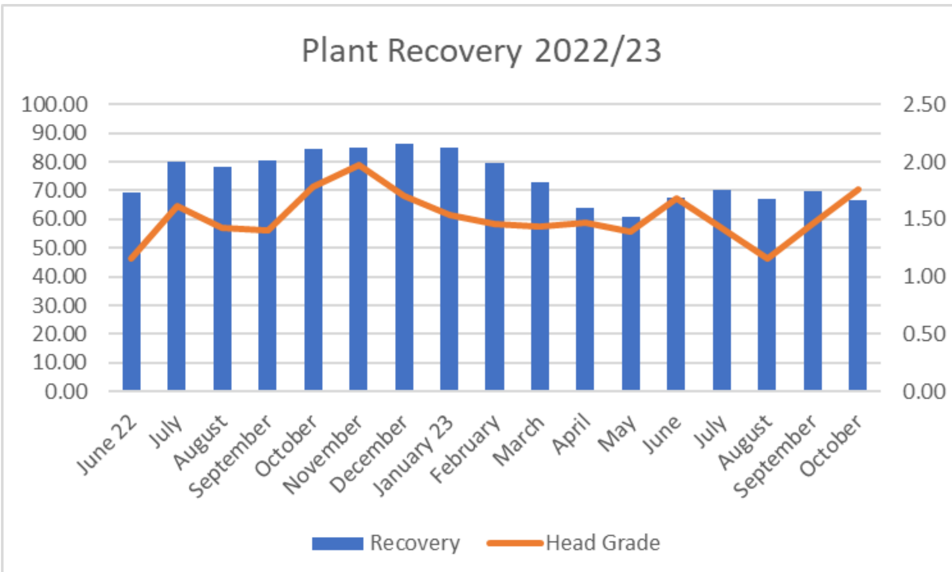


Figure 13-2: Current Gold Recovery for 2022 to 2023

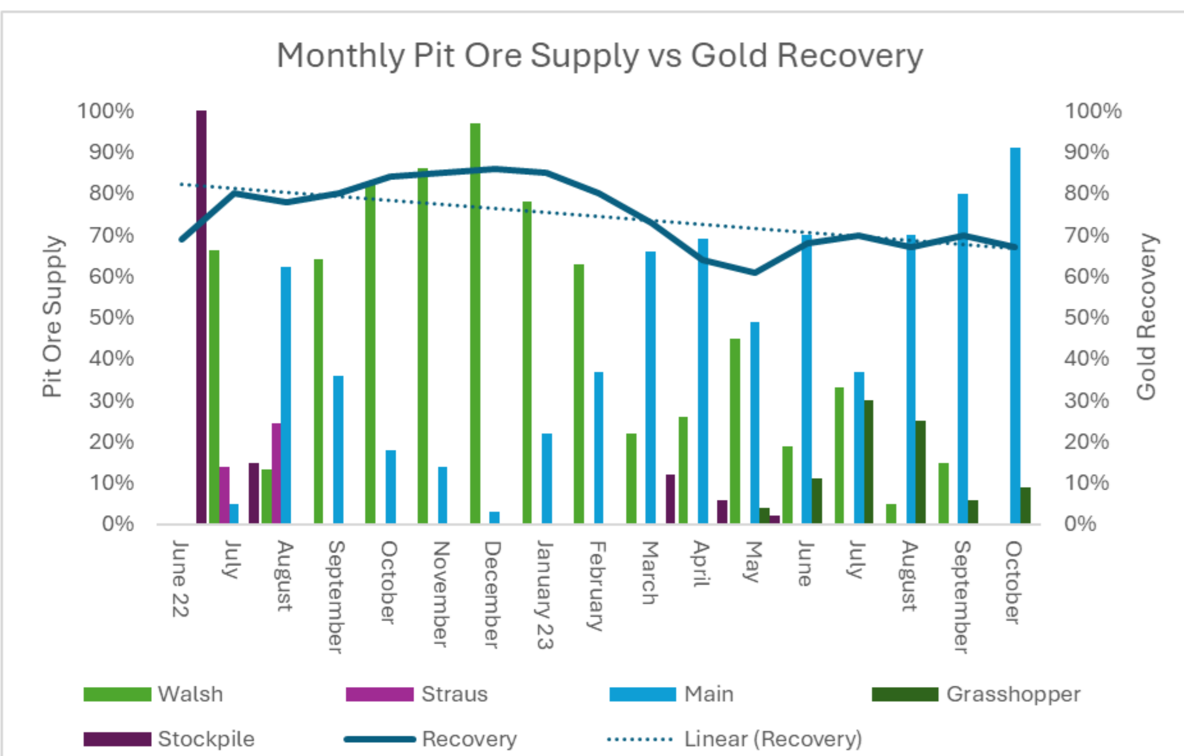


Figure 13-3: 2022/2023 Monthly Pit Ore Supply vs Gold Recovery

In reference to Figure 13-3, the ore supply from the Walsh Pit increased from 65% in July 2022 to 97% in December 2022 and tapered off to the completion of mining at the Walsh Pit in September 2023. Concurrently ore supply from the Main Pit decreased in supply from 60% in August 2022 to 3% in December 2022. From January 2023 the Main Pit ore supply was increased to 91% by October 2023 to supplement the depleting ore supply from the Wash Pit.

From June 2022 the gold recovery trended upwards to 86% in December 2022 and January 2023 with the Walsh Pit as the major ore supply. During this period head grade trended upward from June 2022 to 1.97g/t in November 2023 and subsequently lowered to flatter trend of 1.5g/t until October 2023. From February 2023 to October 2023 the monthly gold recovery had a downward trend as the Main Pit ore supply was increased. The monthly gold recovery stabilised at 70% from June to October 2023 with the major ore supply from the Main Pit and the minor ore supply from the Grasshopper Pit.

13.4.2 Estimation of Bibiani Operations Recovery

Two estimation methods for operation recovery can be applied:

13.4.2.1 Existing Conventional CIL Leaching Operation Recovery

Figure 13-3 Pit Ore Supply versus Gold Recovery shows that a >60% monthly Main Pit Ore Supply results in a 65% operations overall gold recovery. At <40% monthly Main Pit ore supply the operations gold recovery is 80%. These monthly operations gold recoveries include the gravity gold recovery.

13.4.2.2 Future Sulphide Ore Treatment Plant Operation Recovery

The future sulphide treatment process will consist of rougher flotation to produce a concentrate for fine grinding and intensive cyanide leaching. The leached concentrate tails will be re-processed with the flotation tails in the existing CIL circuit.

The ALS 16335 Phase 1 and ALS Phase 2 Test work conducted on the Main Pit core samples in Perth, Australia in 2015 are the only definitive test work available for the estimation of the overall gold recovery for sulphide ore treatment at Bibiani. The ALS Phase 1 and Phase 2 variability test work results on a total of 15 composite samples had an overall normalised gold recovery that ranged from 85.1% to 92.6% and averaged 89.1%. A Master composite of all 15 samples was also tested and yielded an overall gold extraction of 92.2%. All the sulphide ore treatment test work did not include the gravity gold extraction step.

The sulphide ore treatment overall gold recovery calculated from the ALS test work is understated by 3% as it does not represent the plant flow sheet. Gravity concentrates are recovered using a centrifugal concentrator and gold extraction is done in a separate treatment stream with a commercially proven intensive leach reactor that operates at >97% leaching efficiencies than the average 90% conventional leaching test results on the flotation concentrates containing the gravity gold. In plant processing the gravity gold is physically accounted for as doré by smelting the cell sludge produced from the separate electro-winning of the gold pregnant solution from the intensive leach reactor. The leached gravity tails at 0.1% mass of the mill feed rate are re-processed with 24 hours of conventional CIL treatment together with the gold barren electro-winning tails solution resulting in a negligible gold loss.

Figure 13-4 illustrates the recovery comparisons calculations when comparing the Test Flow Sheet recovery of 88.8% against the Plant Flow Sheet recovery of 92.6% and the 91,6% recovery for the Test Flow Sheet that has been modified by applying an industry-standard 97% gravity leach to the gravity portion of the flotation concentrate.

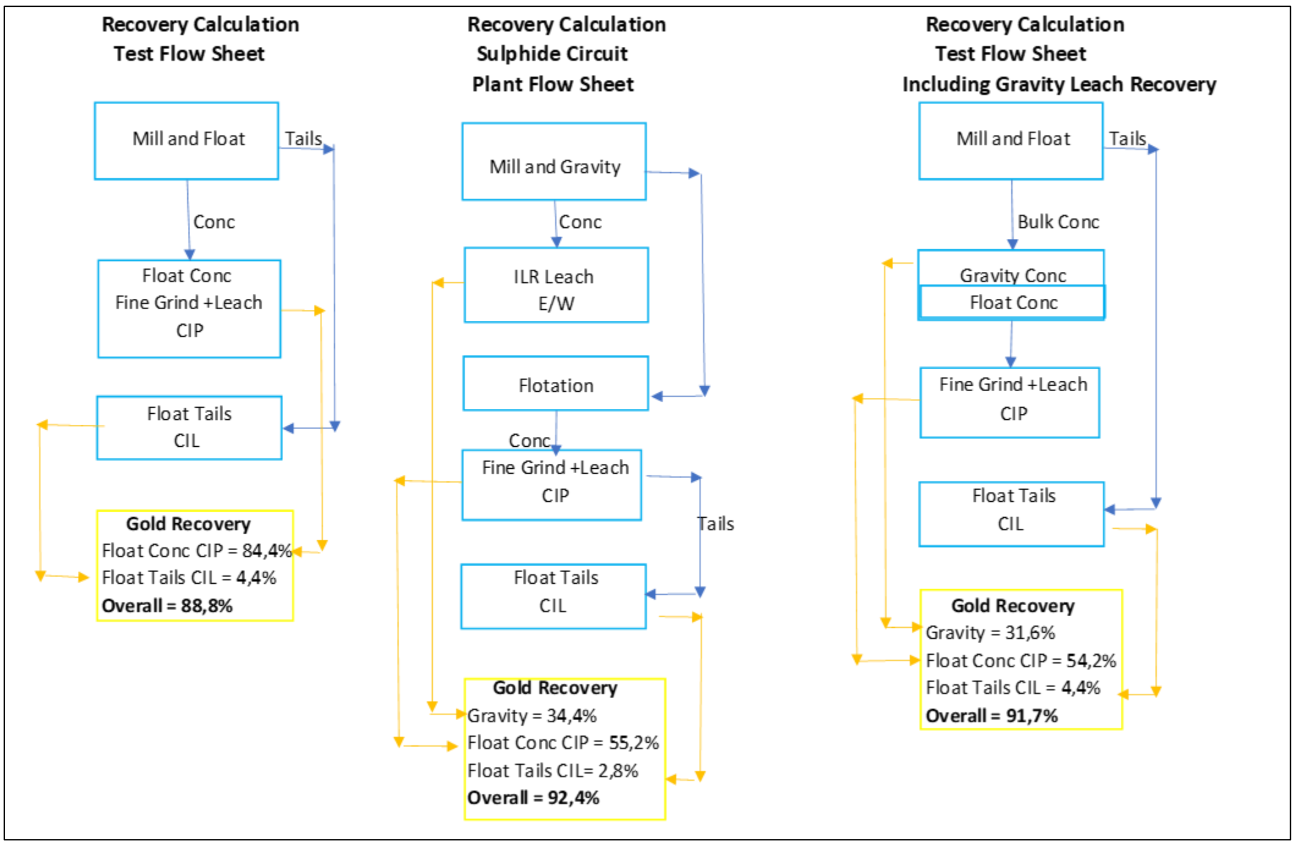


Figure 13-4: Recovery Calculation Comparisons (recoveries are not normalised)

The overall gold recovery differential is 2.9% for excluding the gravity extraction step from the test work flowsheet and is additional to the 89.1% average normalised overall gold recovery from the ALS variability test work. A sulphide ore treatment average overall gold recovery of 92.0% for the Main Pit ore is declared.

14. MINERAL RESOURCE ESTIMATES

14.1 Terms of Reference

The previous NI 43-101 declared Mineral Resources for open pit operations only. Asante has adopted a revised LoM plan which now encompasses the intention to bring forward the development and expansion of mining operations into underground mineral resources that occur below current and depleted open pit operations. Therefore, this Technical Report will be declaring adjusted Mineral Resources prepared, estimated and reviewed for both open pit and underground mining.

The Bibiani Gold Mine includes six deposits for which Mineral Resources have been estimated, over approximately 5km of SW-NE trending strike of the Bibiani shear corridor. These include, from SW to NE; Russell (which now includes Russell South), Main Pit, the Satellite deposits (referring to Strauss and Walsh), Elizabeth Hill and Grasshopper.

The current Bibiani Mineral Resource inventory is derived from the following deposits;

- Russell – Ceased open pit mining in xx. Russell South starter pit development planned for Q3 2023. In 2024 Russell now includes Russell South drilling.
- Main Pit – Open pit mining currently active. Evaluated to optimise the transition to underground mining as part of broader operational strategy.
- Walsh – Ceased open pit mining in 2023. Evaluated for underground mining.
- Strauss - Ceased open pit mining in 2023. Evaluated for underground mining.
- Elizabeth Hill – A small, brownfields deposit as yet unmined. Evaluated for open pit mining.
- Grasshopper – Asante commenced open pit production via expansion of the historic open pit in Q2, 2023.

Mineral Resources disclosed herein are either;

- Those prepared by the Company in 2022 and disclosed in the 2022 Technical Report (Main Pit, Strauss and Walsh) for which Mineral Resource classification has been assessed by the QP along with modified RPEEE reporting under current assumptions in relation to mining (open pit transition to underground), or;
- Have been prepared by the Company following the 2022 Technical Report disclosure (Russell, Grasshopper and Elizabeth Hill) where additional drilling data has been incorporated into (i) maiden Mineral Resource estimation (Grasshopper and Elizabeth Hill) or (ii) updated Mineral Resource estimation (Russell). Where applicable, all Mineral Resources have been depleted for production up to 31 December 2023.

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 named Mineral Resources for the Bibiani operations which were estimated by the company's employees. The QP was afforded sufficient access to supporting data, block models and Bibiani key Company technical staff to follow the process through exploratory data analysis, estimation, classification, and reporting. The site visit (see Section 2.6 and Section 12) afforded an opportunity to review and gain sufficient understanding of the on mine data collection and management processes, and the current geological interpretations.

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 historically and by Asante to understand the geological and structural controls of mineralisation over the mineralised belt, and at the deposit scale. In particular, Professor Kim Hein of KAAH GeoServices, contracted on an ad hoc basis by Asante, has assisted and mentored the MGBL geological team over the last two-year period to carry out intensive re-logging and structural re-interpretation of the local geological environment with the aim of better understanding the tectonic evolution of the Bibiani mine site. This work and knowledge underpins the evaluation of, and methodologies employed to estimate Mineral Resources.

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

The QP has, borne out of various review, made some modifications to reporting of the various MRE's, namely;

- Review and revision of Mineral Resource classification (where appropriate).
- Reporting of MRE's with updated and current cut-off grade assumptions and RPEEE constraints.
- The following tabulation summarises an overview of the updates to the Mineral Resource estimates at Bibiani.

Table 14-1: Bibiani Mineral Resources Overview

Deposit	OP/UG	Local Grid	Additional Data Since Previous MRE Update	MRE Date Stamp	Software Used	Interpolation Method	RPEEE Constraints (COG & Constraining Shells Using US$1,950 Gold Price)	Comments
Main Pit	OP/UG	Bibiani	No significant drilling activity	Feb-22	Leapfrog Geo (Geological modelling) supervisor (EDA, variography & KNA), Surpac (Block modelling) Datamine Studio RM (Grade estimation)	Ordinary Kriging (OK)	COG calculation and MRE reporting within constraining conceptual pit shell (OP) and MSA shapes (UG)	QP review and assessment in the context of planned transition to UG mining. Modification of MRE classification
Walsh	UG	Bibiani	No significant drilling activity	Feb-22	Leapfrog Geo (Geological modelling) supervisor (EDA, variography & KNA), Surpac (Block Modelling) Datamine Studio RM (Grade estimation)	Ordinary Kriging (OK)	COG calculation and MRE reporting within MSO shapes	Depleted for OP production to date and remaining MRE assessed for exploitation via UG
Strauss	UG	Bibiani	No significant drilling activity	Feb-22	Leapfrog Geo (Geological modelling) supervisor (EDA, variography & KNA), Surpac (Block Modelling) Datamine Studio RM (Grade estimation)	Ordinary Kriging (OK)	COG calculation and MRE reporting within MSO shapes	Depleted for OP production to date and remaining MRE assessed for exploitation via UG
Russell	OP	Bibiani	114 Holes (59 DD, 25 RC and 30 DDRC) for 22,035m of drilling 2021-2023	Aug-23	Leapfrog Edge (Geological Modelling variography) Supervisor (EDA & Variography), Datamine Studio RM (Block coding & estimation)	Ordinary Kriging (OK)	COG calculation and MRE reporting within conceptual pit shell	Includes Russell and Russell South
Grasshopper	OP	Bibiani	83 Holes (24 DD, 58 RC and 1 DDRC) for 8,801m of drilling 2021-2023	Nov-23	Leapfrog Geo v2022.1.1 (Geological modelling) Supervisor (EDA & variography), Datamine Studio RM (block coding & estimation)	Ordinary Kriging (OK)	COG calculation and MRE reporting within conceptual pit shell	Revision of geological domains suggested to be incorporated in final model
Elizabeth Hill	OP	Bibiani	26 Holes (4 DD and 22 RC) for 3,461m of drilling in 2022	Nov 23	Leapfrog Geo v2022.1.1 (Geological modelling) Supervisor (EDA & variography), Datamine Studio RM (Block coding & estimation)	Ordinary Kriging (OK)	COG calculation and MRE reporting within conceptual pit shell	Small oxide MRE

14.2 Drill Hole Data Verification

Following a validation check by the Company 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.

14.3 Bulk Density

A database containing 50,416 density determinations exists for the Bibiani Gold Project, and were categorised into material type, with no significant statistical differences observed within material types between deposits. Density values, collected largely from the Main Pit deposit between 2014 and 2017 and more recently collected from the Russell deposit (2022 and 2023) were averaged by material type (weathering) and coded to blocks in the MRE block models as direct block assignation for use in tonnage reporting. Density values applied for the different material types are presented in Table 14-2.

Table 14-2: Density Values Applied for Different Material Types at Bibiani (All Deposits)

Material Type	Density (t/m^3)
Oxidised Sediments	2.00
Transition Sediments	2.50
Fresh Sediments	2.75

14.4 Main Pit Mineral Resources

The Mineral Resource estimate for Main Pit has not been updated since that disclosed in 2022. This section reproduces content from the 2022 Technical Report, where it remains current. The QP has reviewed the MRE workflow and accepts responsibility for the content reproduced here, and where appropriate has provided opinion. Mineral Resource reporting modifications have been made following technical review, in the areas of Mineral Resource classification and RPEEE assessment. Mineral Resources are reported inclusive of Mineral Reserves that may be derived from them.

14.4.1 Geological and Mineralisation Modelling

The Main Pit deposit is hosted within a thick sequence of fine-grained graded turbidites, interspersed with thin, localised, fine- to medium-grained turbiditic sandstones. The geometry of the mineralisation is structurally controlled, and is hosted in a steep, north to northeast trending shear corridor ranging in width of 200m to 400m. In general, mineralisation lodes dip east at between 60° to 80°, cross-cutting the regional shear structure at low angles. In the widest parts of the mineralised zone, two (and locally up to three) individual quartz reefs or lodes have been identified.

Three-dimensional (3D) mineralisation interpretations were generated using Leapfrog™ Geology software and based on the available DD and RC drilling, as well as underground channel “chip” sampling data. An exploratory data analysis (EDA) and review of the spatial distribution of the lower grade material was carried out to assess if a lower cut-off would produce coherent interpretations. After statistical analysis of the assay data, a nominal cut-off value of 0.3g/t Au was selected. Interpretations were geology based, guided by the presence of a logged structure, with or without quartz veining, and combined with gold grade.

The previous MRE modelling was used as guide to create the current wireframes. The existing mineralisation domain codes were imported and manually updated to include the additional lower grade assay intervals. Validation of the domains used the development solids and stope models to align the mineralisation domains with as mined orientations and widths.

The overall framework is of NNE-SSW trending, steep east dipping to subvertical anastomosing vein sets which exhibit jogs/bends related to the arcuate shear zone and folding of the western stratigraphy Figure 14-1. There is a Central main vein that is prominent throughout the deposit with parallel veins. The eastern part of the deposit has two domains (Eastern/Eastern HW) that are sub parallel to the Central lodes Figure 14-2. A set of north-east trending, west dipping veins are also modelled, parallel to known shears, which truncate against the main vein and are interpreted as a secondary mineralisation event.

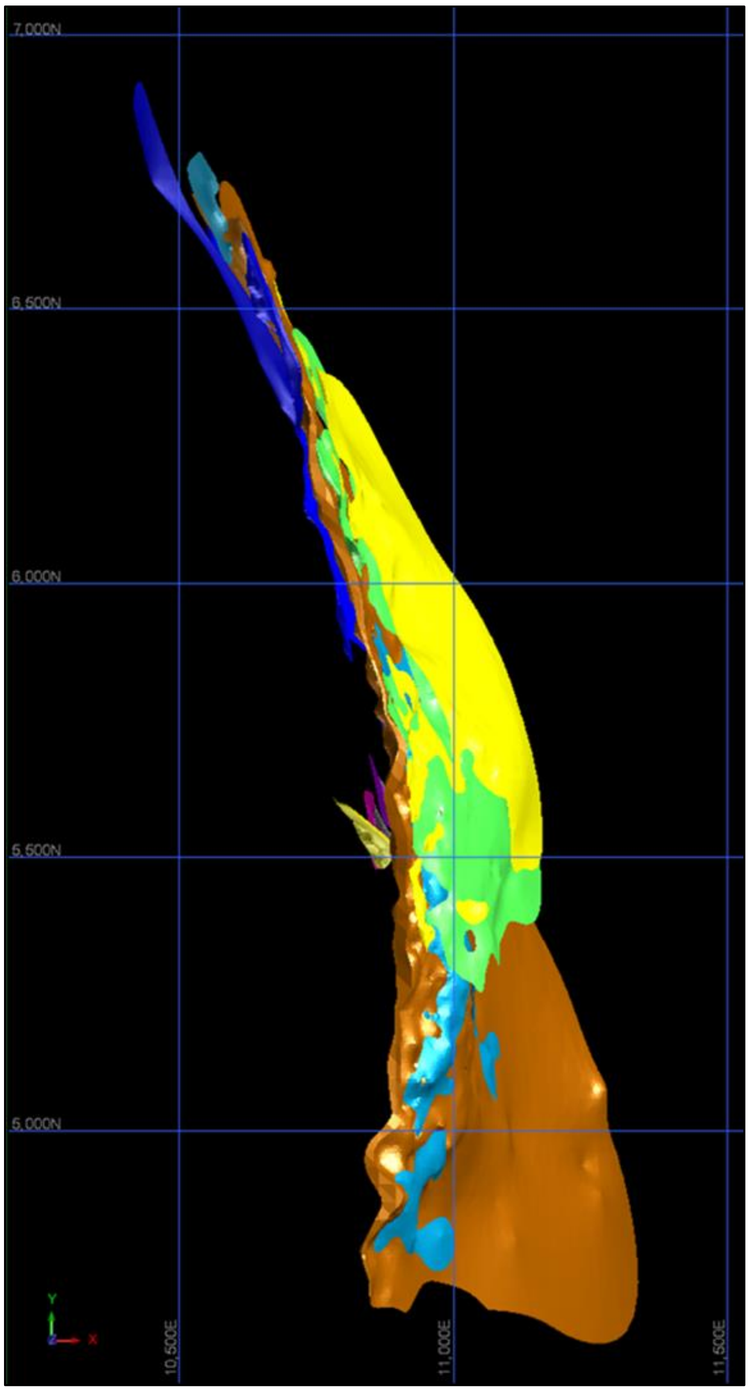


Figure 14-1: Plan View of Main Pit Mineralisation Domains

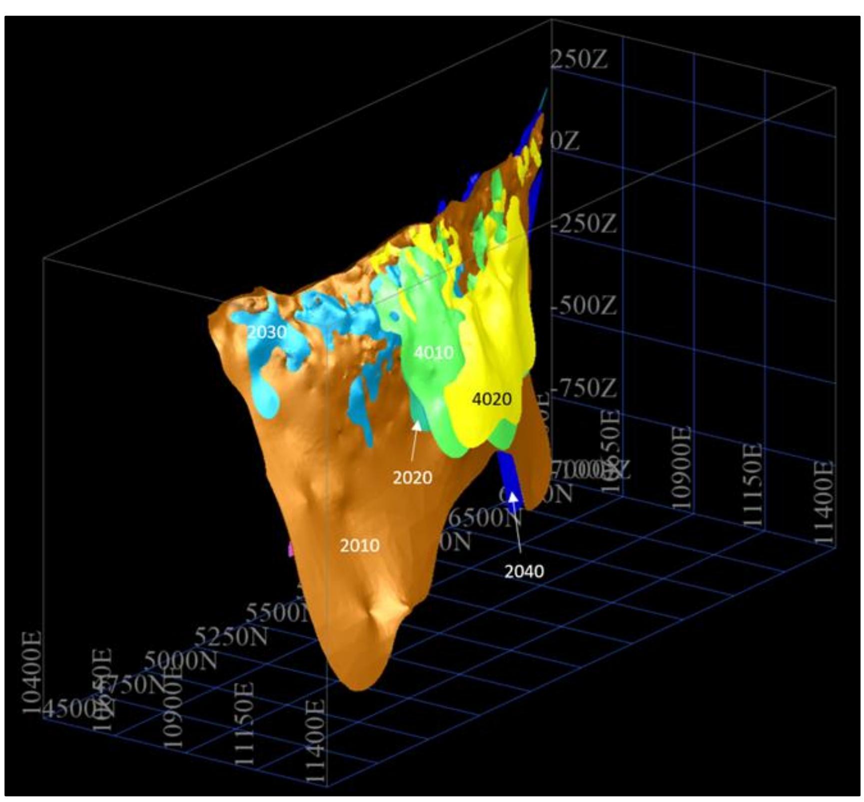


Figure 14-2: Oblique View of Main Pit Mineralisation Domains Looking Northwest

Figure 14-3 is a cross section showing vein relationships and lithology models. The Western lodes were initially proposed as a folded unit, following the carbonaceous shale lower zone model. When the spatial grade patterns were reviewed it became apparent that these could not be formed into a single folded domain, and in fact there were discrete subvertical patterns of intersections that could be formed into separate subvertical veins. A total of seven West lode domains were modelled and these are located between the Mine Shear 2 and the West Wall shear zone surfaces Figure 14-4. One of the issues with the West lodes is the lack of strike and dip continuity and when the structural framework was overlaid the bounding shears fitted around the vein models to produce a shear bounded tension vein array. The West HW7 domain is above the West Wall shear and is a different structure, with an orientation that is more consistent with the Central lode package. This is shown in Figure 14-4.

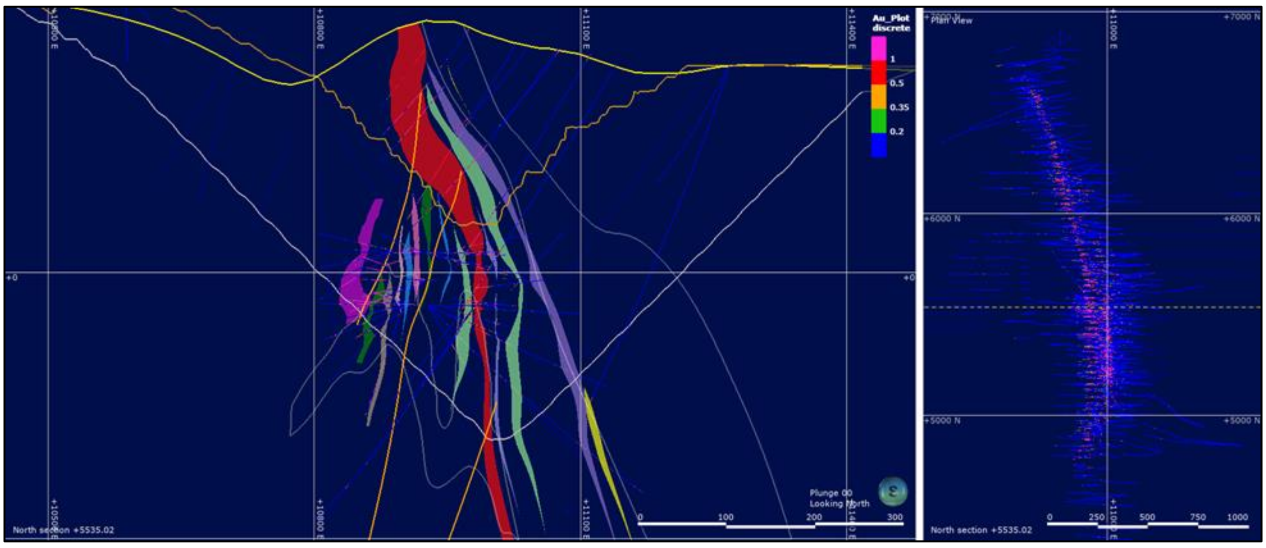


Figure 14-3: Cross Section Looking North Showing Main Pit Lithology and Vein Relationships

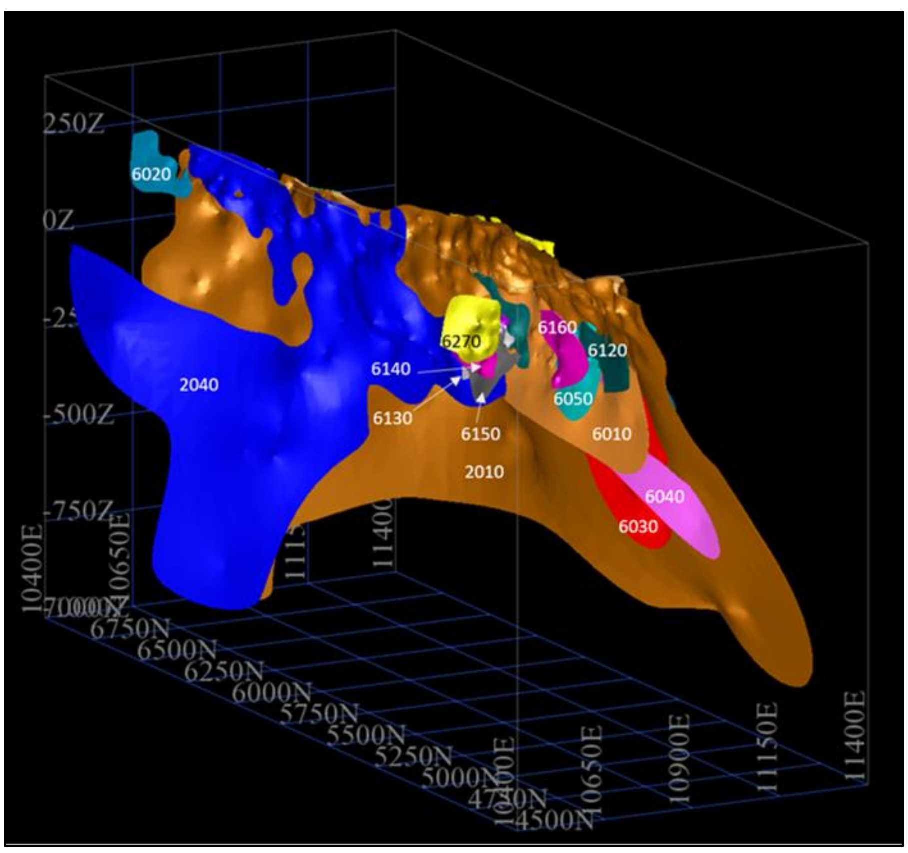


Figure 14-4: Oblique View of Main Pit Mineralisation Domains Looking Northeast

A review of the main domain (2010) determined there was a mixed grade population, so a categorical indicator (CI) approach was adopted to effectively domain out these two sample populations. The higher-grade blocks were determined by using a 1g/t Au threshold. The blocks and composites were coded as either low grade or higher grade based on the probability that they contained more than 1g/t Au. The composites were coded with a categorical indicator (IND) as shown below:

$$\boldsymbol{IND} = \begin{cases} 1 & if\ Au\ grade\ \geq 1.0 \\ 0 & Otherwise \end{cases}$$

Variograms were generated for the grade indicator. A summary of the indicator variogram parameters is displayed in Table 14-3.

Table 14-3: Summary of the Indicator Variography

Indicator	Direction		Nugget effect	Sill 1	Range 1 (m)	Sill 2	Range 2 (m)	Sill 3	Range 3 (m)
IND	Major	-00°→355°	0.2	0.46	10	0.2	35	0.14	400
	Semi-major	-85°→265°			15		60		180
	Minor	00°→355°			3		25		30

The probability (IND) that the block grade was above or below 1g/t Au threshold was estimated using Ordinary Kriging (OK) into the blocks. After visual and statistical examination of the drillhole data against the probability estimates, a probability of 0.40 (40%) was selected to discriminate the lower grade and higher-grade blocks. The blocks and the drillhole composites above 0.40 were assigned a domain code of 201010 and the remaining blocks and composites were assigned a domain code of 20100 Figure 14-5.

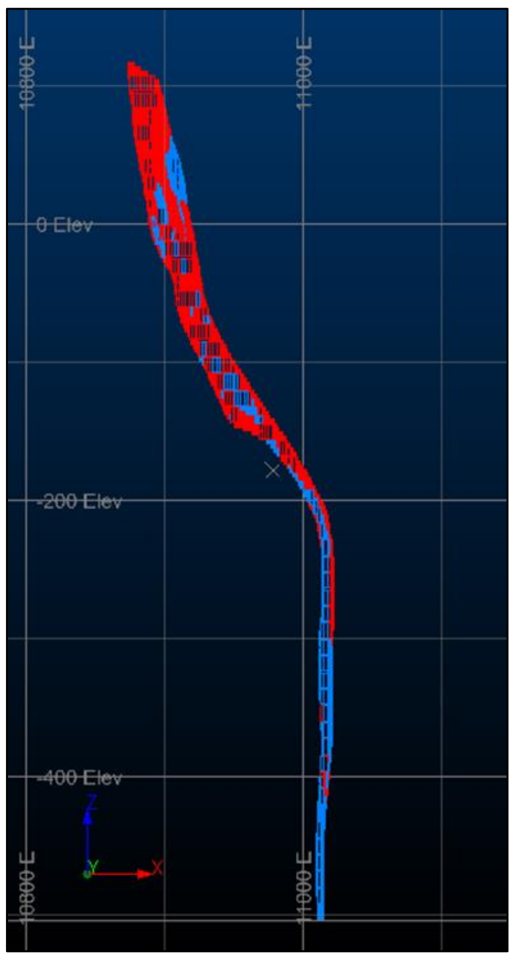


Figure 14-5: Cross Section 5750 mN at Main Pit showing the subdomaining of Lode 2010 With the higher-grade domain in red (201010) and the lower grade domain in blue (20100)

Seventeen mineralised domains were created using this method Table 14-4.

Table 14-4: Mineralisation Domains

Leapfrog™ dxf	Datamine Name	Description	Domain
Central	Central	Main lode (combined N + S domains)	2010
Central	Central	Main lode high grade	201010
Central	Central	Main lode low grade	20100
Central_FW	Central_FW	Main lode FW (combined N + S domains)	2040
Central_HW	Central_HW	Main lode HW	2030
Central_Mid_HW	Central_Mid_HW	Intermediate lode	2020
Eastern	Eastern	Eastern lode	4010
Eastern_HW	Eastern_HW	Eastern HW lode	4020
West	West	West lode	6010
West_N	West_N	Small lode at nth end of deposit	6020
West_FW	West_FW	West FW lode	6030
West_FW2	West_FW2	West FW lode	6040
West_HW	West_HW	West HW lode series	6050
West_HW2	West_HW2	West HW lode series	6120
West_HW3	West_HW3	West HW lode series	6130

Leapfrog™ dxf	Datamine Name	Description	Domain
West_HW4	West_HW4	West HW lode series	6140
West_HW5	West_HW5	West HW lode series	6150
West_HW6	West_HW6	West HW lode series	6160
West_HW7_updated	West_HW7_v2	West HW lode series	6270

14.4.2 Data Compositing and Top-cuts

Data for the Mineral Resource is comprised of DD and RC drillholes, as well as a proportion of underground channel chip sample data from either face, wall or back exposures. Using Datamine software, the data was flagged inside the 3D wireframes and coded by domain. A composite length of 1m was selected as appropriate; however, prior to compositing, it was noted that many samples had sample lengths exceeding 1.5m, including approximately 27% (by length) of samples which exceeded 3.0m. After investigation by MGBL geologists, these samples were determined to be predominantly underground channel samples or intercepts from mineralised fill material from within mined voids and were included. Compositing of these larger samples to 1m has the potential to bias the statistical and variography analysis and as such, samples greater than 3.01m were excluded from this analysis.

All samples were composited to 1m using a best-fit approach using a minimum composite length of 0.50m. Comparisons between the raw and composited sample lengths and grade (metal) were used to validate the compositing process. Naïve composite statistics for all samples is presented in Table 14-5. The coefficient of variation (CoV) which measures the variability in a dataset is the ratio between the standard deviation and the mean. Generally, the CoV for each domain is more than 1.5, relatively high for shear-hosted gold mineralisation with the exception of Domains 6010, 6020, 6130 indicating high variability in the data set. Domain 6020 has the lowest CoV of 0.33 whilst Domain 4010 has the highest CoV of 3.36.

Table 14-5: Composite Statistics

Domain	Samples	Minimum	Maximum	Mean	Standard Deviation	CoV
2010	16398	0.001	183.00	2.62	5.33	2.04
201010	9964	0.001	183.00	3.91	6.41	1.64
20100	6434	0.001	74.00	0.58	1.57	2.72
2020	224	0.005	15.20	1.40	2.26	1.62
2030	2364	0.005	190.00	3.23	9.87	3.05
2040	1622	0.001	44.37	1.12	1.95	1.74
4010	2695	0.001	126.00	2.04	6.87	3.36
4020	868	0.005	98.34	1.57	4.23	2.70
6010	2395	0.001	44.71	2.02	2.64	1.31
6020	25	0.27	0.73	0.39	0.13	0.33
6030	1159	0.005	17.60	1.67	2.03	1.22
6040	162	0.005	12.30	1.17	1.49	1.28
6050	557	0.005	21.80	1.44	2.17	1.51
6120	289	0.005	37.21	1.38	3.12	2.27
6130	240	0.005	20.80	2.24	3.17	1.42
6140	138	0.005	31.75	2.26	4.83	2.13
6150	201	0.005	23.00	2.09	3.13	1.49
6160	271	0.005	52.65	3.00	5.31	1.77
6270	517	0.005	52.64	3.21	5.63	1.75
0	134312	0.001	98.35	0.08	0.67	8.83

Top-cut analysis was completed using a combination of approaches, including examination of the grade distributions (histograms and probability plots), domain statistics and population disintegration. Although many of the statistical measures of outlier grade distribution were not extreme, most domains contained some outlier values when compared with the overall domain population. As such, top-cutting (or capping) of these identified outliers was completed to minimise the local impact of these samples on the estimate. The top-cuts selected, and the impact on the domain statistics for all composites, are presented in Table 14-6.

Table 14-6: Domain Top-cuts

Domain	Top-cut	Percentile	Number cut	Mean			CoV		
				Un-cut	Cut	Diff%	Un-cut	Cut	Diff%
0	1	98.70%	1686	0.08	0.05	30.4%	8.85	2.75	69.2%
2010	40	99.70%	49	2.60	2.52	2.9%	2.01	1.65	17.8%
201010	80	99.9%	8	3.91	3.88	0.8%	1.64	1.51	7.8%
20100	8	99.5%	29	0.58	0.54	7.4%	2.72	1.56	42.7%
2030	40	98.90%	26	3.16	2.73	13.5%	2.08	2.13	30.9%

Domain	Top-cut	Percentile	Number cut	Mean			CoV		
				Un-cut	Cut	Diff%	Un-cut	Cut	Diff%
2040	20	99.90%	2	1.11	1.10	1.6%	1.40	1.50	13.9%
4010	20	98.70%	34	2.05	1.65	19.3%	3.39	1.87	44.9%
4020	20	98.90%	9	1.56	1.40	10.0%	2.72	1.59	41.3%
6010	20	99.90%	3	2.01	2.00	0.6%	1.31	1.25	4.6%
6120	15	98.60%	4	1.38	1.28	7.0%	2.27	1.81	20.4%
6140	20	98.60%	2	2.26	2.09	7.4%	2.13	1.86	12.7%
6160	25	99.30%	2	3.00	2.82	6.1%	1.77	1.40	20.9%
6270	25	99.00%	5	3.21	3.04	5.1%	1.75	1.51	13.9%

14.4.3 Variography

Variography for the mineralised domains was completed in Supervisor v8.14 using normal score transformed data, with the variogram model back-transformed prior to use. For domains with insufficient samples and similar orientations (6120, 6130, 6140, 6150 and 6160), these domains were combined for both the variography and estimation.

Although there is an overall arcuate geometry to the more strike extensive domains, the rate of change did not justify the use of an unfolding approach and the variography was prepared in Euclidean space. The downhole variogram was used to define the nugget component of the modelled variogram and the spatial variograms were modelled using spherical structures. All back-transformed variogram models are presented in Table 14-7.

Table 14-7: Domain Variogram Models (Back-Transformed)

Domain	Direction		Nugget effect	Sill 1	Range 1m	Sill 2	Range 2m	Sill 3	Range 3m
0	Major	-00°→355°	0.223	0.535	25	0.116	125	0.126	320
	Semi-major	-80°→265°			20		120		165
	Minor	-15°→352°			6		15		23
201010	Major	-00°→355°	0.352	0.538	17	0.049	44	0.061	437
	Semi-major	-80°→265°			22		105		200
	Minor	-10°→353°			4		20		50
20100	Major	-00°→355°	0.217	0.653	8	0.076	40	0.054	280
	Semi-major	-85°→260°			10		60		110
	Minor	-10°→171°			5		20		25
2020	Major	-00°→355°	0.254	0.487	45	0.259	115		
	Semi-major	-85°→085°			15		20		
	Minor	-35°→172°			5		6		
2030	Major	00°→345°	0.19	0.405	15	0.28	65	0.125	120
	Semi-major	-80°→075°			35		70		155
	Minor	-05°→164°			4		9		10
2040	Major	-00°→340	0.24	0.475	33	0.285	125		
	Semi-major	-90°→000			35		90		
	Minor	-30°→160			2		4		
4010	Major	-00°→340	0.301	0.404	20	0.295	145		
	Semi-major	-60°→070°			5		65		
	Minor	-013°→348			11		12		
4020	Major	-00°→340	0.247	0.439	40	0.314	100		
	Semi-major	-70°→070°			110		115		
	Minor	-37°→356			5		10		
6010	Major	-00°→355°	0.235	0.619	10	0.146	85		
	Semi-major	-80°→265°			9		35		
	Minor	-44°→185°			4		5		
6030	Major	00°→345°	0.175	0.475	8	0.23	25	0.12	55
	Semi-major	-90°→000			15		40		60
	Minor	-70°→345°			2		4		6
6050	Major	-00°→000	0.244	0.382	5	0.232	40	0.142	50
	Semi-major	-75°→270			10		27		30
	Minor	-69°→224			2		8		14
6100	Major	-00°→340	0.378	0.416	5	0.206	50		
	Semi-major	-75°→250			4		12		
	Minor	-57°→184			8		11		
6270	Major	-00°→315	0.179	0.375	20	0.446	75		
	Semi-major	-85°→225			20		45		

Domain	Direction		Nugget effect	Sill 1	Range 1m	Sill 2	Range 2m	Sill 3	Range 3m
	Minor	-65°→304			4		5		

14.4.4 Block Model

A block model was created in Surpac utilising the block model parameters presented in Table 14-8. The block model is not rotated and was created using the local mine grid. Comparison between the domain wireframes and block model volumes confirms that these parameters appropriately capture the mineralisation.

Table 14-8: Main Pit Block Model Parameters

	Northing (mN)	Easting (mE)		Elevation (mRL)
Minimum coordinates	4,500	10,300		-504
Maximum coordinates	7,000	11,700		409
Parent block size (m)	20.0	5.0		24.0
Minimum block size (m)	5.0	0.625		3.0

Kriging Neighbourhood Analysis (KNA) was undertaken using Supervisor v8.14 to ensure the optimal block size and estimation parameters (minimum and maximum numbers of informing samples, search radius and discretisation) were selected. Domain 2010, the Central domain which had the greatest gold accumulation (volume x mean grade), was selected to test the optimal block size. Using the domain variography and several block locations, comparative metrics (kriging efficiency, slope of regression and number of negative weights) were analysed. In summary, a block size of 5 mE x 20 mN x 24 mRL was selected, with testing on other significant domains supporting its suitability.

The number of informing samples were then tested for the selected block size and consistently a minimum of 8 samples was required. No significant improvement in the estimation metrics was observed for any of the zones once there were at least 34 samples, and so these limits were selected as the minimum and maximum number of informing samples for estimation.

14.4.5 Grade Estimation

The block model was exported into Datamine Studio RM for estimation of gold using OK. No other elements have been estimated. Due to the arcuate overall geometry of the mineralisation, Dynamic Anisotropy (DA) was adopted for grade estimation. DA uses local orientation information to transform the search and variogram ellipses for estimation for each block, optimising the estimation for domains with varying geometry like that at Main Pit. The mineralised wireframes were used to estimate the true dip and true dip direction Figure 14-6 for each domain.

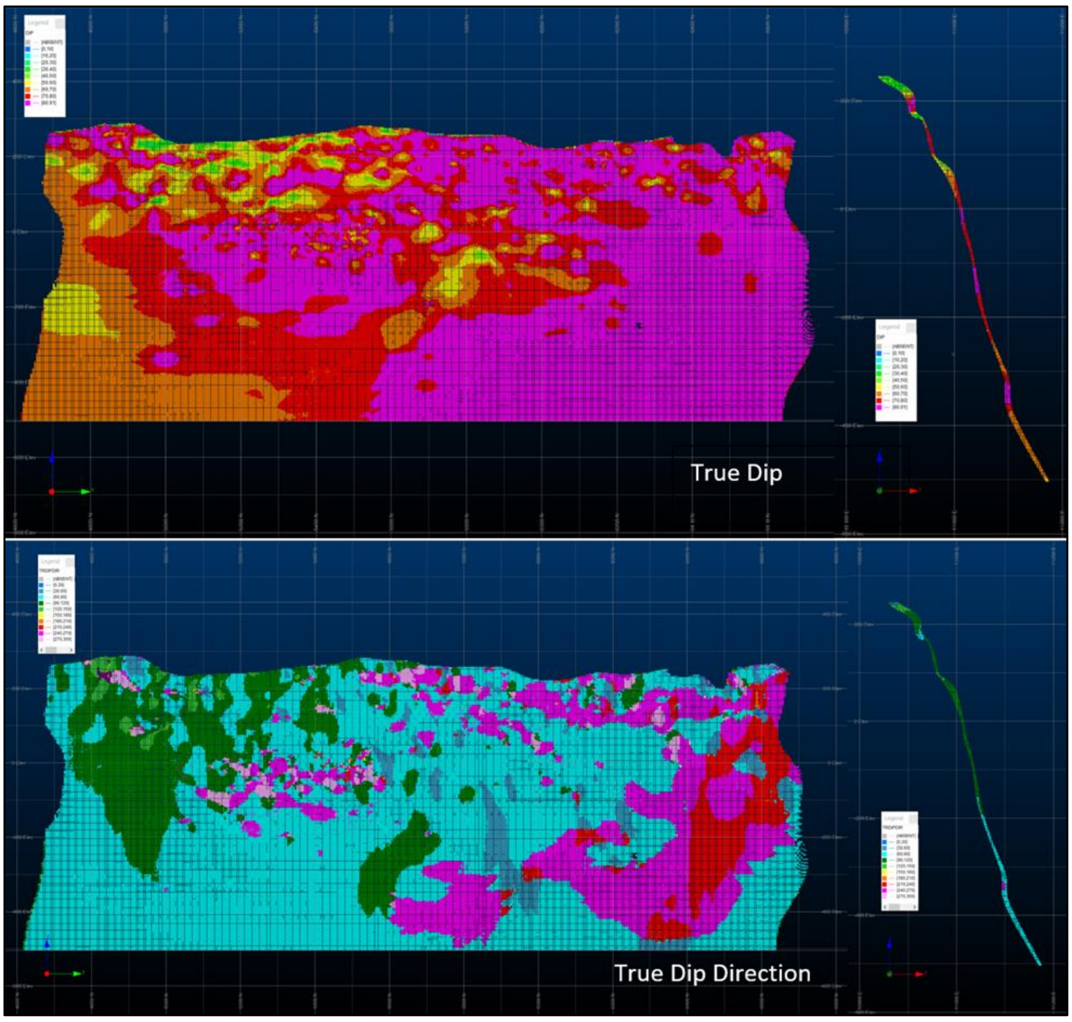


Figure 14-6: Domain 2010 Long-Section and Cross-Section Views Showing True Dip (Upper) and True Dip Direction (Lower)

Search parameters are presented in Table 14-9. A total of three search passes were used; if blocks remained un-estimated after the final pass blocks were assigned the grade of the nearest informed block. Of the total model, 77% (by volume) was estimated in the first pass, 10% in the second pass, 8% in the third pass and 5% had nearest grades assigned. Where the grade of the assigned block was greater than the average grade of the domain the blocks were given the average grade, this accounted for 1% of the blocks.

Table 14-9: Search Parameters

Domain	Max Key	Pass 1	Pass 2	Pass 3
		8 to 34 Samples	6 to 34 Samples	4 to 34 Samples
201010	-	195m x 100m x 30m	243.75m x 125m x 37.5m	292.5m x 150m x 45m
20100	3	455m x 188m x 35m	568.75m x 235m x 43.75m	682.5m x 282m x 52.5m
2020	3	115m x 20m x 6m	143.75m x 25m x 7.5m	172.5m x 30m x 9m
2030	30	120m x 155m x 10m	150m x 193.75m x 12.5m	180m x 232.5m x 15m
2040	4	125m x 90m x 4m	156.25m x 112.5m x 5m	187.5m x 135m x 6m
4010	4	145m x 65m x 12m	181.25m x 81.25m x 15m	217.5m x 97.5m x 18m
4020	2	100m x 115m x 10m	125m x 143.75m x 12.5m	150m x 172.5m x 15m
6010	4	85m x 35m x 5m	106.25m x 43.75m x 6.25m	127.5m x 52.5m x 7.5m
6030	4	55m x 60m x 6m	68.75m x 75m x 7.5m	82.5m x 90m x 9m
6040	4	55m x 60m x 6m	68.75m x 75m x 7.5m	82.5m x 90m x 9m
6050	3	50m x 30m x 14m	62.5m x 37.5m x 17.5m	75m x 45m x 21m
6100	3	50m x 12m x 11m	62.5m x 15m x 13.75m	75m x 18m x 16.5m
6270	4	75m x 45m x 5m	93.75m x 56.25m x 6.25m	112.5m x 67.5m x 7.5m
0	3	320m x 165m x 20m	320m x 165m x 20m	320m x 165m x 20m

14.4.6 Block Model Validations

The techniques adopted for the validation of the block estimates range from global mean comparison of estimates and composites using classical statistics, visual comparisons and swath analyses between the block model estimates and the composite data used to inform them.

14.4.6.1 Global Mean comparisons

Global domain mean comparisons between the declustered top-cut composites and the block model estimates are presented in Table 14-10.

Table 14-10: Global Composite and Block Estimate Comparisons

Domain	No Comps	Estimated Mean	Top-cut Comp Mean	Declustered Top-cut Comp Mean	% Diff with Top-cut Mean	% Diff with Top-cut Declustered Mean
201010	9955	3.38	3.60	3.27	-6.4%	3.2%
20100	6421	0.66	0.63	0.71	4.8%	-6.9%
2020	224	1.28	1.40	1.24	-8.6%	2.7%
2030	2329	2.81	2.79	2.43	0.6%	15.7%
2040	1623	1.08	1.10	1.05	-1.4%	3.1%
4010	2675	1.60	1.67	1.64	-4.3%	-2.4%
4020	868	1.36	1.46	1.46	-6.4%	-6.6%
6010	2380	2.11	2.00	1.94	5.0%	8.5%
6030	1160	1.51	1.67	1.32	-9.5	14.2%
6040	162	1.21	1.17	1.25	3.2%	-3.2%
6050	557	1.60	1.45	1.58	10.5%	0.9%
6100	1139	1.87	2.09	1.51	-10.6	23.6%
6270	517	2.15	3.04	2.18	-29.4%	-1.4%

It is observed from Table 14-10 that the global correspondence between the estimates and composites in the domains is satisfactory.

14.4.6.2 Visual Checks

Initial validation consisted of a visual comparison of the input samples and the estimated block grade in cross section and plan view. The block estimates and sample composites data were superimposed on each other, and colour coded with the same legend for Au for comparison purposes. Visual checks of the model against the sample data used to inform the estimates shows that the estimated blocks reasonably match the sample data used to inform them particularly in areas that have significant data to inform the estimates. All the visual checks confirm that the block estimates are a reasonable representation of the informing data considering the current level of geological and geostatistical understanding of areas within the reach of the definition drilling as shown in Figure 14-7 and Figure 14-8.

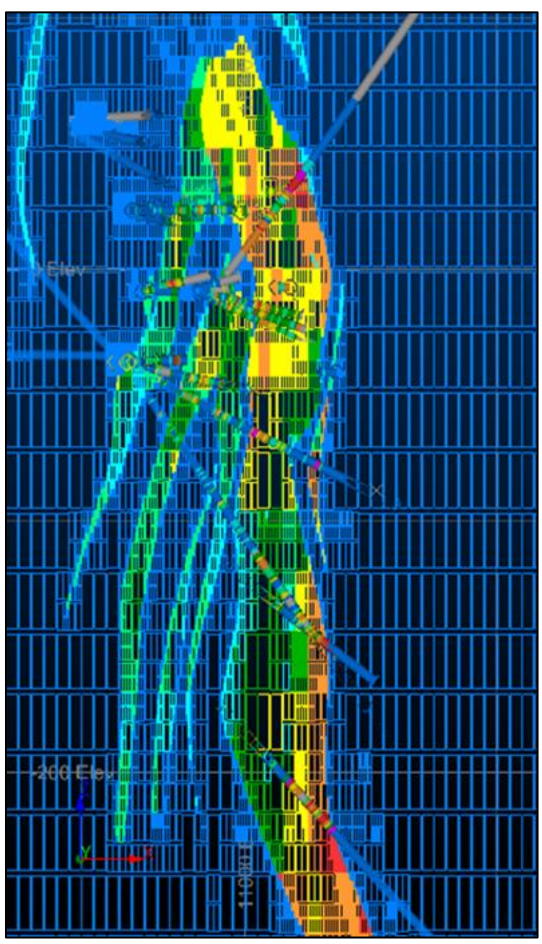


Figure 14-7: Comparison Between Composites and Block Grades in Cross Section (5235 mN)

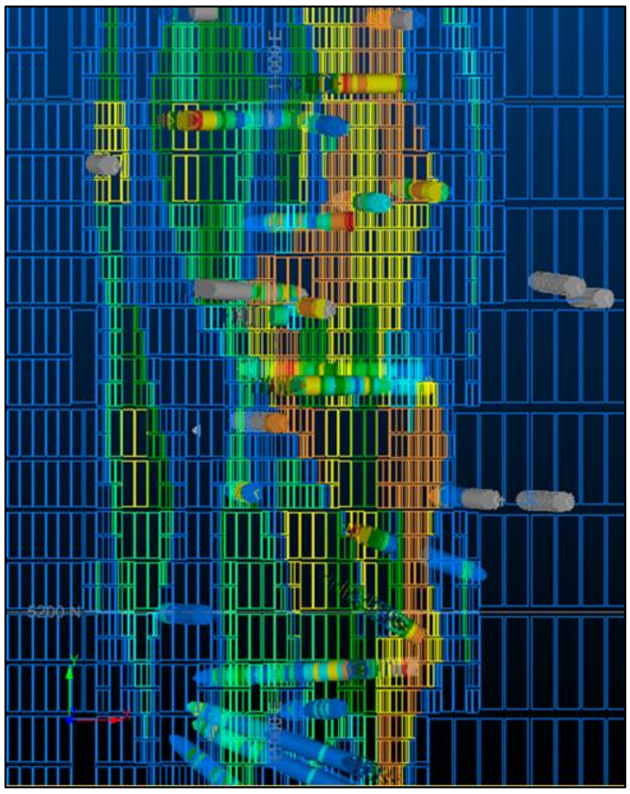


Figure 14-8: Visual Comparison of Samples and Block Model in Plan View (0RL)

14.4.6.3 Swath Analysis

Swath plots for local scale comparison i.e., validation between the averages of the estimated block contents with the averages of the clustered samples were generated. This validation was performed for each domain along easting, northing and elevation dimensions. An example from domain 201010 is presented in Figure 14-9.

The results of the swath validation for sample data and block model estimates exhibited an expected degree of smoothing due to kriging. The estimated values tend to follow the sample values reasonably well, particularly in well sampled areas. But as you move further away from the well sampled areas and into areas that are poorly sampled (low drilling density) and towards deeper portions of the deposit, the estimates are poorly informed.

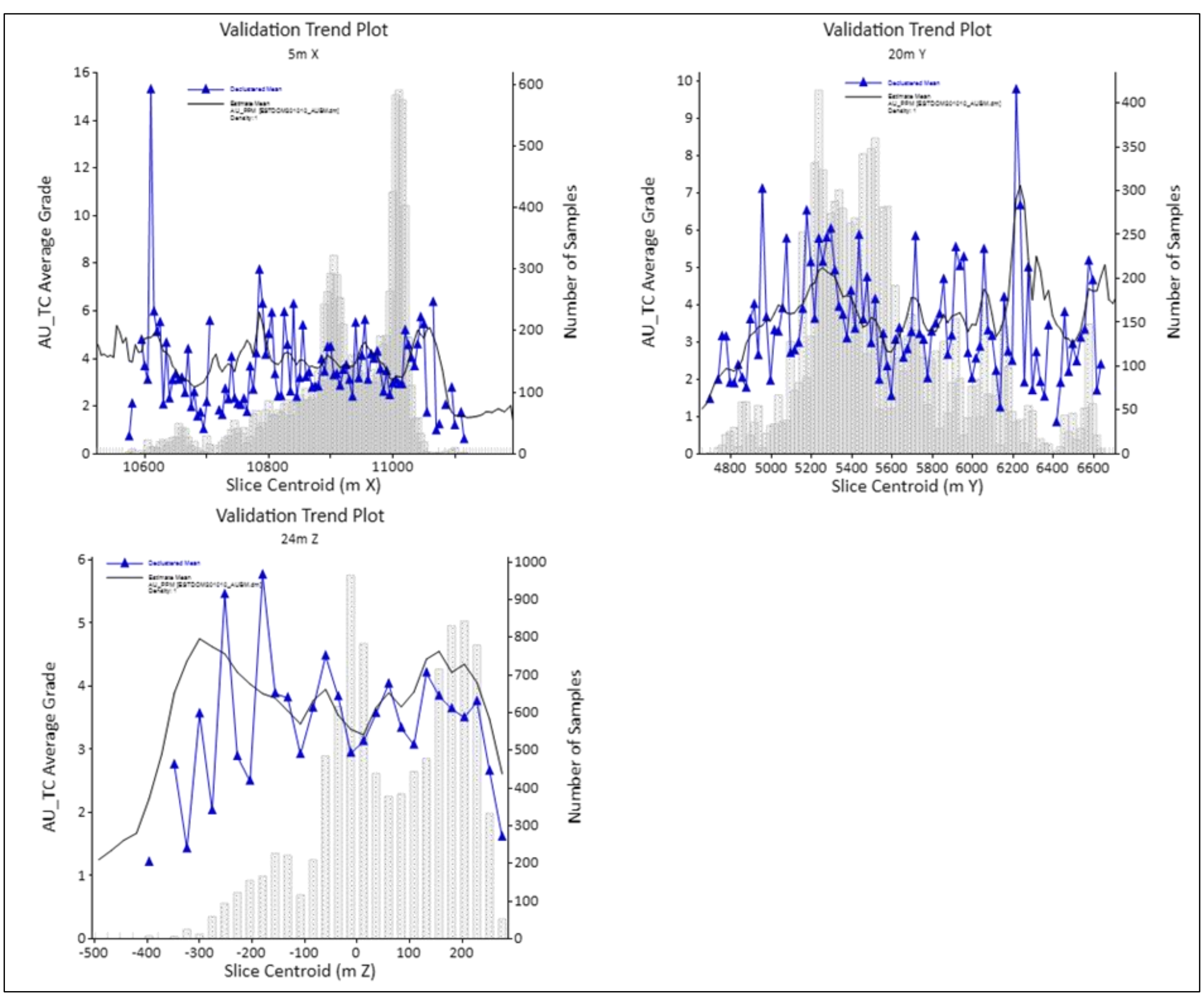


Figure 14-9: Swath Plots for Domain 201010; Easting (Top Left), Northing (Top Right) and Elevation (Bottom)

14.4.7 Qualified Person Review

In the light of the Company's plan to optimise the transition from open pit mining to underground mining of the Main Pit deposit, Maja completed a review of the Mineral Resource estimate disclosed in 2022, in particular the mineralised domain models since these were generated in 2021-2022 under the assumption of open-pit mining only. It was appropriate to review this model in the context of its validity to an open pit and underground mining strategy, with or without modification, for downstream use under the current plan to transition to underground mining earlier than planned.

The following reviews were completed:

- Reporting check and review of the Optiro March 2022 MRE model and associated mineralisation wireframes.
- Investigation of new drilling completed since the 2022 estimate.
- Trial estimation for Main Zone.
- Spatial review of estimation domains against drilling data.
- Review of estimation composite statistics and top-cuts per estimation domain.
- Review of estimation parameters.
- Review of swath and statistical validations.
- Review of classification categorisation.
- RPEEE reporting.

A drill hole collar plan is set out in the Figure below, where; DD = diamond drilling, RC = reverse circulation drilling, RCD = RC collar with a DD tail, CHAN/UG_C = underground channel and UG_D = underground diamond drilling.

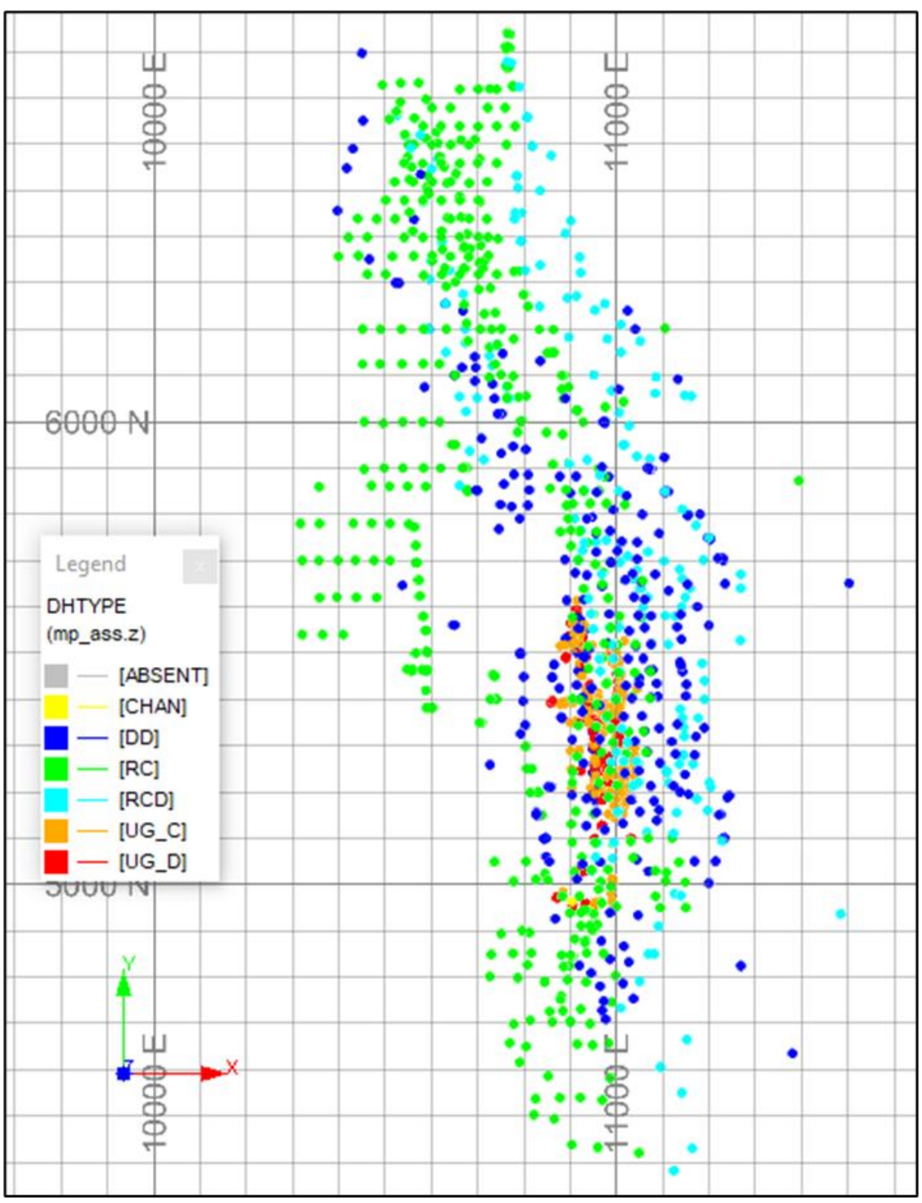


Figure 14-10: Plan View of Drill Hole Collars at Main Pit (as at December 2023)

The 2022 Mineral Resource estimate for Bibiani Main Pit was estimated by Optiro in 2022 and reported in the 2022 NI43-101 Technical Report, Bibiani Gold Project. There have been 16 additional drillholes drilled at the south end of the Main Pit since the 2022 MRE. Figure 14-10. shows collar position relative to the current mining surface. The drilling intercepted the mineralised envelope defined in the 2022 MRE but are not considered to have a material, or indeed significant impact on the MRE, were it to have been updated to include this new drilling.

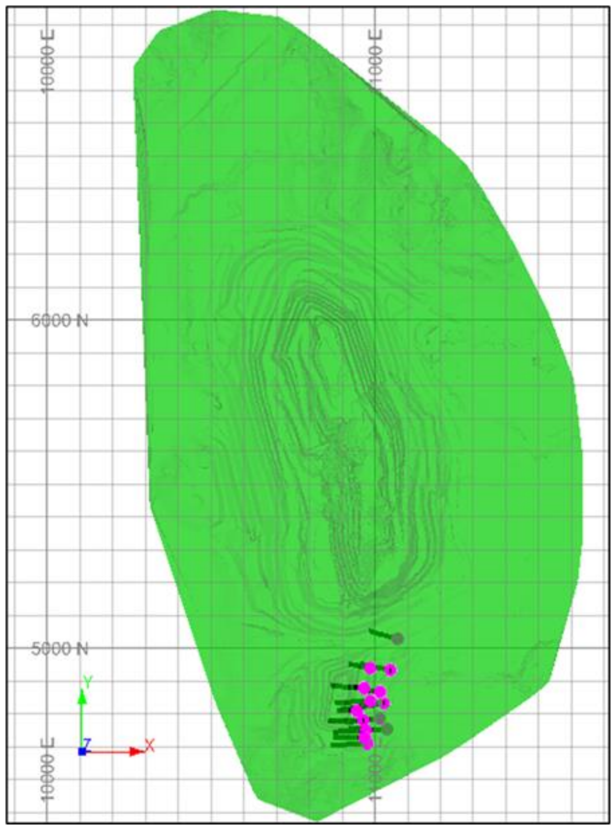


Figure 14-11: Plan View of Main Pit Showing the 15 Additional Drillholes Completed Since the 2022 MRE)

14.4.8 Qualified Person Conclusion

The QP is satisfied that both the data and geological methods used to estimate the Main Pit mineral resource are appropriate. The grade estimates were validated during the review and are considered appropriate for downstream use. Justification of "reasonable prospects of eventual economic extraction" (RPEEE), Mineral Resource classification, and Mineral Resource reporting for the Main Pit are set out in Sections 14.9, 14.10 and 14.11 respectively.

14.4.9 Depletion

The 2022 Mineral Resource has been depleted for both the open pit and underground workings to 31 December 2023.

14.5 Walsh Strauss Satellite Pits

The Mineral Resource estimates for Walsh and Strauss (collectively terms the "Satellite Deposits") have not been updated since those disclosed in 2022. This section reproduces content from the 2022 Technical Report, where it remains current. The QP has reviewed the MRE workflow and accepts responsibility for the content reproduced here, and where appropriate has provided opinion. Mineral Resource reporting modifications have been made following technical review, in the areas of Mineral Resource classification, final depletion for production and RPEEE assessment. Mineral Resources are reported inclusive of Mineral Reserves that may be derived from them.

14.5.1 Geological and Mineralisation Modelling

The Walsh and Strauss (including Strauss South) deposits, collectively termed the "Satellite Deposits" are hosted within a sequence volcanoclastic sediment. A series of felsic intrusive parallel the foliation and mineralisation. The geometry of the mineralisation is structurally controlled, and is hosted in a steep, north to northeast trending shear corridor ranging in width of 100m to 200m. In general, mineralisation lodes dip east at between 60° to 80°.

3D mineralisation interpretations were generated suitable for open pit mining studies using Leapfrog™ software based upon the available DD and RC drilling. An EDA and review of the spatial distribution of the lower grade material was carried out to assess if a lower cut-off would produce coherent interpretations. After statistical analysis of the assay data a nominal cut-off value of 0.3g/t Au was selected. Mineralisation wireframes were created using this cut-off and a minimum downhole thickness of 2m. Up to three metres of internal waste were included in domains to maintain continuity. Interpretations were geology based, guided by the presence of a logged structure, with or without quartz veining, and combined with gold grade. Previous MRE modelling was used as guide to create the current wireframes.

A total of 25 mineralisation domains shown in Figure 14-12, Figure 14-13 and Table 14-11 have been identified at Walsh Strauss, seven at Walsh, five at Strauss South and 13 at Strauss. Domains at Walsh (5000 to 5500) strike ENE, dip steeply to the east and are continuous over 600m. The domains at Strauss South (6100 to 6500) curve around from ENE to N-S over 400m and dip steeply to the east. At Strauss (7100 to 7460) the domains strike N-S and dip steeply to the east. Mineralisation is continuous over 900m of strike length.

High grade mineralisation at Walsh and Strauss is delineated utilising 2D strings to develop subdomains.

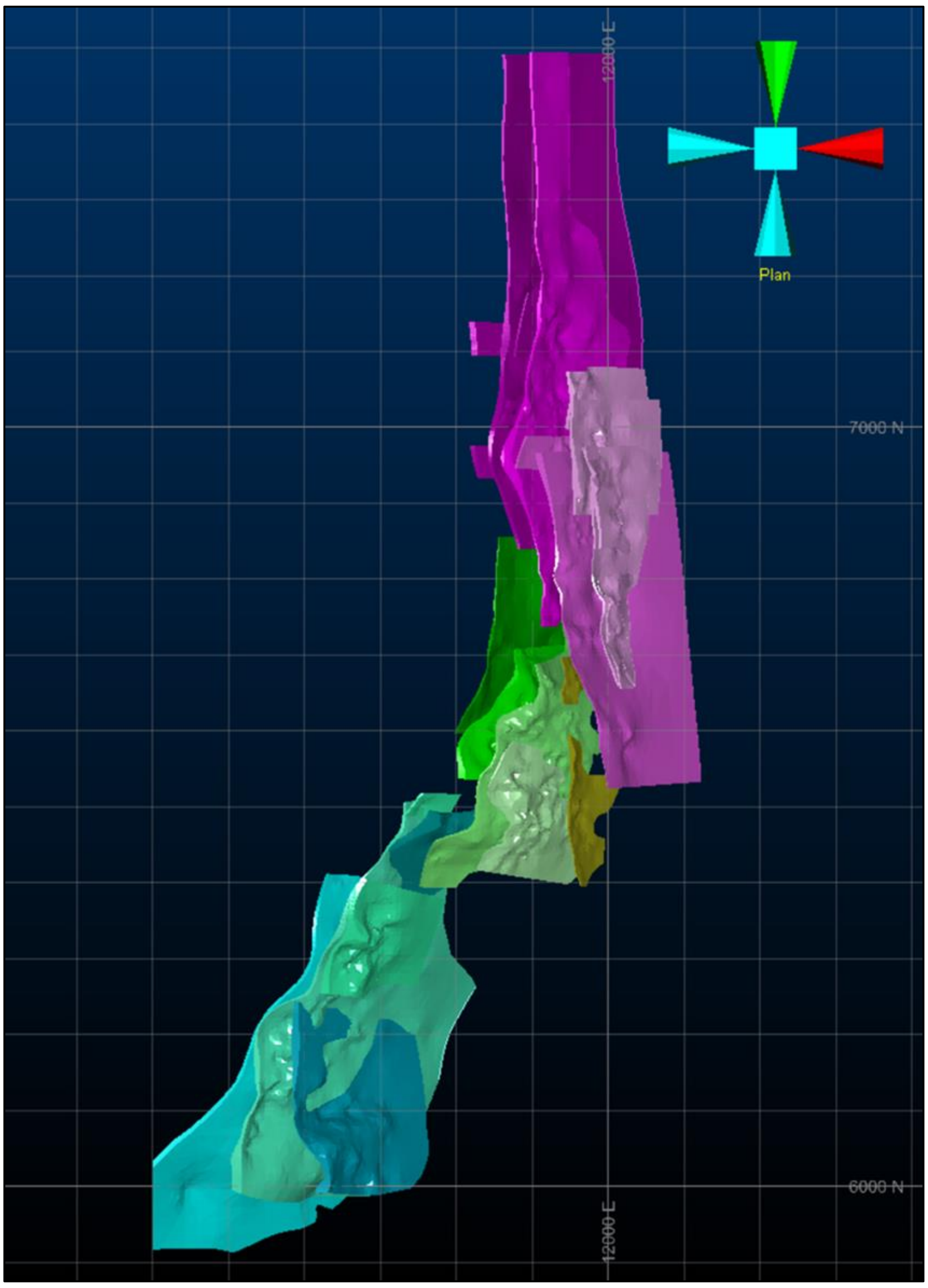


Figure 14-12: Plan View of Domains at Walsh Strauss. Blue = Walsh Domains; Green = Strauss South; Purple = Strauss

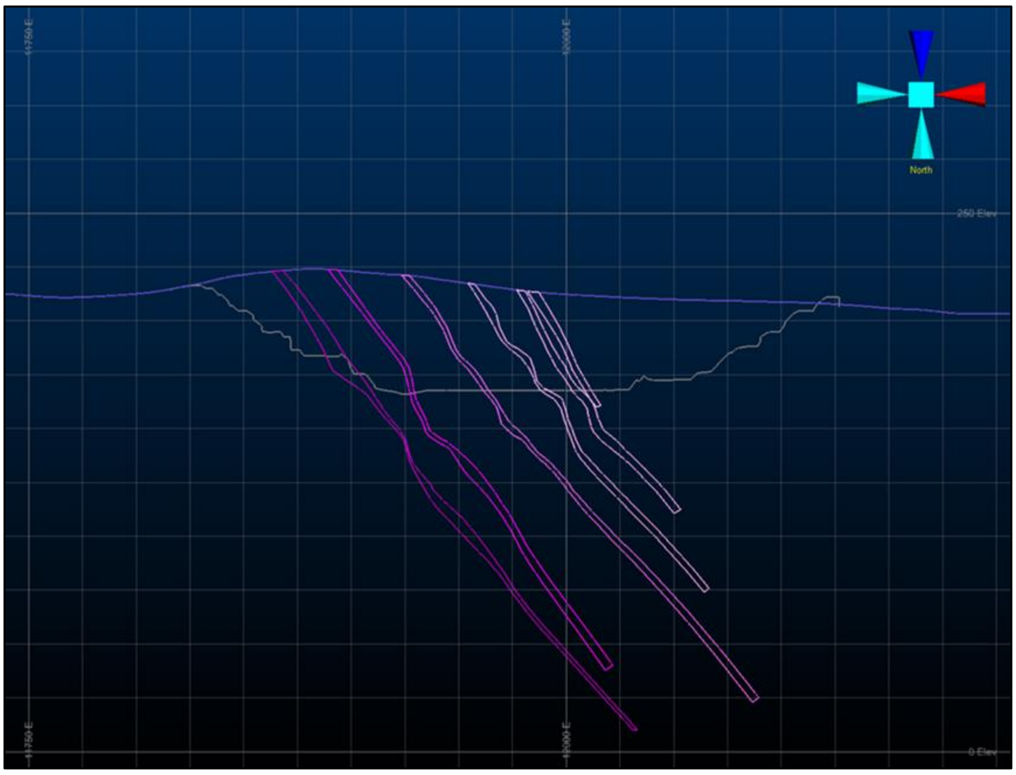


Figure 14-13: Cross Section (6895mn) Through the Strauss Domains Showing Pre-Mining Topography, as Mined Pit Shell and Mineralisation Domains

Table 14-11: The Wireframe Names and Corresponding Domain Numbers used to Code the Wireframes and Block Model

Name	Domain Number
Walsh Main splay	5100
Walsh SW	5200
Walsh SE	5300
Walsh SE HG	5301
Walsh NE	5400
Walsh NE HG	5401
Walsh NE Vertical	5500
Strauss South 01	6100
Strauss South 02	6200
Strauss South 03	6300
Strauss South 04	6400
Strauss South 05	6500
Strauss 1A	7100
Strauss 1A HG	7101
Strauss 1B	7150
Strauss 1B HG	7151
Strauss 1A_E	7160
Strauss 1A_W	7170
Strauss 1C	7180
Strauss 2A	7200
Strauss 2B	7250
Strauss 3A	7300
Strauss 4A	7400
Strauss 4A_E	7450
Strauss 4A_W	7460
Waste	9999

14.5.2 Data Composting and Top-cuts

Data for the Mineral Resource was provided as an Access database, where end tables were exported in .csv format for use. Assays from drillhole intervals with lithology logged as FILL were excluded from the data set used to interpret and estimate the Mineral Resource. Using Datamine Studio RM software, the data was flagged inside the three-dimensional wireframes and coded by domain. A composite length of 1m was selected as appropriate; however, prior to compositing, it was noted a small number of samples were either smaller (5%) or larger (4%) than the selected composite length. The minimum length is 0.5m and the maximum length is 1.5m. Compositing of longer samples to 1m have the potential to bias the statistical and variography analysis, however the impact of these samples at Walsh Strauss is not considered material.

All samples were composited to 1m using a best-fit approach using a minimum composite length of 0.50m. Comparisons between the raw and composited sample lengths and Au grade were used to validate the compositing process. Naïve composite statistics for all samples and the subset used for variography are presented in Table 14-12. Overall, the CoV for each domain are considered relatively high for shear-hosted gold mineralisation with all domains having large positive coefficients of skewness indicative of high variability in the data. Domain 5200 has a considerably high CoV of 14.04 whilst Domain 7460 has the lowest CoV of 1.34.

Table 14-12: Walsh Strauss 1m Composite Statistics of Gold Grade

Domain	Samples	Minimum	Maximum	Mean	Standard Deviation	Variance	CoV
5000	2288	0.0005	323.10	1.88	9.02	81.29	4.79
5100	479	0.0005	15.40	0.97	1.76	3.10	1.82
5200	1326	0.0005	453.30	0.97	13.69	187.37	14.04
5300	597	0.0005	79.40	1.70	5.33	28.41	3.13
5400	414	0.0005	15.09	0.59	1.35	1.82	2.30
5500	29	0.0005	3.77	0.30	0.75	0.57	2.55
6100	279	0.0005	7.89	0.41	0.75	0.57	1.85
6200	481	0.0005	55.51	1.12	4.30	18.51	3.84
6300	1273	0.0005	31.43	0.90	1.91	3.66	2.13
6400	441	0.0005	6.93	0.27	0.70	0.49	2.62
6500	283	0.0005	49.20	0.86	4.24	17.95	4.93
7100	417	0.0005	102.78	2.29	8.20	67.17	3.58
7150	403	0.0005	78.62	2.45	6.69	44.72	2.73
7160	235	0.0005	24.41	0.33	1.65	2.72	5.01
7170	172	0.0005	5.60	0.22	0.73	0.54	3.37
7180	153	0.0005	16.42	0.93	1.55	2.39	1.66
7200	544	0.0005	46.61	1.15	3.54	12.55	3.07
7250	87	0.0005	27.76	1.01	3.28	10.73	3.26
7300	1109	0.0005	73.84	1.12	2.70	7.31	2.42
7400	982	0.0005	34.17	0.90	2.32	5.38	2.58
7450	129	0.0005	4.56	0.29	0.57	0.33	1.95
7460	96	0.0005	4.09	0.55	0.74	0.55	1.34

Note High Grade Domains are Absent from this Analysis and are Incorporated into the Low-Grade Data.

Top-cut analysis was completed using a combination of approaches, including examination of the grade distributions (histograms and probability plots), domain statistics and population disintegration. Although many of the statistical measures of outlier grade distribution were not extreme, the majority of domains contained some outlier values when compared with the overall domain population. As such, top-cutting of these identified outliers was completed to minimise the local impact of these samples on the estimate. The top-cuts selected, and the impact on the domain statistics for all composites and the variography subsets, are presented in Table 14-13.

Table 14-13: Walsh Strauss Domain Top-cuts

Domain	No. Composites	Top-cut			Mean			Coefficient of Variation		
		Value	# Cut	Percentile	Uncut	Cut	% diff.	Uncut	Cut	% diff.
5000	1651	15	6	99.7%	1.03	0.84	18.3%	7.57	1.96	74.1%
5001	637	30	19	97.0%	3.87	3.11	19.6%	2.75	1.89	31.0%
5100	479	10	4	99.2%	0.93	0.89	3.5%	1.92	1.75	9.4%
5200	1326	5	16	98.9%	0.94	0.4	57.2%	14.26	1.9	86.7%
5300	346	7	7	98.1%	1.01	0.69	31.8%	4.66	1.98	57.6%
5301	251	20	9	96.4%	2.63	2.34	10.8%	2.23	1.93	13.4%
5400	240	No Top-cut			0.09			3.17		
5401	174	No Top-cut			1.26			1.46		
5500	29	2	1	96.0%	0.34	0.27	20.8%	2.42	1.97	18.4%
6100	279	No Top-cut			0.41					
6200	481	10	8	98.3%	1.12	0.81	28.1%	3.84	1.98	48.3%
6300	1273	15	6	99.5%	0.89	0.86	3.3%	2.14	1.83	14.1%

Domain	No. Composites	Top-cut			Mean			Coefficient of Variation		
		Value	# Cut	Percentile	Uncut	Cut	% diff.	Uncut	Cut	% diff.
6400	441	2	10	97.7%	0.27	0.23	15.5%	2.62	1.99	24.0%
6500	283	5	6	97.9%	0.86	0.48	44.8%	4.92	1.9	61.4%
7100	285	10	1	99.6%	0.74	0.57	22.8%	4.74	1.72	63.8%
7101	132	50	3	97.7%	5.65	5.15	8.8%	2.31	1.97	14.9%
7150	197	7	2	99.0%	0.52	0.49	5.3%	2.1	1.91	9.4%
7151	206	45	3	98.6%	4.28	4.06	5.1%	2.11	1.86	11.6%
7160	235	3	3	98.7%	0.35	0.24	30.2%	4.76	1.74	63.3%
7170	172	2.5	5	96.9%	0.23	0.18	20.6%	3.3	2.75	16.6%
7180	153	10	1	99.4%	0.91	0.87	4.5%	1.69	1.33	0.6%
7200	544	8	18	96.8%	1.12	0.84	24.4%	3.13	2.13	31.9%
7250	87	6	4	95.5%	0.98	0.66	32.7%	3.32	1.93	41.9%
7300	1109	25	1	99.5%	1.11	1.07	3.9%	2.42	1.63	32.7%
7400	982	15	5	99.5%	0.9	0.84	7.1%	2.57	1.98	29.8%
7450	129	No Top-cut			0.3			1.96		
7460	96	No Top-cut			0.57			1.35		

14.5.3 Variography

Variography for the mineralised domains was completed in Supervisor v8.14.1. Parallel, subsidiary, domains utilised variogram orientations borrowed from the main domains. Directions of maximum continuity along strike and down dip fit the overall geology of the mineralised package.

Although there is an overall arcuate geometry, particularly in the Strauss South domains, the rate of change did not justify the use of an unfolding approach, DA was applied during estimation to account for variations in domain orientation. The downhole variogram was used to define the nugget component of the modelled variogram and the spatial variograms were modelled using spherical structures. All variogram models are presented in Table 14-14.

Table 14-14: Variogram Models Applied to the Walsh Strauss

Domain	Rotations	C_0	Structure 1		Structure 2	
			C_1	A_1	C_2	A_2
Walsh	120– axis 3	0.29	0.43	28	0.28	165
	50 – axis 1			28		125
	165 – axis 3			7		10
Strauss South	100 – axis 3	0.30	0.40	30	0.30	50
	50 – axis 1			18		25
	180 – axis 3			4		5
Strauss	90 – axis 3	0.30	0.60	15	0.10	135
	50 – axis 1			9		60
	0 – axis 3			8		10

14.5.4 Block Model

A block model was created in Datamine Studio RM utilising the block model parameters presented in Table 14-15. The block model is not rotated and was created using the local mine grid. Comparison between the domain wireframes and block model volumes confirms that these parameters appropriately capture the mineralisation.

Table 14-15: Walsh Strauss Block Model Parameters

	Northing (mN)	Easting (mE)	Elevation (mRL)
Minimum coordinates	5,850	11,400	-60
Maximum coordinates	7,500	12,150	324
Parent block size (m)	5	10	6
Minimum block size (m)	0	0	0

domain at Walsh, was selected to test the optimal block size. Using the domain variography comparative metrics (kriging efficiency, slope of regression and number of negative weights) were analysed. In summary, a block size of 5mE x 20mN x 6mRL was selected, with testing on other significant domains supporting its suitability.

The number of informing samples were then tested for the selected block size, a minimum of 10 provided robust results, this coupled with a maximum of three samples per drillhole ensures at least three holes are used to estimate a block.

No significant improvement in the estimation metrics was observed for any of the zones once there were at least 30 samples, and so these limits were selected as the minimum and maximum number of informing samples for estimation.

14.5.5 Grade Estimation

The Au grade was estimated using OK into the mineralised blocks. No other elements were estimated. Variogram parameters are presented in Table 14-14, and search parameters are presented in Table 14-16. A maximum of 3 samples per drillhole were used to ensure that at least three drillholes were informing each block estimate and three search passes were used to inform the blocks. Of the mineralised model, 83% was estimated in the first pass, 13% in the second pass and 4% in the third pass.

DA was adopted for grade estimation to ensure the search ellipse orientation was optimised to the orientation of the wireframe. DA uses local wireframe orientation information to transform the search and variogram ellipses for estimation for each block, the true dip and true dip direction data from the wireframes is estimated into blocks for each domain and used to orient the search ellipse in estimation Figure 14-14.

Table 14-16: Search Parameters Applied to the Walsh Strauss Estimation

Domain	Pass 1	Pass 2	Pass 3
	10 to 30 Samples	**8 to 30 Samples**	**6 to 30 Samples**
Walsh	165m x 125m x 10m	165m x 125m x 10m	330m x 250m x 20m
Strauss South	50m x 25m x 10m	100m x 50m x 20m	200m x 100m x 40m
Strauss	135m x 60m x 10m	270m x 120m x 20m	540m x 240m x 40m

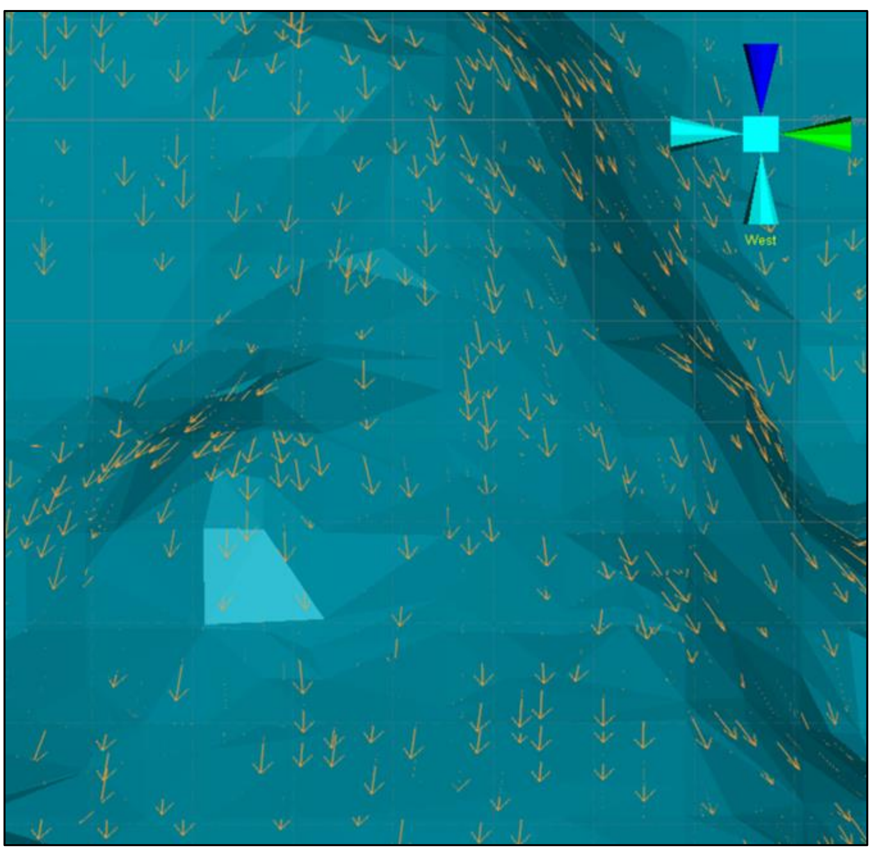


Figure 14-14: Example of Wireframe Dip and Dip Direction Information from Domain 5300 used to Inform the Orientation of the Search Ellipse in Estimation

14.5.6 Block Model Validations

14.5.6.1 Global Mean Comparisons

Global domain mean comparisons between the top-cut composites and the block model estimates were also completed and the result are presented in Table 14-17. Composites were also declustered for this comparison.

Table 14-17: Gold Composite and Block Estimate Comparisons

Domain	# Samples	Top-cut Sample Mean	Declustered Sample Mean	Model Mean	Variance to Naive Mean	Variance to Declustered Mean
5000	1651	0.88	1.04	0.93	5.0%	-11.0%
5001	637	2.98	3.02	3.03	1.6%	0.3%

Domain	# Samples	Top-cut Sample Mean	Declustered Sample Mean	Model Mean	Variance to Naive Mean	Variance to Declustered Mean
5100	479	0.94	0.77	0.83	-12.1%	7.1%
5200	1326	0.40	0.38	0.40	-0.7%	6.1%
5300	346	0.67	0.67	0.75	12.4%	13.2%
5301	251	3.51	4.97	5.46	55.4%	9.8%
5400	240	0.09	0.11	0.07	-24.3%	-34.0%
5401	174	1.27	1.31	1.25	-1.7%	-4.7%
5500	29	0.24	0.21	0.23	-2.3%	10.6%
6100	279	0.41	0.43	0.43	4.7%	0.2%
6200	481	0.80	0.81	0.87	8.2%	7.4%
6300	1273	0.87	0.82	0.82	-6.2%	-0.7%
6400	441	0.23	0.23	0.20	-11.0%	-14.1%
6500	283	0.47	0.49	0.50	5.2%	2.7%
7100	285	0.56	0.50	0.51	-9.6%	1.0%
7101	132	5.15	5.14	5.84	13.4%	13.6%
7150	197	0.53	0.62	0.68	27.7%	9.2%
7151	206	4.03	4.12	4.02	-0.1%	-2.2%
7160	235	0.22	0.22	0.22	-0.4%	2.8%
7170	172	0.17	0.15	0.15	-14.5%	-1.3%
7180	153	0.89	0.75	0.69	-22.6%	-7.9%
7200	544	0.87	0.67	0.62	-29.3%	-8.6%
7250	87	0.68	0.63	0.63	-6.3%	0.5%
7300	1109	1.07	0.96	0.97	-10.1%	0.7%
7400	982	0.84	0.72	0.77	-8.0%	7.5%
7450	129	0.29	0.29	0.27	-8.2%	-7.2%
7460	96	0.55	0.55	0.56	1.6%	0.9%

It is observed from Table 14-10 that the global correspondence between the estimates and composites in the domains is satisfactory with the exception of Domain 5400 whose high percentage difference is attributed to low grades and are thus immaterial.

14.5.6.2 Visual Checks

Initial validation consisted of a visual comparison of the input samples and the estimated block grade in cross section, plan view and longitudinal projection. The plots are shown in Figure 14-15. Visual checks of the model against the sample data used to inform the estimates shows that the estimated blocks reasonably match the sample data used to inform them particularly in areas that have significant data to inform the estimates. All the visual checks confirm that the block estimates are a reasonable representation of the informing data considering the current level of geological and geostatistical understanding of areas within the reach of the definition drilling as shown in Figure 14-15, although it is noted in poorly informed areas, the estimates are less well constrained. There are areas with limited to no drilling information.

14.5.6.3 Swath Analysis

Swath or profile plots were generated for each domain along easting, northing and elevation dimensions. Plots of the results of swath analyses on domain 5000 along, X, Y and Z axis are displayed in Figure 14-16, Figure 14-17 and Figure 14-18. The swath analyses indicate general smoothing of the estimates as expected due to kriging. The estimated values tend to follow the sample composite values quite well particularly in well sampled areas. However, the estimates appear to be overly estimated in the eastern portion of the Domain 5000 and this is attributed to low drilling density in this area. It is poorly informed. However, this particular portion has been classified as an Inferred resource due to low confidence in the estimates and is thus also not included in the optimised pit shell.

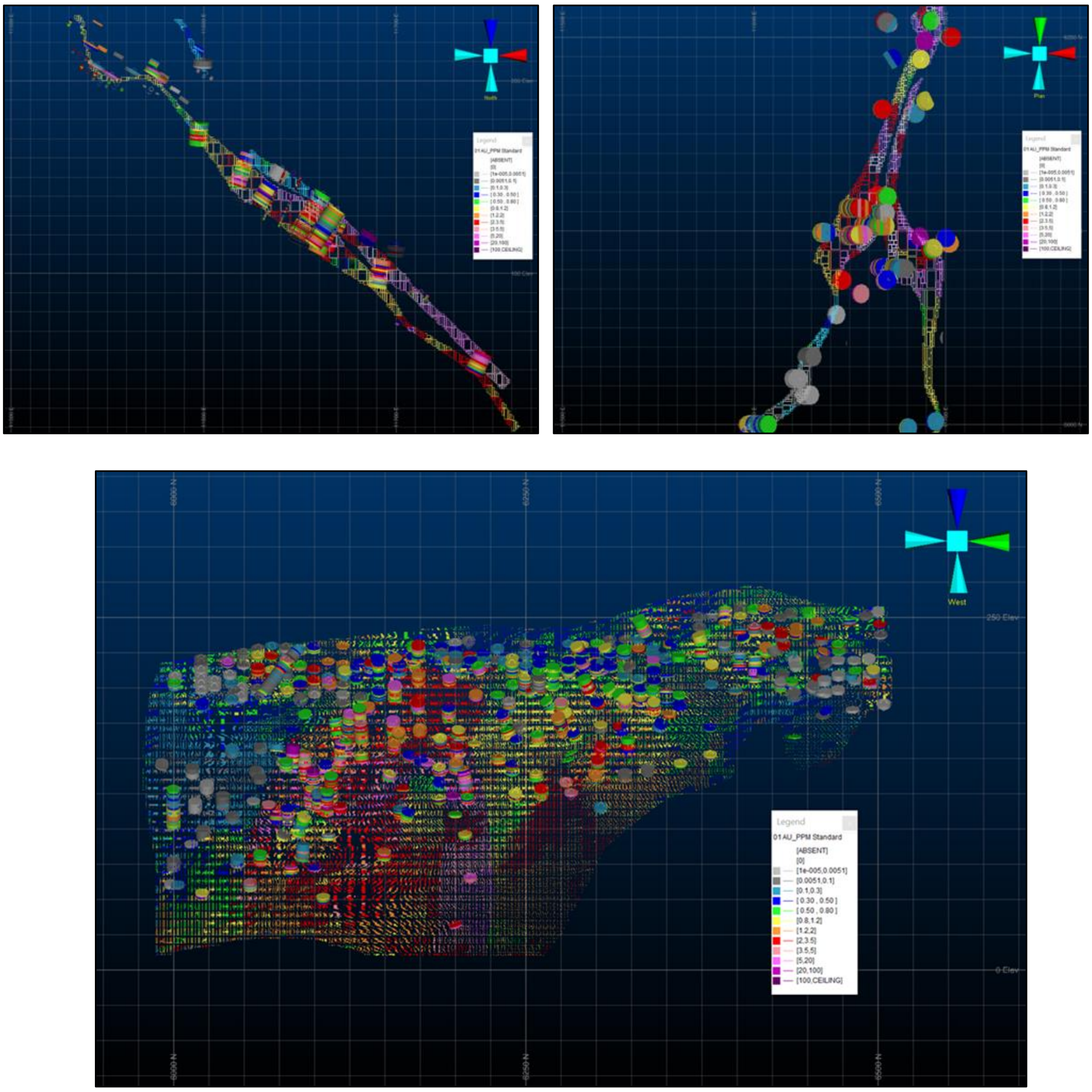


Figure 14-15: Comparison Between Composite Input Data and Block Grades in Cross Section (6110mN), Plan View (122mrl) (Domains 5000, 5001, 5300 And 5301) and Longitudinal Projection Looking West (Domain's 5000 And 5001 Only)

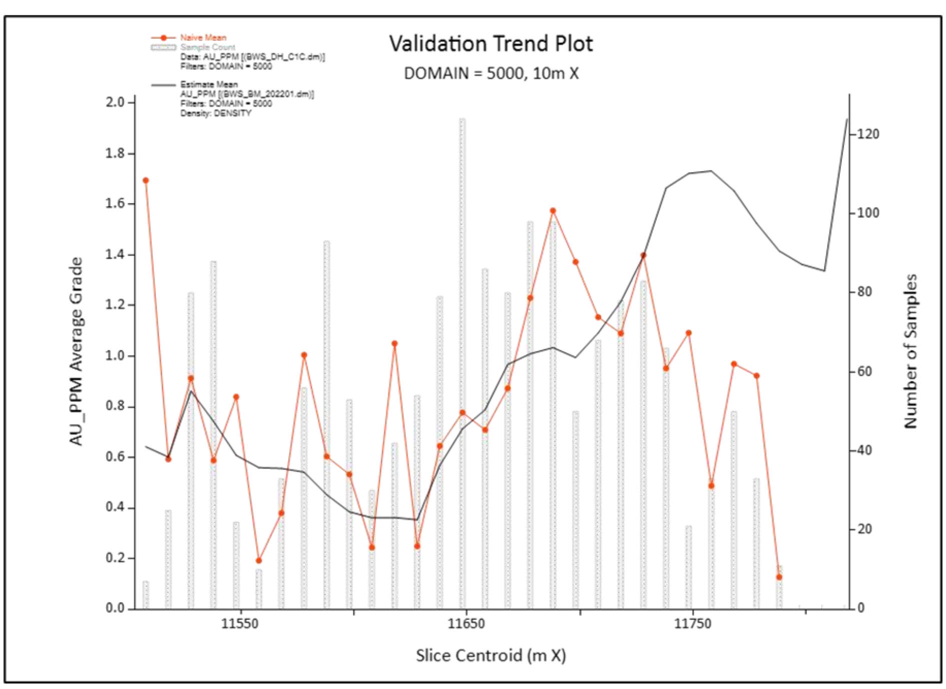


Figure 14-16: X Swath Plot for Domain 5000

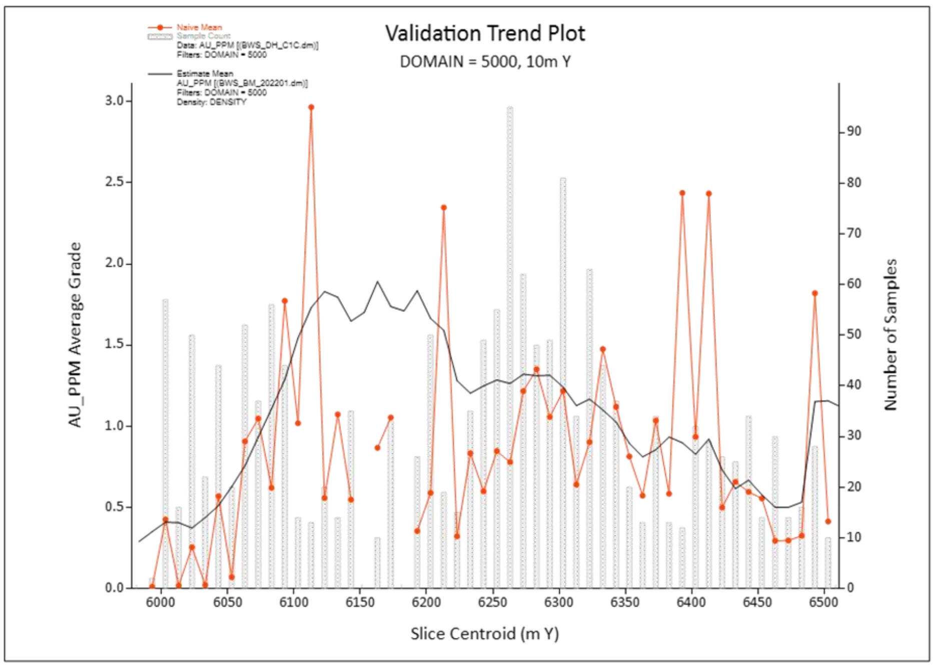


Figure 14-17: Y Swath Plot for Domain 5000

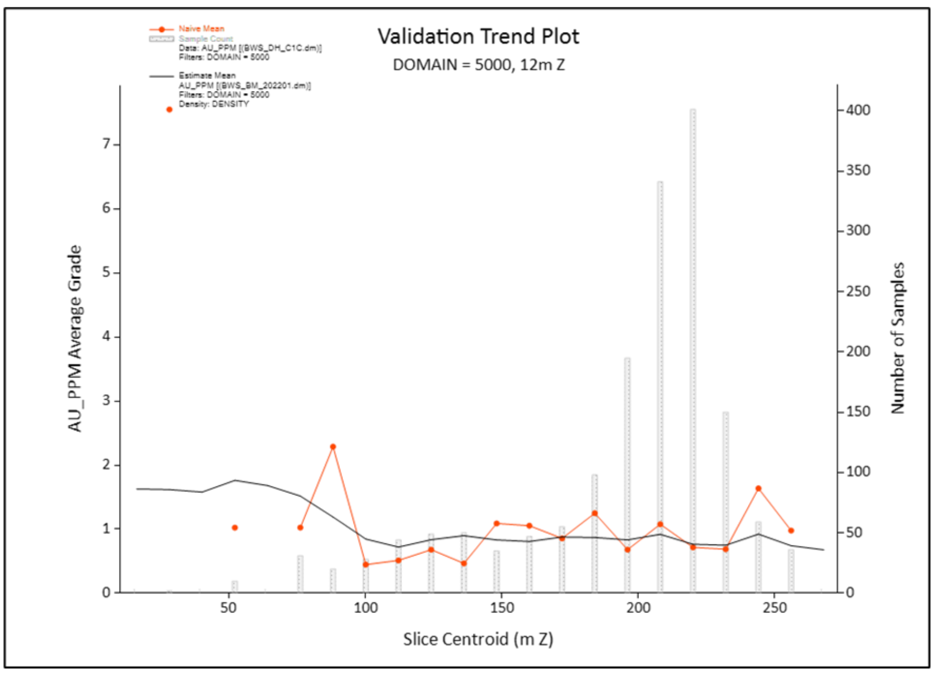


Figure 14-18: Z Swath Plots for Domain 5000

14.5.7 Qualified Person Review

Resource models for the Walsh and Strauss Pits were estimated by Optiro in 2022 and reported in NI43-101 Technical Report, Bibiani Gold Project. The Walsh and Strauss pits are in a single model which adjoins the Main Pit area.

The following review work was completed on the Walsh and Strauss Pits.

- A reporting check against the tabulation in NI43-101 Technical Report, Bibiani Gold Project - 31 August 2022.
- Review of estimation composite statistics and top-cuts per estimation domain.
- Spatial review of estimation domains against drilling data.
- Review of estimation parameters.
- Swath and statistical validations.
- Review of classification categorisation.

A drill hole collar plan is set out in the Figure below, where; DD = diamond drilling, RC = reverse circulation drilling, RCD = RC collar with a DD tail, CHAN/UG_C = underground channel and UG_D = underground diamond drilling.

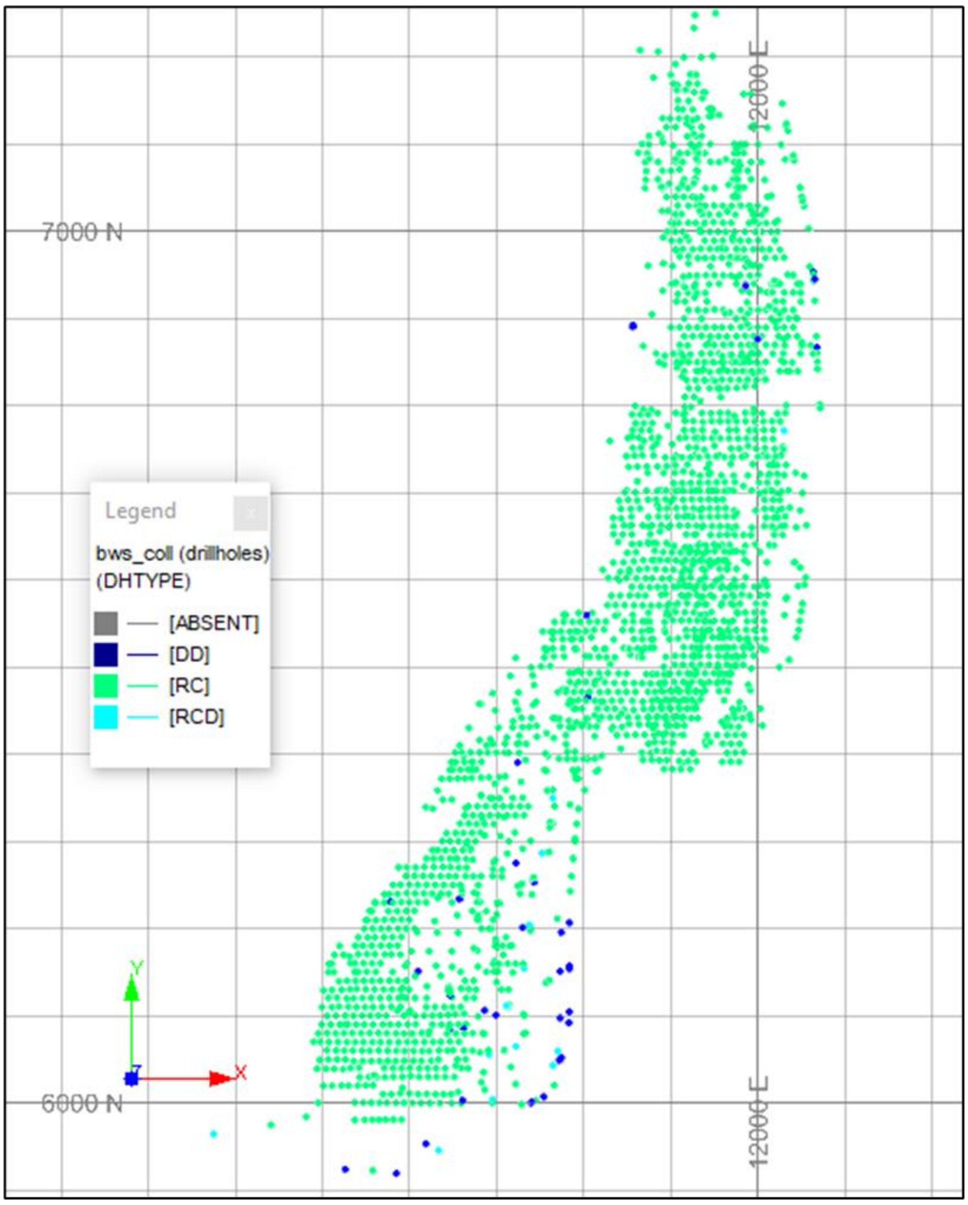


Figure 14-19: Plan View of Drill Hole Collars at Walsh and Strauss (as at December 2023)

14.5.8 Qualified Person Conclusions

The QP is satisfied that both the data and geological methods used to estimate the Walsh and Strauss mineral resources are appropriate. The QP recommends further investigative work should be considered in the mineralised domain interpretation or grade estimation methodology where the sample data COV exceeds 4.0. These domains contain proportions of material below the nominal mineralisation cut-off of 0.2 to 0.3 g/t Au, which is internal waste, but due to grade estimation smoothing, in some instances will overestimate tonnes and ounces at the MRE reporting cut-off. This could be better managed by tighter mineralisation domain interpretation or using non-linear grade estimation methods. The QP considers this issue non-material to the published mineral resource but should still be investigated as a potential improvement. Justification of “reasonable prospects of eventual economic extraction” (RPEEE), Mineral Resource classification, and Mineral Resource reporting for Walsh and Strauss are set out in Sections 14.9, 14.10 and 14.11 respectively.

14.5.9 Depletion

The 2022 Mineral Resource for Walsh and Strauss has been depleted for open pit mining up to cessation of open pit mining of these deposits in 2022 (Walsh) and 2023 (Strauss). Mined material is coded MSTATUS=1 and densities have been re-set to zero. The Walsh pit has been backfilled and the volume of fill is defined by the difference between the May 2013 surface and the final pit surface. This material is coded FILL=1 and density has been re-set to 1.80 t/m^3.

14.6 Russell

The Russell Mineral Resource Estimate was updated by MGBL technical staff in August 2023 and amalgamates drilling data from Russell and Russell South.

The database used to estimate the Mineral Resources of 54 diamond, 77 reverse circulation drill holes and 37 reverse circulations with diamond tails for a total of 30424.9 metre of drilling. Some of these holes are outside the Mineral Resource area and are not used in the estimation process. The holes dip between -43.5º to -74º. All drill holes are surveyed at approximately 30 metre down-the-hole intervals using a Reflex single shot camera and SPT downhole survey tool.

A drill hole collar plan is set out in the Figure below, where; DD = diamond drilling, RC = reverse circulation drilling, RCD = RC collar with a DD tail, CHAN/UG_C = underground channel and UG_D = underground diamond drilling.

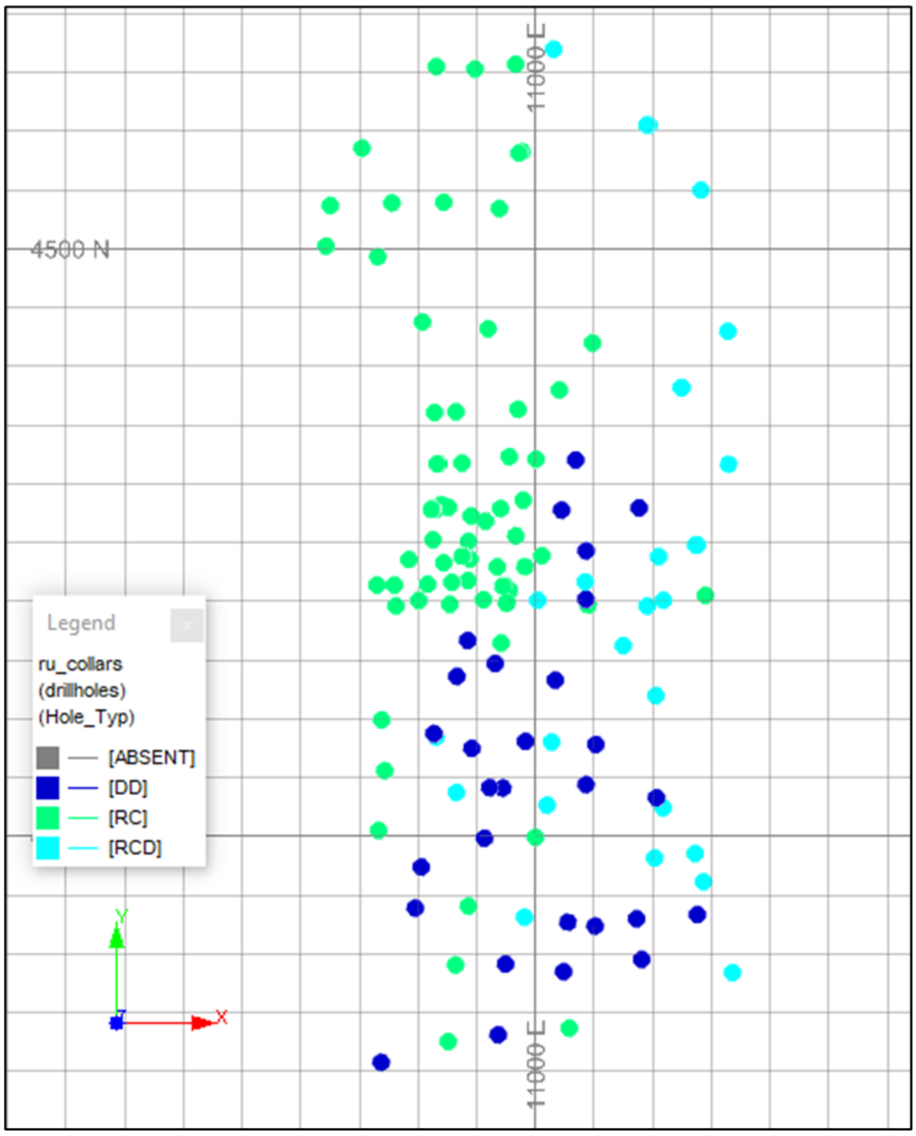


Figure 14-20: Plan View of Drill Hole Collars at Russell (as at December 2023)

14.6.1 Geological and Mineralisation Modelling

Wireframes and surfaces representing topographic surfaces, lithology, oxidation state, structures, and mineralization domains were developed using Leapfrog modelling software. A lidar topography surface is used during grade estimation and the 3D modelling as a domain boundary and an as-mined surface is already incorporated in the lidar surface, estimation and 3D surfaces were not extended beyond the deleted surfaces.

The major lithologies including metavolcanics, metasediment and the granitoids wireframes are used to code lithology into the block model. Two weathering surfaces representing the boundary between Oxides and Transition zones and Transition and Fresh zone are used to code weathering type into the block model for density assignment.

Grade envelopes were developed into footwall and hanging wall mineralization using 0.3g/t together with alteration, breccia zone and veining intensity to define the mineralized domains.

A series of 0.3 g/t Au grade shells are used to code a mineralized material zone into the block model and are used in grade estimation. Structures that crosscut the granitic mineralized bodies are used to truncate as appropriate the along-strike continuity of the granites and grade shells. Figure 14-21 shows a three-dimensional view of the Au grade envelope in relation to the litho-structural model.

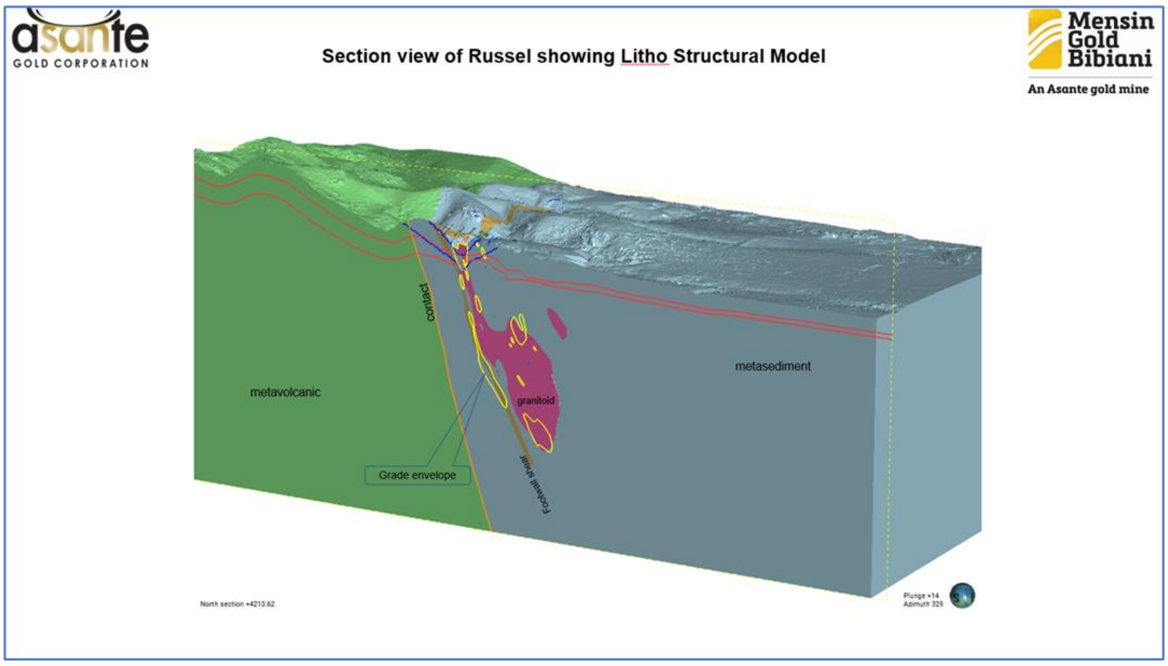


Figure 14-21: A 3D Geological Model Showing Controls on Mineralisation

14.6.2 Data Composting and Top-cuts

The drill hole sampling is mostly at one-metre intervals, although there are two-metre sampling intervals. There are 24,077 assays in the overall database for the Russell area with a maximum value of 23.8 g/t Au. The gold distribution has a global coefficient of variation of almost 4.76, indicating high variability, as would be expected in Birimian-style Au deposits. Figure 14-22 shows the histogram of the raw assay data.

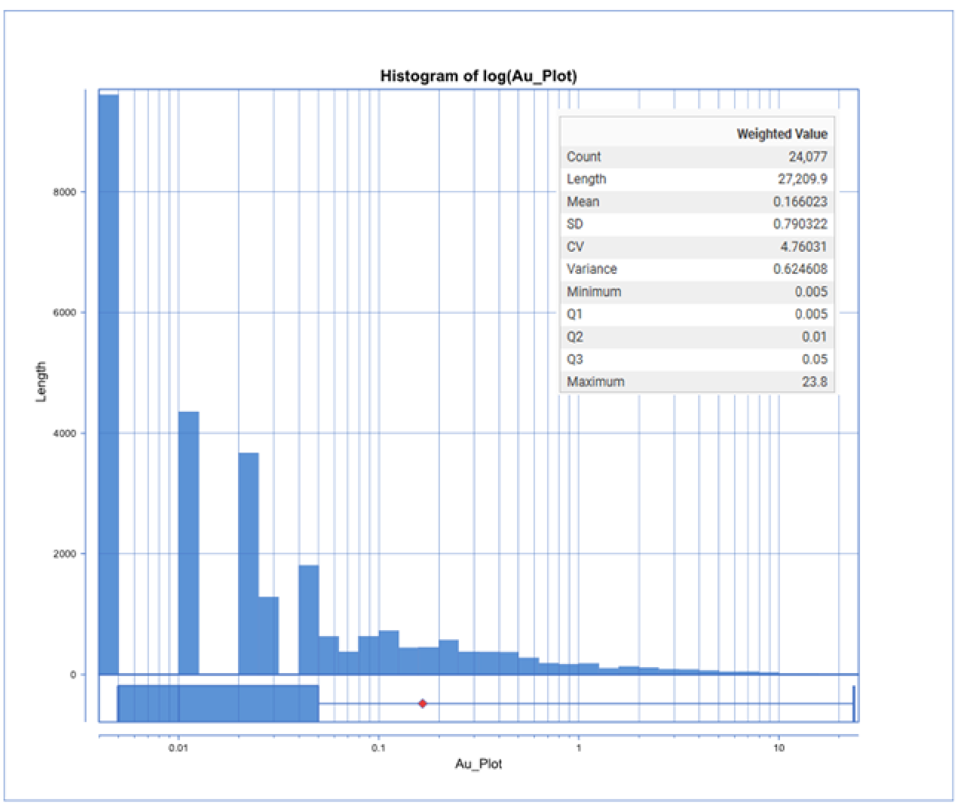


Figure 14-22: Histogram of Raw Assay

1.5m long composites were prepared from the original assay data within the 0.30 g/t Au envelope for both HW and FW domains. Figure 14-23 and Figure 14-24 shows the histogram and log probability plots of basic statistics of all composites inside the 0.3 g/t Au FW domain, whilst Figure 14-25 and Figure 14-26 shows for the HW domain. The coefficient of variation is 1.599 and 1.767 for the FW and HW domains respectively. This probability graph was used as a guide to define the capping thresholds. Figure 14-27 shows that Quantile-Quantile plots of Au grade distributions of weathered and non-weathered domain within the 0.3 g/t Au envelope are virtually identical up to the 2.0g/t Au and very similar up to the 5.0 g/t Au thresholds supporting the decision to ignore the oxidation boundaries when estimating grade.

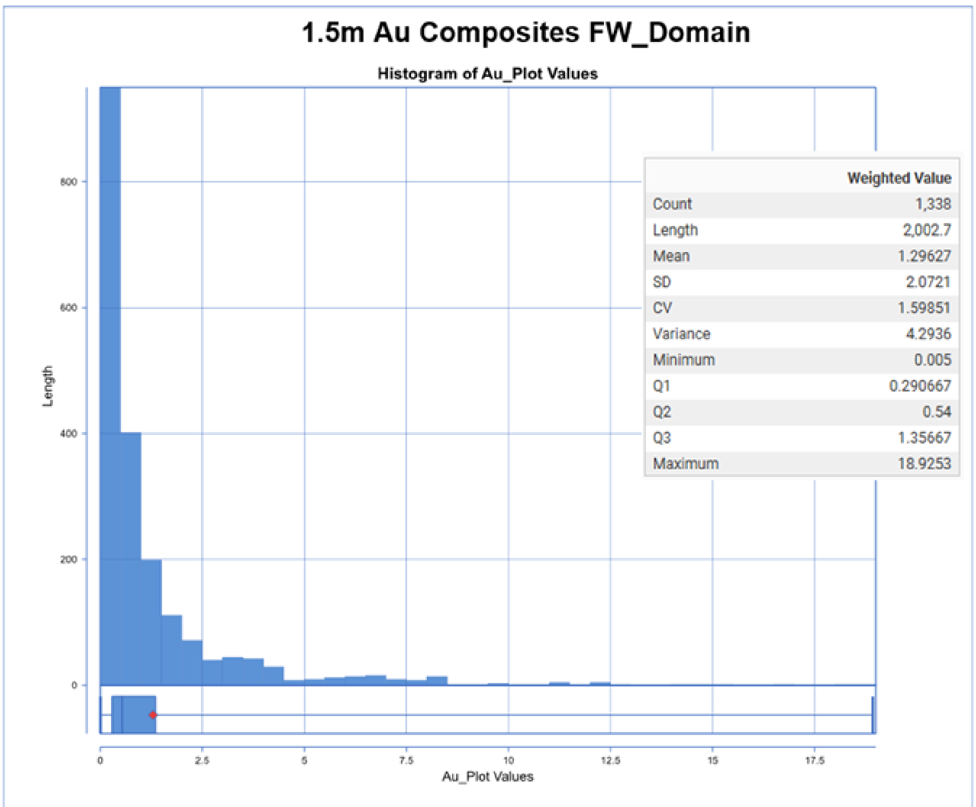


Figure 14-23: Histogram Au Composite for FW Domain

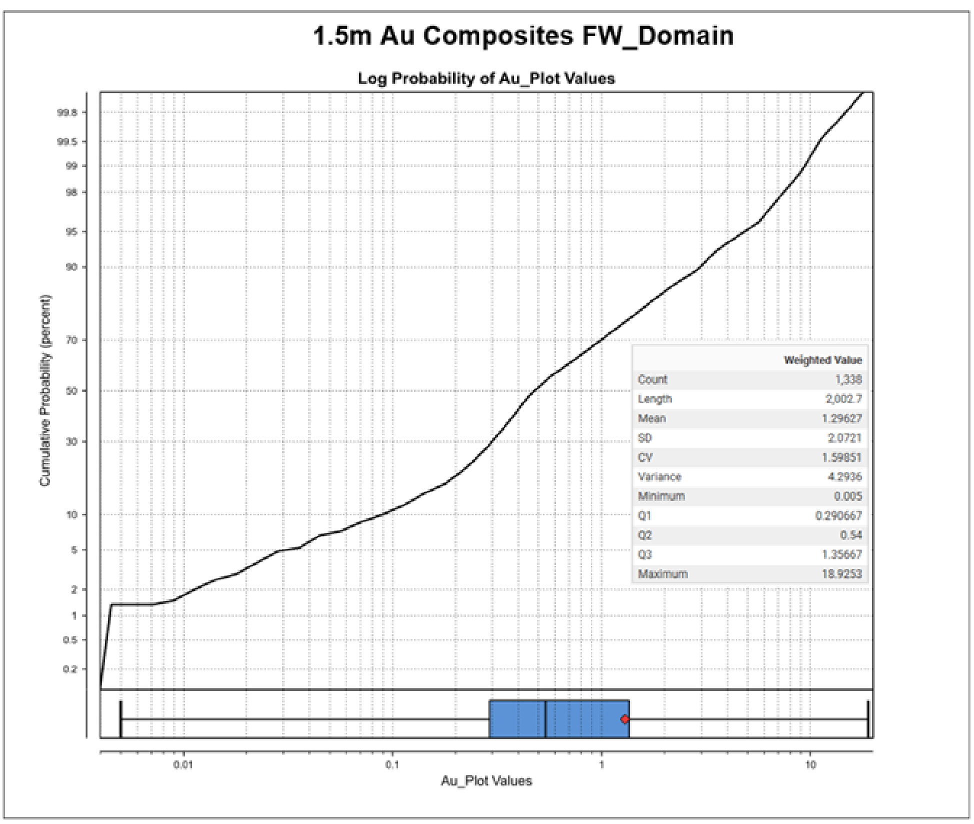


Figure 14-24: 1.5m Log Probability Plot of Au composite for FW Domain

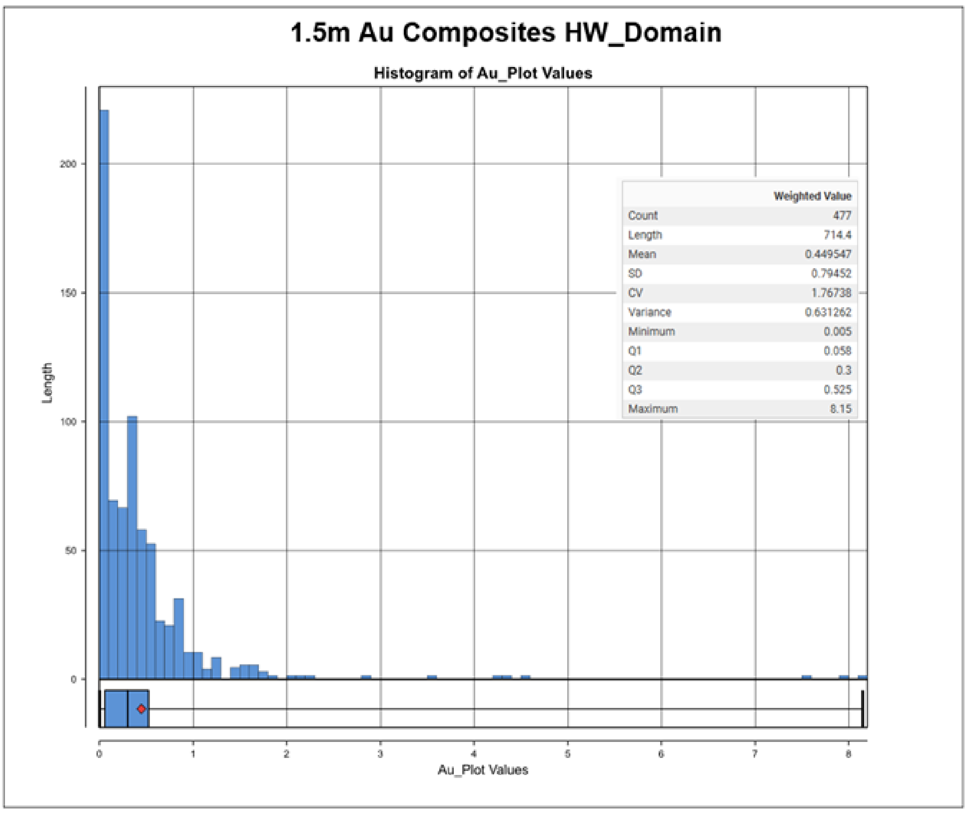


Figure 14-25: 1.5m Histogram Au Composite for HW Domain

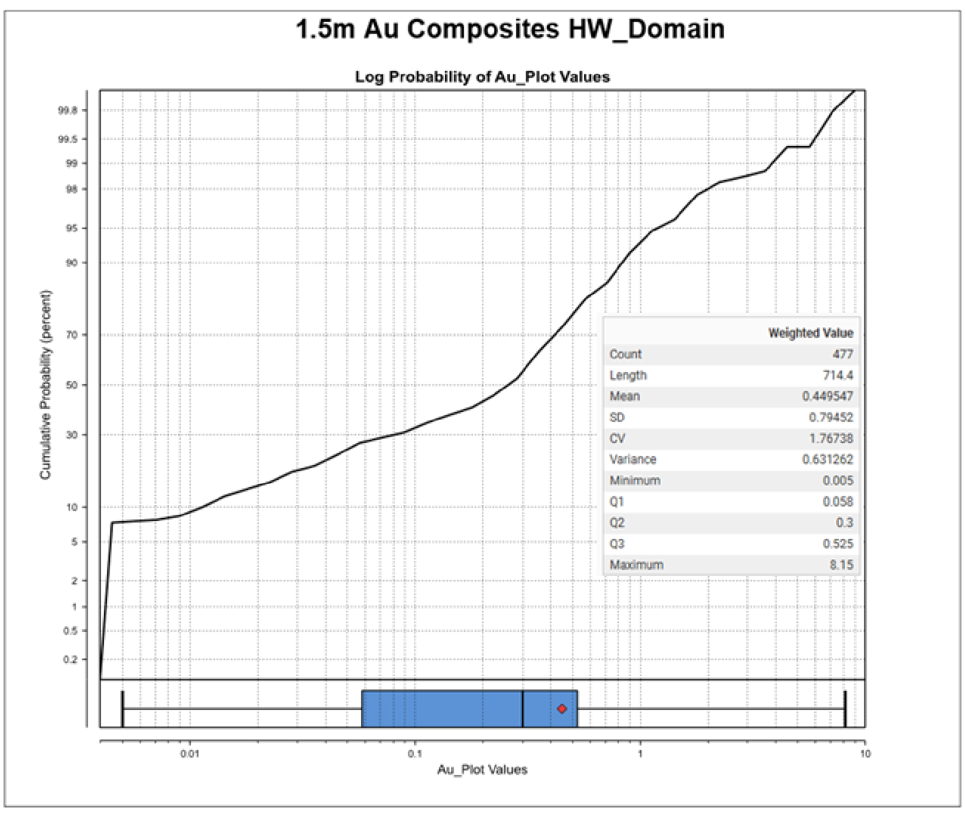


Figure 14-26: 1.5m Log Probability Plot of Au Composite for HW Domain

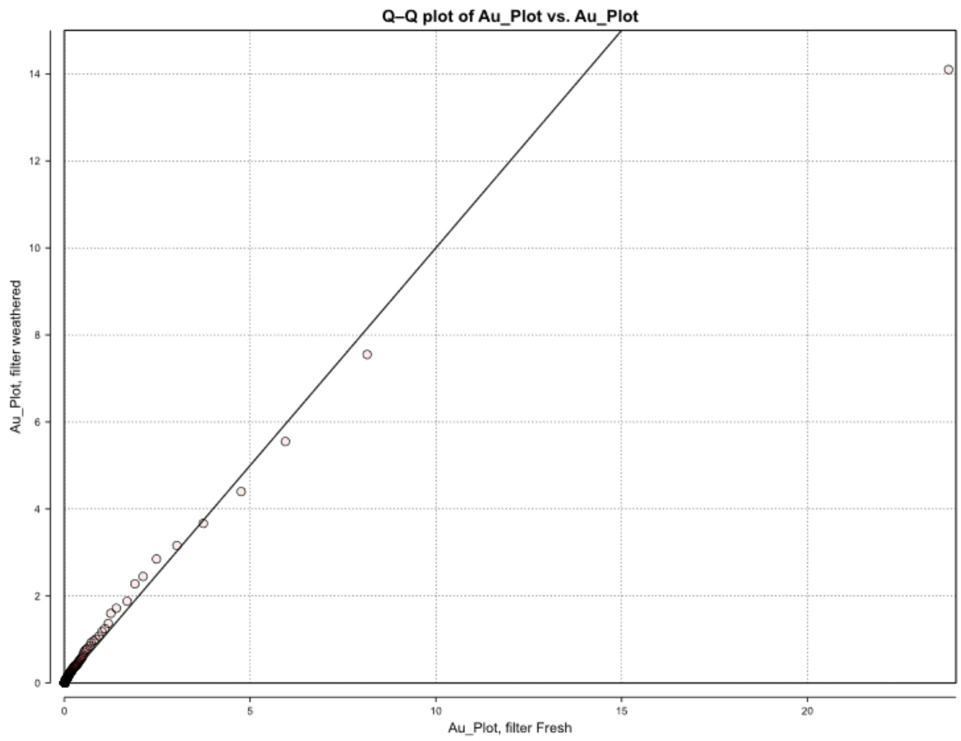


Figure 14-27: Q-Q plots Comparing Grades in Weathered and Fresh Materials

An outlier restriction was applied by clamping Au value threshold above 18g/t to 15g/t and Au value threshold above 8g/t to 5g/t with maximum distance search half the distance between drill hole spacing (approximately 12.5m) for both the FW and HW domains respectively.

Figure 14-28 and Figure 14-29 show cumulative histogram of FW and HW domains respectively.

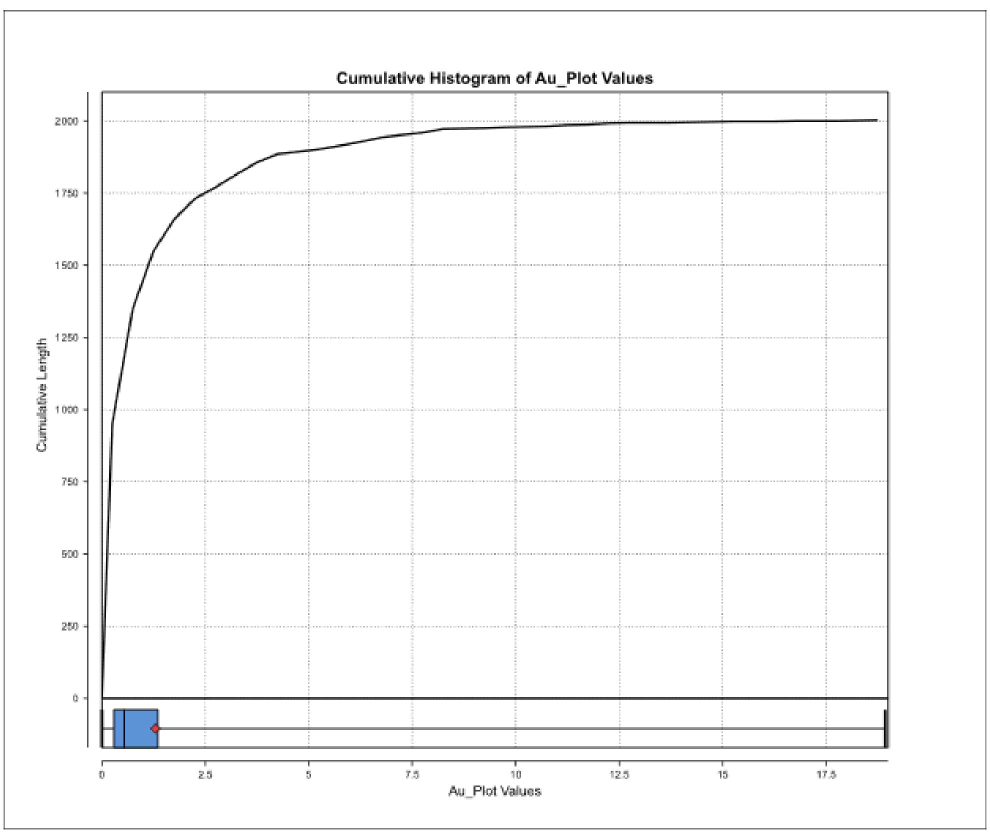


Figure 14-28: Cumulative Histogram of FW Au Values

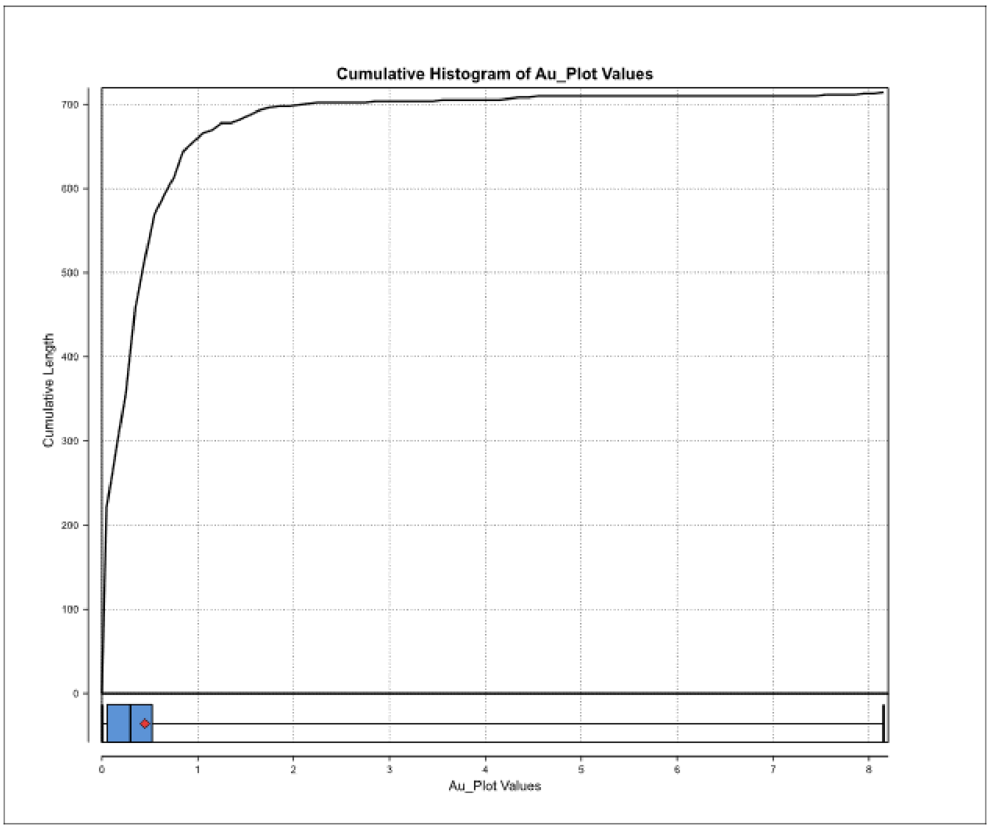


Figure 14-29: Cumulative Histogram of HW Au Values

14.6.3 Contact Analysis

As expected, there is a sharp transition in average grades comparing those composites outside with those inside the envelope for both FW and HW domains supporting the decision to use hard boundary within a domain during grade estimation. Figure 14-30 and Figure 14-31 shows Au values in relation to FW and HW domains respectively.

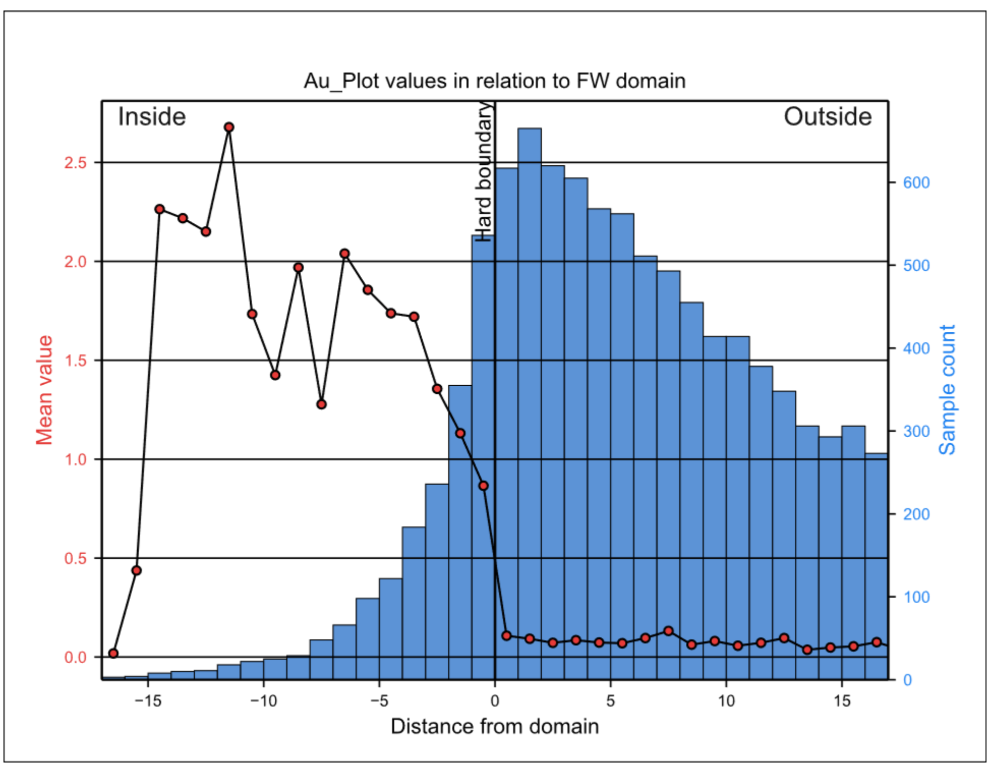


Figure 14-30: Contact Analysis for FW Domains

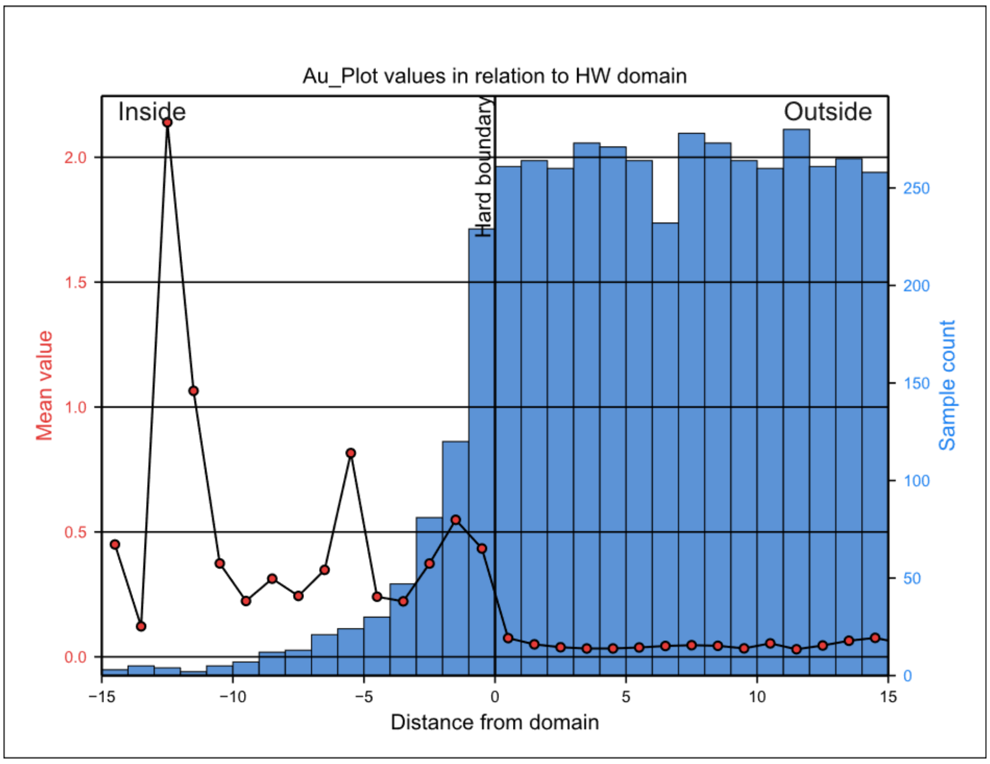


Figure 14-31: Contact Analysis for HW Domain

14.6.4 Variography

Leapfrog Edge was used to calculate and model gold variograms for both the FW and HW domains. SRK used a traditional semi variogram for the three orientations and a downhole variogram to calculate the nugget effect. Figure 14-32 shows an example of variogram model for the FW domain.

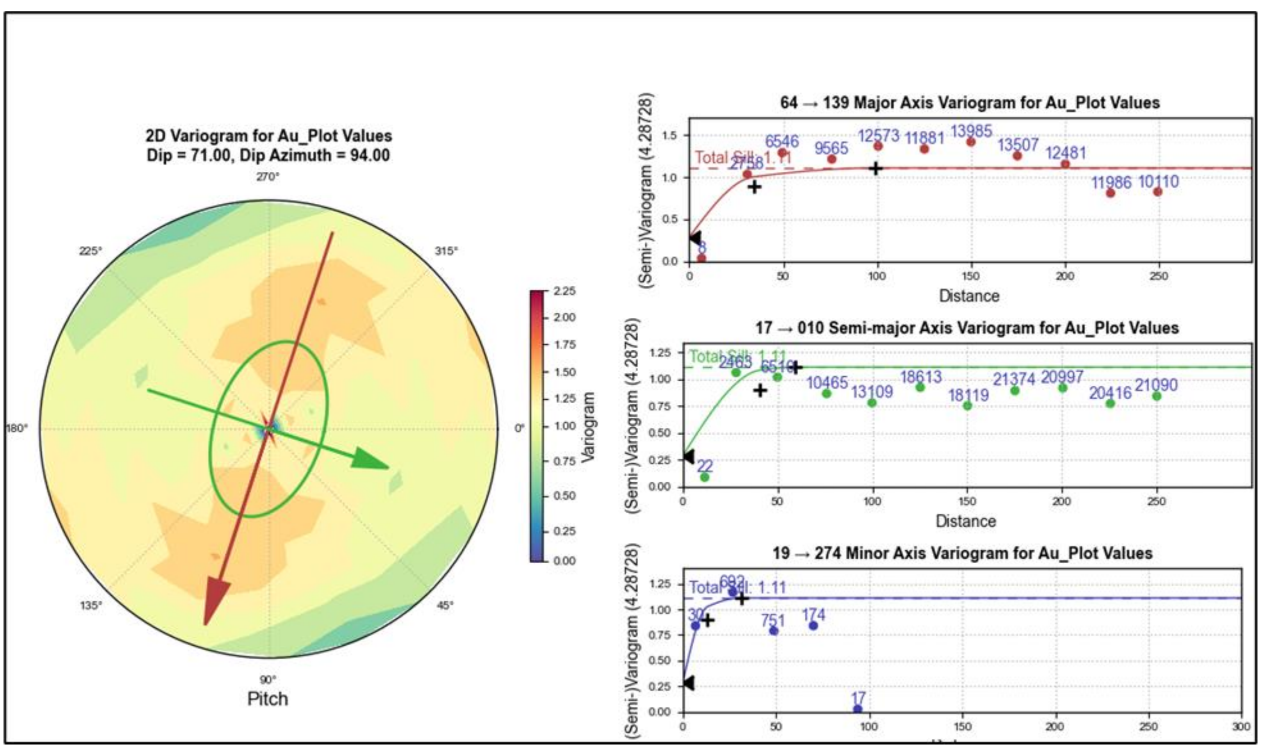


Figure 14-32: Variogram Model for FW Domain

14.6.5 Block Modelling

The block model is defined in Leapfrog using a 5 x 5 x 3 metre parent block size with a count of 8 x 8 x 2. This gives a minimum block size of 0.625 x 0.625 x 1.5. This is to enable ensure that narrow vein zones are populated to get accurate volumes.

Block model extent is shown below in Figure 14-33.

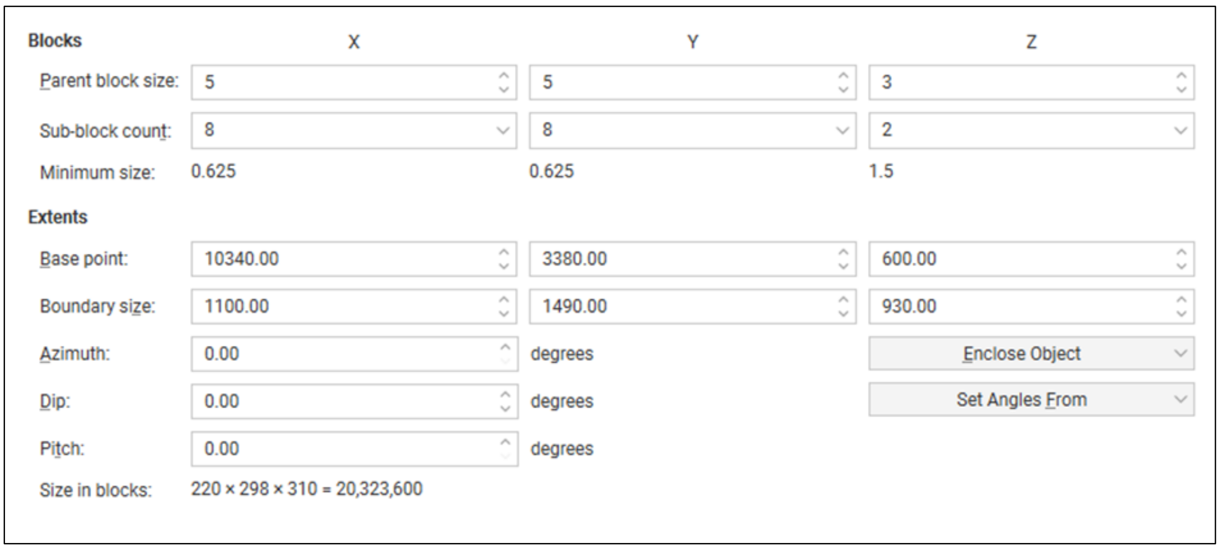


Figure 14-33: Block Model Extent

14.6.6 Grade Estimation

Gold grades are estimated into a 3D block model using Ordinary Kriging (OK) with up to three estimation passes, progressively relaxing the search ellipsoid and sample requirements for both the FW and HW mineralization. An OK method was used for the estimation as CV for both the FW and HW domains are 1.56 and 1.76 respectively. Waste domains are assigned background values of 0.005g/t.

Figure 14-34 shows the major FW domain (containing 70% of contained metal) and the lesser HW domain (containing 30% of contained metal).

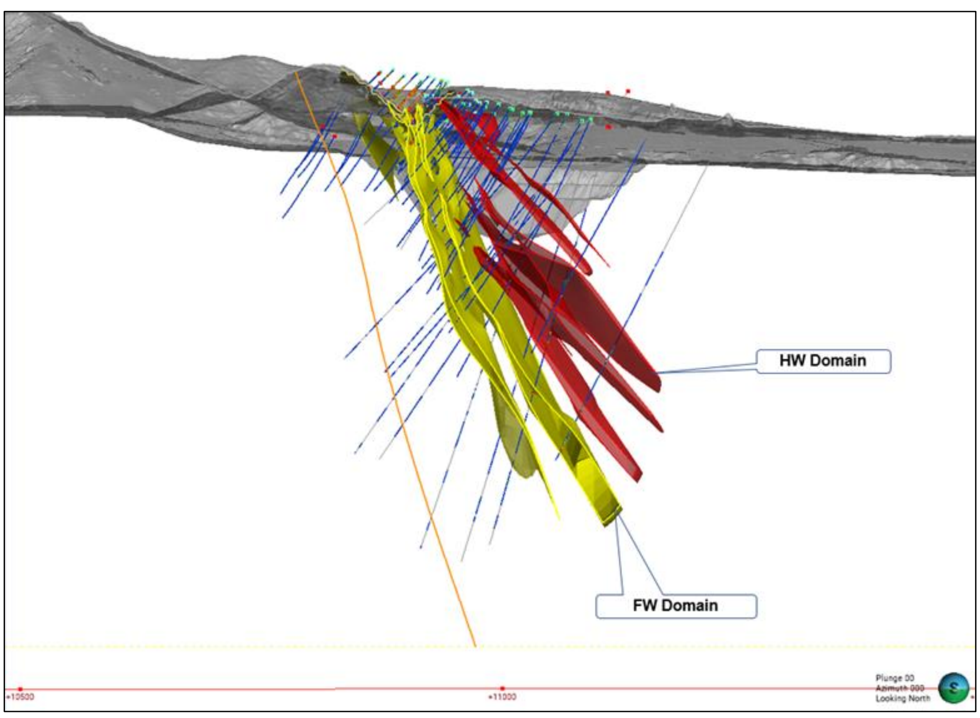


Figure 14-34: Estimation Domains

14.6.7 Qualified Person Conclusions

The QP is satisfied that both the data and geological methods used to estimate the Russell mineral resource are appropriate. As discussed for Walsh and Strauss, the mineralisation domaining of Russell should be further investigated to reduce the proportion of below nominal mineralisation cutoff material if possible. The grade estimates were validated during the review and are considered appropriate for downstream use. Justification of "reasonable prospects of eventual economic extraction" (RPEEE), Mineral Resource classification, and Mineral Resource reporting for Russell are set out in Sections 14.9, 14.10 and 14.11 respectively.

14.6.8 Block Model Validations

Figure 14-35 below shows a long section view of the Main Pit footwall domain at Russell. The block model is cut to the LiDAR topography. The block model and input composite grade are colour coded for comparison. Visually and spatially, the block model grades honour the input composite grades.

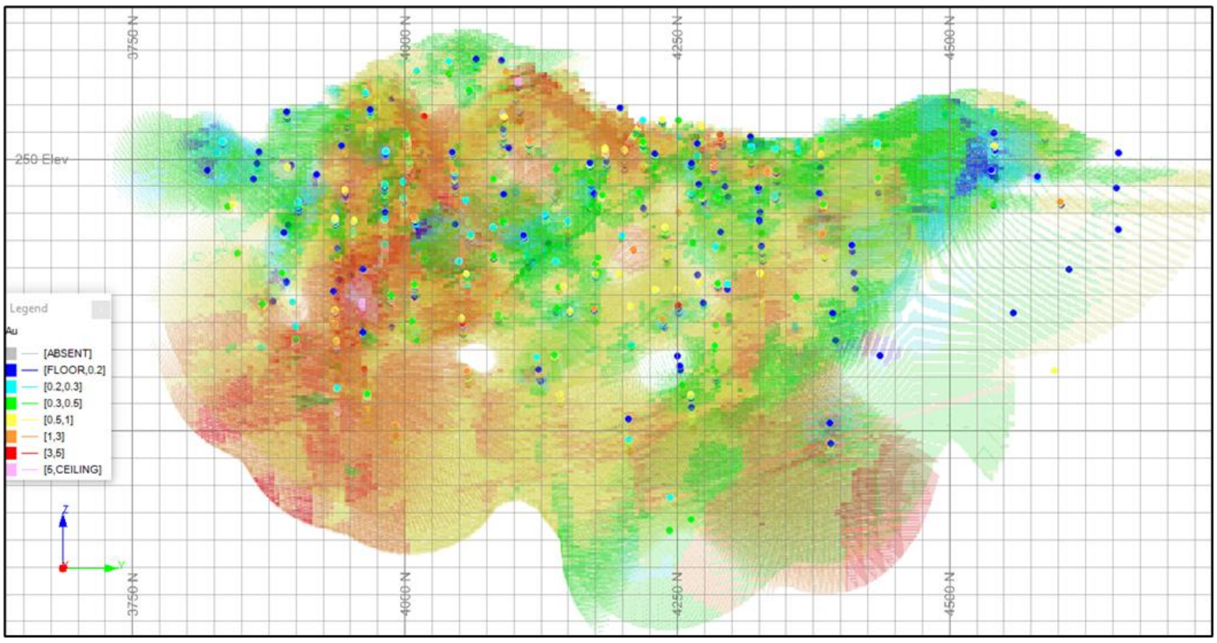


Figure 14-35: Block Grade and Composite Grade Comparison, Footwall Domain at Russell

Figure 14-36 below sets out swath plots comparing input composite data with output block model grades for slices through the block model in the east, north and RL directions. The plots show a degree of smoothing, but the overall trend of the composite data is honoured in the output block model grades.

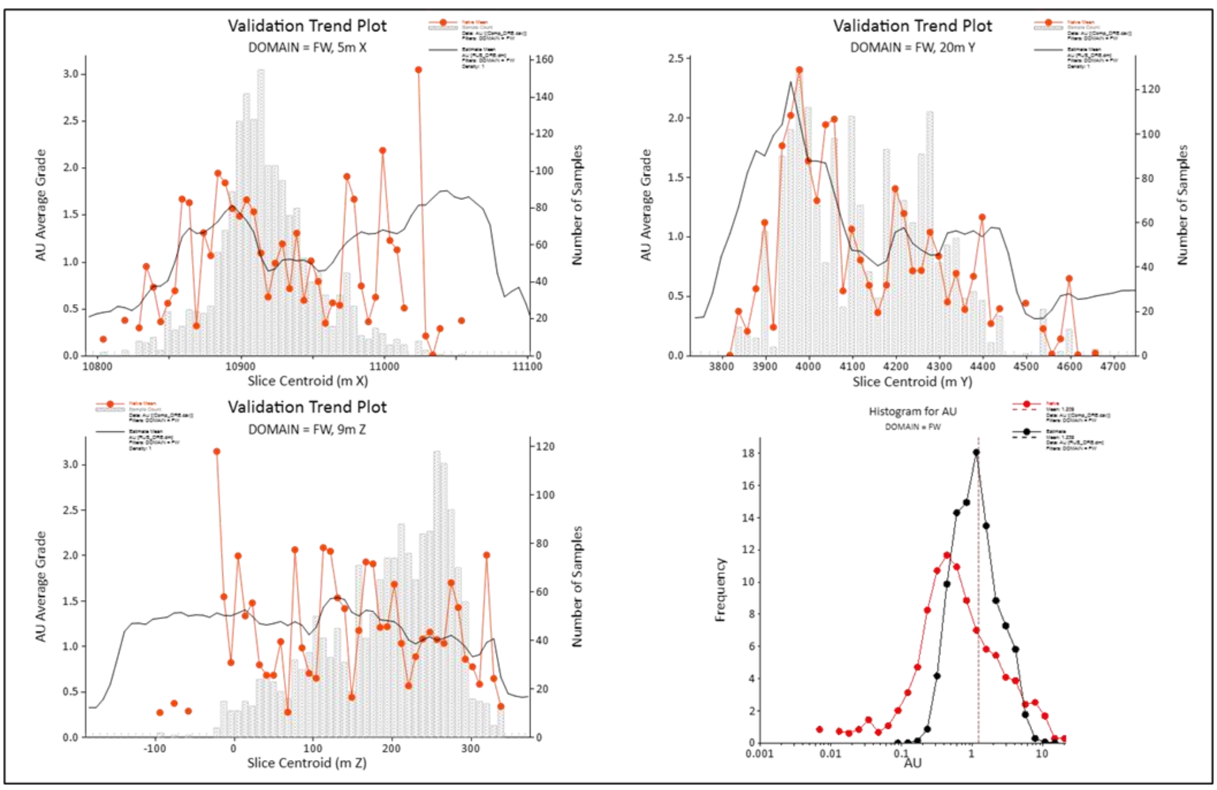


Figure 14-36: Swath Plots – Footwall Domain at Russell. Comparison of Input Composite Grades Against Output Block Model Grades

14.6.9 Depletion

The Russell block model has been depleted for historic open pit production.

14.7 Grasshopper

14.7.1 Geological and Mineralisation Modelling

In 2023 Grasshopper was identified as a small, near-surface quick source of oxidised material to supplement required ore production blend and to replace the Walsh/Strauss oxide ore sources.

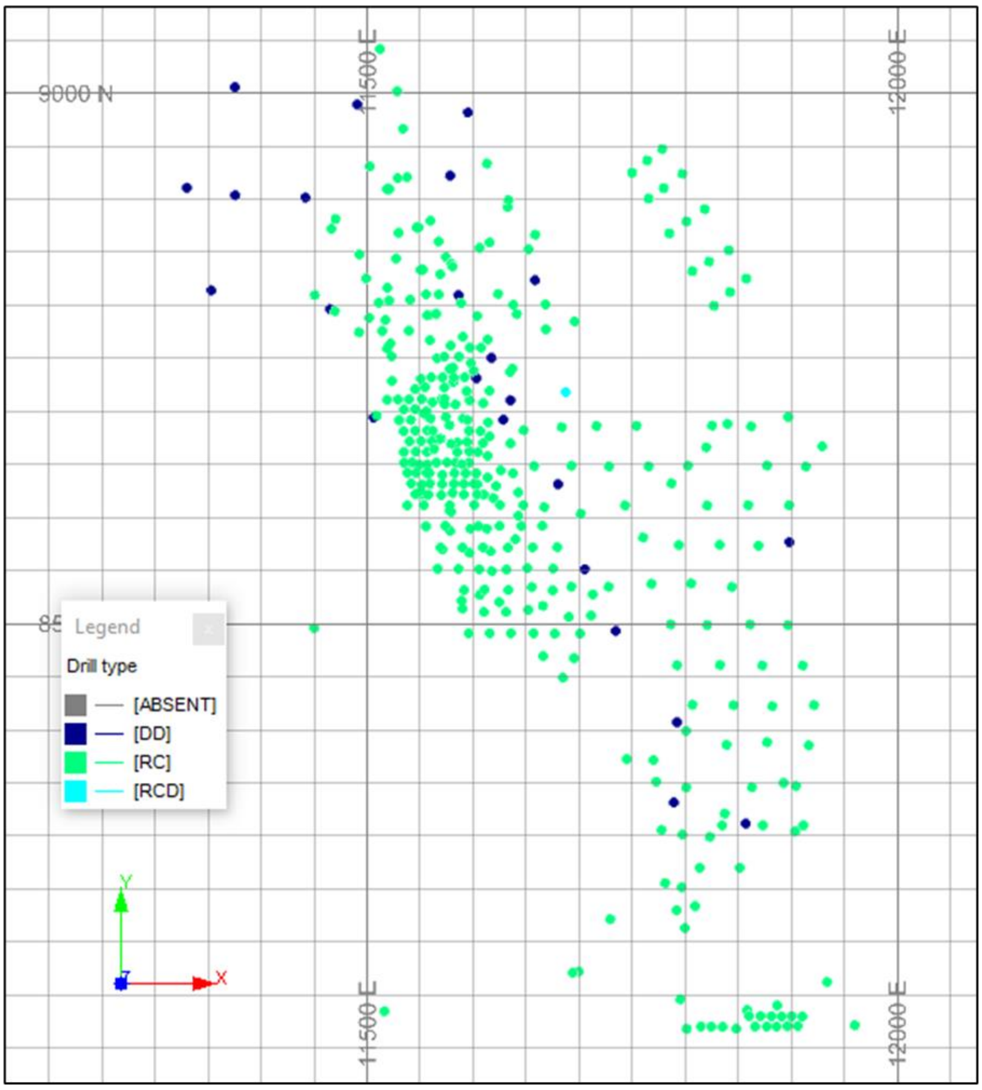


Figure 14-37: Plan View of Drill Hole Collars at Grasshopper (as at December 2023)

The majority of mineralized material is within the oxide and upper transition zone and two mineralised domains are identified, Domain 100 and Domain 200.

14.7.2 Data Compositing and Top-cuts

Raw sampling intervals are dominantly (80%) 1.0m with 15% of intervals sampled at 5m and 5% sampled at between 1.5m and 4m. Intervals were composited to 1.0m. Following assessment of the gold grade histogram of composite data and analysis of log probability plots to determine the breakdown of the histogram and relevant inflection points which help to determine appropriate top-cuts to apply to grade data prior to estimation, a 5g/t Au and 3g/t Au top cut was applied to domain 100 and domain 200 at Grasshopper.

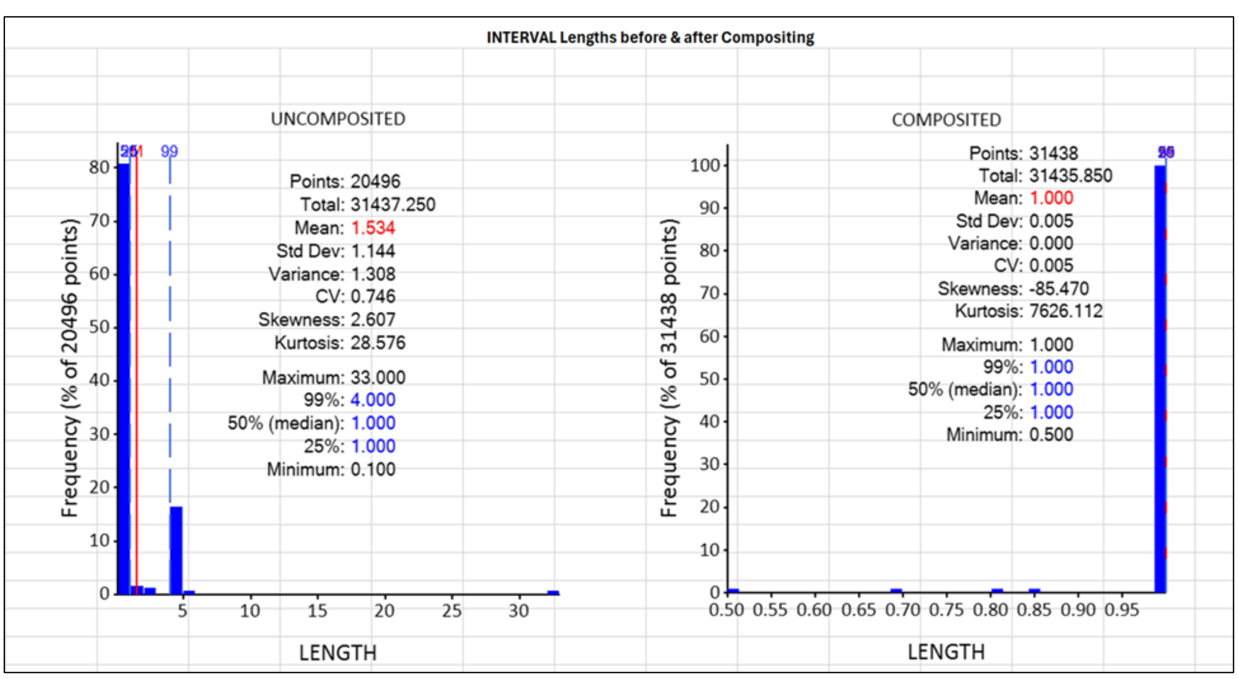


Figure 14-38: Uncomposited and Composited Sampling Intervals - Grasshopper

14.7.3 Variography

Geostatistical analysis was undertaken for each mineralisation domain at Grasshopper. The adopted variogram parameters for each domain are shown in Table 14-18 below.

Table 14-18: Directional Variograms – Grasshopper Domains

Directional Variograms										
Deposit	Domain	Direction 1			Direction 2			Direction 3		
		Dip	Azimuth	Range (m)	Dip	Azimuth	Range (m)	Dip	Azimuth	Range (m)
Grasshopper	100	0	330	98	50	240	66	40	60	16
	200	0	340	120	65	250	66	25	70	16

14.7.4 Block Modelling

A block model was built in Datamine Studio RM software using a parent block size of 5m x 5m x 5m and coded for geology, weathering and density attributes prior to grade estimation.

Block model definitions are set out in Table 14-19 below.

Table 14-19: Block Model Parameters - Grasshopper

Deposit	Origin			Number of Blocks			Block Size		
	mE	mN	mRL	mE	mN	mRL	mE	mN	mRL
Grasshopper	11290	7940	-80	144	254	113	5	5	3

14.7.5 Grade Estimation

The Au grade was estimated into the block model using OK into the mineralised blocks. No other elements were estimated. Variogram parameters were used to inform search parameters used during grade interpolation. A maximum of 3 samples per drillhole were used to ensure that at least three drillholes were informing each block estimate and three search passes were used to inform the blocks in each domain, progressively relaxing the search ellipsoid and sample requirements for both domain 100 and domain 200 mineralisation.

Table 14-20: Grade Estimation Search Parameters - Grasshopper

Passes			Search Ranges			Holes		Samples	
Deposit	Domain	Search Pass	X Axis Search Range (m)	Y Axis Search Range (m)	Z Axis Search Range (m)	Min	Max	Min	Max
Grasshopper	100	Pass 1	21	15	4		3	6	24
	100	Pass 2	28	22	6		3	6	24
	100	Pass 3	42	33	6			4	24
	200	Pass 1	21	15	4		3	6	24
	200	Pass 2	28	22	6		3	6	24
	200	Pass 3	42	33	6			4	24

14.7.6 Qualified Person Conclusions

The QP is satisfied that both the data and geological methods used to estimate the Elizabeth Hill mineral resource are appropriate. As discussed for Walsh and Strauss, the mineralisation domaining of Elizabeth Hill should be further investigated to reduce the proportion of below nominal mineralisation cutoff material if possible. The grade estimates were validated during the review and are considered appropriate for downstream use. Justification of "reasonable prospects of eventual economic extraction" (RPEEE), Mineral Resource classification, and Mineral Resource reporting for Grasshopper are set out in Sections 14.9, 14.10 and 14.11 respectively.

14.7.7 Block Model Validations

The QP completed block model validations of the Grasshopper model. Figure 14-39 below shows a long section validation of composite sample data against output block model grades for domain 100. Swath plots were to show the comparison of composite grades against block model grades by slices through the block model in the east, north and RL directions. A degree of smoothing is evident but trends in the input composite data are honoured in the output model.

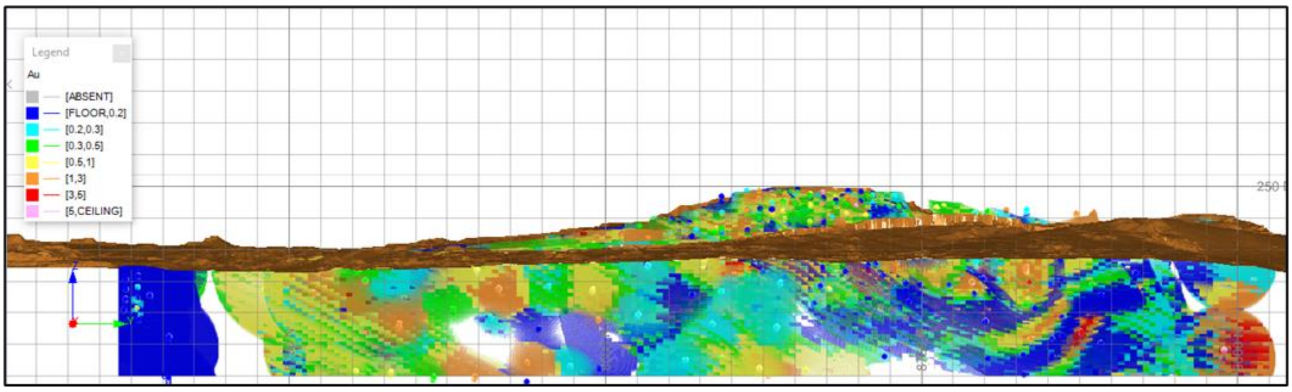


Figure 14-39: Block Grade and Composite Grade Comparison, Footwall Domain at Grasshopper

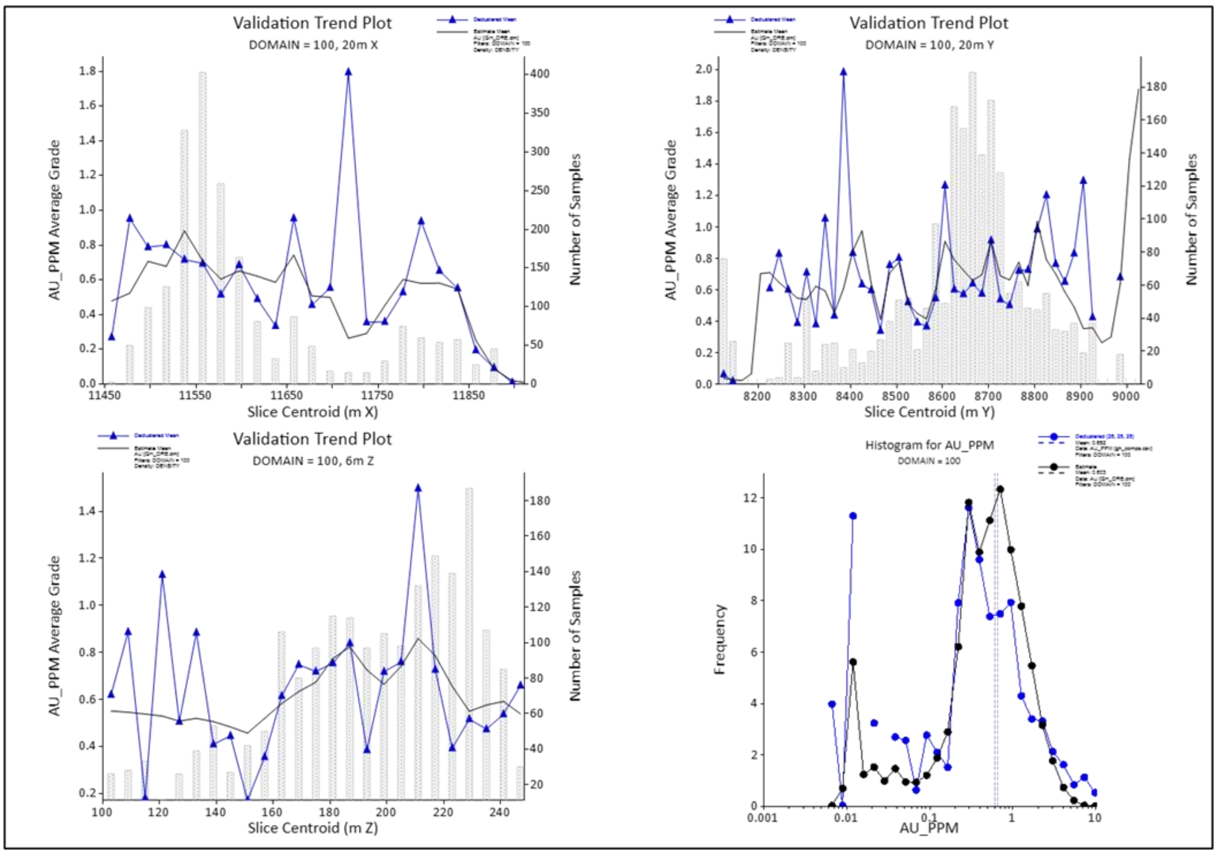


Figure 14-40: Swath Plots – Footwall Domain at Grasshopper.
Comparison of Input Composite Grades Against Output Block Model Grades

14.8 Elizabeth Hill

14.8.1 Geological and Mineralisation Modelling

The Elizabeth Hill mineralised deposit has an investigated strike length of approximately 1km and lies on a splay structure between the current Walsh Pit and Main Pit. The target is supported by geophysics, soils geochemistry and recent structural interpretation. Mineralisation is hosted along the contact between metasediments and granitoids. Mineralisation is also associated with quartz rich veins within the metasediments and granitoids.

A drill hole collar plan is set out in Figure 14-41 below, where; DD = diamond drilling, RC = reverse circulation drilling, RCD = RC collar with a DD tail, CHAN/UG_C = underground channel and UG_D = underground diamond drilling.

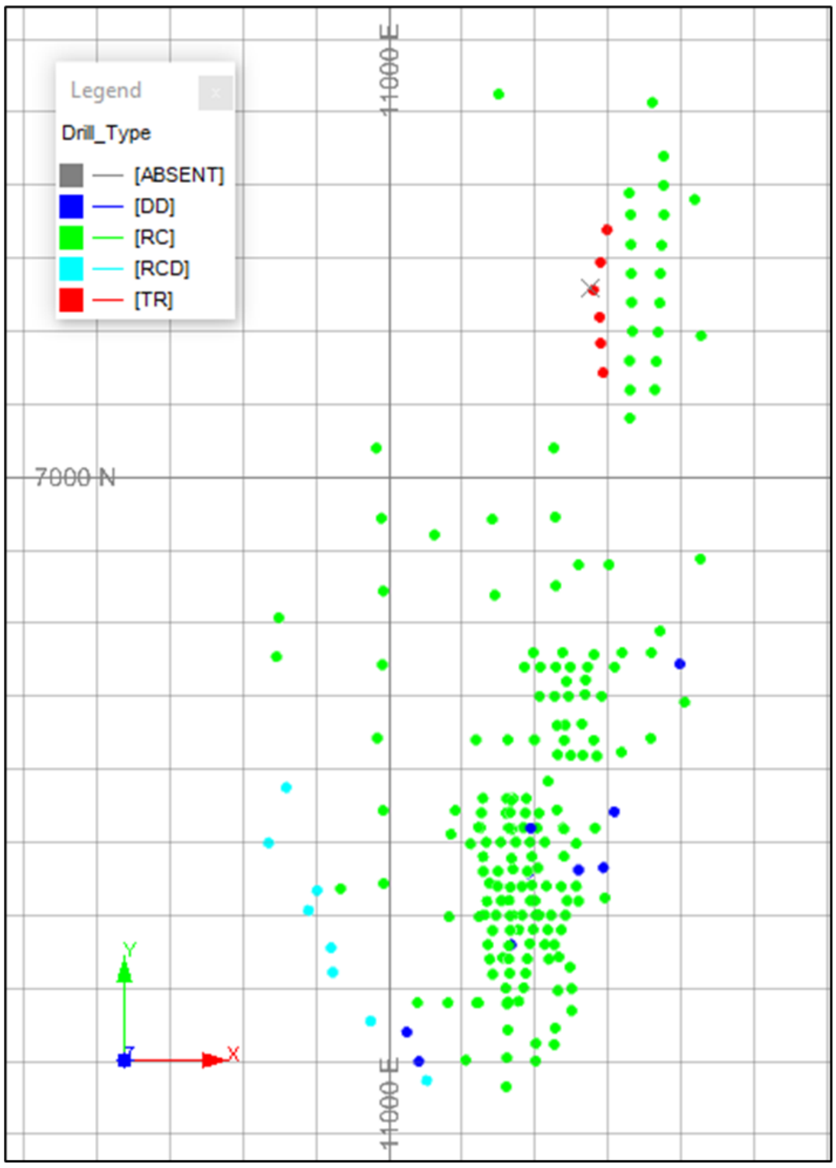


Figure 14-41: Plan view of Drill Hole Collars at Elizabeth Hill (as at December 2023)

Seven mineralised domains were modelled (domain 1-7). Of these, domains 1, 2 and 5 contain the largest tonnage with the remaining domains significantly smaller.

14.8.2 Data Compositing and Top-cuts

The dominant sampling length of mineralisation at Elizabeth Hill is 1.0m. Sample intervals were composited to 1.0m.

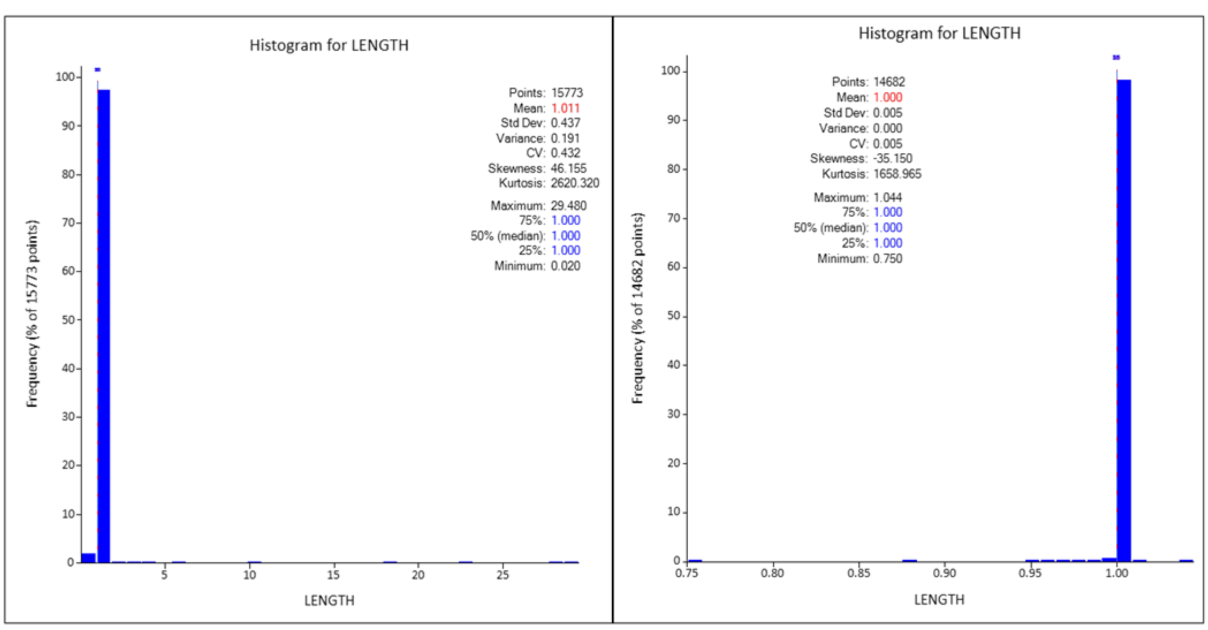


Figure 14-42: Histograms of Raw Sampling Intevals (LHS) and Composite Intervals (RHS) for Elizabeth Hill Data

14.8.3 Variography

Geostatistical analysis was undertaken for the largest domain (domain 1). The modelled variogram is shown in Figure 14-43 below.

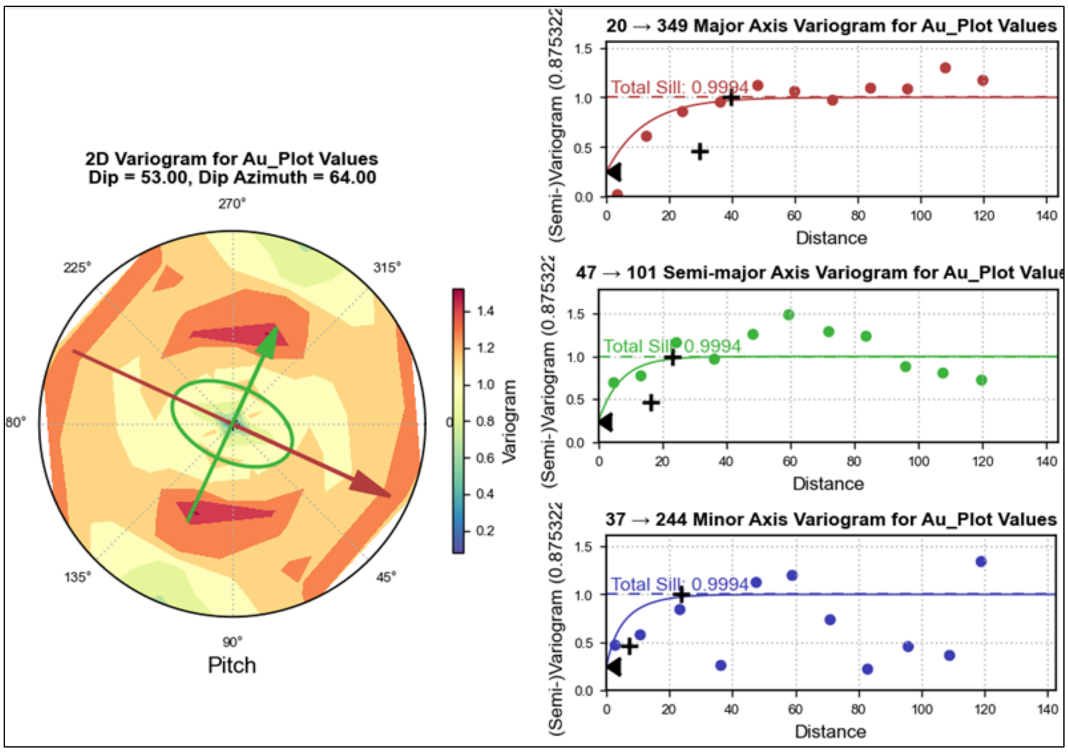


Figure 14-43: Modelled Variogram – Elizabeth Hill

14.8.4 Block Modelling

A block model was built in Datamine Studio RM software using a parent block size of 2.5m x 2.5m x 2.5m and coded for geology, weathering and density attributes prior to grade estimation.

Block model definitions are set out in Table 14-21 below.

Table 14-21: Block Model Parameters – Elizabeth Hill

Deposit	Origin			Number of Blocks			Block Size		
	mE	mN	mRL	mE	mN	mRL	mE	mN	mRL
Elizabeth Hill	11457	7980	-80	304	423	140	2.5	2.5	2.5

14.8.5 Grade Estimation

The Au grade was estimated into the block model using OK into the mineralised blocks. No other elements were estimated. Variogram parameters were used to inform search parameters used during grade interpolation. A maximum of 3 samples per drillhole were used to ensure that at least three drillholes were informing each block estimate and three search passes were used to inform the blocks in each domain, progressively relaxing the search ellipsoid and sample requirements for both domain 100 and domain 200 mineralisation.

14.8.6 Qualified Person Conclusions

The QP is satisfied that both the data and geological methods used to estimate the Elizabeth Hill mineral resource are appropriate. As discussed for Walsh and Strauss, the mineralisation domaining of Elizabeth Hill should be further investigated to reduce the proportion of below nominal mineralisation cutoff material if possible. The grade estimates were validated during the review and are considered appropriate for downstream use. Justification of “reasonable prospects of eventual economic extraction” (RPEEE), Mineral Resource classification, and Mineral Resource reporting for Elizabeth Hill are set out in Sections 14.9, 14.10 and 14.11 respectively.

14.8.7 Block Model Validations

The QP completed block model validations of the Elizabeth Hill model. Figure 14-44 below shows a long section validation of composite sample data against output block model grades for domain 1 (72% of contained metal). Swath plots were to show the comparison of composite grades against block model grades by slices through the block model in the east, north and RL directions. A degree of smoothing is evident but trends in the input composite data are honoured in the output model.

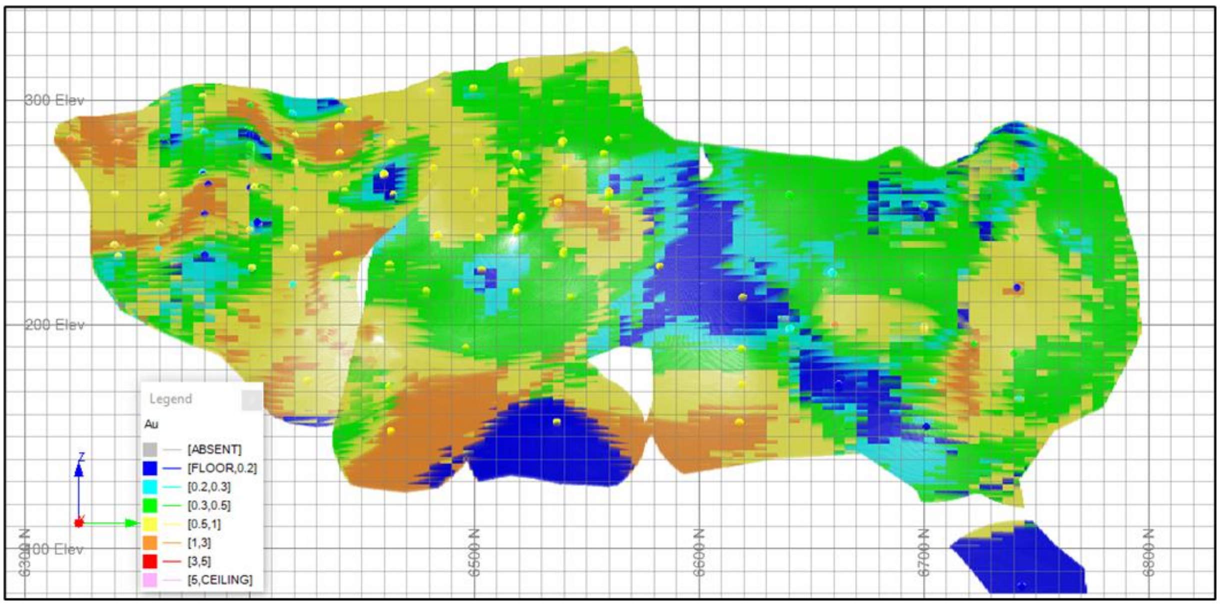


Figure 14-44: Block Grade and Composite Grade Comparison, Domain 1 at Elizabeth Hill

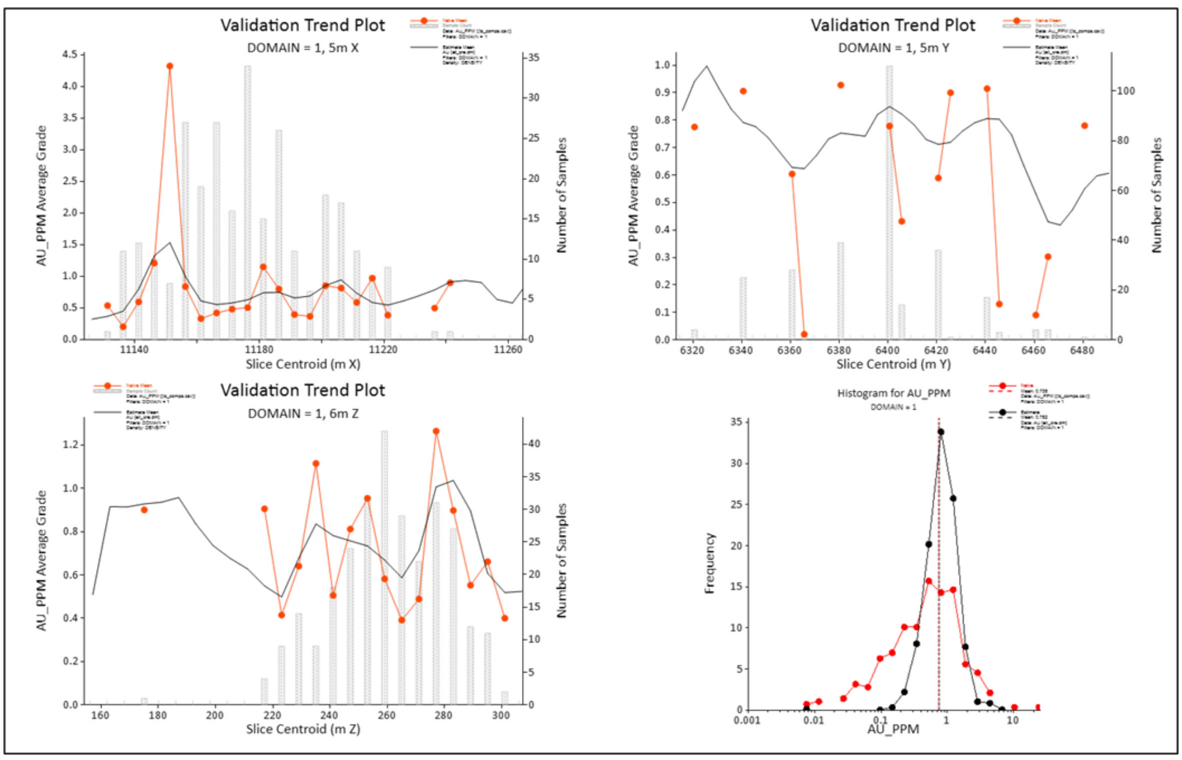


Figure 14-45: Swath Plots – Domain 1 at Elizabeth Hill
Comparison of Input Composite Grades Against Output Block Model Grades

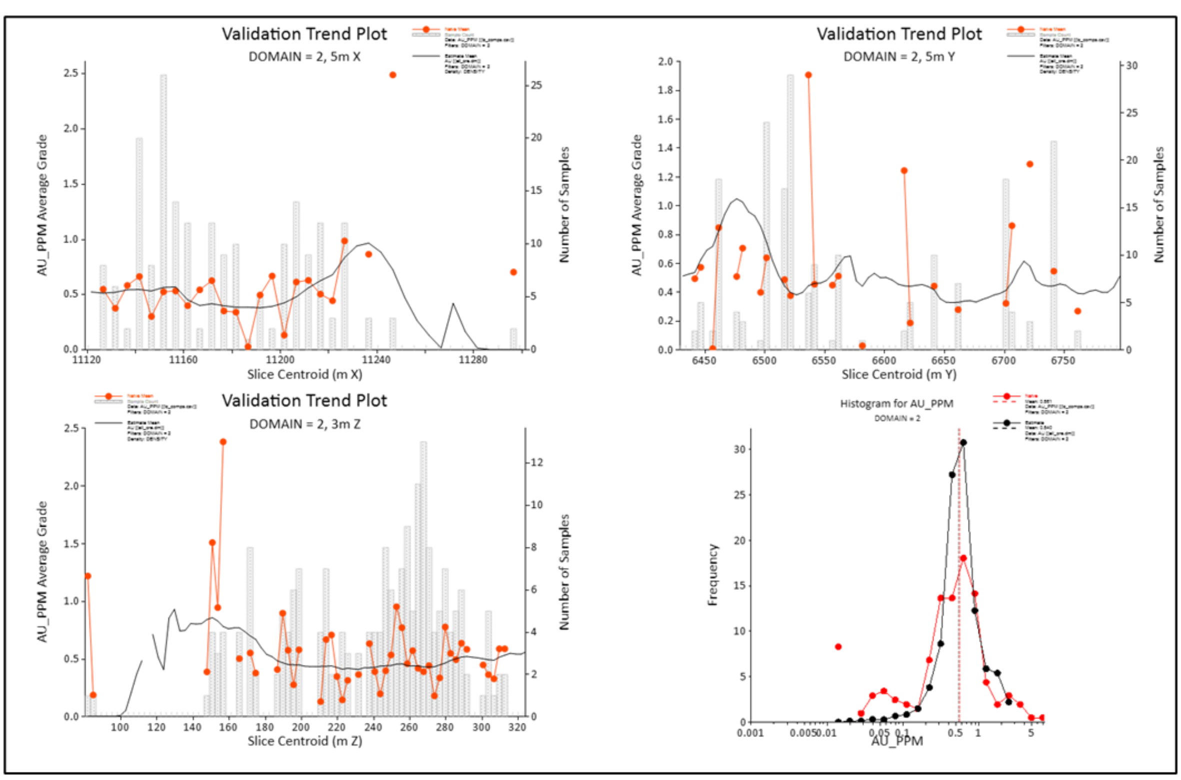


Figure 14-46: Swath Plots – Domain 2 at Elizabeth Hill
Comparison of Input Composite Grades Against Output Block Model Grades

14.9 Reasonable Prospects of Eventual Economic Extraction

Reasonable prospects of eventual economic extraction (RPEEE) must be demonstrated when disclosing estimates of Mineral Resources. At Bibiani, the current mining of multiple deposits by open pit mining methods as well as good data points for the planned transition to underground mining of some deposits provides a reasonable set of mining and conceptual economic parameters with which to assess RPEEE.

Accordingly, RPEEE of Bibiani 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. Mineral Resources are reported above a cut-off grade, within a conceptual pit shell constraint. Mineral Resources are reported in this way for Main Pit OP, Russell, Grasshopper and Elizabeth Hill.
- Constraining deposit block models to conceptual MSO shapes (prepared using UG mining assumptions, a cut-off grade of 0.80g/t Au and a gold price of $1,950). Mineral Resources report all material within the constraining MSO volume. Mineral Resources are reported in this way for Main Pit UG, Walsh and Strauss.

Tabulations of the parameters used to calculate cut-off grades for each the deposits are set out in the tables below.

Table 14-22: Cut-Off Grade Calculation Parameters – Open Pit Mineral Resources

Mineral Resource Reporting Cut-Off Grade (Informed by Operational Inputs)					
Parameters	**Unit**	**Value**			
		Main Pit	**Russell**	**Strauss**	**Walsh/Elizabeth Hill/ Grasshopper**
Gold Price (Mineral Resource Reporting)	(US$/oz)	1950	1950	1950	1950
Selling Cost	**(US$/oz)**	**96.84**	**96.84**	**96.84**	**96.84**
Refinery and Shipment	(US$/oz)	4.34	4.34	4.34	4.34
Government Royalty	(%)	5.00	5.00	5.00	5.00
Government Royalty	(US$/oz)	92.50	92.50	92.50	92.50
Operating Cost					
Mining					
Oxide Waste	(US$/t mined)	2.05	1.96	1.97	1.84
Oxide Ore	(US$/t mined)	2.11	2.83	2.02	2.27
Transition Waste	(US$/t mined)	2.23	2.22	1.91	2.03
Transition Ore	(US$/t mined)	2.33	3.08	2.13	2.33
Fresh Waste	(US$/t mined)	2.82	2.27	3.24	2.33
Fresh Ore	(US$/t mined)	3.03	2.44	2.34	2.64
Contractor Management fees	(US$/ t milled)	2.33	2.91	2.91	2.91
Grade Control	(US$/ t milled)	1.33	1.33	1.33	1.33
Owner Mining Fixed Cost	(US$/t milled)	2.33	1.56	2.33	2.33
Processing					
Process Feed - CIL	(US$/t milled)	12.01	14.85	14.85	14.85
Process G&A	(US$/t milled)	1.00	1.00	1.34	1.34
Admin G&A	(US$/t milled)	4.74	2.37	4.74	4.74
Ore Rehandling	(US$/t milled)	0.83	0.83	0.83	0.83
Operating Parameters					
Mining					
Mining Recovery	(%)	95	95	95	95
Ore Dilution	(%)	5	5	5	5
Processing Recovery					
Oxide	(%)	92.00	90.00	92.00	92.00
Transition	(%)	92.00	90.00	92.00	92.00
Fresh	(%)	92.00	90.00	92.00	92.00
Mineral Resource Cut-Off Grade					
Oxide	**(g/t ore)**	**0.45**	**0.48**	**0.52**	**0.53**
Transition	**(g/t ore)**	**0.45**	**0.48**	**0.52**	**0.53**
Fresh	**(g/t ore)**	**0.36**	**0.38**	**0.38**	**0.40**

Table 14-23: Mineral Resource Cut-Off Grade Calculation elements. The resulting cut-off grade is used in defining MSO shapes for underground Mineral Resource Reporting at Main Pit, Walsh and Strauss

Deposit	Unit	Main Pit, Walsh, Strauss
Revenue		
Gold price	(US$/oz)	1,950
Gold price	(US$/g)	62.69
Gold plant Recovery	(%)	92%
Opex Cost Per tonne	**(US$/t)**	
Mining Cost	(US$/t)	29.97
Stoping	(US$/t)	29.97
Process costs	(US$/t)	14.60
Total	**(US$/ore t)**	44.57
Costs per Gold Ounce	**(US$/oz)**	
Shipment & Refinery	(US$/oz)	6.31
Royalty (5.6% of effective Revenue)	(US$/oz)	100.46
Total	(US$/oz)	106.78
Total	(US$/g)	3.55
Cut Off In situ		0.94
Overbreak Dilution	(%)	14.2
Cut Off Including Dilution	**(g/t)**	**0.82g/t Au**

In addition to cut-off grade, other inputs to MSO shape definition are a stope height and length of 15m, a minimum stope width of 1m and a maximum stope width of 100m.

14.10 Mineral Resource Classification

14.10.1 Main Pit

The 2022 Main Pit Mineral Resource estimate was classified into Indicated and Inferred Mineral Resource categories in accordance with the JORC Code (2012). There are no material differences between the definitions of Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012). Currently no Measured Mineral Resources have been classified at Main Pit.

In 2022, the default classification of the Mineral Resource was Inferred. Indicated Mineral Resources were defined within a contiguous zone where the approximate drillhole density is less than a nominal 30m to 50m spacing, in conjunction with a kriging efficiency greater than 30%. Where there is a reduced confidence in the interpretation and/or grade estimate or an average grade was assigned, the blocks are classified as Inferred. Figure 14-47 and Figure 14-48 show the 2022 classification first as a long section and then as a cross section.

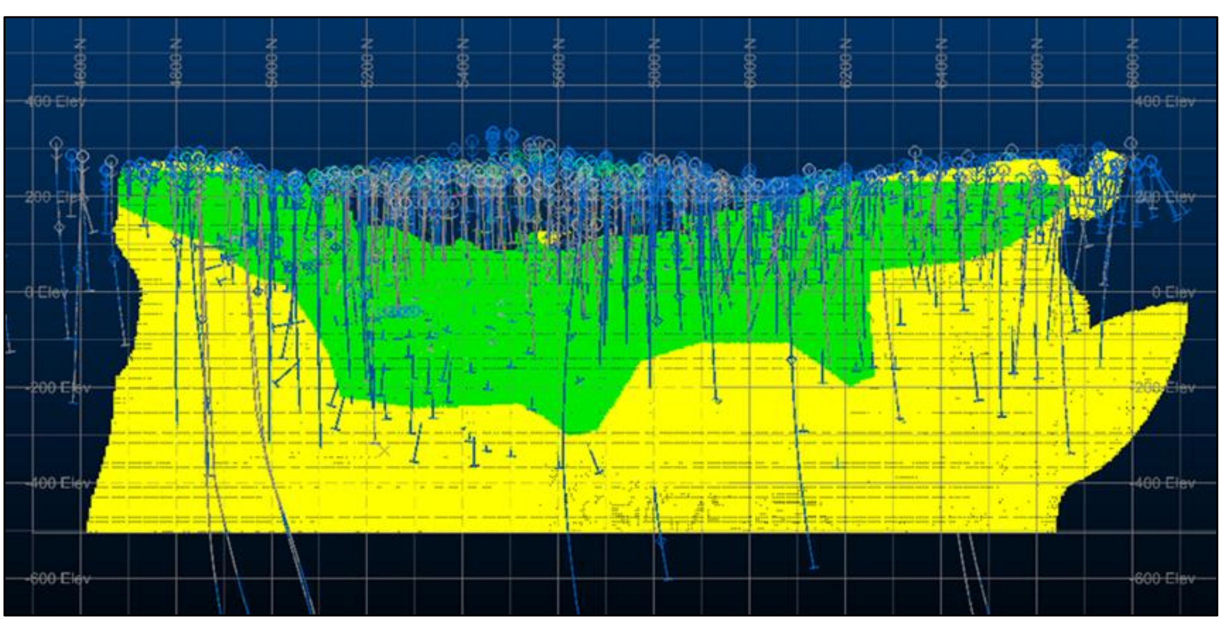


Figure 14-47: Long Section of Applied Mineral Resource Classification (Green – Indicated and Yellow – Inferred)

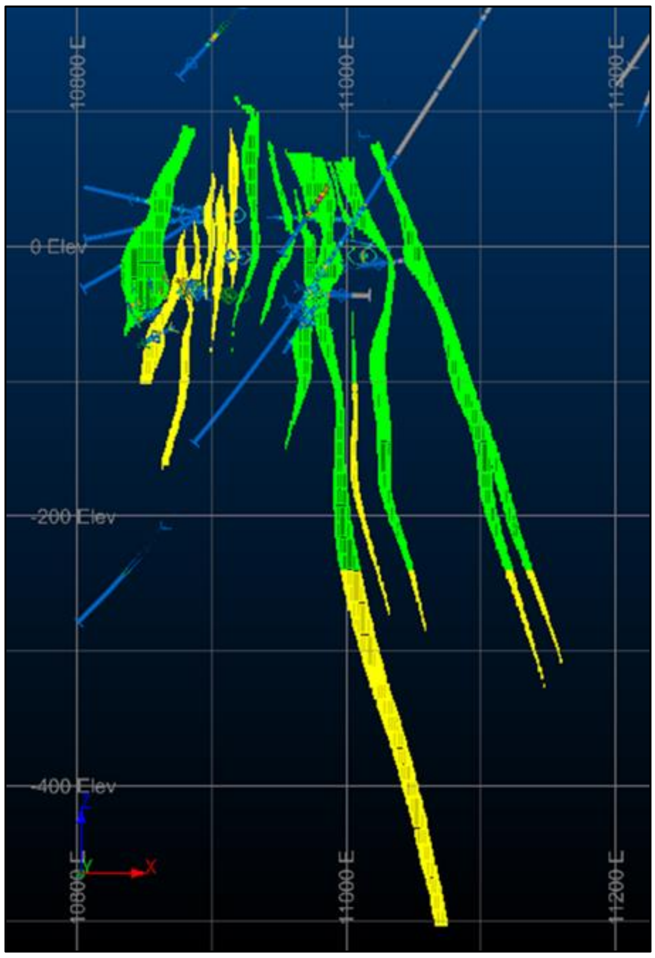


Figure 14-48: Cross Section (5525 mN) of Resource Classification (Green – Indicated and Yellow – Inferred)

The QP has reviewed the classification considerations adopted in 2022 and considers some parts of the Mineral Resource (the yellow domains in the top left-hand corner of Figure 14-47 to have been conservatively classified. Tonnages contained in domains 6120, 6130, 6140, 6150 and 6160 which collectively account for 2% of contained metal (above a 0.5g/t Au cut-off) are well informed by drilling, and in particular underground drill fans, and in the QP's opinion exhibit good geological continuity.

As such, modification was made to the Mineral Resource classification, upgrading these domain tonnages from Inferred to Indicated Mineral Resources.

Table 14-24 provides a comparison of the current classification with that reported in the 2022 model.

Table 14-24: Summary of Classification Adjustments to the Main Pit

Classification	Model	Tons (Mt)	Au Grade (g/t)	Au Content (Moz)
Indicated	2022 MRE	34.63	2.20	2.45
	2024 Update	35.52	2.19	2.50
Difference		**3%**	**0%**	**2%**
Inferred	2022 MRE	20.67	2.15	1.43
	2024 Update	19.78	2.16	1.38
Difference		**-4%**	**1%**	**-4%**

14.10.2 Walsh/Strauss

The 2022 Walsh Strauss Mineral Resource has been classified into Measured, Indicated and Inferred categories in accordance with the JORC Code (2012). There are no material differences between the definitions of Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012).

Measured Mineral Resources at Walsh Strauss are confined to zones where there is grade control drillhole spacing at 10m x 10m, or better, and kriging efficiency generally better than 40%. This material has been mined out. The Measured classification has not been extended past these zones due to a lack of historic reconciliation data. The Mineral Resource QP endorses the classification applied at Walsh Strauss.

Indicated Mineral Resources have been defined within a contiguous zone where the approximate drillhole density is better than a nominal 30m x 30m spacing, commonly 20m x 20m, in conjunction with a kriging efficiency greater than 30%.

Inferred Mineral Resources have been defined where the drillhole spacing becomes irregular but is better than a nominal 75m x 75m. Inferred mineralisation is considered to be interpolated.

Some areas of the interpreted mineralisation have been excluded from the Mineral Resource due to the degree of extrapolation and the lack of support for the interpretation. These zones are unclassified and have not been reported; they include significant portions of Domains 7200, 7300 and 7400. All other areas have been classified as an Inferred Mineral Resource.

14.10.3 Russell

At Russell, Indicated Mineral Resources are considered where drill spacing is <=25m and Inferred Mineral Resources at drill spacing >25m and <=50m.

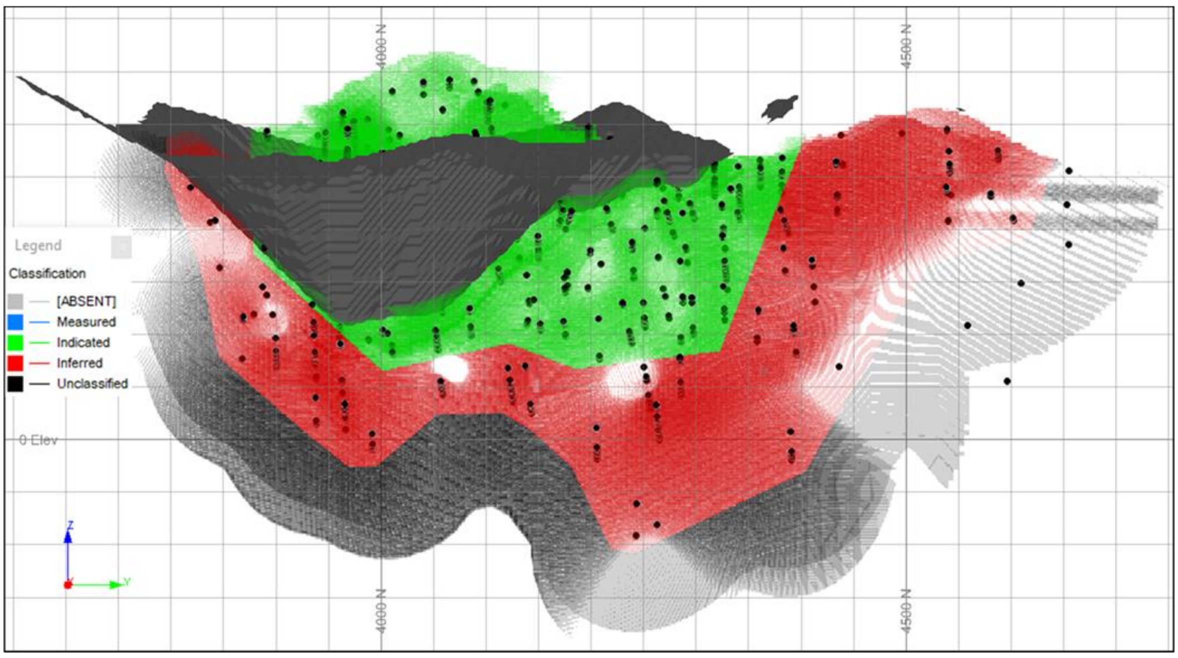


Figure 14-49: Mineral Resource Classification - Russell (Green – Indicated and Red – Inferred)

14.10.4 Elizabeth Hill

At Elizabeth Hill, Indicated Mineral Resources are considered where drill spacing is <=25m and block estimates have a Kriging Efficiency (KE) value of >0.35 and Inferred Mineral Resources at drill spacing >25m and <=60m where blocks have a KE value of >0.20.

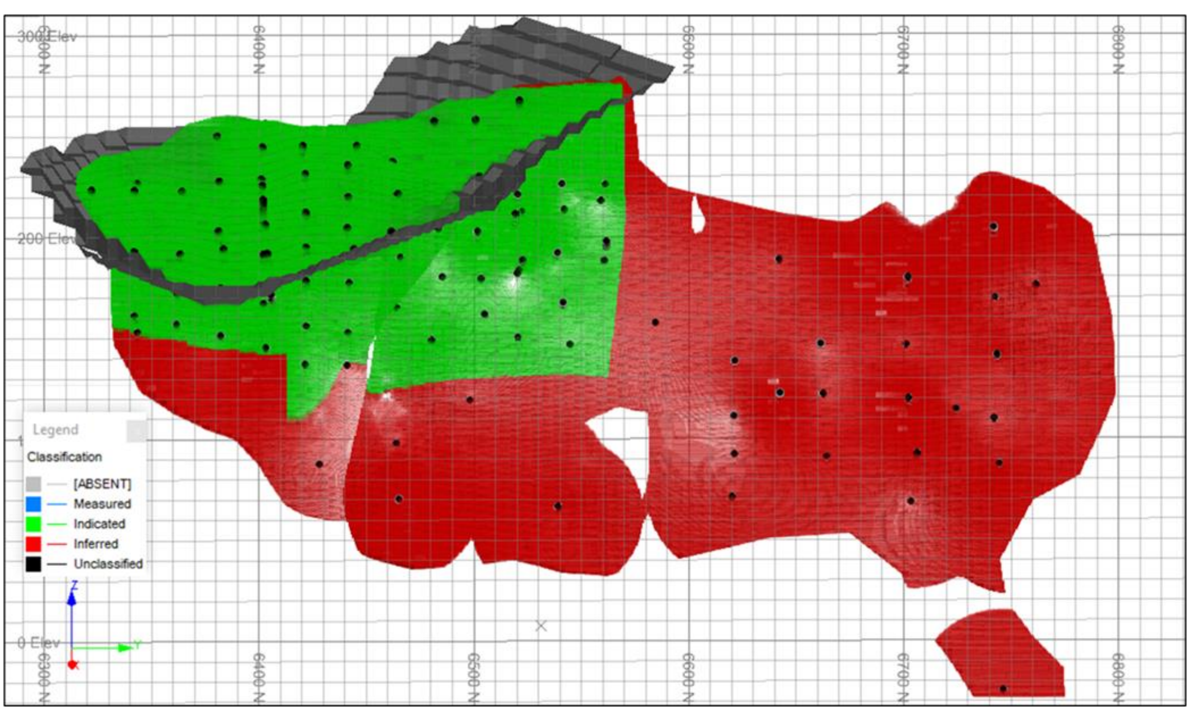


Figure 14-50: Mineral Resource Classification – Elizabeth Hill DOMAINS 1 & 2 (Green – Indicated and Red – Inferred)

14.10.5 Grasshopper

At Grasshopper, Measured Mineral Resources are considered where drill spacing is <25m, Indicated Mineral Resources are considered where drill spacing is >25m and <50m and Inferred Mineral Resources at drill spacing >50m and <75m.

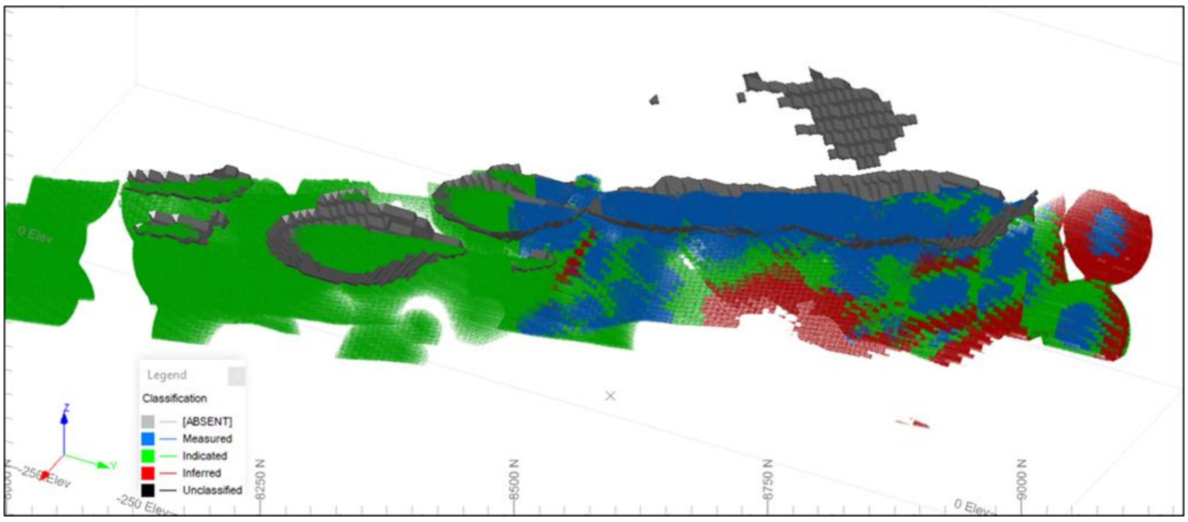


Figure 14-51: Mineral Resource Classification – Grasshopper (Measured – Blue, Green – Indicated and Red – Inferred)

14.11 Mineral Resource Reporting

The Mineral Resource inventory for the Bibiani Gold Mine are reported according to the CIM Definition Standards. The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them. Estimates (tonnes and metal content) for each of the deposits quoted in this report are on a 100% basis. The Mineral Resource Statement reported as at 31 December 2023 is presented in Table 14-25. The Mineral Resource estimates have been depleted, where applicable, for historical production and underground development as at 31 December 2023.

Table 14-25: Final Block Model Files and Constraining Surfaces used to Report Mineral Resources (as at 31 December 2023)

Deposit	Final Block Model	Depletion Surface	RPEEE Constraint	MSO Shape File	COG* (g/t Au)
Main Pit (OP/UG)	MP_MSOMOD	DEP_DEC23	MP_topoFeb24	MSO08	0.5 (OP) 0.8 (UG)
Walsh & Strauss	WS_MSOMOD	ST_dep and walsh_dep23		MSO08_WS	0.8 (UG)
Russell	RUMD_MAR24	lidar_topo_ru	RU_RPEEE		0.5 (OP)
Elizabeth Hill	ELI_MARCH22_MRE	elz_topo	eli_rpeee		0.5 (OP)
Grasshopper	GH_RPEEE	gh_DEP	gh_RPEEE		0.5 (OP)

Notes: An UG cut-off grade of 0.80g/t Au has been used as an input parameter to MSO volume generation.

Table 14-26: Total Mineral Resource Inventory for the Bibiani Gold Mine, as at 31 December 2023

Classification	Tonnes (Kt)	Au Grade (g/t)	Au Content (Koz)
Measured	228	1.34	10
Indicated	33,534	2.30	2,481
Measured + Indicated	**33,762**	**2.30**	**2,490**
Inferred	15,178	2.36	1,152

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 any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1035g.*
5. *A 0.5g/t gold reporting cut-off has been applied for OP Mineral Resources, constrained within a conceptual pit shell using US$1,950 gold price to satisfy RPEEE requirements.*
6. *UG Mineral Resources are reported within conceptual MSO shapes prepared using a US$1,950 gold price and a cut-off grade of 0.80g/t Au to satisfy RPEEE requirements.*
7. *Density values of 2.75t/m^3, 2.50t/m^3 and 2.00t/m^3 have been applied to blocks flagged as fresh, transition and oxidised sediments respectively, for all block models.*
8. *Geological losses and depletions have been applied.*
9. *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.*
10. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

Table 14-27: Mineral Resource Statement by Deposit, Bibiani Gold Mine, as at 31 December 2023

Deposit	Classification	Tonnes (Kt)	Au Grade (g/t)	Au Content (Kozs)	Density
Main Pit (OP)	Measured				
	Indicated	13,581	2.36	1,030	2.74
	Measured and Indicated	**13,581**	**2.36**	**1,030**	
	Inferred	0	3.66	0	2.75
Main Pit (UG)	Measured				
	Indicated	17,403	2.34	1,311	2.75
	Measured and Indicated	**17,403**	**2.34**	**1,311**	
	Inferred	14,794	2.37	1,126	2.75
Satellite Pits (Walsh & Strauss) (UG)	Measured	49	1.49	2	2.52
	Indicated	275	1.59	14	2.71
	Measured and Indicated	**324**	**1.57**	**16**	
	Inferred	364	2.16	25	2.75
Russell (OP)	Measured				
	Indicated	2,069	1.80	119	2.58
	Measured and Indicated	**2,069**	**1.80**	**119**	
	Inferred	0	0.64	0	2.74
Grasshopper (OP)	Measured	179	1.30	7	2.53
	Indicated	91	1.01	3	2.25
	Measured and Indicated	**270**	**1.20**	**10**	
	Inferred	0	0.68	0	2.50
Elizabeth Hill (OP)	Measured				
	Indicated	115	0.90	3	2.00
	Measured and Indicated	**115**	**0.90**	**3**	
	Inferred	19	1.12	1	2.00

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 any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1035g.*
5. *A 0.5g/t gold reporting cut-off has been applied for OP Mineral Resources, constrained within a conceptual pit shell using US$1,950 gold price to satisfy RPEEE requirements.*
6. *UG Mineral Resources are reported within conceptual MSO shapes using a US$1,950 gold price and a cut-off grade of 0.80g/t Au to satisfy RPEEE requirements.*
7. *Density values of 2.75t/m^3, 2.50t/m^3 and 2.00t/m^3 have been applied to blocks flagged as fresh, transition and oxidised sediments respectively, for all block models.*
8. *Geological losses and depletions have been applied.*
9. *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.*
10. *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

14.11.1 Comparison with Previous Estimates

Prior to 2022, the most recent Mineral Resource for the Bibiani Main Pit was reported in the NI 43-101 Asante Gold Corporation Technical Report on the Bibiani Gold Mine dated 7 November 2021. This Mineral Resource was based on the Bibiani Mineral Resource model generated by Optiro in 2017. This model was generated to be suitable for an underground extraction method where its wireframes were generated at a cut-off grade of around 1g/t Au.

The November 2021 Mineral Resources represent material which was to be mined via open pit and were thus reported above a cut-off grade of 0.65g/t gold inside an economic pit shell defined at a gold price of US$1,950. The Mineral Resource statement is presented in Table 14-28.

Table 14-28: Bibiani Main Pit Mineral Resources Reported as at 18th October 2021 at 0.65g/t Au cut-off

Classification	Tonnes (Mt)	Au Grade (g/t)	Au Content (Moz)
Measured	-	-	-
Indicated	19.6	2.76	1.740
Measured + Indicated	**19.6**	**2.76**	**1.740**
Inferred	8.4	2.79	0.751

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *1 troy ounce = 31.1034768g.*

The objective of the 2022 MRE was to create a model suitable to be mined via an open pit method and thus a remodelling exercise was undertaken where wireframes were generated at a cut-off of 0.3g/t gold. The 2 models were compared in 2022 and the outcome of the different cut-off grades has resulted in a drop in grade of 19%, an increase of tonnes of 54% and an overall increase in ounces of 25% for the Indicated portion. However, current comparison is difficult since the Main Pit inventory now includes an open pit portion and an underground portion, informed by the current operational mine plan to transition to underground mining sooner than was previously scheduled.

The most recent Mineral Resource for the Bibiani Satellite Pits was reported in the NI 43-101 Asante Gold Corporation Technical Report on the Bibiani Gold Mine dated 7 November 2021. This Mineral Resource was based on an update of the Bibiani Satellite Mineral Resources generated by Resolute in 2018. This model was generated to be suitable for an underground extraction method where its wireframes were generated at a cut-off grade of around 1g/t gold. The November 2021 Mineral Resources represent material which was to have been mined via open pit and were thus reported above a cut-off grade of 0.65g/t gold inside an economic pit shell defined at a gold price of US$1,950. The Mineral Resource statement is presented in Table 14-29.

Table 14-29: Bibiani Satellite Pit Mineral Resources reported as at 18th October 2021 at 0.65g/t Au cut-off

Classification	Tonnage (Mt)	Au Grade (g/t)	Au Content (Moz)
Measured	0.78	1.77	0.045
Indicated	0.40	1.89	0.024
Measured + Indicated	**1.18**	**1.81**	**0.069**
Inferred	0.03	2.13	0.002

Reinterpretation of mineralisation domains in the 2022 MRE aimed at confirming and extending the mineralisation below the historical Walsh pit with new drill information and to minimise internal dilution in the previous domain wireframes. The 2 models have been compared and the outcome of the different cut-off grades has resulted in an increase in grade of 45%, an increase of tonnes of 16% and an overall increase in ounces of 68% for the Measured and Indicated portion.

14.12 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.

14.13 Risks

As all Mineral Resources are estimates, they are not without inherent geological and grade risk. The Qualified Persons believe that these risks are generally low given that there has been mining at both the main Bibiani deposit and at the satellite deposits. Mineral Resources have been defined using a combination of lithology and structure to interpret the orientation and continuity of gold mineralisation at the nominal geological cut-off of around 0.2 to 0.3 g/t Au. This has resulted in the inclusion of sample intercepts below the nominal gold cut-off grade. These intercepts are considered internal dilution or internal waste zones, but in some case due to grade estimation smoothing, portions of these zones may exceed the MRE RPEEE reporting cut-off resulting in minor overestimation of tonnes and gold ounces. It is recommended that further work is completed to better define the mineralisation volume boundaries or to investigate non-linear grade estimation methods to reduce this potential overestimation due to grade smoothing.

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 Persons do not consider that environmental or permitting risks are likely to have a material impact on the progression and re-start of the Bibiani Project. 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 an expansion of the Bibiani Main open pit.

15. MINERAL RESERVE ESTIMATES

15.1 Introduction

The Mineral Reserve estimate has been prepared as part of the LoM plan prepared by MGBL technical services using the CIM definitions and guidelines adopted as of May 2014 (CIM, 2014) and procedures for classifying the reported Mineral Reserves were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101 (NI 43-101). The Life of Mine planning was completed by the Mensin Gold technical services and has been reviewed by the QP for Mineral Reserves and Mining.

The Mineral Reserves were derived from the Mineral Resource block models and estimates that are presented in Section 14. The Mineral Reserves are based on the Measured and Indicated Mineral Resources that have been identified as being economically extractable and which incorporate mining losses and the addition of waste dilution.

15.2 Methodology

The Bibiani Gold LoM Study and Mineral Reserves followed a process of pit optimisation, design and scheduling. The Mineral Resource models were prepared by MGBL and reviewed by MAJA Mining and are described in Section 14, above. The mining models were derived from the Mineral Resource models modified for dilution and mining loss by MGBL (Open pits) and Bara consulting (Underground). The mining models were depleted to the actual end of December 2023 pit surfaces.

- Open pit targets
  - Using the mining models, pit optimisations were completed in Whittle Four-X™ software (Whittle). The software determines the economic limits of each deposit after accounting for estimated revenues and costs associated with mining each block and the maximum allowable slope angles. Nested pit shells produced by the pit optimisation were used in the selection of an "optimum" pit shell and for guiding the location of pit stages.
  - Using the selected pit shells as templates, pit designs for the final pit limits and stages were developed in Surpac®. The pit designs considered practical access issues, mining constraints and geotechnical design criteria.

- Underground targets
  - For the underground operation a transition point between open pit and underground at Bibiani Main Pit was selected.
  - Stope shapes for the underground were developed using Datamine MSO®, based on a set of design criteria for the underground mining methods selected.
  - Development layouts were developed to access the stope shapes.

Based on these designs, a LoM schedule was completed in MineShed® (open pits) and DeswikSched® (underground). The mining schedule was used to drive the cost models and discounted cashflow model for the project. The discounted cashflow model was reviewed to confirm that the Mineral Reserves considered in the plan can be viably extracted.

15.3 Modifying Factors

15.3.1 Geotechnical Parameters

Geotechnical studies were carried out to support the mine planning inputs for the LoM Study. Refer to the geotechnical considerations Section 16.2 for more details on the geotechnical parameters used.

The overall wall angles used for pit optimisation were based upon the overall wall angles able to be achieved in design when incorporating ramps, minimum mining width, and geotechnical berms. The slope angles used in the pit optimisation are summarised in Table 15-1 and the stope design criteria applied in MSO are shown in Table 15-2.

Table 15-1: Pit Slope Angles used in Pit Optimisation

	Unit	Main Pit	Satellite Pits
Oxide	(°)	26	29
Transition	(°)	31	40
Fresh	(°)	44/45	44

Table 15-2: Stope Design Criteria used in MSO for Underground Stopes

	Unit	Long hole Stoping	Cut and fill
Minimum stope width	(m)	2.0	2.0
Maximum stope with	(m)	15.0	15
Maximum stope height	(m)	30.0	5
Maximum strike span	(m)	75	75

15.3.2 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, or by inaccuracies in the drill and blast process. 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 15-3.

Table 15-3: Mining Recovery Factors

Underground Mining Recovery (%)	Underground Sill Pillar Recovery (%)	Underground Crown Pillar Recovery (%)	Open Pit Mining Recovery (%)
95	60	50	93

15.3.3 Dilution

For each mining operation dilution figures have been assumed based on historical mine to mill reconciliations and proposed mining methods. The dilution factors applied for mineral reserve estimates are shown in Table 15-4.

Table 15-4: Mine Dilution Factors

	Long hole Stoping (Main Pit) (m skin)	Cut and Fill Stoping Walsh and Strauss (m skin)	Pillar Recovery (%)	Open Pits (%)
Dilution	0.5	0.25	30	7

15.3.4 Cost and Revenue Factors

The processing recovery assumed in the pit optimisation is 88 % and was estimated by MGBL and supported by the QP for metallurgy and Metallurgical test work. The cost and revenue factors used in the pit optimisation are tabled below.

Table 15-5: Cost and Revenue Factors

Revenue	Unit	Main Pit	Satellite Pits	Underground
Gold Price - Optimisation (Base)	(US$/oz)	1,700	1,700	1,700
Selling Cost	(US$/oz)	90.09	90.09	90.09
Refinery and Shipment	(US$/oz)	6.31	6.31	6.31
Government Royalty	(%)	5.60	5.60	5.60
Government Royalty	(US$/oz)	83.78	83.78	83.78
Operating Cost				
Mining				
Oxide Waste	(US$/t mined)	2.05	1.84	
Oxide Ore	(US$/t mined)	2.11	2.27	
Transition Waste	(US$/t mined)	2.23	2.03	
Transition Ore	(US$/t mined)	2.33	2.33	
Fresh Waste	(US$/t mined)	2.82	2.33	
Fresh Ore	(US$/t mined)	3.03	2.64	
Contractor Management fees	(US$/t milled)	2.33	2.91	
Grade Control	(US$/t milled)	1.33	1.33	
Owner Mining Fixed Cost	(US$/t milled)	2.33	3.11	
Underground mining cost				
Stoping	(US$/t RoM)			30.00
Development	(US$/t RoM)			13.70
Other	(US$/t RoM)			1.71
Sustaining Capital	(US$/t RoM)			10.71
Processing				
Process Feed - CIL	(US$/t milled)	14.70	14.70	14.60

Revenue	Unit	Main Pit	Satellite Pits	Underground
Process G&A	(US$/t milled)	1.00	1.34	
Admin G&A	(US$/t milled)	4.74	4.74	6.54
Ore Rehandling	(US$/t milled)	0.83	0.83	

15.3.5 Cut Off Grade

MGBL uses two cut-off grades:

For open pit operations:

- **Reserve cut-off**: This is the cut-off grade based on costs incurred during steady state operations. It includes fixed mining costs and full general and administrative costs. The gold price used in calculating this cut-off is the Mineral Reserve gold price, which in this case is US$1,700/oz.
- **Marginal cut-off**: This is the cut-off grade applied after mining is complete and only stockpile depletion and processing occur. In this case, the mining costs are removed.

For underground:

- **Reserve cut-off**: This is the cut-off grade based on costs incurred during steady state operations. It includes fixed mining costs and full general and administrative costs. The gold price used in calculating this cut-off is the Mineral Reserve gold price, which in this case is US$1,700/oz.
- **Stope cut-off**: This is the cut-off grade applied after development to a block or area is complete. The costs considered include the direct costs of stoping, load and haul and processing. Overhead costs and development costs are excluded in this calculation.

The mining schedule and ultimately the Mineral Reserve, were calculated on the Reserve cut-off grades for open pit and a combination of Reserve cut-off and stope cut-off for underground. The cut-off grades used are tabled below.

Table 15-6: Cut-Off Grades used for Mineral Reserve Estimation

Material Type	Cut-off grade (g/t)	
Open Pit	**Main Pit**	**Satellite Pits**
Oxide	0.474	0.599
Transition	0.475	0.596
Fresh	0.477	0.597
Underground	**Long Hole Stoping**	**Cut and Fill**
Reserve Cut-off	1.71	1.71
Stope Cut-off	0.99	0.99

15.4 Life of Mine Schedule

The December 2023 production schedules for Bibiani are based on reasonable assumptions and calculations using appropriate software and best efforts. The production target is approximately 4.0 Mtpa of RoM ore from 2026 on.

The Mineral Reserve was estimated using the LoM mine design to support appropriate sequencing and scheduling. Cognisance was taken of hydrogeology, geotechnical criteria and various other modifying factors to ensure an acceptable level of accuracy. Figure 15-1 shows the RoM production schedule.

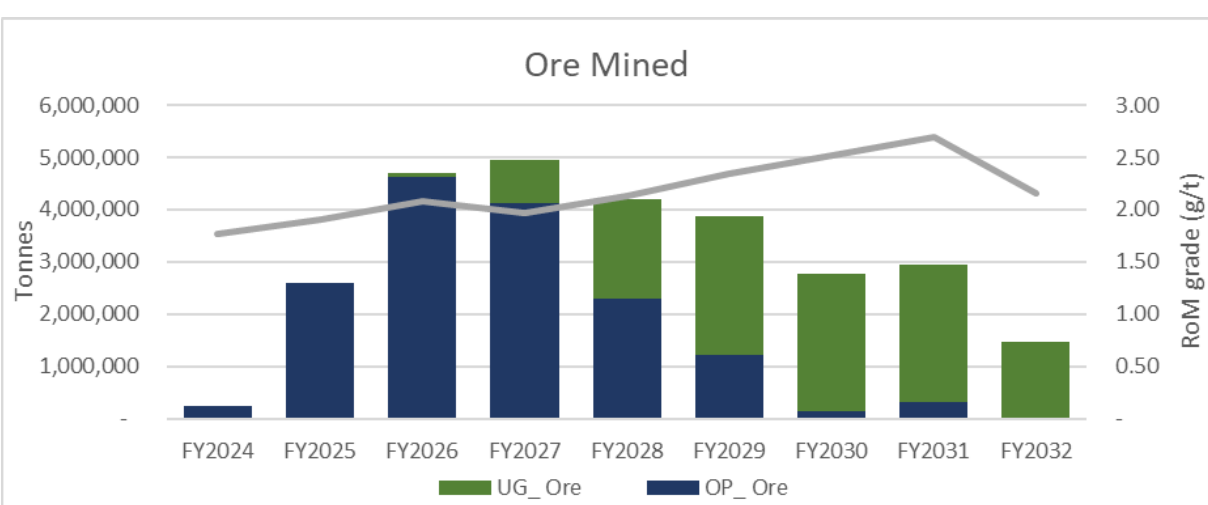


Figure 15-1: Summary of Bibiani LoM Schedule

Only Measured and Indicated Mineral Resources are converted to Mineral Reserves.

15.5 Mineral Reserve Statement

The Mineral Reserves for Bibiani Mine, as at 31 December 2023 are tabled below. The Mineral Reserve Statement followed an assessment of the economic viability of the Mineral Resources that were scheduled for depletion before confirming them as Ore Reserves.

Table 15-7: MBGL Mineral Reserve Statement as at 31 December 2023

Item	Tonnes (Mt)	Grade (g/t)	Contained Gold (Moz)
Open Pit			
Proven Mineral Reserves	0.18	1.24	0.01
Probable Mineral Reserves	15.10	2.10	1.02
Underground			
Proven Mineral Reserves	0.02	1.44	0.00
Probable Mineral Reserves	12.12	2.35	0.92
Total Bibiani			
Proven Mineral Reserves	**0.20**	**1.26**	**0.01**
Probable Mineral Reserves	**27.22**	**2.21**	**1.94**
Total Mineral Reserves	**27.42**	**2.21**	**1.95**

Notes:

1. *The Mineral Reserve has been reported in accordance with the requirements and guidelines of NI-43101 and are 90% attributable to Asante (10% Ghanaian Government).*
2. *Apparent computational errors due to rounding 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$1700/oz as at 31st December 2023.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves.*
7. *Only Measured and Indicated Mineral Resources have been converted to Ore Reserves.*
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.*

15.6 Mineral Reserve Reconciliation

The previous Mineral Reserve estimate for Bibiani was completed by MGBL in 2022 and was based on open pit mining only. The December 2023 Mineral Reserve statement includes both open pit and underground Mineral Reserves. Table 15-8 below shows a comparison of the Mineral Reserves including an explanation of the differences.

Table 15-8: Comparison of February 2022 and December 2023 Mineral Reserves

		Reserves as at 28 Feb 2022			Depleted			Exploration Change			Engineering Changes			Reserves as at 31 Dec 2023		
Location	**Category**	**Mt**	**Grade (g/t)**	**Au (Moz)**	**Mt**	**Grade (g/t)**	**Au (Moz)**	**Mt**	**Grade (g/t)**	**Au (Moz)**	**Mt**	**Grade (g/t)**	**Au (Moz)**	**Mt**	**Grade (g/t)**	**Au (Moz)**
Main Pit	Proven	0		0	0		0	0		0	0		0	0		0
	Probable	26.93	2.14	1.86	-1.28	2.16	-0.09	0		0	-12.53	2.12	-0.85	13.11	2.17	0.91
	P&P	26.93	2.14	1.86	-1.28	2.16	-0.09				-12.53	2.12	-0.85	13.11	2.17	0.91
Satellite Pits	Proven	0.26	2.16	0.02	-0.56	1.47	-0.03	0.37		0.01	0.11	0.74	0	0.18	1.24	0.01
	Probable	1.18	1.99	0.08	-1.05	1.73	-0.06	1.98	1.73	0.11	-0.12	5.01	-0.02	1.99	1.69	0.11
	P&P	1.44	2.02	0.10	-1.61	1.64	-0.08	2.35	1.63	0.12	0	133.62	-0.02	2.17	1.66	0.12
Underground	Proven										0.02	1.44	0	0.02	1.44	0
	Probable										12.12	2.35	0.92	12.12	2.35	0.92
	P&P													12.15	2.35	0.92
Stockpile	Proven	0	0	0	0	0	0				0	0	0	0.15	1.02	0.01
	Probable	0	0	0	0	0	0				0	0	0	0	0	0
	P&P	0	0	0	0	0	0				0	0	0	0.15	1.02	0.01
Total Bibiani	**Proven**	**0.26**	**2.16**	**0.02**	**-0.56**	**1.47**	**-0.03**	**0.37**	**1.09**	**0.01**	**0.14**	**0.87**	**0**	**0.36**	**1.16**	**0.01**
	Probable	**28.1**	**2.14**	**1.93**	**-2.34**	**1.97**	**-0.15**	**1.98**	**1.73**	**0.11**	**-0.53**	**-2.65**	**0.04**	**27.22**	**2.21**	**1.94**
	P&P	**28.36**	**2.14**	**1.95**	**-2.9**	**1.87**	**-0.17**	**2.35**	**1.63**	**0.12**	**-0.39**	**-3.89**	**0.05**	**27.58**	**2.2**	**1.95**

15.7 Factors Affecting Mineral Reserve Estimation

The Mineral Resource and Mineral Reserves are sensitive to cut off grade as shown in Mineral Resource grade tonnage curves from the Mineral Resource Section 14. The factors affecting the Mineral Reserve cut-off grade are:

- Gold price (US$/oz).
- Mining costs in US$/t.
- Processing recovery.
- Processing costs.

Other factors that can affect the Mineral Reserve estimate are:

- Environmental and social risks including the timeous completion of the Resettlement Action Plan required to allow the mining of the final Main Pit to its final pit design. This may cause delays impacting the mine scheduling and consequently the project cashflows.
- Timeous completion of the proposed diversion of the national road. If the diversion is not successfully completed this will impact the pit design and could sterilize some of the Main Pit Mineral Reserves. All processes required for the successful diversion of the road are in progress at the time of writing this report.
- Since the project infrastructure is largely in place it is unlikely that infrastructure issues, other than the Resettlement Action Plan and road diversion, discussed above, will have a material impact on the Mineral Reserves.
- All the required operating permits are in place so permitting does not present a material risk to the Mineral Reserve estimate.

16. MINING METHODS

16.1 Mining Overview

Multiple phases of both underground and open pit mining have been undertaken at Bibiani. Figure 16-1 shows the historical open pit and underground mining prior to commencement of mining by Asante in 2022.

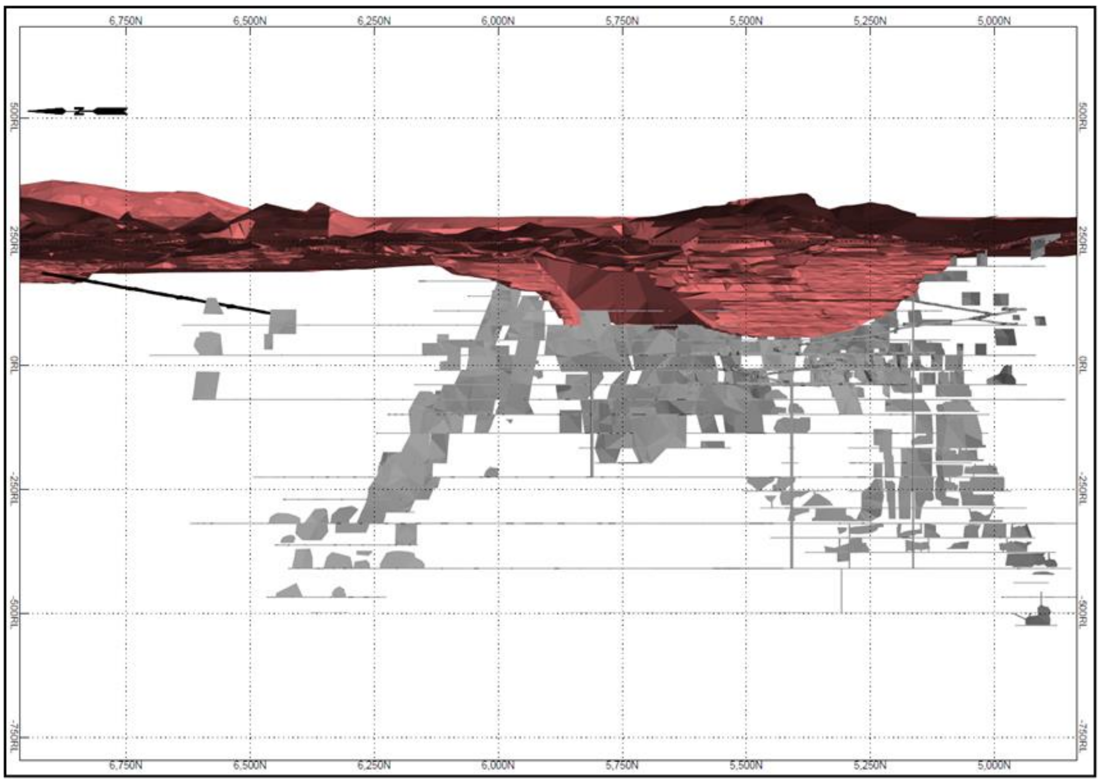


Figure 16-1: Historical Mining Prior to Asante Ownership of Bibiani

Underground mining took place between 1902 and 1973 via a series of vertical and inclined shafts. The mining extended over a strike length of 1.5km and from surface to 24 Level (800 m below surface). Development was undertaken in 30m intervals and stoping was by overhand shrinkage and bench cut and fill methods.

AngloGold Ashanti commenced open pit mining in 1997 and continued until 2003 when mining was ceased due to a major failure of the West wall.

Modern trackless underground mining commenced in 2002 from a portal in the South-East end of the Main pit and a decline was developed to 9 Level. In 2006 the mine changed hands and the new owner, Central African Gold (CAG), continued with trackless development and limited stoping between 7 and 9 Levels.

In 2008 a new decline, the Greg Hunter (GH) Decline, was commenced from the Strauss Pit, located near the processing plant. The decline, with dimensions of 5.0m wide x 5.5m high, advanced approximately 700m. A subsequent cutback to the Strauss pit destroyed the access to the GH Decline

In 2021 Asante Gold gained ownership of the property and recommenced with open pit mining of the Main Pit and a number of satellite pits including Strauss and Walsh Pit, situated North-East of the Main Pit.

Asante have backfilled the Strauss pit to the elevation of the GH Decline and established a ramp constructed of backfilled waste rock from the GH portal to the RoM pad at the processing plant. At the time of writing the GH portal has not been re-opened so access to the underground workings at GH Decline remains closed.

The Bibiani Main pit accounts for most of the ore production at Bibiani but is supplemented by ore from the satellite pits which currently include Grasshopper and Russell open pits.

In the current Life of Mine the Main pit extends to a depth of 440 m below surface (-126 RL).

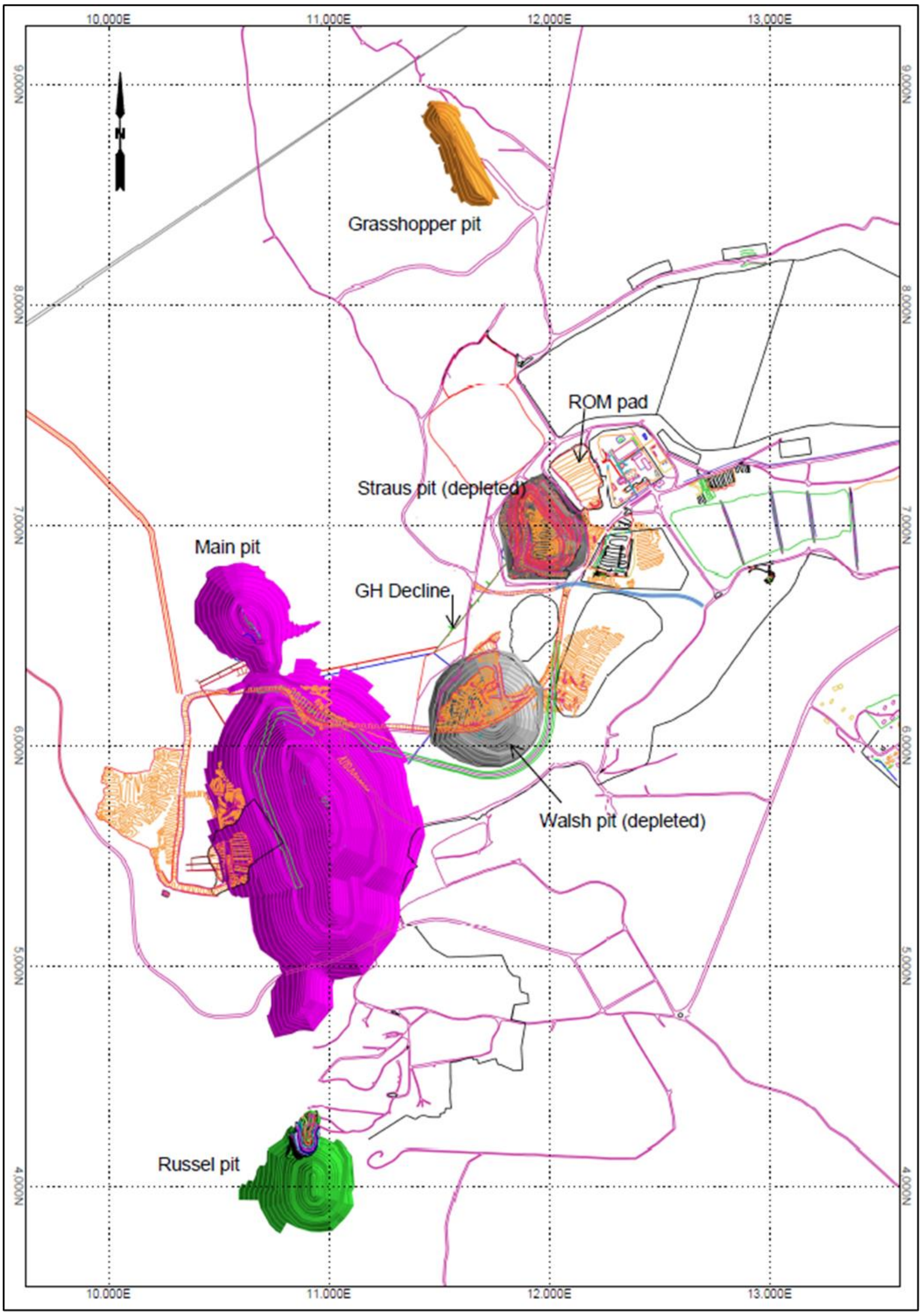


Figure 16-2: Bibiani Site Layout

(Source: Bara 2024)

16.2 Mining Strategy

Although the 2022 Mineral Reserve estimate included only open pit mining Asante have always considered future underground mining in their strategy. During 2023 Asante commissioned an underground scoping study, initially considering only mining below the optimum open pit, which at the time was referred to as Cut4/5. During the scoping study it became evident the underground mining presented an opportunity to mine at lower cost per ounce than the deeper portions of the open pit, which required strip ratios to increase with associated increased mining costs.

Asante have subsequently completed a prefeasibility level of detail mine plan for the underground mining operation. This plan considers commencing underground mining at a higher elevation than the final Cut4/5 open pit design, thereby reducing the open pit mine life but brining in underground production in conjunction with open pit mining from both Main pit and various Satellite pits from 2026 onwards.

16.3 Open Pit to Underground Transition in Bibiani Main Pit

The base case considered for the open pit to underground transition was that open pit mining would continue to the extent of the viable life of open pit mining in the Main Pit, Cut 5 in the Life of Mine plan LoM55C, which extends to -210 M RL.

When used as the basis for a preliminary financial model the resultant operating cost per ounce of gold produced was US$1,341/oz.

Table 16-1 shows the results of the open pit optimisation exercise, illustrating the increasing strip ratio as the pit revenue factor and consequent pit depth increase.

Work during the Scoping study and subsequent PFS level underground mine planning indicated that underground costs are likely to be around US$1,050/oz.

Table 16-1: Results of Pit Optimisation for Main Pit

1850										**Cost**						**Unit Cost**	
Gold Price ($/oz)	**Final Pit No.**	**Revenue Factor**	**Cashflow (US$)**	**Ore (t)**	**Grade (g/t)**	**Waste (t)**	**Total (t)**	**Strip Ratio**	**Mining (US$)**	**Processing (US$)**	**Selling (US$)**	**Revenue (US$)**	**Proc Rec (%)**	**Rec. Gold (oz)**	**Mining (US$/t Mined)**	**Processing (US$/t Milled)**	**Gold (US$/oz)**
863	1	0.47	297,654,993	3,146,679	2.89	26,278,288	29,424,967	8.35	76,571,671	86,453,377	25,446,767	486,126,807	89.9%	262,755	2.60	27.47	717
925	2	0.50	308,609,272	3,391,737	2.81	27,760,995	31,152,736	8.18	81,055,419	93,187,337	26,671,489	509,523,517	89.9%	275,473	2.60	27.47	729
987	3	0.53	315,376,135	3,536,461	2.78	29,157,803	32,694,264	8.25	85,003,230	97,163,997	27,483,001	525,026,362	89.9%	283,854	2.60	27.47	739
1,048	4	0.57	372,590,601	4,824,541	2.58	42,944,439	47,768,980	8.90	125,046,282	132,559,851	34,810,428	665,007,162	89.9%	359,492	2.62	27.48	813
1,110	5	0.60	417,705,402	5,771,475	2.53	56,061,442	61,832,917	9.71	162,420,102	158,581,531	40,804,254	779,511,290	89.9%	421,377	2.63	27.48	859
1,172	6	0.63	472,512,634	7,077,305	2.47	79,049,610	86,126,915	11.17	217,016,868	194,463,859	48,829,493	932,822,854	89.9%	504,238	2.52	27.48	913
1,233	7	0.67	664,194,062	12,162,032	2.34	156,746,292	168,908,324	12.89	444,564,998	334,188,513	79,704,669	1,522,652,242	89.9%	822,921	2.63	27.48	1,043
1,295	8	0.70	686,575,121	12,807,443	2.33	167,519,696	180,327,139	13.08	474,837,232	351,924,317	83,592,780	1,596,929,450	89.9%	863,260	2.63	27.48	1,055
1,357	**9**	**0.73**	**716,453,429**	**13,829,367**	**2.31**	**185,246,068**	**199,075,435**	13.40	**524,895,227**	**380,002,145**	**89,559,199**	**1,710,910,000**	**89.9%**	**924,945**	**2.64**	**27.48**	**1,075**
1,418	10	0.77	754,106,971	15,346,854	2.28	209,838,793	225,185,647	13.67	593,939,105	421,698,458	97,756,083	1,867,500,617	89.9%	1,009,583	2.64	27.48	1,103
1,480	11	0.80	776,946,397	16,469,917	2.25	228,817,604	245,287,521	13.89	644,781,003	452,555,784	103,530,526	1,977,813,709	89.9%	1,069,182	2.63	27.48	1,123
1,542	12	0.83	818,362,291	18,711,631	2.21	272,255,999	290,967,630	14.55	765,133,132	514,156,811	115,868,851	2,213,521,085	89.9%	1,196,320	2.63	27.48	1,166
1,603	13	0.87	890,886,268	23,380,582	2.19	372,723,845	396,104,427	15.94	1,055,200,000	642,458,679	142,989,775	2,731,630,465	89.9%	1,476,581	2.66	27.48	1,247
1,665	14	0.90	903,812,324	24,396,446	2.19	398,230,524	422,626,970	16.32	1,127,300,000	670,374,603	149,226,059	2,850,766,406	89.9%	1,540,737	2.67	27.48	1,264
1,727	15	0.93	922,098,635	26,332,517	2.19	451,020,403	477,352,920	17.13	1,278,800,000	723,577,849	161,544,785	3,086,099,383	89.9%	1,668,335	2.68	27.48	1,297
1,788	16	0.97	925,893,426	27,146,807	2.19	473,476,158	500,622,965	17.44	1,343,300,000	745,954,435	166,549,699	3,181,711,637	89.9%	1,719,926	2.68	27.48	1,312
1,850	**17**	**1.00**	**927,302,614**	**28,621,991**	**2.20**	**519,643,422**	**548,265,413**	18.16	**1,480,700,000**	**786,492,480**	**176,456,553**	**3,370,968,971**	**89.9%**	**1,822,488**	**2.70**	**27.48**	**1,341**
1,912	18	1.03	926,449,799	29,055,258	2.20	532,719,507	561,774,765	18.33	1,519,200,000	798,398,659	179,194,437	3,423,272,634	89.9%	1,850,076	2.70	27.48	1,350
1,973	19	1.07	910,429,714	31,450,971	2.23	621,024,258	652,475,229	19.75	1,782,000,000	864,232,829	196,464,739	3,753,198,887	89.9%	2,028,984	2.73	27.48	1,401
2,035	20	1.10	903,350,053	32,020,358	2.24	645,035,904	677,056,262	20.14	1,853,900,000	879,879,581	200,910,323	3,838,125,901	89.9%	2,074,972	2.74	27.48	1,414

From the Table above it is evident that at Pit 9 the open pit operating cost exceeds the predicted underground operating cost of US$1,050/oz. Figure 16-3 shows a graph of the results.

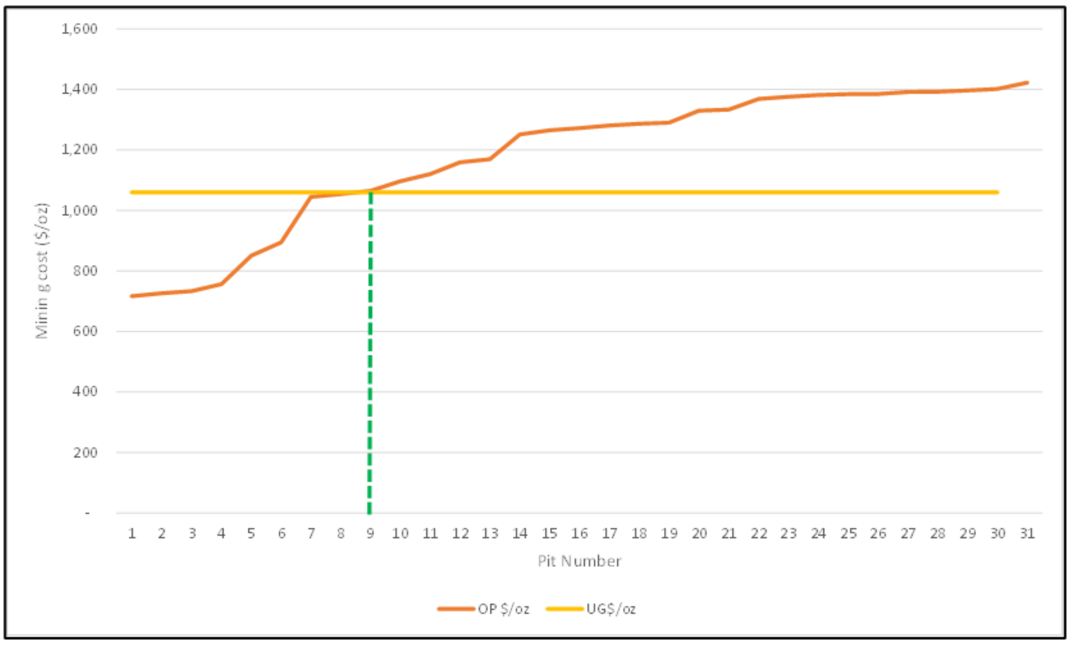


Figure 16-3: Comparison of Open Pit and Underground Mining Cost Varying with Pit Shell Number (Pit Depth)

Based on the following points the decision was made to limit open pit mining to the Pit 9 pitshell for future Life of Mine planning and to consider underground methods of exploiting the ore outside of this shell:

- This option allows for some flexibility in the implementation of the underground mine as open pit and underground mining are conducted simultaneously for a number of years.
- It reduces the overall strip ratio of the Main Pit open pit from 16.7 to 12.7, resulting in considerably lower open pit mining costs.
- It results in a higher NPV than an open pit mining only as per the 2022 Life of Mine plan.
- The opportunity exists to increase the plant throughput from 3.6mtpa to 4.0mtpa if additional open ore can be sourced from satellite pits.

The underground mine design described in the following sections of this report is based on underground mining below a final open pit based on Pit 9 optimisation shell.

16.4 Geotechnical Considerations – Open Pits

16.4.1 Introduction

RonDave Engineering Solutions (RES) Limited (Ghana) carried out a geotechnical review at MGBL to confirm recommended design slope angles for the highest priority open pits at the Bibiani project. The key focus of the review is the current operating open pit (Main Pit). The Main pit has been mined extensively with the highest pit wall slope exposures on site. Mining in the Grasshopper pit is mainly in the oxides and plan to mine until end of April 2024. Russell pit is planned for mining in June 2024. Both operational pits and those yet to be mined are expected to be geologically and geotechnically alike. Assessment of the rockmass conditions and other geotechnical design parameters of the Main, Grasshopper and Russell pits incorporated into the pit designs, resulted through external audits and design verifications, in significant improvement in pit slope stability are discussed below.

The review was to give a geotechnical overview based on the list below in fulfilment of the requirements for Asante's NI43-101 reporting for the 2023/2024 reporting cycle. The review included:

- The geotechnical conditions existing in the individual open pits.
- Review of previous study and test work conducted and its relevance to the current open pit design.
- The rockmass classification system used.
- The rock properties of the individual open pits.
- Description of geotechnical design parameters applied in the designs.
- Description of geotechnical design process, i.e. are designs based on modelling, empirical rules, benchmarking etc?

16.4.2 Main Pit

The orebody in the main pit consists of the Eastern and Central Lodes, and dipping to the east, while the Western Lode dips steeply westward. NE trending sub-vertical to steeply SE dipping shear and graphitic fault structures are also present in the vicinity of the orebody. Historic mining targeted thick laminated and stylolitic quartz-carbonate-sulphide veins hosted by these three structures, but modern drilling and extensive underground mapping has also intersected vein stockworks outside these trends. There is distinct evidence of shearing within and at the contacts of the mineral deposit. The presence of striations in the phyllite material shows that directional shear displacement has occurred. The zone of gold mineralisation is typically 30m wide.

The host rock is primarily undifferentiated metasediments appearing phyllitic to schistose at contacts with intrusives and within shear zones. Generally, the rockmass conditions in the main pit consists of massive but highly foliated and fractured (mainly towards the southern section) rockmass on the hangingwall (east).

Strong foliation is predominant in the meta-sediments, particularly in the phyllite, with foliation thicknesses ranging from millimetre to centimetre scale. The foliation dip varies from 70° to 90°, with most of the foliation present in the current west wall of the Main pit approaching 70° and generally steepening towards the main shear zone. The strike is sub-parallel to the current Main pit east and west walls. Layered tonalite trending northeast-southwest cut through the host rock in the east wall.

The west wall however consists of a more massive metavolcanic units alternate with highly foliated metasediments. Individual blocks within the west wall exhibit little to no cohesion in the zone where faulting and shearing are intense. These rock blocks appear to have been rotated possibly due to shearing. Three main shears are present in the main pit: The primary order, the second order and the third order shears. The primary shear zone is a regional scale shear zone that strikes between 000° and 035° azimuth along the main axis of the pit with a variation in dip. It has little impact on the pit slope stability. Second order shears and faults are widespread in the meta-sediments on both sides of the main shear zone, with their dip and strike varying on either side. These second order structures appear to have an influence on slope stability however managed by the designed slope angles. Third order shears are mostly prevalent along the western slope of the Main pit and follow a similar style to the second order shears, but they are less persistent and influence mainly bench-scale stability.

Structural orientation measurements from various site investigations, and from studies carried out by SRK from 2005 to 2006, indicate that due to the curvi-linear nature of the shear planes, their orientations lie within a broad range, with the steeper shear orientations being parallel to the average foliation orientation. The shear plane orientations are shown on the stereonet in Figure 16-4 and vary between 58°/050° and 87°/110° (dip/dip direction) to the west of the main shear. A stereonet representation of the shear plane orientation to the east of the main shear is as shown in Figure 16-5. It should be noted that only one reliable measurement was achieved on the east of the main shear zone.

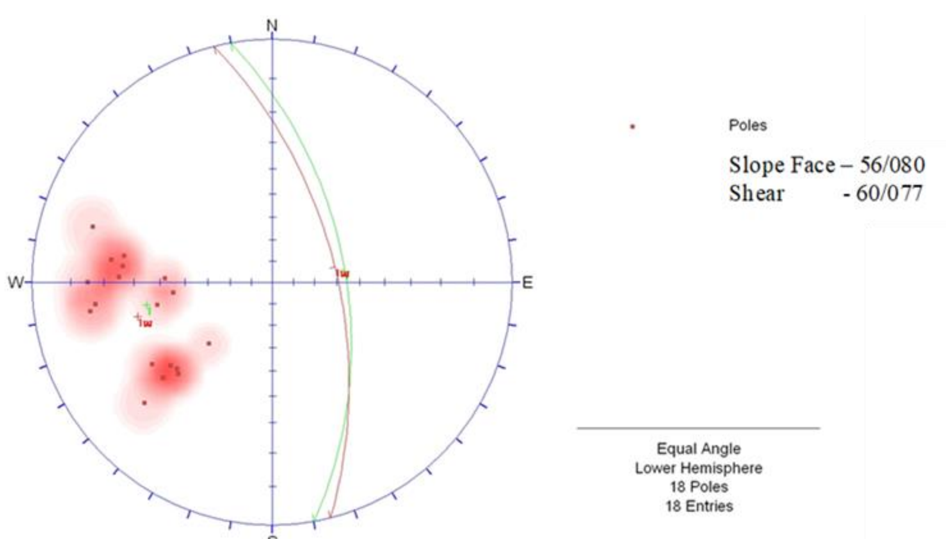


Figure 16-4: Pole Plot of Shear Plane Orientations to the West of the Main Shear

(Source SRK, 2022)

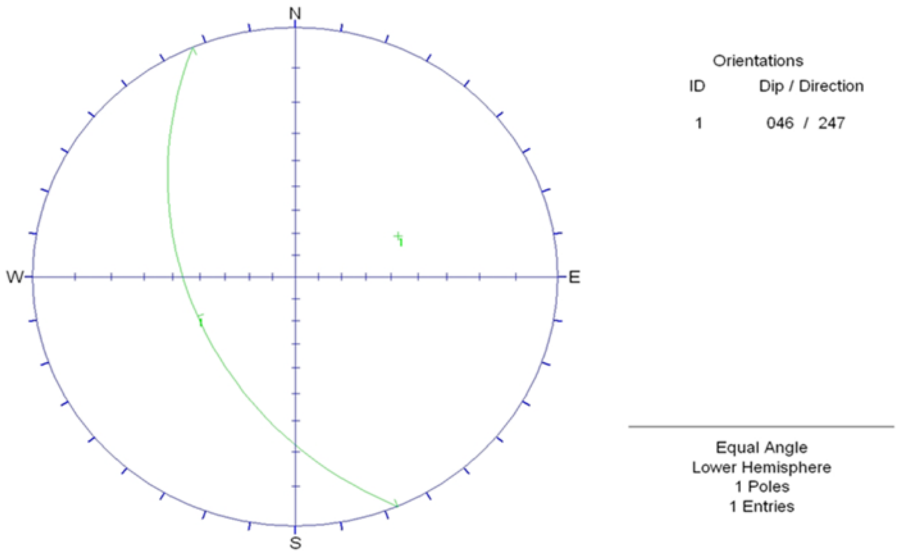


Figure 16-5: Pole Plot of Shear Plane Orientations to the East of the Main Shear

(Source SRK, 2022)

The foliation and potentially the shearing are the result of intense folding. However, distinct marker units could not be readily identified.

In the central and southern portions of the Main pit, a porphyry dyke, which is up to 80m wide, strikes in an approximate NE direction, closely following the hanging wall of the reef. The dyke bifurcates in the north of the pit with the major branch of the dyke continuing NE and the other minor branch continuing N parallel to the reef.

Mining of the main pit has intercepted underground historical voids as a result of previous stopes mined. The presence of unidentified voids poses a risk to the mining operations. However, to date the presence of voids has successfully been identified through the void management systems resulting in no risk to operations since voids has been intersected. To de-risk the main pit of inadvertently intercepting these voids a robust void model, being updated regularly, has been established to guide the operational team, supported by Ground Penetration Radar equipment to map-up voids as mining progresses both horizontally and vertically. The drilling of Grade control holes (28m) and blastholes (10m) are being used as void probing holes through intensive hole mapping by the Geological and Geotechnical teams. This approach has greatly improved safety in the pit.

16.4.2.1 Review of Previous Study and Test Work Conducted and Its Relevance to the Current Main Pit Design

Previous studies and test works carried out by SRK (2006 SRK and August 2021 SRK Reports) and those of the Bibiani staff were reviewed during the assessment of the main pit. It can be confirmed that the information gathered, and the results of the test work are still relevant to the current main pit design. However, recent mining in the main pit has revealed that some rock blocks formed on the west wall appear to have been rotated possibly due to shearing. The presence of fault and shearing has also resulted in low cohesion amongst the individual rock blocks in an isolated zone. The current design proves and support future stability of the pit slopes hence flatter bench face angles than that of the shears will remain, significantly reducing the chances for planar sliding along the shear. Mapping has confirmed the existence of multiple shears in the pit, Figure 16-6.

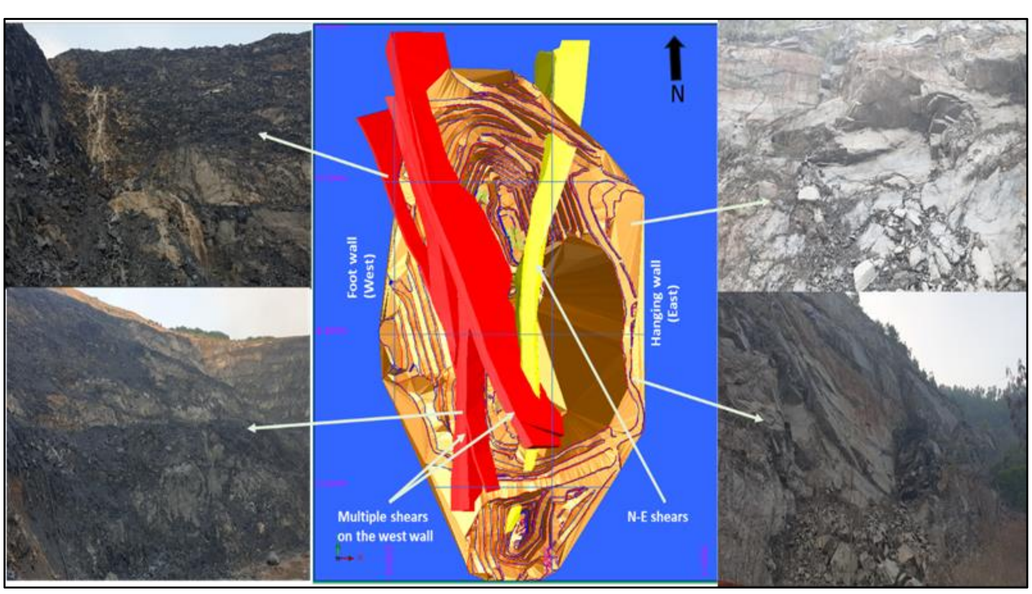


Figure 16-6: Presence of Multiple Shears in the Main Pit

16.4.2.2 Rock Properties of the Main Pit

The adjusted material properties recommended by SRK (Feb 2022 Report) and summarised in Table 16-2, are recommended to serve as the guideline for future designs.

Table 16-2: Initial Material Properties Derived from Available Literature for Bibiani

Undamaged Properties											
Unit No.	**Material**	**Young's Modulu (MPa)**	**Poisson**	**Cohesion (kPa)**	**Friction (°)**	**Tensile Strength (kPa)**	**Dilation**	**Density**	**mi**	**UCS (MPa)**	**GSI**
1	Saprolite	1680	0.25	150	35	4700	37.5	2.3	10	68	52
2	Andalusite	40990	0.49	7500	42	12970	45	3.2	6	110	55
3	Tonalite	73580	0.23	4400	42	13540	45	2.7	11	123	60
4	Shear	25000	0.2	76	30	0	0	1.8			
5	Fault	15000	0.2	76	30	0	0	1.8			
6	Fault-Zone	30000	0.25	76	30	0	0	1.8			
Damaged Zone Properties											
Unit No.	**Material**	**Young's Modulus (MPa)**	**Poisson**	**Cohesion (kPa)**	**Friction (°)**	**Tensile Strength (kPa)**	**Dilation**	**Dity**	**mi**	**UCS (Mpa)**	**GSI**
1	Saprolite	1176	0.175	105	24.5	3290	26.25	1.61	7	47.6	36
2	Andalusite	28639	0.343	5250	29.4	9079	31.5	2.24	42	77	38
3	Tonalite	51506	0.161	3080	29.4	9478	31.5	1.89	7	86.1	42
4	Shear	18000	0.1	53.2	21	0	0	1.26			
5	Fault	12000	0.12	53.2	21	0	0	1.26			
6	Fault-Zone	25000	0.1	53.2	21	0	0	1.26			
Undamaged Joint Properties											
Unit No.	**Material**	**Young' Modulus (MPa)**	**Poisson**	**Cohesion (kPa)**	**Friction (°)**	**Tensile Strength (kPa)**	**Dilation**	**Density**	**mi**	**UCS (MPa)**	**GSI**
7	Saprock	25000	0.25	300	37	6700	0	2.6	10	68	90
8	Carb Shale	30000	0.25	1200	35	10000	0	1.8	8	62	55
9	Phyllite-Schist	28000	0.3	1200	40	8000	0	2.7	10	70	52
Damaged Zone Joint Properties											
Unit No.	**Material**	**Young' Modulus (MPa)**	**Poisson**	**Cohesion (kPa)**	**Friction (°)**	**Tensile Strength (kPa)**	**Dilation**	**Density**	**mi**	**UCS (MPa))**	**GSI**
7	Saprock	17500	0.175	210	25.9	4690	0	1.82	7	47.6	63
8	Carb Shale	21000	0.175	840	24.5	7000	0	1.26	56	43.4	38
9	Phyllite-Schist	19600	0.21	840	28	5600	0	1.89	7	49	36

Foliation Properties					
Unit No.	**Material**	**Cohesion (kPa)**	**Friction (°)**	**Tensile Strength (MPa)**	**Dilation**
7	Saprock	200	34	5	0
8	Carb Shale	800	37	10	0
9	Phyllite-Schist	800	37	8	0
Foliation Damaged Zone Properties					
Unit No.	**Material**	**Cohesion (kPa)**	**Frictionn (°)**	**Tensile Strength (MPa)**	**Dilation**
7	Saprock	140	23.8	3.5	0
8	Carb Shale	560	25.9	7	0
9	Phyllite-Schist	560	25.9	5.6	0
Waste Rock Underground Void Backfilling					
Unit No.	**Material**	**Cohesion (kPa)**	**Friction (°)**	**UCS (MPa) Intact Rock**	**Density (Broken Rock)**
10	Andalusite	50	55	110	2.2

16.4.2.3 Description of Geotechnical Design Parameters Applied in the Main Pit Design

The recommended slope angles by SRK in their earlier report is adopted as the design parameters are relevant to future designs. As indicated in the previous document, the recommended slope angles in Table 16-3 ensures depressurised slopes which entails that active slope depressurisation (continued underground pumping, and ex-pit and in-pit pumped wells, as required) and passive depressurisation, the drilling of “weep holes” which is currently the practice on site (sub-horizontal drain holes installed along successive pit benches) should continue as part of the mining schedule.

Table 16-3: SRK Recommended Maximum Slope Angles for the Bibiani Main Pit

Bibiani Main Pit			
	Units	**East, North & West Slope**	**South Slope & North East Slopes**
Oxide/Saprolite			
Bench Height	(m)	12	12
Berm Width	(m)	5	5
Batter Angle	(°)	31.5	37
Inter-ramp Angle	(°)	**26**	**30**
Transition/Saprock		**All Slopes**	
Bench Height	(m)	12	
Berm Width	(m)	6	
Batter Angle	(°)	55	
Inter-ramp Angle	(°)	**40**	
Fresh/Unweathered		**West Slope**	**East Slope**
Bench Height	(m)	18	18
Berm Width	(m)	8	7
Batter Angle	(°)	65	70
Inter-ramp Angle	(°)	**48**	**53**

It must be emphasised here that good surface water management and in-pit drainage, which is the practice on site, remains essential during mining to ensure that infiltration of surface water behind and along the pit slopes is minimised, thus minimising the potential for transient pore water pressure increases in the slope.

16.4.2.4 Description of Geotechnical Design Process

The geotechnical design process considered the prevailing rockmass conditions in the main pit, 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. The predictive stable slope angles achieved in the FLAC3D stability analyses conducted (by Professor Carlos Carranza-Torres on subcontract to SRK) in the earlier document to achieve a desired design criteria of FoS greater than 1.4 was also considered.

Limit equilibrium analysis was carried out to assess the effect of water on the bench stack in the transition and lower sections of the oxides at both the northern and the southern sections of the west wall. The west wall is impacted by both underground water and surface inflows, however well managed by bench level water controls and pumped away. The drilling of depressurizing holes(weepholes) which is the practice remains critical of the West wall. The results established that pushing the water table back by 50m at both the northern and the southern sections of the pit will ensure stable slopes.

16.5 Geotechnical Considerations – Underground

During 2023 Middindi Consulting (Middindi) was contracted by Bara Consulting (Bara), on behalf of Asante Gold, to perform a geotechnical concept design for the planned underground mining at Asante Gold’s Bibiani Gold mine in Ghana. The study investigated underground mining below Main pit as well as the Walsh and Strauss satellite pits. In early 2024 the study was upgraded to PFS level of design by Middindi. Additional borehole data was provided which could be used to validate the concept level stoping design and upgrade the level of design accuracy to pre-feasibility (PFS). The mining method assessed in the validation study is sublevel open stoping with an uncemented rockfill. The designs were also compared to the work done by AMC in August 2018.

The design includes sublevel open stoping below Main pit, an option for either sublevel open stoping or cut and fill below Walsh pit, the portal design for the Greg Hunter Decline entrance from Strauss pit, and underground ground stabilisation strategies.

Existing geotechnical data is discussed in the following sub-sections.

16.5.1.1 Boreholes

A plethora of boreholes have been drilled within the project area; however, many holes were either reverse circulation (RC) drilled or had not been geotechnically logged to obtain the rock quality designation (RQD%). The borehole logs did contain relevant data, which could be used to derive the RQD% and Tunnelling Quality Index (Q-Index). A total of 270 boreholes had been drilled in the area at the time of the study and a total of 94 boreholes were used for the study, as illustrated in Figure 16-7.

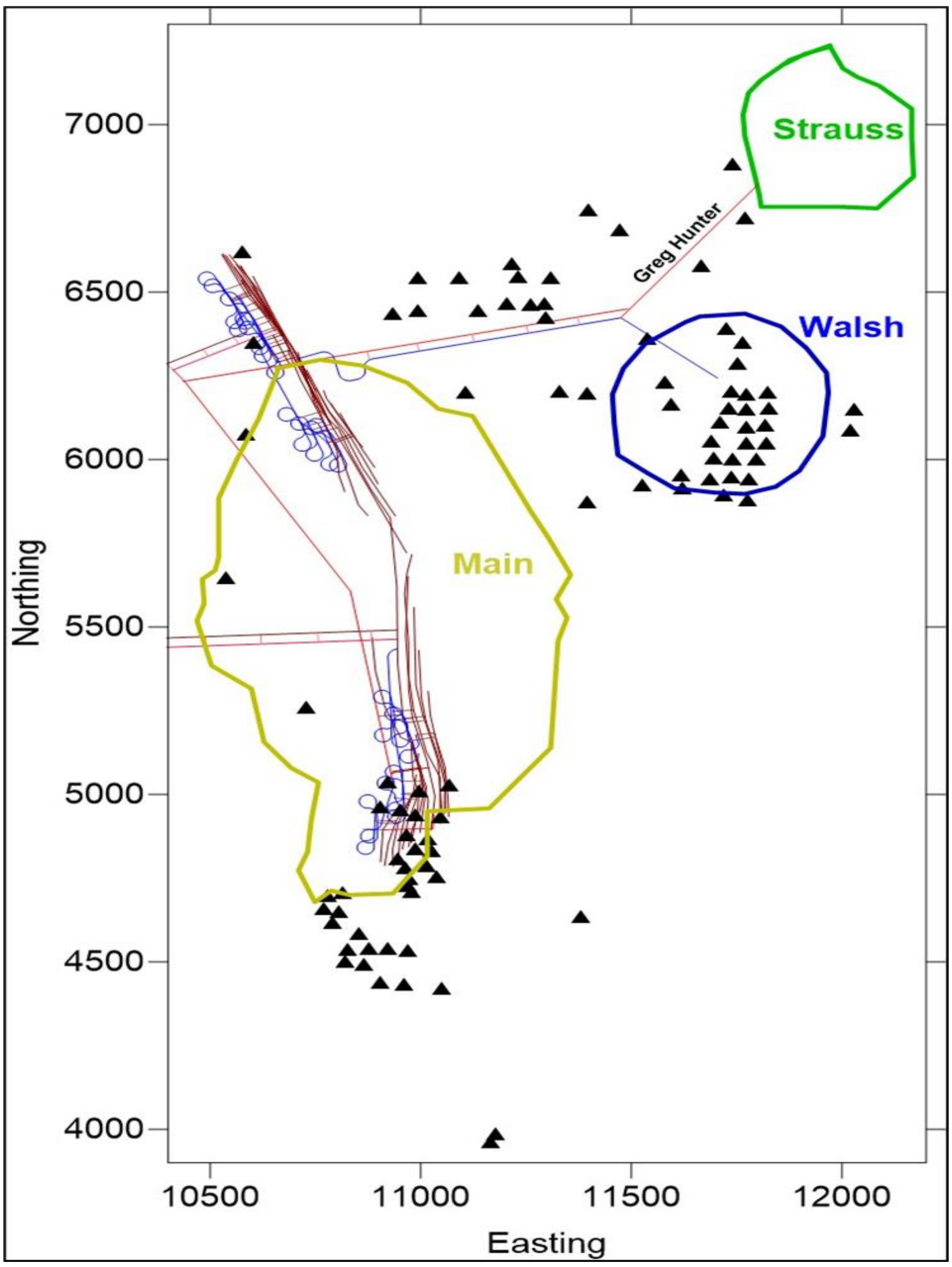


Figure 16-7: Boreholes used in the Study

16.5.1.2 Rock Laboratory Tests

Table 16-4: List of Rock Strength Tests Conducted

Area	Rock Strength Test	Number of Tests
Main	Brazilian Tensile Strength	2
	Uniaxial Compressive Strength	2
	Triaxial Compressive Strength	2 sets of 3
	Base Friction Angle	2
	Direct Shear	2
Walsh	Brazilian Tensile Strength	5

Area	Rock Strength Test	Number of Tests
	Uniaxial Compressive Strength	5
	Triaxial Compressive Strength	5 sets of 3
	Base Friction Angle	5
	Direct Shear	5

16.5.1.3 Rock Mass Classification

The data provided in the geological borehole logs were used to characterise the rock mass according to Deere's Rock Quality Designation (RQD%), Bieniawski's Rock Mass Rating (RMR89), Barton's Q-Index and Q-Prime Index, and Laubscher's Mining Rock Mass Rating (MRMR).

The rock mass properties used for each design area are presented in the tables below.

Table 16-5: Rock Mass Properties used for Main Underground Stoping Design

Wall	Q-Index	Q'-Index	A	B	C	N'
HW	4.54	13.03	1.00	0.30	6.60	25.80
Orebody	4.54	13.03	0.95	0.30	6.60	24.51
FW	4.54	13.03	1.00	0.30	6.60	25.80

Table 16-6: - Laboratory Test Properties used for Main Underground Stoping Design

Wall	Density (kg/m^3)	UCS (MPa)	Elastic Modulus (GPa)	Poisson's Ratio	Tensile Strength (MPa)	Friction Angle (°)	Cohesion (MPa)
HW	2640	165.22	68.37	0.17	8.2	38.72	16.16
Orebody	2640	78.37	44.78	0.21	5.2	37.50	12.90
FW	2640	165.22	68.37	0.17	8.2	38.72	16.16

Table 16-7: Rock Mass Properties used for Walsh Underground Stoping Design

Wall	Q-Index	Q'-Index	A	B	C	N'
HW	6.59	14.73	1.00	0.30	4.50	19.89
Orebody	6.59	14.73	0.95	0.30	4.50	18.89
FW	6.59	14.73	1.00	0.30	4.50	19.89

Table 16-8: Laboratory Test Properties used for Walsh Underground Stoping Design

Wall	Density (kg/m^3)	UCS (MPa)	Elastic Modulus (GPa)	Poisson's Ratio	Tensile Strength (MPa)	Friction Angle (°)	Cohesion (MPa)
HW	2720	264.94	111.27	0.13	18.3	40.75	14.97
Orebody	2720	66.06	43.06	0.23	12.4	37.40	11.84
FW	2720	264.94	111.27	0.13	18.3	40.75	14.97

Table 16-9: Rock Mass Properties used for the Strauss Boxcut and Portal Pre-sink Design

Parameter	Value
Q-Index	1.52
RMR_{89}	39.63
MRMR	26.06

Table 16-10: Rock Mass Properties used for the Walsh Boxcut and Portal Pre-sink Design

Parameter	Value
Q-Index	3.96
RMR_{89}	55.61
MRMR	44.89

Table 16-11: Rock Mass Properties used for the Decline Design

Parameter	Value
Q-Index	0.4
RMR_{89}	1.0
MRMR	4.0

Table 16-12: Rock Mass Properties used for the Decline Design

Orebody	Q-Index
Main	4.5
Walsh	6.6

16.5.2 Stope Sizing

The determination of the stope sizes was performed for the Main and Walsh orebodies, with cut and fill and open stoping methods investigated for Walsh. All designs were based on a k-ratio (horizontal-to-vertical stress ratio) of 1.5.

The hydraulic radius (HR), introduced by Laubscher and Taylor (1976), is obtained by dividing the area of an excavation face by the perimeter of the excavation face. The hydraulic radius can be calculated using the following formula:

$$HR = (H \times L)/(2(H + L))$$

Where: HR is the hydraulic radius (m), H is the excavation height (m), and L is the excavation length (m). The critical hydraulic radius, which is defined as the limiting hydraulic radius for stability is obtained from stability charts, using the modified stability number. Table 16-13 below shows the hydraulic radii derived for each orebody.

The stability charts relate the modified stability number to a critical hydraulic radius which is related to stope dimension limits. Since the modified stability number is derived directly from rock mass classifications, the stability charts show that the size of an excavation surface can be related to the rock mass quality, to indicate stability or instability. The Potvin (1988), Matthews-Potvin (1992), Extended Matthews (Mawdesley, et al., 2001), and Nickson (1992) stability charts, as presented in Figure 16-8 to Figure 16-11, were used to derive the HR from the stability number. The position where the hangingwall and orebody modified stability numbers plot on the stable curve of the stability graphs are indicated with markers in each chart. The supported HR values assume that the ore drives will be supported using cable anchors, which allows for larger spans to remain stable.

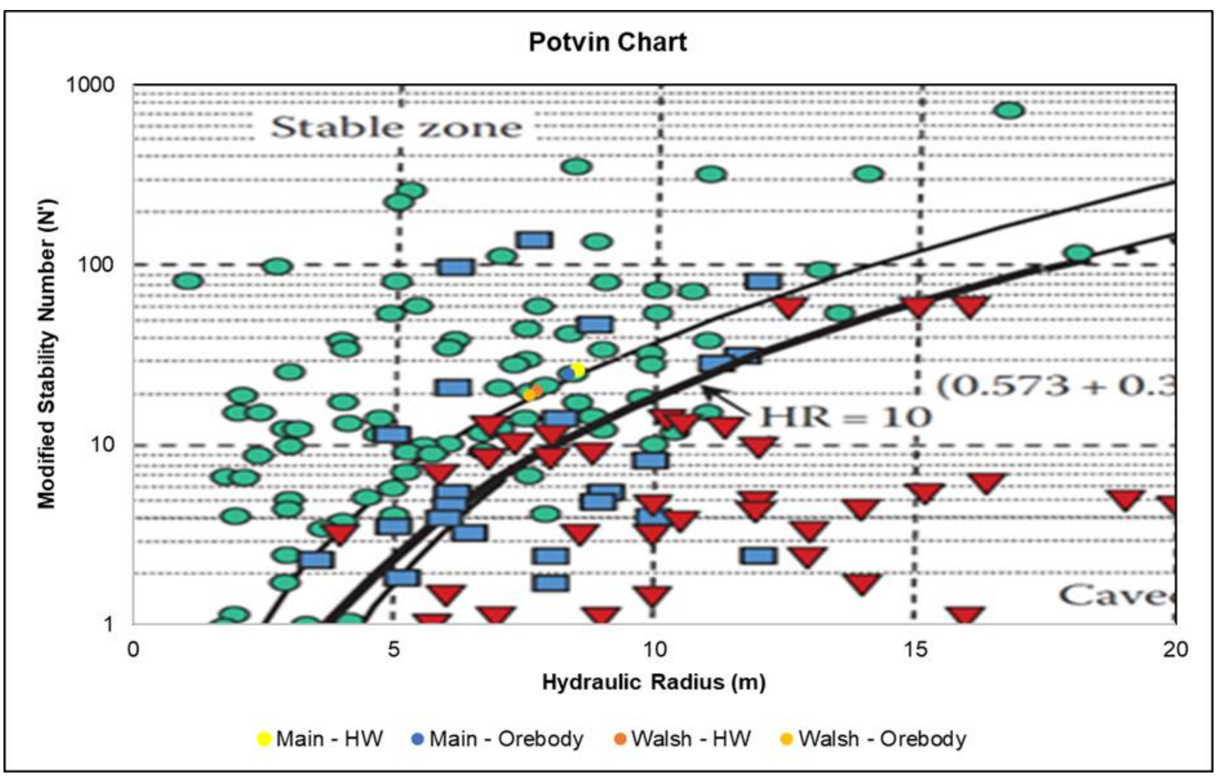


Figure 16-8: Potvin stability chart (Potvin, et al., 1988)

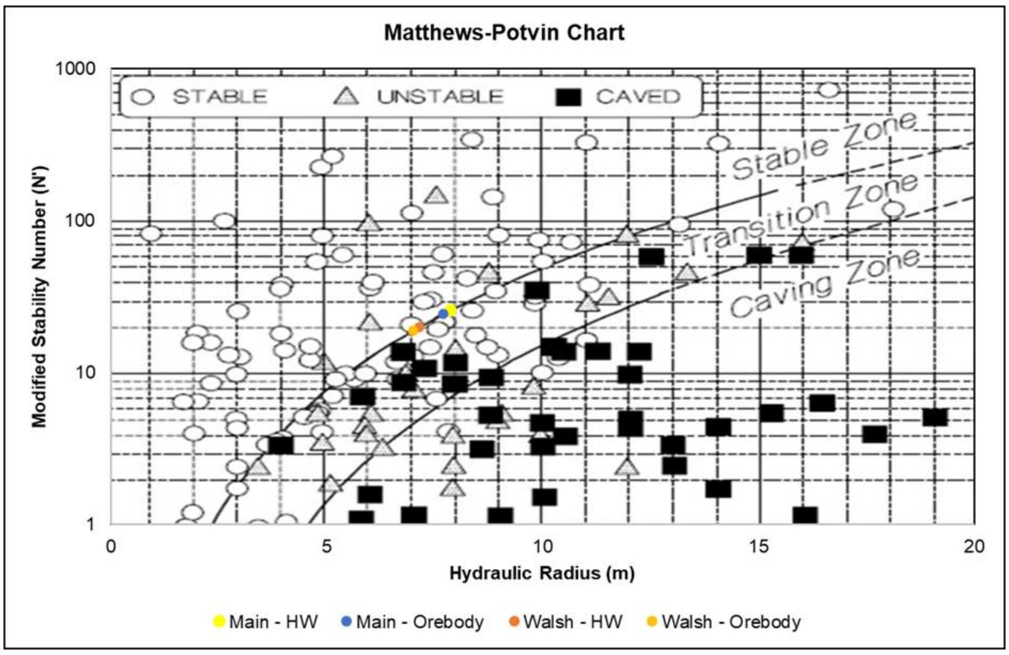


Figure 16-9: Matthews-Potvin stability chart (Hutchinson & Diederichs, 1996)

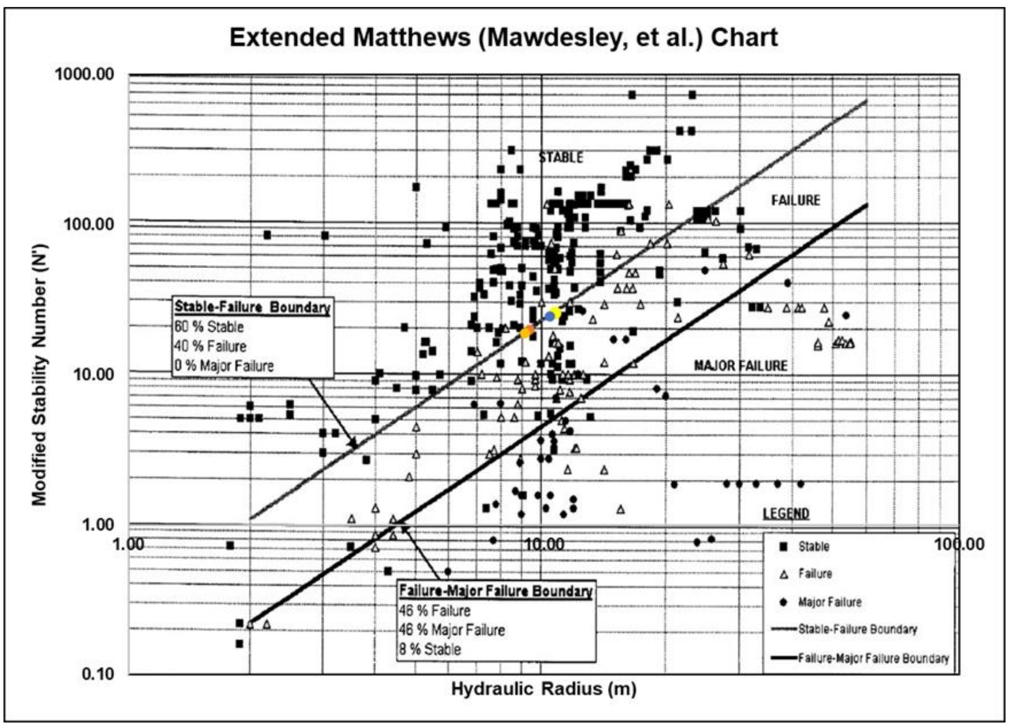


Figure 16-10: Extended Matthews (Mawdesley, et al., 2001) stability chart (Hutchinson & Diederichs,1996)

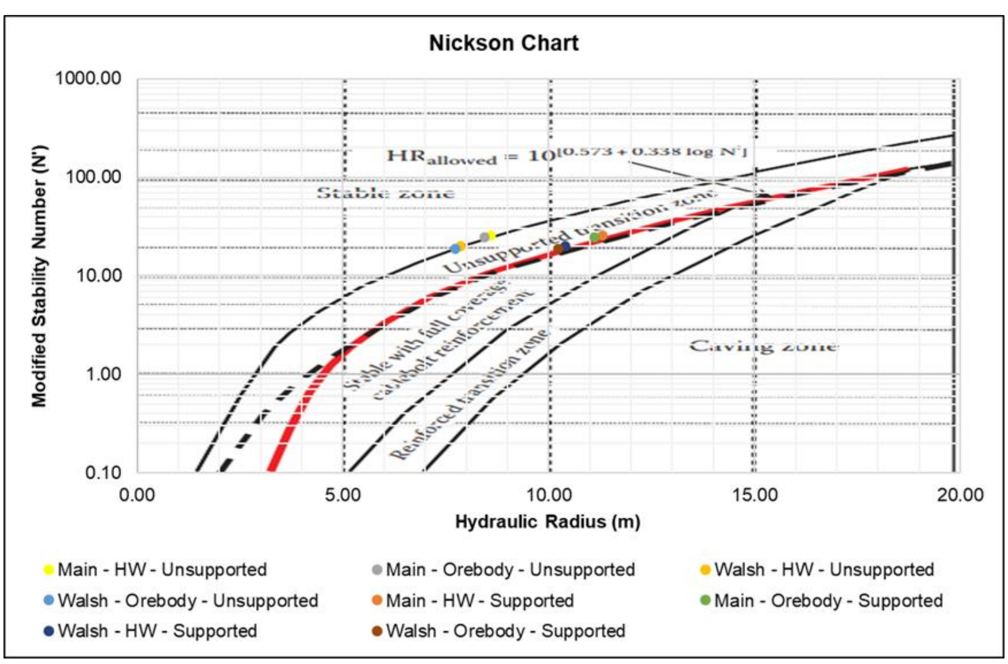


Figure 16-11: Potvin (1988) stability graph modified by Nickson (1992) (Hutchinson & Diederichs, 1996)

Table 16-13: Derived Hydraulic Radii for each Orebody

Wall	Main		Walsh	
	Unsupported HR (m)	Supported HR (m)	Unsupported HR (m)	Supported HR (m)
HW	8.33	10.97	7.58	9.83
Orebody	8.17	10.73	7.44	9.62
FW	8.33	10.97	7.58	9.83

A system for determining the maximum unsupported span for different excavations was derived by Barton et al. (1974), which was based on the Q-index. To derive the maximum unsupported span, the Excavation Support Ratio (ESR) needs to be defined. The ESR is a factor that accounts for different degrees of allowable instability based on excavation service life and usage. The ESR selected for the planned stopes is 3.0. The maximum unsupported span can then be determined by the following formula:

$$\text{Span} = 2 \times ESR \times Q^{0.4}$$

The unsupported span derived for each orebody width category and stoping wall is presented in Table 16-14. These spans represent the widths which can be safely mined without support. If the orebody becomes wider, the mining method will need to transition to a transverse direction.

Table 16-14: Maximum Unsupported Span

Orebody	Q-Index	ESR	Unsupported Span (m)
Main	4.5	3.0	10.81
Walsh	6.6	3.0	12.25

The maximum vertical height for each stope was determined using the hydraulic radius. The maximum vertical heights for Main and Walsh cut and fill were derived and are presented in Table 16-15. The vertical heights were derived for scenarios where the ore drives are unsupported, supported with cable anchors, and where backfill is used.

Table 16-15: Maximum Allowable Vertical Height

Scenario	Main		Walsh – Cut and Fill	
	HR (m)	Vertical Height (m)	HR (m)	Vertical Height (m)
Unsupported	8.2	20.0	7.6	15.0
Supported	10.7	25.0	10.4	20.0
Backfilled	10.7	30.0	-	-

The limiting strike spans were determined based on the critical hydraulic radius. The limiting strike span for Main and Walsh cut and fill were derived and are presented in Table 16-16. The strike spans were derived for scenarios where the ore drives are unsupported, supported with cable anchors, and where backfill is used.

Table 16-16: Limiting Strike Span

Scenario	Main		Walsh – Cut and Fill	
	HR (m)	Strike Span (m)	HR (m)	Strike Span (m)
Unsupported	8.2	80.0	7.6	67.0
Supported	10.7	120.0	10.4	78.0

The use of backfill allows for excavations to be larger, thus increasing the extraction ratio. Backfill also allows for the sill pillars to be spaced further apart; depending on the type of backfill used. It is not advised for the spacing to exceed 3 to 4 levels as the weight of the backfill will become too large for the sill pillar to carry. The allowable sill pillar spacing based on the type of backfill is presented in Table 16-17.

Table 16-17: Vertical Distance Between Sill Pillars when using Backfill

Backfill Type	Height between Sill Pillars (m)	
	Main	Walsh – Cut and Fill
No Backfill	20.0 to 25.0	n/a
Rockfill	75.0 to 90.0	15.0 to 20.0
Cemented Rockfill	100.0 to 120.0	45.0 to 60.0
Paste Fill	100.0 to 120.0	60.0 to 80.0

However, the backfill used needs to be of sufficient strength to remain stable within the specified stope dimensions. Therefore, the required backfill strengths were derived based on the height between the sill pillars and the span of the stopes using the graph in Figure 16-12.

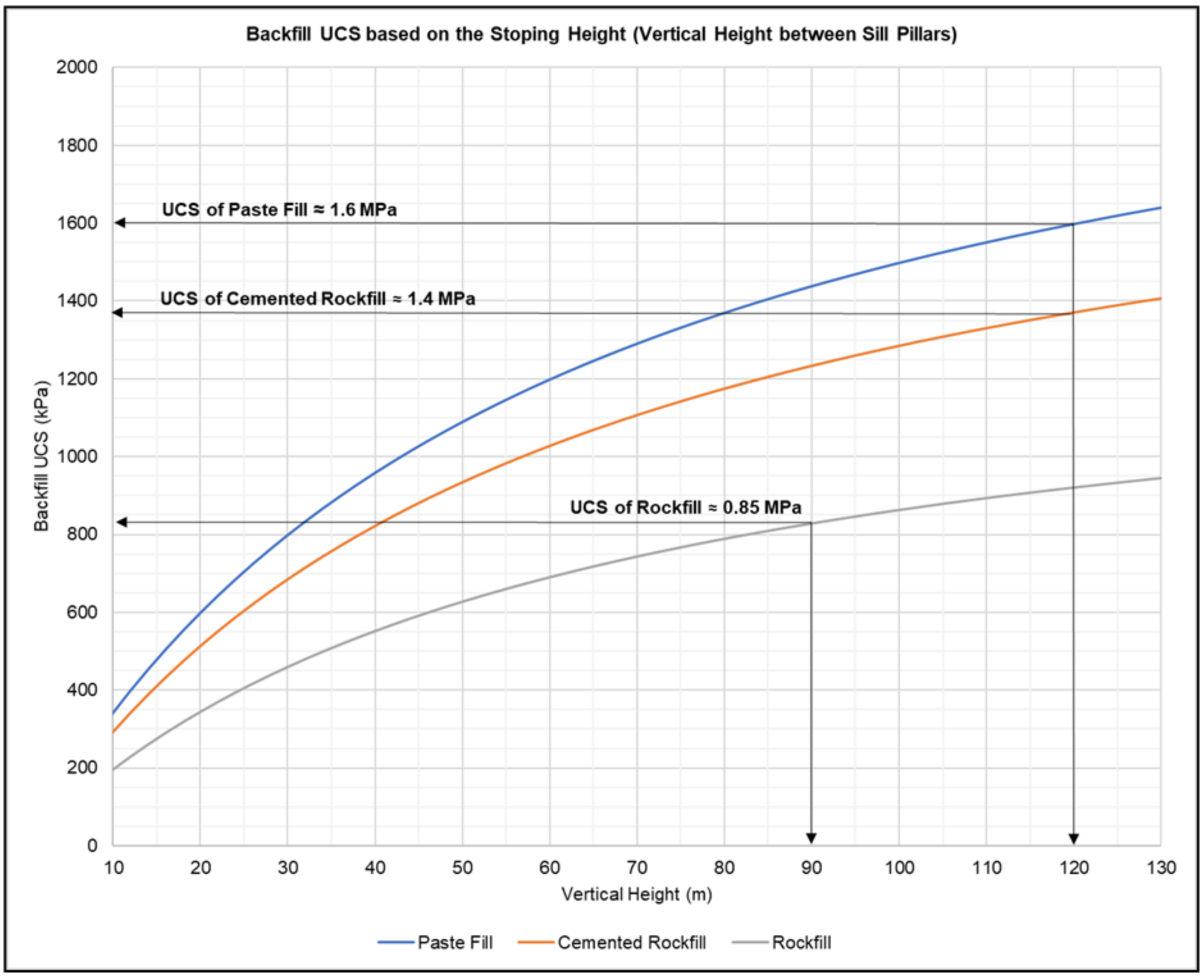


Figure 16-12: Required Backfill UCS

To estimate the expected dilution, the Equivalent Linear Overbreak Slough (ELOS) method derived by Clark (1998) was used, which correlates the stope surface area and the volume of overbreak. The ELOS for each stope wall was determined using a chart which uses the stability number and hydraulic radius, as presented in Figure 16-13, where an ELOS of 0.750 m was determined for Main and 0.625 m was determined for Walsh.

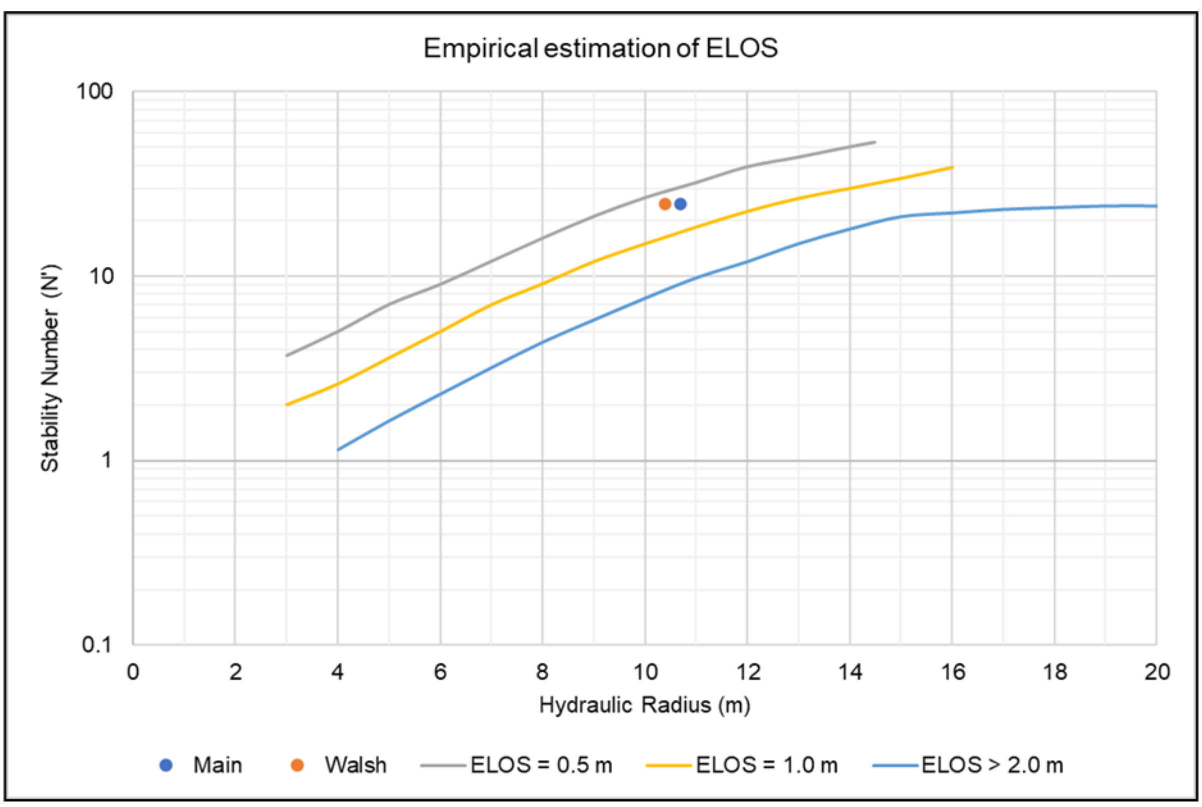


Figure 16-13: Empirical Estimation of ELOS (Clark, 1998)

Using these ELOS values as well as the stope dimensions, the estimated dilution was calculated by using the following:

$$\text{Dilution (\%)} = (\text{ELOS} \times 2)/(\text{Orebody Width})$$

The ELOS is multiplied by 2 to account for the dilution from each stope wall (footwall and hangingwall), the dilution values are presented in Table 16-18.

Table 16-18: Estimated Dilution

Parameter	Unit	Main			Walsh – Cut and Fill		
Orebody Width	(m)	< 10	10 to 15	>15	< 8	8 to 12	> 12
ELOS	(m)	0.750	0.750	0.750	0.625	0.625	0.625
Dilution	(%)	15.00	10.00	7.50	15.63	10.42	8.33

16.5.3 Pillar Design

16.5.3.1 Rib Pillars

The purpose of rib pillars is to stabilise the mining block by limiting the displacement within the rock mass. Rib pillars also allow for flexibility in mining as the orebody is divided into several working areas. The use of backfill can assist with stope stability, however, there are still severe implications of poor pillar design (Potvin, et al., 1988). The required width of the rib pillars varies with depth due to the change in pillar stress at depth. The rib pillars were designed to have a safety factor of 1.4 or more. The Lunder (1994) chart, as presented in Figure 16-14 and Figure 16-15, was used to derive the required rib pillar widths presented in Table 16-19.

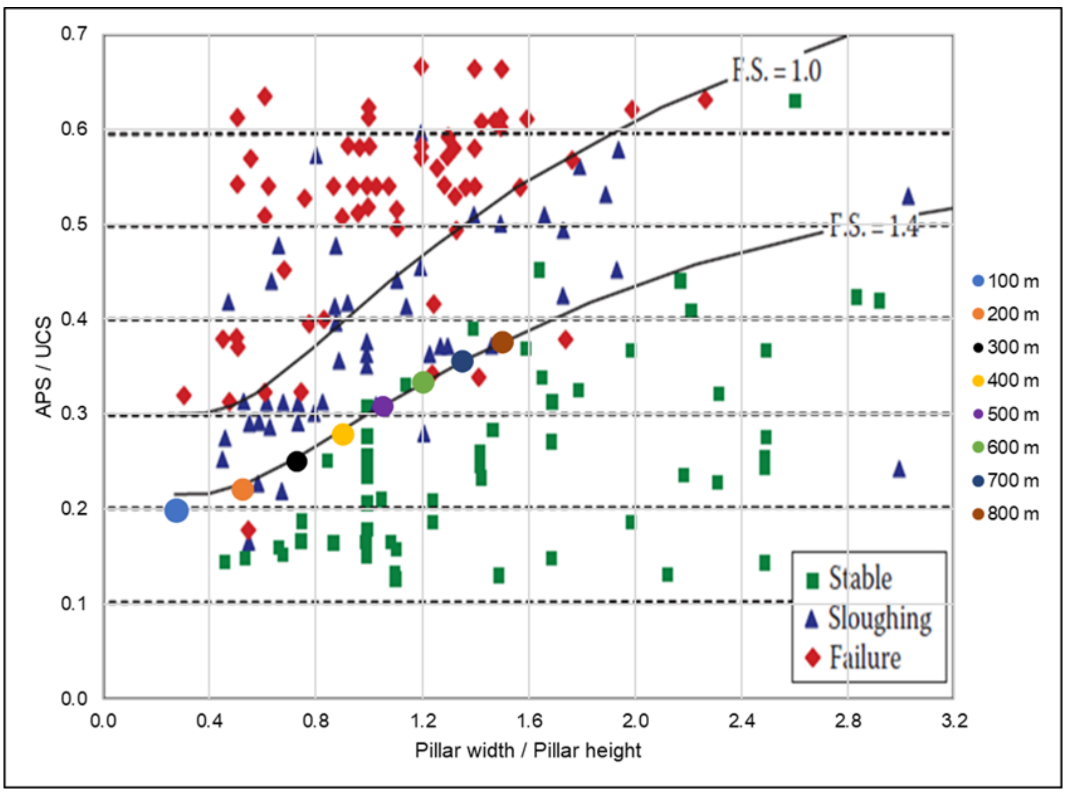


Figure 16-14: Lunder (1994) Chart used to Derive Rib Pillar Widths - Main

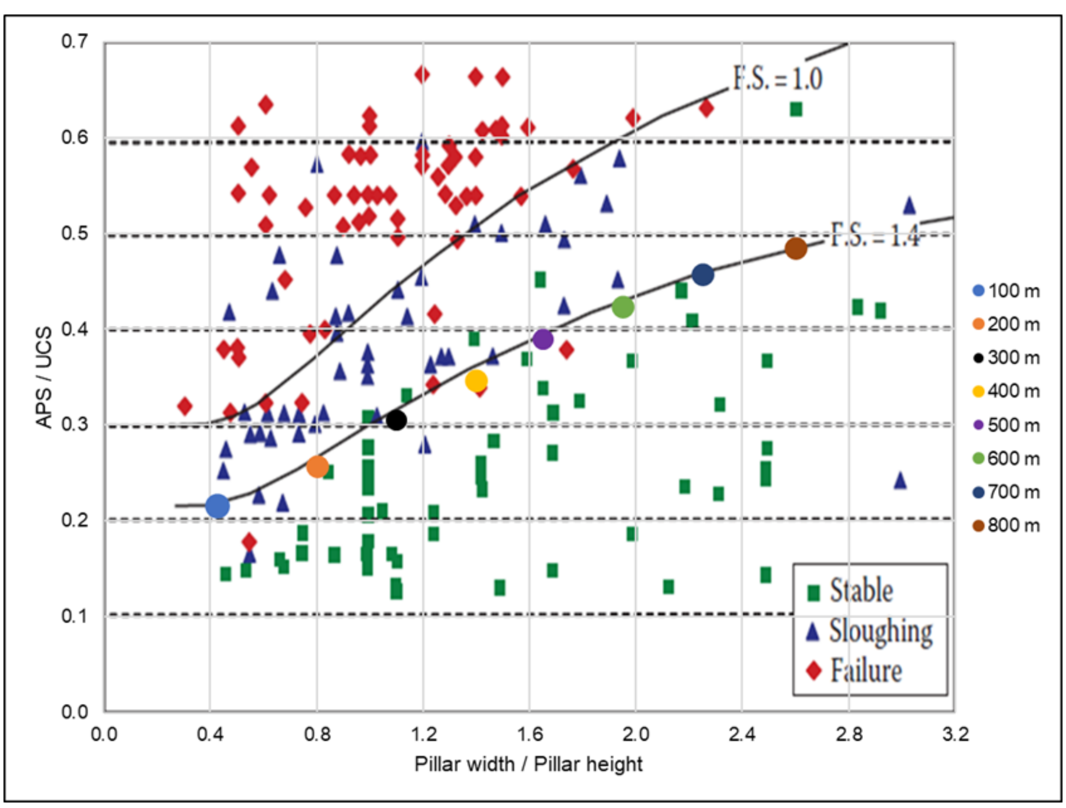


Figure 16-15: Lunder (1994) Chart used to Derive Rib Pillar Widths – Walsh

Table 16-19: Designed Rib Pillar Widths for Varying Depths Below Surface

	Rib Pillar Width (m)	
Depth	**Main**	**Walsh**
100 m	5.5	8.5
200 m	10.5	16.0
300 m	14.5	22.0
400 m	18.0	28.0
500 m	21.0	33.0
600 m	24.0	39.0
700 m	27.0	45.0
800 m	30.0	52.0

When backfill is used in the stopes, if the backfill is cemented and installed correctly, the size of the rib pillars can reduce as they merely provide confinement to the backfill during curing. When rockfill is used, rib pillars will not be used regularly, as is the methodology at Chirano Gold Mine, however, it is recommended that 5.0m rib pillars are placed every 150m to 200m to ensure regional stability.

16.5.3.2 Sill Pillars

Sill pillars are designed to protect the rock mass against caving, potential flexural, and sliding failure, using the beam theory analysis proposed by Mitchell (1991). The Mitchell method for flexural failure was used to derive the sill pillar thickness:

$$(L/d)\ 2 > (2 \times (\sigma_t + \sigma_c))/(\sigma_v + d \times \gamma)$$

Where: L is the span of the stope (m), γ is the rockfill unit weight (tonnes/m3), σt is the tensile strength of the cemented sill (MPa), d is the thickness of the sill (m), σc is the horizontal confinement (MPa), and σv is the vertical stress due to loading above the sill mat (MPa).

The results of the sill pillar analysis are illustrated in Figure 16-16 and Figure 16-17 and summarised in Table 16-20. Although the sill pillars can be smaller in narrower stopes, the sill pillars are recommended to not be less than 10.0m due to the spacing between them.

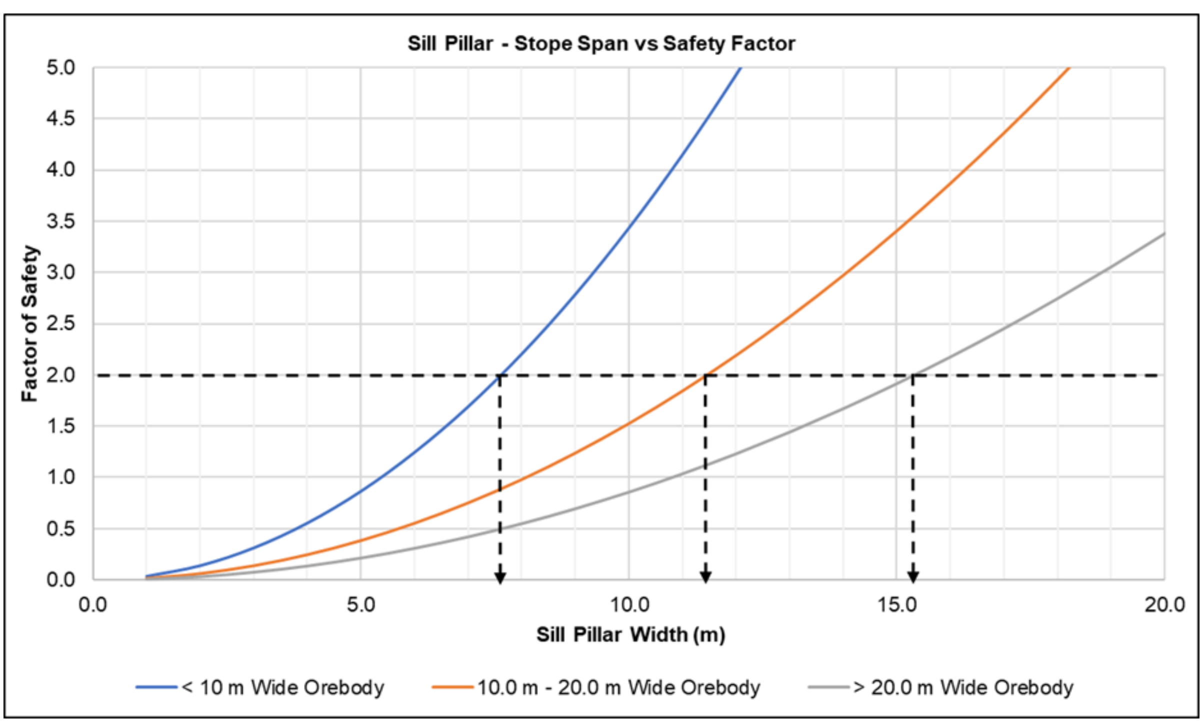


Figure 16-16: Design Sill Pillar Width for Varying Orebody Width - Main

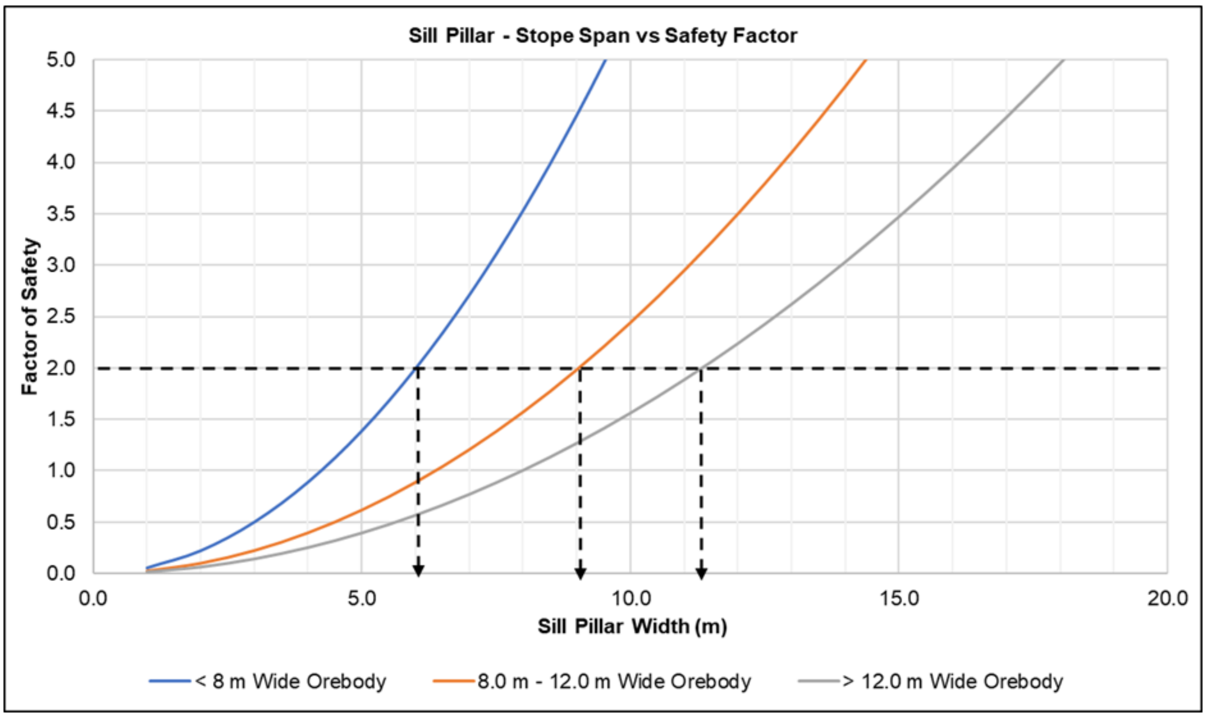


Figure 16-17: Design Sill Pillar Width for Varying Orebody Width - Walsh

Table 16-20: Designed Sill Pillar Width for Varying Orebody Width

Parameter	Unit	Main			Walsh – Cut and Fill		
Sill Pillar Thickness	(m)	8.0	12.0	16.0	6.0	9.0	12.0
Design Pillar Thickness	(m)	10.0	12.0	16.0	10.0	10.0	12.0

16.5.3.3 Crown Pillar

The crown pillar thicknesses required below the Main and Walsh pits were derived by constructing 2-dimensional numerical models in the Rocscience programme RS2. A simple Mohr-Coulomb model was constructed through the deepest section of the open pit, as presented in Figure 16-18. The width of the orebody was varied between 10.0m, 15.0m, and 20.0m while the depth was varied from 20.0m to 40.0m. The results, summarised in Table 16-21, indicate that a minimum 30.0m thick crown pillar will be required to prevent the open pit from collapsing into the underground workings. If backfill is not used, a 35.0m pillar will be required if the orebody width exceeds 15.0m.

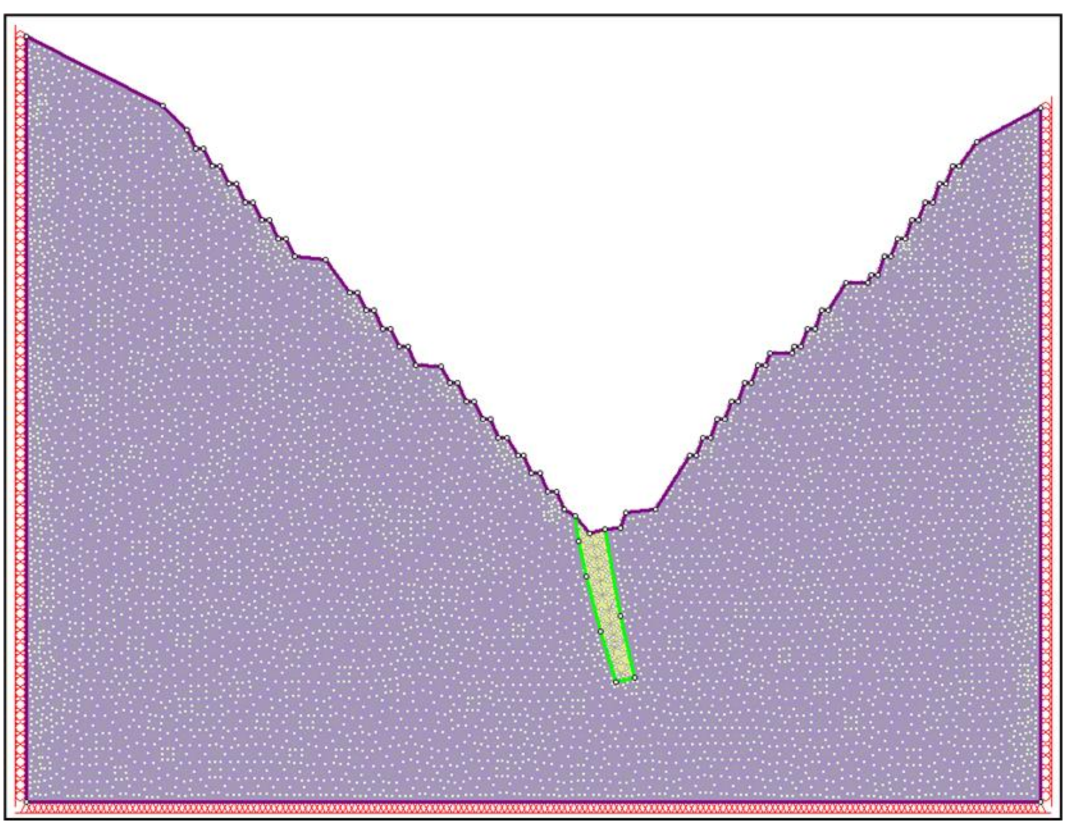


Figure 16-18: RS2 Model Set Up as a Section Through Main Pit

Table 16-21: Crown Pillar Modelling Results

Orebody Width (m)	Crown Pillar Thickness (m)	Interaction between Open Pit and Underground Stope
< 10.0	20.0	Yes
	25.0	Yes
	30.0	No
	35.0	No
	40.0	No
10.0 to 15.0	20.0	Yes
	25.0	Yes
	30.0	No
	35.0	No
	40.0	No
> 15.0	20.0	Yes
	25.0	Yes
	30.0	Yes
	35.0	No
	40.0	No

It is critical to note that the crown pillar below Main pit will have historic mining voids within it, therefore, further, more detailed numerical modelling is recommended to assess the impact of the voids on the crown pillar stability, once the location of the crown pillar has been selected and the known voids present in the vicinity of the crown pillar can be modelled.

16.5.3.4 Stand-Off Distance

The interaction between the unfilled historic stopes and the newly planned stopes, together with the interaction between the unfilled historic stopes and the final Main pit floor requires detailed investigation. The standard rib pillar width may not be suitable due to the prolonged period of damage together with the damage which may be sustained when Main pit blasting progresses. The stand-off pillars are required to compartmentalise the historic mining areas from the new mining areas. Standard width-to-height ratios do not apply to rib pillars due to their large heights. An empirical width to height ratio of 0.5:1 was assumed, which implies a 15 m wide pillar will be required to ensure stability. This was tested using an RS2 Model. However, the mine design does not necessarily require a stable pillar between the old and new stopes. If the old stopes are backfilled the pillar can be reduced or not be required at all in the case of cemented backfill. The mining of stopes in the vicinity of old stopes must be addressed on a case-by-case basis during detailed mine design.

16.5.4 Underground Access

The current mine plan is to access the orebodies using a system of declines. The Greg Hunter Decline will be rehabilitated from the existing Strauss Pit and extend to the Walsh and Main orebodies. A second access decline will be developed from Walsh Pit and intersect the extension from the Greg Hunter Decline. The design recommendations for the boxcut, portal pre-sink, and support designs at each decline are described below.

16.5.4.1 Boxcut Design

Each of the planned boxcuts will host a single decline. The declines will be sunk into existing open pits; therefore, their shapes will not resemble conventional boxcuts with development requiring mostly highwall reshaping. The design was carried out empirically using the Haines-Terbrugge chart which uses the MRMR values and the slope height and correlates it to the slope angle, as presented in Figure 16-19 summarised in Table 16-22.

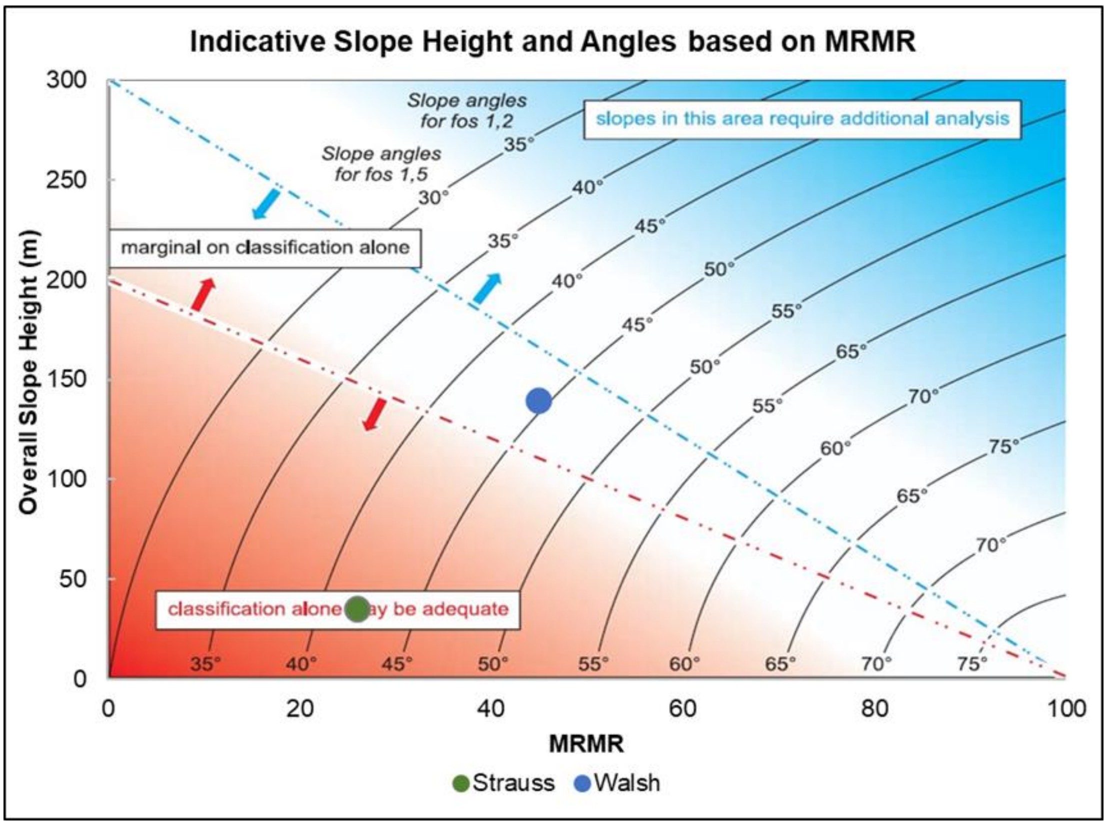


Figure 16-19: Haines-Terbrugge Design Chart (Read & Stacey, 2009)

Table 16-22: Indicative Overall Slope Angle for each Boxcut

Slope	MRMR	Overall Slope Height (m)	Individual Bench Height (m)	Indicative Overall Slope Angles (°)	Current Overall Slope Angles (°)
Strauss	26.08	35	10	43	35
Walsh	44.89	140	20	44	40

The empirical investigation suggests that the current overall slope angle should be suitable for the declines to be developed. The boxcut highwall should be supported according to Table 16-23.

Table 16-23: Boxcut Highwall Support Recommendations

Support Unit	Design
Bolts	2.4m length, 2.0m square spacing, resin-filled or full-column grouted, 12.0-tonne capacity, pre-tensioned to 4.0 tonnes
Shotcrete	75mm thick shotcrete (40 MPa strength)
Wire Mesh	Galvanised 4mm thick, 100mm aperture
Cable Anchors	4.5m length, 4.0m square spacing, full-column grouted, 25.0-tonne capacity, pre-tensioned to 10.0 tonnes

16.5.4.2 Decline Support Design

The decline support design was derived empirically using the Barton and Grimstad (2014) chart. The chart is presented in Figure 16-20.

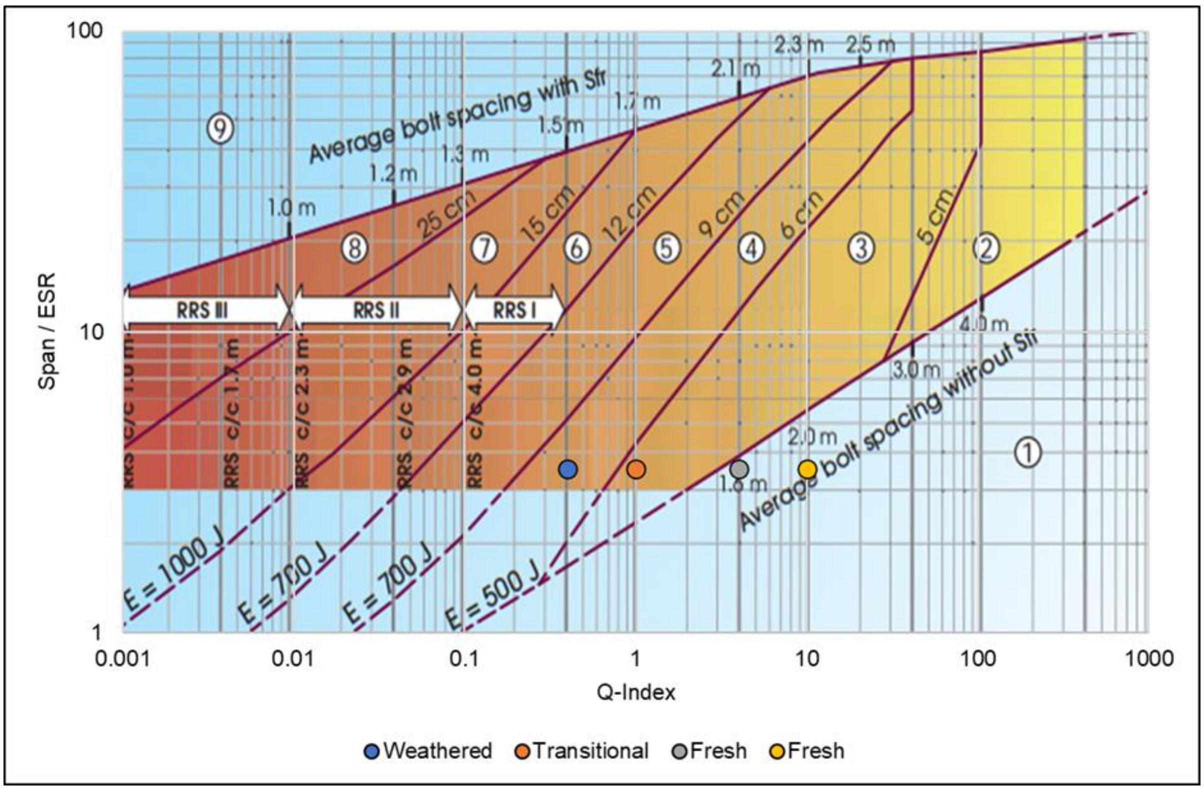


Figure 16-20: Barton and Grimstad Chart for Empirical Support Design (Norwegian Geotechnical Institute, 2013)

The distance requiring steel sets was determined using a simple RS2 model constructed a section through the centre of the Greg Hunter Decline. The model results, presented in Figure 16-21, were used to determine the length of the decline where the hangingwall is in tension and could collapse; a length of 30.0m is recommended to ensure the longevity of the portal. The support requirements are summarised in Table 16-24. Since the Walsh Decline will be developed within more competent, less weathered material than the Greg Hunter Decline, the length of decline requiring steel set support can be reduced to 15.0m.

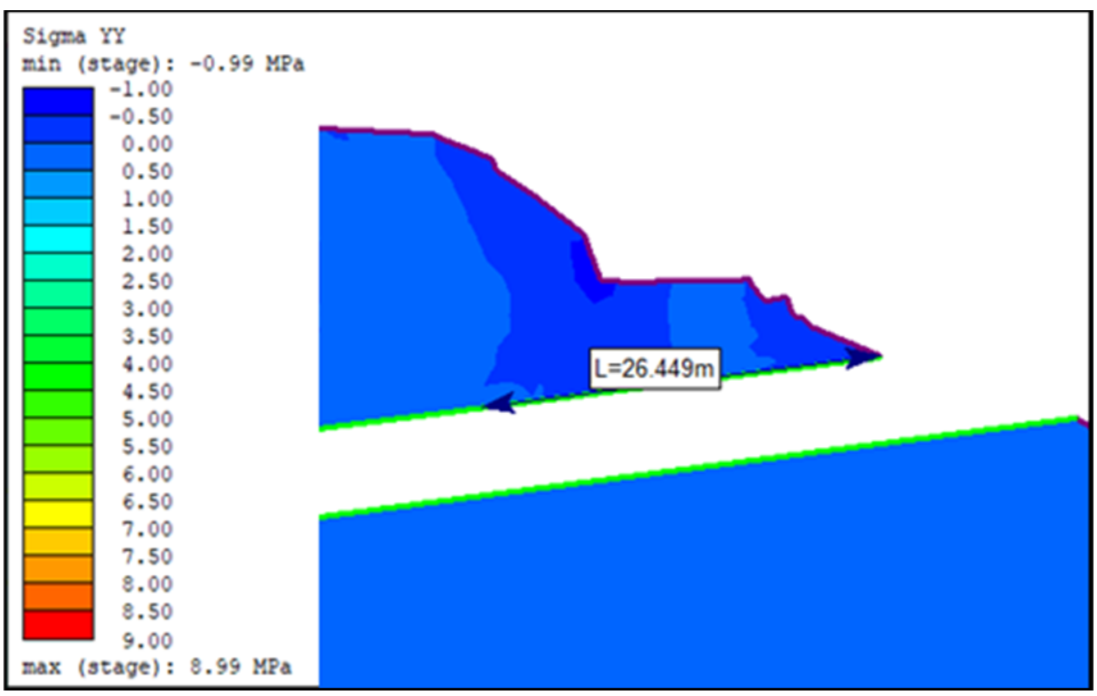


Figure 16-21: RS2 Model Indicating the Area in Tensile Above Greg Hunter Decline

Table 16-24: Support Design Required for the Decline

Area	Approximate Distance (m)	Bolt Length (m)	Bolt Spacing (m)	Cable Anchor Length (m)	Cable Anchor Spacing (m)	Steel Set Capacity (kN)	Steel Set Spacing (m)	Shotcrete Thickness (mm)	Wire Mesh and Lacing Required
Portal (Greg Hunter)	30.0	2.4	1.0 x 1.0	4.5	2.0 x 2.0	220.0	1.0	100.0	Yes
Portal (Walsh)	15.0	2.4	1.0 x 1.0	4.5	2.0 x 2.0	220.0	1.0	100.0	Yes
Weathered	50.0	2.4	1.5 x 1.5	4.5	2.0 x 2.0	-	-	100.0	Yes
Transitional	50.0	2.4	1.5 x 1.5	4.5	3.0 x 3.0	-	-	50.0	Yes
Fresh	Remainder of the Declines	2.4	2.0 x 2.0	4.5	5.0 x 5.0	-	-	-	No

16.5.4.3 Ground Stabilisation

The support requirements for underground excavations were derived using the Barton and Grimstad (2014) chart, as presented in Figure 16-22, a summary of the support requirements is presented in Table 16-25.

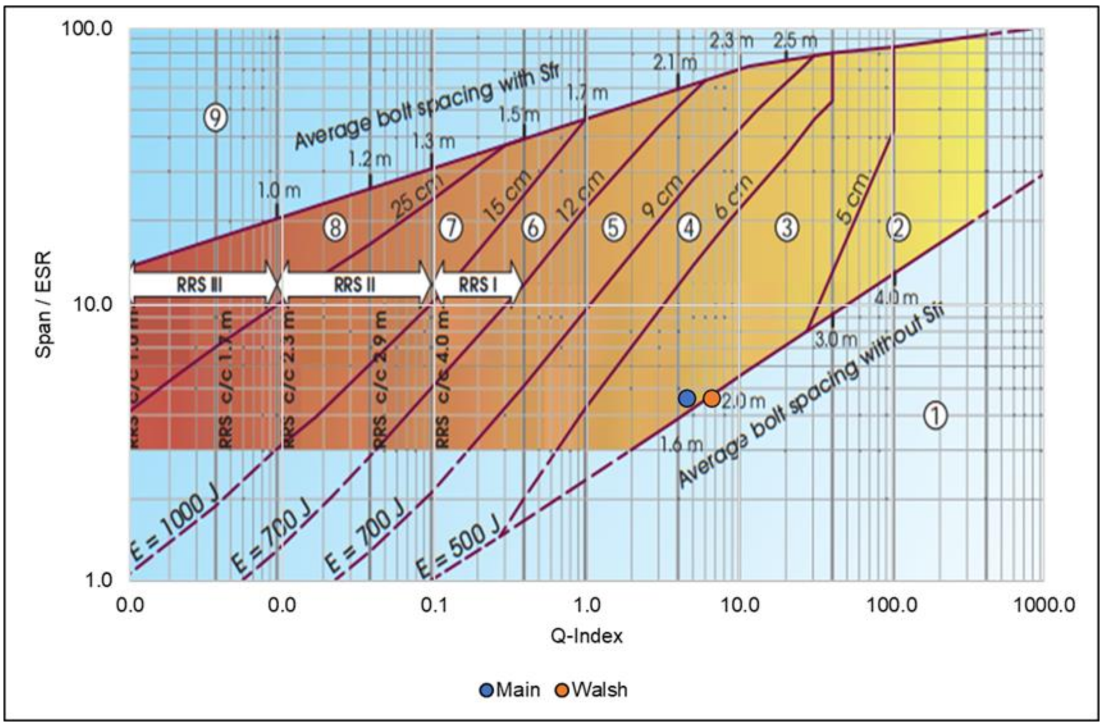


Figure 16-22: Barton and Grimstad Chart for Empirical Support Design (Norwegian Geotechnical Institute, 2013)

Table 16-25: Underground Support Design

Area	Parameter	Value (m)
Normal	Bolt Length	2.4
	Bolt Spacing	2.0 x 2.0
Special Areas: -Intersections -Geological Features -Poor Ground Conditions	Bolt Length	2.4
	Bolt Spacing	1.5 x 1.5
	Cable Anchor Length	4.5
	Cable Anchor Spacing	2.5 x 2.5
	Wire Mesh	As required
	Shotcrete	50mm (as required)

16.5.5 Post Mining Sill Pillar Extraction

The possibility of sill pillar extraction was briefly investigated. An empirical chart was derived based on several numerical modelling simulations used to determine the suitable extent of pillar extraction, as presented in Figure 16-23 and Table 16-26.

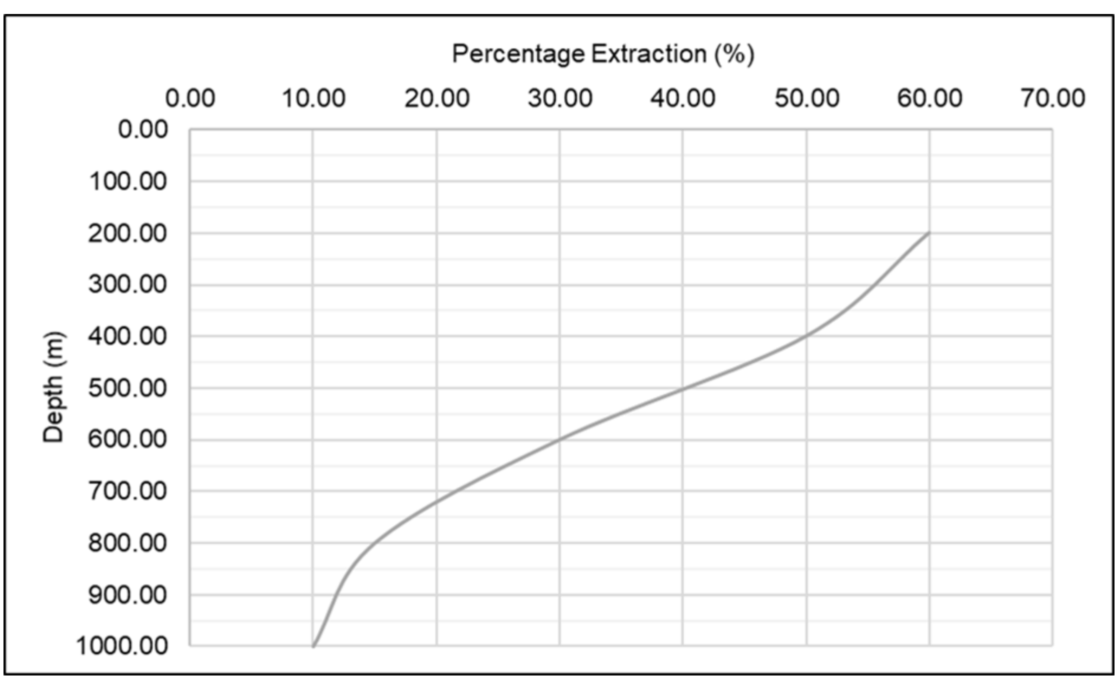


Figure 16-23: Sill Pillar Extraction Percentages

Table 16-26: Sill Pillar Extraction Percentages

Depth (mbs)	Recommended Pillar Extraction Percentage (%)
0 to 100	0.0
100 to 200	60.0
200 to 300	60.0
300 to 400	55.0
400 to 500	50.0
500 to 600	40.0
600 to 700	30.0
700 to 800	20.0

These results are indicative based on case studies at other mines. Further work will be required to accurately determine the allowable extraction percentage of the sill pillars at Bibiani.

16.5.6 Conclusions

The geotechnical design at Bibiani Gold Mine was informed by a total of 94 geologically logged boreholes. To validate the design, the core logs from 30 boreholes which had been geotechnically logged to derive rock mass rating (RMR89) were provided. The data was used to derive the Q-Index, Q-Prime Index, RMR89, MRMR, and Modified Stability Number (N').

Different stoping designs were derived for the Main and Walsh orebodies, with two options for sublevel open stoping and cut and fill investigated for Walsh due to the shallower orebody dip. The use of backfill in the open stoping methods was also investigated to determine the impact it will have on overall extraction.

There is potential for the extraction of the sill pillars once stoping has been concluded, however, extraction is limited to 60% of the sill pillar and decreases with increasing depth.

Portal designs were completed for the declines which will be developed from within the Strauss, Walsh and Main pits. The portal access of the declines within the boxcuts will need to be supported with steel sets for 30m in the Greg Hunter Decline and 15m in the Walsh and Main Pit Declines.

The interactions between the historic stopes, the open pit bottom, and the new planned stopes were investigated to determine the stand-off distance at which the new stopes should be kept away from the historic stopes. An empirical width-to-height ratio of 0.5:1 was applied and tested numerically in RS2. The results of the models indicated a stand-off distance between 15.0m and 30.0m depending on the depth below surface if stable pillars are required and stopes remain unfilled.

The required crown pillar thickness was determined to be 30m, apart from the scenario where the orebody width exceeds 15m at Main, then the crown pillar should be 35m.

16.6 Open Pit Mining

16.6.1 Pit Optimisation

16.6.1.1 Main Pit

Although a pit optimisation exercise was undertaken for the Bibiani Main Pit, the optimum pit shell does not form the basis of the open pit Mineral Reserve. As described in Section 16 below, a transition point between open pit and underground mining was selected, based on the projected underground mining costs. Table 16-1 in subsection 16.3 above shows the results of the pit optimisation with both the revenue 1 pit (Pit 17) and the final pit selected for the open pit to underground transition, Pit 9, highlighted. Figure 16-24 shows a graph of the pit optimisation results.

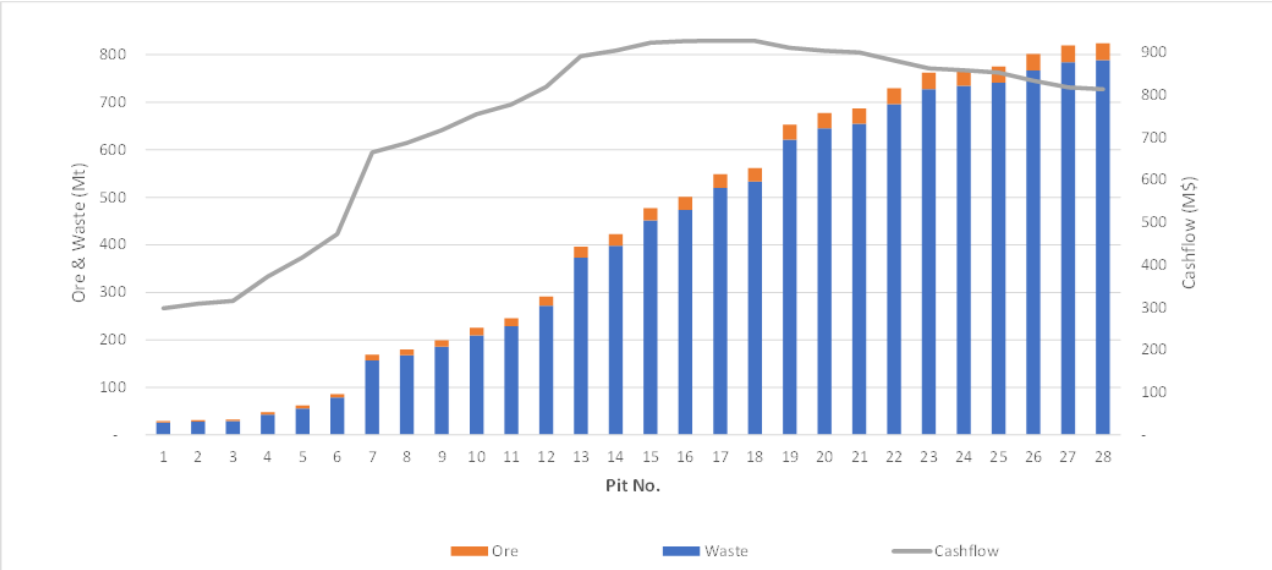


Figure 16-24: Pit Optimisation Results – Main Pit

16.6.1.2 Russell

The pit optimisation for Russell was carried out using a gold price of US$2,150/oz. The same optimisation exercise was used to select the pit shells for declaring of reserves and for mine design and Mineral Reserve estimation. The pit optimisation result is tabled below. Figure 16-25 shows a graph of the tonnes and cashflow by pitshell, with the cashflow calculated using a gold price of US$1,850/oz.

Table 16-27: Results of Pit Optimisation for Russell Pit

2150										**Cost**		
Gold Price ($/oz)	**Final Pit No.**	**Revenue Factor**	**Cashflow (US$)**	**Ore (t)**	**Grade (g/t)**	**Waste (t)**	**Total (t)**	**Strip Ratic (t:t)**	**Mining (US$)**	**Processing (US$)**	**Selling (US$)**	**Revenue (US$)**
900	1	0.42	338,348	6,277	1.59	51,511	57,788	8.2	115,400	164,575	1,265	619,588
950	2	0.44	1,391,843	17,620	2.27	305,460	323,080	17.3	623,922	461,965	5,070	2,482,799
1,000	3	0.47	64,993,481	1,261,558	1.58	11,560,081	12,821,639	9.2	26,650,365	32,382,308	253,762	124,279,917
1,050	4	0.49	66,609,174	1,297,983	1.58	11,826,967	12,124,950	9.1	27,299,450	33,307,409	260,289	127,476,321
1,100	5	**0.51**	**70,287,869**	**1,356,383**	**1.60**	**12,865,501**	**14,224,884**	**9.5**	**29,651,696**	**34,781,695**	**275,645**	**134,996,905**
1,150	6	0.53	70,907,459	1,374,098	1.60	12,973,477	14,347,575	9.4	29,920,191	35,231,238	278,382	136,337,270
1,120	7	0.56	72,220,930	1,400,843	1.60	13,379,886	14,780,729	9.6	30,858,555	35,903,482	284,364	139,267,332
1,120	8	0.58	74,389,818	1,445,339	1.61	14,197,388	15,642,727	9.8	32,714,500	37,023,409	294,891	144,422,618
1,130	9	0.60	76,798,996	1,516,251	1.60	14,971,346	16,487,597	9.9	34,539,825	38,811,561	307,213	150,457,595
1,350	10	0.63	77,271,315	1,528,887	1.60	15,176,889	16,705,776	9.9	35,020,391	39,128,322	309,811	151,729,840
1,400	11	0.65	78,943,191	1,570,143	1.60	16,047,997	17,618,140	10.2	36,983,165	40,162,511	319,364	156,408,231
1,450	12	0.67	79,338,160	1,581,564	1.60	16,276,949	17,858,513	10.3	37,499,812	40,449,083	321,815	157,608,870
1,500	13	0.70	80,254,817	1,620,600	1.59	16,707,320	18,327,920	10.3	38,523,829	41,428,061	327,789	160,534,496
1,550	14	0.72	80,666,580	1,635,456	1.59	16,983,848	18,619,304	10.4	36,161,386	41,801,938	330,701	161,960,605
1,600	15	0.74	81,880,626	1,686,400	1.59	17,878,994	19,565,394	10.6	41,215,097	43,076,832	339,995	166,512,550
1,650	16	0.77	83,367,336	1,746,607	1.59	19,252,355	20,998,962	11.0	44,385,113	44,583,565	352,606	172,688,620
1,700	17	0.79	90,314,012	2,030,091	1.62	26,989,073	29,019,164	13.3	62,249,245	51,677,735	417,885	204,658,877
1,750	18	0.81	90,333,287	2,032,418	1.62	26,996,911	29,029,329	13.3	62,272,980	51,735,961	418,092	204,760,321
1,800	19	0.84	90,624,690	2,049,352	1.62	27,390,233	29,439,585	13.4	63,170,867	52,159,763	421,392	206,376,713
1,850	20	**0.86**	**92,451,346**	**2,142,706**	**1.64**	**31,124,162**	**33,266,868**	**14.5**	**71,706,123**	**54,495,665**	**447,373**	**219,100,507**
1,900	21	0.88	92,811,730	2,164,600	1.65	31,978,140	34,142,740	14.8	73,693,980	55,043,456	453,188	221,948,353
1,950	22	**0.91**	**93,138,004**	**2,191,678**	**1.65**	**32,970,500**	**35,162,178**	**15.0**	**72,927,036**	**55,721,018**	**459,921**	**225,245,980**
2,000	23	0.93	93,266,692	2,205,229	1.65	33,435,558	35,640,787	15.2	76,988,899	56,061,181	463,056	266,779,825
2,050	24	0.95	93,361,170	2,215,734	1.66	34,088,992	36,304,726	15.4	78,450,269	56,324,255	466,774	228,602,469
2,100	25	0.98	93,375,307	2,218,708	1.66	34,186,240	36,404,948	15.4	78,678,432	56,398,725	467,423	225,919,886
2,150	26	1.00	93,400,838	2,242,508	1.66	34,833,642	37,076,150	15.5	80,175,771	56,994,184	471,757	231,042,550

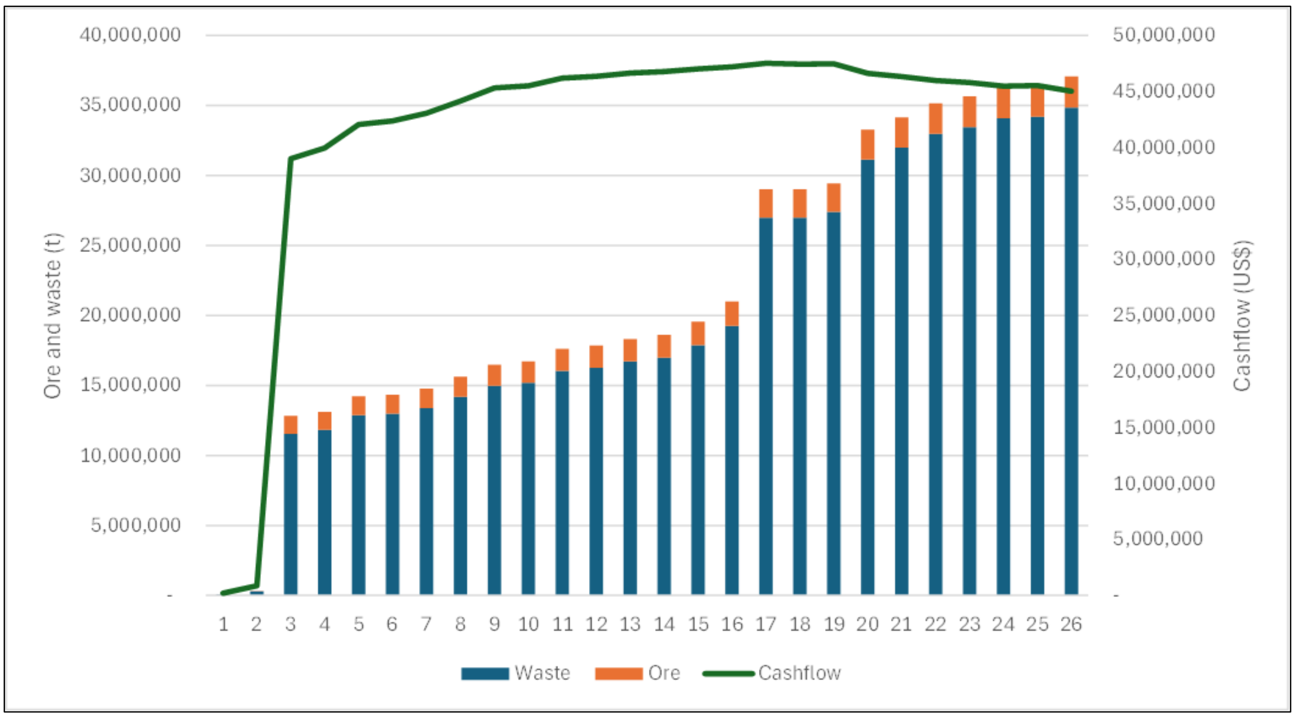


Figure 16-25: Pit Optimisation Results – Russell Pit

16.6.1.3 Grasshopper

The pit optimisation for Grasshopper was carried out using a gold price of US$1,950/oz due to the short life of the project and the current gold price of over US$1,900/oz. The same optimisation exercise was used to select the pit shells for declaring of reserves and for mine design and Mineral Reserve estimation. The pit optimisation result is tabled below. Figure 16-26 shows a graph of the tonnes and cashflow by pitshell, with the cashflow calculated using a gold price of US$1,950/oz.

Table 16-28: Results of Pit Optimisation for Grasshopper Pit

Gold Price ($/oz)	Final Pit No.	Revenue Factor	Cashflow (US$ M)	Ore (t)	Grade (g/t)	Total (t)	Strip Ratic (t:t)	Total Cost (US$M)	Revenue (US$)	Proc Rec (%)	Rec Gold (koz)	Gold (US$/oz)
900	1	0.432	4.21	0.07	1.61	0.24	2.5	2.10	5.99	91.0%	3.24	648
950	2	0.459	4.57	0.08	1.55	0.28	2.6	2.40	6.61	91.0%	3.57	672
1,000	3	0.486	5.10	0.09	1.50	0.38	3.0	2.91	7.59	91.0%	4.10	708
1,050	4	0.514	5.21	0.10	1.49	0.40	3.1	3.02	7.81	91.0%	4.22	715
1,100	5	0.541	5.49	0.11	1.46	0.45	3.3	3.33	8.37	91.0%	4.52	736
1,150	6	0.568	5.76	0.12	1.41	0.50	3.3	3.67	8.94	91.0%	4.83	758
1,200	7	0.595	6.02	0.13	1.38	0.57	3.5	4.02	9.52	91.0%	5.15	781
1,250	8	0.622	6.23	0.13	1.37	0.65	3.8	4.34	10.03	91.0%	5.45	801
1,300	9	0.649	6.53	0.15	1.34	0.77	4.2	4.83	10.78	91.0%	5.83	830
1,350	10	0.676	6.69	0.16	1.32	0.83	4.3	5.15	11.23	91.0%	6.07	847
1,400	11	0.703	6.82	0.16	1.30	0.87	4.3	5.38	11.58	91.0%	6.24	860
1,450	12	0.730	7.05	0.18	1.27	0.99	4.5	5.90	12.28	91.0%	6.64	889
1,500	13	0.757	7.10	0.18	1.26	1.01	4.5	6.02	12.44	91.0%	6.73	895
1,550	14	0.784	7.26	0.20	1.23	1.13	4.8	6.51	13.07	91.0%	7.06	922
1,600	15	0.811	7.38	0.21	1.21	1.21	4.8	6.87	13.51	91.0%	7.30	940
1,650	16	0.838	7.42	0.21	1.20	1.25	4.9	7.03	13.71	91.0%	7.41	949
1,700	17	0.865	7.48	0.22	1.19	1.31	5.0	7.28	14.00	91.0%	7.57	962
1,750	18	0.892	7.59	0.23	1.17	1.49	5.4	7.88	14.68	91.0%	7.94	993
1,800	19	0.919	7.64	0.24	1.17	1.58	5.6	8.19	15.01	91.0%	8.12	1,009
1,850	20	0.946	7.69	0.25	1.15	1.69	5.8	8.60	15.46	91.0%	8.35	1,030
1,900	21	0.973	7.70	0.25	1.15	1.71	5.8	8.68	15.54	91.0%	8.40	1,033
1,950	**22**	**1.000**	**7.74**	**0.26**	**1.14**	**1.91**	**6.3**	**9.25**	**16.12**	**91.0%**	**8.71**	**1,062**
2,000	23	1.027	7.74	0.27	1.13	1.96	6.4	9.41	16.28	91.0%	8.80	1,070
2,050	24	1.054	7.76	0.27	1.13	2.01	6.5	9.58	16.44	91.0%	8.89	1,078
2,100	25	1.081	7.75	0.27	1.12	2.09	6.6	9.80	16.64	91.0%	9.00	1,089
2,150	26	1.108	7.74	0.28	1.12	2.13	6.7	9.93	16.77	91.0%	9.06	1,096

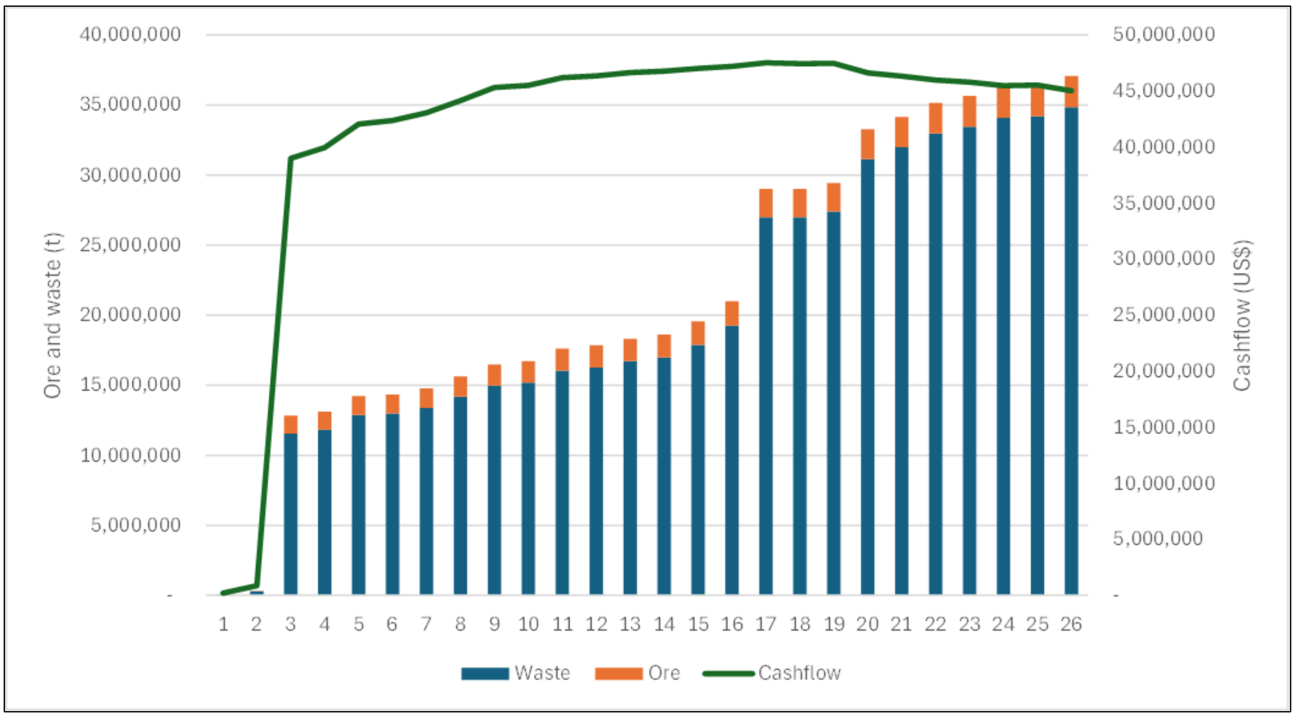


Figure 16-26: Pit Optimisation Results – Grasshopper Pit

16.6.2 Pit Design

Pit designs were completed based on the selected pit shells for each deposit. The geotechnical parameters used are summarised in Section 16.2. Other practical mining parameters were applied, as shown in Table 16-29.

Table 16-29: Design Parameters

Parameters	Unit	Main Pit	Satellite Pits
Ramp width – double	(m)	22	16
Ramp width – single)	(m)	16	12
Ramp gradient	(1:x)	10	10
Minimum mining width – cutback	(m)	40	35
Minimum mining width – pit base	(m)	20	20

All pit designs were subjected to geotechnical review to ensure compliance with the intended parameters and factors of safety.

16.6.2.1 Main Pit

The Main Pit has been re-designed since the previous Life of Mine plan, reported in 2022, in accordance with the revised mining strategy to transition between open pit mining and underground mining earlier than in the previous plan. The Main pit design consist of four stages or cutbacks, named Cut 1 to Cut 4. Cut 3 is the final cutback in the main portion of the pit, based on Pitshell 9 from the pit optimisation, described above. The last cut, Cut 4, is an extension of the pit to the North to include the area referred to as Big Mug. Figure 16-27 shows a plan view of the final pit design for Main Pit. The design of the interim stages or cutbacks is illustrated in Figure 16-28 while Figure 16-29 shows a cross section through the pit design along Section line Y= 5500.

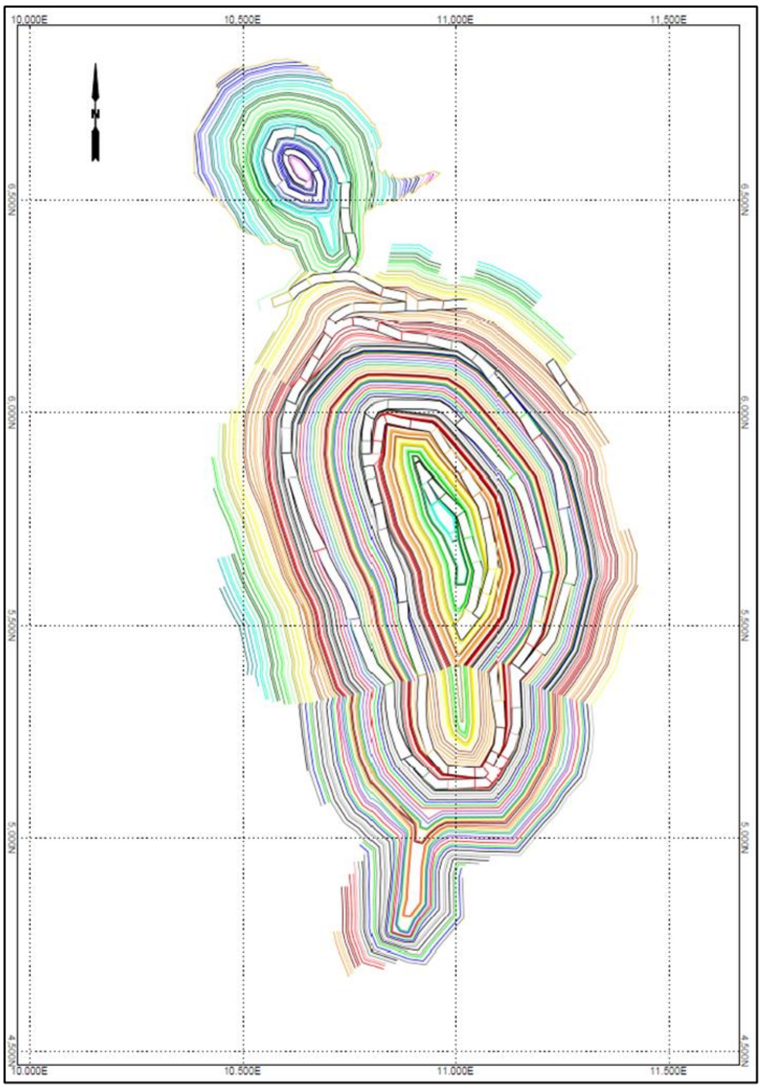


Figure 16-27: Main Pit Design

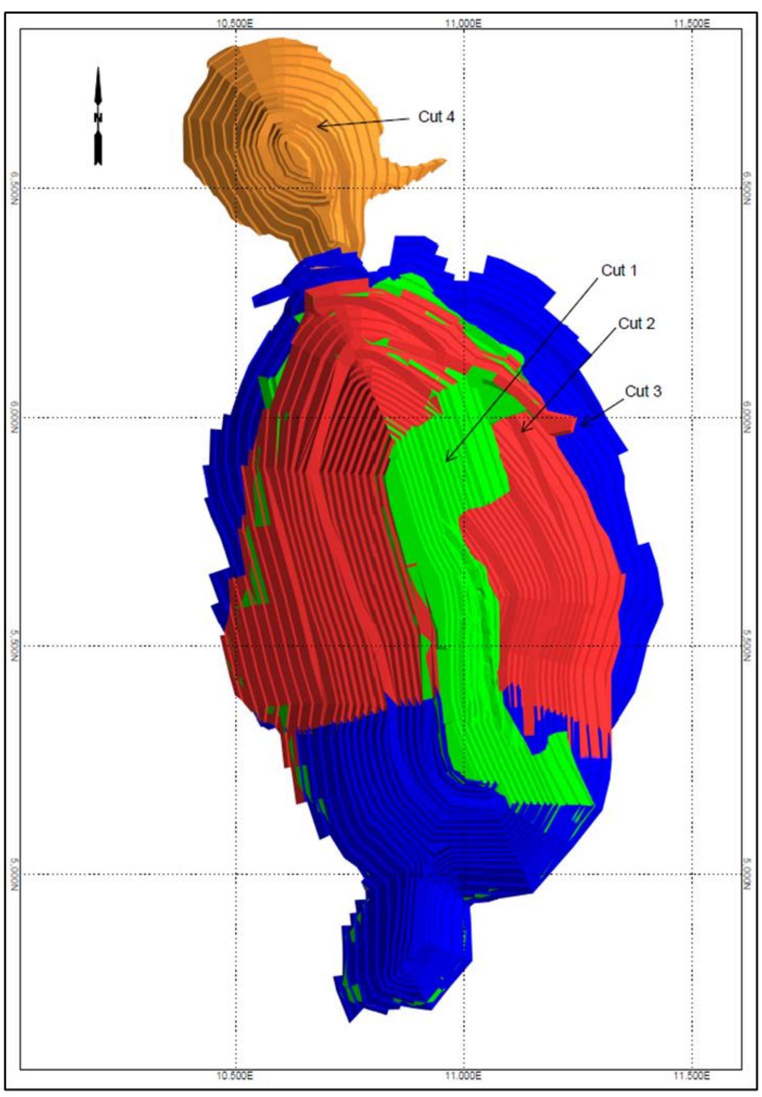


Figure 16-28: Main Pit Stage Designs

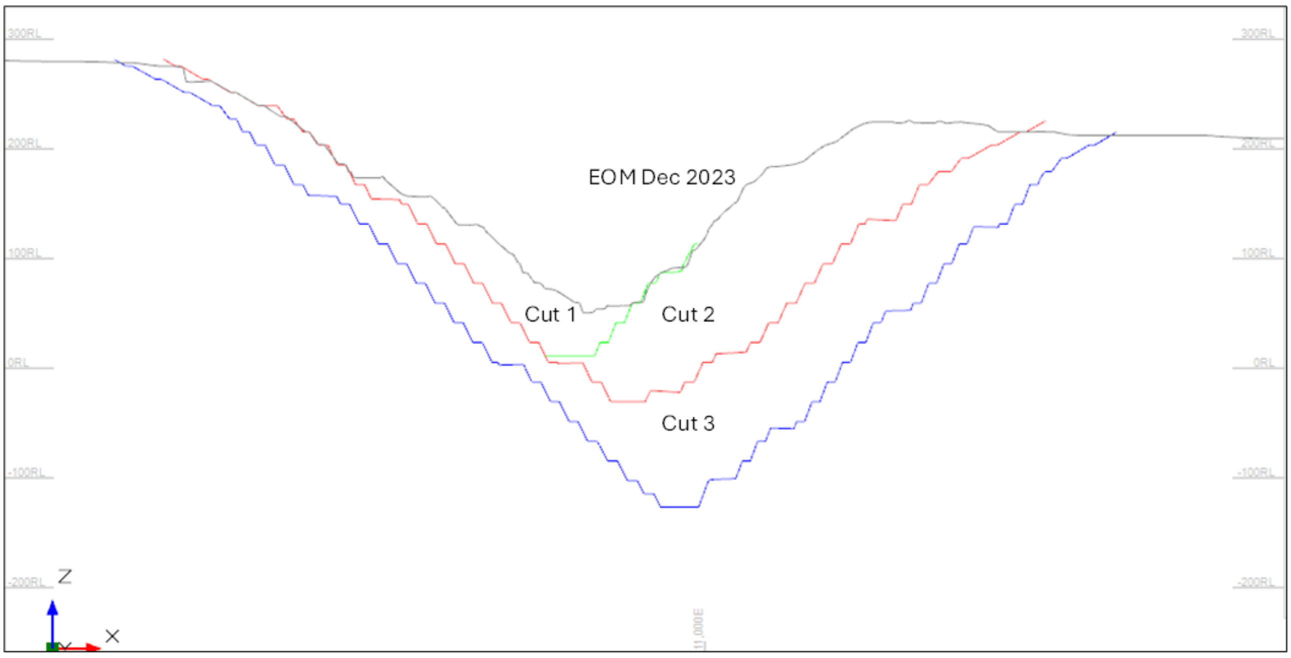


Figure 16-29: Cross Section through Main Pit Design

(Source: MGBL, 2024)

A reconciliation between the final pit design and the selected pit shell was completed. The results are shown in Table 16-30 below. The variances in tonnes and gold content between the pit shells and pit designs are deemed acceptable.

Table 16-30: Reconciliation Between Pit Designs and Pit Optimisation Shell – Main Pit

	Unit	Pit Shell	Pit Design	Difference
Ore	(Mt)	13.8	13.3	-3%
RoM Grade	(g/t)	2.31	2.11	-9%
Gold Content	(Moz)	1.025	0.901	-12%
Waste	(Mt)	188	189	-0.5%
Strip Ratio	(t:t)	13.4	14.2	+6%

16.6.2.2 Grasshopper

The Grasshopper pit is a relatively small pit reaching a final depth of 65 m below surface. The pit extends for 500m on strike and is 150m wide. The pit is currently being mined with the lowest bench as at end December 2023 being on the 192m elevation, approximately 15m below original ground level. Figure 16-30 shows a plan view of the pit design. Due to the relatively small size of the current Grasshopper pit design, it is scheduled to be mined in a single stage with no interim stage or cutbacks.

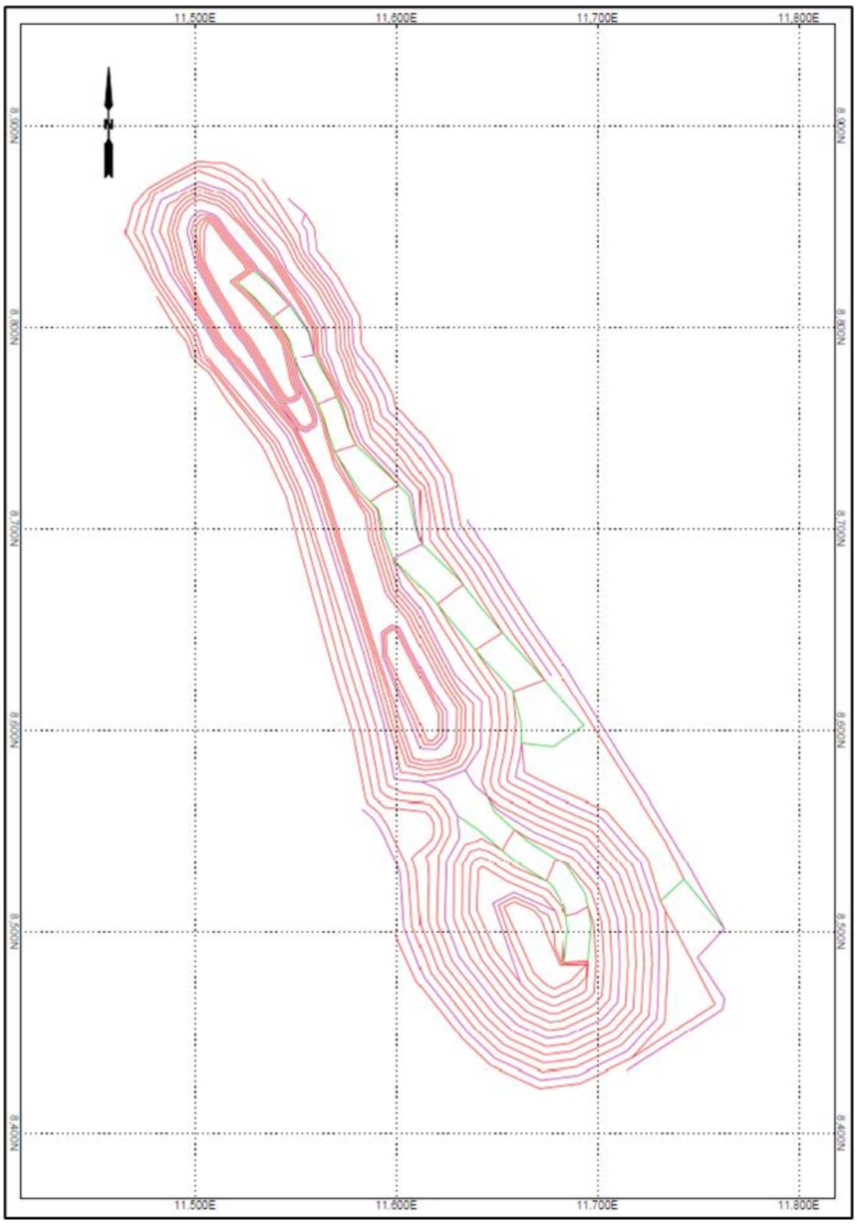


Figure 16-30: Grasshopper Pit Design

(Source: MGBL, 2024)

A reconciliation between the final pit design and the selected pit shell was completed. The results are shown in Table 16-31 below.

Table 16-31: Reconciliation Between Pit Designs and Pit Optimisation Shell – Grasshopper

	Unit	Pit Shell	Pit Design	Difference
Ore	(Mt)	0.217	0.226	+4%
RoM Grade	(g/t)	1.19	1.12	-6%
Gold Content	(Moz)	0.008	0.008	-2%
Waste	(Mt)	1.09	1.82	-67%
Strip Ratio	(t:t)	5.0	8.0	-60%

16.6.2.3 Russell

For the design of the Russell pit the Revenue Factor 1.08 shell was selected from the pit optimisation. This equates to selecting the revenue 1 pit at a gold price of US$1,850/oz. This shell was selected to maximise the ounces from this relatively short life pit. The Russell pit design extends over a relatively short strike length of 500m and is approximately 290m wide. The natural topography consists of a steep hill on the West side of the pit. The pit is designed to be mined in two stages in order to minimise upfront waste stripping. Figure 16-31 shows the final design while Figure 16-32 shows the design of the two cutbacks. The design of Cut 1 is based on pitshell 5 in Table 16-31, above.

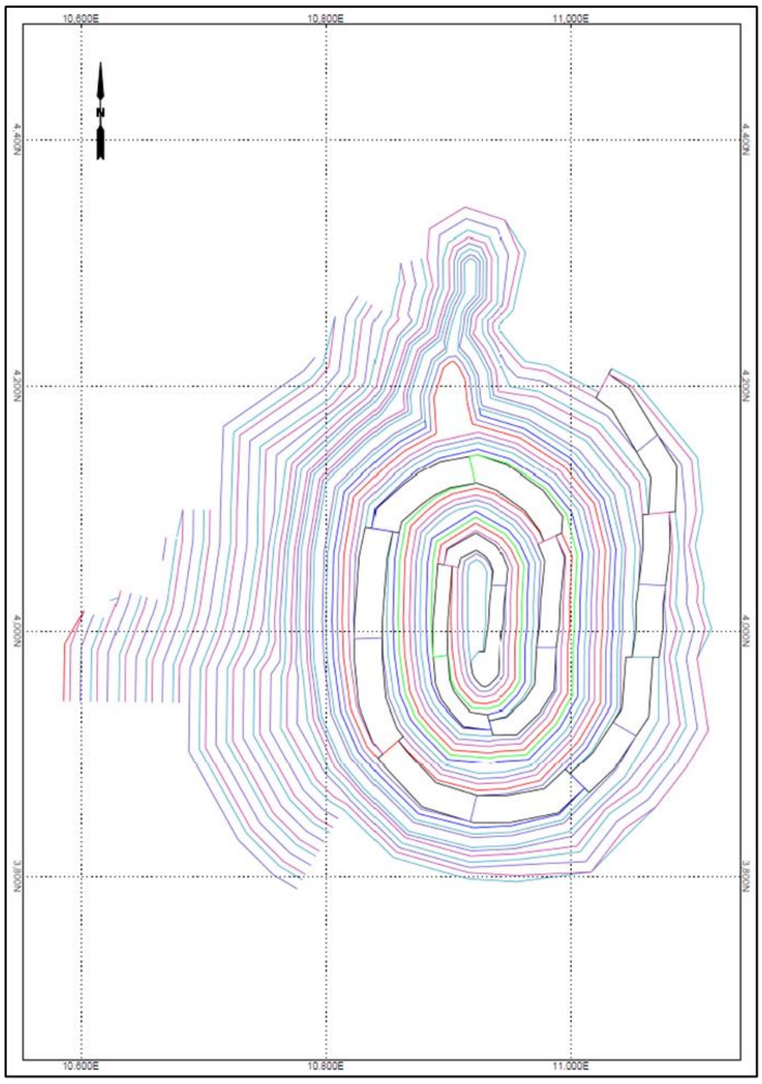


Figure 16-31: Russell Pit Design

(Source: MGBL, 2024)

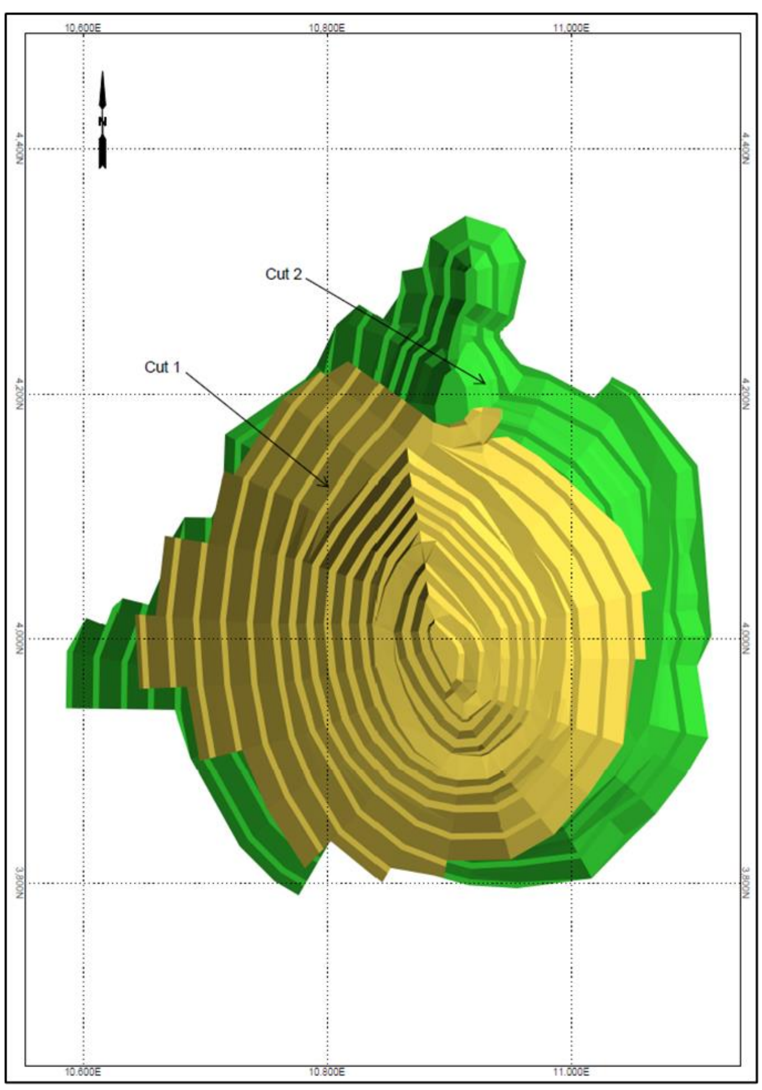


Figure 16-32: Russell Stage Designs

(Source: MGBL, 2024)

Table 16-32: Reconciliation Between Pit Design and Pit Optimisation Shell – Russell Pit

	Unit	Pit Shell	Pit Design	Difference
Ore	(Mt)	2.143	1.929	-10%
RoM Grade	(g/t)	1.64	1.62	-2%
Gold Content	(Moz)	0.113	0.101	-11%
Waste	(Mt)	31.124	25.7	-17%
Strip Ratio	(t:t)	14.5	13.3	+8%

16.6.3 Mine Operation

16.6.3.1 Site Preparation

The Main and Grasshopper pits are currently being mined so there is limited site preparation required. Russell is a greenfield open pit site. The area required for the pit expansions at Main and Grasshopper, as well as the proposed pit area at Russell will be cleared of vegetation to a depth of 0.3m. The topsoil will be pushed into piles by a dozer or grader before a loader or excavator is used to load it into trucks. Trucks will then haul the soil to stockpiles for later use on rehabilitation, or directly to active rehabilitation areas. Prior to topsoil deposition, the stockpile areas will be cleared and surveyed.

16.6.3.2 Drill and Blast

Ore and waste are and plan to be broken using conventional drilling and blasting techniques. It is possible to free dig some of the material using either backhoe excavators or by ripping with a CAT D9 dozer, (or equivalent). It is anticipated that approximately 80% of the oxide material in the production schedule will be amenable to free dig, with the remainder of material being drilled and blasted.

The blast hole drilling is performed using Sandvik DP1500 drill rigs, or equivalent, capable of drilling 102mm to 152mm vertical and inclined holes. An explosive delivery truck and several special purposes built LDV's carry personnel and explosive accessories. Stemming is used to fill the blast holes after they have been charged.

The blast design parameters are detailed in Table 16-33 below. These might differ from time to time as required while mining through different zones and weathering areas.

Table 16-33: Blast Design Parameters

Material Type	Pattern Size	Pattern Area (m^2)	Subdrilll (m)	Stemming Height (6m Blast)	Stemming Height (9m Blast)	Diameter (mm)	Penetration Rate (m/h)
Oxide	6.1m x 6.2m	37.8	1.0	3.0	3.5	127	50
Oxide	5.0m x 5.5m	27.5	1.0	3.0	3.5	127	50
Oxide	5.0m x 5.0m	25.0	1.0	3.0	3.5	127	50
Oxide	5.0m x 4.8m	24.0	1.0	3.0	3.5	127	50
Transition	4.5m x 4.8m	21.6	1.0	3.0	3.5	127	50
Transition	4.2m x 4.8m	20.2	1.0	3.0	3.5	127	35
Transition	4.3m x 4.5m	19.4	1.0	3.0	3.5	127	35
Fresh	4.3m x 4.5m	19.4	1.0	3.0	3.5	127	35
Fresh	3.9m x 4.5m	17.6	1.0	3.0	3.5	127	35
Fresh	3.8m x 4.2m	16.0	1.0	3.0	3.5	127	35
Fresh	3.7m x 4.3m	15.9	1.0	3.0	3.5	127	25
Fresh	3.5m x 4.0m	14.0	1.0	3.0	3.5	127	25
Fresh	3.2m x 3.8m	12.2	1.0	3.0	3.5	127	25
Fresh	3.0m x 3.5m	10.5	1.0	3.0	3.5	127	25

The pit configuration, bench height and waste material type anticipated best suits drill rigs capable of drilling drill holes with a diameter of 127mm. The burden, spacing and sub-drill design are dependent on the varying material types of the deposit.

An emulsion-based product with water resistant characteristics and a high velocity of detonation is used to achieve the best fragmentation result. The blast pattern is dictated by the powder factor required to ensure appropriate fragmentation and heave. The selection of the powder factor is based on the unconfined compressive strength (UCS) measurement results obtained from the preliminary excavation characterisation work.

The current explosives consumption is managed by the mining contractor and is included as part of the contractor's cost. There is an established explosives storage facility (Magazine) on site which complies to Ghanaian Minerals and

Mining (Explosives) Regulation 145 with clear indication of types of explosives being stored, design, fenced-off and plans supplied to the Commission. Explosives and accessories are delivered by the explosive contractor to ensure production requirements and legal storage limitations. Emulsion storage capacity is also already established on site to meet both production and regulatory requirements.

16.6.3.3 Load and Haul

The mining fleet for the Main pit includes CAT 6030, 300t hydraulic backhoe excavators with a 17m^3 bucket capacity, or equivalent, Hitachi 1900, 190t hydraulic backhoe excavators with a 12m^3 bucket capacity or equivalent and CAT 6015 excavators with an 6m3 bucket capacity. The primary hauling fleet is CAT 777D dump trucks with a 94t capacity.

The mining fleet for the Satellite Pits typically includes CAT 6015, 140t hydraulic backhoe excavators or equivalent and CAT 390, 90t hydraulic excavators with a 4.6m^3 bucket capacity or equivalent. Haul trucks are Cat 775 Dump trucks with a 64 tonne capacity.

Ore dig plans are provided by the mine planning and grade control team to the operational team, who load and haul the ore, under control of the grade control team, from the pits to the ore RoM pads, or directly to the crusher.

The crushing circuit operates seven (7) days per week, 24 hours per day. The requirement is to keep the primary crusher bin full to appropriate levels and the plant crushing systems fed in accordance with the crusher feed plan while the crushers are operational.

The primary crusher is located at the main RoM stockpiles. The crusher is designed to accept direct tipping by haulage trucks from the pits. The crusher feed plan shall consist of ore blending from the pits and from RoM stockpiles. A certain quantity of ore from the pits is dumped at the respective RoM stockpiles and then re-handled into the primary crusher bin as per the crusher feed plan. A layout of the RoM stockpiles is depicted in Figure 16-33. When underground mining commences in 2025 the RoM pad will be modified to include a slewing conveyor which will allow stockpiling of the underground ore on the RoM pad in two grade bins (medium grade and high grade).

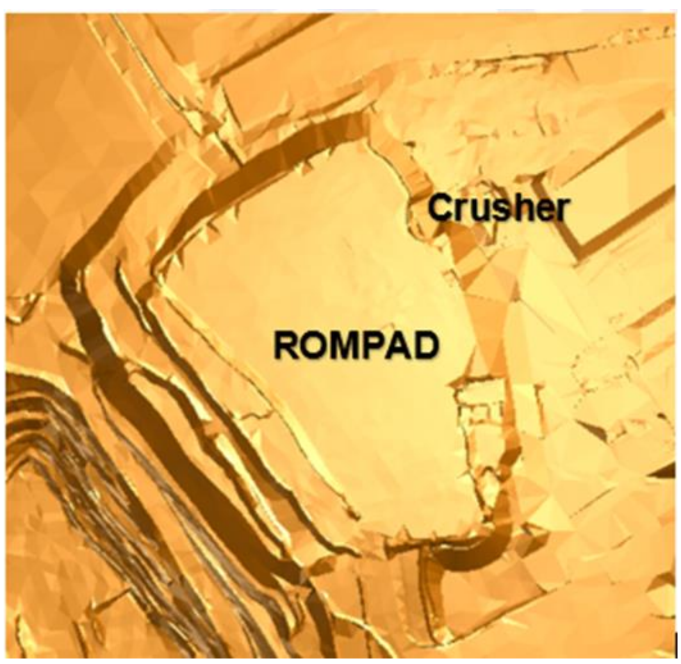


Figure 16-33: RoM Pad Design

(Source MGBL, 2022)

16.6.3.4 Grade Control

Grade control (GC) drilling and sampling is carried out to determine whether material in a given area is above, or below the cut-off grade. GC definition drilling and sampling is used to delineate the ore zone prior to the blast planning of the ore blocks.

GC drilling is conducted by a dedicated RC drill that drills a 10m x 5m pattern to a depth of 24m. Sampling is conducted at 1.5m intervals using composited drill chippings along the full length of the hole. This data is used to generate a GC model, which will be used for short term planning. This GC drilling is accompanied by deeper holes which is called dynamic drilling, these holes cover the deeper area from 24m to 48m which is used for the medium-term planning.

The technical services team is responsible for collecting the definition drilling assay data and interpreting the results to define the economic ore zones. They communicate the ore zones to the mine planning engineer and drill and blast supervisor for inclusion into the short term mine plan. Finally, they delineate those zones in the field and provide direction to the mine operations crew during excavation.

Mapping of the pit for lithology, alteration, structure, mineralisation, hardness is undertaken utilizing the following process:

- Logging of the blast holes for lithology and alteration.
- Development of a hardness model based on logging, mapping and drill penetration rates.
- Development of an alteration model based on logging and mapping data.
- Generation of dig plans based on assay results and the hardness and alteration models.
- These dig plans are communicated to the mining team to direct the mine personnel and mining contractor.
- The grade control geologist visits the mining faces on a regular basis to monitor production and can update dig lines.

16.6.3.5 Underground Mining Voids

The Bibiani mine has previously been mined as an underground mine. The open pit mining does hole into and takes place in the vicinity of existing voids. Special precautions are taken to ensure the safety of people and equipment when mining close to voids. Operating procedures specifically dealing with mining in the vicinity of voids are in place and are adhered to. These procedures specifically deal with:

- The early identification of and demarcation of voids by the survey department.
- Early warning of mining approaching voids by technical services department to mine production personnel.
- Procedures adopted by production crews to ensure safety of personnel and equipment.

16.6.3.6 Rehabilitation

The surface waste dumps at each of the various mining locations are to be progressively rehabilitated during their construction. Once a mining location is completed, the surface of the waste dump is rehabilitated. Topsoil is sourced directly from the mining areas or from topsoil stockpiles. There is to be no backfilling of the pits based on the guidance from Minerals Commission, Ghana to avoid sterilisation of future potential resources.

The following activities are allowed for the rehabilitation of waste dumps:

- Push down waste dump batters to final formation.
- Form waste dump top to final formation.
- Load topsoil and dump at rehabilitation area.
- Spread topsoil onto battered slopes.
- Rip and seed waste dump battered slopes.
- Spread topsoil onto waste dump top.
- Rip and seed waste dump top.

Mine closure and rehabilitation are covered in more detail in Section 20.

16.6.3.7 In-pit Water Management

In-pit water management primarily consists of run-off control and sumps. The dewatering infrastructure and equipment is sized to handle ground water inflows and precipitation. The pit dewatering plan is based on diverting as much surface water as possible away from the open pits. Water that does report to the open pits is collected, using ditches and sumps before pumping it to the mine water pond. There are intermediate sumps on the pits walls as well as on the surface between the pit and the mine water pond.

As the Main pit will be operating at depths greater than 200m below the crest, special high lift or stage pumps are required. Pontoon mounted pumps are used to draw water from the sumps, when appropriate. This ensures the pumps are not submerged as sump water levels rise rapidly in response to rainfall events. Pumping infrastructure advances as the mining activity advances deeper.

16.6.3.8 Waste Rock Dumps

The waste rock dumps (WRDs) associated with mining operations have been constructed to meet the requirements of the Ghanaian Mining Regulations. The WRDs are initially constructed with the natural rill angle of approximately 35° degrees with 10m lifts and 14m berms. This is then to be contoured progressively to an overall slope angle of 20° (1:2.8) to allow for slope stability and revegetation. The WRDs are progressed by tipping from a higher level against a windrow and progressively pushing the waste out with a dozer. The WRDs location for Main Pit is shown in Figure 16-34.

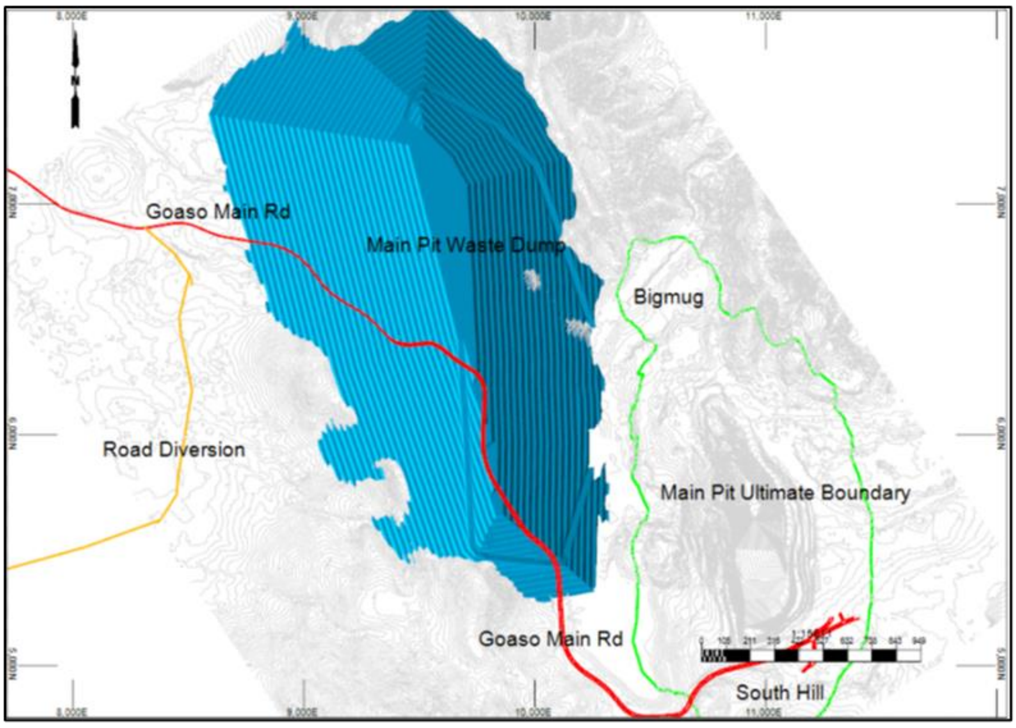


Figure 16-34: Main Waste Dump Location

(Source MGBL, 2022)

The waste dumps will be progressively rehabilitated with topsoil, where possible. Surfaces of dumps will be contoured to minimise batter scour and ripped at 1.5m centres to a depth of 400mm, where practicable. All of the rehabilitation work will be carried out progressively. Seepage and shallow ground water flow along the perimeter of the mine residue deposits should be controlled with suitable toe drains.

Selected waste rock will also be used for the further TSF wall lifts during the LoM.

Table 16-34 summarises the dump capacities. Waste was assumed to have a loose density of between 1.6 and 2.1 t/m^3.

Table 16-34: Waste Dump Capacities

Waste Dump	Capacity (Loose Cubic Metres, LCM)
Main pit	268 million
Satellite pits	8.2 million

The current Life of Mine plan for open pits produces 118 million LCM so the waste dump has capacity for an additional 150 million LCM of waste.

16.6.4 Mining Fleet

16.6.4.1 Primary Equipment

The Bibiani Gold Mine is a contractor-based mining operation. The general approach is that the larger Main pit requires 300t excavators with 100t rigid dump trucks for hauling to increase productivity, while the smaller Satellite Pits typically use 140t excavators that will load 64t dump trucks to improve manoeuvrability and increase selectivity in the smaller deposits.

A single Mining contractor has been selected for the operation of the Main and satellite pits and MGBL has a contractual agreement in place with the contractor. The selection of equipment is based on the pit designs and mainly driven by the ore body size and production requirement from each pit to achieve the required blend and feed to the plant. The primary production equipment is summarised in Table 16-35.

Table 16-35: Proposed Primary Mining Equipment Fleet

Description	Estimated Quantity
CAT 6030 Excavator	5
CAT 6015B Excavator	3
HITACHI 1900-6	2
CAT 390D Excavator	3
CAT 777E Dump Truck	70
CAT 775 Dump Truck	10
Sandvik DP 1500i Drill Rig	24

Industry norms were used as basis for availability and utilisation (at 85%), resulting in an effective utilisation of 72%. This is applied to the total available time with two twelve-hour shifts being used for production. The availability and utilisation accounts for shift change, inspections, breaks and all maintenance related aspects.

16.6.4.2 Ancillary Equipment

In addition to the primary mining equipment additional support equipment is required to support the mine operation. A list of secondary equipment deployed at Bibiani was provided by the mining contractor and is tabled below.

Table 16-36: Ancillary Equipment Fleet

Equipment Description	Quantity
CAT 16 Grader	4
CAT D9 Bulldozer	14
CAT Rigid Frame Water Tanker	3
CAT 966 Payloader	1
CAT 950 Payloader	1
4x4 Hardtop (LV)	2
4x4 Personnel Carrier (LV)	11
4x4 Double Cab Pickup (LV)	11
4x4 Single Cab Pickup (LV)	13
Fuel Bowser	3
Service Truck	2
Hiab Crane Truck	2
Telehandler	2
Tyre Handling Attachment	2
Mobile Crane	2
Mobile Elev working Platform	3
Mobile Lighting Set	60
Light Duty Truck	2
Low Loader	1
Earthworks Roller	1
HL160M Water Pump	10
CD100 Water Pump	2
Equipment Simulator	1
CAT 988 Payloader	2
Rock hammer	2

16.6.5 Open Pit Scheduling

The mining schedule was developed using Geovia MineShed®, a scheduling package which is integrated with Geovia's Surpac® mine design software.

The schedule was completed in monthly periods for the full Life of Mine. The mining inventory was separated into pit stages and 6m vertical benches for scheduling. Within each bench, material was separated into the material types and grade bins for grade maximisation or blending purposes.

The material bins used for this schedule are tabled below.

Table 16-37: Material Bins used in Mine Schedule

Weathering	Grade
Oxide	High grade (>2.3 g/t)
	Medium grade (1.2 g/t to 2.3 g/t)
	Low grade (0.5 g/t to 1.2 g.t)
Transition	High grade (>2.3 g/t)
	Medium grade (1.2 g/t to 2.3 g/t)
	Low grade (0.5 g/t to 1.2 g.t)

Weathering	Grade
Fresh	High grade (>2.3 g/t)
	Medium grade (1.2 g/t to 2.3 g/t)
	Low grade (0.5 g/t to 1.2 g.t)

A maximum mining rate of 7.6Mtpm was targeted in the schedule. Mining ramps up to 7.6Mtpm by December 2024 after which it remains between 7Mtpm and 7.4Mtpm until September of 2025 when it steps down progressively to 4Mtpa by December 2027. After December 2027 there is another sharp reduction to less than 1Mtpa for the remainder of the life, ending in June 2030.

The mining schedule is illustrated in Figure 16-35 and Figure 16-36, below.

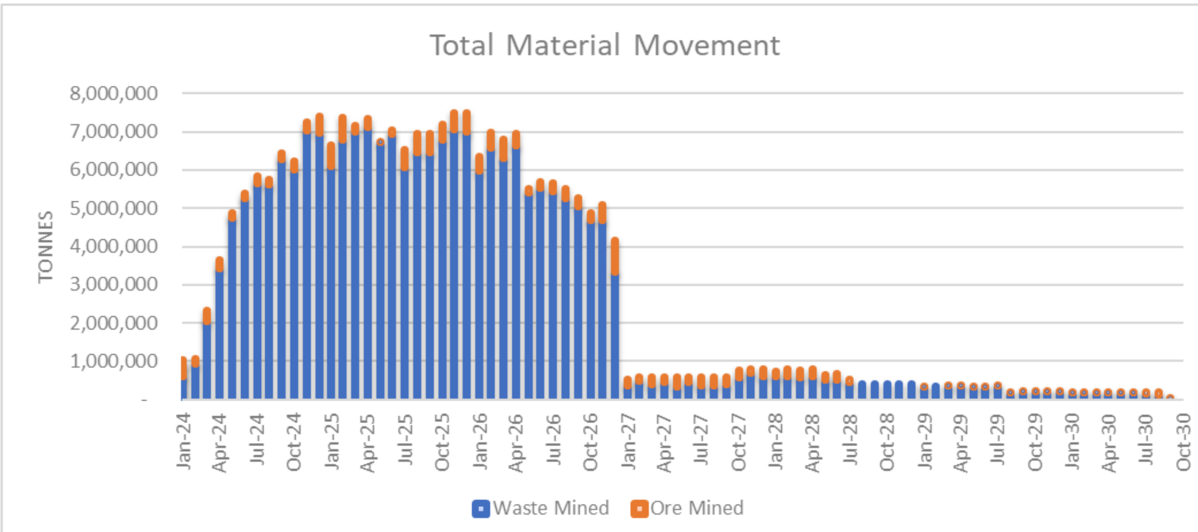


Figure 16-35: Total Material Mined Schedule

(Source Bara, 2024)

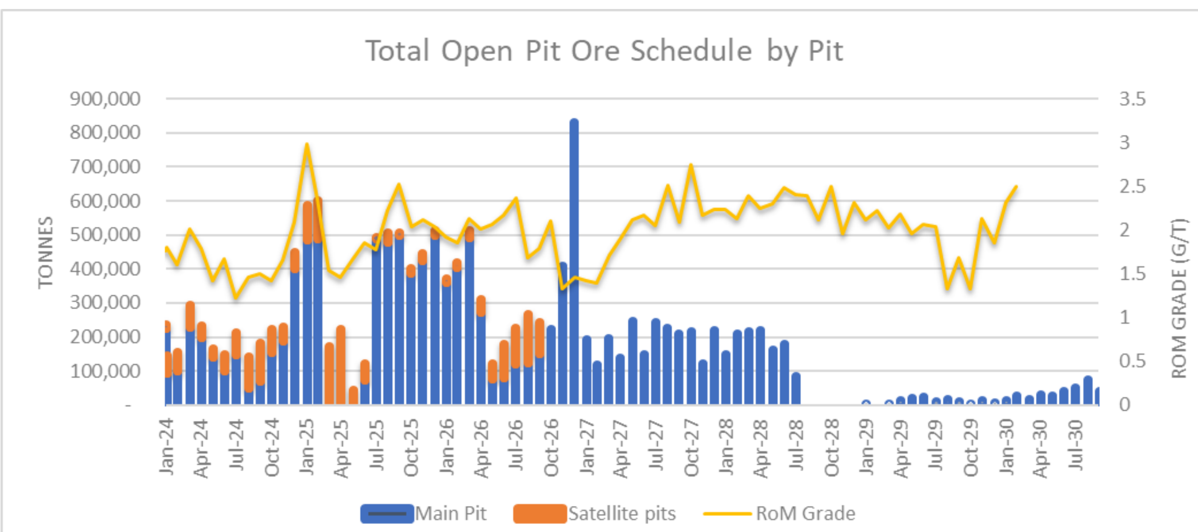


Figure 16-36: Ore Mining Schedule by Pit

(Source Bara, 2024)

16.7 Underground Mining

16.7.1 Mining Limits and Conventions

Bibiani Gold Mine makes use of a local survey coordinate grid with the mining license areas extending from X = 2,829m to X = 16,807m (West to East) and from Y = 475m to 21,678m (South to north). Elevations are stated in m above mean sea level.

The limits of the underground mine design are determined by the final pit design for open pit mining and the extent of the Measured and Indicated Mineral Resources in block model. The final open pit design reaches a depth of 350 m below surface at -125m RL.

Underground mining level elevations follow the naming convention adopted in the historical mine plans. The level names and elevations are tabled below.

Table 16-38: Underground Level Names and Elevations

Level Name	Elevation (Mamsl)
1	200
2	170
3	140
4	110
5	80
6	50
7	20
8	-10
9	-40
10	-70
11	-100
12	-130
13	-160
14	-190
15	-220
16	-250
17	-280
18	-310
19	-340
20	-370
21	-400

16.7.2 Primary Access

The primary access into the Bibiani underground mine will be via a trackless decline system, making us of existing development and an access developed out of the Walsh open pit.

Previous owners of Bibiani, Central African Gold, developed a decline from just south of the processing plant towards the orebody at an incline of -8 degrees. The entrance and upper portions of the decline were destroyed by the mining of Strauss open pit. However, from the point where the decline enters the sidewall of the Strauss pit it extends for 630m. This decline, referred to as the Greg Hunter Decline, has dimensions of 5.5m wide x 5.5m high.

Asante have backfilled the Strauss open pit to gain access to the Greg Hunter decline position in the sidewall of the pit. A new portal will be established securing the decline access. A ramp has been created using waste rock backfill from the portal position onto the RoM pad, just to the south of the plant, as illustrated in Figure 16-37.

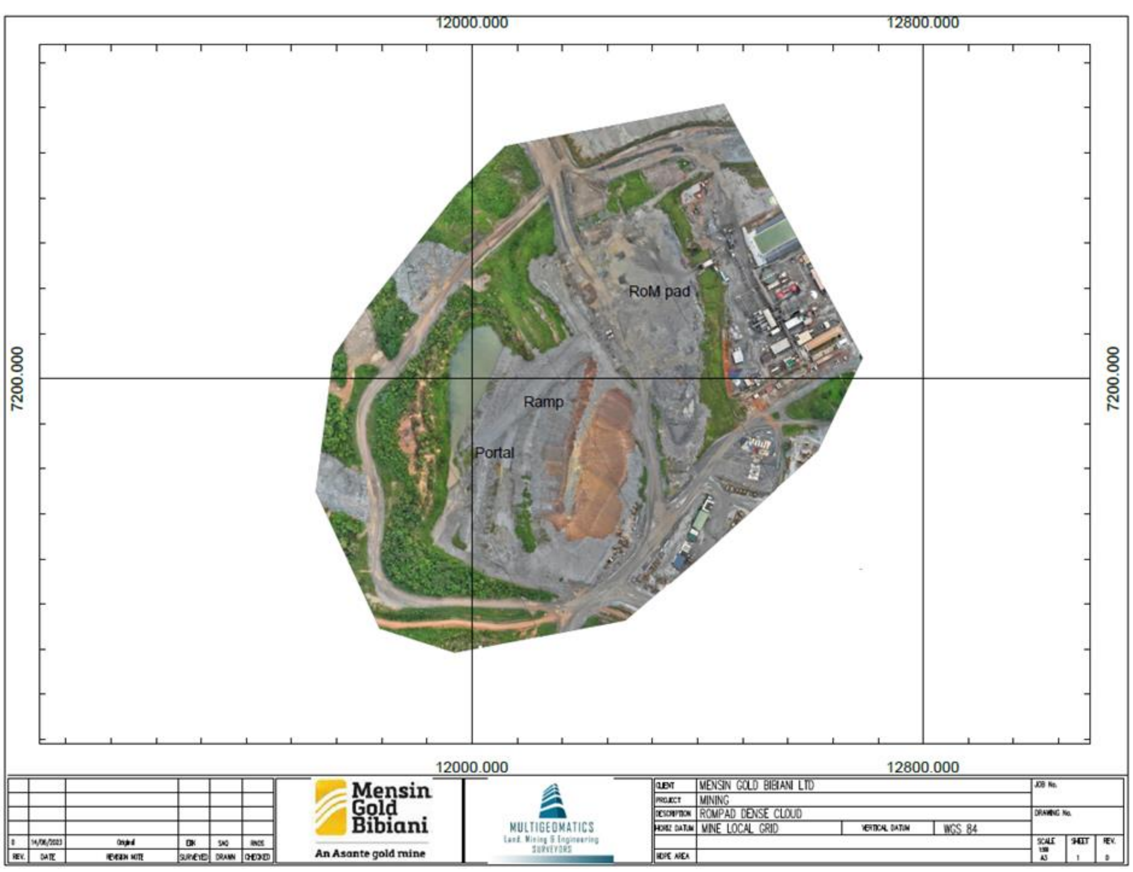


Figure 16-37: Satellite Image Showing GH Portal Location and Ramp to RoM Pad

The Greg Hunter Decline will be rehabilitated and development continued in a south-westerly direction towards the Main Pit orebody.

The second access from Walsh pit will meet the Greg Hunter Decline at the current face position, from where the development will proceed as a twin decline system. See Figure 16-38 below.

The Greg Hunter Decline system will be used as a conveyor decline which will handle all the ore from the underground mine, while the Walsh Decline provides access for men and material on rubber tyred vehicles.

The decline system will intersect the orebody, which strikes North- South, in a low grade area and will pass through to the Western side of the orebody which is the footwall side. There the declines will separate with the men and material decline progressing in the form of a series of spiral ramps, while the conveyor decline turns to the South and follows the approximate strike of the orebody, continuing at an inclination of -9 degrees.

A third access will be established from within the Bibiani Main pit on the 75m RL. This access will serve as early access for development of the Southern areas of the underground mine.

The orebody has been divided into five mining Zones, namely Strauss, Walsh, North, Central and South Zones.

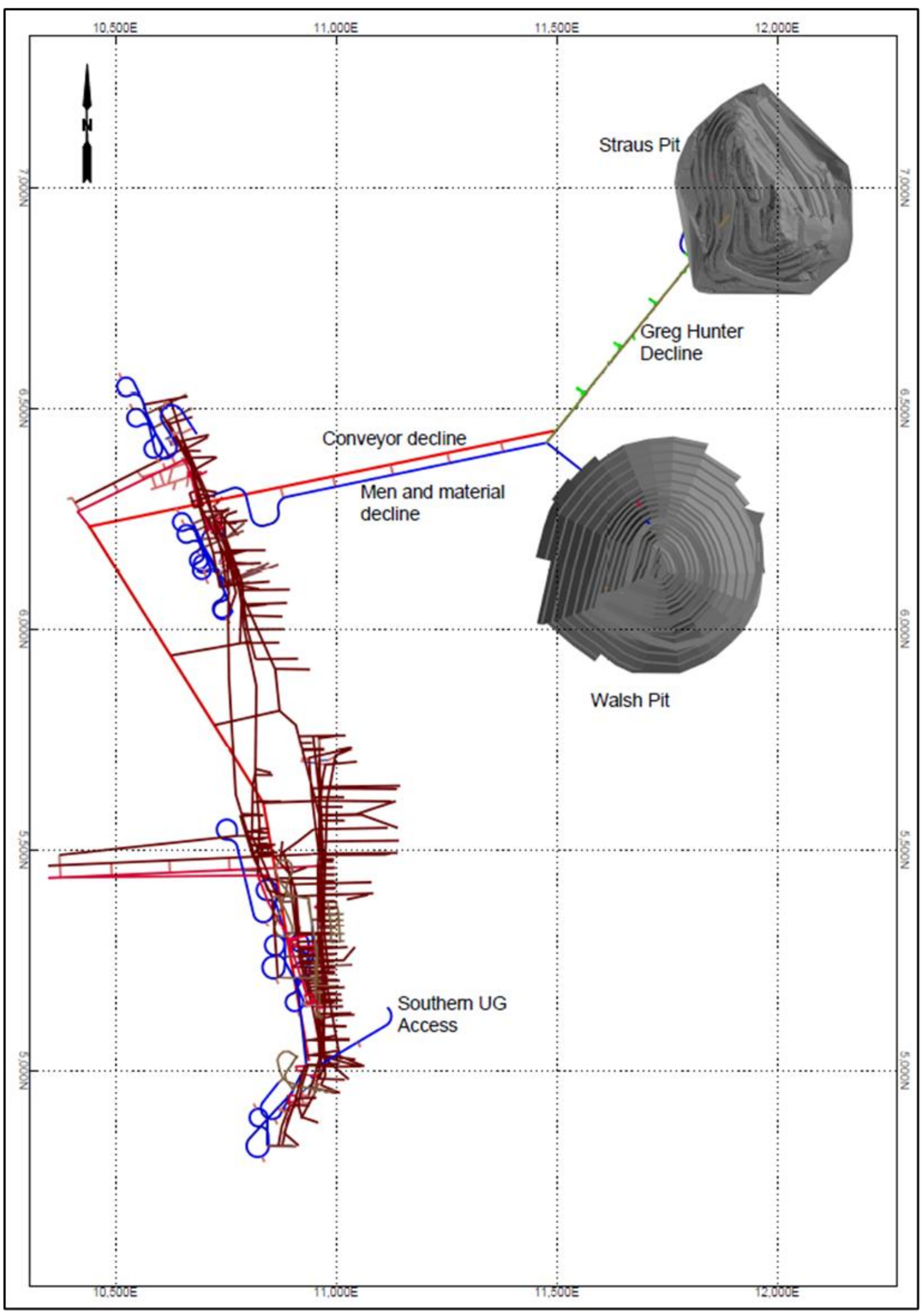


Figure 16-38: Plan View Showing Mine Access Development

16.7.3 Mining Method Selection

The Bibiani Main orebody is well suited to long hole mining methods being steeply dipping and with a range of widths from 2.0m to 30m wide. During the 2018 Resolute Mining Feasibility Study trade of work was completed comparing long hole stoping with and without backfill and with various types of backfill. The final design for the 2018 DFS included both long hole stoping with pillars, in the narrower portions of the orebody and long hole stoping with waste rock backfill in the wider areas. Bara have reviewed the work conducted by Resolute and their consultants and agree with the findings. However, with the operational experience that Asante have from the operation of Chirano Mines using long hole stoping with waste rock fill, the overall extraction can be increased by applying this method in the narrower portions of the orebody as well, thereby negating the need for rib pillars and a reduction in sill pillar requirements. This will have an overall positive impact on percentage extraction.

Figure 16-39 shows a schematic longitudinal section through a long hole stope using waste rock as backfill.

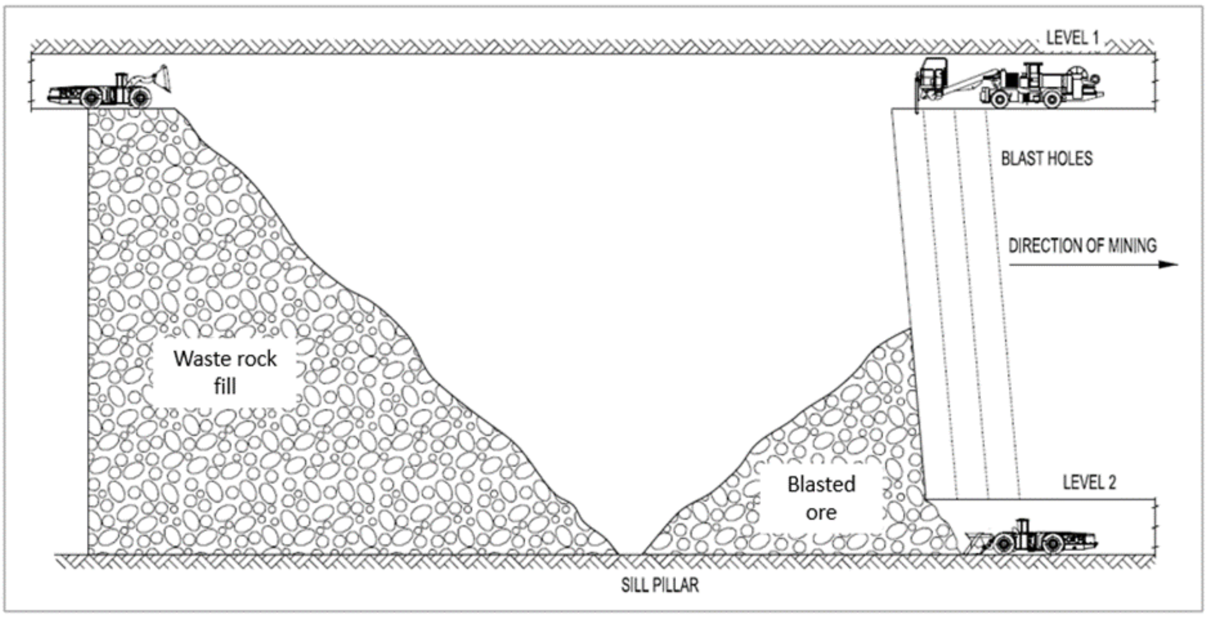


Figure 16-39: Schematic of LHOS with Waste Rock Fill

The Walsh and Strauss orebody, which is also included in the mine design and schedule differ considerably to the Main orebody. The dip of these orebodies varies from 40 to 55 degrees and it is considerably narrower than the Main orebody with typical widths in the underground portion of 2.5 to 10m wide. Due to the flat dip and relative narrow nature of the orebody long hole stoping cannot be applied. Mechanised cut and fill stoping is proposed for mining of the Strauss and Walsh orebodies.

Cut and Fill mining is best suited to vein or bedded type deposits which are steep or moderately dipping. The method offers the capability of selective mining as well as adaptability to variations in the orebody.

For Walsh, overhand cut and fill has been selected. This involves mining the orebody in consecutive horizontal slices starting from the bottom, up. Each cut is drifted until the entire slice is mined before the next cut is mined. The excavation is then backfilled, with the backfill now becoming the working platform for machinery to travel on for the next cut above. Back slashing or slyping is carried out along the cross-cut to access the next vertical slice as shown in Figure 16-40 below.

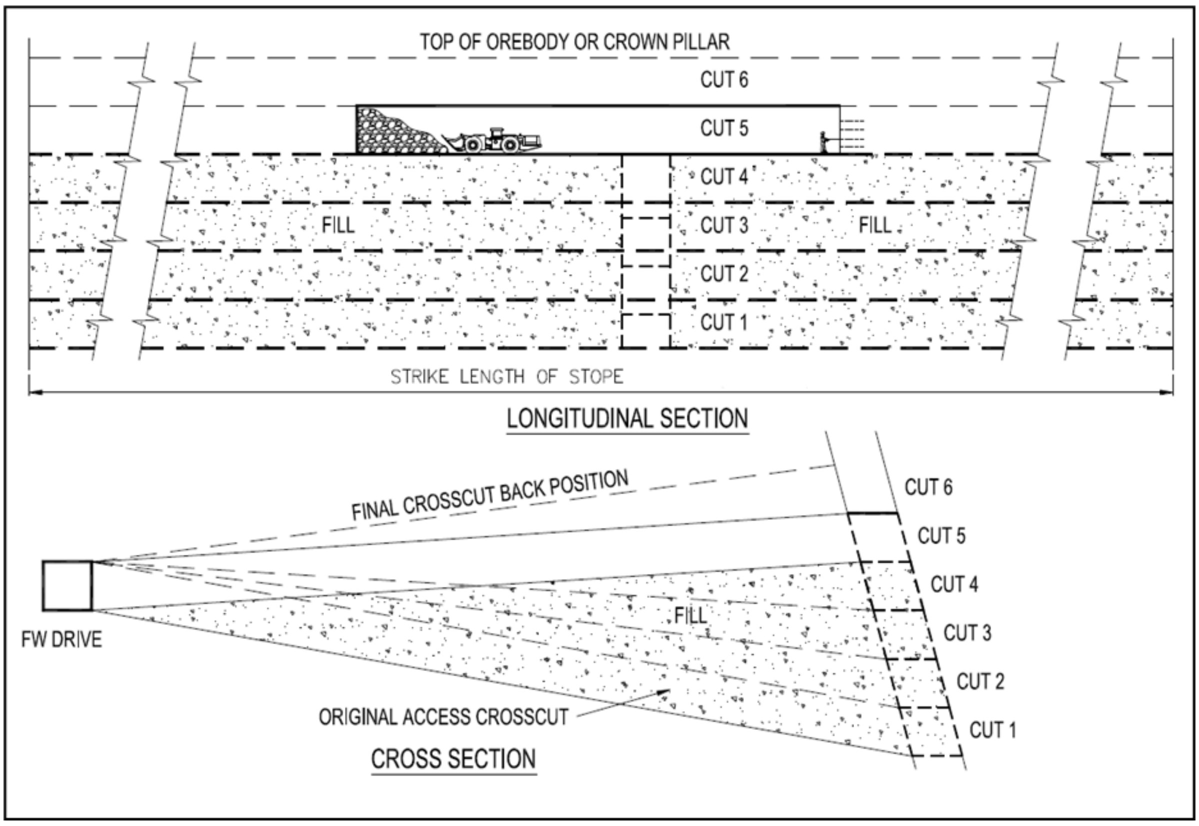


Figure 16-40: Schematic of Cut and Fill (CAF) Mining

The type of fill proposed is waste rock. The waste rock will be sourced from waste development (decline, access cross-cuts, footwall drives etc).

16.7.4 Mining Modifying Factors

In order to develop the mine plan, the modifying factors used to convert the Mineral Resources to a mining inventory were determined based on the mining method selected. The following mining modifying factors were applied.

16.7.4.1 Cut-off Grade

Three cut off grades were calculated as follows:

- Strategic cut-off grade which considers larger mining areas and includes the consideration of ore development costs for these areas.
- Stope cut-off grade which considers single stopes within a mining area only and excludes the sunk ore development costs.
- Development cut-off grade which only considers the grade of the ore development and whether or not it will add value and excludes the sunk cost of development and stoping.

The cut-off grade calculations are shown below in Table 16-39.

Table 16-39: Bibiani Underground Cut-off Grade Calculation

Item	Unit	Strategic cut-off (Breakeven)	Stoping Cut-off	Development cut-off	Comment or source
Revenue					
Gold Price	(US$/oz)	1,700.00	1,700.00	1,700.00	
Gold Price	(US$/g)	54.66	54.66	54.66	
Gold Plant Recovery	(%)	88%	88%	88%	
Operating Cost Per tonne					
Mining Cost	(US$/t)	45.41	30.00	-	
Stoping	(US$/t)	30.00	30.00	-	Bara Scoping study Mining cost model
Ore Development	(US$/t)	13.70		-	Bara Scoping study Mining cost model
Other Mining Costs	(US$/t)	1.71		-	Bara Scoping study Mining cost model
Process Costs	(US$/t)	14.60	14.60	14.60	Bibiani finmod F6B-OPT3_Pit9
Site Administration Costs	(US$/t)	6.54		-	Bibiani finmod F6B-OPT3_Pit9
Sustaining Capital	(US$/t)	10.71		-	Bara Scoping study Mining cost model

Item	Unit	Strategic cut-off (Breakeven)	Stoping Cut-off	Development cut-off	Comment or source
Total US$/ore tonne	**(US$/t)**	**77.26**	**44.60**	**14.60**	
Costs per Gold Ounce					
Shipment & Refinery	(US$/oz)	6.31	6.31	6.31	From Chirano COG calculation sheet
Royalty (5.6% of Effective Revenue)	(US$/oz)	83.78	83.78	83.78	From Chirano COG calculation sheet
Total US$ per Gold Ounce	(US$/oz)	90.09	90.1	90.1	
Total US$ per Gold Gram	(US$/oz)	2.90	2.90	2.90	
Cut-off Grade					
Cut Off In situ	(g/t)	1.95	1.13	0.37	
Overbreak Dilution	(%)	14.2%	14.2%	14.2%	Total dilution reported from MSO
Cut Off Including Dilution	**(g/t)**	**1.71**	**0.99**	**0.32**	

In generating the mine plan, the breakeven or strategic cut-off grade of 1.71g/t was applied to determine which areas to include in the mine plan. Within a mining area, the stope cut-off of 0.9g/t was applied to determine which stope blocks to include, provided that they required no additional access development. Lastly a cut-off grade of 0.32g/t was applied to development ore to determine whether it is sent to the RoM pad as medium grade ore or handled as waste.

16.7.5 Mining Recovery

Mining loss of 5% (extraction of 95%) has been applied to normal long hole and cut and fill tonnes. Pillar recovery of sill pillars and the crown pillar between the open pit and the underground has been included in the mine plan at the end of the mine life with the recovery of 60% applied to sill pillar mining and 50% to the crown pillar.

16.7.6 Dilution

Dilution in both stoping and development occurs as two types of dilution:

- Internal dilution – this is waste or unpay material included in the volume mined by design in order to honour a practical mining shape of required dimension. This dilution is accounted for the stope shapes or in the development tonnages and grades reported from the mine design and planning software.
- External dilution – this is waste or unpay material included due to inaccuracies in mining. An allowance is made during the design of the stope shapes using MSO® by adding a dilution skin to the stope shape. Foe Long hole stoping a skin of 0.5m was added to both the hangingwall and footwall of stopes. For cut and fill stopes a skin added is 0.25m is added on each side.

16.7.7 Mine Layout

16.7.7.1 Development

The level spacing has been set at 30m vertically. This results in a vertical stope height of 25m, with an ore drive height of 5.0m.

Footwall drives will be developed on each level. The footwall drives provide access to the various zones in the orebody which are separated by low grade or mined out areas. The footwall drive also allow for multiple stope crosscuts to be established on each level allowing multiple mining fronts to be established on the longer levels. The footwall drive also allows access to the orebody, behind the retreating stope face for purposes of backfilling of stopes with waste rock fill.

Figure 16-41 shows vertical projection, looking West, of the mine development.

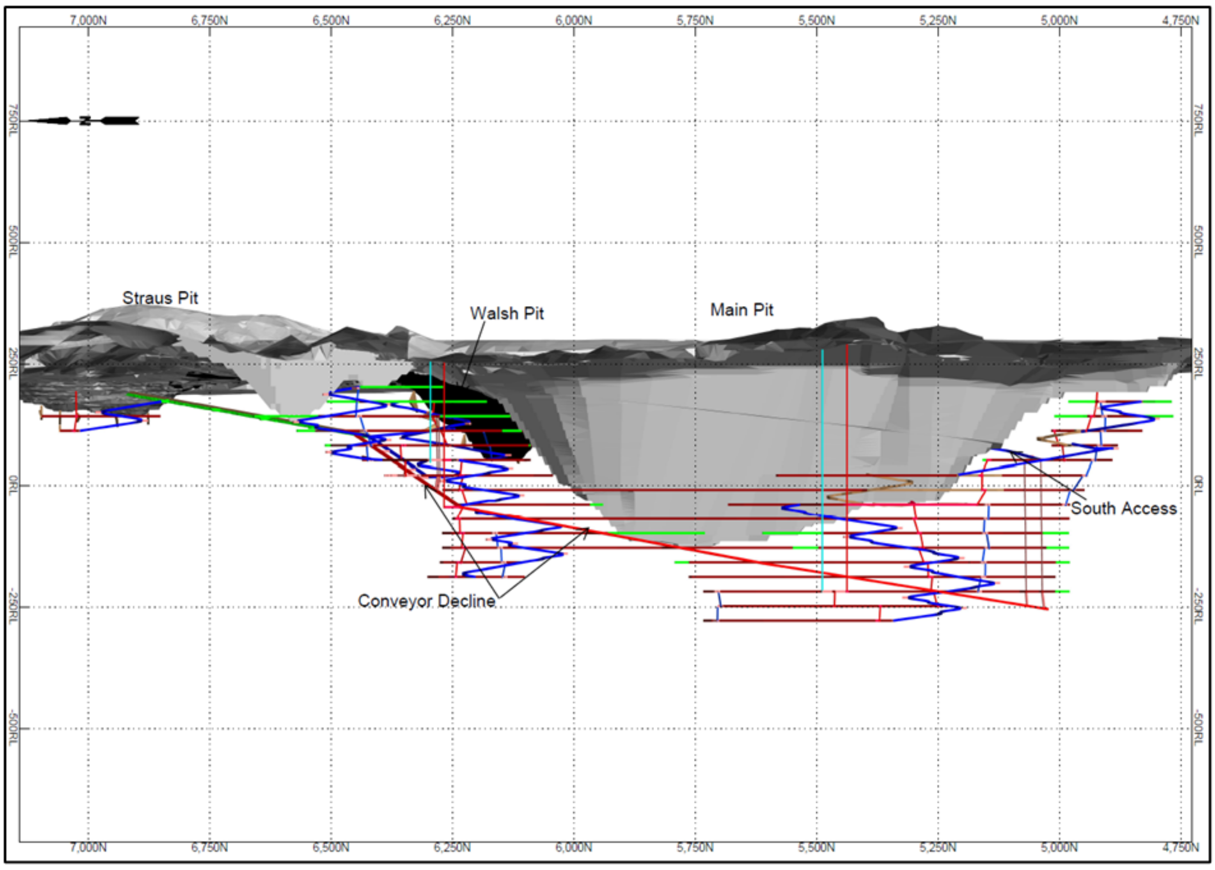


Figure 16-41: Vertical Projection Looking West – Development

Development profiles were designed to cater for the selected equipment to be used as well as other constraints such as ventilation requirements. Table 16-40 shows the development sizes of the various ends.

Table 16-40: Development End Dimensions

Excavation	Width (m)	Height (m)	Density (t/m^3)	Tonnes/ (m)
Conveyor Decline	6.5	5.0	2.75	89.4
Ramp	5.5	5.0	2.75	75.6
Footwall Drive and crosscuts	5.5	5.0	2.75	75.6
Ore Drive	4.5	5.0	2.75	61.9
Cut and Fill Crosscut	4.5	5.0	2.75	61.9
Ventilation Raise (intake) North	3.1		2.75	20.7
Ventilation Raise (exhaust) North	4.1		2.75	36.3
Ventilation Raise (intake) Central	4.1		2.75	36.3
Ventilation Raise (exhaust) Central	4.1		2.75	36.3
Silo	5.0		2.75	54
Service Raise	3.5	3.5	2.75	26.4

16.7.8 Stopes

Stope shapes were designed using DataMine MSO® software. This programme selects stope shapes using the block model and based on input criteria specified by the designer. The stope input criteria were developed based on the mining methods described above. The tables below summarise the stope design criteria for both long hole stoping in the Main orebody as well as the cut and fill proposed for the Satellite orebodies.

Table 16-41: MSO Input Criteria – Long Hole Stoping (Main Orebody)

Factor	Unit	Value	Comment
Cut-off grade	(g/t)	0.99	
Minimum Stope width	(m)	2.0	
Maximum stope width	(m)	15	Where orebody is >15m wide consider transverse stopes.
Maximum stope strike span	(m)	60	This was not applied in MSO. It is the limit of open stope between backfill and face.
Rib pillar width	(m)	N/A	Due to retreat mining with backfill, as per Chirano, no rib pillars are required.
Dilution skin thickness	(m)	0.5	
Stope height	(m)	15.0	
Level spacing	(m)	30.0	

Table 16-42: MSO Input Criteria – Cut and Fill (Satellite Orebodies)

Factor	Unit	Value	Comment
Cut-off grade	(g/t)	0.99	
Minimum Stope width	(m)	3.0	
Maximum stope width	(m)	15	
Maximum stope strike span	(m)	60	Strike length of cut and fill stope
Rib pillar width	(m)	N/A	
Dilution skin thickness	(m)	0.25	
Stope height	(m)	5.0	Height of single cut
Level spacing	(m)	30.0	Six cuts of 5 m per cut

The geotechnical study (Section 4.9) recommended a minimum pillar width of 15m between historical stope voids and new stopes if both stopes are to remain stable. In order to reduce this pillar loss a number of options of handling open voids during stoping can be considered. Each void encountered underground will need to be addressed on a case-by-case basis. One of a number of options for mining adjacent to existing voids which can be employed, depending on the prevailing conditions:

- Honour the geotechnical guideline for stable stopes and leave pillar between stopes.
- Backfill old stope with either rock fill or cemented rockfill, depending on the relative location of the planned stopes. This will reduce or negate the need to pillars between stopes.
- Mine into the old stope to make a single, larger void. This will depend on the safety of the floor of the old stope, i.e. is there a safe sill pillar below it. It may require some backfill to establish a safe working floor.

Mining recovery and dilution assumptions may differ in each of these options. During operation the design of stopes in proximity to historical voids will need to be addressed on an individual basis and the most appropriate approach selected. In the current mine design, no pillars have been left between new stopes and existing, "old", stopes. It is assumed that the existing voids will be backfilled with cemented fill allowing full extraction of the new stope right up to the limit of the existing void.

16.7.9 Ore and Waste Handling

Blasted ore and waste will be loaded in the face by a loader (LHD). The loader will tip directly into a truck. If no truck is available, the LHD will tip into a stockpile and re-handle the material into a truck when available. The trucks will move ore to the nearest tip from where ore will be transported to surface on the ore conveyor system. Two sets of tips feeding the conveyor system have been included in the design, one in the North on 7 Level servicing the Northern Zone and one in the Southern Zone on 15 Level servicing the Central and Southern Zones. Levels above the conveyor tips will be equipped with a truck tip allowing ore to pass through an orepass system to the conveyor tips below.

Waste will be trucked to either the waste dump area on surface or into a stope void for use as backfill, when sufficient stope voids are available for waste tipping.

16.7.10 Mining Equipment and Productivities

The mining equipment fleet at Bibiani has been selected with the orebody dimensions and geometry in mind. The stope width, being on average 10m wide, has not imposed a limit on the equipment although a limited fleet of smaller LHDs will be required to operate in the narrower stopes.

The productivity of the selected equipment fleet at Bibiani was calculated. The shift cycle will be two by 11-hour shifts per day, 7 days per week. This amounts to an average of 30 workings days or 60 shifts per month. A total of 1.5 hours per shift was allowed for as unproductive time. This accounts for:

- Travelling time in and out of the mine.
- Pre-shift meeting.
- Pre-shift equipment checklist.
- Postproduction handover.

Equipment availability and utilisation were applied to the remaining 9.5 hours per shift to estimate the total working hours per month for each unit of mining equipment (loaders, jumbos and trucks). Based on the operating conditions, which include haul distances and estimated travelling speeds the productivity of the loaders and trucks was estimated and are shown in Table 16-43.

Table 16-43: Summary of Selected Mining Equipment

Equipment Type	Model	Capacity	Quantity

Development Jumbo	Sandvik DD321	250m /month (multiple heading) 120 m/month (single end)	5
Production Drill	Sandvik DL321	6500m/month	7
Loader (Production)	Cat R2900G	115 t/hour	10
Truck	SandvikTH663i	146t.km/hour	4

The time to drill, charge and load a stope face were calculated, based on the average stope width of 10m. Table 16-44 shows the calculation which results in an overall production rate of 446 tonnes per day per stope.

Table 16-44: Stope Productivity - SLOS

Item	Unit	Value
Stope Width	(m)	10
Sublevel Spacing	(m)	30
Stope Length	(m)	50
Mining Drive Height	(m)	5
Stope Height	(m)	25
SG of Ore	(t/m³)	2.75
Dilution	(%)	15
Tonnes Per M Stope Advance	(t/m)	791
Tonnes Per Stope	(t/stope)	39,531
Stope Drill and Blast		
Metres Per Stope Drill/Month		4,500
Spacing	(m)	1.5
Burden	(m)	1.8
Holes Per Ring	(no)	9
Tonnes Per Hole		186
Tonnes Per Ring		1423
Tonnes Per M Drilled	(t/m)	5.8
Tonnes Per Stope Drill Per Month		25,875
Metres Per Ring	(m)	248
Metres Per Stope	(m)	6,875
Drilling Rate	(m/day)	150
Days to Drill Stope		46
Days to Charge Rings		2
Days to Muck Stope		26
Filling		
Volume to be Filled	(m³)	15,000
Volume of Fill	(m³)	24,000
Fill Rate	(t/d)	1,600
Days to Fill Stope		15
Total Days		89
Tonnes Per Day		446
Tonnes Per Month Per Stope (Main Level)		13,375

A similar calculation was performed to determine the expected production rate from the Cut and fill stopes at the Satellite orebodies, as shown below.

Table 16-45: Stope Productivity – Cut and Fill

Item	Unit	Value
Stope Width	(m)	8
Sublevel Spacing	(m)	30
Stope Length	(m)	60
Mining Drive Height	(m)	5
Stope Height	(m)	25
Lift Height	(m)	5
Number of Lifts	(no)	6
SG of Ore	(t/m³)	2.75
Dilution	(%)	5
Tonnes Per Lift		6 600
Tonnes Per Stope		39 600
Stope Drill and Blast		
Burden	(m)	0.8
Spacing	(m)	0.8
Holes Per Face	(no)	76
Advance Per Blast	(m)	3.2
Time Per Hole	(Minutes)	5
Drilling Time Per Face	(Minutes)	380

Item	Unit	Value
Charging Time	(Minutes)	60
Drill And Charge Time	(Minutes)	440
Rounds Per Day		1
Blasts Per Lift		19
Days to Drill and Blast Lift		19
Mucking		
Tonnes Per Blast		352
Mucking Rate	(t/d)	1 530
Time to Muck Blast	(Days)	0.2
Time to Muck Lift	(Days)	4
Filling		
Volume to be Filled		2 400
Fill Rate	(t/d)	1 600
Days to Fill Lift		2
Days to Prepare Access Ramp	(no)	3
Total Days	(no)	28
Tonnes Per Day	(t/day)	239
Tonnes Per Month Per Stope		7 183

In order to estimate the development advance rates to be used during mine scheduling the advance per development end and per development jumbo were calculated. The blast hole length that will be drilled by the singe boom drilling jumbo is 3.5 m. It is assumed that an effective advance of 3.2m per blast will be achieved. Table 16-46 shows the estimate of advance rates in both waste and ore development.

Table 16-46: Scheduling Advance Per Month Per End Type

	Unit	Ramp/Access Crosscut	Ore Drive
Shifts per day	(no)	2	2
Days per month	(no)	30	30
Blast hole length	(m)	3.7	3.7
Effective advance	(m)	3.2	3.2
Time to drill and blast (shifts)	Unit	1	1
Time to muck and support (shifts)	Unit	0.5	0.5
Grade control (shifts)	Unit	0	0.5
Blasts per day	Unit	1.5	1.00
Advance pr day	(m)	4.8	3.2
Blast efficiency	(%)	83%	73%
Advance per month	**(m)**	**120**	**70**

16.7.11 Underground Scheduling

A mining layout was developed using DeswikCad® mining software and based on the mine design described in the sections above. The mining layout was then exported to DeswikScheduler® which was used to generate a mining schedule. The productivity per activity (development and stoping) described in 16.7.10 was used in the mining schedule.

The mining schedule commences in Month 1 with the excavation and support of the Greg Hunter Decline entrance. The existing 630m of the Greg Hunter Decline will need to be rehabilitated. A period of six months has been allowed for this. At the same time the mine entrance from the Walsh open pit will be established on the 114m elevation in the North West wall. Two months has been allowed for the establishment and support of the portal before development commences. The Walsh Decline is scheduled to reach the current face position of the GH Decline in Month 7, after which the development of the twin declines (Conveyor and Trucking declines) commences.

Access via the Southern access from the Mine pit becomes available in Q2, 2025. Development is planned to commence from this access in January 2026, allowing six months for site preparation and portal establishment.

First ore is produced from the CAF stopes at Strauss in month 9, while ore development on the Main Orebody commences in Month 16. The first long hole stoping commences in Month 20, with production build up to steady state production of 220ktpm taking a further 15 months (to Month 35).

Table 16-47 shows a summary of the mine schedule by year while Figure 16-42 illustrates underground ore tonnes and grade over the Life of Mine. Figure 16-43 shows the mine schedule coloured by year.

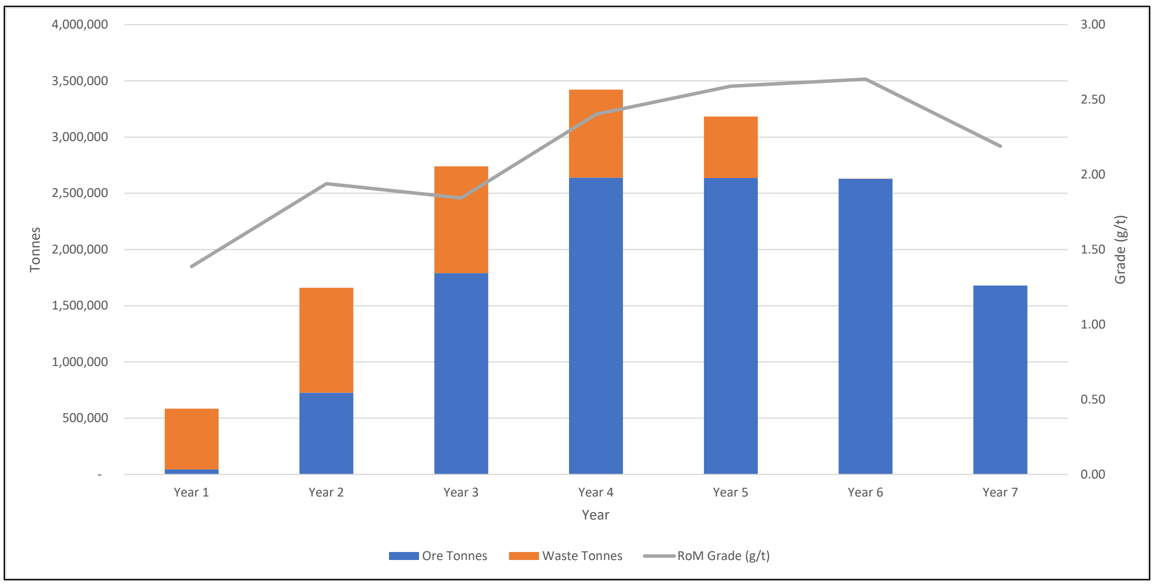


Figure 16-42: Run of Mine Tonnes and Grade

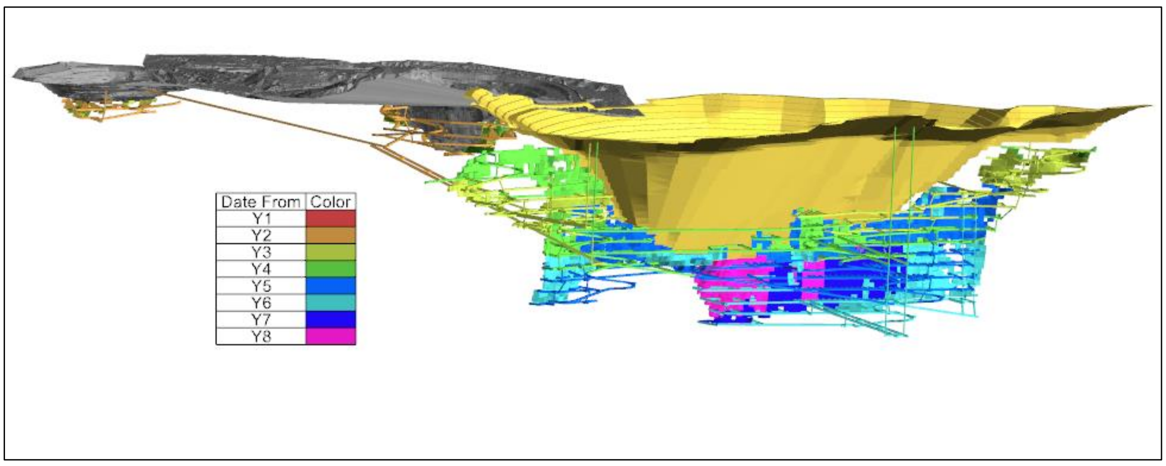


Figure 16-43: Mining Design Coloured by Year

Table 16-47: Summary of Mining Schedule by Year

Name	Unit	Row Total	2025	2026	2027	2028	2029	2030	2031
Metres									
Capital Development									
Ramp	(m)	**7 964**	1 908	2 767	1 498	1 322	469	-	-
Conveyor Decline	(m)	**2 435**	449	661	375	685	264	-	-
FW Drive	(m)	**26 324**	1 277	4 407	8 573	7 164	4 897	7	-
Level Xcut	(m)	**1 751**	91	451	426	500	282	-	-
RAW	(m)	**2 787**	213	748	935	179	712	-	-
RAR	(m)	**1 788**	169	364	757	211	288	-	-
IAR	(m)	**738**	-	217	345	-	176	-	-
ESW	(m)	**781**	46	273	157	201	74	31	-
Silo	(m)	**108**	-	53	-	-	55	-	-
Cubby	(m)	**1 675**	124	803	268	238	236	7	-
Operating Cost									
Ore Drive	(m)	**24 358**	-	2 686	7 751	7 150	6 247	525	-
Tonnes									
Waste Tonnes		**3 756 314**	541 002	933 790	950 391	783 291	545 987	1 854	-
Ore Development	(t)	**1 462 181**	-	158 126	459 560	429 450	382 558	32 488	-
	(g/t)	**1.91**	-	1.71	1.60	2.00	2.32	1.07	-
	(oz)	**89 555**	-	8 678	23 600	27 654	28 504	1 119	-
Stope	(t)	**10 682 986**	43 422	568 518	1 330 267	2 209 544	2 253 593	2 597 430	1 680 211
	(g/t)	**2.41**	1.39	2.00	1.93	2.48	2.64	2.66	2.19
	(oz)	**828 444**	1 937	36 615	82 499	176 239	191 015	221 863	118 277
Total Ore	**(t)**	**12 145 167**	**43 422**	**726 644**	**1 789 827**	**2 638 993**	**2 636 151**	**2 629 918**	**1 680 211**
	(g/t)	**2.35**	**1.39**	**1.94**	**1.84**	**2.40**	**2.59**	**2.64**	**2.19**
	(oz)	**917 999**	**1 937**	**45 293**	**106 098**	**203 893**	**219 519**	**222 982**	**118 277**

The total mining inventory summarised by resource class is tabled below.

Table 16-48: Mining Inventory Summarised by Mineral Resource Class

Class	Tonnes	Grade (g/t)	Au (oz)
Measured	24,293	1.43	1,114
Indicated	11,918,052	2.31	892,940
Inferred (1)	202,823	3.67	23,906
Total	**12,145,167**	**2.35**	**917,960**

Note:

1. *Inferred Mineral Resources included in the mining inventory are included only as dilution within the stope shapes generated using Measured and Indicated Resources only. The total Inferred Mineral Resource tonnage included as part of the dilution in the stope shapes amounts to <2% on the RoM ore tonnage.*

16.7.12 Mine Operating Strategy

The underground capital development will be conducted by an underground mining contractor. It is envisaged that the contractor will develop and install all the main underground infrastructure such as the conveyor decline, underground silos, tips and conveyor loading arrangements as well as ventilation raise bore holes. The mining contractor will hand over the mining sections after the first level of development, ready for stoping has been competed, after which the owner mining will take place, stoping and sustaining development in the sections. The mining contractor will continue until all the mining sections has been established and equipped to first level. This is accounted for as operating cost, in each mining section up until the mining commences with production, at which stage the mine crews will take over level development.

All stoping and backfill operations will be undertaken by mine crews. It is likely that as the mine transitions from using the mining contractor to mine operation many of the personnel will transfer between the contractor and the mine owner.

Technical services and infrastructure maintenance services will be provided by the mine. The mining contractor will be expected to provide for, operation and maintenance their fleet of underground mining equipment.

16.7.13 Ventilation

A ventilation model was created for the Bibiani Underground mine design using VentSim® ventilation modelling software. The model is based on the design criteria detailed below.

16.7.13.1 Ventilation Design Criteria

Internationally accepted ventilation design criteria have been applied to the design of the ventilation system for Bibiani. Table 16-49 presents a summary of the design air velocities adopted for the study.

Table 16-49: Ventilation Design Velocities

Item	Value
Downcast shafts - Men, Material and Rock [equipped]	10 - 12 m/s
Upcast shafts [unequipped]	18 - 22 m/s
Intake airways [personnel] including declines	8 m/s
Return airways [personnel and equipment]	8 m/s
Dedicated return airways	10 m/s
Workshops	0.4 m/s
Conveyor airways	4.5 m/s
RBHs [upcast and downcast]	15 - 25 m/s

16.7.13.2 Ventilation Airflow Quantity

For diesel mining equipment exhaust dilution, 0.06 $m^3/s/kW$ rated is applied at point of use. This factor assumes latest specification engines [Tier 2 or better], low sulphur diesel, catalytic converters, particulate filters, and good engine maintenance.

To determine the total airflow required where mobile diesel equipment is being used a factor of 80% of the kilowatt ratings for primary equipment including trucks and LHDs will be applied. Drill rigs as well as service and utility vehicles will be used for relatively short periods at varying times of the shift cycle, so a factor of 50% of the kilowatt rating is used. Table 16-50 shows the proposed mobile mining equipment fleet, at steady state production, and the calculated air quantity required, driven by the underground fleet.

Table 16-50: Diesel Fleet and Required Ventilation Quantity

Equipment	Rating kW	Number	Utilization	Total kW	Air Required (m^3/s)
Development Drill Rigs	75	5	30	112.5	6.75
Long Hole Drills	75	7	30	157.5	9.45
Bolters	75	4	30	90	5.4
LHDs (17t)	299	10	80	2392	143.52
ADTs (40t)	350	4	100	1400	84
Pickup	150	10	50	750	45
UVs	92	10	50	460	27.6
Grader	70	1	50	35	2.1
Sub Total		51		5397	323.82
Plus 20% Leakage					64.764
Plus conveyor decline commitments					60
TOTAL					**449**

The above table indicates that the total quantity required for only the diesel exhaust dilution and scattered mining will be 449m^3/s.

16.7.13.3 Ventilation Design – Primary Airflow System

A Ventsim model of the Bibiani Main Mining Area was developed and run to test the Concept Ventilation Design and adjust the design accordingly. The main issue highlighted by the Ventsim simulation was that there will be a period during which the total tonnage will be mined from an area ventilated from a single exhaust shaft and ramp which will not be able to accommodate the required airflow thus having a service raise/intake airway close to the ramp and interconnected is necessary. The intake airway will also serve as the escape or second outlet.

WALSH AND STRAUSS

The Walsh and Strauss Underground Sections will be mined before the production starts in the Main Production area. The development design is similar for both sections which be in sperate ventilation districts. 0.12 m^3/s per Kw of primary mining equipment was used as a factor to determine the amount of air required for diesel exhaust dilution. The increased factor allows for adequate ventilation including the additional fleet which may be in use.

Table 16-51: Diesel Fleet Walsh Mining Area

Equipment	Rating kW	Number	Utilization	Total kW	Air Required (m^3/s)
LHDs (17t)	299	2	100	598	72
ADTs (40t)	350	2	100	700	84
Sub Total		4		1298	156
Plus 20% Leakage					31
Plus 20% Commitments					31
TOTAL					**218**

Air will flow down the main decline from surface. The ramps and ventilation raises close to the ramps will serve as intake airways, with the intake raise serving as a second outlet and escape way. The ramps and service raises will downcast to the lowest level and then into the RAW back up to surface.

Return airways from the upper mining level will connect to the open pit, where two main exhaust fans of 120 m^3/s each will be installed. Once the Walsh and Strauss production has been completed the main surface fans can be used at one of the other RAWs situated in the main production area. A schematic of the primary ventilation for Walsh Section is shown below.

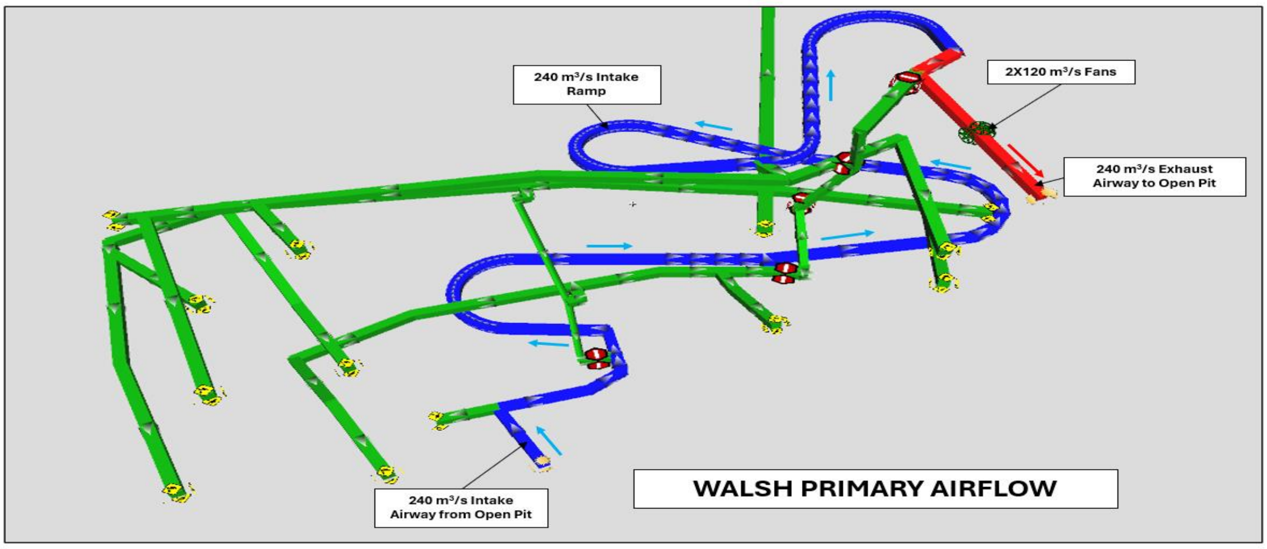


Figure 16-44: Primary Airflow at Walsh

MAIN OREBODY

The primary ventilation for the Main Pit mining area considers that production will be scattered across the North, Central and South Zones and that each Zone will have a ramp and service raises to access the mining area.

The men and material decline, intake ventilation raises and service raises will serve as the main intake airways. Air will flow down the men and material decline and the vent raises to the ramps and service raises and then flow down the ramp to the lowest level and then into the return airway (RAW) and back up to surface.

The conveyor decline will have a separate and dedicated ventilation system with a portion of the air namely 20 m^3/s down casting from surface to the North RAW and 40 m^3/s upcasting from the South Zone to the North RAW.

The Bibiani Mine is divided into five zones; Strauss, Walsh, North, Central and South. Strauss and Walsh are small sections and expected to be worked out (depleted) by the time the mine reaches full production, after which production will come from two or more of the remining three zones simultaneously. To achieve the design tonnage of 2.6mtpa will require three production levels or six stopes in operation, spread between the operating zones, with one level being developed and ramp development taking place in each of the three zones.

The main fans will consist of 2 x 120 m^3/s axial flow fan operating at a pressure of 2.5 KPa for each of the two RAWs and will operate on surface. When both fans are operating the primary airflow quantity will be 480 m^3/s.

A schematic of the primary ventilation is shown below.

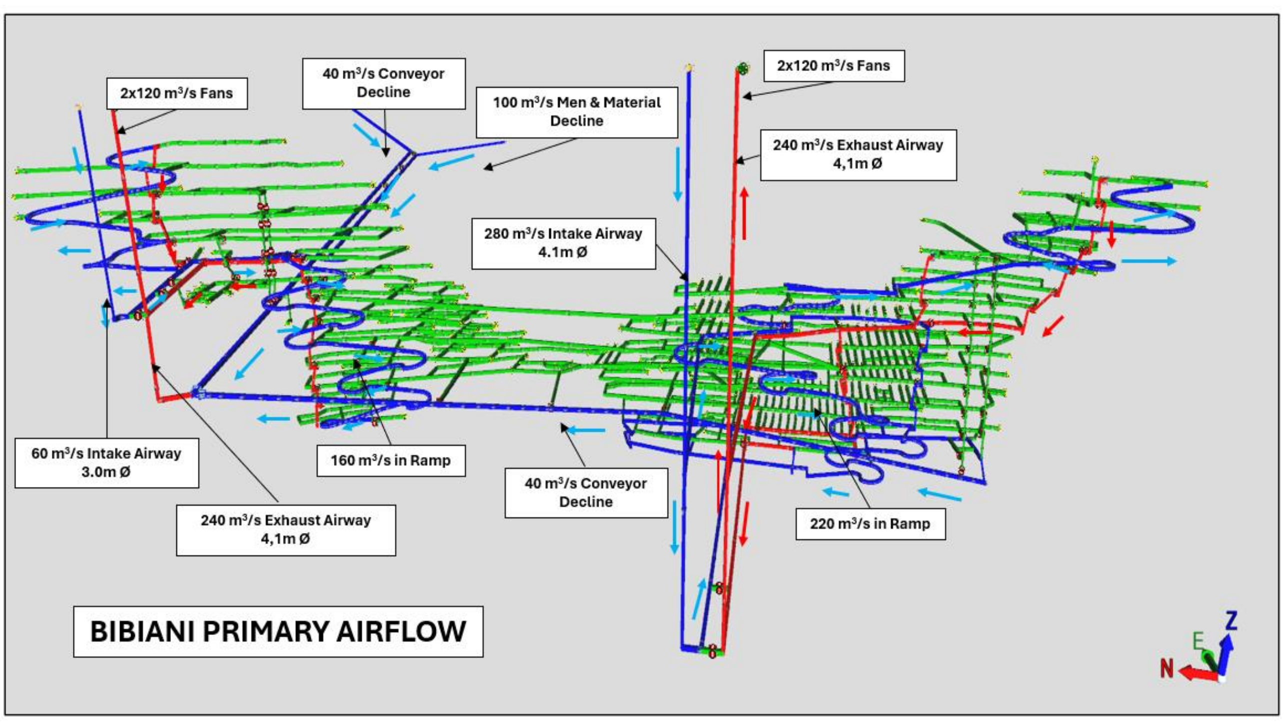


Figure 16-45: Schematic of Primary Ventilation Airflow

16.7.14 Escape and Rescue Strategy

This project will be subject to Internationally accepted best practice and guidelines. From these rules and regulations, the following items must be included in the planning:

- There must be a second outlet to surface.
- Where diesel equipment is used underground all persons must be supplied with an approved self-contained self-rescuer.
- Escape routes must be clearly marked and all persons in the area trained in using them.
- A refuge chamber or fresh air base must be available within the operating time of the SCSR to the working place of every person underground.
- It is recommended that the Service Raise which is used as an Intake Airway be equipped on every level with a man door airlock, communication system and potable water. Then this area behind the airlock is a fresh air base.
- All persons within a working area must be made familiar and trained in the use and operation refuge chambers and fresh air bases.
- In an area where no second outlet is available for example decline development, portable refuge chambers must be used that can move with the development and other controls like limiting the number of persons operating in the area.

16.8 Consolidated Mining Schedule

The underground mining schedule was combined with the open pit mining schedule to produce an overall Life of Mine, mining and processing schedule. Table 16-52 shows the combined mining schedule for Bibiani.

Figure 16-46 and Figure 16-47 show the processed tonnes and recovered gold ounces by source of ore. Figure 16-48 shows the processing schedule for Bibiani.

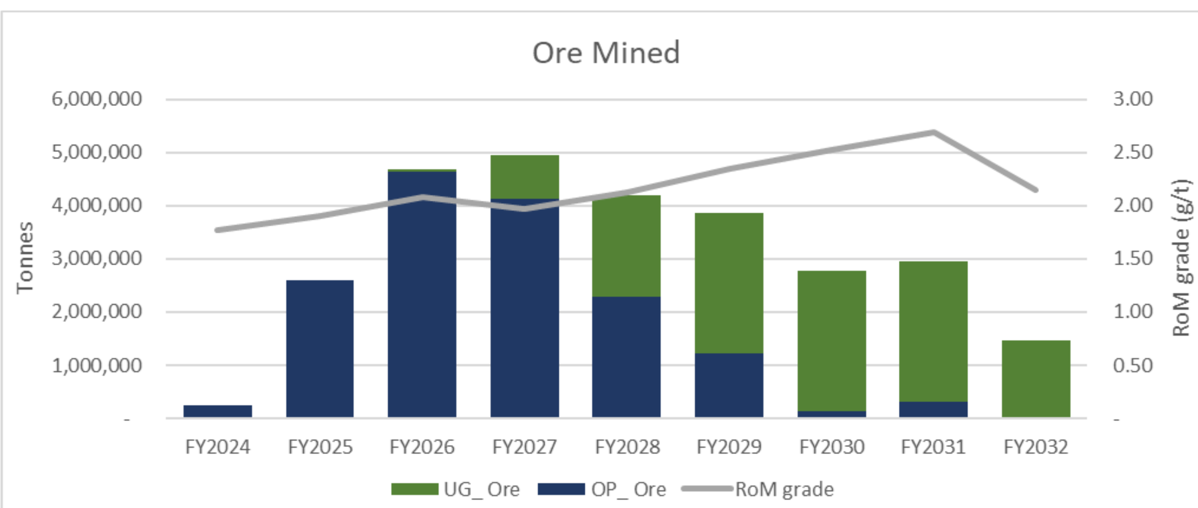


Figure 16-46: Ore Mined by Source

(Source MGBL 2024)

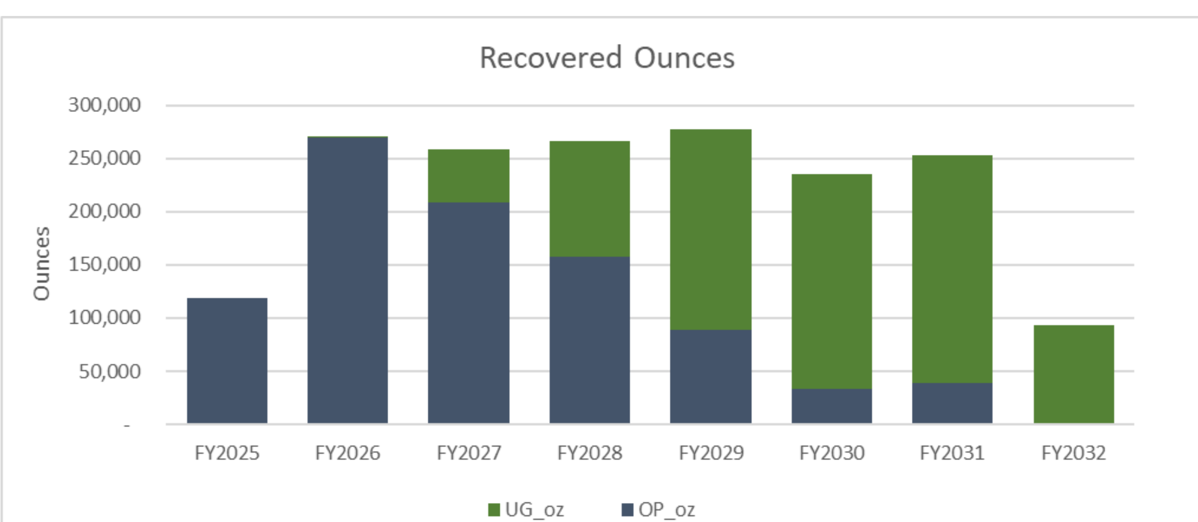


Figure 16-47: Recovered Gold by Source

(Source MGBL 2024)

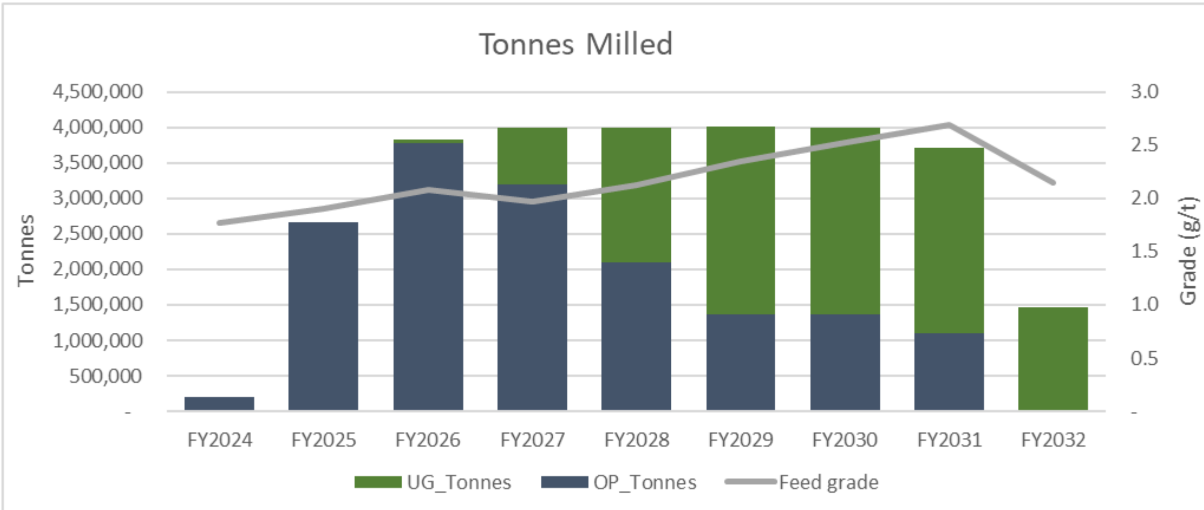


Figure 16-48: Processing Schedule

(Source MGBL, 2024)

Table 16-52: Bibiani Combined Mining Schedule

Mining	Units	Totals	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032
Open Pit											
OP_Ore	(t)	**15 555 054**	236 310	2 593 695	4 631 281	4 126 143	2 285 369	1 226 705	132 535	323 015	-
Grade	(g/t)	**2.05**	1.76	1.9	2.1	1.95	2.29	2.2	1.27	2.23	-
Contained Gold	(oz)	**1 026 182**	13 406	158 623	312 399	258 354	168 087	86 775	5 395	23 143	-
Waste	(t)	**216 503 979**	598 272	54 770 942	80 372 464	64 784 523	5 375 881	5 873 685	3 353 965	1 374 247	-
Total Mined	(t)	**232 059 032**	834 583	57 364 636	85 003 746	68 910 666	7 661 250	7 100 390	3 486 500	1 697 262	-
Strip Ratio	(t:t)		2.5	21.1	17.4	15.7	2.4	4.8	25.3	4.3	-
Underground											
UG_Ore	(t)	**12 145 165**	-	-	58 053	811 951	1 909 858	2 638 994	2 636 156	2 628 040	1 462 113
Grade	(g/t)	**2.39**	-	-	1	2.05	1.93	2.42	2.58	2.75	2.15
Contained Gold	(oz)	**931 321**	-	-	1 866	53 517	118 493	205 049	218 931	232 382	101 082
Waste	(t)	**3 756 317**	-	-	579 565	980 534	934 971	765 742	495 443	62	-
Total Mined	(t)	**15 901 482**	-	-	637 618	1 792 485	2 844 829	3 404 736	3 131 599	2 628 102	1 462 113
Bibiani Total											
RoM	**(t)**	**27 700 219**	**236 310**	**2 593 695**	**4 689 334**	**4 938 094**	**4 195 227**	**3 865 699**	**2 768 691**	**2 951 055**	**1 462 113**
RoM	**(g/t)**	**2.2**	**1.76**	**1.9**	**2.08**	**1.96**	**2.12**	**2.35**	**2.52**	**2.69**	**2.15**
Contained	**(oz)**	**1 957 503**	**13 406**	**158 623**	**314 265**	**311 870**	**286 580**	**291 824**	**224 326**	**255 526**	**101 082**

16.9 Manpower

16.9.1 Owner's Team

Mining labour includes technical services and mining production (part of the owner team). Technical services will be responsible for all technical input into mining related activities. This includes:

- Mine planning - responsible for short-term and medium-term planning.
- Mine geology that is responsible for grade-control, modelling (for short-term planning), dilution and loss control and reconciliation.
- Resource geology is responsible for exploration and grade-control drilling.
- Geotechnical engineering to ensure mining compliance to design and pit stability.
- Survey to ensure compliance to design, volume measurement and production reconciliation.

The department consists of 66 employees, with personnel make-up shown in Table 16-53.

Table 16-53: Owners Team Technical Services Personnel

Position/ Job Title	Total Number Required	Level
Technical Services Manager	1	Senior manager
Unit manager mine planning	1	Lower manager
Senior planning engineer	1	Senior
Short term planning engineer	2	Senior
Junior planning engineer	2	Senior
Unit manager Geotechnical	1	Lower manager
Senior geotechnical engineer	1	Senior
Geotechnical engineer	1	Senior
Junior slope monitoring engineer	3	Junior
Geotechnical field technician	1	Senior
Unit Manager Survey	1	Lower manager
Senior surveyor	1	Senior
Surveyor	3	Senior
Survey technicians	6	Senior
Survey assistants	6	Junior
Unit manager Resource Geology	1	Lower manager
Senior resource geologist	1	Senior
Unit Manager Mine Geology	1	Lower manager
Senior geologist production/grade control	1	Senior
Database geologist	1	Senior
Grade control Geologist	2	Senior
Production geologist	3	Senior
Drill samplers	10	Junior
Ore Spotter	6	Junior
RoM pad spotter	3	Junior
Senior mine geologist	1	Senior
Structural geologist	2	Senior
Geotechnicians	3	Senior
Total Technical Services	**66**	

The mining production team will be a small department that manages all mining production related issues and manages the contractor's team. This team ensures that the contractor adheres spatially and volumetrically to the mining plan, as well as ensuring that the contractors work to the contract guidelines in terms of cost, procedures and other disciplines. This department comprises 24 employees and is made up as tabled below.

Table 16-54: Owners Team Mining Personnel

Position/ Job Title	Total Number Required	Level
Unit Manager/ Deputy Manager	2	Lower Manager
Drill & Blast Technicians	3	Junior
Control Room Dispatchers	10	Junior
General Manager, Mining	1	Senior Manager
Mine Captain	4	Senior
Senior Supervisor (Drill & Blast)	3	Senior
Reports & Database Officer	1	Senior
Total Mining	**24**	

16.9.2 Mining Contractor

The mining contractor, PW Mining, will have responsibility for mining operations including drilling, blasting, load-and-haul and re-handling on RoM pad (both at the Main and Satellite Pits). A summary of the Contractor manpower requirement submitted by PW Mining is shown below.

Table 16-55: Mining Contractor Manpower Schedule

Description	2022	2023	2024	2025	2026	2027
Management/Admin	12	12	12	12	12	12
Supervision/Supervision	12	14	14	15	14	14
Maintenance Dept	252	362	385	388	340	341
Operators	185	356	388	400	330	344
Technical/Other	76	107	105	99	82	83
Security	9	9	9	9	9	9
Total	**546**	**860**	**913**	**923**	**787**	**803**

16.9.3 Underground

A summary for the peak labour requirement in each function and the steady state requirement during underground operations is presented in Table 16-56.

Table 16-56: Underground Manpower Summary

Area	Total
Mining Supervision	42
Development	238
Stoping	92
Loads and Haul	102
Technical Services	49
Surface Engineering	83
Underground Engineering	96
Total Mining Labour	**702**

17. RECOVERY METHODS

17.1 Overall Process Design

The processing plant at Bibiani was designed by Lycopodium in 1997 as a SAG/ball mill circuit with a conventional CIL plant. The plant was in operation under Resolute's management until 2005 when it was put into care and maintenance. Under Asante's management, the Bibiani plant was refurbished in Q3 2021 with the inclusion of a gravity concentration circuit and the installation of a re-conditioned primary gyratory crusher to replace the jaw crusher. The Bibiani plant was re-commissioned in June 2022 at the original design nameplate throughput rate of 2,4Mtpa and comprises:

- Primary crushing – re-conditioned FLS 42 x 70 gyratory crusher.
- Primary SAG mill and secondary ball mill with classification hydrocyclones.
- Gravity concentrator – one Knelson XD48 concentrator and Gekko ILR.
- Carbon-in-leach (CIL).
- Carbon elution and regeneration and electrowinning.
- Gold room.
- Reagent mixing.

The previous Bibiani NI 43-101 Report for Asante dated 31 August 2022 stated the process flowsheet would be modified in November 2022 with the inclusion of a new sulphide treatment circuit, which has subsequently been postponed. The results of the 2015 ALS test work program reported in Chapter 13 of this NI 43-101 Report and the 2023 preliminary test work result on the Mian Pit and the Russell Pit undertaken by Asante support the fresh ore gold recovery from the developed sulphide ore process flowsheet. The postponed sulphide treatment circuit consists of the following unit processes:

- Rougher flotation of the mill circuit product stream with tank flotation cells.
- Ultra-fine regrinding of the scavenger concentrates with a vertical mill using ceramic media.
- Concentrate thickening.
- Intensive cyanidation of the ultra-fine grind concentrates with separate tank stages for shear reactor pre-oxidation and pre-leaching with cyanide.
- Carbon in pulp contactor tanks.
- Flotation reagent mixing.

The previous Bibiani Report stated that Asante would schedule the implementation of future process improvements and upgrades to the plant to improve the efficiency of gold extraction and increase the plant throughput capacity. The phased implementation of these modifications has been re-scheduled as follows:

- **Phase 1A** – the re-commissioning of the existing plant at 2.4Mtpa was completed in June 2022 on schedule.
- **Phase 1B** – implementation of the sulphide treatment circuit at 2.4 Mtpa is rescheduled for Q4 2024.
- Phase 2 - increase throughput rate to 2.7 Mtpa by adding pebble crushing to the SAG milling circuit is re-scheduled to Q2 2024.
- **Phase 3A** - install a mobile jaw crusher for fragmentation control to increase mill annual throughput to 3.0 Mtpa. The mobile jaw crusher is re-scheduled for Q2 2024.
- **Phase 4** – install a secondary cone crusher on the SAG mill feed to improve RoM fragmentation and to increase the mill throughput to 3.8 Mtpa is rescheduled for Q2 2024. The mill product grind size would coarsen from P80 75µm to P80 106µm.
- **Phase 5** – install an additional CIL tank to maintain a minimum of 24 h leaching time at a throughput of 4.0Mtpa by Q1 2025, which is on schedule.

The schematic flowsheet shows the exiting conventional CIL process and inclusion of the Phase 1B sulphide treatment unit processes the subsequent added Phase 2 and Phase 4 Figure 17-1.

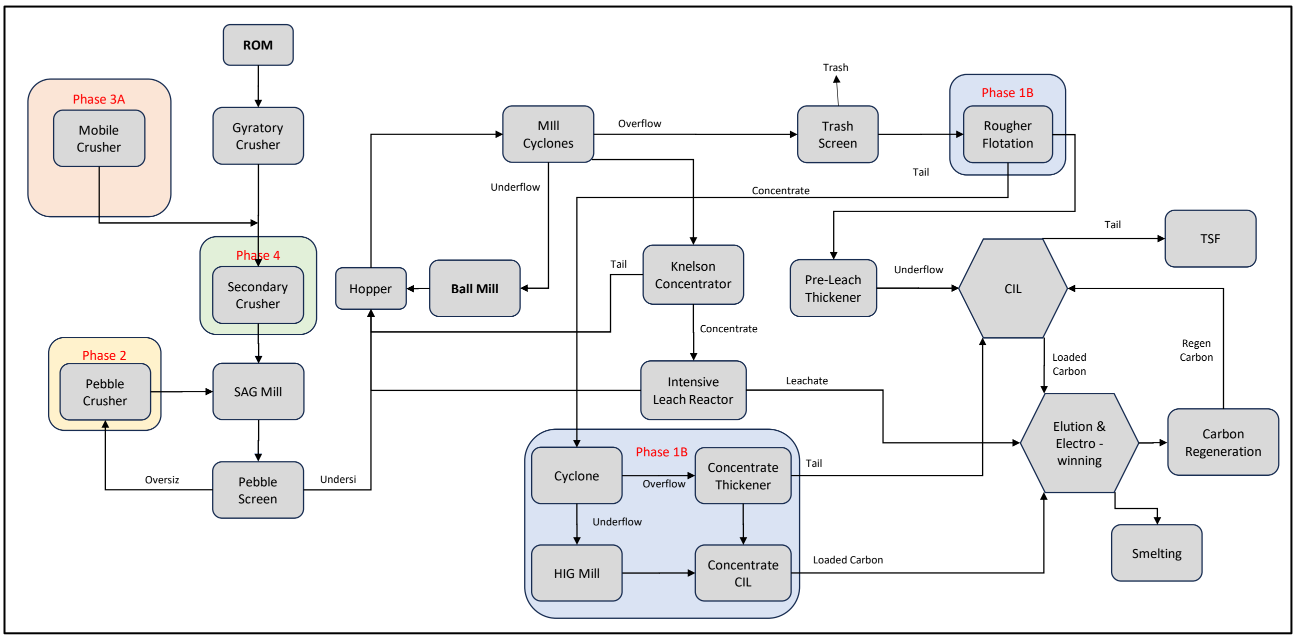


Figure 17-1: Schematic Process Flowsheet Indicating Current and Phased Additions

The plant process descriptions for Phase 1A, Phase 1B, Phase 2, Phase 3, Phase 4 and Phase 5 have been reported in Chapter 17 of the previous Bibiani NI Report dated 31 August 2022. Chapter 17 of this report will present the key process design criteria of the existing Phase 1A plant and new Phase 1B sulphide treatment circuit. The plant modifications that have been made since the re-commissioning of the plant are presented and the plant operations performance is reviewed.

17.2 Key Process Design Criteria -Phase 1A

Table 17-1 presents the key design parameters from the Lycopodium Process Design Criteria dated 1997.

Table 17-1: Phase 1B Key Process Design Criteria – Lycopodium 1997

Parameter	Units	Value
Plant Throughput	(Mtpa)	2.4
Gold Head Grade	(g/t Au)	3.9
Crusher Plant Availability	(%)	91.3
Milling Plant Availability	(%)	91.3
Impact Work Index (CWi) – Design (Primary)	(kWh/t)	11.2
Bond Rod Mill Work Index – Design (Primary)	(kWh/t)	19.4
Bond Ball Mill Work Index – Design (Primary)	(kWh/t)	18.2
SMC Axb		54.9
Material Specific Gravity	t/m^3	2.7
Feed Size	(F100)	800
Crushing Plant Product Size, P80	(mm)	150
Cyclone Overflow Size, P80	(µm)	75
Gravity Gold Recovery	(%)	31
Leaching Gold Recovery – Without Gravity	(%)	87
Leach Time	(Hrs)	24
Leach Tails Solution Grade	(g/m^3 Au)	0.01
Carbon loadings	(g/t)	3000
Carbon barren	(g/t)	100
Elution Column Size	(Tonnes)	10
Number of Carbon Strips per Week	(#)	6
Carbon Regeneration	(kg/h)	500
Sodium Cyanide Addition (NaCN)	(kg/t material)	0.75
Lime Addition (at 90% CaO purity)	(kg/t material)	0.5

Figure 17-2 is a schematic flowsheet of the refurbished Bibiani Plant in 2022 produced by Mining Process Project Engineering.

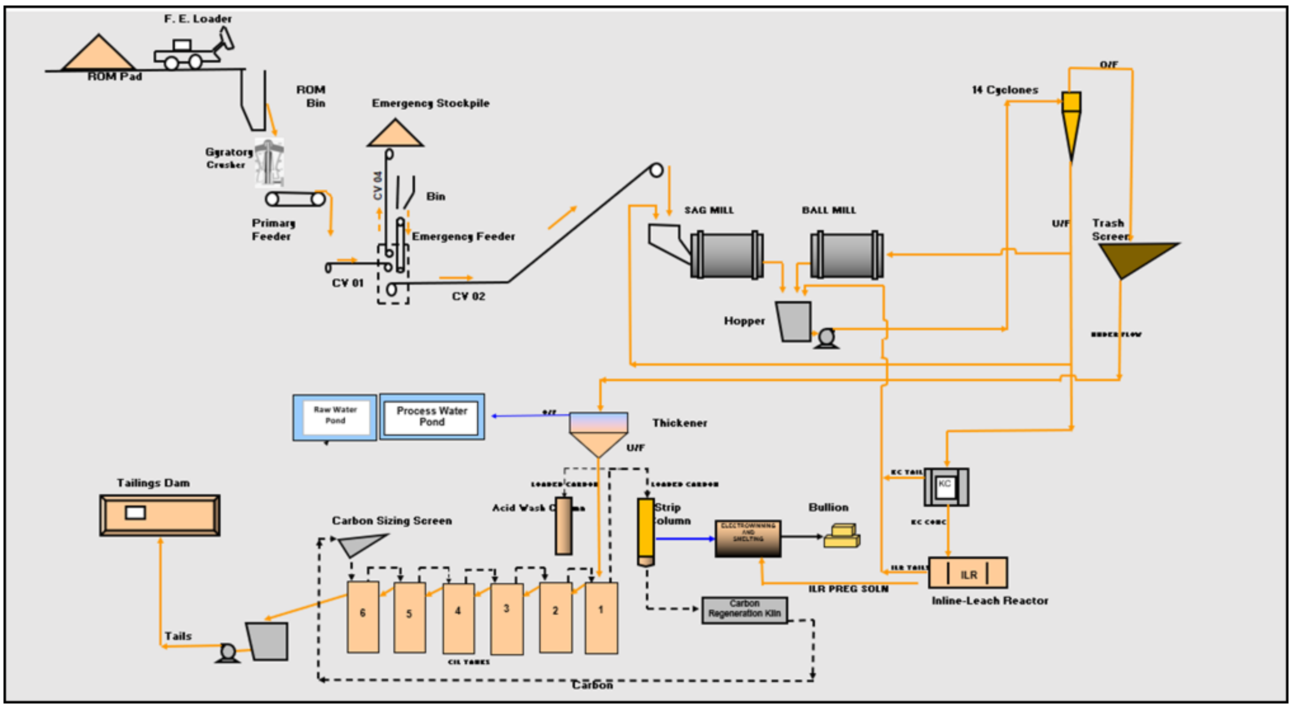


Figure 17-2: Schematic Flowsheet of the Bibiani Plant in 2022

17.2.1 Plant Modification – Phase 1A

Plant modifications have been implemented since the plant start up in June 2022. These are discussed below.

17.2.1.1 Crusher

The original crushing system had a primary jaw crusher that received RoM ore via an apron feed from a tip bin. The crushed product was conveyed to a surge bin that was equipped with an apron feeder to regulate the feed rate into the SAG mill. Crushed material drawn from the surge bin was fed to the SAG mill circuit via the mill feed conveyor. The excess crushed material overflowed from the surge bin onto a throw-out conveyor feeding a "dead" stockpile which could be fed back onto the mill feed conveyor by a front-end loader via the reclaim bin during periods when the primary crusher was not available.

The refurbishment of the plant in 2022 included the existing gyratory crusher that had been installed by the previous owners. From the recommissioning of the plant in June 2022 to January 2023 the gyratory crusher maintained a crushing rate that was equal to the ramping up of the mill feed rate. From February 2023 the RoM ore to the gyratory crusher became more competent with the increased blend proportion of Main Pit North ore. The harder crushing ore in the RoM feed to the gyratory crusher caused the crusher motor to trip with a full ore load in the crushing chamber. The Phase 3 scheduled utilisation of the mobile jaw crusher was brought forward by Asante in March 2023 to maintain a crushing availability equal to the milling circuit. The plant engineers continued to resolve the gyratory crusher motor trips with mechanical investigations and the uprating of the installed motor power on the crusher.

Phase 3 A is to provide redundancy for the primary crusher by installing a skid mounted jaw crusher in Q2 2024 to increase the mill throughput to 3.0Mtpa.

17.2.1.2 PSA Oxygen Plant

The Bibiani ore is noted to be grind sensitive and oxygen consuming requiring dissolved oxygen concentrations above 20ppm for effective leaching. Since commissioning in June 2022, liquid oxygen and hydrogen peroxide were the sources of boosting the dissolved oxygen levels required for leaching. The addition of the liquid oxygen was stopped in October 2022 which required the leach circuit to depend solely on hydrogen peroxide usage. This had a great impact on the dissolved oxygen concentrations as the supply needed to attain the required set point were very high.

In September 2023, a 10 ton per day PSA oxygen plant was commissioned to reduce the cost of hydrogen peroxide and to boost the dissolved oxygen levels.

17.2.1.3 Mach Shear Reactor

The Mach 2000 Shear Reactor supplied by Gold Ore was installed on the thickener underflow pipeline to the first tank in the CIL circuit on the 8th of October 2023. The shear reactor in performing intensive pre-oxidation with a single pass. A dedicated pipeline from the oxygen plant supplies the reactor with a daily average of 4.8t at a purity of 91% oxygen.

The key objectives of the optimization process with the Mach reactor are:

- Improve the rate of gold dissolution in the CIL process stream by increasing the contact time with oxygen injection.
- Improve overall plant recovery, through efficient gold dissolution.
- Reduce the hydrogen peroxide consumption.

Figure 17-2 shows the oxygen introduced through the Mach reactor has increased the dissolved oxygen (DO) levels to an average of 12ppm before being augmented with hydrogen peroxide to an average of 23ppm in CIL Tank 1.

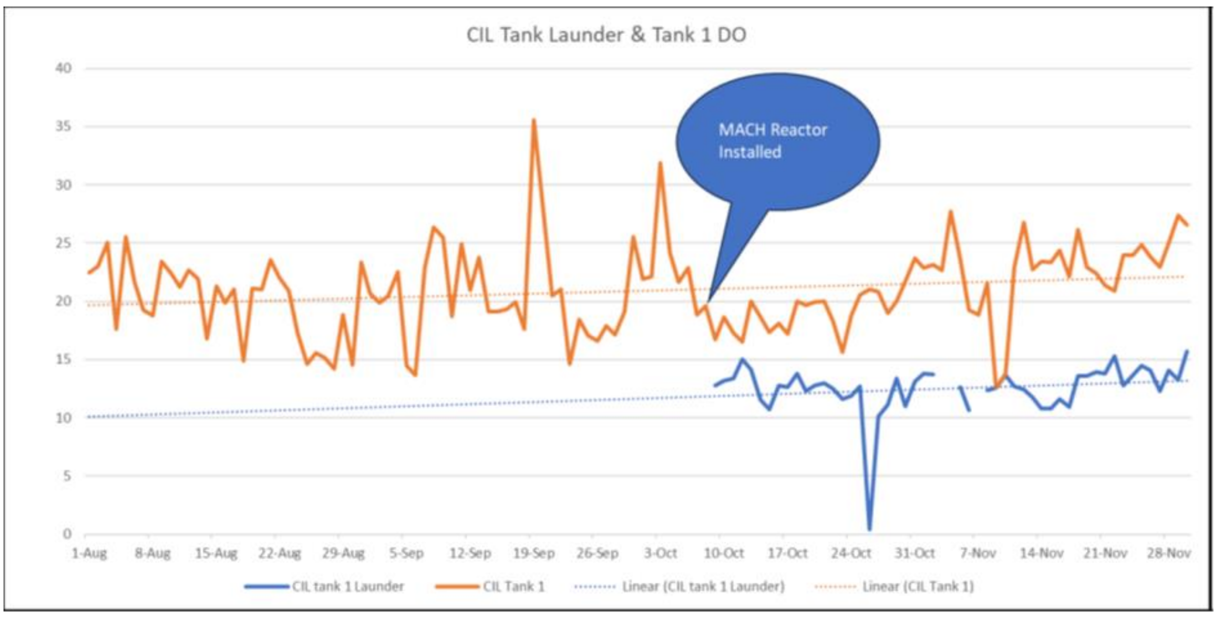


Figure 17-3: Dissolved Oxygen Levels Before and After Mach Reactor Installation

In Figure 17-3 the installation of the 10-tpd PSA oxygen plant has reduced the hydrogen peroxide consumption from 1.14kg/t in August 2023 to 0.73kg/t in September 2023 and the trend continues until November 2023.

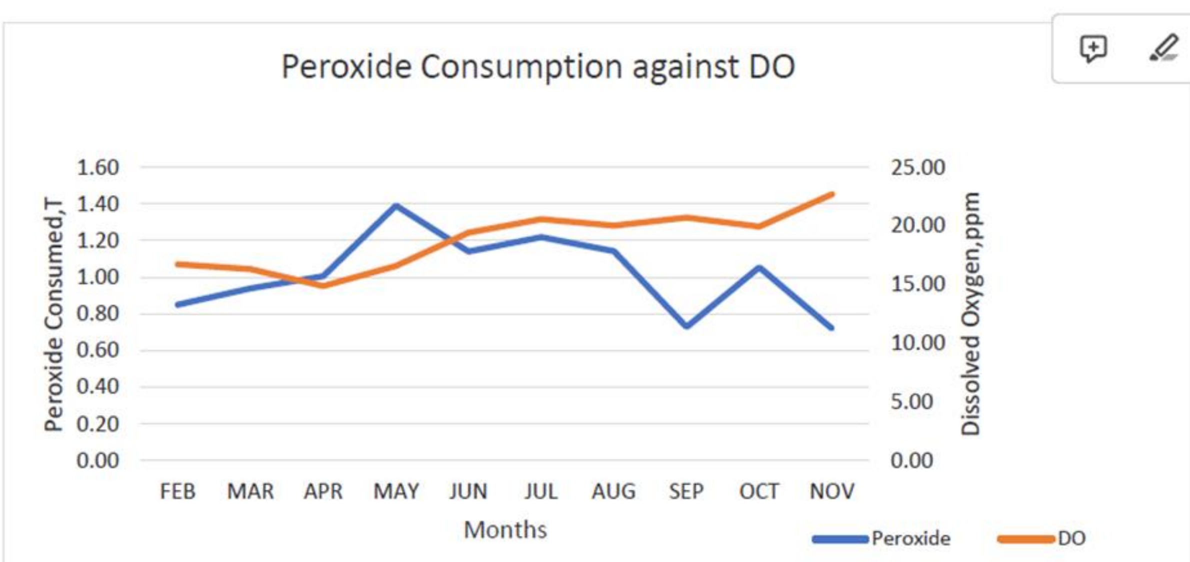


Figure 17-4: Impact of Oxygen Plant and online MACH Reactor on Peroxide Consumption and DO levels

In Figure 17-4 the dissolution rate in CIL Tank 1 improved with the installation of the Mach reactor and the dedicated 5tpd oxygen plant feed to the reactor. The dissolved oxygen improved from an average of 17.89ppm February 2023 to August 2023 to an average of 21.13ppm after the introduction of the Mach reactor. The gold dissolution in CIL Tank 1 showed an increasing trend from 46.9% in September to 48.7% in October and to 51.8% in November

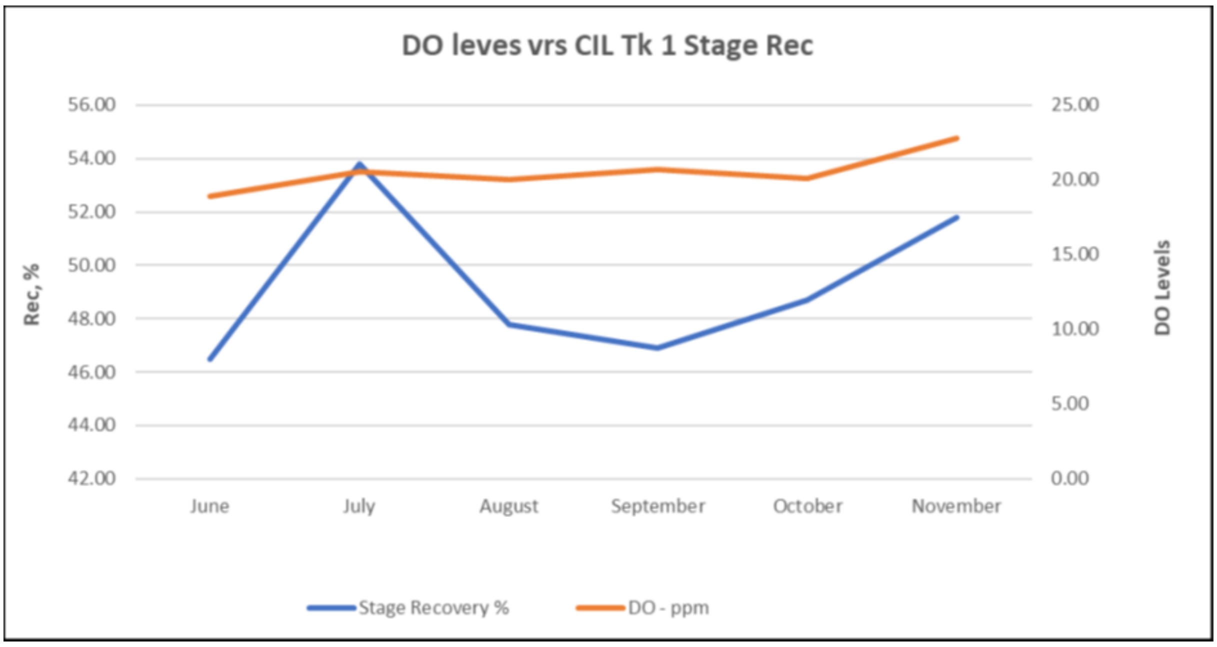


Figure 17-5: CIL Tank 1 Dissolution Rate and Dissolved Oxygen Levels

17.2.2 Plant Operations Performance – Phase 1A

The following review of plant performance pertains to the plant throughput rate for the operations period from the commencement of re-commissioning in June 2022 to October 2023.

Figure 17-5 shows that from the start of commissioning in June 2022 the mill throughput rate ramped up to 230ktpm, at a plant availability of 89%, exceeding the 200ktpm design throughput. The 230ktpm mill throughput rate was maintained until January 2023. From February 2023 to October 2023 the mill throughput rate went below 200ktpm averaging 179ktpm with an 87% plant availability.

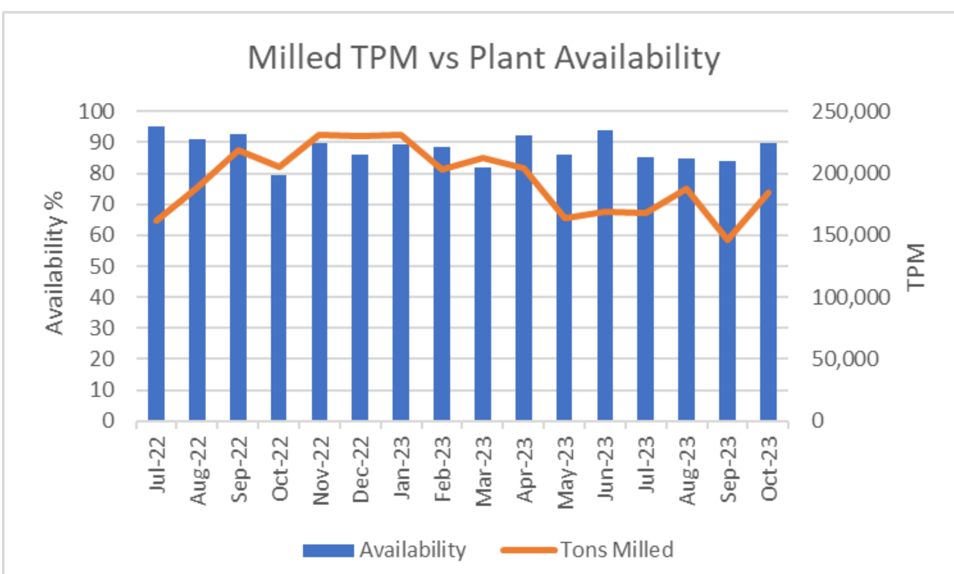


Figure 17-6: Phase 1A Milled TPM versus Plant Availability

Figure 17-6 shows a reduction in mill throughput rate in three steps of 230ktpm, 200ktpm, and <180ktpm. These step reductions in mill throughput rate correlate with the blended proportions of mill feed from the Walsh Pit, Strauss Pit, Main South Pit and Main North Pit, Grasshopper Pit, and the stockpile.

The 230ktpm mill throughput rate from November 2022 to January 2023 relates to the blended mill feed of Walsh Pit as the major portion and Main Pit South with Strauss Pit as the minor portion. From 2023 February to April 2023 a 40% to 60% blended mill feed of Main Pit North ore reduces the mill throughput rate to 200ktpm. At a Main Pit North blend of >60%, the mill throughput rate is further reduced from May 2023 to October 2023 to <180ktpm with August's 146ktpm production as the lowest mill throughput rate.

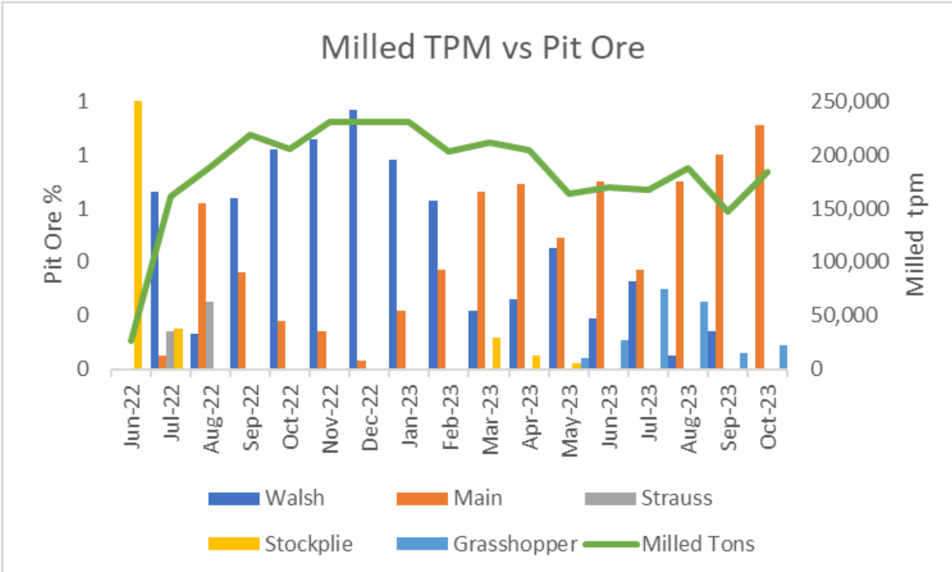


Figure 17-7: Phase 1A Milled TPM versus Pit Ore Blend

Figure 17-7 shows the 230ktpm mill throughput rate from November 2022 to January 2023 has a milling power or net specific energy of 20 kWh/t, this correlates with the Walsh Pit oxidised ore as the major portion of the ore blend. The 40% to 90% blend of Main Pit North fresh ore increases the mill power to 23 kWh/t in October 2023 with monthly mill power peaks of 25 kWh/t in July 2023 and September 2023. The reduction in mill throughput rate to <200ktpm is the competency of the Main Pit fresh ore. The size reduction in mill feed with secondary crushing fragmentation is required to increase the SAG milling rate or to revert to a coarser mill product size from P80 75µm to P80 106µm when the sulphide treatment circuit is in operation.

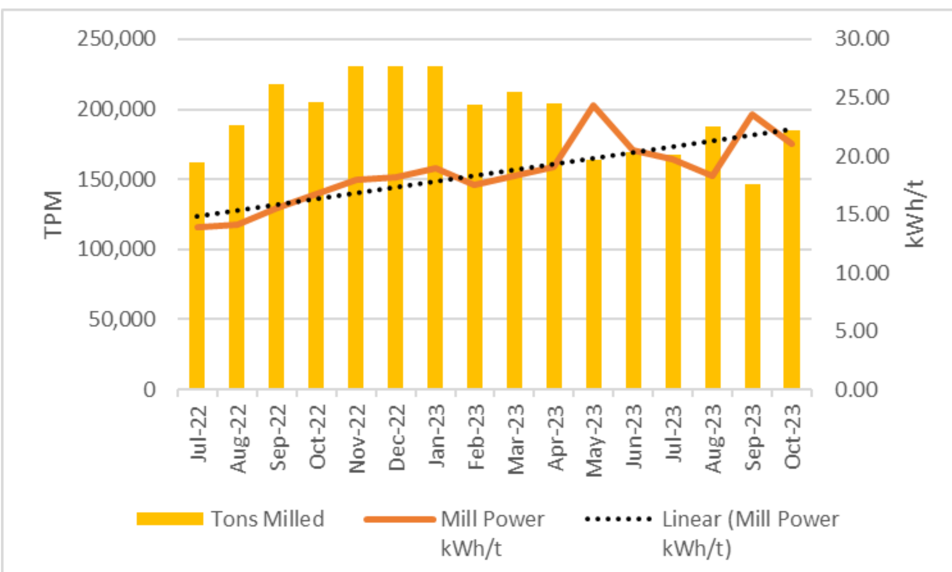


Figure 17-8: Phase 1A Milled TPM versus Pit Ore Blend

17.3 Key Process Design Criteria – Phase 1B

Table 17-2 presents the key design parameters from the Mining Process Project Engineering Process Design Criteria dated 2021.

Table 17-2: Phase 1B Key Process Design Criteria – Mining Process Project Engineering 2021

Parameter	Units	Value
Plant Throughput as concentrate	(Mtpa)	0.35
Concentrate Grade (Calculated)	(g/t Au)	23
Flotation and Sulphide Treatment Availability	(%)	93%
Bond Rod Mill Work Index – Design (Fine Grind)	(kWh/t)	20
Bond Ball Mill Work Index – Design (Fine Grind)	(kWh/t)	21.2
Concentrate Specific Gravity	t/m^3	3.1
Flotation Residence Time	(minutes)	15
Mass Pull	(%)	8
Flotation Au Recovery	(%)	89.6
Specific Regrind Energy	(kWh/t)	42
Regrind Feed Size, P80	(µm)	106
Cyclone Overflow Size, P80	(µm)	25
Grinding media consumption	(g/kWh)	08-Dec

Parameter	Units	Value
Intensive Pre-oxidation residence time	(hours)	1.5
Intensive Pre-oxidation DO concentration	(ppm)	20
Intensive Cyanide Leach residence time	(hours)	4.8
Intensive Cyanide Leach DO concentration	(ppm)	20
Intensive Cyanide Leach CN consumption	(kg/t)	6.16
Concentrate Leach Au Dissolution	(%)	88.4
Absorption Contactors residence time (4 Carousel Contactors)		
	(hours)	2.8
Adsorption Carbon Concentration	(g/L)	30-60
Carbon Loadings	(g/t)	20 000

Figure 17-9 is a schematic flowsheet of the future flotation circuit and concentrate regrind produced by Mining Process Project Engineering.

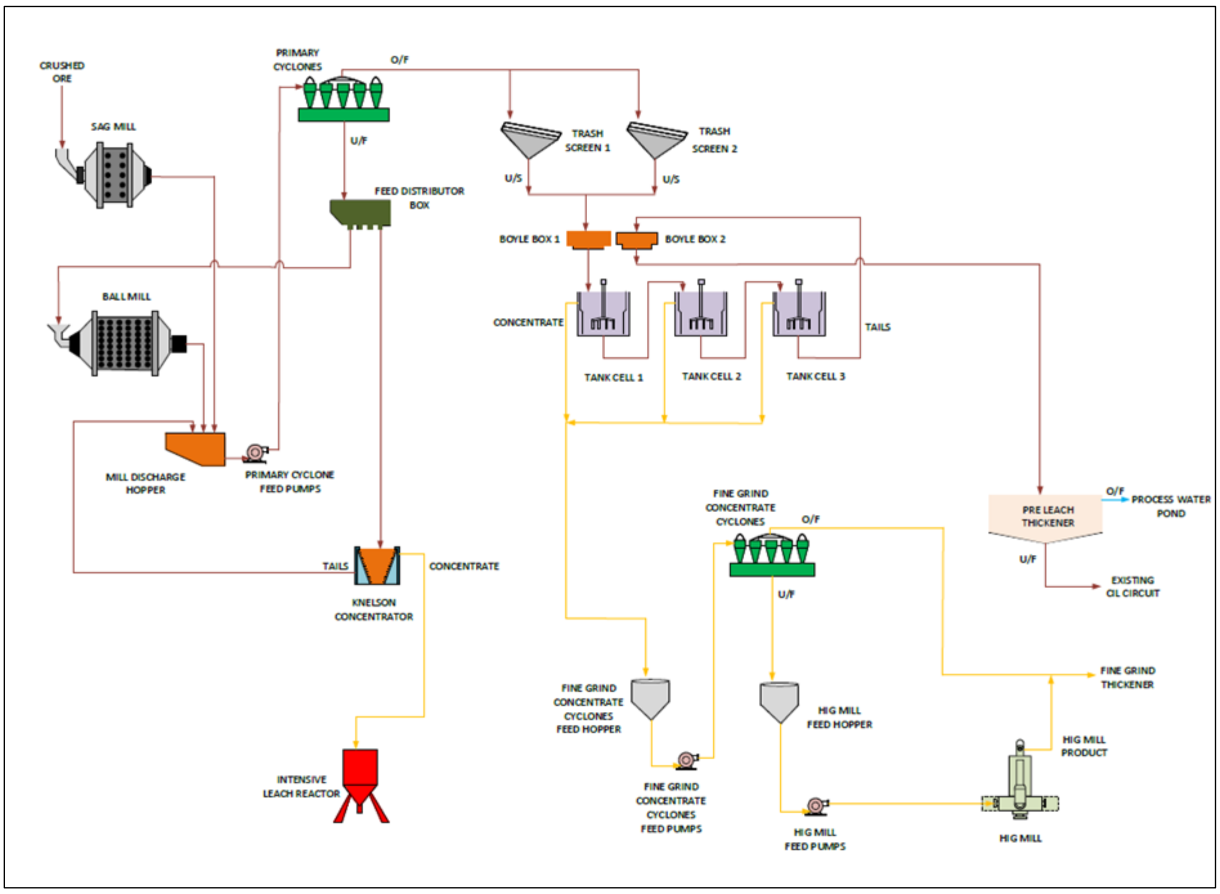


Figure 17-9: Schematic Flowsheet of the Future Flotation Circuit and Concentrate Regrind

Figure 17-10 is a schematic flowsheet of the future intensive concentrate leach and adsorption circuit produced by Mining Process Project Engineering.

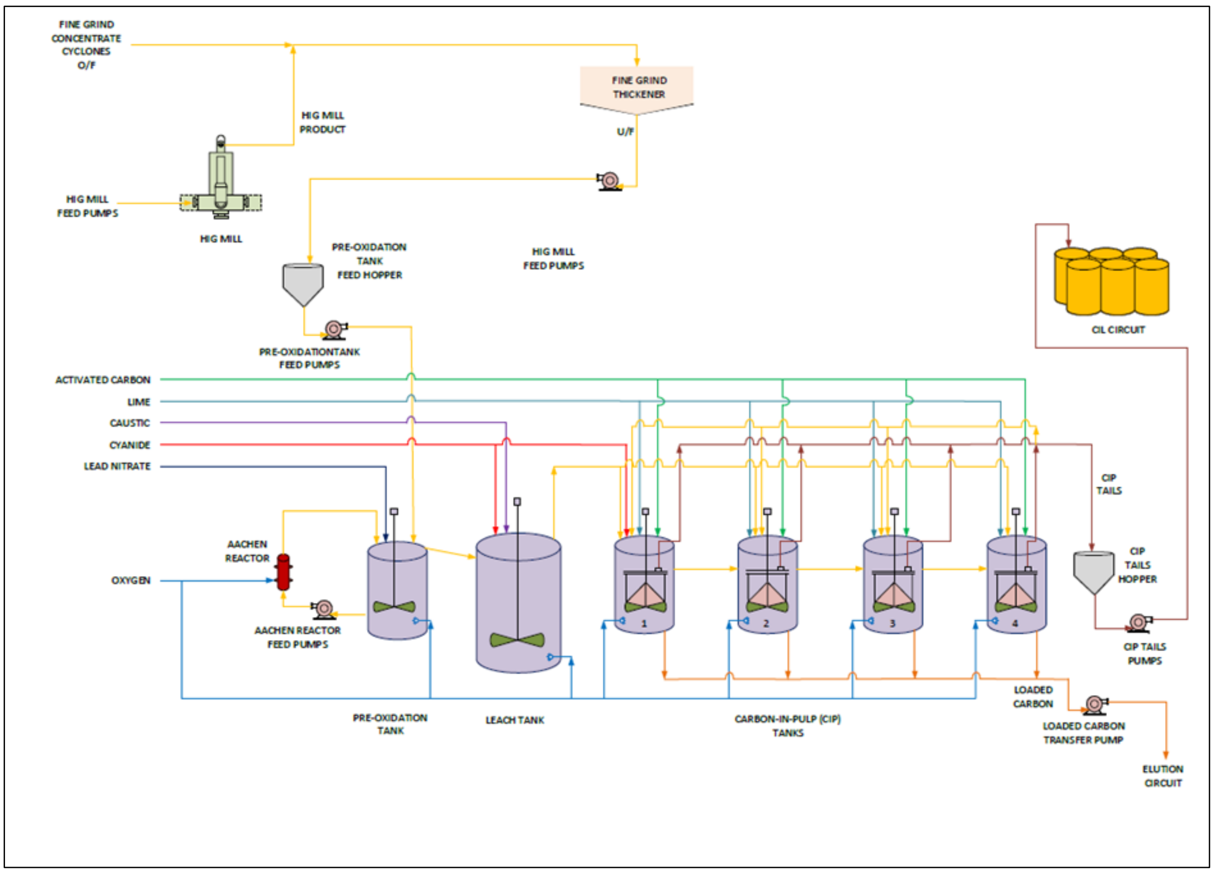


Figure 17-10: Schematic Flowsheet of the Future Intensive Concentrate Leach and Adsorption Circuit

18. PROJECT INFRASTRUCTURE

18.1 Overview

The Bibiani Mine historically operated as both an open pit and an underground mine. The surface infrastructure constructed to support both the open pit and the underground mine is largely still in place and has been well maintained during an extended period of care and maintenance by the various owners of the project. The existing infrastructure consists of:

- Site access and internal roads.
- Site security arrangements.
- Buildings including camps, offices, stores, workshops.
- Treatment plant.
- Stormwater arrangements and water collection dams.
- Electrical supply and site reticulation.
- Sewerage handling facilities.
- Waste dumps.
- Tailings storage facility.

Asante Gold Corporation (Asante) purchased and re-opened the Bibiani Gold Mine during 2021 and 2022. Mensin Gold Bibiani Limited ("MGBL"), incorporated in Ghana, which owns and operates the Bibiani Gold Mine ("the Project") is a wholly owned subsidiary of Asante.

The Asante mining strategy differs considerably from the previous owners, Resolute Mining, who had planned to mine the deposit by underground mining methods only. Asante has re-established the main and satellite open pits and has a Life of Mine plan which includes mining by open pit methods for a mine life of seven and a half years. Asante would now like to evaluate the option of exploiting the remaining resource, outside of the current open pit Life of Mine, by underground methods.

As a first step in this process, Asante has completed a concept study on the underground mine which has quantified the mine life, production rate, infrastructure requirements as well as capital and operating costs for underground mining. The scoping study has also considered the appropriate transition point between open pit and underground mining.

Figure 18-1 shows a site plan of the mine infrastructure.

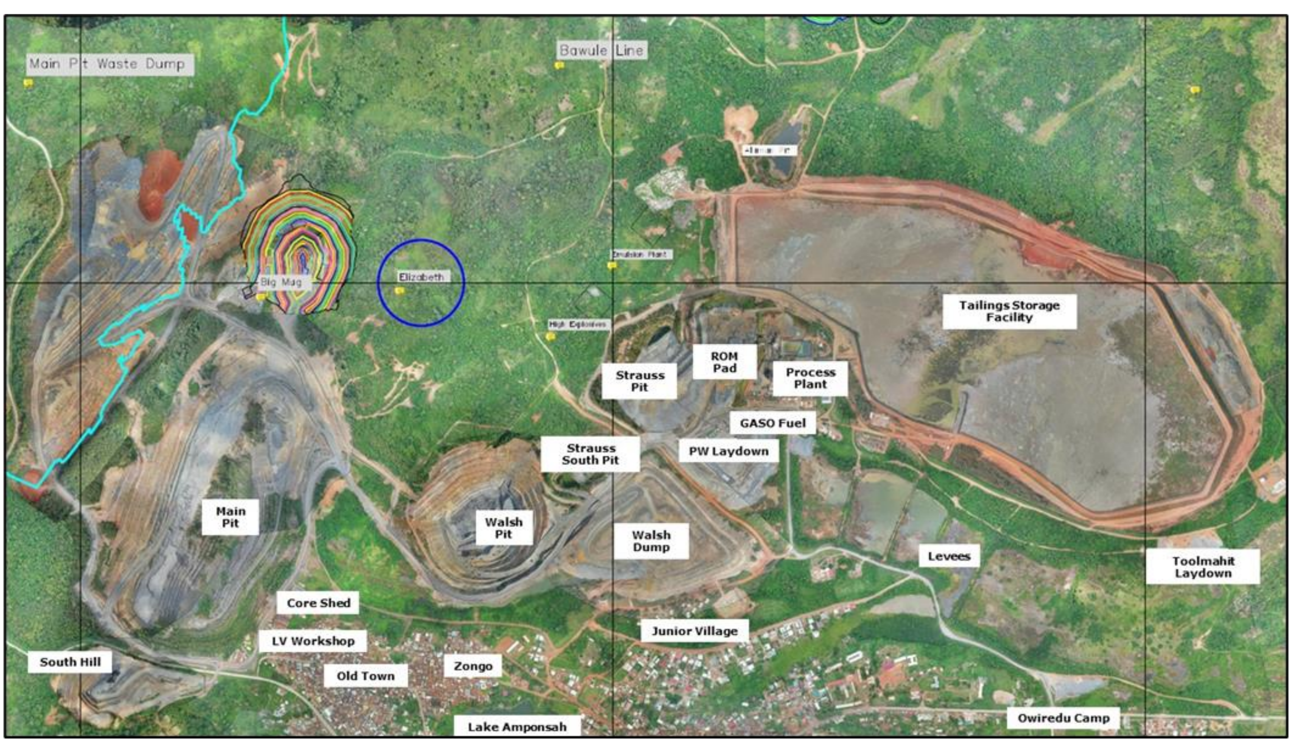


Figure 18-1: Bibiani Gold Mine - Site Infrastructure Plan

18.2 Site Access and Roads

Public access to the mine site is from the Southeast off the main Kumasi-Bibiani–Sefwi Bekwai Highway. A security and access control checkpoint is in operation and controls public access to the mine site.

All roads on the mine site accessing the main infrastructure including open pit mining sites, offices, plant, and tailings facility are in good condition and are well maintained.

The Goaso-Bibiani Road which runs to the South of the Main pit will need to be rerouted to allow the expanded open pit mining of the Main pit. The costs and time for this public road diversion have been provided for in the capital estimate and the planning for this road diversion is currently in progress.

18.3 Buildings and Facilities

18.3.1 Surface

The mine infrastructure buildings including offices, stores, mess, and accommodation camps are well maintained and are fit for use. The mine offices are currently in use and are equipped with power and water supply as well as functioning telecommunications and internet connectivity.

The surface mining infrastructure and area access roadways servicing the currently operational Bibiani open pit mines will be shared with the underground mine, with the addition of the following facilities:

- Change house.
- Lamp room.
- HME workshop including a tyre inflation bay and wash bay.
- LV workshop including a tyre inflation bay and wash bay.
- General engineering workshop.
- Chophouse / mess.
- Substation to feed underground.
- Compressor.
- Main Ventilation Fans.
- Service water tanks.

Capital estimates for the above-mentioned facilities have been provided in the concept study cost model.

The proposed site layout of the above-mentioned facilities is illustrated in Figure 18 2. The facilities have been laid out to support the planned underground mining operations for Bibiani and are logically positioned to separate the heavy underground vehicle routes from other vehicle routes, as far as is practicable.

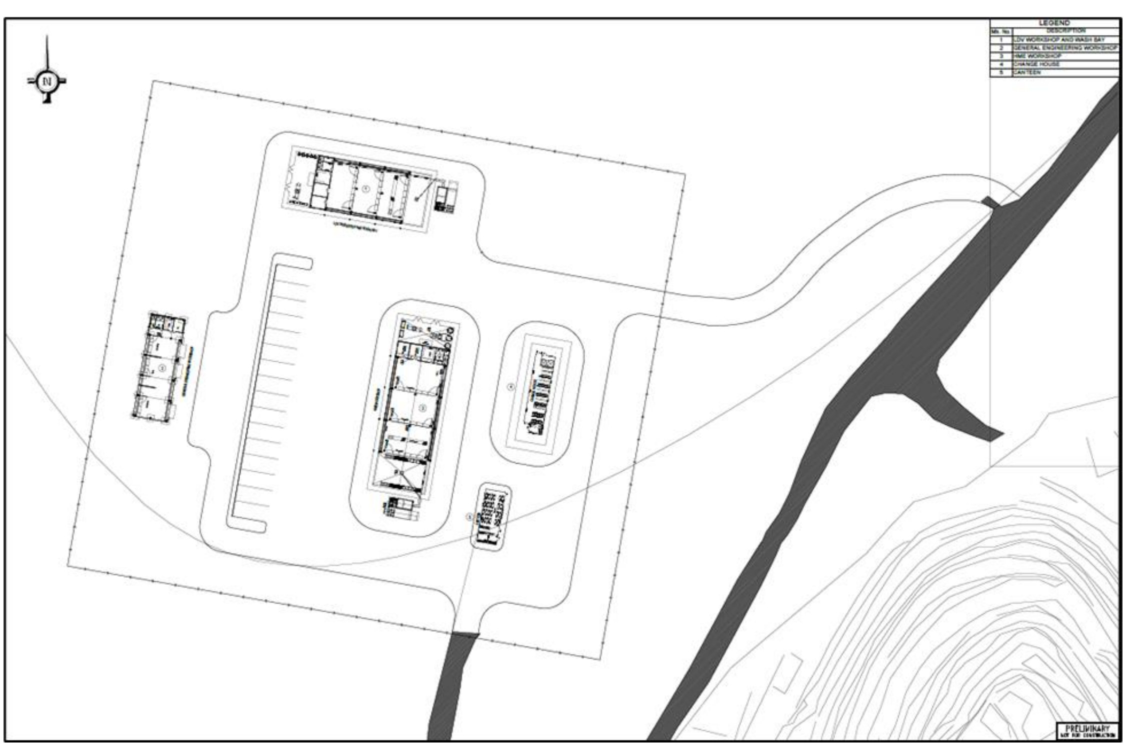


Figure 18-2: Proposed Layout of Additional Surface Infrastructure

The mining contractor has established their own laydown area, offices, workshops, and mess. Sites have been allocated for this infrastructure. The infrastructure supplied by the mining contractor is tabled below.

Table 18-1: Infrastructure Supplied by Mining Contractor

Item	Description	Building Type	Quantity
1.1	Mine Services Area Prep Works	N/A	1
1.2	Site Services connections etc.	N/A	1
1.3	Mining Contactor Office	Prefab	1
1.4	HME Workshop & Stores	Steel frame	1
1.5	Wash Bay	Concrete	1
1.6	Tyre Bay	Container	1
1.7	Junior Staff Change House	Prefab	1
1.8	Ablutions Facility	Prefab	1
1.9	LV & Drill Rig Workshop	Container	1
1.1	Service / Lube Bay	Container	1
1.11	Junior Staff Mess	Prefab	1
1.12	Staff Training Facility	Prefab	1
1.13	Security Guard House	Prefab	1
1.14	Equipment Simulator	N/A	1

MGBL owns three accommodation villages in Bibiani with enough capacity to house the senior workforce. Individual rooms at each location may need maintenance work or renovations. Accommodation for 25 senior mining contractor personnel is provided by MGBL in their senior camp. Accommodation for other contactor personnel is the responsibility of the contractor and they will not be housed on site but will take up residence in Bibiani town.

18.3.2 Underground

The required infrastructure and facilities for the underground mine have been set out in the concept study. The mined ore will be loaded into dump trucks which will tip either high or medium-grade ore at one of the two designated rock passes, which will be equipped with hydraulic rock breakers and static grizzlies. The proposed truck tip layout is presented in Figure 18-3.

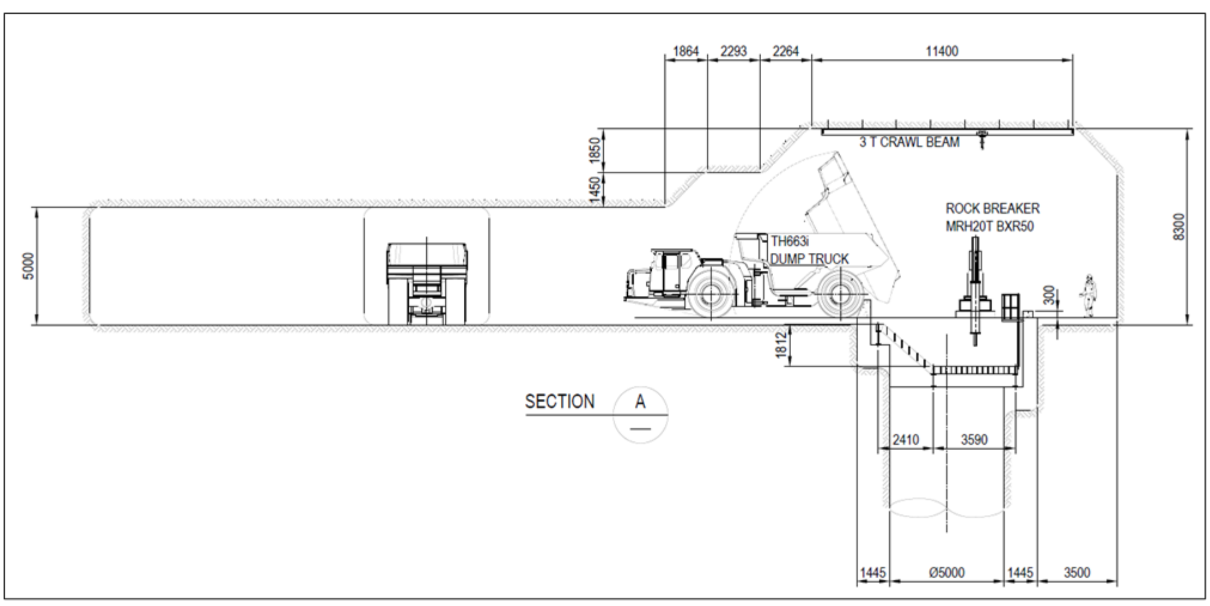


Figure 18-3: Proposed Layout of the Truck Tips, Elevation View

Conveyor loading bulkheads will be constructed at the bottom of the rock passes. The bulkheads have a throat piece that is equipped with spile bars and liner plates. The discharge chute is attached to the underside of the throat piece and tied into the support structure beams and the flow of rock is controlled by a hydraulically operated radial door. Rock is discharged onto a vibrating feeder that in turn feeds via a chute onto the conveyor. The conveyor feed chute can be lifted and lowered by a hydraulic actuator to allow material from other preceding conveyor belt installations to pass without interference. The proposed layout of the conveyor loading bulkheads is presented in Figure 18-4.

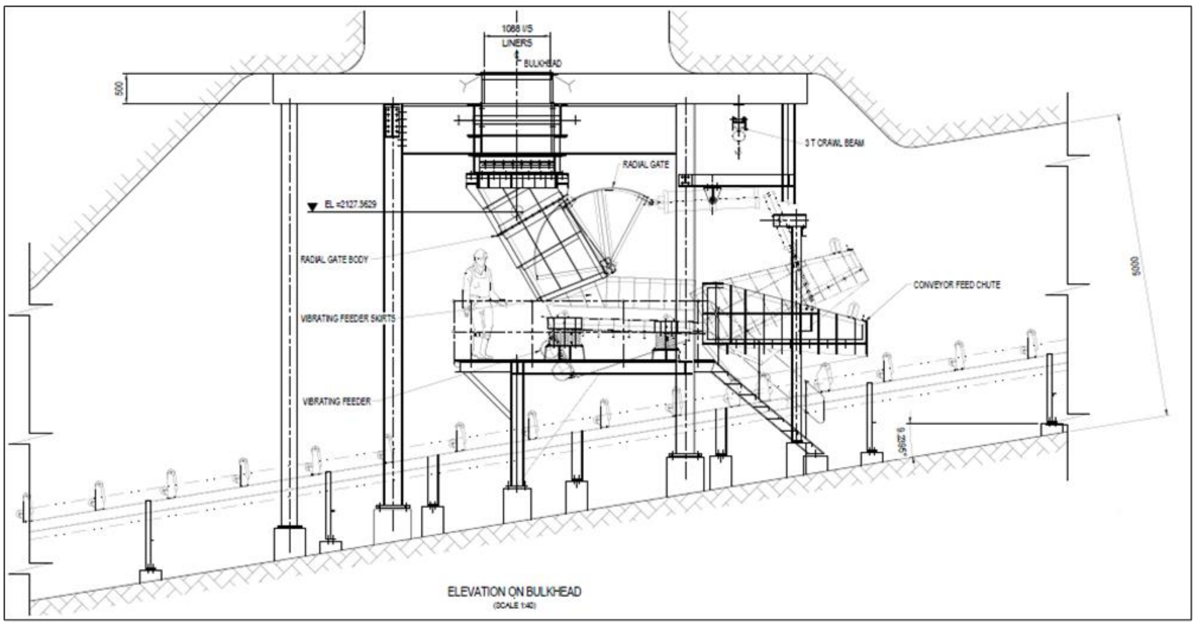


Figure 18-4: Proposed Layout of the Conveyor Loading Bulkhead, Elevation View

The ore will then be conveyed and dumped on the RoM Pad, which is situated at the process plant. A series of conveyor belts will be installed as the mine is developed. Over the LoM, a total of four (4) conveyor belts will be required underground (CV02 to CV05) as well as a radial stacker (CV01) on the RoM pad. The largest drive/motor size was limited to 110 kW, with multiple drives where required. Conveyor troughing idlers will be 3-roll 35° and return idlers 2-roll 10°. Impact idlers will be provided under the loading points. All conveyor motors will have variable-speed drives. Where applicable, gravity or automated winch take-ups have been included. A metal detector and cross-belt electromagnet will be located immediately downstream of loading points.

Figure 18-5, below, indicates the proposed layout of the head end of CV02 and the RoM Pad. CV02 will be installed in the currently existing Greg Hunter decline and will be extended up the backfilled ramp in Strauss Pit to the RoM pad. The conveyor will be elevated at the RoM pad, to allow for the movement of the mining trucks on and around the RoM pad.

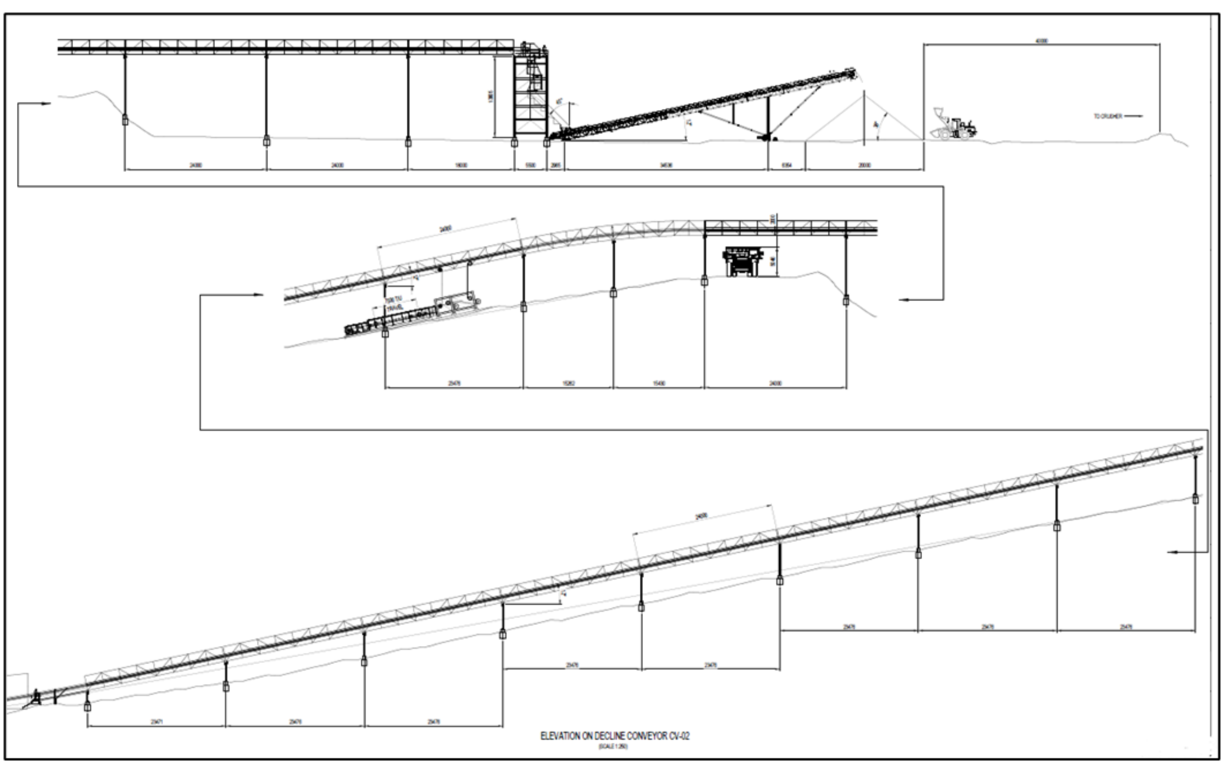


Figure 18-5: Proposed Head End of CV02 and RoM Pad Layout

Provision has also been made for an underground workshop for underground equipment to be serviced and maintained via an access route near the truck tips on 7 Level. The workshop layout has been designed so that incoming trackless vehicle components, transported on utility vehicles, will be offloaded at a material transfer point. The facility will be equipped with overhead gantry cranes in major equipment bays and crawl structures in other bays.

18.4 Water Management

The mine relies on underground dewatering for the raw water for its operations (dust suppression, domestic use, and process plant). Raw water is stored in the mine dewatering settling pond and the levees. The main purpose of the water storage system is to provide a secure plant supply in case of extended drought conditions.

From the settling pond and levees, water is pumped to a 5,000m^3 raw water pond (HDPE-lined earth dam) located at the plant site. For the concept study underground mine, service water storage tanks are planned near the decline portal area. Service water will be supplied from these storage tanks down the decline to a series of service water cascade dams. These service water cascade dams function to relieve the service water system pressure. The cascade dams will be situated in cubbies near the service raises. The dams will be 5m wide, 4m long and will have a live height of 3m. The water level in each dam will be controlled through float valves. In total, eight (8) cascade dams are planned to be installed throughout the Life of Mine.

Seven (7) levees were historically constructed as tailings storage ponds. In recent times the levees have been used to store and supply makeup water for the processing plant. Adjacent levees are conjoined but separated by saddles. There is vegetation growing all along the embankments which protects them from erosion and subsequent sedimentation of the levees. Wetland vegetation at the levees ameliorates the water quality by removing sediment trace metals and nutrients. The levees also collect most of the direct runoff from the mine area and in the care and maintenance phase, they receive dewatered water from underground dewatering.

The underground mine, as set out in the concept study, will require a total of eleven dirty water pump stations throughout the life of the mine. These dirty water pump stations comprise of three primary features: a degritting sump, a dirty water dam, and the pump station itself. The purpose of the degritting sump is to collect and settle all coarse material (grit) such that only dirty water with finer material reports to the dirty water dam through an overflow channel. As such, all water from the strike drives or drain columns will report to the degritting sump. Water from subsequent permanent pump stations will report directly to the dirty water dam as this water would have already passed through degritting.

Dirty water from the levels that are not equipped with a dirty water pump station, will be gravity-fed to the next dirty water dam below. Levels equipped with dirty water pump stations will be equipped with a sump in the footwall drive and a vertical spindle pump to pump the dirty water into the dirty water columns feeding the various dirty water dams. Dirty water will be pumped to the surface from the 6 Level dam. An estimated maximum dewatering rate of 530 m^3/hr is required from 6-level to surface. The dirty water dams will have a capacity of approximately 100m^3 and will be equipped with Warman DWU pumps pumping water to the next dirty water dam. Table 18-2 provides a list of the proposed Warman DWU pump models, the number of operational and standby pumps as well as the pumping specifications.

Table 18-2: Dirty Water Pumps

Pump Station	Model	Number in Series	Standby Pumps	Power [kW]
Pump station 1	Warman DWU 150QC	2	1	500
Pump station 2	Warman DWU 150QC	2	1	180
Pump station 3	Warman DWU 75NC	2	1	60
Pump station 4	Warman DWU 125PC	1	1	45
Pump station 5	Warman DWU 125PC	1	1	55
Pump station 6	Warman DWU 75NC	2	1	60
Pump station 7	Warman DWU 150QC	1	1	200
Pump station 8	Warman DWU 125PC	2	1	180
Pump station 9	Warman DWU 125PC	2	1	150
Pump station 10	Warman DWU 75NC	1	1	55
Pump station 11	Warman ISO125-250	1	1	15

The Process Water System water circuit is split into Raw, Process, and TSF return water. TSF Return water will be used for CIL slurry dilution. Excess TSF return water will be detoxified before being used for Process Water makeup. In the care and maintenance phase, dewatering discharge from underground entered the top of the levee system. In the operation phase, the Mineral Processing Plant will reuse the dewatering supply and the water released to the environment will cease. All decant water from the TSF will be reused by the plant and none of that water will be released to the environment.

Boreholes, hand-dug wells, and public reticulated water pipes are the main water sources for catchment communities as streams and other surface waters in the mine concession have been contaminated in the past in earlier mining operations.

In terms of drainage, the concession is in five sub-catchments in the Tano River Basin of the Southwestern Basin System of Ghana. These sub-catchments are the Amponsah, Mpokwampa, Mensin, Kyirayaa and Pamunu. The five rivers of these catchments are seasonal, sometimes drying up in the dry season from December to March. The Amponsah and the Mpokwampa drain various areas of the mine before joining the Mensin through the levees. The Mensin joins the Kyirayaa which then joins the Pamunu which in turn joins the Tano River.

Most of the direct runoff from the mine area is collected in the levees. However, incident rainfall runoff in the Mineral Processing Plant is contained and discharged to the Tailings Storage Facility.

The underground dewatering, as well as water pumped from the pit dewatering boreholes and operating open pits, will be the source of raw water for dust suppression, the processing plant, and the concept study underground mining activities. If required water can be drawn from a dam situated approximately 5.0km to the East of the mine site, which belongs to MGBL. Refurbishing of the pipeline and pumping system is 90% completed.

18.5 Sewerage Handling

All ablution facilities on the mine site are serviced by septic tanks and soakaways for sewage disposal. A local contractor empties the septic tanks at the required intervals and disposes of the solid waste at a licensed sewage treatment site.

19. MARKET STUDIES AND CONTRACTS

19.1 Introduction

The primary commodity produced by MGBL 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	Unit	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032
Gold Production	(oz)	118 434	271 208	258 103	266 628	277 597	235 116	252 573	92 995

19.2 Marketing Contracts

The gold refining industry is competitive with several gold refineries in South Africa, India, Switzerland, Türkiye and several other countries that have the capacity to refine gold from MGBL. MGBL have entered into a refining and offtake agreements with MKS PAMP SA of Switzerland and Istanbul Altin Rafinerisi A.S. in Türkiye for the refining and sales of gold doré. The contracts specify a standard refining charge. This charge is credited for payables (e.g. silver content of the doré) and debited for any deleterious content (e.g. arsenic) in accordance with specific terms in the contract. MGBL has the option to sell the final refined metal directly to MKS or IGR Metals Trading DMCC, or on the London LBMA AM or PM auction price or by mutually accepted pricing method.

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$1,700oz. 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*

MGBL 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 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 Background

(a) a summary of the results of any environmental studies and a discussion of any known environmental issues that could materially impact the issuer's ability to extract the mineral resources or mineral reserves;

Mensin Gold Bibiani Ltd (MGBL), a subsidiary of Asante Gold Corporation owns the Bibiani Gold Mine located at Bibiani in the Bibiani-Anhwiaso-Bekwai Municipality in the Western North Region of Ghana. The mine consists of decommissioned underground workings and open pits which were previously mined from 1891 to 2013 and thereafter went into care and maintenance. MGBL obtained an environmental permit in July 2021 to commence underground (UG) mining and processing operations from 2021 to 2023. This environmental permit covered the proposed underground mining operations, ore processing and related operations, the Tailings Storage Facility, workshops etc.

However, due to changes in the business plan for the period, MGBL took a decision to re-open open pit operations under a new Environmental Permit that covers mining 163.6 Million bank cubic metres (Mbcm) (423.6 Million tonnes) of material to deliver 7.8Mbcm of ore over 9 years Life of Mine (LoM) from the Main pit (over 4 cutbacks) and from Satellite pits (Strauss and Walsh) located within its concession area and with the potential for continuing underground mining at the Main Pit. The main waste rock facility located northwest of the main pit was planned to be expanded to provide storage for waste rock from the main pit cutbacks while a new Walsh Waste rock facility was to be constructed south-east of the satellite pits to provide storage of waste materials from these pits.

The implementation of the project required the diversion of 13km of the Bibiani-Goaso Highway to the unplanned area enclave of Bibiani Lineso Junction to Tanodumase Junction. The cutbacks of the Main pit would also require the resettlement of parts of Bibiani Zongo and Bibiani Old Town communities that would be impacted by the mining and related activities around the pit.

In compliance with the requirements of the Environmental Assessment Regulations, 1999, (LI 1652), and under the direction of the EPA upon completion of the EPA Form 2a, MGBL appointed Geosystems Consulting Ltd to carry out an Environmental Impact Assessment (EIA) and submit an EIS to the EPA to enable the grant of an environmental Permit for the project. The EIS was submitted in December 2021 and Environmental Permit (Permit No. EPA/EIA/568) was issued to MGBL on 21 February 2022 which expired on 20 August 2023 to commence Open pit mining at Main Pit, Strauss Pit and Walsh pit and to carry out diversion of portions of the Bibiani-Goaso Road. MGBL has since submitted an Environmental Management Plan to the EPA as required by LI 1652.

20.2 Activities Undertaken by MGBL Under Environmental Permit No. EPA/EIA/568

Since the grant of the Permit in 2021, MGBL has accomplished the following:

20.2.1 Mining

- Walsh pit has been mined out and decommissioned and undergoing closure.
- Strauss Pit has been mined out and decommissioned and partially backfilled with waste rock.
- Main pit cut 1 is currently being executed.

20.2.2 Road Diversion

- A 16.796km detour road that connects Bibiani to Goaso through Antwi Agyei Nkwanta on the Bibiani-Kumasi Road to Ahyiresu on the Bibiani-Goaso road has been upgraded from a gravel road to a tarred road to enable safe commutation of travellers from Bibiani and environs during the road diversion.
- Land acquisition and land clearance for the Phase 1 resettlement of Old Town and Zongo has been completed.
- Designs for the road diversion were completed for construction, however, construction could not commence due to serious issues raised by stakeholders.

Subsequently, MGBL in consultation with the MRT and after extensive consultations of relevant stakeholders proposed the following:

- An 11.140km long diversion of the Bibiani-Goaso Road from Tanodumase to Lineso Junction on the Bibiani-Kumasi Road.
- The mine will provide an additional detour road within its mining area for access by farmers to farmlands located beyond the mine concession.
- Execute part of the proposed cut 2 of the Main Pit by constructing a 1.2km diversion of the Bibiani-Goaso road at the southern end of the main pit. This road is called the Mine Access Road (MAR) and will provide temporary passage of traffic from Goaso to Bibiani to allow for the execution of cut 2 of the Main Pit and provide lead time for the proposed main diversion. The proposed MAR diversion will be located completely within MGBL Mine Concession area.

20.2.3 Resettlement Update

- Resettlement Agreement signed with RNC and Community.
- Project Budget Approved.
- Site Clearing in Progress.
- Type of structures to be designed and constructed has been agreed by RNC and community.
- Crop Compensation payments on site almost completed.
- Detail design works for topography, geotechnical, civil works and building designs to be completed by November 2023.
- Planning/Architectural/Engineering designs to be completed by December 2023.

20.3 MGBL Permits

The Bibiani Gold Project currently owned by MGBL comprises a number of mineral resources which fall within the confines of the Bibiani Mining Lease, LVB/WR.615/97, issued originally to Ashanti Goldfields (Bibiani) Limited in 1997 valid for a period of 30 years commencing 19 May 1997 and expiring on the 18 of May 2027. Exploration is allowed for gold only. Aside from the mine lease the mine operates under three permits: Mine Operating Permit; the Environmental Permit; the Water Use Permit. Other permits that are specific to project expansion or special/critical projects also exist. Table 20-1 shows the permits register for MGBL. The register gives the status of each permit and actions being taken to obtain expired permits.

Table 20-1: MGBL 2023 Permits Register

#	Type of Permit Description	Permit Number	Date Issued	Expiry Date	Renewal Date	Renewal Clause	Status	Actions Taken	Remarks
ENVIRONMENTAL PROTECTION AGENCY (EPA) PERMIT									
1	Bibiani Environmental Permit to recommence surface Gold Mining and Processing Project	EPA/EIA/568	21/02/2022	20/08/2023	21/08/2023	Apply for renewal 3 months (20/05/2023) before expiry and submission of EMP	Expired	Application for renewal submitted to the Agency. EMP also submitted	Awaiting response from the Agency
2	EPA permit for TSF embankment raise								
3	Bibiani Environmental Permit to commence Underground Gold Mining and Processing Project	EPA/EIA/560	19/07/2021	18/01/2023	19/01/2023	Apply for renewal 6 months before expiry (18/06/2019)	Expired		
4	EPA Permit to Store Fuel (Diesel & Lubricants) on site	WNRCE00140.01	30/03/2022	29/09/2023	30/09/2023	Complete AER1 and submit	Expired	MGBL Fuel farm decommissioned	New fuel farm owned by GASO
5	EPA Permit to operate the Mine Clinic	WNRCH000041.01	30/03/2022	29/09/2023	30/09/2023	Apply for renewal by submitting appropriate application	Expired	Application submitted. Invoice paid & inspection done by EPA	Awaiting issuing of permit
6	EPA Permit for Exploration	EPA/PR/PN/1237	24/03/2022	23/03/2024	24/03/2024	Apply for renewal 3months (23/12/2023) before expiry	Valid		
MINERALS COMMISSION PERMIT									
1	Bibiani Mining Lease	WR 840/97	19/05/1997	18/05/2027	19/05/2027				Minister/Mincom to transfer Lease to Mensin
2	Mine Operating Permit	00002521/23	19/02/2023	31/12/2023	01/01/2024	MGBL to Submit a Comprehensive Mine Operating Plan for renewal	Valid	Mine Operating Plan submitted, awaiting EPA permit for issuance	
3	Permit for Storage of High Explosives	0009298/23	09/02/2023	31/12/2023	01/01/2024		Valid		
4	Permit for Storage of Detonators	0009299/23	09/02/2023	31/12/2023	01/01/2024		Valid		
5	Permit to Purchase Explosives	0006183/23	09/02/2023	31/12/2023	01/01/2024		Valid		
6	Mining Exploration Permit	012422/23	14/03/2023	31/12/2023	01/01/2024		Valid		
WATER RESOURCES COMMISSION (WRC) WATER USED PERMIT									

#	Type of Permit Description	Permit Number	Date Issued	Expiry Date	Renewal Date	Renewal Clause	Status	Actions Taken	Remarks
1	Groundwater abstraction for Domestic Purposes	MGBL ID 312/22	01/01/2022	31/12/2024	01/01/2025	Apply 90 Days before expiry	Valid		
2	Main Pit (Underground) Dewatering for Processing and Dust Suppression	MGBL ID 313/22	01/01/2022	31/12/2024	01/01/2025	Apply 90 Days before expiry	Valid		
3	Groundwater Abstraction from Ten (10) Boreholes for Mining Purposes	MGBL ID 680/1/23	01/04/2023	31/03/2026	01/04/2026	Apply 90 Days before expiry	Valid		
4	Abstraction from Nzemaa Nkwanta Dam for Mining Purposes	MGBL ID 680/2/23	01/04/2023	31/03/2026	01/04/2026	Apply 90 Days before expiry	Valid		
5	Pits (Aheman, Walsh, Strauss & Strauss South) Dewatering for Mining Purposes	MGBL ID 680/3/23	01/04/2023	31/03/2026	01/04/2026	Apply 90 Days before expiry	Valid		
GHANA NATIONAL FIRE SERVICE – FIRE CERTIFICATE PERMIT									
1	Fire Certificate	0021600	08/01/2023	31/12/2023	01/01/2024	Apply 30 Days before expiry	Valid		
GHANA ATOMIC ENERGY COMMISSION PERMIT									
15	Permit to store and use radiation badges								

20.3.1 MGBL Environmental Management Plan

Prior to the expiration of Permit No. EPA/EIA/568 for the resumption of Surface mining and ore processing, MGBL of LI 1652, commissioned Geosystems Consulting Ltd to prepare an Environmental Management Plan (EMP) in line with the requirements of regulations 24 of the Environmental Assessment Regulations 1999 (LI 1652). The EMP was completed and submitted in November 2023 and now awaiting EPA reviews and grant of permit.

20.3.2 New Undertakings that Need Permitting

In order to complete the Main Pit Cut 1 and continue to mine cut 2, MGBL proposed to construct a 1.2km diversion of the Bibiani-Goaso road at the southern end of the main pit to provide temporary passage of traffic from Goaso to Bibiani to allow for mining the Main Pit. Stakeholder Consultations with relevant key stakeholders in 2022 on the road diversion also agreed to an 11.14km long diversion of the Bibiani-Goaso Road from Tanodumase to Lineso Junction on the Bibiani-Kumasi Road. MGBL, applied to the EPA on 9 September 2023 for permit to execute these road diversion projects. The EPA in a letter dated 13 September requested MGBL to prepare an EIA and submit an EIS for consideration for the grant of the permit. A contract was awarded to Geosystems for the conduct of the EIA which is ongoing.

Other undertakings that need permitting include commencement of mining of Grasshopper Hill Pit. MGBL applied to the EPA to commence mining on 19 April 2023. EPA responded on 17 May 2023 and requested for MGBL to submit a Supplementary EIS for consideration and grant of a permit. Geosystems is currently working on the SEIS.

There is also a proposal to commence mining at Russell Pit. Registration of the project at the EPA has been done and awaiting response.

20.4 MGBL Tailings Storage Facility

The MGBL Tailings Storage Facility (“TSF”) is a cross-valley impoundment located in a northeast– southwest trending valley adjacent to and to the north of the existing processing plant. The existing TSF covers an area of approximately 140Ha and comprises a Main Embankment (current maximum height 35m) and two earth-fill saddle embankments located on the northern perimeter of the facility. The facility was originally designed by Knight Piésold in 1996-1997, to accommodate a total of 20.6 Mt of tailings produced over an envisaged seven-year mine life. This was subsequently extended as more ore reserves became available. The facility development commenced with the construction of a 14.5m high earth-fill starter wall (Stage I) in the period April 1997 to July 1997. The facility was commissioned in 1998 with subsequent stage embankment raises constructed to increase capacity.

The existing facility was constructed using zoned techniques. The starter embankment was constructed of lateritic material/oxide mine waste and thereafter extended downstream in Stage II and III. From Stage III onwards, all raises were constructed upstream, utilising lateritic clays/silts with the tailings as foundation for subsequent raises. An upstream toe-drain was installed during Stage I and during a subsequent stage, a rock buttress and seepage control measures were added to the downstream slope (Knight Piésold TSF Design Report, 2011). The embankments have upstream slopes of 1V:2H and downstream slopes of 1V:2.5H.

Material used for the various stage construction works generally comprised lateritic clays and clayey gravels obtained from borrow-pits located to the north and south of the Main Embankment. The downstream buttress was constructed utilising oxide mine waste and incorporated a drainage layer/toe drain of mill scats (coarse gravel obtained from the milling process).

In 2021 Knight Piésold was commissioned to conduct an audit of the TSF to access the effort required to bring the facility into operation. Knight Piésold recommended a general rehabilitation of the of the TSF in two phases. Phase 1 rehabilitation construction comprised: TSF beach vegetation clearing, including swampy areas, TSF peripheral access road clearing, embankments upstream slope clearing, embankment downstream slope and buttress slopes/crest clearing and topsoil removal.

Phase 1 additional works consisted of: raising all existing embankments to achieve crest elevation 211m RL, Placement of erosion protection rock on the upstream slopes of all embankments, removal and backfilling of unsuitable materials within main embankment downstream basin/wetland and construction of a 3m wide Zone A upstream buttress to widen the Main Embankment crest along the eastern section.

The TSF rehabilitation construction works (Phase 1) was started in November/December 2021, achieving practical completion in February 2022 for the TSF beach clearing and August 2022 for the additional works. Phase 2 construction is at about 90% completion. The following are yet to be achieved.

- Completion of rock buttress at the downstream toe of the main embankment.
- Installation of pumps in the downstream seepage sumps to return water to the dam.

Rehabilitation construction activities were executed and completed by MGBL nominated local contractors under Knight Piésold oversight. MGBL nominated contractors included: Rabotec, KPS, Kaslive, Kozah, K-Nyame, all locally owned earthworks contracting firms with majority coming from the community and surrounding catchment areas. Tailings deposition to the TSF started in July 2022 after EPA permit clearance from the Inspectorate Division of the Minerals Commission.

20.4.1 Pre-Deposition TSF Audits

Prior to tailings deposition into the rehabilitated TSF commenced in 2022, a pre-deposition audit was conducted by Geosystems with the following terms of reference:

- To assess the condition of the rehabilitated TSF and ancillary structures to ensure the integrity of the facility has not been compromised due to the prolonged period of non – usage.
- To carry out an inspection of the TSF and ancillary structures including environmental and stability monitoring systems, ponds and sumps, tailings delivery infrastructure etc. to ensure that the integrity of the facility satisfies design specifications and regulatory requirements as stipulated in the permitting conditions.

Geosystems audit report concluded that:

- There were no visible signs of distress in the embankments such as scouring, erosion gullies, cracks or settlement. However, stability analysis conducted by KP suggests that the main embankment in its current form does not attain the allowable minimum safety factor of 1.7. The rehabilitation design, therefore, includes an 11m high buttress wall construction to support the main embankment and improve the safety factor to meet regulatory requirements. This buttress construction, at the time of compiling this report, had commenced and scheduled to be completed on 30 August 2022.
- There were no issues of seepage observed on the downstream slope of the embankments. Issues of rusty reddish-brown flow observed downstream of the east embankment has not been established to be seepage from the TSF and it is therefore recommended that during operation of the TSF this flow should be monitored to establish its source for proper management.
- Issues of steep slopes beyond elevation 205m RL of the main embankment will be addressed, according to KP as part of the ongoing buttress construction works. While the construction of the buttress wall as well as remnants of the rehabilitation works are being completed, tailings deposition into the facility will commence in accordance with the deposition plan designed by KP to ensure that tailings deposition into the facility does not adversely affect the integrity of the main embankment.
- Signage and security on the facility are deemed adequate. However, when operations commence and supernatant pond forms, pond – specific signage and safety controls must be provided to enhance the safety of the facility.

From the analysis of all documentation relating to the TSF, physical observations and interviews with the KP staff responsible for the TSF rehabilitation works as well as the MGBL officials, Geosystems can conclude that all proposed remedial measures, when implemented, are capable of restoring the facility to a fit – for – purpose state and may be used for containment of tailings at the projected rate of rise of 0.15m/month while the rehabilitation works continue

20.4.2 Quarterly Third Party TSF Audits

MGBL continues to engage Geosystems to conduct quarterly audits as required in the TSF permit conditions. The latest audit was the third quarter 2023 Audit. The report concluded that:

There were no visible signs of distress in the embankments such as scouring and cracks or settlement. There were also no major issues of erosion. Main embankment toe rock buttressing which is about 97% complete should be completed. No major issues of seepage were observed on the downstream slope of the embankments inspected. However, seepage was observed to be flowing from a section at the toe of the buttress towards the northern side of the Main embankment due to challenges observed in the construction of the secondary confinement channel. Remedial measures should be instituted to intercept and channel this seepage to the secondary confinement sump.

Supernatant water flow into the decant sump was lower than the design intent, leading to a large supernatant pond size, which is suspected to be due to challenges in the construction of the sump. It is recommended that remedial works are undertaken immediately on the decant sump to ensure water flows unhindered into the sump to reduce the size of the supernatant pond.

20.4.3 TSF Closure

The following paragraphs describing the closure arrangements, or the Tailings Storage Facility were extracted from the Draft Environmental Impact Assessment for re-opening of Underground Mining Operations at Bibiani Gold Mine, completed by Mensin Gold in 2018.

A qualitative or semi quantitative risk assessment will be carried out on the tailings storage facility and adequate control measures will be put in place to address all significant risks that the facility may pose to the Bibiani community and surrounding ecosystem. Potential risks would include accidental releases of effluent to the environment, death of flora or fauna, significant harm to o trespassers and post closure team of the HSE department. The sensitivity analysis will identify the key areas of concern and facilitate the preparation of a risk management plan.

The main works to be undertaken to achieve closure of the TSF are:

- Spillway excavation.
- Embankment Capping.
- Embankment re-vegetation.
- Surface re-vegetation.
- Final check on tailings dam stability.
- Pumping and discharge of the remaining effluent into the tailings pond.
- Monitoring of surface water and groundwater quality and levels.
- Crop trials prior to cessation of operation.

During the final stages of mining operations, the position of tailings will be planned and managed to achieve the desired final bench configuration. The intention is to establish a vegetation cover directly on the tailings surface. The lower slopes of the dam are earth fill structure and will be progressively re-vegetated throughout the life of the mine operation. The tailings pipeline and return water system will be decommissioned in conjunction with the plant site decommissioning.

20.5 Community and Social Aspects

20.5.1 Profile of Host Districts

MGBL operational areas lie within three paramountcies (Anhwiaso, Sankore and Nkawie-Kuma), and two municipalities (Bibiani-Anhwiaso-Bekwai and Atwima Mponua) with 16 catchment communities (Nzema-Nkwanta, Adzenkye, Kyekyewere/Gyedi, Newtown, Estate/Ahodwo, Old/New Compound, Bibiani Old Town, Zongo, Attakrom/Oforikrom, Nantwikumye, Hwenampori/Degede, Donkoto-Lineso/Bawuleline, Pipeline, Donkoto, Abofrem and Ahyiresu,

This section discusses the Regional and Local profile of the study areas. The regional profile comprises the Municipal and District information, and the local study area comprises the six (6) project affected communities.

20.5.1.1 Atwima Mponua District

Atwima Mponua District Assembly was created out of the former Atwima District by a Legislative Instrument (L.I.) 1785, 2004 by an Act of Parliament on 18 February 2004 with prior approval of Cabinet under the subsection (1) of section 3 of the Local Government Act, 1993 (Act 462) to bring governance to the doorstep of the people and enhance the decentralisation process. Its capital is sited at Nyinahin. The Assembly is composed of 57 Government Appointees. The Executive Committee serves as the executive and coordinating body of the Assembly. The District has 310 communities which is divided into 12 Area/Town Councils and further subdivided into 39 Electoral Areas. The District shares boundary with eight Districts, principally in the South with the Amansie West District, Ahafo Ano South District to the North, Atwima Nwabiagya District in the East and Bibiani-Anwhiaso-Bekwai District of the Western Region to the West. The major ethnic group in the municipality is the Asante-Twi. Other ethnic groups include Northerners, Ewes, Bono, Fante among others. Most of the people are Christians (74.3%); other religious groups are Islam and traditional African beliefs.

The population of Atwima Mponua District according to the 2010 Population and Housing Census is 119,180 and population density of 63/km^2.

The municipality relies heavily on agriculture, forestry and fishing for both employment and income. As high as 85% of households in the district engage in agriculture. Crop farming, tree planting, fish farming and animal rearing are the main farming activities. The predominant cash crop cultivated is cocoa. Food crops cultivated include plantain, yam, maize etc. Chicken takes the largest of livestock farming followed by sheep rearing.

Culture: The District has no Paramount Chief but rather Divisional/Stool Chiefs who owe direct or indirect allegiance to the Manhyia Palace. There are six traditional authorities or divisional chiefs in the District. The predominant cultural practice in the District is the Asante culture. The important traditional/historical sites in the District are the Mud-Fishes in the Amanano River at Nyinahin and Yaa Asantewaa Museum at Sreso Tinpom. A prominent traditional festival of the people is the 'AMANANO ASUOBO'. In addition, Asante festivals such as Akwasidae and Awukudae are important cultural practices of the people in the District.

Services and Infrastructure: The three main sources of lighting in dwelling units in the district are flashlight/torch (59.8%), electricity 27.8%) and kerosene lamp (15.0%). The main source of fuel for cooking for most households in the district is wood (82.3%). The four main sources of water in the district are boreholes (55.2%), river stream (16.6%), public tap and pipe (10.4%) borne water. About half of households (55.2%) drink water from boreholes. The most common toilet facility used in the district is public toilet (WC, KVIP, Pit, Pan) representing 53.9 percent followed by pit latrine (27.9%). The most widely method of solid waste disposal is by public dump in the open space accounting for 79.8%. About one in ten households (10.0%) dump their solid waste indiscriminately. House to house waste collection accounts for 0.7 percent. For liquid waste disposal, throwing waste onto the compound (46.4%) and onto the street (45.9%) are the two most common methods used by households in the district. The Atwima Mponua District has access to modern information and communication technology due to the presence of some cellular communication network service providers, including MTN, AirtelTigo and Vodafone Ghana.

20.5.2 Project Affected Communities

Five (5) communities are identified as Project Affected Communities (PACs), these are Old Town, Zongo, Kyekyewere/Gyedi, Donkoto-Lineso and Attakrom.. The closest communities are Zongo, Old Town and Attakrom, which are about 1km or less from the mining areas. The local chiefs or "Odikros" of these five communities fall within Bibiani Township in the Sefwi Anhwiaso Traditional Area.

20.5.2.1 Bibiani Zongo

Bibiani Zongo (Zongo), one of the closest communities to the mine is under the Bibiani-Ahwiaso-Bekwai District. The population of Zongo is not stated in the 2010 Population and Housing Census (PHC), however, the elders estimate the population to be approximately 2000 people. The community falls under the Sefwi Anhwiaso traditional paramount chief. The settlement layout is haphazard, and buildings are very close to each other. The community has been in existence for over 100 years and, according to the elders, the population has increased tremendously over the past ten years due to the activities of the Bibiani Gold Mine and Small-Scale mining. The dominant ethnic groups in the community, are Dagomba and Wangare (all northern descents). Other minority groups include Mosi, Kusasi, Builsa, Sisala, Grusi and Wala. Islam forms the majority of the religious groups in the community followed by few Christians and traditionalists. Like all muslims, the people in Zongo largely celebrate the annual Islamic festivities in addition to the 'Shashabue/Damba' festival. People in the community mostly engage in farming and trading activities as well as small-scale artisanal mining activities. Their major cash crop is cocoa and food crops are plantain, cassava, and cocoyam. Other agricultural activities include small scale animal husbandry. Most of the houses in the community are made of cement blocks/concrete, while some are made of mud brick/walls. The Zongo community has been planned by the Bibiani Mine to be resettled. Accordingly, a resettlement Agreement with the community has been signed.

20.5.2.2 Bibiani Old Town

Old Town falls under the Bibiani-Anhwiaso-Bekwai Municipal Assembly and traditionally is under the Sefwi Anhwiaso Paramountcy. The population is estimated by the elders to be approximately 1,500. According to the interviewees, the population of the community has increased significantly due to the activities of the Bibiani Gold Mine and Small-Scale mining activities. The dominant ethnic group in the community is the Nzemas (Akan). Other minority groups include Asante, Sefwi, and people of northern descents. Christianity forms the majority of the religious group in the community followed by Islam and traditionalist. Like all the Akans in the District, the people in Old Town celebrate the annual 'Aluelue' yam festival in December. People in the community mostly engage in farming, small-scale and other trading activities. The major cash crop is cocoa and other food crops cultivated are plantain, cassava, and cocoyam. Other agricultural activities include small scale animal husbandry. Most of the houses in the community are made of cement blocks/concrete, while some are made of mud brick/walls. The main construction materials for the floor of buildings are cement/concrete. All the building structures are roofed with metal sheets. Most households in the community occupy compound houses occupied by an extended family or tenants. Most of the houses have shared bathrooms or separate bathrooms, for males and females, which are separate from the houses.

The main source of water supply in the community is groundwater. There are five boreholes in the community with three in use during the time of study. Another source of water is from the Bibiani Water Board. The Old Town is planned by the Bibiani Mine to be resettled. The Resettlement Agreement between the Mine and the community has been signed.

20.5.2.3 Attakrom/Oforikrom

The settlement was founded about 60 years ago by Nana Atta. The local population is dominated by Sefwis. There are other ethnic groups including Asantes, Bonos, Krobos, Ewes, Northerners (Kusasis, Dagartis, and Mamprusis) who are all settler farmers. Subsistence farming is the predominant preoccupation. The main cash crop is cocoa whereas the second cash crop is Rubber. Plantain is the main food crop with cassava being the second food crop. Other farmers do engage in oil palm plantations. In addition to boreholes, they also rely on water from the Bibiani Water Board. The inhabitants rely on two pit latrines and a Ventilated Improved Pit Latrine (KVIP). Some of the common diseases in the village include the following, fever, diarrhoea, measles, cough, skin ailment, epilepsy, piles, diabetes hypertension, convulsion, bilharzia.

20.5.3 General Socio-Economic Baseline of Selected Local Communities

MGBL conducts periodic socioeconomic and perceptions studies within its catchment communities to assess the impacts of mining on these communities.

20.5.3.1 Literacy and Skills Training

As usually observed in most rural areas, literacy levels in the sampled communities are relatively low. Results indicate that three (3) out of every ten (10) 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 (1) out of every ten (10) females was literate while for the male gender, five (5) out of every ten (10) males were literate. On community basis, the big communities of the Bibiani Township had close to a hundred percent school enrolment levels while the small communities of Pipeline, Donkoto-Lineso and Abofrem had less than average.

20.5.3.2 Direct Employment

Records from the Human Resource Department of MGBL indicates that as at November 2023, a total number of indigenes of the sixteen sampled communities who had been employed directly by MGBL was 13,873. Table 20-2 shows the Employment statistics from the communities since mining resumed in 2022.

Table 20-2: Employment Statistics

Community	2022				2023				Grand Total 2022-2023
	Skilled	Trainees	Unskilled	Total	Skilled	Trainees	Unskilled	Total	
Abofrem	19	0	36	55	9	0	15	24	79
Adzenkye	125	0	40	165	48	0	24	72	237
Ahyiresu	27	0	27	54	18	0	12	30	84
Attakrom/Oforikrom	755	0	280	1,035	297	0	132	429	1,464
California	31	0	38	69	15	0	18	33	102
Compound	487	0	268	755	189	0	123	312	1,067
Dansoman	18	0	5	23	9	0	3	12	35
Donkoto	50	0	42	92	24	0	21	45	137
Donkoto/Lineso	68	0	40	108	27	0	12	39	147
Estate/Ahodwo	1,037	6	223	1,266	429	0	102	531	1,797
Hwenampori/Degede	999	6	180	1,185	411	0	75	486	1,671
Joena	5	0	-	5	3	0	0	3	8
Junior Village	4	0	-	4	0	0	0	0	4
Kwamekrom	31	0	17	48	18	0	9	27	75
Kyekyewere/Gyedi	939	0	315	1,254	366	0	147	513	1,767
Lineso	15	0	2	17	9	0	0	9	26
Madina Estate	12	0	7	19	6	0	3	9	28
Manso Dominase	-	0	7	7	0	0	3	3	10
Nantwikumye/Praga	445	6	68	519	198	0	33	231	750
New Town	390	0	188	578	147	0	75	222	800
Nkawie Traditional Council	35	0	14	49	18	0	3	21	70
Nzema Nkwanta	30	0	6	36	6	0	0	6	42
Old Admin	55	0	25	80	27	0	15	42	122
Old Town	709	60	542	1,311	306	0	255	561	1,872
Pipeline	26	0	29	55	12	0	6	18	73
Sankore	34	0	17	51	12	0	9	21	72
SATA(Sefwi Anhwiaso Traditional Area)	102	0	31	133	42	0	15	57	190
Sefwi Akaaso	7	0	-	7	3	0	0	3	10
Sefwi Bekwai	3	0	12	15	3	0	3	6	21
Zongo	410	39	340	789	174	0	150	324	1,113
GBIPE					3	0	0	3	3
Grand Total	**6,868**	**117**	**2,799**	**9,784**	**2826**	**0**	**1263**	**4089**	**13,873**

20.5.3.3 Housing Tenancy and House 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 MGBL Staff while the renters were often workers of some MGBL'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%.

20.5.3.4 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. Of course, there are the incidence of indiscriminate dumping which for instance in Zongo the community leaders are struggling to deal with by setting up a committee to "police" the community and apprehend recalcitrant offenders. 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 Old Town the communal dumpsite is located at the outskirt but within the environs of the new site just before the MGBL junior village camp.

It was observed that open defecating and the use of pit latrine were not the most dominant means used. In Donkoto-Lineso, 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.

20.5.3.5 Education

Evidence on the ground indicates that MGBL has not only provided a number of educational infrastructure but also a number of scholarship schemes. For instance, the educational facilities provided by MGBL for Newtown, were renovated Junior High School. Donkoto-Lineso has 1 basic education facilities including: 1 Primary School; MGBL Basic Schools as the most prestigious basic school in the Bibiani Township. The company has donated educational materials such laptops, books, pens and mathematical sets. Annual quiz, debates and reading festivals for the basic schools. In 2017, MGBL established the Mensin scholarships for brilliant and needy tertiary students from the catchment communities. Historically, Mensin supports the Bibiani Schools with sporting equipment, menstrual sanitary pads, specials science and math quiz and symposium and seminars on Basic Educations Certificate Examination.

20.5.3.6 Health

In general, the Bibiani Government Hospital and 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 Kumasi or Sefwi Bekwai. All the health facilities identified were public owned with the exception of the drug stores/chemical shops in the Bibiani Township. Additionally, there are two private specialist hospitals in the Bibiani Township which accept health insurance. Most residents in the communities are registered on the national health insurance scheme. Tertiary and special medical services are provided at the Komfo Anokye Teaching Hospital in Kumasi, about 58Km away from the Bibiani Township.

The Company has provided a lot of supports for the Bibiani Hospital and the Ghana Health Service in the areas eye surgeries, ante natal clinic HIV behavioural changes, air conditioners, incubators, renovating surgical theatre, renovating children's ward, repair of vehicles, malaria control and prevention, hepatitis B screening and vaccination of school children and further providing support for individual community residents with special medical needs for tertiary medical procedures and treatment.

20.5.3.7 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 Zongo and Donkoto-Lineso communities.

20.5.4 Socioeconomic Impacts

The presence of MGBL has brought about profound socio-economic transformation of the communities in the catchment area and beyond. Since 2021, MGBL has spent approximately US$250 million (MGBL, 2021) in the local area and the region. MGBL 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:

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.

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: MGBL's policy of awarding contracts to companies indigenous to Sefwi/Bibiani 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 life, humane places of convenience and sanitation services.

Sport and Recreation: There is an increase in sports and recreational activities following the rehabilitation of community football parks and the qualification of the Bibiani Goldstars into the Ghanaian tier-1 Premiership. MGBL is the sole sponsor of the only Ghanaian Premiership football club in Bibiani and the Western North Region in Ghana. MGBL 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 Bibiani Gold Mines Limited in the area will further consolidate these socio-economic gains in the years to come. Sporting equipment are donated to the local communities and basic schools to support amateur football.

Land Access and Crop Compensation: Acreage and absolute counting methods were introduced during the first phase of compensation from December 2022 to date particularly depending on the type of farm. Farm produce was counted one by one by the enumeration team in the presence of the farmers and the farmers' committee. 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 approximately 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 MGBL began operations including telecommunications (MTN and Vodafone), banking through ATMs, Insurance companies and stable electrical power.

20.5.5 Social Monitoring

MGBL carries out periodic perception studies within the catchment communities to monitor social impacts on the communities as a result of MGBL 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 MGBL.

- Inform MGBL on the perceptions of citizens of the selected communities on the impact of MGBL operations on their socio-economic wellbeing.
- Ascertain the relevance of MGBL in the social, economic and human fibre of the communities.
- Recommend to MGBL a management plan for mitigating the perceived negative impacts based on historically implemented policies (international best practices).
- Itemize the benefits and negative effects of MGBL 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 MGBL.

The outcomes of the most recent socioeconomic and perceptions studies are summarised below:

20.5.6 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 statistics 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 marital/amorous relationships, difficulty in taking care of their families and breakdown in social order.

20.5.7 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 but improving over the past two years although, 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 Bibiani township held the view that the quality of life was good. This was the highest proportion of such respondents. The least proportion was recorded in the rural communities such as Pipeline, Donkoto, Abrofem and Ahyiresu (25%). On the other hand, Pipeline recorded the highest proportion of respondents saying that the quality of life was poor. In Bibiani Township, about 57.6% of the sampled respondents believed that the quality of life was good while 41.3% said it was poor.

20.6 Mine Closure

20.6.1 Closure Requirements

The general closure objectives for the surface mining operations as captured in the expanded EIS submitted to the EPA in October 2022 (MGBL, 2022), include providing for: legal compliance; physical stability of the landscape; environmental quality; health and safety; aesthetic quality, biodiversity; and acceptable socio-economic aspects. MGBL is committed to rehabilitate, to the extent possible, all disturbed areas as a result of development of the pit cutback operations, in accordance with Ghanaian legislation and best practice. At a minimum, the following will be completed as part of the broader MGBL closure plan:

- Decontaminate, decommission, salvage or demolish all related structures on the site according to the terms of the mine lease agreement.
- Rehabilitate disturbed areas that do not represent a resource of direct benefit to the community. This rehabilitation will be performed in a manner that allows beneficial re-use by the community, to the extent possible.

- Seek agreement with the communities, regulatory authorities, and other relevant stakeholders regarding facilities considered as assets for the community and for which ownership can be transferred in the post-closure period. Examples of facilities that could be of beneficial use to the community in a post-mining environment include roads, facilities for water catchment, storage, treatment, and distribution, and power supply systems.

MGBL's efforts to close, decommission, reclaim and rehabilitate the mining pits and ancillary facilities after operations is in line with its commitment to establish sustainable post-mining land uses for PACs. Sustainable closure and reclamation concepts for the open pits will be part of the overall closure concept for the MGBL Project and will include ecological restoration of disturbed lands to promote and maintain biodiversity and development of beneficial land use options for future generations.

20.6.2 Closure Activities

The reclamation and decommissioning activities related to the open pits and ancillary facilities will be based on the overall MGBL preliminary reclamation and decommissioning plan. Rigorous physical monitoring and maintenance will be undertaken typically for a three-year period after closure. This will include water quantity and quality monitoring (covering surface water, groundwater and open pit water) and monitoring the success of the reclamation and re-vegetation of the waste dumps, acid mine drainage, Soils and general areas.

The anticipated closure activities for some related infrastructures are described below.

OPEN MINE PITS: The main pit is projected to produce a total of 20.2 million tonnes of ore to feed the processing plant whereas the satellite pits together will produce 1.2 million tonnes. The resulting open pits will be secured to prevent unauthorized entry and warning signs posted. Some remedial work will be undertaken in the form of a berm enclosing the crest of the pits to prevent the entry of livestock in line with Regulation 277 of L.I 2182. As the pit lakes form the Company will develop fisheries in a sustainable manner and train the local communities in their use and maintenance.

Mine Dumps: The mine dumps will be contoured to conform to the local terrain and topped with topsoil and vegetation established on the surfaces, resulting in the restoration of the dump areas to the pre-mining land use (farming).

Non-Mining Related Infrastructure: Non mining related infrastructure includes operations camp, fuel station, laboratory, water purification system and storage, localised sewage treatment etc. Closure plans for this infrastructure is discussed in the MGBL underground development and processing EIS.

Roads: The roads that will be utilized by the operations of the open pit mining include haul roads and operational roads (gravel/unpaved). Closure plans for this infrastructure will be retained for use by local communities after mine closure. Operational roads (pit access etc.) will be covered with topsoil and re vegetated to pre mining conditions.

Services: Power lines, water and sewer infrastructure will be dismantled and demolished unless otherwise agreed upon through engagements with all relevant stakeholders to be handed over to PACs.

After all the equipment and machinery have been cleared from the mine site, the site will be cleaned up.

Non-hazardous remnants will be buried within a safe geological environment. Where necessary, the area will be revegetated.

20.6.3 Closure Cost

MGBL compiled a cost estimate for completing the decommissioning and reclamation of the open pits, waste rock dumps and related infrastructure. It also includes decommissioning and closure of facilities that were constructed to support underground mining. The estimated total cost to complete decommissioning and surface reclamation would be approximately US$ 23 884 538.

The closure cost estimates were estimated using typical rates for mining and earth moving equipment and estimating volumes and areas from the project plans, then applying factors from experience of such closure.

The cost estimate quantities and unit rates were taken from available plans, studies, assumptions, and revegetation programmes. The costs will also be included in future updates to the reclamation and decommissioning plan, in accordance with regulations. Table 20-3 presents the details of the Closure cost calculations.

Table 20-3: Closure and Reclamation Cost

Description	Unit	Total	2032	2033	2034
PITS					
Main Pit	(US$)	1 155 504	385 168	385 168	385 168
Strauss	(US$)	360 746	360 746	-	-
Strauss South	(US$)	223 849	223 849	-	-
Walsh (new)	(US$)	443 022	221 511	221 511	-
Grasshopper	(US$)	439 491	439 491	-	-
WASTE ROCK DUMP AREAS					
Main Pit Waste Dump	(US$)	2 343 496	1 171 748	1 171 748	-
Walsh - Strauss Waste Dump	(US$)	867 660	867 660	-	-
Grasshopper Waste Dump	(US$)	753 095	753 095	-	-
OTHER AREAS					
ROM Pad & Admin Area	(US$)	475 457	475 457	-	-
TSF	(US$)	4 297 353	2 148 676	2 148 676	-
Levees	(US$)	619 208	619 208	-	-
Oil Contaminated Waste Dump	(US$)	7 269	7 269	-	-
Process Plant Waste Dump	(US$)	527 175	527 175	-	-
PW & GASO Yard	(US$)	348 730	348 730	-	-
Magazine Extension	(US$)	65 211	65 211	-	-
Magazine	(US$)	28 422	28 422	-	-
Toomahit Yard	(US$)	54 328	54 328	-	-
Buses Parking Space	(US$)	45 712	45 712	-	-
Scraps Yard	(US$)	72 891	72 891	-	-
Owiredu Mess	(US$)	-	-	-	-
Junior Village	(US$)	-	-	-	-
Decommissioning Cost	(US$)	5 120 456	1 706 819	1 706 819	1 706 819
UNDERGROUND OPERATIONS					
UG Development Project	(US$)	-			
Removal of cables, ducting, metals, containers etc	(US$)	-			
Seal & stabilization of Accesses, Shafts, Portal, Stopes, sumps	(US$)	-			
Clean up & Removal of generated wastes etc.	(US$)	-			
TOTAL Direct Costs (USD)	**(US$)**	**18,249,075**	**10,523,167**	**5,633,922**	**2,091,987**
Third Party Profit/Markup					
Engineered estimate using in-house or published costs (based upon labour, equipment & materials costs from a cost reference guide or similar source.	(US$)	18 249 075	10 523 167	5 633 922	2 091 987
Contractor mark-up on engineered estimate	(US$)	3 649 815	2 104 633	1 126 784	418 397
Description	**Currency**	**Total**	**2032**	**2033**	**2034**
Total direct cost incl. third party profit / markup (USD)	(US$)	21 898 891	12 627 800	6 760 706	2 510 384
Asante's share of RRO	100%	21 898 891	12 627 800	6 760 706	2 510 384
Inflation adjustment	(US$)	4 685 647	2 538 058	1 521 223	626 365
Total RRO incl. Inflation Adjustment	**(US$)**	**26 584 538**	**15 165 859**	**8 281 930**	**3 136 749**
EPA BOND Deposit	(US$)	-2 700 000	-2 700 000	**0**	**0**
Net Future Cashflow after EPA Bond	**(US$)**	**23 884 538**	**12 465 859**	**8 281 930**	**3 136 749**

20.6.4 Post Closure Monitoring

Post-closure monitoring and maintenance of the open pits and related infrastructure will begin following completion of the rehabilitation work and would extend through the period of physical stabilization. Certain components of the rehabilitation programme will be implemented concurrent with active operations to reduce the time exposed areas are subject to erosion, to the extent practicable. Based on estimates and other experiences, an estimated figure of US$1,500,000 including contingency is expected to be used on the post closure monitoring exercise for a 3-year period post closure of operations or as agreed upon with the regulators.

The following monitoring will be undertaken:

- Air quality monitoring at strategic locations established during operations.
- Water quantity and quality monitoring of surface water, ground water and open pit water.
- The state of re-vegetation of operational facilities, waste dumps and other exposed sites.
- Soil monitoring for potential contamination from heavy metals.
- Acid Mine drainage monitoring.

Surface and groundwater sampling will continue on a quarterly basis through the post-closure period, or more frequently if necessary. Results will be compared with the Ghana Standards guidelines and baseline data collected at the beginning of the Project and other criteria to be developed in consultation with regulatory authorities to ascertain the current status and identify any problem areas.

Reclaimed areas will be monitored and managed until they are determined to be stable, or an end point has been reached which is satisfactory to the land-users and/or responsible government regulators.

21. CAPITAL OPERATING COSTS

21.1 Basis of Cost Estimate

21.1.1 Base Date and Terms

The mining cost estimate for the Bibiani 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.
- All underground waste development until steady state production is reached from underground mining.

Sustaining capital includes:

- Ongoing primary mine development after steady state production.
- 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$000)	Sustaining Capital Cost (US$000)	Total (US$000)
UG Project Capital - Non-sustaining	172 785		172 785
Plant Non-sustaining	13 889		13 889
Exploration - Non sustaining	15 352		15 352
Resettlement CAPEX	73 405		73 405
Road Diversion CAPEX	45 059		45 059
Mine Access Road	3 211		3 211

Cost Centre	Non-Sustaining Capital Cost (US$000)	Sustaining Capital Cost (US$000)	Total (US$000)
Road Detour	974		974
Sulphide Recovery Project	30 762		30 762
Plant Sustaining Capital		23 248	23 248
Process Engineering costs		2 077	2 077
Capitalised Mining Cost (Stripping Asset)		385 038	385 038
Light Vehicle Purchase		1 718	1 718
Security Infrastructure Upgrade		936	936
IT Infrastructure Upgrade		264	264
Capital UG - Sustaining		58 002	58 002
Exploration - Sustaining		7 417	7 417
Crop Compensation		4 800	4 800
Mine Services Capex		3 969	3 969
Total	**355 437**	**487 468**	**842 905**

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.

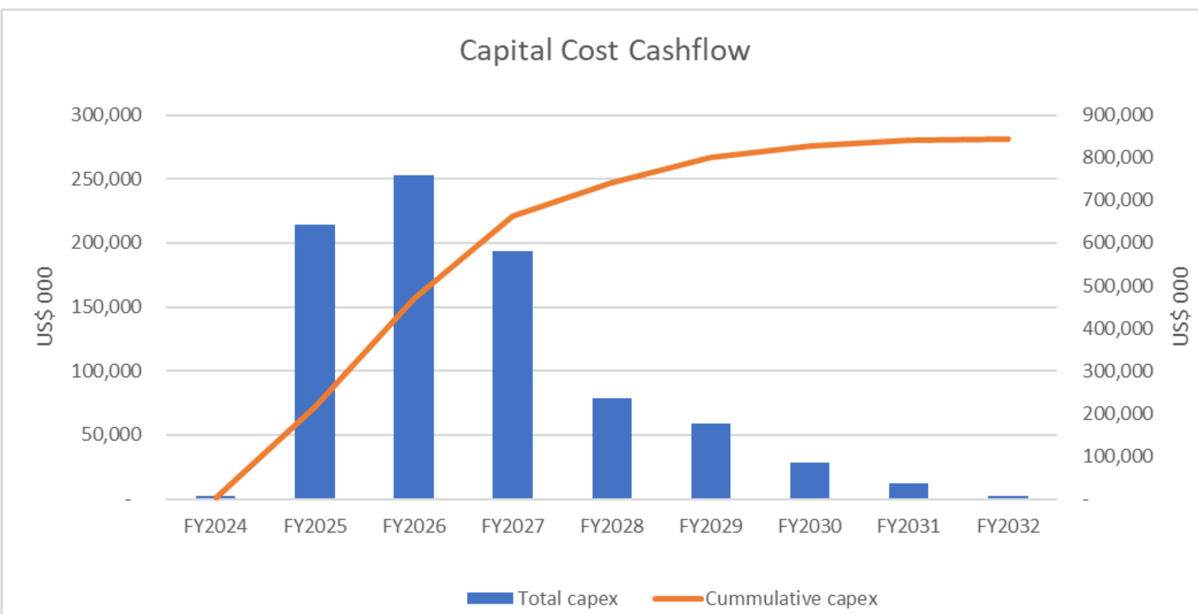


Figure 21-1: Capital Cost Cashflow and Cumulative Capital Cost

(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.

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	Cost/t RoM	Cost/oz Au
	(US$000)	(US$)	(US$)
Mining Cost - Opex OP	371 288	13.32	208.39
Mining Cost - Opex UG	523 298	18.77	293.7
Grade Control & Assaying - OP	20 983	0.75	11.78
Processing Cost	420 797	15.09	236.17
General & Admin Cost	161 916	5.81	90.88
Refinery & Shipment Cost	10 697	0.38	6.00
Royalties	169 471	6.08	95.12
Total Operating Costs	**1 678 449**	**60.00**	**942.04**

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. Underground mining costs have been determined through application of underground mine costs benchmarked from Asante's Chirano mine 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.

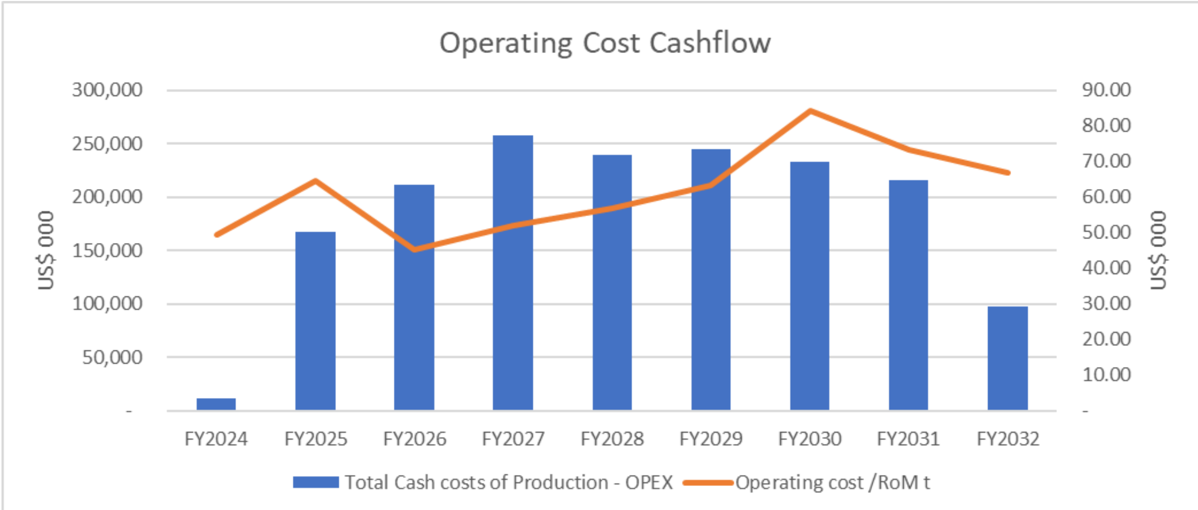


Figure 21-2: Operating Cost Cashflow and Unit Operating Cost

(Source: Bara 2024)

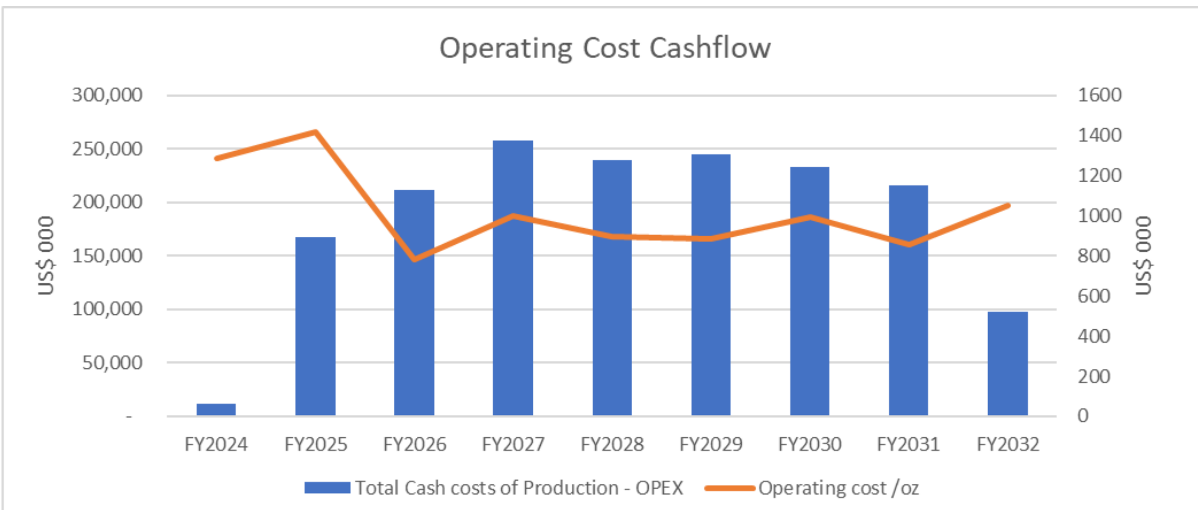


Figure 21-3: Operating Cost Cashflow and Unit Operating Cost per Ounce

(Source: Bara 2024)

22. ECONOMIC ANALYSIS

22.1 Evaluation Methodology

The economic evaluation of Bibiani 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$3.39 billion has been calculated over the Life of Mine.

Table 22-1: Calculation of Revenue

Description	Unit	Value
Processed Tonnes	(t)	27 877 502
Processed Gold (Au) Content	(oz)	1 962 537
Processed Gold (Au) Grade	(g/t Au)	2.15
Process Recovery (LoM Average)	(%)	91
Recovered Content	(oz)	1 781 717
Troy Ounces Sold	(oz)	1 782 950
Gold Price (LoM Average)	(US$/oz)	1 901 (1)
Total Revenue	**(US$000)**	**3 389 398**

Note (1) Forward looking gold price used in cashflow model is US$1,900/oz but January and February 2024 revenue and cost data is achieved data and gold price realised was greater than US$1,900/oz.

22.2.1 Tax

Taxation calculations are based on a 35% mining corporate tax rate with a 20% 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

Item	TOTAL (US$ 000)
Income before tax	1 691 358
Less depreciation	(966 737)
Taxable income	700 556
Tax loss opening balance	(112 886)
Taxable income	700 556
Cumulative tax loss/assess income	587 670
Tax payable @ 35%	214 319

22.2.2 Discounted Cashflow Analysis

A cashflow model for the Bibiani life of mine was produced based on the combined open pit and underground mining schedules. A summary of production schedule and cashflows on an annual basis is tabled below.

Table 22-3: Summary of Production Schedule and Cashflow Model

Item	Units	Total LoM	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Open pit													
RoM Tonnes Mined	(t)	**15,555,054**	236,310	2,593,695	4,631,281	4,126,143	2,285,369	1,226,705	132,535	323,015	-	-	-
RoM Grade	(g/t)	**2.05**	1.76	1.90	2.10	1.95	2.29	2.20	1.27	2.23	-	-	-
Contained Au	(oz)	**1,026,182**	13,406	158,623	312,399	258,354	168,087	86,775	5,395	23,143	-	-	-
Underground													
RoM Tonnes Mined	(t)	**12,145,165**	-	-	58,053	811,951	1,909,858	2,638,994	2,636,156	2,628,040	1,462,113	-	-
RoM Grade	(g/t)	**2.35**	-	-	1.40	1.95	1.88	2.39	2.65	2.57	2.22	-	-
Contained Au	(oz)	**917,997.00**	-	-	2,607	50,921	115,437	202,645	224,890	217,368	104,129	-	-
Processing													
Tonnes Processed	(t)	**27,877,502**	199,080	2,661,168	3,832,395	4,000,000	3,999,999	4,003,272	3,999,999	3,719,475	1,462,113	-	-
Grade	(g/t)	**2.19**	2.14	1.76	2.39	2.18	2.25	2.34	1.99	2.30	2.15	-	-
Contained Au	(oz)	**1,962,537**	13,691	150,782	294,792	280,547	289,813	301,736	255,560	274,536	101,082	-	-
Recovery	(%)	**90.8**	66.2	78.5	92.0	92.0	92.0	92.0	92.0	92.0	92.0	-	-
Gold Ounces Produced	(oz)	**1,781,717**	9,062	118,434	271,208	258,103	266,628	277,597	235,116	252,573	92,995	-	
Revenue													
Gold Ounces Sold	(oz)	**1,782,950**	10,296	118,434	271,208	258,103	266,628	277,597	235,116	252,573	92,995	-	
Revenue	US$000	**3,389,398**	20,936	225,443	515,296	490,396	506,592	527,435	446,720	479,888	176,691	-	
Costs													
Production Costs - Opex	US$000	**1,508,978**	10,613	156,559	185,680	232,591	213,549	218,552	210,601	191,788	89,045	-	
Royalties	US$000	***169,471***	*1,047*	*11,273*	*25,765*	*24,520*	*25,330*	*26,372*	*22,336*	*23,994*	*8,835*	-	
Total Cash Costs of Production - OPEX	US$000	**1,678,449**	11,660	167,832	211,445	257,111	238,878	244,923	232,937	215,783	97,880	-	
Sustaining Capital	US$000	**487,468**	454	100,432	151,946	118,859	19,841	57,206	26,197	10,092	2,443	-	-
AISC of Production	US$000	**2,165,917**	12,114	268,264	363,391	375,970	258,719	302,129	259,134	225,874	100,322	-	-
AISC of Production	US$/oz	**1,216**	1,337	2,265	1,340	1,457	970	1,088	1,102	894	1,079		
Project Capital	US$000	**355,437**	1,572	113,683	101,061	74,543	58,577	2,000	2,000	2,000	-	-	-
AIC of Production	US$000	**2,521,353**	13,686	381,947	464,451	450,513	317,296	304,129	261,134	227,874	100,322	-	-
AIC of Production	US$/oz	**1,415**	1,510	3,225	1,713	1,745	1,190	1,096	1,111	902	1,079		
Cashflow from Operations													
Operating Cashflow	US$000	**1,710,950**	9,276	57,611	303,851	233,285	267,714	282,512	213,783	264,105	78,812	-	-
Growth & Stability Levy	US$000	**(7,126)**	(209)	(2,254)	(4,662)	-	-	-	-	-	-	-	-
Closure Cost	US$000	**(23,885)**	-	-	-	-	-	-	-	-	(12,466)	(8,282)	(3,137)
Income Tax	US$000	**(214,319)**	-	-	-	(16,995)	(35,583)	(43,009)	(31,968)	(66,445)	(20,319)	-	-
Net Operating Cashflow	US$000	**1,465,620**	9,067	55,357	299,189	216,290	232,131	239,503	181,815	197,660	46,026	(8,282)	(3,137)
Total Capex	US$000	**(842,905)**	(2,026)	(214,115)	(253,007)	(193,402)	(78,418)	(59,206)	(28,197)	(12,092)	(2,443)	-	-
Net Cashflow	US$000	**622,715**	7,041	(158,758)	46,183	22,887	153,714	180,297	153,618	185,569	43,584	(8,282)	(3,137)
WACC (post-tax, real)	5.0%												
Post-tax Discounted cashflows	US$000	**463,533**	7,012	(153,930)	42,088	20,124	129,015	144,388	116,846	134,695	30,709	(5,449)	(1,965)

Note:

1. *FY2024 includes only January 2024.*
2. *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$406 million at a discount rate of 5%. Post-tax cashflow is presented in Figure 22-1.

Table 22-4: Summary of Discount Cashflow Analysis

Description	Unit	Value
Processed Tonnes	(t)	27 877 502
Processed Gold	(oz)	1 962 537
Processed Gold	(g/t Au)	2.19
Process Recovery (LoM Average)	(%)	91
Recovered Content	(oz)	1 781 717
Troy Ounces Sold	(oz)	1 782 950
Gold Price (LoM Average)	(US$/oz)	1 901
Total Revenue	(US$000)	3 389 398
Life of Mine	(years)	8
Capital Cost		
Non-Sustaining Capital Cost	(US$000)	355 437
Sustaining Capital Cost	(US$000)	487 468
Total Capital Cost	(US$000)	842 905
Operating Cost		
Total Operating Cost	(US$000)	1 678 449
Cash Cost	(US$/t RoM)	60
Cash Cost	(US$/oz)	942
AISC	(US$/t RoM)	78
AISC	(US$/oz)	1 216
Economics		
EBITDA	(US$000)	1 710 950
Free Cashflow (After Tax)	(US$000)	622 715
Post-Tax NPV (5%)	(US$M)	464
IRR	(%)	53
Operating Margin	**(%)**	**50**

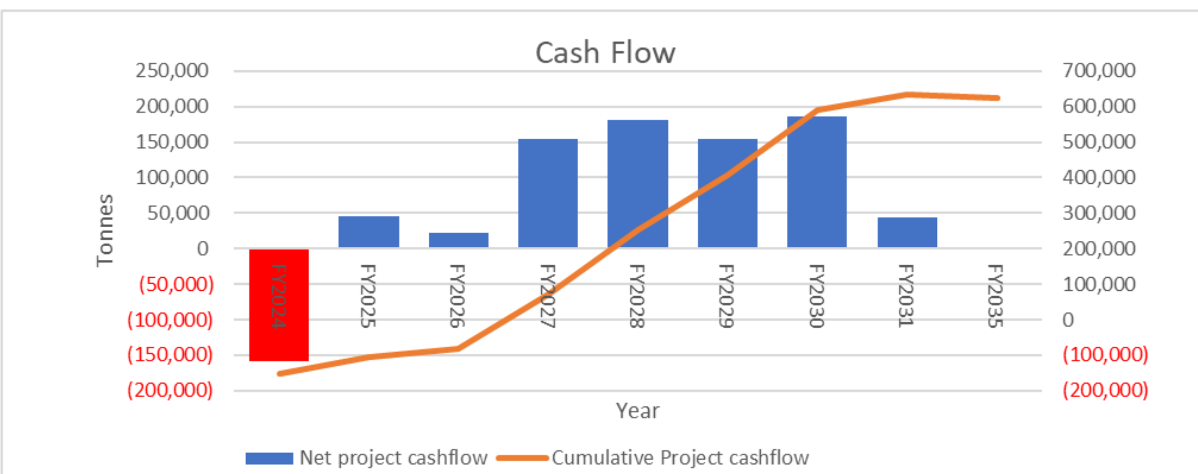


Figure 22-1: Post Tax Project Cashflow Over LoM

(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

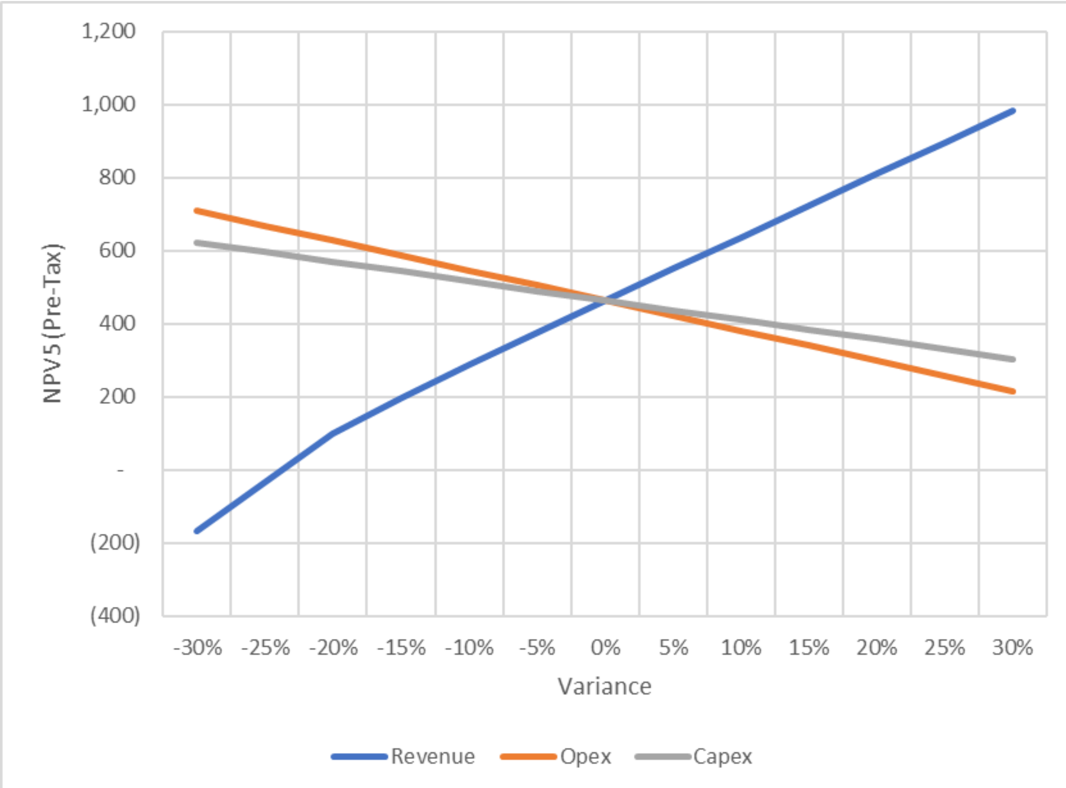


Figure 22-2. The figure presents post-tax NPV in relation to changes in capital cost, operating cost, and revenue respectively.

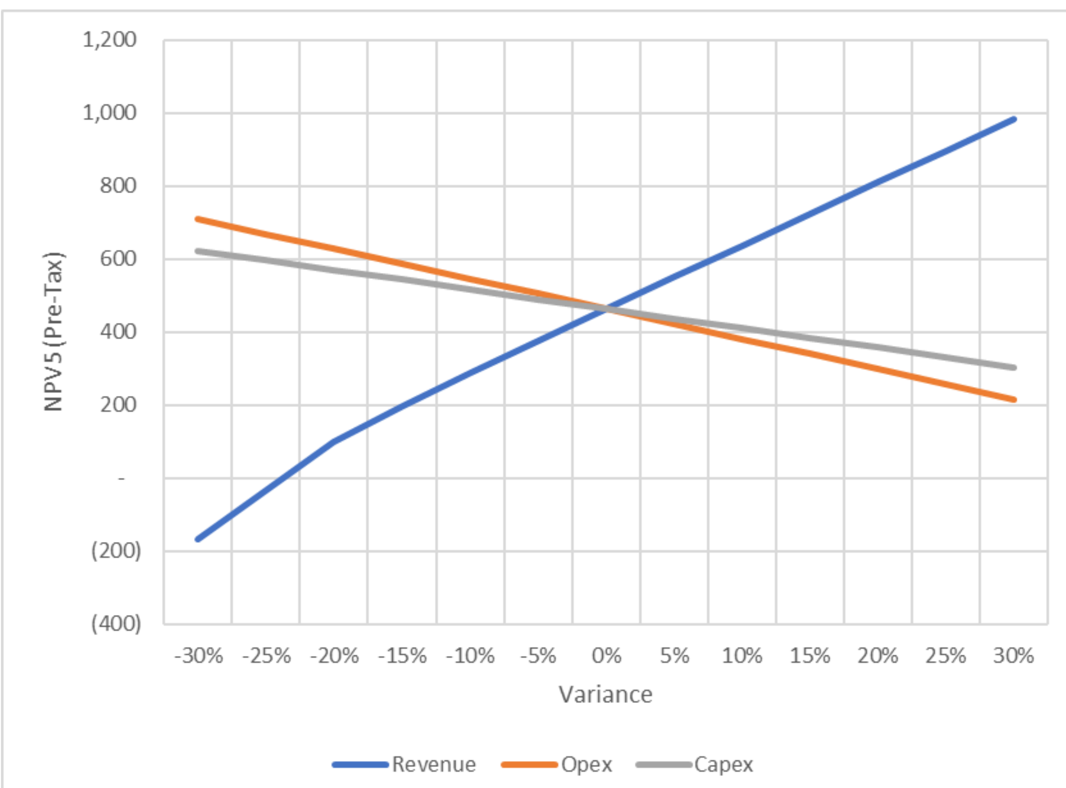


Figure 22-2: Post Tax NPV Sensitivity

(Source: Bara 2024)

23. ADJACENT PROPERTIES

The closest mine to the Bibiani Mine is the neighbouring Chirano Gold Mine complex situated approximately 37km by road to the north-east. The Chirano Gold Mine is also owned and operated by Asante and the latest Resource Estimate as at 31 December 2023 reports total Measured and Indicated Resources of 39.9Mt at a grade of 1.63g/t Au giving 2.088Moz Au (NI 43-101 Technical Report and updated Mineral Resource estimate, Chirano Gold Mines Limited, Ghana West Africa) The Inferred Resource reported was 20.01Mt @ 1.60g/t Au for 1.031Moz Au.

Chirano 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.

Chirano is a well-established, sizable mine. 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 by Asante.

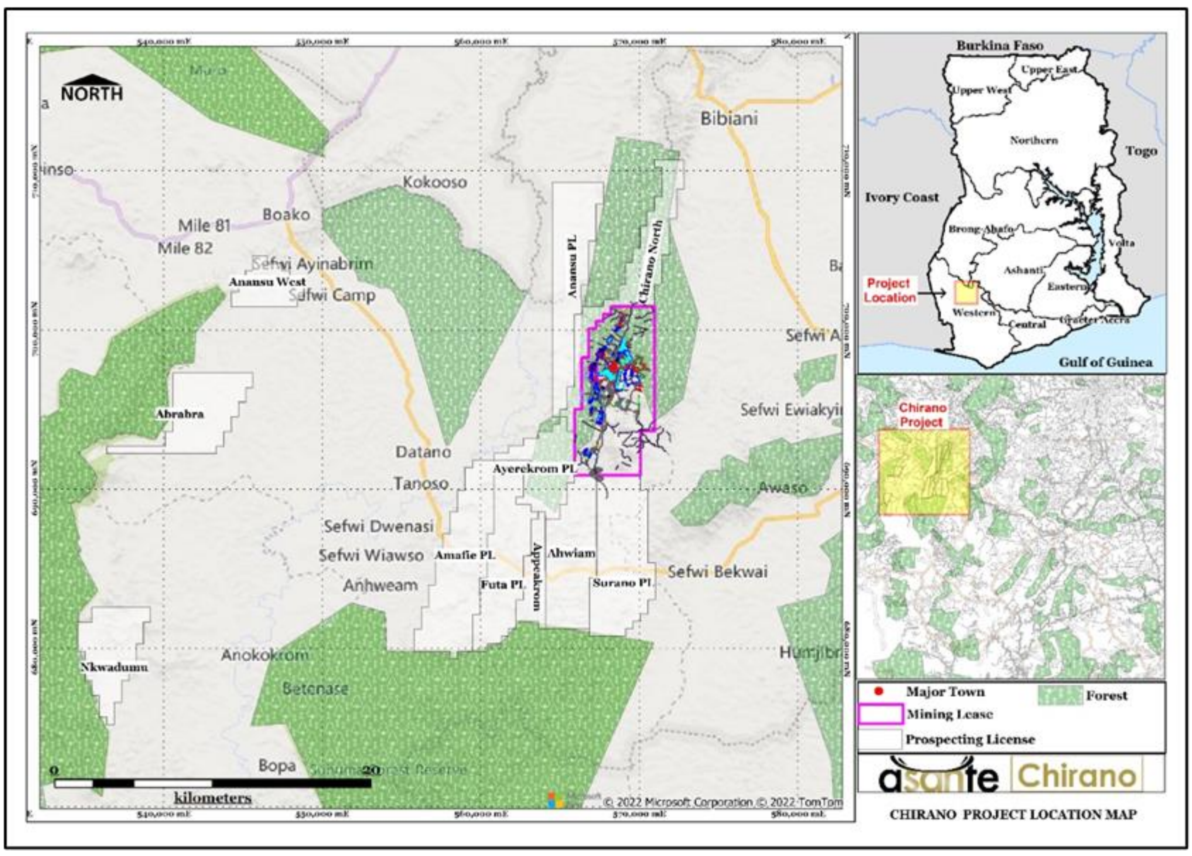


Figure 23-1: Position of Chirano in Relation to Bibiani Mine

(Source: MBGL 2023)

The gold deposit is located within the Bibiani gold belt and can be described as epigenetic mesothermal gold deposits demonstrating strong structural controls and a brittle structural style. Hosted in mafic volcanics and granites ranging from stacked veinlet systems, vein stockworks and breccias. Veins dominated by quartz. Deposits occur close to a major fault (Chirano Shear).

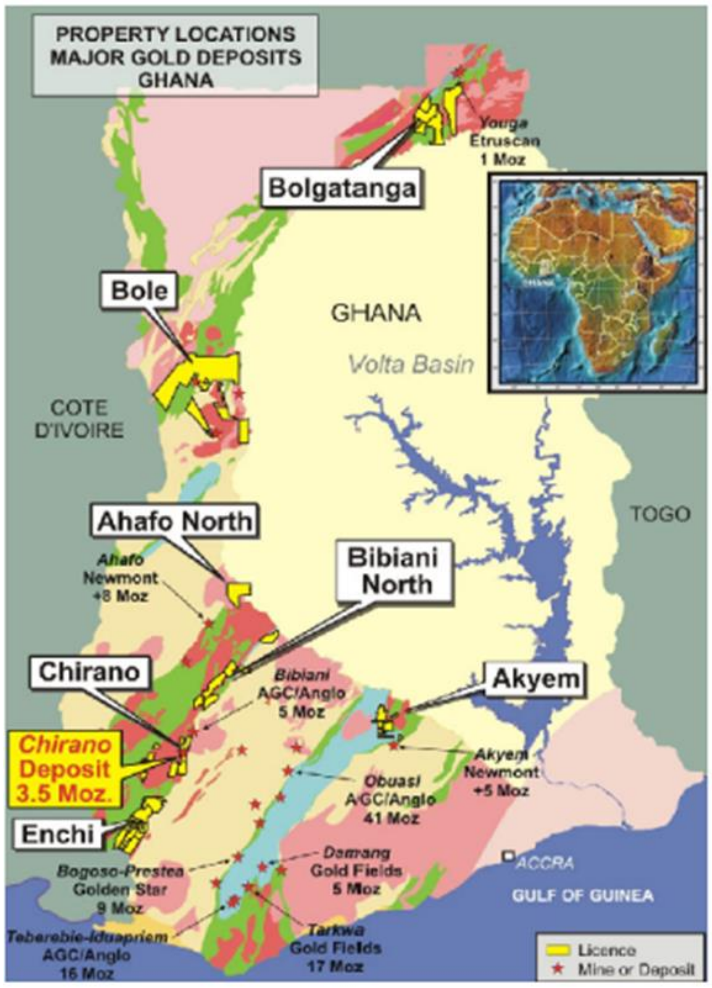


Figure 23-2: Position of Bibiani in Relation to Chirano Mine

(Source: Technical Report on the Chirano Gold Mine, 2009)

The Author has visited Chirano Mine and its related mineral deposits and can verify the information extracted from public sources. Properties adjacent to the Bibiani 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

Some of the Authors of this Bibiani Gold Mine NI 43-101 Technical Report were also involved in the compilation of the previous NI 43-101 Technical Report:" NI *43-101 Technical Report Bibiani Gold Project, Ghana, West Africa*" with Effective Date: 28 February 2022 and Issue Date: 31 May 2022. The authors are also concurrently updating the NI 43-101 Technical Report for the Chirano Gold Mines Limited sanctioned by Asante.

To the Authors knowledge there remains no other relevant data or information that would affect the readers understanding of the Bibiani Gold Mine that is not covered in the Technical Report.

24.2 Security

No further security measures are required over and above the current operations at the Bibiani site.

24.3 Logistics

Fully developed logistics and supply chain management processes and procedures are already in place at the Bibiani Gold Mine.

24.4 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

25. INTERPRETATIONS AND CONCLUSIONS

The Authors and QPs involved in the compilation of this Technical Report on the Bibiani Gold Mine have submitted inputs to the conclusion and recommendations relevant to their specific sections and pertaining to the visited operations. The Bibiani 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, 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 Bibiani 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 Bibiani Gold Mine holds the relevant mining lease, surface rights, major approvals and permits required for the ongoing mining operations.

25.2 Geology and Exploration

The Bibiani 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 planned underground operations and for 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.

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

It is the opinion of the QP that the adequacy of the sample preparation, security and analytical procedures for the Bibiani 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, being of acceptable accuracy and precision.

25.4 Mineral Resources

Mineral resources have been appropriately updated where additional drilling and sampling data has been completed. All mineral resources were estimated using similar rules for defining mineralisation domains, block model volume construction, variography and grade estimation. All mineral resources have been depleted for production as at the end of December 2023. Mineral resources have been classified according to CIM definitions and standards. RPEEE has been applied using Whittle open pit optimisation and Mine Shape Optimisation (MSO) for UG. Operational costs and parameters, and the forecast gold price were used to determine gold cut-off grades and the open pit and underground shapes used to define RPEEE.

25.5 Mineral Reserves

The change in mining strategy has resulted in the estimation of Mineral Reserves for both open pit and underground mining. Open pit and underground mine plans have been developed to at least prefeasibility level of detail and include only Measured and Indicated Mineral Resources. The mine plans have been reviewed by the QP for Mineral Reserves who is of the opinion that the mine plans adequately support the declaration of Mineral Resources in terms of CIM definitions and guidelines adopted as of May 2014 (CIM, 2014).

25.6 Mining Method

The open pit mining methods at Bibiani are well established and all relevant management and control processes and procedures are in place. The Life of Mine open pit plan includes the continuation of the current mining in the Bibiani Main pit and Grasshopper satellite pit as well as the future mining of the Russell open pit.

The underground mine plan for mining of the Strauss, Walsh and Main orebodies has been developed to prefeasibility level of detail. In future months this plan will be upgraded to definitive feasibility level of detail to support a more accurate capital and operating cost estimate.

25.7 Processing

The overall gold recovery differential is 2.9% for excluding the gravity extraction step from the test work flowsheet and is additional to the 89.1% average normalised overall gold recovery from the 2015 ALS variability test work. A sulphide ore treatment average overall gold recovery of 92.0% for the Main Pit ore is declared.

Since the startup of the plant in June 2022 the performance of the conventional CIL plant recovery shows that a >60% monthly Main Pit Ore Supply results in a 65% operations overall gold recovery. At <40% monthly Main Pit ore supply the operations overall gold recovery is 80%. The operations overall gold recoveries include a 35% gravity gold recovery.

A 60% blended mill feed of Main Pit North ore reduces the mill throughput rate to 200ktpm. The reduction in mill throughput rate to <200ktpm is the competency of the Main Pit fresh ore.

25.8 Environment, Permitting and Social

MGBL 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 2027. MGBL 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.

MGBL maintains and regularly updates its environmental and social baseline to enable efficient impacts assessments and mitigations.

MGBL 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.

The important issue still to be completed remains the Relocation Action Plan and the planned road diversion. Both are critical to the success of achieving the published LoM plan and longer-term strategic outcomes.

25.9 Infrastructure

The Bibiani Gold Mine is a well-established operation. All infrastructure is in place and is well maintained via the maintenance department.

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 (50%) and post-tax net present value, at a discount rate of 5%, of US$46 million.

26. RECOMMENDATIONS AND OPPORTUNITIES

26.1 Geology and Exploration

The technical review has shown MGBL is a viable operation but has a relatively short current LoM of eight years. To extend the LoM the emphasis must be on both mine-site and regional exploration. The fact that Asante now has both the Bibiani and Chirano 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.

Bibiani 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 15.18Mt at a grade of 2.36g/t Au for an additional 1.15Moz Au.

26.2 Sample Preparation, Analysis and Security

It is recommended that the process of field duplicate sampling be reviewed given the low repeatability being shown by analysis to date. In addition, QAQC failures, trends and bias issues identified over time and followed up should be documented in monthly QAQC reporting for follow up and resolutions documented in subsequent monthly QAQC reports as appropriate. SOP's where these are modified over time as appropriate should be appropriately date stamped with version control.

26.3 Mineral Resources

Mineral Resources have been defined using a combination of lithology and structure to interpret the orientation and continuity of gold mineralisation at the nominal geological cut-off of around 0.2 to 0.3g/t Au. This has resulted in the inclusion of sample intercepts below the nominal gold cut-off grade. These intercepts are considered internal dilution or internal waste zones, but in some case due to grade estimation smoothing, portions of these zones may exceed the MRE RPEEE reporting cut-off resulting in minor overestimation of tonnes and gold ounces. It is recommended that further work is completed to better define the mineralisation volume boundaries or to investigate non-linear grade estimation methods to reduce this potential overestimation due to grade smoothing.

A number of the deposits have good exploration targets for further expansion both at depth and laterally. The opportunity exists, with further drilling and sampling, to increase the mineral resource inventory.

26.4 Mining

The current mine plan for Bibiani includes the commencement of development of the underground mine in Quarter 2 of 2025. The detailed planning and front-end engineering for the underground mine underground mine must be prioritized in order to meet this timeline.

The current Life of Mine, based on the current Mineral Reserves, has a life of 8 years. A strategic mine plan, which includes inferred and unclassified exploration potential, has been developed by Asante which indicates that with future exploration to convert the inferred and unclassified material into Indicated Resources, the mine life can be extended to beyond 10 years, with at least 8 years of production approximately 250,000 oz per year. The drilling required to upgrade the inferred and exploration potential material into Indicated Resources to support an increase in Mineral Reserves and an extended mine life is imperative and must be prioritized. However, this drilling is most likely best undertaken from underground, so establishment of the underground mine is key to extending the life of Bibiani Gold Mine.

26.5 Processing

The size reduction in mill feed with secondary crushing fragmentation is required to increase the SAG milling rate or to revert to a coarser mill product size from P80 75µm to P80 106µm when the sulphide ore treatment circuit is in operation.

The Q4 2024 scheduled commissioning of sulphide ore treatment circuit is required to increase the overall gold recovery to 90% and with operational optimisation to >92% recovery.

26.6 Economic Analysis

All possible operational synergies with the neighbouring, Asante owned, Bibiani Gold Mine must be implemented.

26.7 Relocation Action Plan

The risk identified exists between the timing of resettlement and mining advance and may result in project delays. Therefore, the required resettlement of the Bibiani Zongo and Old Town communities is the project's most significant risk.

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, Mensin Gold Bibiani 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 Bibiani Gold Mine in October 2023 and again in November 2023.

e) Responsibilities

I am personally responsible for Sections 1-10, 20, 23-27 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, Mensin Gold Bibiani 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 Bibiani Gold Project in November 2023.

e) Responsibilities

I am responsible for Section 15-16, 18-19, 21-22 NI43-101 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

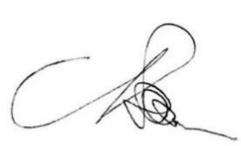
I have been involved with Asante Gold Corporation previously in the compilation of the previous NI 43-101 Technical Reports for the Kubi Gold Project, the Bibiani Gold Project and the Chirano Gold Project, Ghana, West Africa. Therefore, I have had prior involvement in the Project that is the subject 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, Mensin Gold Bibiani 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 Essase, Obitan, 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 Bibiani 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 and Section 17.

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 & Principal Consultant, Bara Consulting UK Limited.

b) Title And Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Mensin Gold Bibiani 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 Bibiani Gold Project that is the subject of this Technical Report, in October 2023.

e) Responsibilities

I am responsible for Sections 11-12 of this NI43-101 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 & Principal Consultant, Maja Mining Limited.

b) Title And Effective Date of Technical Report

NI 43-101 Technical Report and Updated Mineral Resource Estimate, Mensin Gold Bibiani 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 Bibiani Gold Project that is the subject of this Technical Report, in 2022.

e) Responsibilities

I am responsible for Section 14 of this NI43-101 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

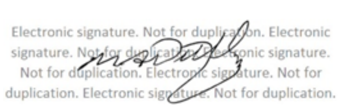
I was involved with Asante Gold Corporation on the Chirano Gold Project during 2022 conducting mineral resource estimation reviews and training, including implementation of business improvement initiatives.

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 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 7.3.9.1

"*Feasibility Study Report, Chirano Gold Mine Limited, Ghana, West Africa; Chirano North, Aboduabo Project; Application for Mining Lease, PL2/56."*

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.*

Items 10 and 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

Items 11 and 12

MGBL Drilling and Sampling Procedures, 2023

MGBL, QAQC Monthly Summary Reports (April 2022 – August 2023)

Rpt007 Structural geology model of the Bibiani goldfield, 2022

Technical-Report-NI-43-101-Bibiani-Gold-Mine-Ghana-West-Africa-Sept.1-2022

Main Pit Litho-Structural Model presentation 2022

02.01.01.01.01 Appendix 1 - Optiro Bibiani – 2017 Updated Mineral Resource Estimate

MGBL Operating Procedure – Database QAQC, 2023

MGBL Operating Procedure – DD Logging & Sampling, 2023

MGBL Operating Procedure – Density Measurement, 2023

MGBL Operating Procedure – Sampling & QAQC Protocols, 2023

Item 16

Nickson (1992) and Potvin (1998) – *Amalgamated Case Histories of Stope Stability.*

Item 18

Knight Piesold Consulting *memorandum* on 11 November 2023 to Asante Gold Corporation. Item 18.13

Item 26

Noble Gold Bibiani Ltd. Bibiani Gold Mine. *Report on the Estimation of the Mineral Resources of Levee 6 & 7 Tailing Dams.*