AMC Consultants (UK) Limited
Registered in England and Wales - Company No 3688365

Level 7, Nicholsons House
Nicholsons Walk, Maidenhead
Berkshire SL6 1LD
UNITED KINGDOM

T +44 1628 778 256
F +44 1628 638 956
E amcmaidenhead@amcconsultants.com
W amcconsultants.com

Report

Ndablama and Weaju Gold Projects
Bea Mountain Mining Licence, Northern Block
Technical Report on Mineral Resources

Aureus Mining Inc.

Liberia, West Africa

In accordance with the requirements of National Instrument 43-101 “Standards of Disclosure for Mineral Projects” of the Canadian Securities Administrators

Qualified Persons:

Christopher G Arnold, MAusIMM (CP)

Glenn Bezuidenhout, NDT Ex. Met, FSAIMM

AMC Project 413027
Effective date 11 November 2013

Contents

Tables

Figures

Distribution list

1 e-copy to
1 e-copy to AMC Ndablama and Weaju office

1 Summary

This technical report ("Technical Report" or "Report") on the Bea Mountain Mining Licence, Northern Block, in the north-western region of the Republic of Liberia, has been prepared by AMC Consultants (UK) Limited ("AMC") of Maidenhead, UK, for Aureus Mining Inc. ("Aureus") of Toronto, Canada. The report has been prepared in accordance with the requirements of National Instrument 43-101 ("NI 43-101"), "Standards of Disclosure for Mineral Projects", of the Canadian Securities Administrators ("CSA") for lodgement on the CSA's "System for Electronic Document Analysis and Retrieval" ("SEDAR"). This report is required to support an initial estimation of Mineral Resources for the Ndablama and Weaju Gold Projects (the Projects), as announced by Aureus in a press release issued on November 11, 2013.

The Projects are located within the Bea Mountain Mineral Development Agreement ("Bea-MDA") property, in Grand Cape Mount County in the north-western portion of the Republic of Liberia, approximately 90 km north-west of the capital, Monrovia. From the capital there is approximately 90 km of paved road to the town of Tubmanburg and then 40 km of laterite road to the Projects. Road access is all year round. The property occupies a lowland area of tropical forest with thick undergrowth, cut by two prominent east–west ridges of resistant rock units (the Bea Mountain and Tokani ranges). Elevations in the area of the Projects range between 40 m and 80 m above mean sea level.

The Republic of Liberia is situated on the coast along the south-west corner of West Africa, bordered by Sierra Leone, Guinea and Cote d'Ivoire. Since the end of the civil war in 2003, Liberia has experienced a period of reform and reconstruction under President Ellen Johnson Sirleaf.

Aureus, through its ownership of the Bea Mountain Mining Corporation ("BEA) has a 100% interest in the Bea-MDA. The Bea-MDA property covers an area of 457 km² and the agreement has an initial and renewable term of 25 years. In July 2009 BEA was granted a Class A Mining Licence for the whole area, subject to an annual licence fee of US$ 90,146. Under the terms of the Bea-MDA the Republic of Liberia is entitled to receive, free of charge, an equity interest on BEA's operations equal to 10% of its authorized and outstanding share capital without dilution (i.e. a 10% "carried interest"). There is also a 3% royalty, calculated on a production basis, payable to the Republic of Liberia in the Bea-MDA licence area.

BEA has a 100% interest in the Bea-MDA, which was originally signed with the Liberian Government in November 2001. In September 2013, an amended and restated MDA was signed with the Government with a remaining term of 13 years and the right to extend for an additional 25-year term. The Ndablama and Weaju projects are located within the Northern Block of the Bea-MDA licence, separated from the Southern Block by a line that traces the EW-trending Silver Hills range.

To the best of AMC's knowledge, the area has only had limited surface artisanal workings, small-scale historical mining at Weaju, and has no historical environmental issues.

Liberia is geologically traversed by the Man Shield, which in turn lies within the West African Craton, and hosts rocks dating from 3.0-2.5 Ga. The Projects are located within an area characterized by Archean-age greenstone belts (metamorphosed mafic and ultramafic rocks, bounded by granitic gneiss).

The general geology of Ndablama consists of mafics, in the form of amphibolite schists and gneisses, and ultramafic rocks, represented by magnetite-rich and magnetite-poor zones. Ndablama lies on the western edge of a shallow westerly-dipping shear, in a pressure shadow area of the Ndablama batholith to the east. Gold mineralization is related to shear deformation which follows the granite-metavolcanic contact zone

The lithological sequence at Weaju is similar to that of Ndablama; however the sequence starts in the ultramafic rocks which contain thin beds of more amphibolitic material, intercalated with the ultramafics. Weaju is hosted in a synformal fold, which plunges shallowly to the south-west. Gold mineralization is found on both limbs of the fold, and is hosted in the sheared ultramafic, and occasionally within the sheared contacts with amphibolite.

The primary targets of Aureus's mineral exploration programme in Liberia are shear zone-hosted gold. In addition to the Ndablama and Weaju deposits, there are three other identified localities on the Bea-MDA licence Northern Block which are currently undergoing exploration. These are Gondoja, Gbalidee and Koinja, which, along with Ndablama and Weaju have similar geological characteristics to the New Liberty project in the adjacent southern block of the Bea-MDA property. Ndablama, Gondoja, Gbalidee and Koinja are located within a regional structural corridor. Drilling to date has been carried out on Ndablama, Weaju, Gondoja and Gbalidee.

Exploration activity at the Projects dates from mapping in 1999 at Weaju, accompanied by soil geochemistry programmes, trenching and two drillholes. Activities were prolonged due to stoppages associated with instability during the Liberian civil conflict. Inspired by pockets of artisanal mining activity, exploration work at Ndablama was initiated with channel sampling in 2007, followed by a soil sampling programme and two trenching campaigns between 2009 and 2011. Other surveys included satellite imagery, aerial photography and airborne and ground geophysics.

Since 2010 drilling at Ndablama has been conducted in three campaigns, during which a total of 54 diamond drillholes have been completed for 8,337 m. At Weaju, five campaigns have been completed, with the first 14 holes drilled up to 2000, a further 34 in 2005 and the remaining 81 being completed in 2012–2013.

Drilling at the Projects has been carried out using contracted diamond coring drill rigs, with holes at Ndablama mostly drilled to the east and typically inclined at between 55° and 60°. Drilling at Weaju has been at a variety of orientations, with the aim of intersecting the plane of the mineralization on each limb of the fold structure.

Core recovery is typically over 90%, with higher losses in oxide material. Downhole surveys are carried out on the majority the holes, though intermittently in the early campaigns. Full re-surveys of drillhole collar coordinates were carried out in 2010 and 2011.

Quality assurance protocols have passed through several cycles, with various consultants contributing to the present status. QA/QC protocols were not very rigorous in the Weaju drilling from Campaign 1 through 3 (1999–2000) and simply involved the sparing use of core duplicates. Certified reference materials (CRMs) were first utilized at Weaju from drilling Campaign 4 and onward (2005). Improved QA/QC procedures were implemented at Weaju during drilling Campaign 5 (2012-2013) and at Ndablama from drilling Campaigns 1 through 3 (2010-2013).

Sample preparation, analytical techniques and QA/QC procedures for the Ndablama Campaign 1 were not available for AMC to review. Discussions apply to the drilling programme completed by Aureus, (Campaign 3, 2013). Similarly, sample preparation, analytical techniques, and QA/QC procedures for the Weaju project for drilling Campaigns 1 through 4 (1999 to 2005) are not available for review, and comments apply to the drilling programme completed by Aureus (Campaign 5, 2012-2013).

The primary laboratory for the projects is the SGS Monrovia laboratory, located in Monrovia, Liberia. The laboratory performs sample preparation and gold assaying of drill core and trench samples. While the laboratory is not certified for ISO/IEC 17025:2005 for gold assaying, the laboratory is working towards this certification. The laboratory participates in internal SGS internal audits aimed at ensuring that all SGS laboratories operate to the same standard.

Control samples submitted by Aureus for the Ndablama and Weaju projects comprise checks on assay accuracy only, and in the case umpire samples may not be representative of the project assay data because of limited data or limited representation of drillholes for the projects. Quality control samples to monitor the reproducibility of assay from the SGS Monrovia laboratory are not submitted or not submitted in a regular frequency in the sample streams for the Ndablama and Weaju projects.

AMC validated the assay databases for the Ndablama and Weaju projects by comparing randomly selected assay values and compared them with laboratory assay certificates in PDF format. AMC completed a site visit to the SGS Monrovia assay laboratory.

Sampling and sample preparation and analytical procedures used by Aureus for both the Ndablama and Weaju projects follow generally accepted practices for the mining industry.

Based on the above observations of data collection and preparation activities in the field, and a site visit to the primary assay laboratory for the two projects, AMC considers the drillhole database for the Ndablama and Weaju projects to be sufficiently reliable for the purpose of Mineral Resource estimation at the current level of study.

At the request of Aureus Mining Inc., DRA scoped and managed scouting testwork on the Ndablama and Weaju orebodies, with the objective of assessing the metallurgical responses of both oxide and sulphide material to a gravity/leach treatment route.

Testwork for Ndablama was conducted at ALS Laboratories in Perth (ALS), and limited to assessing the amenability of the ore to cyanidation.

Representative samples of oxide and sulphide material were selected by Aureus geologists and dispatched to ALS. Bulk composites of oxide and sulphide material were constructed giving average head grades of 0.91 g/t and 2.21 g/t for the oxide and sulphide material respectively.

Two leach tests incorporating gravity recovery stages were conducted on each bulk composite. Both the oxide and sulphide material are deemed to be amenable to cyanidation, with average residue grades of 0.08 g/t and 0.14 g/t obtained for oxide and sulphide material respectively. This returned overall gold recoveries ranging between 92% and 94% for the oxide and sulphide material, from composite head assay grades of 0.91 g/t and 2.21 g/t respectively. Recoveries may vary according to head grades and it is recommended that further variability leaches be conducted to assess gold recovery variation across the orebody.

Additionally, the sulphide material in particular returned a gravity recovery of 70% which could be exploited to positive effect in the process plant design.

As the Weaju testwork, also conducted at ALS, was preliminary, only aspects of the gravity/leach circuit regarded as key to the success of the process were investigated. These included the grindability of the sulphide material and the leachability of both the sulphide and oxide material.

The Weaju sulphide ore gave a Bond BWi of 16.7 kwh/t, and no problems are foreseen with achieving a primary grind of p80 75 microns, as well as a regrind of p80 45 microns, should this be required.

Both the Weaju oxide and sulphide composites, as supplied and tested, are deemed to be amenable to gravity recovery and cyanidation. Gravity recoveries ranging from 39% to 48% were obtained for the oxide composite. For the sulphide composite, gravity recoveries between 40% and 48% were obtained.

For the oxide composite, residue gold grades ranging between 0.05 g/t to 0.21 g/t, giving recoveries between 92% and 98%, depending on the head grade, were obtained across all cyanidation tests conducted. There is some potential for OpEx savings by employing a primary grind only, of p80 75 microns, for the oxide material.

For the sulphide composite, residue gold grades ranging between 0.55 g/t to 0.31 g/t, giving recoveries between 89% and 93%, depending on the head grade, were obtained across all cyanidation tests conducted. An acidic pre-oxidation stage, in addition to a lime pre-oxidation stage, was required to obtain a 0.31 g/t residue on the sulphide composite.

The mineral resource estimation work for the Ndablama and Weaju deposits has been based on interpretations from integrated geological and grade information recorded from diamond core logging and assaying. For the Ndablama project a wireframe mineralization shell was developed on the basis of a nominal 0.1 g/t threshold based on a structural interpretation of the mineralized shear zone. Only diamond drilling gold assays were used in this procedure. Two wireframe shells were developed for the Ndablama project and were sub-domained into weathered and fresh rock sub zones.

Mineralization at Weaju is associated with a synformal structure with an axial trace trending south-west with a shallow plunge. Mineralization is related but not confined to ultramafic units. However, significant amounts of gneissic rock are intercalated with the mineralized zones. Therefore mineralization is most appropriately modelled using gold grade shells and interpreted structural trends. Based on a nominal 0.3 g/t gold threshold, 10 mineralized zones were developed for Weaju. Only diamond drill gold assays were used in this procedure. These domains were further sub-domained into weathered and fresh rock for a total of 18 domains.

Assay intervals within the mineralized zones were coded according to sub domains and composited to provide common support for statistical analysis and estimation. For the Ndablama project, samples were composited to 1 m intervals, while for Weaju samples were composited to 2 m. Ndablama composite gold grades were not capped, whereas for Weaju, composite gold grades at 6 out of 18 domains were capped.

Statistical observations for the Ndablama project, and visualization of mineralization characteristics were used to guide the selection of grade estimation technique. Ordinary kriging was considered, however, given the diffuse nature of the grade boundaries, the presence of legitimate extremely high-grade values within the mineralization domains and the likely targeted mining selectivity, the non-linear grade estimation technique, multiple indicator kriging (MIK) was adopted. For the main (MS01) domain, 19 indicators thresholds were used to discretize all sample metal values.

The primary Ndablama block model consisted of 20 m by 20 m by 10 m blocks (easting, northing and elevation directions) is used for the MIK estimate. A separate SMU model for localization of the MIK estimate was developed on 5 m by 5 m by 5 m blocks.

Ndablama indicator variograms for the MS01 domain were modelled using traditional variograms. Indicator variograms for the secondary (MS02) zone were not readable, and therefore MS01 indicator variograms were assumed for this domain. Gold variograms were used to determine change of support correction factors, as required for the MIK estimation.

Gold grades for the Ndablama project were estimated into MS01 and MS02 domains using an MIK estimator, followed by change of support correction using an indirect lognormal/affine approach. Hard boundaries were used for estimating the two domains. The MIK estimate was post-processed to produce a localized set of SMU-size block grade estimates. Gold grades from weathered or fresh rock domains were not differentiated in this process. Block density values were estimated using an inverse distance squared estimator, with hard boundaries between individual mineralization zones and weathered zones.

The Weaju estimate is based on a 10 m by 10 m by 10 m parent cell model, with sub-cells along boundary surfaces. For Weaju, ordinary kriging was considered an appropriate estimator, as the mineralization is confined to veins with relatively well-defined grade boundaries.

Weaju variograms were modelled using Gaussian transforms of gold composite data. Since only three variogram models were readable, these variogram models were assumed for the other domains.

Gold grades were estimated by ordinary kriging into the 18 Weaju domains, using hard boundaries. Average sample bulk density values for each domain were assigned model blocks according to the corresponding domain.

Procedures for classifying the estimated mineral resources were undertaken within the context of CIM Standards on Mineral Resources and Reserves. Estimated tonnages and grades have been classified with consideration of the following criteria:

- Quality and reliability of raw data (sampling, assaying, surveying).
- Confidence in the geological interpretation.
- Number, spacing and orientation of intercepts through mineralized zones.
- Knowledge of grade continuities gained from observations and geostatistical analyses.
- The likelihood of defined material meeting economic mining constraints over a range of reasonable future scenarios, and expectations of relatively low selectivity of mining.

In the case of Ndablama, the relatively simple geometry of the broad interpreted 0.1 g/t Au mineralized shells masks poor short range intersection correlations at likely economic cut-off grades. The current overall drill spacing is considered to be only sufficient for the Ndablama tonnage and grade estimates to be classified at the Inferred category.

Similarly, the Weaju tonnes and grades estimates have been assigned a classification level of inferred. In this case the initial pattern of drilling intersections is diminished by the exclusion of 14 low confidence early holes and the need to partition the intersections into multiple mineralized domains and the two weathered zones. The level of confidence is further constrained by the interpretive geology and variable statistical characteristics of the mineralization.

The Ndablama and Weaju resource estimates were prepared by AMC Consultants (UK) Limited (AMC) in accordance with the requirements of National Instrument 43-101 "Standards of Disclosure for Mineral Projects", of the Canadian Securities Administrators (NI-43-101). The Mineral Resource Statement for the two deposits consists of an Inferred Mineral Resource estimate of 451,000 ounces at 2.1 g/t Au using a 0.5 g/t cut-off for the Ndablama deposit, and an Inferred Mineral Resource estimate of 178,000 ounces at 2.1 g/t Au using a 1.0 g/t cut-off for the Weaju deposit. The Mineral Resource Statement for the deposits is presented in Table 1.1.

Table 1.1 Resource Statements for the Ndablama and Weaju Gold Deposits, Liberia. AMC Consultants (UK) Limited, November 11 2013.

Deposit	Cut-off grade (g/t Au)	Classification	Quantity	Au	
			(Kt)	(g/t)	(Koz)
Ndablama	0.5	Inferred	6,829	2.1	451
Weaju	1.0	Inferred	2,680	2.1	178

[1] Mineral Resources for the Ndablama deposit are reported at a cut-off grade of 0.5 g/t Au and for the Weaju deposit at 1.0 g/t Au.

[2] The effective date of the Ndablama and Weaju gold deposit mineral resource estimates is 11 November 2013.

[3] Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.

[4] The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as indicated and measured mineral resources.

[5] Totals and average grades are subject to rounding to the appropriate precision.

The Ndablama and Weaju orogenic lode gold deposits have been defined as a result of a systematic sequence of exploration activities, from regional stream sediment sampling, soil geochemistry surveys, geological mapping, trench sampling and airborne magnetic gradient and gamma-ray spectrometer geophysical surveys, and structural interpretation and diamond core drilling. Exploration work for the project has been professionally managed using procedures that meet generally-accepted industry best practice. Preliminary metallurgical testwork has been completed on both deposits.

Mineral resources for the Ndablama deposit are based on gold mineralization related to a shear zone developed in the pressure shadow of the Ndablama batholith. The shear trends approximately north–south with a moderate dip of 35° to the south. Mineralization within this within shear zone contains discontinuous higher grade gold trends and is best estimated using a multiple indicator approach to grade estimation within a mineralization envelope.

Mineral resources for the Weaju deposit are based on gold mineralization related to a synformal fold structure with an axial trace trending shallowly to the south-west. Three major zones for the deposit have been identified as the northern limb of the fold, the nose of the fold, and the southern limb. Resources for this constrained style of mineralization were estimated using ordinary kriging.

The exploration procedures and protocols used by Aureus are appropriate to the current level of study for the project. Mineral resources for both projects can be potentially increased with drilling campaigns by exploring extensions to the identified mineralization and infill drilling of defined mineral resources.

AMC recommends that protocols for recording core recovery should be reviewed. The Aureus QA/QC procedures can be improved by targeting a regular submission frequency of 10% for each type quality control sample. It is also recommended that quality control samples to monitor the reproducibility of assays are submitted comprising duplicate pulp and coarse reject samples. Pulp duplicates need to be submitted as part of the umpire sample quality control protocol.

AMC recommends that the exploration drilling is focused on extending possible mineralization at depth for both Weaju and Ndablama projects, to the north for the main mineralization trend for the Ndablama project and to the west and south-west of synformal limbs for the Weaju project. This campaign should be followed by an infill drilling programme for both Ndablama and Weaju projects. The total cost of this exploration programme is estimated at 4.5 million US dollars.

2 Introduction

This technical report ("Technical Report" or "Report") on the Ndablama and Weaju gold projects (the Projects) within the Bea Mountain Mineral Development Agreement ("Bea-MDA") property in Liberia, West Africa, has been compiled by AMC Consultants (UK) Limited ("AMC") of Maidenhead, UK, for Aureus Mining Inc. ("Aureus"). Aureus, through its ownership of Bea Mountain Mining Corporation ("BEA") has a 100% interest in the Bea-MDA, in which the Ndablama and Weaju gold projects are located.

The work covered in this report relates to exploration, drilling, metallurgical testwork, and Mineral Resource estimation undertaken within Bea Mountain Mining Licence, Northern Block in the period 1999 through to 11 November 2013.

This report has been prepared in accordance with the requirements of National Instrument 43-101 (NI 43-101), "Standards of Disclosure for Mineral Projects", of the Canadian Securities Administrators ("CSA") for lodgement on the CSA's "System for Electronic Document Analysis and Retrieval" ("SEDAR"). This report is required to support estimation of Mineral Resources for the Ndablama and Weaju deposits, and a Mineral Resource statement as announced by Aureus in a press release issued on 14 November 2013.

This content of this report has been prepared by Chris Arnold, MAusIMM (CP), and Glenn Bezuidenhout, FSAIMM, both of whom meet the requirements of a Qualified Person, and are independent as defined in NI 43-101.

In 2009 and 2011, Chris Arnold visited the Aureus exploration and development site at the New Liberty Gold Mine, located on the adjacent, southern, portion of the Bea-MDA property, and on the second visit also inspected the sample preparation facility, located in Monrovia. Between 17 September 2013 and 21 September 2013, David Boakye, Senior Geologist, of AMC, visited the camp from which exploration activities relating to the Ndablama and Weaju projects are conducted. David carried out ground inspections of exploration activities, including drilling, sampling, core logging, core cutting and site data management.

On 29 November 2012, Glenn Bezuidenhout visited Aureus operations on the adjacent Bea Mountain Mining Licence Southern Block.

3 Reliance on other experts

With respect to the Mineral Development Agreement between The Republic of Liberia and Bea Mountain Mining Corporation (Section 4 of this report), AMC has relied on copies of documents provided by Aureus that confirm the terms of the Agreement.

With respect to the granting of a Class A Mining Licence to Bea Mountain Mining Corporation (Section 4 of this report), AMC has relied on copies of a document provided by Aureus that confirm the terms of the Licence.

Most of the factual text for this Technical Report covering Items 4–11 was prepared by Aureus and provided to AMC for review. Aureus also supplied supporting technical documents which AMC has used to verify this data where practical.

AMC has compiled this report from contributions by the individuals listed in Table 3.1.

Table 3.1 Qualified Persons responsible for report

Qualified Person	Position	Employer	Independent of Issuer?	Professional Designation	Sections of Report
Christopher G Arnold	Principal Geologist	AMC Consultants (UK) Limited	Yes	MAusIMM (CP)	All sections apart from Section 13.
Glenn Bezuidenhout	Process Director	DRA Mineral Projects	Yes	FSAIMM	Section 13, parts of Sections 1, 17 and 18.

4 Property description and location

The BEA-MDA property is located within The Republic of Liberia, which is situated on the coast of the south-west corner of West Africa and bordered by Sierra Leone, Guinea and Cote d'Ivoire. The country lies between longitude 7°30' and 11°30' west, latitude 4°18' and 8°30' north, and covers a surface area of 111,369 km². Liberia's capital is Monrovia and, as of the 2008 Census, had a population of 3,476,600.

4.1 Location

The Bea-MDA property is situated 90 km north-west of the capital in Grand Cape Mount County, in the north-western portion of Liberia, approximately longitude 11° west, 7° north, as shown in Figure 4.1. The projects are situated within the Bea-MDA property, the UTM coordinates of which are shown in Table 4.1.

Figure 4.1 Location of the Bea-MDA property in Liberia

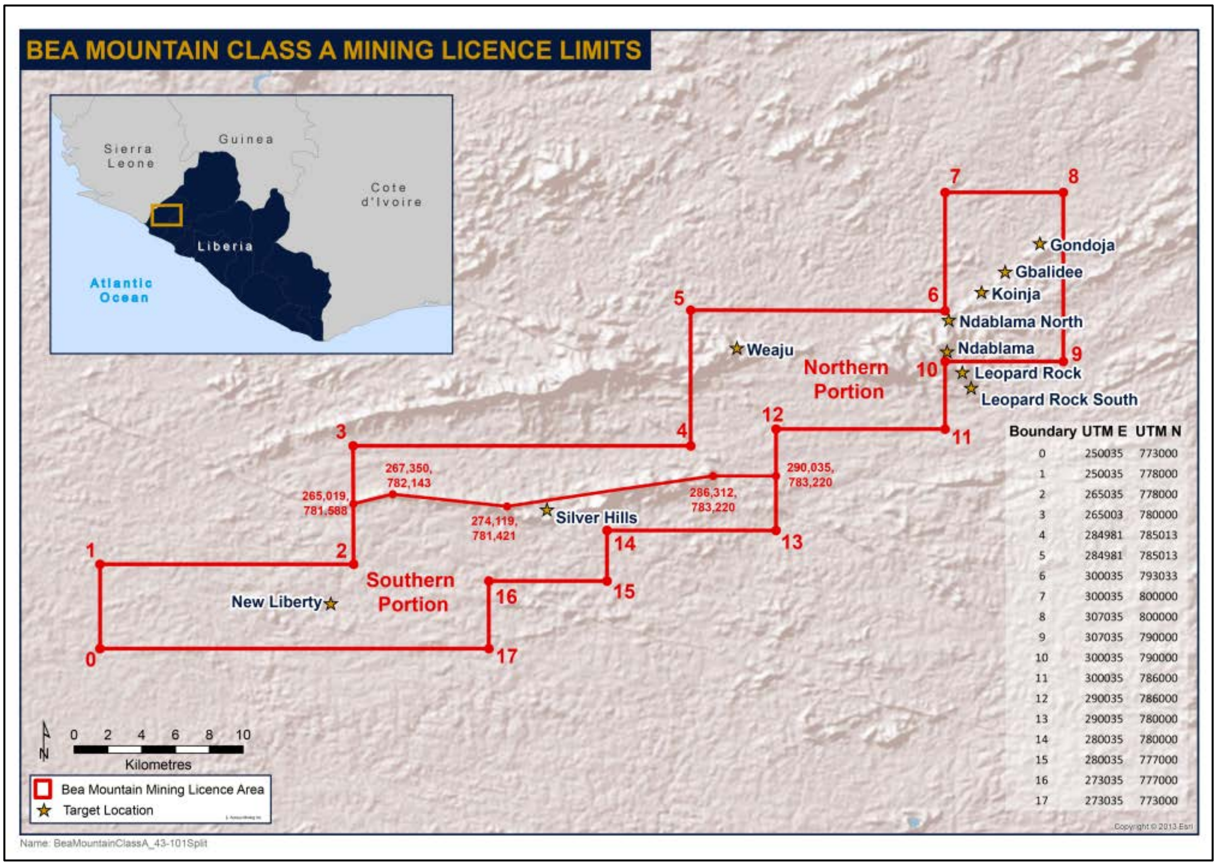
4.2 Property Description

The Bea-MDA property covers an area of 457 km² with boundaries described by cadastral and cartographic survey in maps at the Ministry of Lands, Mines and Energy Republic of Liberia. The projects are shown in Figure 4.2, along with the New Liberty Gold Mine development site and other targets, which are currently the subject of exploration. The Bea-MDA property, which is covered by a Class A mining licence, has been reduced from a prior exploration lease which covered a total of 1,000 km².

This report relates to the Northern Block of the BEA-MDA property, the boundaries of which are illustrated in Figure 4.2. The Northern Block boundary with the adjacent Southern Block coincides with Silver Hills Mountains, trend EW and form a natural barrier between the blocks.

The UTM coordinates of the boundary between the blocks of the BEA-MDA property are as follows: 265019E, 781588N; 267350E, 782143N; 286312E,783220N and 290035E, 783220N.

Figure 4.2 BEA Class A mining licence limits



Source: *Aureus, 2013*

Table 4.1 WGS84 UTM Zone 29 N vertices of the Class A mining licence

Boundary	UTM E	UTM N
0	250035	773000
1	250035	778000
2	265035	778000
3	265003	778000
4	284981	785013
5	284981	785013
6	300035	793033
7	300035	800000
8	307035	800000
9	307035	790000
10	300035	790000
11	300035	786000
12	290035	786000
13	290035	780000
14	280035	780000
15	280035	777000
16	273035	777000
17	273035	773000

4.3 Ownership

BEA has a 100% interest in the current Bea-MDA, which was signed with the Liberian Government in November 2001. BEA is a wholly-owned subsidiary of Aureus. The MDA was amended and restated by the Government in September 2013, with a remaining term of 13 years and the right to extend for an additional 25-year term. BEA was previously a wholly-owned subsidiary of African Aura Mining Inc. (African Aura), formerly called Mano River Resources Inc. On April 13, 2011 African Aura completed a Plan of Arrangement ("Arrangement") under the Business Corporations Act (British Columbia) pursuant to which it transferred its gold assets, 30,792,770 shares in Stellar Diamonds and US$10.6 million cash (the "Transferred Assets") to Aureus and African Aura was renamed Afferro Mining Inc.

Under the Arrangement, among other things, the Transferred Assets were acquired by Aureus and each participating shareholder received new common shares in Afferro and Aureus in exchange for the African Aura common shares held by such shareholder, on the basis of one new Afferro common share and one Aureus common share for each African Aura common share held by such shareholder.

Table 4.2 summarizes the ownership history.

Table 4.2 Ownership history

Date	Company	Comments
August 1995	KAFCO	Assigned rights in area to Golden Limbo
18 November 1996	Golden Limbo	Assigned rights to BEA
22 November 1996	BEA	Approval received
22 April 1998	BEA	Bea-MDA defined as 1000 km^2
28 November 2001	BEA	Bea-MDA reduction to 457 km^2 came into effect
29 July 2009	BEA	Granted a Class A Mining Licence

In July 2012, the company reached an agreement for the acquisition of certain legacy mining rights from Weajue Hill Mining Corporation (WHMC). These legacy mining rights were situated in the Weaju area, covering only 1.7 km^2 of the total 457 km^2 Bea Mountain Class A Mining Licence. As a part of the transaction, WHMC agreed to release all claims pertaining to the legacy mining rights. The Government of Liberia has attested to and endorsed the agreement.

4.4 Title

The mineral exploration and exploitation rights defined by the Bea-MDA originally became effective on April 22, 1998. Previously the ground was held by a Liberian entity known as KAFCO. In August 1995 KAFCO received government approval to assign its rights to the licence to Golden Limbo Rock Liberia Ltd (Golden Limbo). On 18 November 1996, Golden Limbo assigned its rights to the licence to BEA which was subsequently approved by the government on 22 November 1996. In April 1998, in anticipation of a new Mining Code, BEA replaced the existing licence and assignment, and entered into a specially-negotiated Exploration Agreement. Upon ratification of the new Mining Code in 2000, BEA, in keeping with the new law, reduced the size (acreage) of the licence and entered into the present governing Agreement. The Bea-MDA came into effect on 28 November 2001 and has an initial term of 25 years, which may be extended for successive 25-year terms.

Under the terms of the Bea-MDA, there is a 3% royalty to the Republic of Liberia calculated on a production basis. In addition, the Republic of Liberia is entitled to receive, free of charge, an equity interest on BEA's operations equal to 10% of its authorized and outstanding share capital without dilution (i.e. a 10% "carried interest"). African Aura through its subsidiary was required to pay the Republic of Liberia US$0.08 per acre per year as a rental fee for the Exploration Licence. Due to the civil unrest in the country, the Ministry of Land, Mines, and Energy suspended the exploration period as from July 2002 until 4 January 2005.

During the initial term of the Bea-MDA, BEA was required to make minimum exploration expenditures of US$1.40 per acre per year. Excess expenditures in a given year can be credited against succeeding years work requirements. The Bea-MDA provides BEA the right to free access to public land and will assist BEA in cases where access to private lands is necessary. Prior to the commencement of exploitation and production BEA is required to provide an Environmental Impact Statement to the Minister, detailing any adverse effects operations may have on the environment and review plans to mitigate such effects. From time to time BEA is required to submit detailed plans “for the protection, correction and restoration of the water, land and the atmosphere”.

BEA was granted a Class A Mining Licence (the Licence) on July 29, 2009. Annual licence fees for the Licence, based on the production area of 457 km² (“the Production Area”), amounts to US$0.80 per acre, which equates to US$90,146 per annum (1 km² = 247.1 acres). The Licence for the Production Area selected by the operator of the Project shall remain valid and effective for the unexpired portion of the Bea-MDA and any extensions thereof. The Licence allows BEA to commercially exploit minerals found in the Production Area and all other activities incidental thereto, including the design, construction, installation, fabrication, operation, maintenance and repair of infrastructure, facilities and equipment and the mining, excavation, extraction, recovery, handling, beneficiation, processing, milling, stockpiling, transportation, export and sale of minerals.

In order to maintain the Licence, BEA is required to demonstrate proven mineral reserves.

BEA will need to apply for and acquire normal operating licences and permits for the mining operation, including licences associated with explosive storage and use, abstraction and discharge of water and construction.

4.5 Environmental

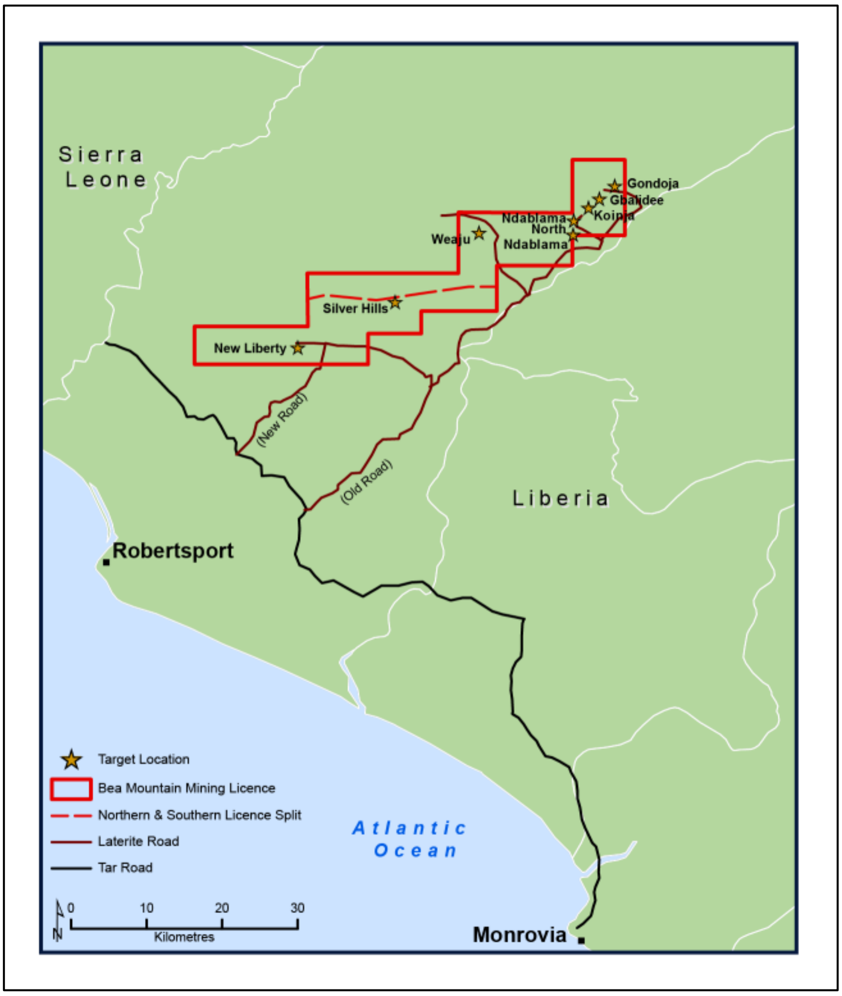
To the extent known, the area has had only limited surface artisanal workings, small-scale historical mining at Weaju, and has no historical environmental issues.

5 Accessibility, climate, local resources, infrastructure and physiography

5.1 Accessibility

The Ndablama and Weaju projects are accessible from Monrovia by vehicle, with approximately 90 km of paved road to the town of Tubmanburg. A further laterite road, which forks after Lofa Bridge provides access to the projects, with a north-east section proceeding to Ndablama and a north-west section to Weaju. The laterite road to both Ndablama and Weaju are approximately 40 km long. Secondary roads on the licence, built by Aureus, provide access across the property (Figure 5.1). The sandy nature of the roads allows all year round access, including during the height of the rainy season.

Figure 5.1 Road access to the project



5.2 Physiography

Within the Bea-MDA property are both primary and secondary forest, as well as some grassland and farmland. The topography ranges from around 50 m above mean sea level (AMSL) to a maximum of 600 m AMSL, with the majority of the licence area being composed of gently undulating plains at less than 200 m AMSL, with two prominent east-west ridges of resistant rock units (the Bea Mountain and Tokani ranges). Vegetation consists of tropical trees attaining heights of 30 m to 40 m above the forest floor, with thick undergrowth common (primary rain forest is mainly in the mountainous areas).

The Ndablama and surrounding area is dominated by low mountains. Elevations range between 150 m to 350 m AMSL. The project itself is located on such terrain, over-looking lower terrain to the east. Vegetation is primary forest, with a thick canopy and little undergrowth. Rock outcrops are found mostly in the valleys of the numerous water channels, with boulders on some of the valleys and mountain sides.

Weaju is located on a hillside at the edge of the east–west trending Bea-mountain range. The Weaju project itself is positioned on the concave northern slope. A small creek follows the topography running down the slope. The highest point is 300 m AMSL in the south, sloping down to 250 m AMSL in the north. The project is mostly covered by secondary forest. In common with the majority of Liberia, deep lateritic soils limit rock outcrop to streams and the more rugged hill areas.

5.3 Climate

The equatorial climate is hot year-round, with heavy rainfall from May to October and a short interlude in mid-July to August. During the winter months of November to March, dry dust-laden Harmattan winds blow inland. Average annual rainfall along the coastal belt is over 4,000 mm and declines to 1,300 mm at the forest-savannah boundary in the north (Bongers, F et al, 1999). Temperatures range from the low 20ºC during the rainy season to warm (low 30ºC) during the dry season. Exploration has generally been able to continue throughout the rainy season.

5.4 Infrastructure

The 1989–2003 civil wars in Liberia had a devastating effect on the country's economy, with neglect and damage resulting in much of Liberia's physical infrastructure being destroyed. Reconstruction began during 2003 and there has since been a recovery in critical infrastructure sectors such as power, water and transport.

The Liberian Electricity Corporation currently supplies 10 MW in Monrovia, with private generators meeting the remaining requirement. The Freeport of Monrovia, which is privately run under a concession from the government, is one of four main ports in Liberia and is currently the only port with cargo and oil handling facilities. It can accommodate third-generation container ships.

Liberia has approximately 10,600 km of road networks throughout the country, of which 650 km are paved highway. Some of the dirt roads in the interior of the country were constructed in the 1990s, chiefly by Asian timber companies. These roads were well built and maintained at the time. Access to the projects is addressed in Section 5.1.

The 490 km of rail line in Liberia was primarily constructed to haul iron-ore from interior mining areas to ports. Much of the Bong Mine rail is still usable, while an iron ore mining company, ArcelorMittal, has renovated the Nimba railway to the port of Buchanan. Buchanan lies well to the east of the (250 km) and consequently this rail line has no impact thereon.

Private satellite internet service is available in Monrovia and in some smaller urban centres. The Aureus camps at Ndablama and Weaju have 512-512 Vsat VOIP facilities. Cellular phone coverage in Liberia is good within the major urban areas and is widespread throughout much of the country, with signal available at all of Aureus' main exploration sites.

Ndablama is located in a remote area with no particular infrastructure beside the laterite road passing 3 km SE of the project. Weaju lies within 1 km of a laterite road which is the local road to Tubmanburg and on to Monrovia. The former Mano River railway alignment, which was used for transporting iron ore, lies 2 km north of the project; however this is no longer in use and the rails have been removed.

The increase in mining operations in Liberia is expanding the supply of mining personnel and mining services, such as drilling contractors, equipment rental and services, engineering services and a trained labour force. In addition, there is a mobile West African work force in the mining industry.

5.5 Local Resources

In the area around the Bea-MDA property, covering Grand Cape Mount County between the localities of Gbah and Gbesse, large tracts of land are devoted to rubber farms; however these are located mainly outside the licence area. Closer to the Sierra Leone border the major farming activity is oil palm cultivation.

Within the BEA-MDA property, there are several local, small-scale alluvial diamond and gold operations on the Mabong, the Lofa and the Yambesei rivers. The Gondoja North, Weaju and Ndablama projects all have small-scale artisanal mining communities.

6 History

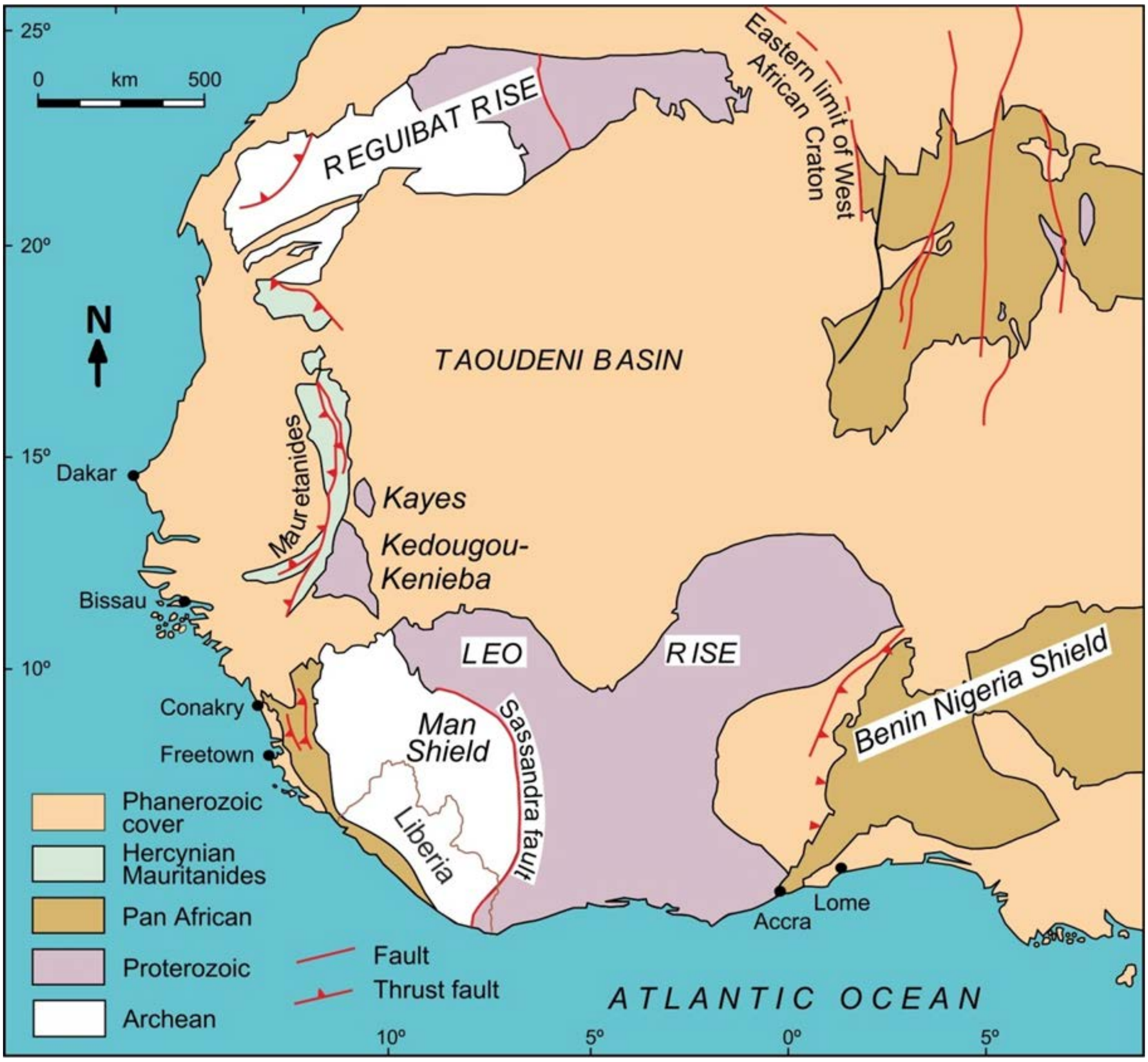
It is reported (A.C.A. Howe International Ltd. 2000) that, in the late 1980s, a company, Atlantic Mining, installed a small wash plant, mine buildings and accommodation, and commenced mining for gold from adits and hand-excavated shafts around Weaju. A large area of alluvial ground and swamp close to the mine site was cleared to provide alternative ground for artisanal miners. Larger scale production was due to commence in 1990, but the outbreak of civil hostilities led to the abandonment of the operations and the excavations were filled in. No results are available from referenced drilling.

Subsequently, main work carried out within the BEA-MDA property has concentrated on the New Liberty deposit. Golden Limbo (pre-November 1996) completed desktop studies, reviewed satellite imagery, carried out target selection and acquired a portfolio of possibilities. In 1997 Mano River Resources (Mano) collected preliminary channel samples across the artisanal workings, where primary rock was exposed. During reconnaissance work numerous targets for gold mineralization were identified through geological mapping, supported by soil and stream geochemical sampling programmes.

7 Geological setting and mineralization

Liberia is situated within the West African Craton, which has remained stable since about 1.7 Ga. The craton consists of two major basement domains; the Reguibat shield (in the north around Mauritania) and the Man Shield (3.0 to 2.5 Ga). The two shields are separated by the Taodeni basin of Proterozoic to Paleozoic age, while the Man Shield lies to the west of the Proterzoic Birimian Belts. Liberia is located in the Man Shield (Figure 7.1).

Figure 7.1 Regional geological setting

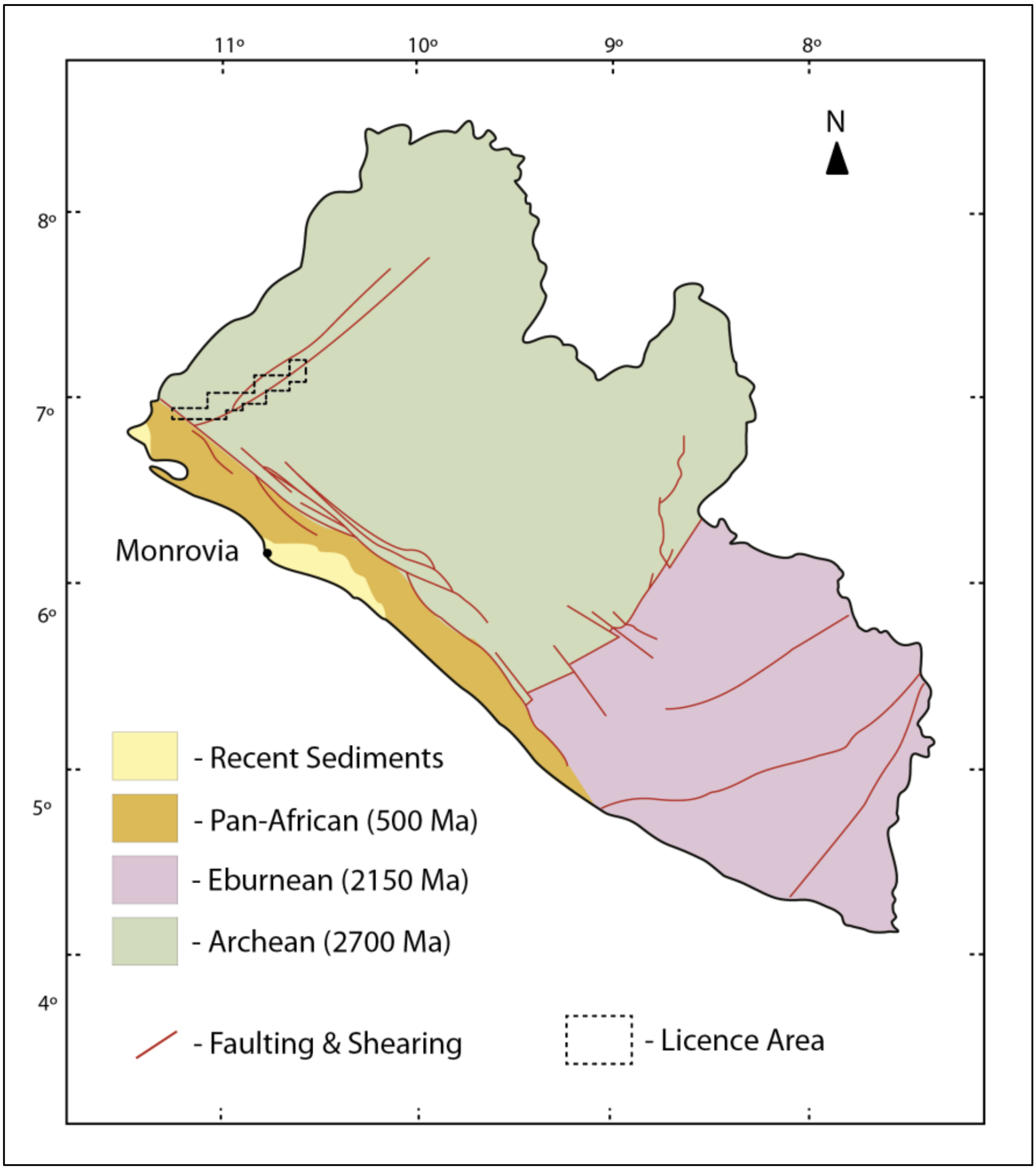


Modified from: *Milesi et al. 1992*

To the east of Liberia is a Birimian-age (2.1 Ga) proto-continent that accreted onto Africa during the Eburnean Orogeny (Milési, J-P, et al 1992). Pan African units extend along the southern edge of the country, representing the formation of Gondwana (500 Ma). The west of Liberia is underlain by Archean granites and granitic gneiss, as well as greenstone belts (metamorphosed mafic and ultramafic rocks, bounded by granite and gneisses suites representing the remains of volcanic belts), summarized in Figure 7.2. The Archean rocks have been subjected to deformation and shearing, with the principal structures acting as conduits for mineralizing fluids.

An Archean mobile belt along the border between north-west Liberia and Sierra Leone represents a collision orogeny, with a north-east trend and a north-westerly directed closure. Oceanic crust, overlain by sediments, is preserved as tectonic inliers and forms the Bea Mountains, Kpo Range and associated greenstone belts. Later Eburnean (2.15 Ga) deformation is also found to the south-east. A major, crustal scale, north-westerly-trending shear zone in the south-western part of the country cuts across the regional trend of the Archean mountain belt. The interference of these two tectonic elements produced complex structures with a strong rotational component of deformation and formed large and long-lived traps for mineralization.

Figure 7.2 Age province map of Liberia



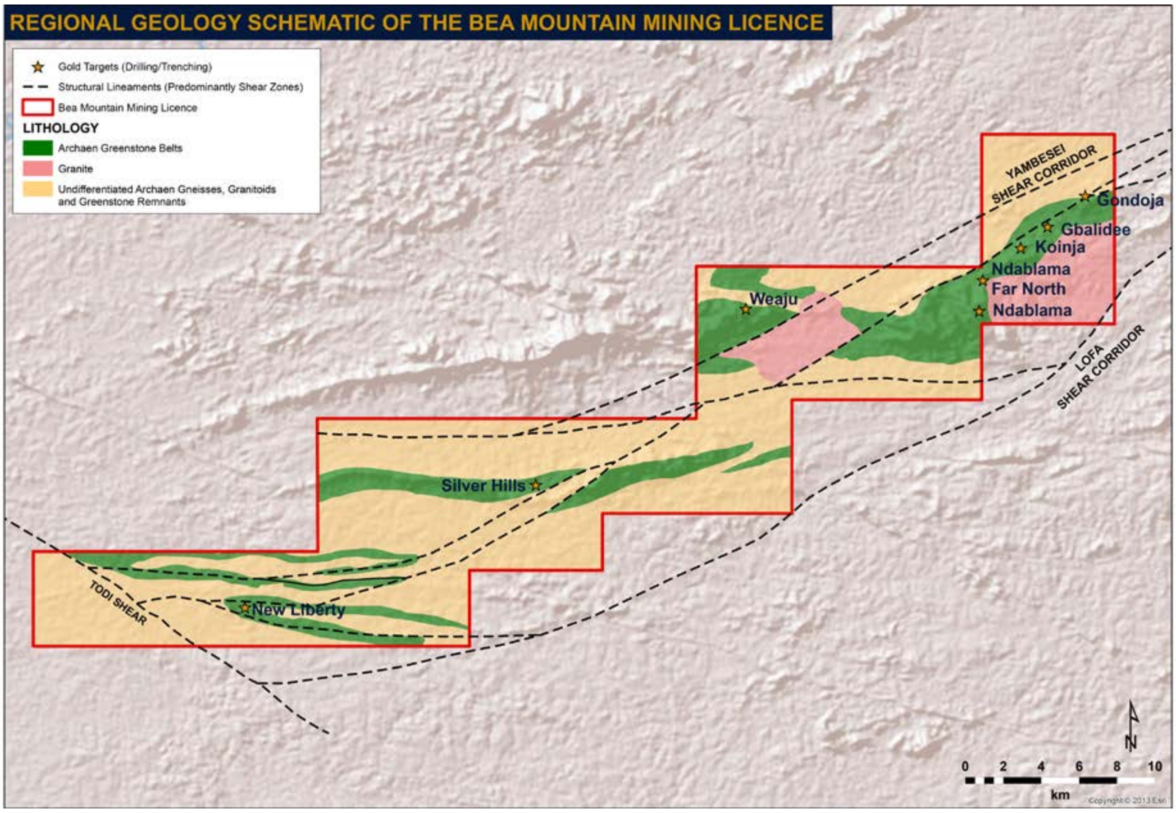
Source: *Hurley et al. 1971*

7.1 Geology of the Bea-MDA property

The Bea-MDA property contains a sequence of highly-deformed discrete lenses of ultramafics and amphibolites, which represent relict Archean greenstone belts, surrounded by granites and granodiorites. These rocks have been subjected to lower amphibolite grade metamorphism resulting in gneissose or schistose textures, depending on the rock competency.

The greenstone belts are elongated parallel to the regional strike, which is east-trending in the south, swinging to the north-east across a major shear in the north. Two sub-parallel arms of this greenstone unit have been mapped across the entire property; the northern arm represented by the Bea Mountain range and the southern arm the Silver Hills (Figure 7.3). In the south of the Bea-MDA property, airborne geophysics has identified other, less clearly defined, east–west trending units.

Figure 7.3 General geology of the Bea-MDA property



Source: *Aureus Mining Inc. (2013)*

The Bea-MDA property contains several known areas of gold mineralization, typical of Upper Archean to Lower Proterozoic styles of metallogeny within greenstone belts. These are concentrated in major imbricate shear zones and possibly associated rotational fold hinges close to greenstone belt contacts, forming coevally with calc-alkaline granitoid intrusions. The shears and associated splays acted as structural channels for hydrothermal solutions, which deposited gold in suitable structures or chemical traps. This model is consistent with Archean orogenic gold deposits described by Hagemann and Cassidy (2000), Richards and Tosdal (2001) Goldfarb, Groves and Gardoll (2001), Roberts et al (1989).

The geology of the Bea-MDA Northern Block is highlighted by the presence in the far east, of a granite batholith, bordered on both the north-western and south-eastern sides by two prominent shear zones, respectively the Yambesei and Lofa shear zones. The area west of the batholith represents a pressure shadow zone, along which Ndablama is located. The Ndablama pressure shadow zone and the Yambesei corridor consist of deformed mafic to ultramafic sequences which consistently contain gold mineralization. This is highlighted by a continuous 13 km long zone of soil anomalies extending from the Leopard Rock project (situated south of Ndablama within the adjacent and contiguous Archean Gold Exploration Licence) north to the Gondoja project.

Weaju is located at the eastern edge the Bea Mountain range which is known for hosting itabirite. The site corresponds to a fold closure of mafic and ultramafic rocks, which have been sheared.

7.2 Geology of Ndablama

7.2.1 Stratigraphy

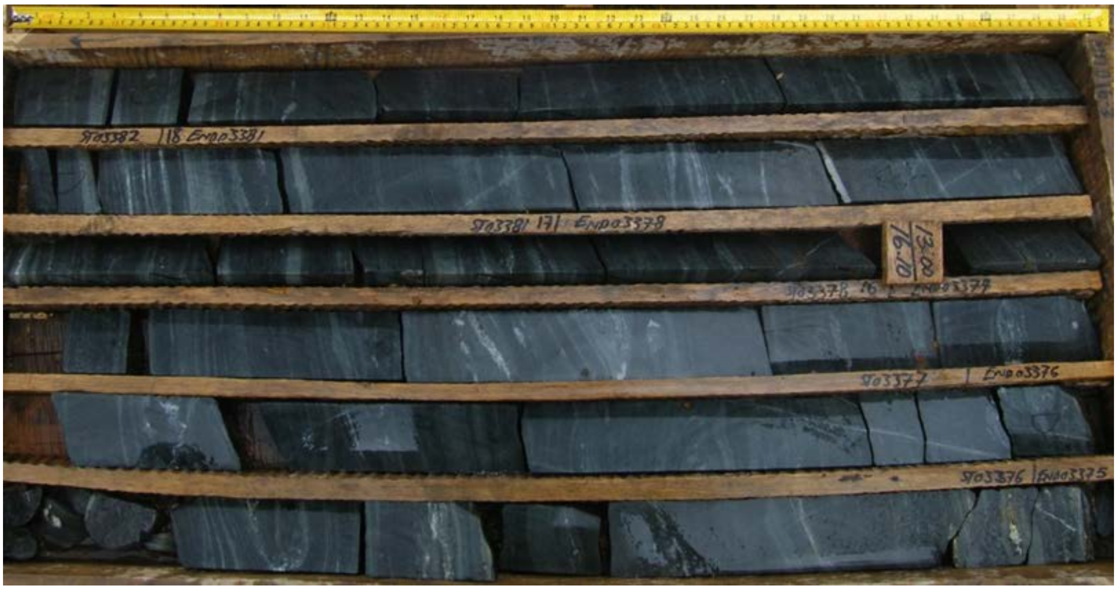
The Ndablama gold target is located in the north-eastern area of the BEA-MDA Northern Block, and forms part of the Gondoja Hills, which are underlain by Archean amphibolite gneisses and ultramafic rocks.

Geologically, Ndablama is subdivided into three entities, designated the Northern, Central and South Eastern Zones. The general geology of Ndablama consists of mafics and ultramafic rocks. The mafic package consists of amphibolite schists and gneisses which envelope a series of ultramafic schists. The ultramafic rocks have been subdivided into magnetite-rich and magnetite-poor zones. The ultramafic and mafic rocks are located close to the contact with a large granitic batholith to the east. The metavolcanic sequence has been intruded by granitic sills.

A simplified lithological sequence of Ndablama comprises three distinct packages:

- An upper package (the hanging wall) consisting of amphibolite gneiss followed by a deformed zone of intercalating granitic gneiss (Figure 7.4).
- A middle package of amphibolite and ultramafic schists which include magnetite, tremolite-chlorite with dispersions of phlogopite, and biotite schist. Occasionally, this package and the contact zone between the mafic and ultramafic rocks are intruded by granitic breccias and quartz rich veins. This package is host to the mineralized zone (Figure 7.5).
- A lower package (the footwall) which is made up of the basement unit followed by a competent granitic gneiss that has been intruded by the microcline granite. The basement unit consists of deformed granitic gneiss, with intercalating amphibolite gneiss and some veining (Figure 7.6).

Figure 7.4 Amphibolite gneiss (upper package)

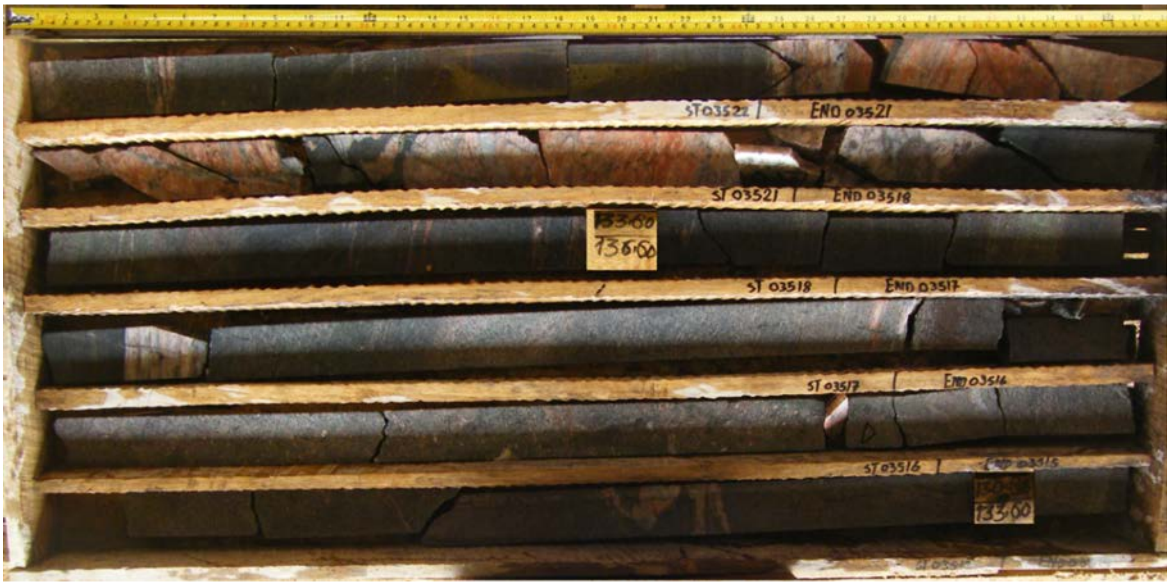


Drillhole NDD016 (13.14–18.50 m)

Figure 7.5 Sheared ultramafic schists (mineralized zone)

Drillhole NDD047 (79–82 m)

Figure 7.6 Granite gneiss with microcline granite injection (lower package)



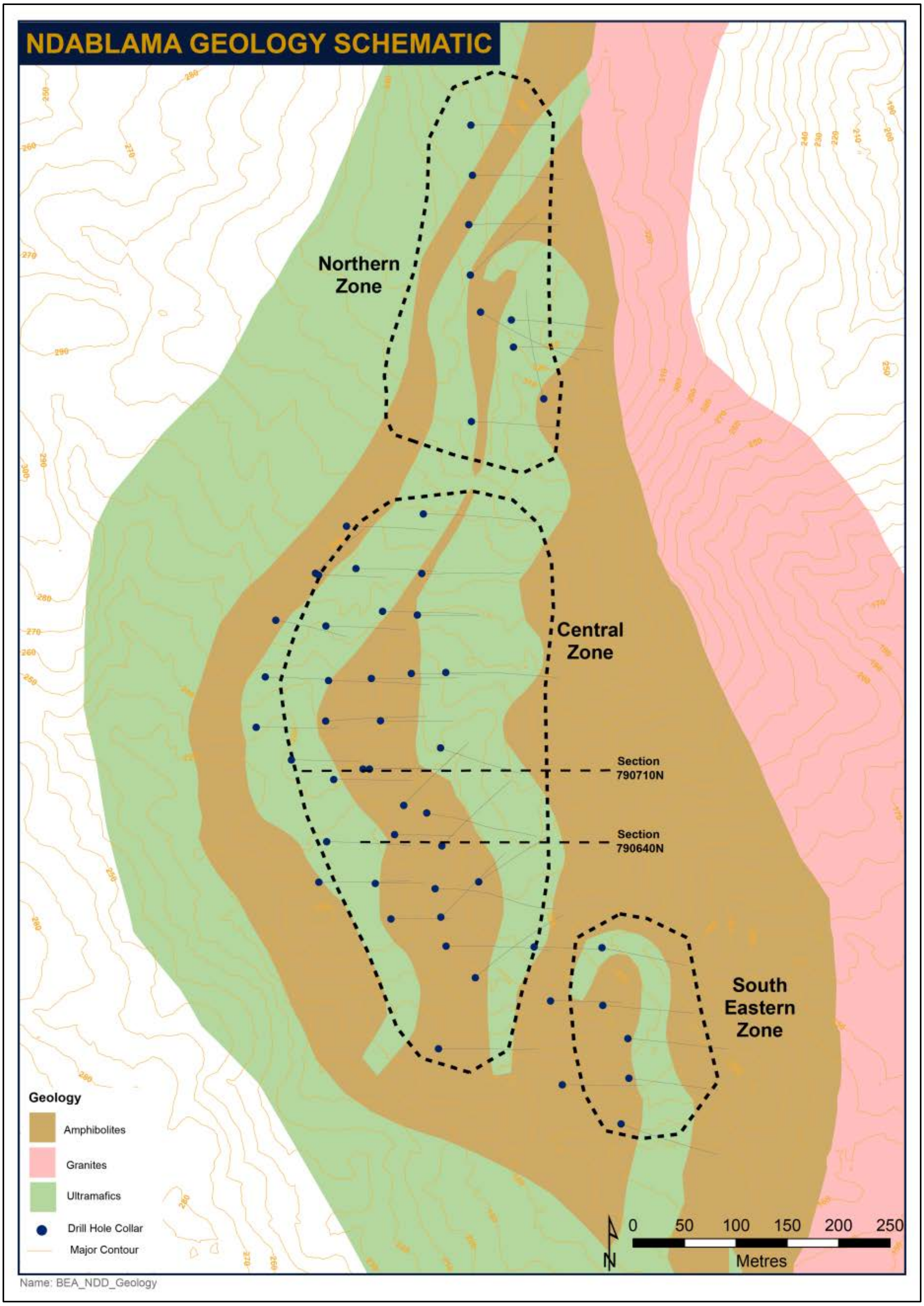
Drillhole NDD016 (133.48–139.22 m)

7.2.2 Structure

Ndablama lies on the western edge of a shallow westerly-dipping shear, in a pressure shadow area of the Ndablama batholith to the east. The shear, which strikes north–south and hosts the gold mineralization, extends over 5 km from Leopard Rock to Ndablama Far North.

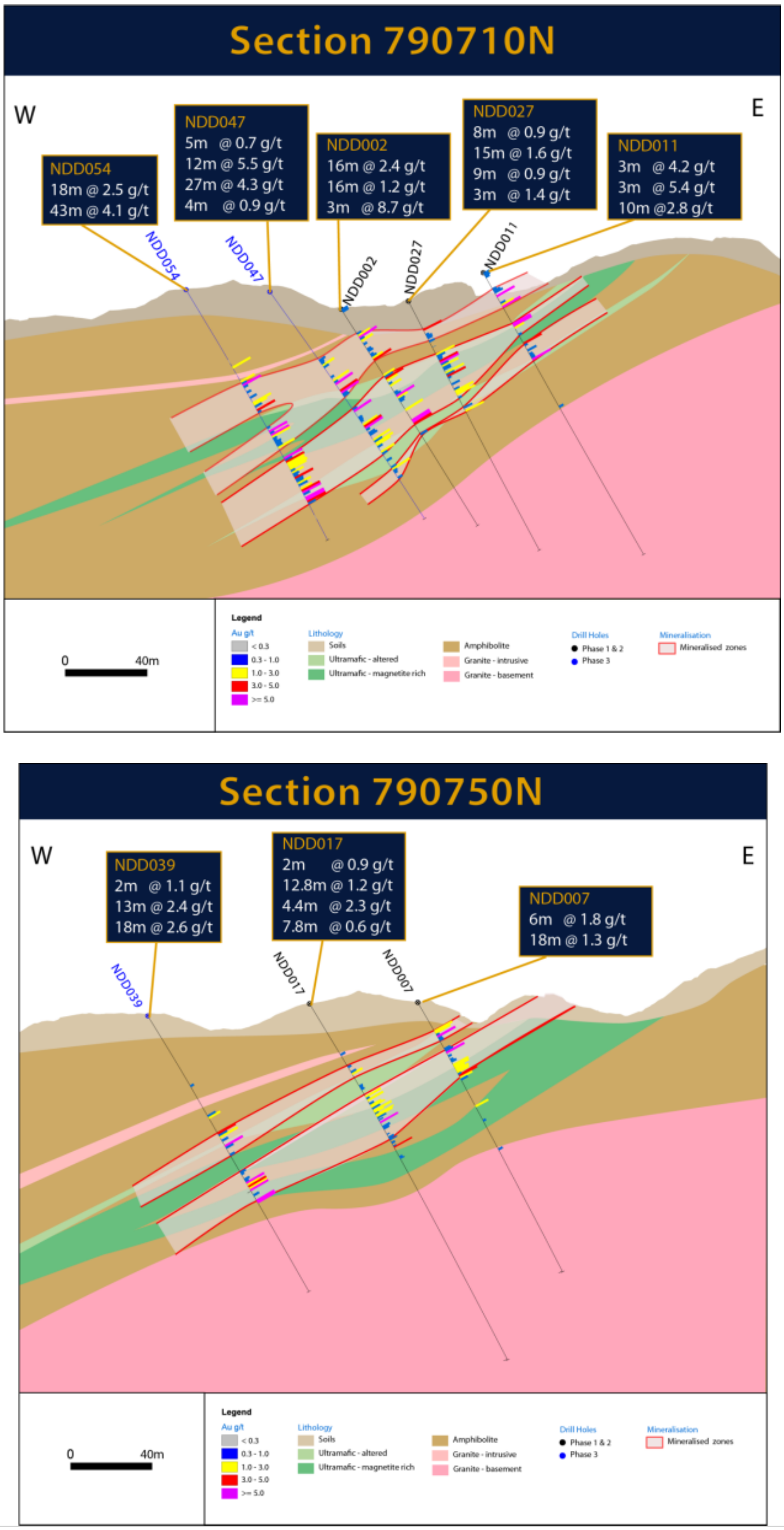
The resulting shear structure developed mostly in the middle package of amphibolites and ultramafics. The shear dips shallowly westwards (averaging at 34º in the central portion and approximately 37º in the south), with a number of cross-cutting east–west faults. The structure has been mapped on surface and confirmed by structural projections to surface from drillholes (Figure 7.7).

Figure 7.7 Geological map of Ndablama



Source: *Aureus, 2013*

Figure 7.8 Ndablama example cross-sections



Source: *Aureus, 2012*

7.2.3 Alteration

Gold mineralization is associated with hydrothermal alteration and disseminated sulphides, and is related to shear deformation which follows the granite-metavolcanic contact zone.

Alteration is consistently defined by silicification, magnetite destruction, phlogopite and chlorite, with phlogopite dominating the relationship. Magnetite destruction within the ultramafics has been identified as having a direct relationship with gold mineralization.

Pyrrhotite is the dominant sulphide mineral and occurs as disseminations throughout the mineralized zone. Other sulphides identified include pyrite, chalcopyrite and tiny, but scarce, specs of arsenopyrite.

7.2.4 Mineralization

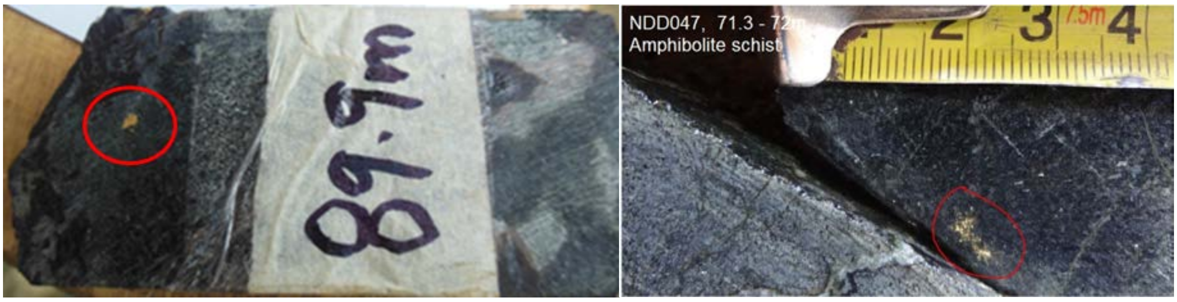
The mineralization is located within a sheared package of ultramafic and mafic rocks intercalated within a gneiss sequence overlying a granite batholith. The mineralization has a shallow westerly dip reaching on average 34° and striking north (Figure 7.8).

Sheared rocks, namely amphibolite schists with phlogopite and ultramafic tremolite chorite schists, host the gold mineralization at Ndablama, with occasional magnetite-poor ultramafics and intrusive granites also contributing to the gold mineralization. Associated with the gold is disseminated pyrite and pyrrhotite.

At least a part of the gold mineralization occurs as coarse fraction. Visible gold is consistently observed in most of the drillholes (Figure 7.9). It occurs mainly within the intensely silicified parts, but can also occur within less altered amphibolites or ultramafics.

Gold often occurs at sheared contact zones between ultramafic and mafic rocks that have been intruded by granitic dykes and breccias. The breccia often marks the end of the gold mineralization. The mineralization extends over 650 m of strike in a north–south direction, and is open in all directions.

Figure 7.9 Visible gold in drill core



Drillhole NDD045 (89.9 m) Drillhole NDD047 (71.3–72 m)

7.3 Geology of Weaju

7.3.1 Stratigraphy

The lithological sequence at Weaju is similar to that of Ndablama; however the sequence starts in the ultramafic rocks which contain thin beds of more amphibolitic material, intercalated with the ultramafics (Figure 7.10). A tourmaline- and magnetite-rich granite is also observed. The footwall unit (Figure 7.11) is dominated by amphibolite gneissose units, as well as a microcline granite-rich unit. Intruding into the system are brecciated granites and pegmatites. The brecciated granites have a weak fabric which is concordant with the main lithology, suggesting they intruded during the main shearing event. Tourmaline- and-magnetite rich granites also have a weak fabric, which suggests that they occurred syn-shearing. Later pegmatite material cross-cuts the dominant foliations, implying that it post-dates the mineralization.

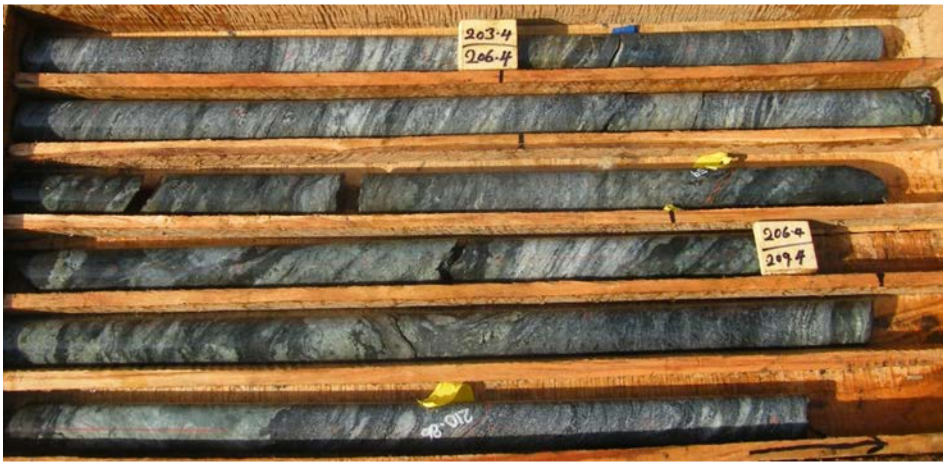
Figure 7.10 Hanging wall ultramafics

Drillhole WJD0105 (59.46–64.5 m)

Figure 7.11 Footwall amphibolite gneisses

Drillhole WJD0105 (254.4 – 258.81 m)

Figure 7.12 Sheared ultramafics (mineralized zone)



Drillhole WJD0105 (205.95 – 211.26 m)

7.3.2 Structure

Weaju is hosted in a synformal fold, which plunges shallowly to the south-west at around 15º. Gold mineralization is found on both limbs of the fold, namely the North and Main zones, and at the surface expression of the fold axis, which is the Ridge and Creek zone (Figure 7.13 and Figure 7.14).

The gold mineralizing phase occurred before the last folding event but during a shearing event. Localized folds, formed during the main shearing event, act as focus for gold mineralization. These were later re-folded, forming high-grade plunging shoots of mineralization.

7.3.3 Alteration

Mineralization-related alteration includes silicification and a phlogopite-tourmaline-magnetite-carbonate assemblage, together with pyrrhotite, arsenopyrite, pyrite, chalcopyrite and niccolite.

Gold mineralization at Weaju is found in tremolite-talc-chlorite-schists. A magnetite halo around the edges of the system probably represents a regional metamorphic event, possibly related to serpentinisation. Within the footwall complex, distal to the mineralization, weak hematite veinlets are observed.

7.3.4 Mineralization

The gold mineralization at Weaju is hosted in the sheared ultramafic (Figure 7.11), and occasionally within the sheared contacts with amphibolite. The mineralization has a strong westerly plunge.

Mineralization is associated with sulphides in the rocks. It is dominated by pyrrhotite, with lesser arsenopyrite, pentalandite and, rarely, chalcopyrite. Thin sections carried out on one sample from Weaju (Robb 2001) showed that the sulphide occurs as finely dispersed grains and also as occasional coarser bodies lying within the fabric of the rock.

Sulphide growth may be in the form of vein fills, massive aggregates, clusters, blebs, stringers and fine or coarse disseminations, with finely disseminated pyrrhotite having the best association with gold. There is a progression from syn-tectonic to late-tectonic growth, with at least two phases of sulphide: pyrrhotite and arsenopyrite syn-shearing, some of which is later remobilised to form coarser blebs. The non-opaque minerals are actinolite, chlorite, biotite and phlogopite mica.

Free gold has also been observed within core samples.

Figure 7.13 Geological map of Weaju

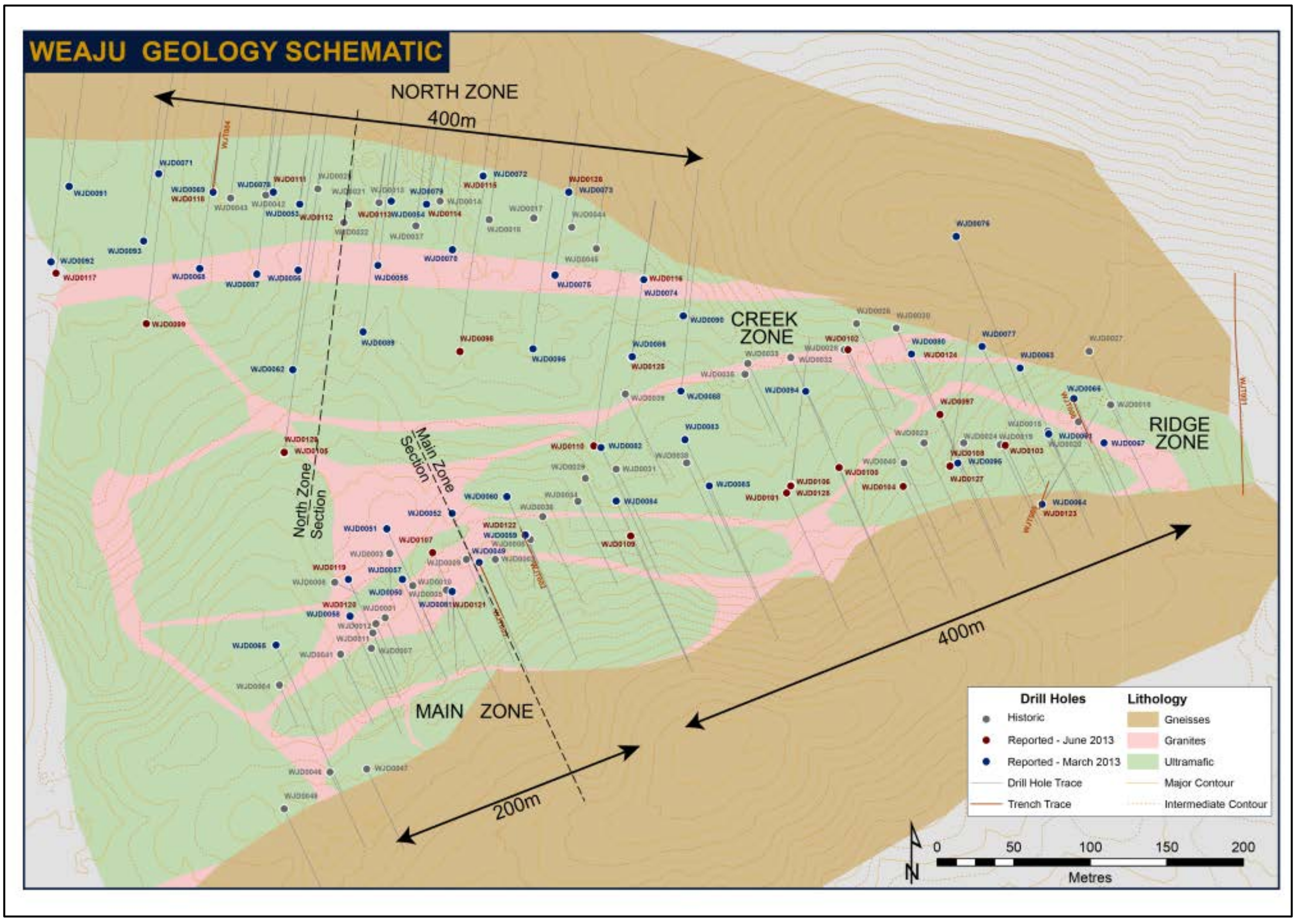


Figure 7.14 Weaju North Zone cross-section

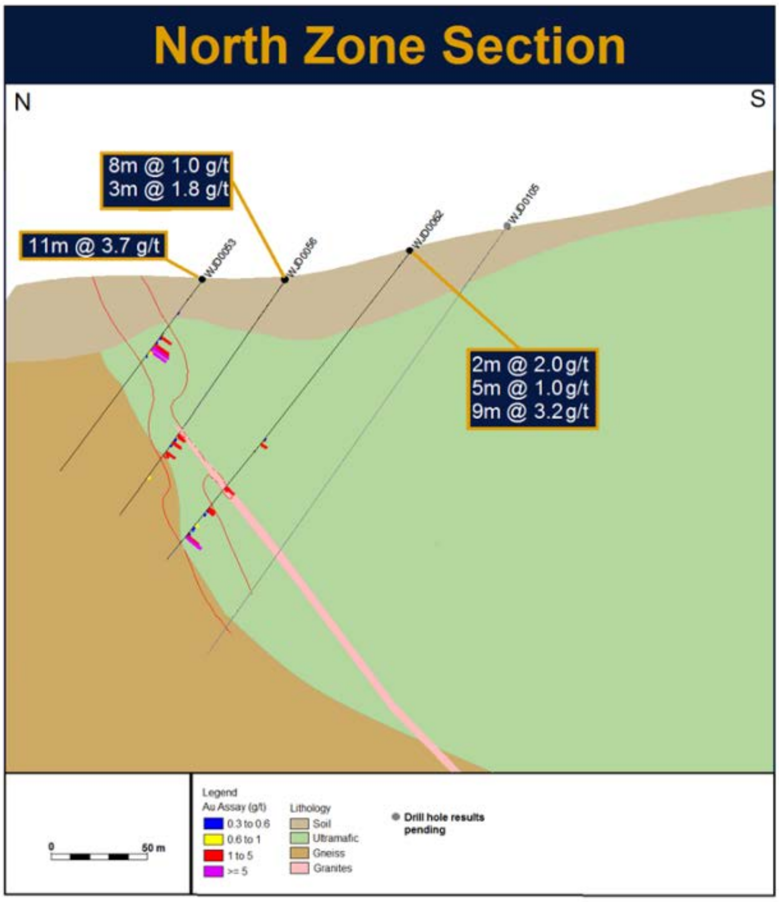
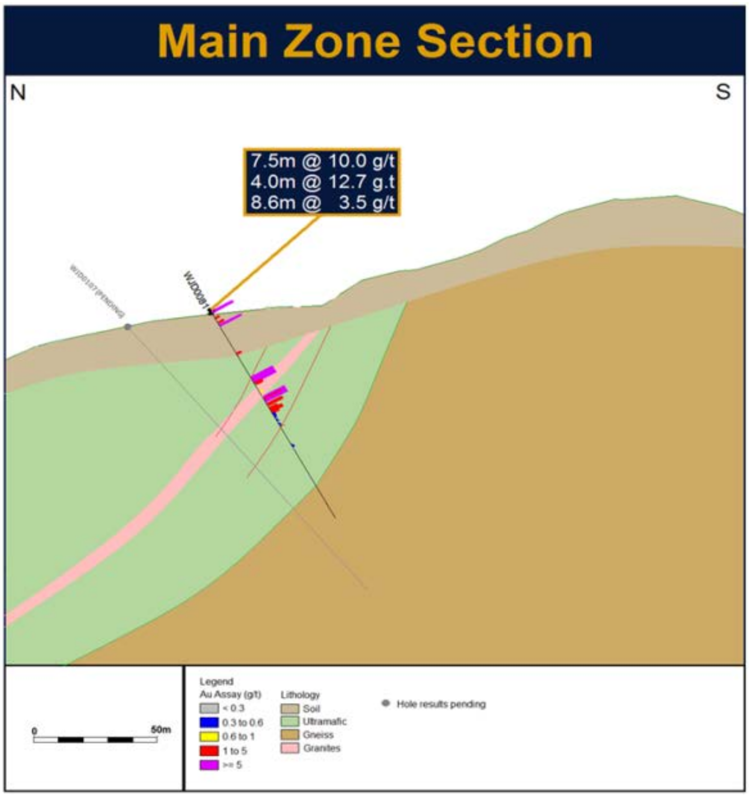


Figure 7.15 Weaju Central Zone cross-section



7.4 Geology of other main targets

7.4.1 Ndablama North and Far North

Ndablama North and Ndablama Far North targets are located within the 5 km long pressure shadow zone of the Ndablama batholith. They are part of the continuation of the north–south shear of the pressure shadow zone that hosts Ndablama.

The Ndablama North target is immediately north of Ndablama and has been trenched and drilled previously for over 300 m strike.

The Ndablama Far North geology is similar to Ndablama and comprises mainly amphibolite and ultramafic rocks that have been intruded by granites.

7.4.2 Ndablama South

Ndablama South lies within the pressure shadow zone, which is situated on the western edge of the batholith contact. This zone locates mainly south-east of Ndablama and extends into the gap area, towards Leopard Rock, to the edge of the BEA/MDA property.

The South East Zone outlines mineralization over 200 m of strike. It hosts thin zones of three-to-ten metres, which have been traced down to vertical depths of 50 m below the surface. Deformation is more intense at these depths within the South East Zone, which remains open at depth, along strike and to the west.

Gold intercepts occur at the contact between the mafic and ultramafic rocks, within altered ultramafics and in association with brecciated granitic intrusives. Gold mineralization is associated with shearing, breccias, disseminated sulphides and hydrothermal alteration. Pyrrhotite is the dominant sulphide mineral and occurs as disseminations throughout the mineralized zone. Alteration is consistently defined by silicification, magnetite destruction, phlogopite and chlorite.

7.4.3 Gondoja, Koinja and Gbalidee

The northern shear corridor extends over 8 km. This corridor is part of the Yambesei shear zone that runs along the northern edge of the Ndablama batholith. Work to date has highlighted three projects (Koinja, Gbalidee and Gondoja) for which steeply dipping, shear-hosted mineralization has been intersected within both trenches and drillholes.

Gondoja (Figure 7.16 and Figure 7.17), Koinja and Gbalidee represent separate en-echelon shear dilatational structures trending from north-east to south-west, with Gondoja in the north, Gbalidee in the middle and Koinja furthest to the south-west.

The area is geologically underlain by an approximately 200 m wide mafic body consisting of marginal amphibolite and a central zone of ultramafic rock. A series of quartz carbonate veins intrude mainly into the ultramafic unit, although one prominent quartz vein cuts through amphibolite close to the northern margin of the body. The quartz veins are closely related to granitized schists or greisens. Two moderate-sized (circa 100 m long) quartz veins, which intersect amphibolite, are mineralized with sphalerite, galena, scheelite, and gold with minor chalcopyrite. The geological setting of gold mineralization appears to be very similar to that at the New Liberty and at Weaju Projects. The principal differences are the veins and a polymetallic (Au-W ± Zn-Pb-Cu) metal assemblage at Gondoja. The association between the mineral assemblage and granitoid intrusion is comparable to intrusion-related gold mineralization systems.

Figure 7.16 Gondoja geology with trench and drillhole locations

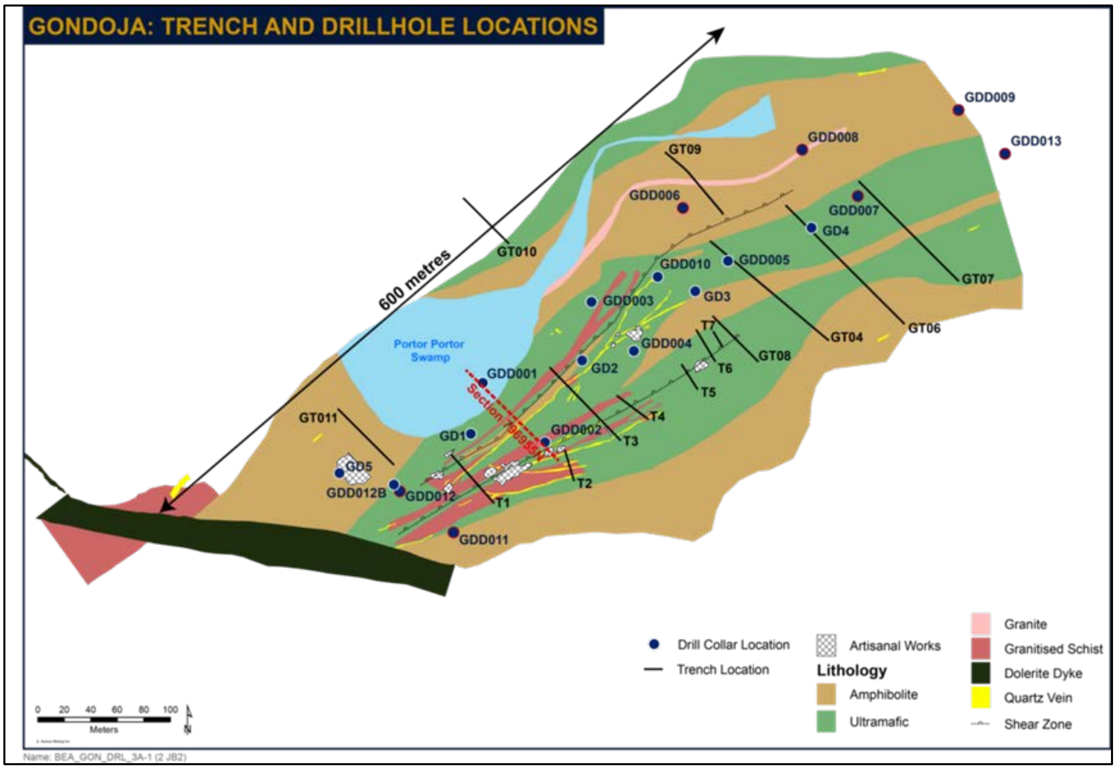
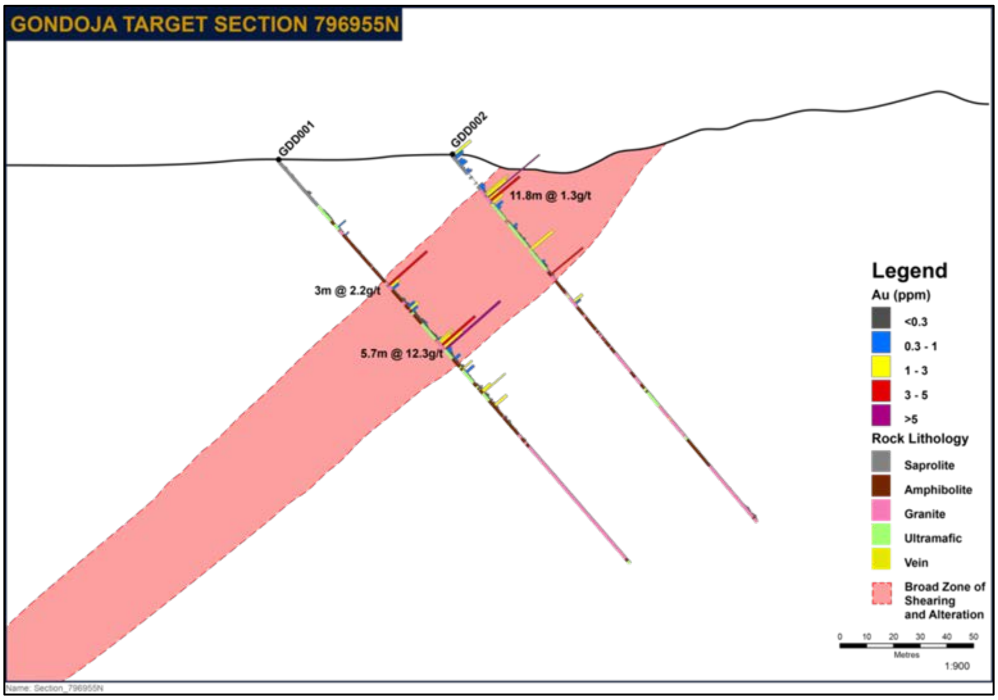


Figure 7.17 Gondoja section



7.5 Metallogeny and paragenesis

Gold at Ndablama and Weaju is linked with an assemblage of sulphide and oxides in ultramafics and amphibolites. Opaque minerals include mainly pyrrhotite and magnetite. There are minor traces of pyrite, chalcopyrite, pentlandite, sphalerite, ilmenite and rutile. Sulphide growth may be in the form of vein fills, massive aggregates, clusters, blebs, stringers and fine or coarse disseminations in ultramafics or granite veins. There appears to be a progression from syntectonic to late-tectonic growth, with at least two phases of sulphide and oxide growth. The non-opaque minerals are amphibole, chlorite, mica, serpentine, talc and quartz. Pyrrhotite, coarse-grained pyrite, chalcopyrite, sphalerite and minor pentlandite are the principal sulphides; the chief observation being (but not always) an increase in grain size and abundance, both absolute and relative, in host rocks near granite veins.

In Figure 7.18, pyrrhotite and pyrite are shown in cut and uncut ultramafic core, with the bulk of the sulphides aligned to the dominant cleavage.

Figure 7.18 Mineralization in cores (Ndablama and Weaju)

Ndablama ore Weaju ore

8 Deposit types

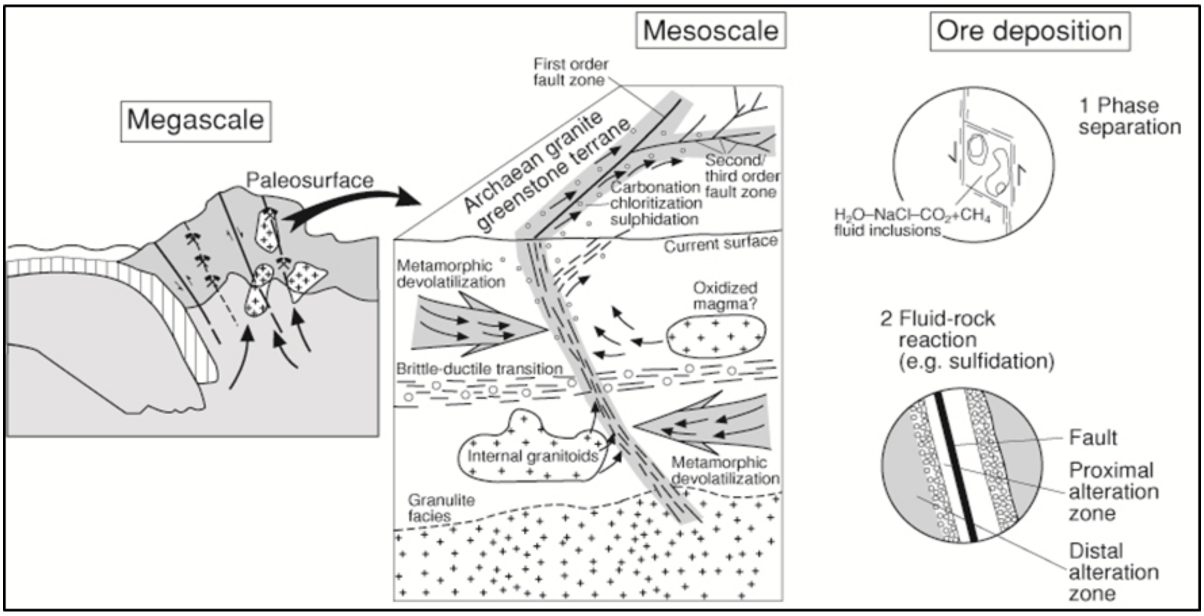
The Property hosts a typical Upper Archean to Lower Proterozoic style of metallogeny, characteristic of greenstone-hosted lode gold mineralization, where deposits are often referred to as orogenic, and characterized by the presence of gold-quartz veins and disseminated mineralization.

Archean orogenic deposits are typically hosted in greenstone belts comprising meta-volcano sedimentary supracrustal assemblages, together with coeval calc-alkaline granitoid intrusions. Gold mineralization is hosted in moderate to steeply dipping quartz-dominated shear zones with associated extensional vein systems. Gold mineralization is coeval with the syntectonic stages of the orogeny and is related to periods of crustal shortening at 8 km -15 km depth. Structures are typically formed at, or close to, contacts between rock types of contrasting competencies, and mineralization is often localized at bends or splay intersections in the shear system.

Mineralization in Archean orogenic deposits are associated with characteristic alteration styles (quartz-carbonate-sericite-biotite-sulphides) and often enriched in ‘lodes’ that plunge steeply. Gold deposits may occur in a variety of host rocks, which include granite, meta-volcanic rock (greenstones) and include mafic and ultramafic rock units and associated volcaniclastic, banded iron-formations and siliciclastic sediments, as observed within the Bea-MDA licence area. The schematic diagram (Figure 8.1) depicts a typical orogenic lode system with analogous geological settings for the deposit styles found on the Property.

The primary targets of Aureus’ mineral exploration programme in Liberia are shear zone-hosted gold systems, whether associated with quartz, granite veins, breccia zones or granitic bodies. A structural control to mineralization is eminent with areas of multiple structures intersecting. Gold mineralization in these deposits is thought to have been emplaced by Au-bearing fluids flowing into dilatational zones formed by faults or fold hinges in high strain zones.

Figure 8.1 Schematic of orogenic gold systems



Modified from: *Hageman and Cassidy, 2001*

Gold within the system was introduced as gold sulphide complexes in hydrothermal solutions, which may in part have been sourced from underlying granitic plutons. The solutions reacted when they came into contact with the magnetite within the ultramafic rocks, causing the deposition of native gold and sulphide minerals. Prominent examples of such deposits, some of which rank as world class, are: Golden Mile at Kalgoorlie, Australia, Kerr-Addison Mine in Ontario, Canada and Homestake Mine in the United States Groves et al. (2003), Robb (2005).

9 Exploration

9.1 Introduction

Exploration at the Bea-MDA property follows a systematic process of reconnaissance work, including grab-sampling, followed by soil geochemistry, mapping, trench sampling and eventually drilling. Airborne and ground geophysics have also been conducted, where appropriate.

Exploration at Ndablama started in 2007-2008 with channel sampling. Results for the channel samples are not available even though they have been mentioned in some reports. African Aura carried out a soil sampling programme in 2010 after the civil unrest force-majeure, followed by two trenching campaigns between 2010 and 2011, excavating 47 and 16 trenches respectively. Geological mapping and extension of the soil sampling were carried out along-side trenching by Aureus Mining between 2011 and 2013.

Exploration at Weaju started in 1999 with mapping, local soil programmes, trenching and initial drilling.

9.2 Methodologies

9.2.1 Coordinates, datum, grid control and topographic surveys

In the last quarter of 2012, six control points were set up at locations over the Ndablama, Leopard Rock and Gondoja project areas with a Leica DGPS, by consultants from Ghana in collaboration with Aureus surveyors. These points served as the references for all spatial data collected within the project areas.

A LiDAR (light detection and ranging) survey was flown during March 2013 over the northern block of Aureus' Bea Mountain Mining Licence. The survey, by CK Aerial Surveys Inc. of South Africa, produced topographic DTMs and contours, and aerial photographs. A total of 32 km^2 was covered during the survey, including Ndablama and Weaju and Leopard Rock in the the Archean Gold Exploration Licence area.

Historically at Weaju drillhole coordinates were based on a local grid, which was subsequently converted to UTM29N projected coordinate system, referencing the WGS84 datum. The elevation (RL) was then corrected to the new topographic elevation obtained from the LiDAR survey. Subsequent drillhole and trench collars have been picked up using a SOKIA DGPS.

At Ndablama, since 2012, survey pickups for both drillholes and topography have been obtained using a Garmin handheld GPS. Later, all drillhole collars were re-surveyed using a Total Station, with reference to the control points. The LiDAR survey has improved the quality of survey work on the target. All drillhole collars and trenches surveyed with total station matched well with the LiDAR DTM.

9.2.2 Geological mapping

Company geologists map lithology, alteration, mineralization and structures using outcrop mapping. Outcrop is limited mostly to stream beds, road cuts, artisanal pits and trenches; therefore maps are progressively updated as more data from trenches and drilling becomes available.

9.2.3 Regional stream and outcrop sampling

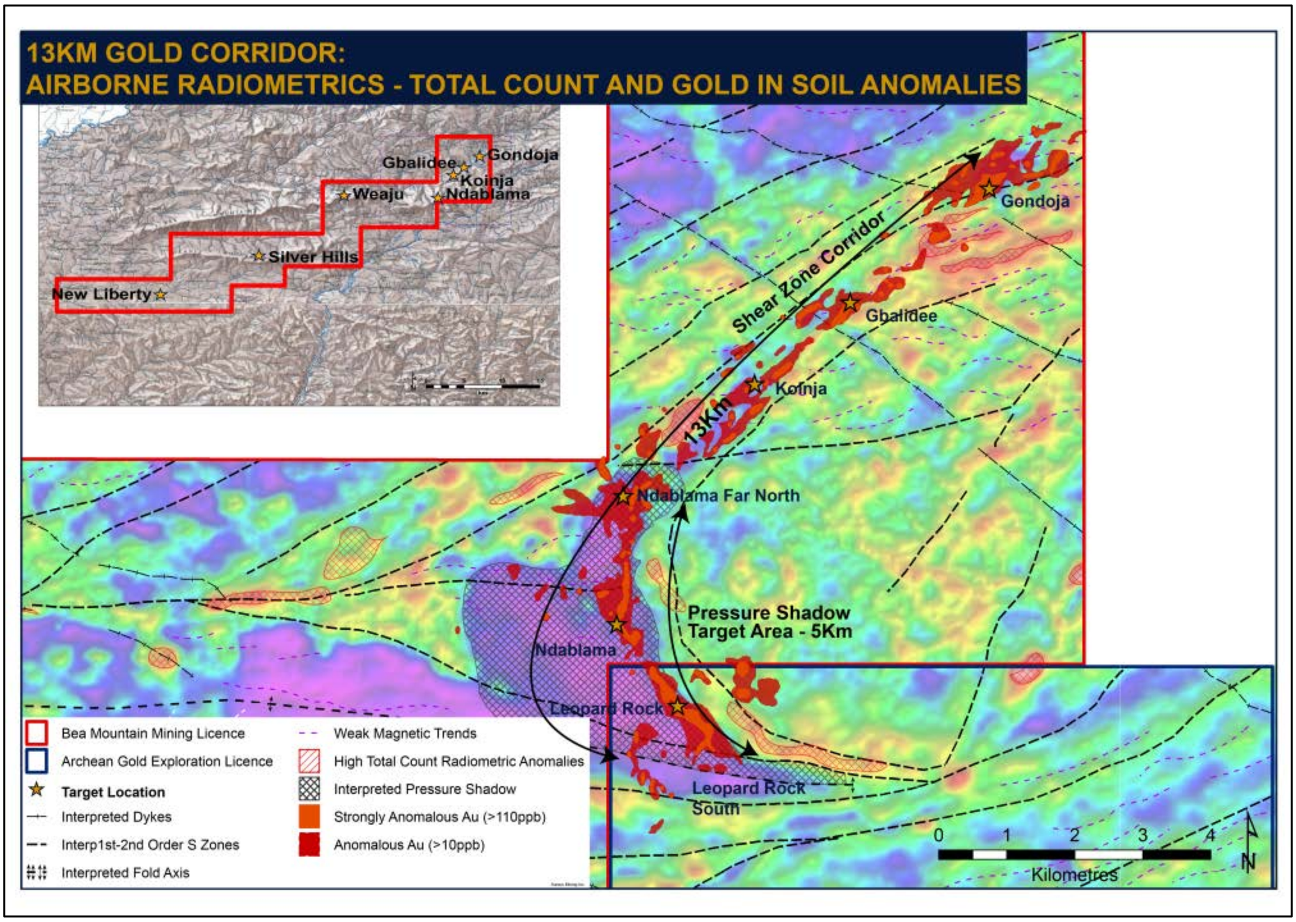
In the period 2005 and 2006, Mano acquired multi-element, stream sediment geochemical data from Western Mining Corporation (WMC) and undertook extensive regional outcrop and heavy mineral sampling programmes in Gola Konneh, Tewo and other districts.

Reconnaissance sediment surveys of small streams for gold and heavy mineral, in and around the Bea Mountain and Silver Hills ridges, have indicated the presence of several previously unknown gold occurrences, in water courses flowing off the Bea Mountain ridge, which require future investigation.

9.2.4 Soil geochemistry

Soil sampling is undertaken on a set grid, with line spacing determined by the objectives of each individual programme. Samples are positioned using handheld GPS, with 1 kg of soil taken from a depth of approximately 0.5 m, depending on the soil profile.

Figure 9.1 13 km soil anomaly



Ndablama

Exploration work at Ndablama was initially inspired by pockets of artisanal mining activity. Between 2009 and 2010, a soil sampling programme was carried out on a 50 m by 100 m grid spacing. A total of 1,331 soil samples were collected and analysed for gold. This programme, covering an area of approximately 6 km^2 between Ndablama Far North and Leopard Rock, detected a 1.2 km long, north–south trending zone of gold enrichment, up to 100 m wide, over the Ndablama prospect. This anomaly is part of a continuous anomaly covering the whole 5 km of the pressure shadow area (Figure 9.1).

In 2011, the soil grid was extended, with 1,256 samples (Table 9.1) taken west of Ndablama over an area called the Parallel zone, to cover an additional 6.05 km^2. The soil results provided additional targets further west of the main pressure shadow zone anomalies.

Table 9.1 Soil sampling at Ndablama and Weaju

Project	Year	Company	Number of soil samples
Ndablama	2010	African Aura	1,331
	Q3 2011	Aureus Mining Inc.	1,256
Weaju	1999-2005	Mano River	66
	1999-2005	Mano River	37
	1999-2005	Mano River	9
	2012-2013	Aureus.	1,759

Weaju

At Weaju, a total of 1,759 samples (Table 9.1) have been collected covering an area of 25 km^2. The main fold-like structure has been delineated by soils, showing the anomalous zones on each limb, and also extending the southern limb in the south-west up to 800 m.

9.2.5 Trenching

Trenches are staked out by geologists at an alignment that intersects the strikes of structures, and are then excavated to a depth of 1 m–4 m, depending on bedrock intersection depth. The trenches are surveyed and logged, followed by continuous channel sampling along each metre of the trench.

Ndablama

At Ndablama, a follow-up trenching programme along a 400 m north–south soil anomaly was undertaken with 31 trenches completed in 2010 for a length of 2,521 m. This was then followed up with detailed mapping and a subsequent round of trenching in 2011, with 32 trenches excavated for 2,845 m. A total of 63 trenches were completed at Ndablama for 5,366 m. Significant intercepts (Table 9.3) were found in the majority of the trenches, and results confirm the soil anomalies. The trench results paved the way for the first campaign of drilling in 2011, followed by Campaigns 2 and 3 drilling during 2012 and 2013 respectively.

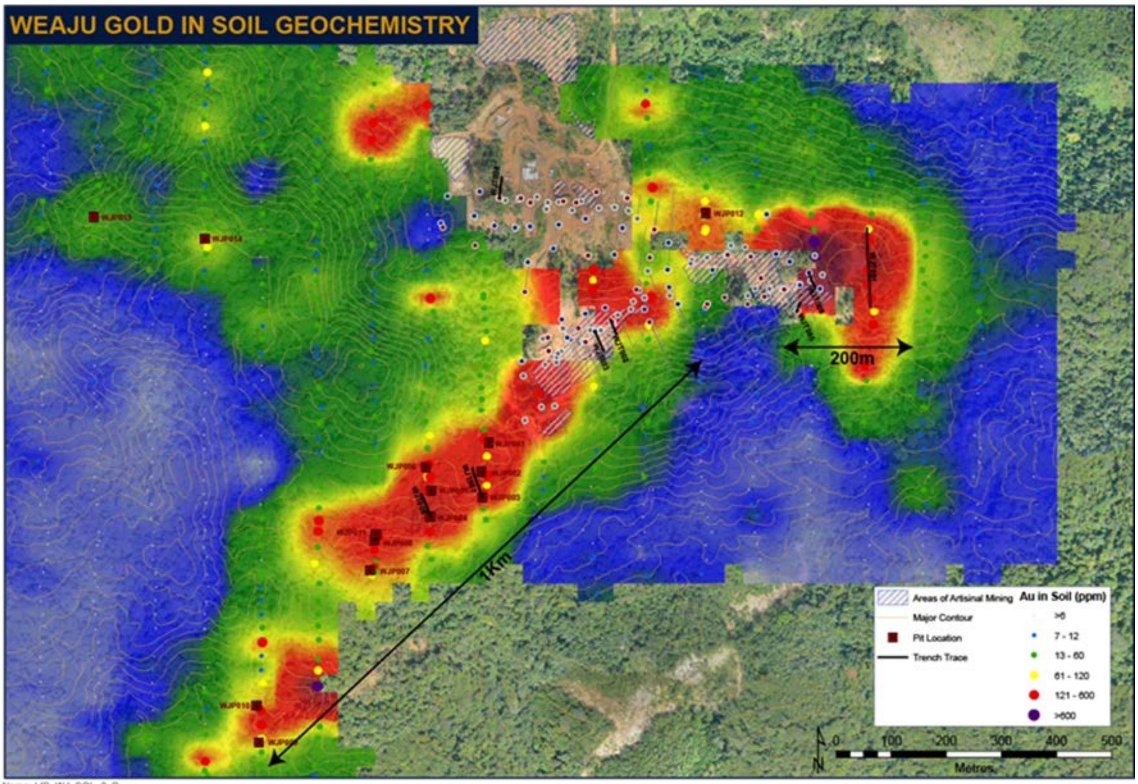
Table 9.2 Trench sampling at Ndablama and Weaju

Project	Year	Company	Number of Trenches
Ndablama	2010	African Aura	NT001 – NT047
	Q1 2011	African Aura	NT047 – NT 063
Weaju	1999	Mano River	T1-2
	2000	Mano River	T3-T12
	2013	Aureus	WJT1-8

Weaju

At Weaju, historically, twelve trenches were completed on the site, although the exact location and gold grades of these are unknown due to loss of historical data and damage by artisanal miners. Between 2012 and 2013, Aureus completed a further eight trenches on the site, in both the main mineralized areas and along strike (Table 9.2, Table 9.4 and Figure 9.2).

Figure 9.2 Weaju soil and trench locations



Name: LIB_WJ_SOL_3_B

Source: *Aureus, 2012*

Table 9.3 Ndablama trenches significant intercepts

Trench Values are Reported from North to South.				
Trench	**From (m)**	**To (m)**	**Length (m)**	**Mean Au g/t**
NT23	36	46	10	0.5
NT30	15	17	2	9.4
NT29	115	148	33	0.8
and	122	134	12	1.3
NT62	30	39	9	2.1
including	34	38	4	3.9
and	42	46	4	0.8
NT42	0	3	3	0.7
and	22	37	15	0.6
NT17	20	42	22	0.6
including	25	34	9	0.8
and	68	150	82	2.1
including	74	80	6	3.5
including	101	105	4	5.3
including	132	147	15	4.8
NT43	76	87	11	3.8
and	90	100	10	0.7
and	116	124	8	1.3
and	148	154	6	0.6
NT21	12	20	8	1.0
and	38	45	7	1.1
NT16	60	67	7	1.0
and	20	42	22	0.6
NT13	0	12	12	2.3
and	34	89	55	2.2
and	54	59	5	1.7
and	88	90	2	4.6
and	113	121	8	1.2
NT8	35	40	5	1.7
NT7	0	24	24	1.8
including	14	22	8	3
NT3	0	44	44	1.0
including	36	43	7	1.8
NT1	0	70	70	1.4
including	4	12	8	5.2
NT2	16	86	70	1.1
including	77	86	10	1.6
NT48	38	45	7	2.3
NT9	56	88	32	1.1
NT11	40	42	2	4.8
NT34	2	6	4	0.5
NT36	0	3	3	1.5
and	60	70	10	2.0

Trench Values are Reported from North to South.				
Trench	**From (m)**	**To (m)**	**Length (m)**	**Mean Au g/t**
and	84	101	17	0.6
NT32	25	30	5	0.7
and	113	120	7	0.6
and	137	147	10	7.8
NT18	6	10	4	1.3
and	15	18	3	3.2
NT10	36	55	19	1.5

Assay grade data is un-cut.
The following trenches fell within the three zones but yielded NSV:
Trenches: NT031, NT033, NT035, NT037-041, NT044, NT051 and NT053-NT055, NT057-NT061 and NT063 are unmineralized.

Table 9.4 Weaju trenches significant intercepts

Trench ID	From (m)	To (m)	Intersection Length (m)	Au Grade (g/t)	Zone
WJT002	14	24	10	2.3	Main
Including	17	20	3	3.4	Main
WJT003	4	31	27	0.6	Main
WJT004	7	14	7	0.7	North
and	19	25	6	0.6	North
WJD001	16	24	8	0.7	Ridge
and	32	46	14	1.4	Ridge
Including	37	41	4	3.3	Ridge
and	58	61	3	0.3	Ridge
WJT006	16	31	15	1.2	Ridge
WJT007	7	9	2	0.4	Main extension
WJT008	6	9	3	0.4	Main extension
and	24	27	3	0.5	
and	34	39	5	0.4	
NSV – WJT005					

9.2.6 Geophysics

In May 2006, a high resolution helicopter-borne, combined magnetic gradient and gamma-ray spectrometer survey was conducted over the south-west and north-east sections of the licence area by New Resolution Geophysics (NRG). This was complimented by a further survey, carried out by Geotech Airborne Limited in 2012, which covered the remainder of the Bea-MDA property, and the adjacent Archean licence, which is also owned by Aureus. Sufficient overlap between the old and new surveys and matching line spacing enabled the surveys to be merged together. The survey parameters of both are summarized in Table 9.5. The datasets were merged by Geotech Airborne analysts and data quality control was undertaken by an independent consultant geophysicist. The magnetics show both structure and magnetic bodies, (Figure 9.3). The radiometric spectrometry enables the demarcation of different lithology types such as the granite batholith in the east of the pressure shadow zone at Ndablama (Figure 9.4).

Table 9.5 Comparisons of 2006 and 2012 airborne geophysical surveys

Company	Year	Survey Method	Data Acquired	Flight Elevation	Line Spacing	Positioning System	Line Flown (km)
New Resolution Geophysics	2006	Helicopter	Magnetics, spectrometry DTM	30 m	100 m with 1000 m tie lines	DGPS and radar altimeter	2,200
Geotech Airborne Limited	2012	Fixed wing	Magnetics, spectrometry DTM	100 m	100 m with 1000 m tie lines	GPS with WASS enabled and radar altimeter	9,631

Figure 9.3 BEA Mountain geophysics interpretation

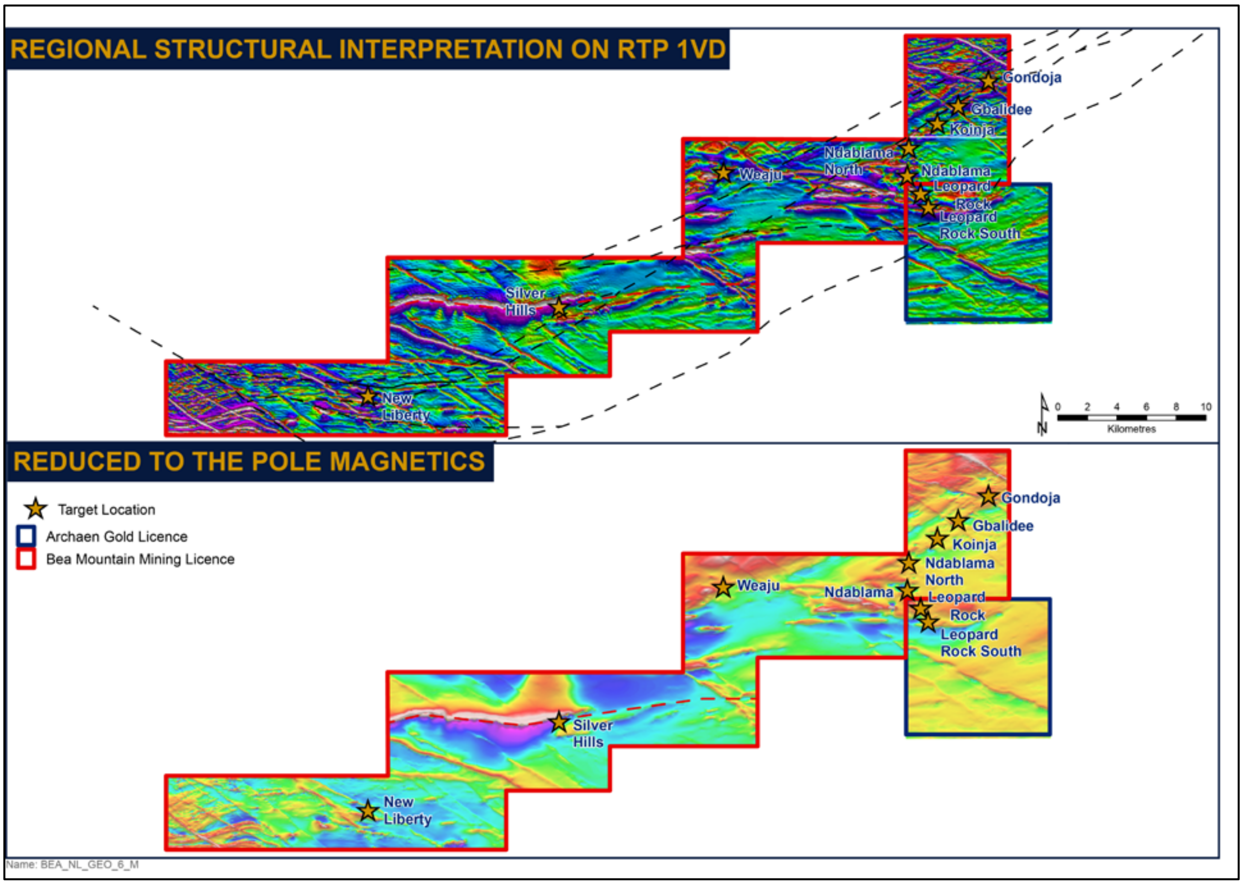
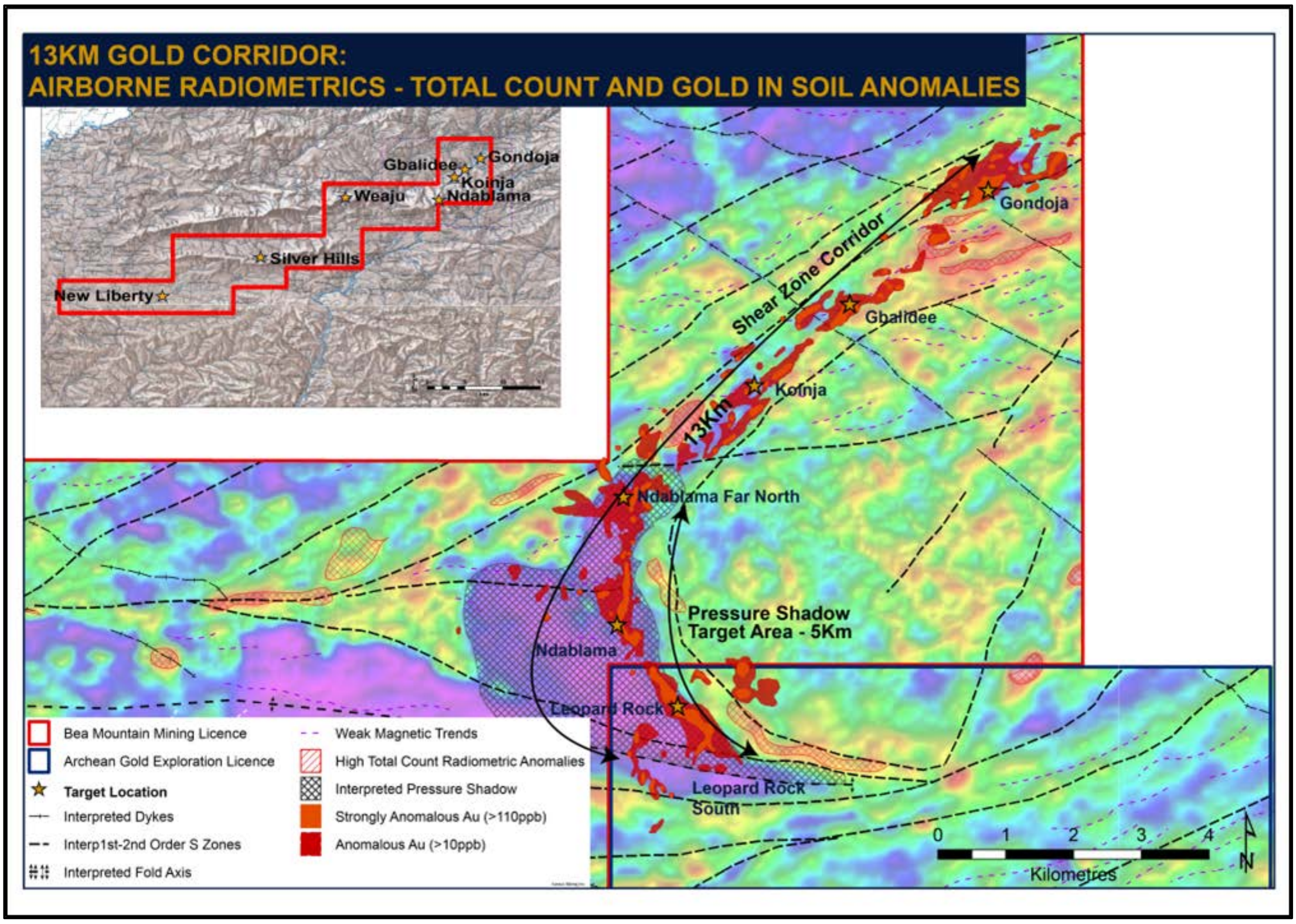


Figure 9.4 Ndablama radiometrics interpretation



9.3 Exploration of other main targets

At Ndablama Far North, five trenches were excavated earlier in 2013 and they show wide gold intercepts that have north–south strike continuity for over 1 km. Geology is similar to Ndablama and comprises mainly sheared amphibolite and ultramafic rocks located within packages of granitic gneisses.

At Ndablama South, a ground geophysical gradient array IP and magnetics survey was completed, which covered a 1.8 km^2 area, including the southern portion of Ndablama, the northern portion of Leopard Rock and the 500 m gap in between these gold targets. The work shows a 500 m NW–SE trending sulphide mineralization zone which appears to form a continuation of the main mineralized Leopard Rock to Ndablama shear zone.

Trenches were excavated in 2012. One out of the five trenches returned significant gold mineralization.

Each of the Gondoja, Gbalidee and Koinja targets is represented by soil anomalies and have associated artisanal workings. Recent trenching has identified encouraging gold mineralization in the area.

10 Drilling

10.1 Drilling procedures

All drilling campaigns undertaken have been conducted using diamond core drilling methods, performed by external contractors.

Collar coordinates

Ndablama collar coordinates were originally surveyed with Garmin hand held GPS, and later using a Sokia Total Station. The points were verified with the contour and DTM data obtained from the LiDAR survey carried out in early in 2013. To date all drillholes and collars have been properly surveyed and are well positioned on the LiDAR DTM.

At Weaju, in 2013 a DGPS was used to survey drill collars (as described in Section 9). All collars were found to correspond well with the LiDAR topographical surface.

Downhole surveys

Downhole surveying practices were similar throughout all phases of the drilling. The database shows that surveys were consistently taken, applying the same method. Equipment used was Reflex Gyro downhole survey tool and core orientation was done with the Gyro ACT II orientation tool.

The equipment was supplied by the drilling companies and operated by the Aureus geology field crew. Most of the holes were planned on 90° azimuth and inclined at -45°, -50° and -60° degree dips. Actual azimuth and inclination deviations were very minimal, except for the first hole NDD001, which returned up to 12° deviations in azimuth over 192 m.

At Ndablama, deviations in azimuth generally average ± 5° for holes depths exceeding 150 m. Downhole survey intervals were 10 m in most cases and 5 m where applicable. For Weaju, average recorded dip deviation over the full length of each hole is around 1°, but some deeper holes (more than 400 m) deviate more than 15°. Average azimuth deviation is around 1°. Up to hole WJD0048 only end-of-hole (typically 100 m) readings were taken. Thereafter, surveys were taken at 10 m intervals, or less in some cases.

Core recovery

The overall core recovery during all three campaigns of drilling at Ndablama was 94%. Minor core losses were largely limited to the oxide zone.

Drill core recovery during the first four Weaju campaigns averaged out at 84%, with the majority occurring in oxide zone. During Campaign 5 (2012 to 2013) an average recovery of 90% was achieved, with 73% recovery in the oxide and 97% in fresh rock.

10.2 Ndablama drilling programme

Ndablama exploration work was conducted between 2010 and 2013. This consisted mostly of drilling carried out in three phases. The first phase was conducted by African Aura in 2010, for a total of 15 diamond holes. Aureus Mining then conducted two drilling campaigns with 21 and 18 diamond holes in 2012 and 2013 respectively. In all, a total of 63 trenches and 54 drillholes have been completed at Ndablama.

Between 2011 and 2013 a total of 54 diamond drillholes, totaling 8,337 m were completed at Ndablama, predominantly oriented to the east, and typically inclined at 55° to 60°.

Most of the holes were drilled along the 650 m strike length of the Central and South East Zones. The current Ndablama resource has been defined based on the holes drilled within these 2 zones. At Ndablama North only a single line of holes was drilled, testing a 300 m strike length.

Details of drilling at the Ndablama target are shown in Table 10.1 and Figure 10.1. Significant drill intersections are summarized in Table 10.2.

Drilling was carried out by two different contractors. Campaigns 1 and 2 were completed by Geosearch Drilling Services of South Africa, and Campaign 3 by Boart Longyear. Two holes, NDD013 and NDD014, were drilled in different directions, based on structural orientations observed in trenches.

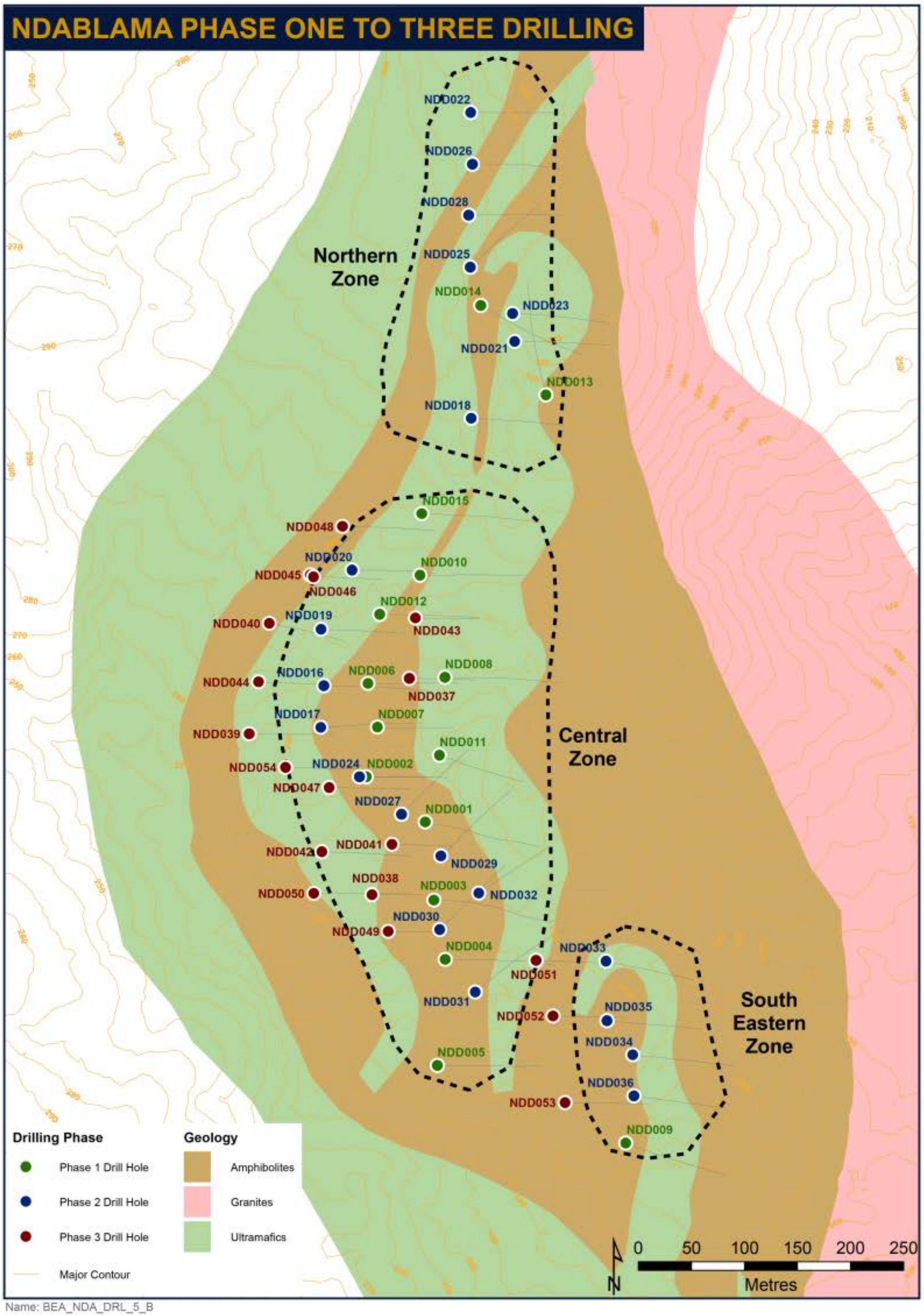
Campaign 2 drilling had 6 of 22 holes drilled on a 45° azimuth, whilst the rest were drilled at 90°. In Campaign 3, one hole (NDD045) was drilled on a 45° azimuth, whilst the remaining 17 were oriented at 90°.

The core sizes drilled varied over time as well as within holes, HQ followed by NQ core sizes were drilled during Campaigns 1 and 2. In Campaign 3 holes were drilled with PQ3 in the oxide zone to reduce core losses, followed by HQ up to saprock and NQ for the remainder of the hole.

Table 10.1 Ndablama drilling campaign details

Ndablama Drilling Campaigns							
Project	**Campaign**	**Period**	**Number of Holes Drilled**	**Total Metres Drilled**	**Total Samples Taken**	**Total Samples Sent to Laboratory**	**Results Received**
Ndablama	1	2010	15	2,665	2,390	2,390	2,390
Ndablama	2	Q4 2011 to Q2 2012	21	3,345	3,646	3,646	3,646
Ndablama	3	Q1 2013	18	2327.2	2,579	2,579	2,579
TOTALS			54	8,337.20	8,615	8,615	8,615

Figure 10.1 Ndablama drilling, Phases 1–3



Significant gold mineralization drillhole intercepts for all the zones from Ndablama N to SE are indicated in Table 10.2. These intercepts are as for drilling results published by Aureus, but are not necessarily consistent with those used for resource estimation (Chapter 14).

Table 10.2 Ndablama drilling intersections

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone
NDD026	26	31	5	0.5	Northern
and	36	38.7	2.7	0.7	Northern
NDD028	27	29	2	1.4	Northern
NDD025	16	35	19	1.1	Northern
including	18	22	4	3.5	Northern
and	39	45	6	1.8	Northern
and	48	53	5	0.7	Northern
and	60	69	9	0.7	Northern
NDD14	4	12	8	1.1	Northern
NDD023	0	2	2	0.7	Northern
NDD021	0.8	3	2.2	0.6	Northern
NDD018	35	38.7	3.7	2	Northern
and	44	46.5	2.5	1.4	Northern
NDD10	26	43	17	1.2	Main
and	65	73	8	1.3	Main
NDD020	49	62	13	1.4	Main
including	57	60	3	2.9	Main
and	82.2	87.2	5	2.1	Main
and	92.2	99.2	7	0.7	Main
NDD12	24	38	14	2.9	Main
NDD019	51	61	9	0.8	Main
and	66	71	5	0.8	Main
NDD016	39	42	3	0.5	Main
and	49.5	60.5	11	7.1	Main
NDD06	28	54	26	0.5	Main
and	64	69	5	2.6	Main
and	90	99	9	1.6	Main
NDD08	0	3	3	1.1	Main
NDD07	16	22	6	1.8	Main
and	26	44	18	1.3	Main
NDD017	39	41	2	0.9	Main
and	53	65.8	12.8	1.2	Main
and	67.6	72	4.4	2.3	Main
and	76	83.8	7.8	0.6	Main
NDD11	17	20	3	4.2	Main
and	29	32	3	5.4	Main
and	40	50	10	2.8	Main
NDD024	9	14	5	0.6	Main
NDD02	14	30	16	2.4	Main
and	38	54	16	1.2	Main
and	64	67	3	8.7	Main
NDD027	17	25	8	0.9	Main

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone
and	32	47	15	1.6	Main
and	50	59	9	0.9	Main
and	64	67	3	1.4	Main
NDD01	2	9	7	1.4	Main
and	49	53	4	1.4	Main
and	56	60	4	2.8	Main
NDD029	10	12	2	1.1	Main
and	23	28	5	1.2	Main
and	42	45	3	4.3	Main
and	47	51	4	1.9	Main
NDD032	12	17	5	0.8	Main
and	23	25	2	0.7	Main
NDD03	20	28	8	6	Main
and	45	49	4	1.9	Main
NDD030	23.7	27	3.3	4.8	Main
and	43.7	47	3.2	0.6	Main
and	58	61	3	0.5	Main
NDD031	12.6	14	1.4	4.7	Main
and	25.5	27	1.5	0.7	Main
and	31	37	6	0.6	Main
NDD04	26	28	2	1.7	Main
and	42	54	12	0.6	Main
NDD033	13.3	15	1.7	2.1	South Eastern
and	28	32	4	3.2	South Eastern
and	38	43	5	0.6	South Eastern
NDD035	42	47	5	2	South Eastern
NDD034	28.4	37	8.6	0.6	South Eastern
NDD036	30.8	33	2.2	7.6	South Eastern
and	41	43	2	1.5	South Eastern
NDD09	15	23	8	0.7	South Eastern
and	31	41	10	2.3	South Eastern
NDD048	65	78	13	2	Main
and	104	109	5	5.4	Main
NDD045	78	92	14	9.7	Main
including	84	92	8	16.5	Main
NDD046	63	74	11	0.5	Main
and	119	120	1	1.3	Main
NDD040	71	84	13	0.6	Main
and	99	101	2	1.9	Main
NDD043	12	15	3	0.7	Main
and	28	32	4	0.5	Main
NDD044	62	75	13	1	Main
and	83	98	15	2.3	Main

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone
including	86	93	7	4.3	Main
and	116	120	4	2.1	Main
NDD037	13	16	3	3.1	Main
and	61	68	7	1.2	Main
NDD039	57	59	2	1.1	Main
and	67	80	13	2.4	Main
including	67	76	9	3.4	Main
and	89	107	18	2.6	Main
including	95	100	5	4.8	Main
NDD054	52	70	18	2.5	Main
including	52	56	4	8.5	Main
and	78	121	43	4.1	Main
including	78	90	12	9	Main
NDD047	41	46	5	0.7	Main
and	51	63	12	5.5	Main
including	70	97	27	4.3	Main
NDD042	68	85	17	2.4	Main
including	70	77	7	4.5	Main
and	92	97	5	1	Main
and	108	119	11	16.7	Main
and	142	146	4	4.4	Main
NDD041	35	40	5	1	Main
and	44	49	5	0.9	Main
NDD050	77	81	4	3.2	Main
and	94	103	9	1.6	Main
including	99	103	4	3.4	Main
NDD038	57	60	3	1.8	Main
and	72	79	7	0.9	Main
NDD049	83	88	5	0.6	Main
NDD051	85	88	3	2	South Eastern
NDD052	66	76	10	2.2	South Eastern
and	93	95	2	1.3	South Eastern
NDD053	59	61	2	0.6	South Eastern
and	94	100	6	3.4	South Eastern
NSV - NDD005, NDD013, NDD015, NDD022 Assay grade data is un-cut					

10.3 Weaju drilling programme

Initial exploration at Weaju was followed by two drilling campaigns in 2000, for a total of twelve drillholes. Drilling resumed in 2005 with 34 holes drilled. A hiatus in drilling occurred until 2012 when Aureus drilled an additional 81 holes and excavated 8 trenches. In summary, as shown in Table 10.3, drilling at Weaju has been completed in five campaigns, totalling 129 holes and 13,570 m.

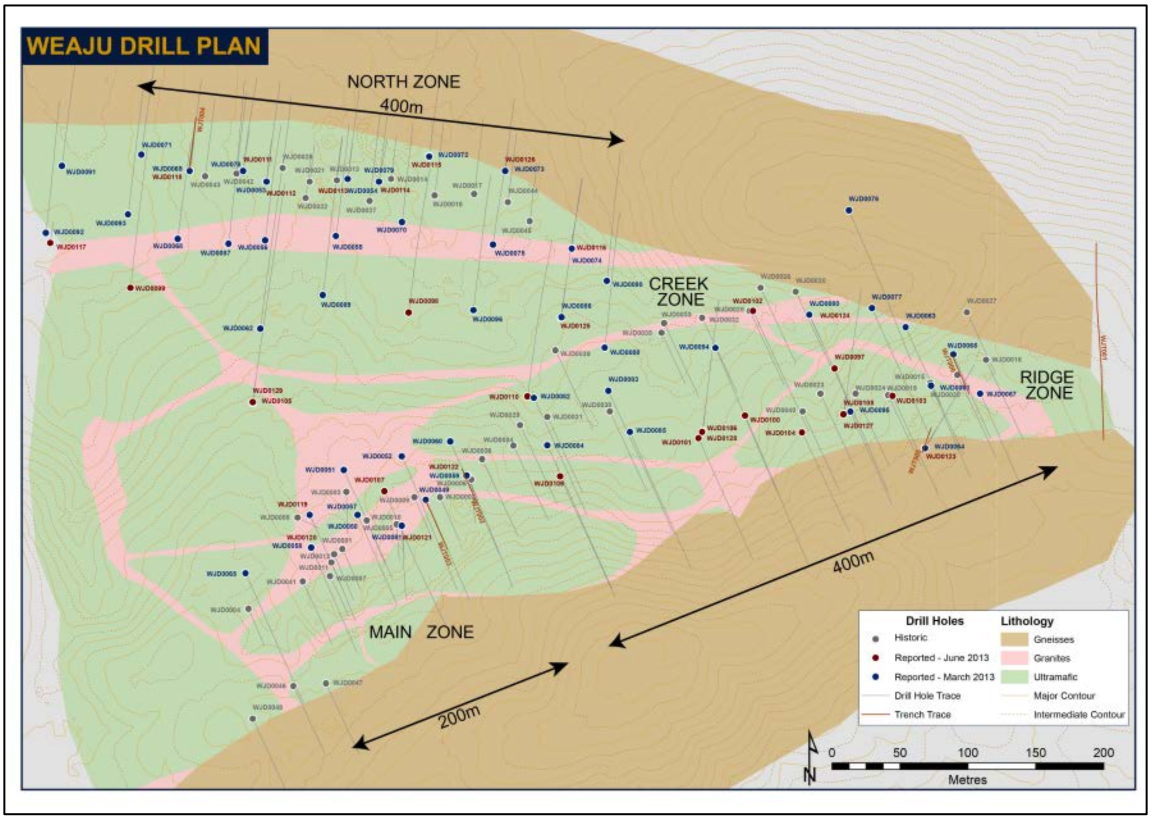
Table 10.3 Weaju drilling campaign details

Campaign	Year	Company	Number of Drillholes	Metres Drilled	Drilling Company
1	1999	Mano River	1-2	103	Drill Sure
2	2000	Mano River	3-8	228	Drill Sure
3	2000	Mano River	9-14	291	Drill Sure
4	2005	Mano River	15-48	3253	Envirodrill
5	2012-2013	Aureus	49-129	9635	Boart Longyear

Drilling was conducted with the aim of intersecting mineralization on each limb of the fold structure. Initially the southern limb was tested (Main Zone) and later the northern limb (Northern Zone) and the fold axis (Ridge and Creek) (Figure 10.2).

Drilling of the southern limb was oriented on an azimuth of 156° and a dip of -50° and in the north at 007° dipping -55°. The drillholes for Campaigns 1, 2 and 3 (holes 1–14) have not been used for resource estimation, as the drilled material was damaged during the hiatus between 2000 and 2005.

Figure 10.2 Weaju drilling



Drilling has been carried out by various contractors. Campaigns 1 to 4 used UK-based firm Drillsure (later Envirodrill); while Campaign 5 was completed by Boart Longyear.

Campaigns 1 to 4 were drilled using a small man-portable rig with BQ size core. Campaign 5 was completed by Boart Longyear, using PQ triple tube in the oxide, reducing to HQ then to NQ.

Significant intersections of gold mineralization within all zones at Weaju are presented in Table 10.4. These intercepts are as for drilling results published by Aureus, but are not necessarily consistent with those used for resource estimation (Chapter 14).

Table 10.4 Significant intersections at Weaju

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone	Core Loss
WJD0049	16	19	3	5.8	Main	
and	24	43	19	2.5		
WJD0050	3	4	1	3.7	Main	
and	33	35	2	1		
and	64	65	1	2		
WJD0051	33	35	2	0.5	Main	
WJD0057	1.4	10	8.6	1.3	Main	48%
and	111.5	112.5	1	6.5		
WJD0058	4.5	10.3	5.8	1.3	Main	45%
and	93	99	6	1.6		
including	93	94	1	4.6		
WJD0059	12.9	19.5	6.6	5.5	Main	28%
WJD0060	52	54	2	0.5	Main	
WJD0065	107	113	6	1.4	Main	
WJD0081	0.2	7.7	7.5	10	Main	49%
and	33.6	37.6	4	12.7		
and	43.6	52.2	8.6	3.5		
WJD0082	84.6	87.6	3	0.9	Main	
and	122.6	125.6	3	0.5		
WJD0083	87.7	89.7	2	2.3	Main	
and	106.7	109.7	3	0.4		
and	116.7	117.7	1	9.1		
WJD0084	114.4	123.4	9	6.6	Main	
WJD0085	41.5	42.5	1	11	Main	
and	61.5	63.5	2	1.4		
and	73.5	75.5	2	1.7		
and	77.5	79.5	2	2.1		
and	85.5	90.5	5	0.4		
and	94.5	99.5	5	0.5		
and	102.5	104.5	2	0.9		
and	133.5	134.5	1	4.8		
WJD0107	40.7	48.7	8	4.4	Main	
Including	46.7	48.7	2	7.5		
and	59.7	65.7	6	2.5		
WJD0109	3.8	5.8	2	1.3	Main	
WJD0053	36	47	11	3.7	North	9%
including	41	46	5	8		20%
WJD0054	23.2	27.8	4.6	2.5	North	33%
WJD0055	78	87	9	3.8	North	3%

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone	Core Loss
WJD0056	97	105	8	1	North	
and	108	111	3	1.8		
WJD0062	155	157	2	2		
and	169	174	5	1		
and	180	189	9	3.2		
WJD0068	63	68	5	5.7	North	
WJD0069	6	10	4	5	North	40%
and	15	17.5	2.5	1.2		20%
WJD0070	78	82	4	1	North	
WJD0072	13.9	25.2	11.3	4.6	North	38%
WJD0073	0.9	8.3	7.4	1.9	North	78%
and	18.2	23	4.8	0.5		
WJD0074	4.6	12.4	7.8	0.9	North	50%
including	9.4	12.4	3	1.2		33%
and	42	48	6	1.1		
and	50	58	8	1.5		
WJD0075	44.2	47.2	3	2.3	North	
and	80.6	91.6	11	0.5		
WJD0078	28.9	33.1	4.2	1.6	North	23%
and	63.1	64.1	1	2.6		
WJD0079	15.3	32.8	17.5	1.3	North	30%
and	42.8	47.8	5	2.4		28%
WJD0086	28.9	32.8	3.9	0.9	North	23%
and	63.8	64.8	1	2.8		
and	79.8	84.8	5	4.4		
and	86.8	87.8	1	2.3		
and	90.8	94.8	4	1.3		
and	106.8	107.8	1	5.2		
WJD0087	86.9	87.9	1	5.9	North	
and	95.9	97.9	2	0.9		
and	103.9	105.9	2	1.2		
WJD0088	51.5	52.5	1	1.6	North	
and	64.7	66.7	2	1.1		
and	82.7	83.7	1	2.8		
WJD0089	126.2	127.2	1	3.2	North	
and	140.2	143.2	3	0.9		
and	152.2	157.2	5	2.3		4%
WJD0090	9.4	10.7	1.3	1.4	North	
and	19.9	21.1	1.2	4.5		
and	24.1	26.1	2	0.5		
WJD0092	15.9	19.6	3.7	0.6	North	25%
WJD0093	25.8	30.9	5.1	0.5	North	
	51.6	52.6	1	1.2		

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone	Core Loss
WJD0096	121.8	129.8	8	1	North	
WJD0098	0.3	3	2.7	1	North	
and	88.2	90.8	2	0.5		
WJD0099	96.4	98.2	2	7.8	North	
and	101.4	112.4	11	0.9		
Including	110.4	112.4	2	3.5		
WJD0105	9.3	12.4	3.1	0.6	North	29%
and	188.4	190.4	2	0.7		
and	205.4	223.4	18	1.1		
and	237.4	238.4	1	11.5		
WJD0110	162.7	164.7	2	0.4	North	
WJD0061	28	29	1	1.6	Ridge	
and	40	41	1	4.5		
WJD0063	0	3	3	1.2	Ridge	
and	6.5	9.5	3	1.3		
WJD0064	7.2	11.6	4.4	5.1	Ridge	43%
and	41	56	15	1.3		
including	41	46	5	3.2		
WJD0066	9	16	7	3	Ridge	
including	12	16	4	4.8		
WJD0067	95.4	96.4	1	1.6	Ridge	
WJD0077	6	8	2	0.4	Ridge	
WJD0095	0	5.9	5.9	4.7	Ridge	
and	17.9	20.9	3	0.5		7%
and	43.7	46.7	3	4.4		
and	51.7	53.7	2	1.3		
WJD0097	27.3	34.3	7	0.6	Ridge	
WJD0103	39	53	14	5.6	Ridge	
Including	42	46	4	8.4		
WJD0104	72	77	5	0.9	Ridge	
WJD0106	29.85	35.7	5.9	1.1	Ridge	12%
WJD0108	1.3	7.4	6.1	2.6	Ridge	31%
and	43.7	49.7	6	9.1		
Including	43.7	47.7	4	13.3		
WJD0080	0	7.1	7.1	0.8	Creek	39%
WJD0094	0	8.7	8.7	6.9	Creek	55%
and	28.4	30.4	2	0.5		
and	52.4	57.4	5	0.5		
WJD0100	46.8	48.8	2	1.1	Creek	
and	66.8	75.8	9	1.8		
WJD0101	24.6	26.6	2	1.1	Creek	
and	49.6	52.6	3	2		
and	82.6	91.6	9	2.3		

Hole ID	From (m)	To (m)	Intersection Length (m)	Au (g/t)	Zone	Core Loss
Including	86.6	88.6	2	8.9		
and	102.6	104.6	2	0.7		
WJD0102	53.6	55.6	2	0.4	Creek	
and	123.6	125.6	2	1.8		
Assay grade data is un-cut						
NSV – WJD0052, WJD0071, WJD0091, WJD0076						

10.4 Drilling at other targets

A 13 km by 2 km soil geochemistry survey covering Ndablama's batholith pressure shadow area and the Yambesei shear zone has demarcated a continuous zone of gold-in-soil anomalies with values up to 6 g/t. This work outlined multiple targets which require follow up trenching and drilling programmes. To date, work outside Ndablama has been undertaken at five targets, being Ndablama, Ndablama North, Koinja, Gbalidee, Gondoja and Leopard Rock (the last being located in the Archean Gold Licence).

As with Ndablama the drilling confirmed that the soil anomalies are associated with bedrock mineralization and that the geology and style of mineralization is very similar to that observed at Ndablama. To date less than 15% of the gold corridor has been drill tested.

The Ndablama North target requires further drilling to extend the strike continuity from Ndablama towards the north.

10.4.1 Gondoja and Gbalidee

The Gondoja gold target is located 7 km NE of Ndablama. The area was previously explored by Mano River in 1999 to 2000 and results from seven trenches and four drillholes were reported in 2000. The trench results showed gold grades of between 1g/t and 2 g/t, over widths of 20 m to 64 m. Five diamond drillholes were drilled at various orientations, with a best intercept of 30 m grading 3.9 g/t from hole GD4.

During 2012, a 13 hole, 2,699 m, diamond drilling programme was completed at Gondoja. Core from the five drillholes previously drilled at the prospect were lost during the period of civil unrest. The results from the drilling are detailed in Table 10.5.

Gold mineralization at Gondoja locates at the sheared contacts between ultramafic and metabasalt rocks and is associated with disseminated arsenopyrite, pyrrhotite and silica-sericite-carbonate alteration.

The reconnaissance drill results highlight multiple intercepts over an ENE-trending structural zone with a 500 m strike length. The mineralized system is still open to the WSW and at depth.

At this stage the mineralization is characterized by very variable widths and grades, and further surface work and drilling will be required in order to develop a mineralization model.

Gold-in-soil anomalies have been defined for over 4 km in a NE–SW direction in this area. At the Gbalidee target, located 2 km SW of Gondoja, four trenches for 235 m and five diamond drillholes have been completed. The geology of Gbalidee is very similar to Gondoja.

Table 10.5 Gondoja significant intersections

Borehole ID	From (m)	To (m)	Intersection Length (m)	Au Grade (g/t)
GD-4	74	110	30	3.9
GDD005	37.3	39	1.7	1.3
GDD010	72.8	75.8	3	14.8
GDD003	58.7	63	4.3	3.6
and	87	90	3	2.9
GDD004	36	37.85	1.9	0.9
and	40.9	48.8	7.9	0.6
GD-2	12	14	2	1.1
GDD001	62	65	3	2.2
and	73	76	3	0.8
and	90	96	6	11.7
and	104	106.6	2.6	0.7
and	114.8	116.3	1.5	1.6
GDD002	0	2.5	2.5	1.4
and	3.2	5.76	2.6	0.6
and	15.2	27	11.8	1.3
and	70.9	72.8	1.9	0.8
GD-1	38	42	4	3
GDD012B	25.8	27.8	2	1.2
and	30.8	33.5	2.7	0.9
and	73	78.8	5.8	0.7
and	79.1	81	1.9	0.7
GD-5	38	42	4	2
GD-5	58	64	6	1.2

Notes: Assay grade data is uncut.

No significant values were detected in drillholes: GD-3, GDD006, GDD007, GDD008, GDD009, GDD011 and GDD013, and GDD012 was abandoned.

10.4.2 Leopard Rock

The Leopard Rock gold target is located 800 m south-east of Ndablama within the Archean Gold exploration licence. A first-phase exploration programme was completed at this target and includes soil geochemistry, geological mapping, 27 trenches covering 2,965 m and 27 drillholes totalling 4,293 m. The drilling programme demonstrated shallow westerly-dipping gold mineralization which is very similar to Ndablama and can be followed for a further 800 m to the SE (Figure 10.3).

Results from the drilling and trenching have outlined multiple gold zones which are hosted within a NW to SE trending shear zone over a strike length of 1.1 km. The diamond drilling cores demonstrate that the gold mineralization is associated with disseminated pyrite, pyrrhotite and arsenopyrite, located within sheared and altered ultramafic rocks at the contact with metabasalt rocks. The ultramafic and metabasalt rocks have been intruded by granitic dykes. Gold zones vary from thin (1–4 metres) higher grade (+5 g/t) bodies to wider intercepts (8–20 metres) grading 0.5 to 2.0 g/t. All of the gold zones dip at a shallow angle of 45° to the SW. The results for the 27-hole programme are given in Table 10.6 below.

The Leopard Rock gold target is still open to the NW and SE. Gold-in-soil anomalies extend for a further 1 km NW to the Ndablama target.

An induced polarization ground geophysical survey (Figure 10.4) was completed in this area to define further targets for drilling. In the SE the gold-in-soil anomaly associated with the Leopard Rock mineralization can be traced for a further 500 m. Further drilling programmes at Leopard Rock will focus on the NW and SE extensions as well as infill drilling into the current gold zones, as outlined by the previous drilling programme.

Figure 10.3 Leopard Rock geology and drilling location

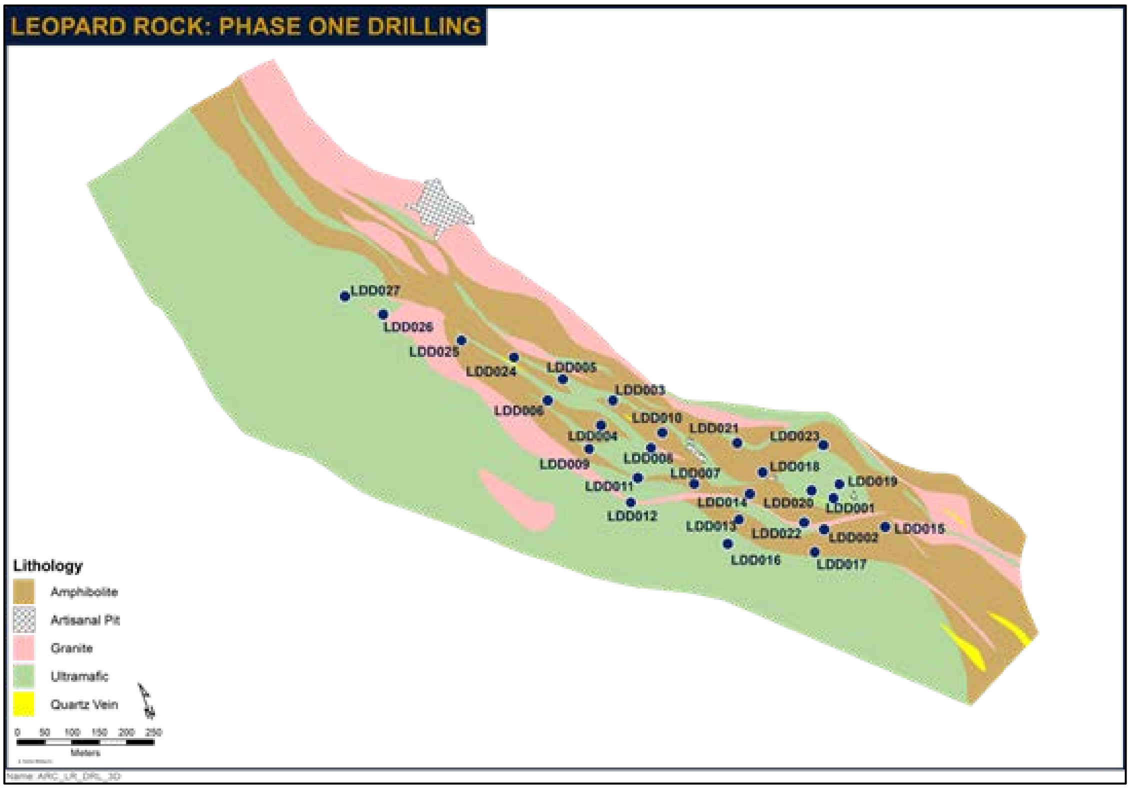


Figure 10.4 Leopard Rock – Ndablama gap ground IP survey

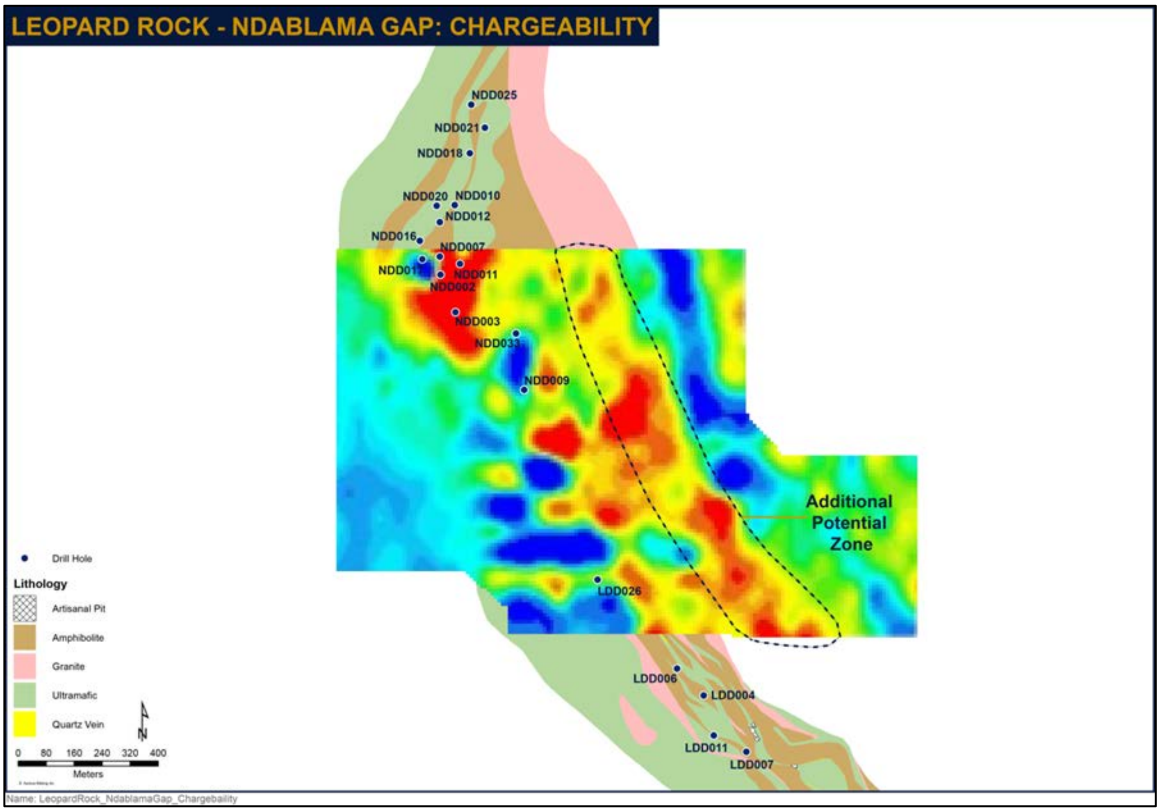


Table 10.6 Significant Leopard Rock drill results

Borehole Values are Reported from North to South				
Borehole ID	**From (m)**	**To (m)**	**Intersection Length (m)**	**Au g/t**
LDD001	2	22	20	1.9
and	52	61	9	1.9
including	56	59	3	5.0
LDD004	79	83	4	5.5
and	87	91	4	17.6
LDD005	2	10	8	1.0
and	42	44	2	10.4
LDD006	24	35	11	1.7
and	39	43	4	1.1
and	56	59	3	9.5
LDD007	26.6	33	6.4	1.0
LDD009	107	113	6	9.4
including	107	111	4	13.9
LDD011	116.5	126	9.5	1.3
LDD014	15	25.3	10.3	1.0
and	35	39	4	4.8
LDD016	93.2	95.2	2	4.4
LDD019	40.8	50	9.2	1.4
LDD020	57	64	7	1.0
LDD024	0	11.5	11.5	1.0
LDD026	67	77	10	2.8

Assay grade data is uncut.

11 Sample preparation, analyses and security

11.1 Introduction

Quality assurance protocols have passed through several cycles, with various consultants contributing to the present status. QA/QC protocols were not very rigorous in the Weaju drilling for Campaigns 1 through 3 (1999–2000), and simply involved the sparing use of core duplicates. Certified reference materials (CRMs) were first utilized in the Weaju drilling for Campaigns 4 and onward (2005). Improved QA/QC procedures were implemented in Weaju Campaign 5 (2012–2013) and Ndablama drilling Campaigns 1 through 3 (2010–2013).

Prior to dispatch to the sample preparation laboratory field samples collected from various projects are stored in a secure facility at the field base camp. Pulp and coarse rejects duplicates and other unassayed material are stored at this facility.

Sample preparation, analytical techniques and QA/QC procedures for the Ndablama Campaign 1 were not available for AMC to review. Discussions in this section apply to drilling programme completed by Aureus covering drillholes NDD037 to NDD054 (Campaign 3, 2013).

Similarly, sample preparation, analytical techniques and QA/QC procedures for the Weaju project for drilling Campaigns 1 through 4 (1999 to 2005) are not available for review by AMC. Discussions in this section apply to drilling programme completed by Aureus, covering drillholes WJD0049 to WJD0129 (Campaign 5, 2012-2013).

11.2 Soils and trenches

Soil samples were collected from 0.5 m below surface, in areas away from drainage channels, then coned and quartered to 1.5 kg–2.5 kg weights, and bagged for analysis.

For trenches, 1 m-long samples were systematically collected in saprolite material from 10 cm square channels cut into cleaned trench walls near the floor of trenches and across the strike of mapped structures. For consistency the channels start at the southern ends of trenches. Some trenches (and channels) were excavated in separate segments to traverse around large boulders, trees and unstable artisanal workings, whilst maintaining continuity across the zone.

All work has been carried out by project field crews and supervised by Aureus geologists.

11.3 Diamond drillhole samples

Core runs and core blocks were placed in boxes by the drillers and verified by the Aureus geologists at the drill rig. As a general practice, core orientations were measured at the drill site by the drillers and checked by the geologists, who then drew orientation lines on the core. Upon receipt in the site core shed, core was cleaned or washed (if required) and core blocks were re-checked by Aureus staff. Orientation lines were also cross-checked at the core yard by the logging crew.

The core was photographed, wet and dry, using a camera mount in a framed structure to ensure a constant angle to and distance from the camera. Magnetic susceptibility readings were taken every metre. For unconsolidated core this is measured in situ and results recorded, in SI units (kappa) in the assay log sheet.

Geotechnical logging records the casing size, bit size, depths, intervals, core recovery, weathering index, RQD, fracture index, jointing and joint wall alteration, and a simple geological description. All core was oriented, with alpha and beta angles of fabrics recorded at point depths (Figure 11.1).

Sample intervals are measured-off by the project geologists and a line is drawn 90° clockwise from the orientation line along the length of the core to indicate where the core must be cut. This is to ensure that each half of the core will be a mirror image of the other. Where there is no orientation, a line is chosen to be at 90° to the predominant structure so that each cut half of the core will be a mirror image.

Core cutting by diamond saw is conducted in a dedicated core saw shed, while unconsolidated material is split using spoons or trowels. Core is cut in half, or in the case of unconsolidated material, half is removed from the core box for assay. Each sample interval is placed in a plastic bag with a sample ticket. The bag is labelled with the hole and sample numbers, using a marker pen.

Figure 11.1 Structural core measurements

Early exploration samples at Weaju were 2 m in length. One metre samples were introduced for target intersections, retaining 2 m intervals over suspected weakly mineralized material. During the 2012–2013 campaign drillholes were uniformly sampled at 1 m intervals for the entire length of the hole, with some areas of core loss being assigned specific intervals, as determined by geologists.

At Ndablama, all samples were cut at 1 m lengths, except for a limited number of holes in Campaign 2 drilling, where samples were cut according to specific lithologies to determine which lithologies were hosts to mineralization. In such cases average core lengths for samples fell to about 0.7 m.

11.3.1 Bulk density measurements

Bulk density readings are taken at 2 m intervals within the same lithology and at every lithological break, based on weights from 10 to 20 cm lengths of core (Figure 11.2). Measurements are carried out by weighing samples in air and water with a balance, with porous samples wrapped in plastic. For some drillholes in Ndablama (Campaign 2), measurements were carried out on half core, i.e. post-sampling, but currently whole core is used.

Figure 11.2 Measurement of bulk densities

11.3.2 Preparation and analysis

The primary laboratory for the projects is the SGS Monrovia laboratory, located in Monrovia, Liberia. The laboratory performs sample preparation and gold assaying of drill core and trench samples. While the laboratory is not certified for ISO/IEC 17025:2005 for gold assaying, the laboratory is working towards this certification. The laboratory participates in internal SGS internal audits aimed at ensuring that all SGS laboratories operate to the same standard.

The Umpire laboratories used by Aureus for quality control samples are the ALS laboratory located in Loughhrea, Ireland, and SGS Tarkwa laboratory, located in Ghana. The ALS laboratory is ISO/IEC 17025:2005 certified for gold fire assays, but SGS Tarkwa does not have the ISO/IEC 17025:2005 certification.

In March 2012, Aureus started sending samples to the SGS laboratory in Monrovia. The SGS laboratory promised a shorter turnaround time for assays and had an improved layout of facilities. Core samples were cut with a diamond saw at Aureus's core yard on site and 1 m samples were dispatched to SGS for fire assay. Samples were transported in plastic bags, labelled with sample numbers, and inserted with tickets bearing the same numbers.

For QA/QC purposes, Aureus inserts certified reference material from commercial laboratories into the sample stream at a rate of one in ten, at the 19th and 20th samples positions in the stream.

At the SGS Monrovia sample preparation facility, samples were checked against a sample submission sheet, which had been attached in the presence of a senior geologist and two field assistants, to ensure sample identities and numbers are correct, and the samples were received by the laboratory attendants. Average weight of sample accepted by the laboratory was 2 kg. In the laboratory, samples were selected in batches of 50 and each sample assigned a laboratory working code, prior to being logged into the laboratory database, together with the Aureus sample numbers.

Each sample is dried in an oven at a controlled temperature, usually 105°C, for 8 hours, jaw crushed, homogenized to prevent segregation, and 200 g of each sample is scooped into separate pans for analysis. The remainder is saved as a coarse reject for return to Aureus camp sites. The 200 g portion is milled into pulps. The flow chart in Figure 11.3 summarizes sample collection, sample preparation, assaying and QAQC procedures adopted during the analysis. Samples are analysed in lots of 50 and include 44 original samples, four duplicates, one CRM and a blank prepared by the laboratory itself.

After milling, samples are weighed and 50 g of each sample scooped for analysis, with the remainder retained as pulps. The 50 g portion was mixed with flux and fused in clay crucibles. Lead buttons produced after fusions are cupelled, forming Dore pills that are digested in aqua regia. The digest is analysed for gold using a Varian AA Spectrometer.

The pulps are taken through the laboratory's round-robin programmes and proficiency test. The test involved sample decomposition by fire assay fusion, FAA505 method, utilizing 50 g of sample, followed by atomic absorption spectroscopic finish to determine the amount of gold in the sample. The value is recorded electronically to the laboratory's database, exported in csv format and e-mailed to Aureus, followed by PDF copies of assay certificates.

11.4 Assay QA/QC

Aureus systematically submits blank and standard quality control samples at a nominal frequency of 1 in 10 for both the Ndablama and Weaju projects. Field duplicates and pulp duplicates are not submitted for Ndablama or Weaju projects.

Umpire quality control samples have been submitted by Aureus periodically for both the Ndablama and Weaju projects.

Aureus QA/QC protocols require monthly review of blank and standard quality control data using the Century Systems drillhole database management software. The failure of one standard to assay outside of ±10% of the certified value is considered a quality control failure and requires the re-assay of 10 samples prior and 10 samples after the failed quality control sample.

Aureus has also performed limited analysis comparing standard fire assays with screened fire assays with atomic absorption and gravimetric finish.

11.4.1 Blanks

For both Ndablama and Weaju projects sand or bricks used locally as building material were used as blank material for quality control samples. When this blank material was not available coarse rejects that assayed below detection limit were used as replacement blank material (Weaju only).

Aureus submitted a total of 274 blanks for the Ndablama project and 146 blanks for the Weaju project.

Blank sample data is in general well within the acceptable limit of 0.1 g/t Au for both the Ndablama and Weaju projects, with one assay above the limit in each project. Aureus reports that each incident was the result of mislabeled samples or contamination. Results are presented in Figure 11.4 and Figure 11.5 respectively.

11.4.2 Standards

Aureus uses 12 certified reference material (CRM) samples for each of the Ndablama and Weaju projects. All CRMs have been sourced from Geostats Pty Ltd. and Rocklabs Ltd. A list of CRMs used for each project is provided in Table 11.1.

Results from these quality control samples are generally within ±10 of the certified values for the standards. The mean of assay values is typically below this value but well within the accepted error range of 10%. Typical results for Ndablama and Weaju projects are presented in Figure 11.4 and Figure 11.5 respectively. Aureus reports that all samples assaying above the 10% limit resulted from mislabelled samples or contamination. All instances required re-assaying of the 10 preceding and 10 following samples.

Table 11.1 Certified reference material (CRM) for Ndablama and Weaju projects

Ndablama CRM	Certified Value	Weaju CRM	Certified Value
G303-8	0.26	G910-4	16.92
G311-4	1.43	G910-1	1.43
G995-1	2.75	G900-5	3.21
G996-7	5.98	G310-6	0.65
G_13_54	13.54	G306-3	8.66
G_0_69	0.69	G303-8	0.26
G_0_99	0.99	G311-4	1.43
G_7_18	7.18	G995-4	8.67
SE58	0.607	SP59	18.12
SG40	0.976	SN60	8.595
SG56	1.027	G996-7	5.98
SJ53	2.637	SG56	1.027

Figure 11.3 Sampling, sample preparation and assay flowchart

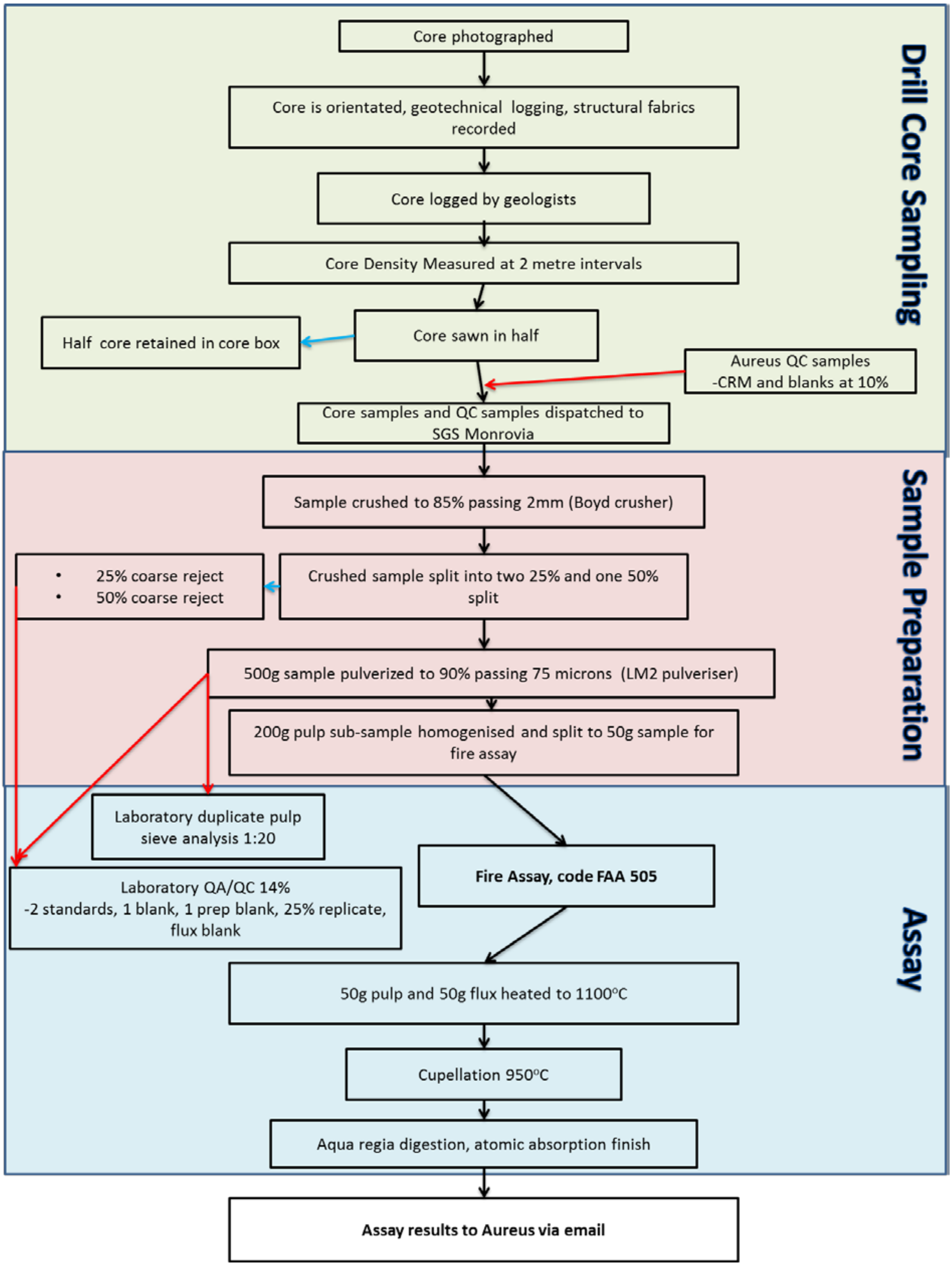


Figure 11.4 Summary of standards and blank quality control samples for Ndablama project

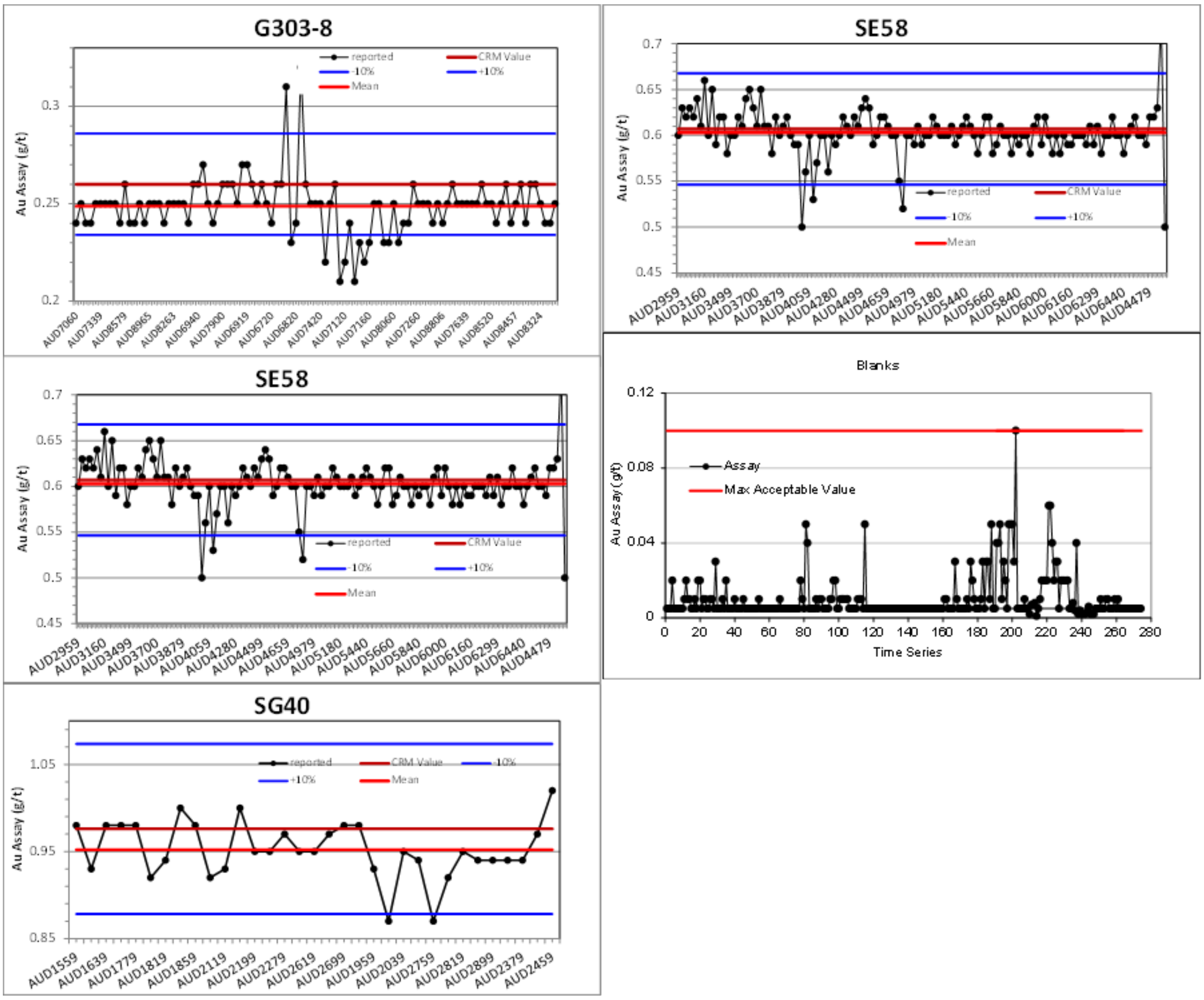
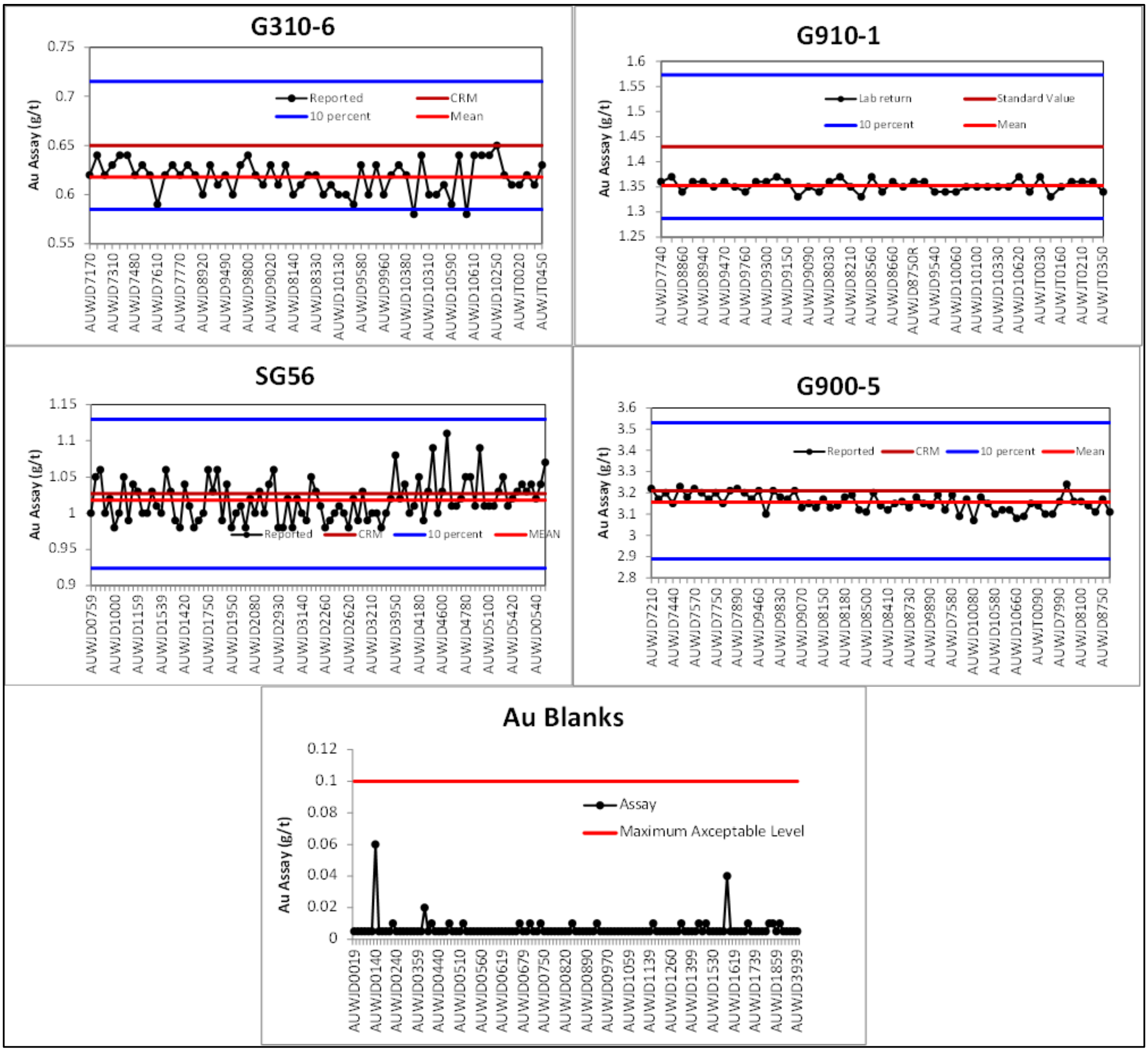


Figure 11.5 Summary of standards and blank quality control samples for Weaju project



11.4.3 Umpire samples

For the Ndablama project Aureus has submitted 105 coarse reject duplicates to the SGS laboratory in Loughrea, Ireland. The submission consists of coarse reject material from the start of the programme to the current end of drilling. Aureus found 4 sample submissions that were mislabeled and removed them from analysis. Summary statistics and plots for this data set are presented in Figure 11.6.

For the Weaju project 384 coarse reject samples were submitted to external laboratories. The umpire samples were submitted in two sets from Campaign 5 comprising:

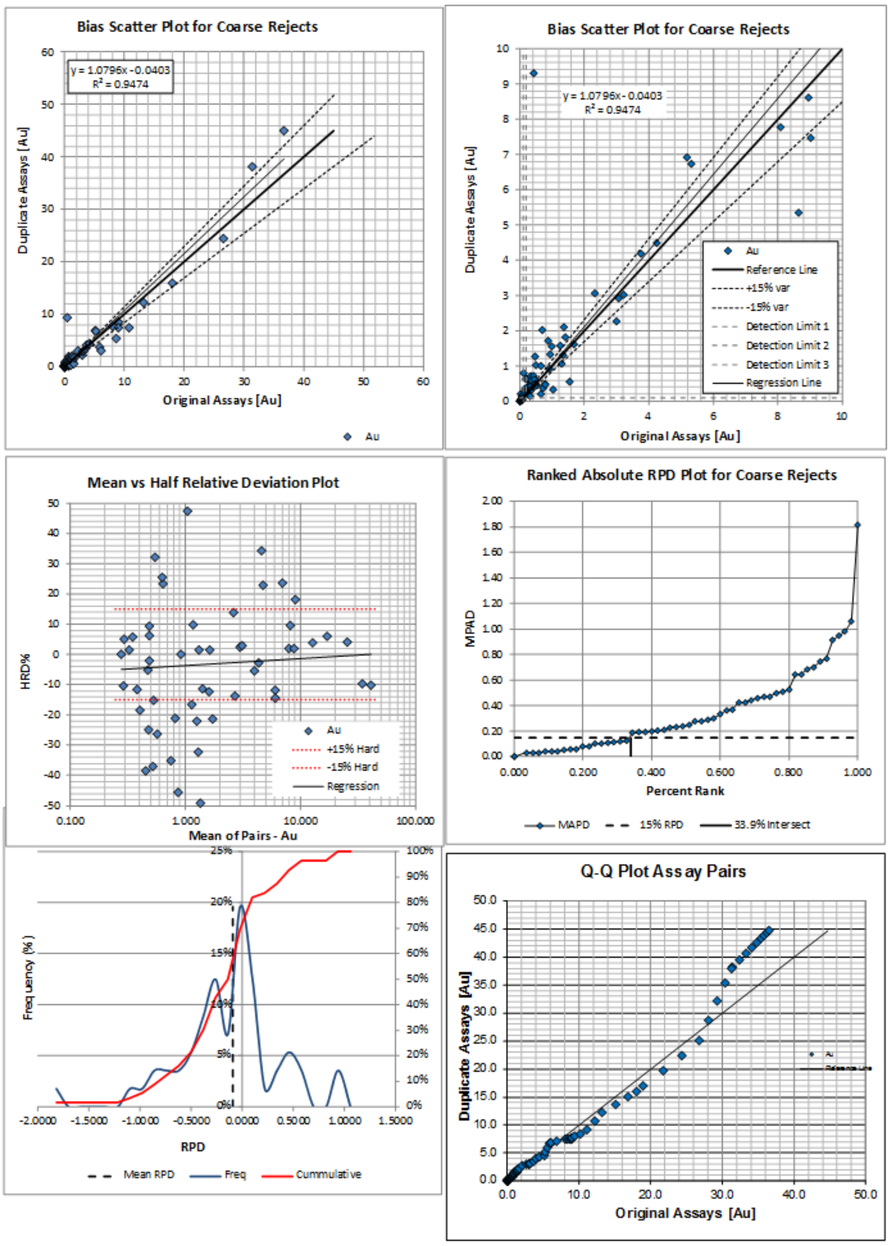
- Assays from nine drillholes (WJD0067, WJD0058, WJD0061, WJD0066, WJD0078, WJD0079, WJD0084, WJD0081 and WJD0095) assayed by SGS Monrovia with umpire samples sent to ALS Ireland, total 290 samples;
- Assays from four drillholes (WJD0049, WJD0053, WJD0056, and WJD0074) assayed by SGS Monrovia with umpire samples sent to SGS Tarkwa total 40 samples.

The total umpire samples submitted by Aureus represent 3% of assays and 13% of drillholes for the project. The correlation coefficient of assays with umpire assays ranges from 0.45 for assays from the previous operator, to 0.72 to 0.94 for Aureus drilling.

Figure 11.6 Summary of coarse reject duplicates Ndablama project

Statistic	Original	Duplicate	
Sample Count	101	101	
Minimum	0.001	0.005	
Maximum	36.700	45.000	
Mean	2.414	2.566	
Median	0.3300	0.4400	
Standard Deviation	5.9880	6.6415	
Correlation Coefficient	0.973		
Pairs within +/- 15% variance	28%		
Pairs with Pair Mean >=0.25	56	55%	of total data
Pairs ≤ 15% HARD	32	57%	
Pairs ≤ 15% RPD	19	34%	
Average RPD	-0.089	Skewness	-0.555

Project	AMC
Data Series	*NDABLAMA UMPIRE SAMPLES*
Data Type	*Coarse Rejects*
Analytical Method	*Au-AA26*
Detection Limit	*0.05 g/t*
Comments	
SGS Monrovia vs ALS Ireland	



11.4.4 Other samples

Aureus submitted duplicate coarse reject samples for analysis by fire assay with AAS finish to examine the reliability of this technique with respect to high-grade assays using gravimetric finish and screened fire assay analysis.

For Ndablama, this analysis was completed on 98 sample pairs using screened fire assays and seven samples for gravimetric finish. Over the course of drilling campaigns for the Weaju project various runs comparing screened and gravimetic analysis have been completed. Results for both projects generally indicate a variable correlation with fire assays with atomic absorption finish. However, because of limited data sets used in this analysis, conclusions on analytical methods can be considered preliminary only. More comprehensive and systematic sampling is suggested.

11.4.5 Comments

Sampling and sample preparation and analytical procedures used by Aureus for both the Ndablama and Weaju projects follow generally accepted practices for the mining industry and are acceptable for resource estimation.

The assay QA/QC protocols for the two projects needs improvement to meet industry standards. Checks for the accuracy of primary laboratory assay procedures comprise standard and blank quality control samples. The results for standard and blank quality control are good. The range of standard certified reference material is appropriate for testing the range of assays for both projects, from low-grades to higher grades. Results are well within the ±10% range of the certified value of each standard with the exception of cases reported by Aureus to be cases of sample number errors or contamination. The policy of requiring re-assays of the 10 previous and 10 following samples is a good check to ensure that incidences of contamination are appropriately handled. However, there is a minor concern that the actual frequency of submission of blanks is significantly below the Aureus target of 10%. The actual frequencies for blanks is 4.9% for Ndablama and 1.6% for Weaju. AMC considers that these targets should be at a minimum of 10%. The frequencies of standard samples exceeds the Aureus target of 10% with 11.7% for Ndablama and 12.2% for Weaju.

Umpire quality control samples are designed to check the accuracy of the main assay laboratory in comparison to external laboratories. The Ndablama coarse reject umpire samples were submitted recently and comprise a small proportion of the total assays submitted being 1.9%. Results appear reasonable with a correlation coefficient of 0.97. However bias plots and Half Relative Deviation plots show significant scatter of values around 1 g/t and 10 g/t gold. Similarly, ranked RPD plots and quantile-quantile plots indicate significant variability of the samples analysed. Because of the limited number of samples sent for analysis it is difficult to draw general conclusions about umpire sample results for the Ndablama project. It is likely that some of the data reflects inherent variability in the coarse reject samples. Pulp duplicate samples should be submitted in preference to or in addition to coarse reject samples for umpire quality control samples.

Umpire coarse reject samples submitted for the Weaju project are slightly higher for the Weaju project at 4.2%. However the three sets of umpire samples submitted for this project represent a limited set of drillholes and overall very limited data sets. AMC considers this data too restricted and therefore potentially biased to draw conclusions about the accuracy of assays.

Control samples submitted by Aureus for the Ndablama and Weaju projects comprise checks on assay accuracy only and in the cases of blank and umpire samples may not be representative of the project assay data because of limited data or limited representation of drillholes for the project.

It is essential that QA/QC programmes are designed to check the reproducibility of assays. The regular submission of duplicates coarse rejects and/or pulp samples are accepted samples to monitor this. Aureus has not submitted these types of control samples.

AMC recommends that QA/QC protocols for both Ndablama and Weaju projects must include the following:

- Submission of pulp and coarse rejects samples to the main assay laboratory at regular frequency of 10% to 20% in the assay sample stream
- Submission of blank samples at a regular frequency of 10% to 20%
- Submission of pulp and/or coarse reject duplicates to an external laboratory at a regular frequency of 10%
- Continued submission of certified reference material at a regular frequency of 10% to 20% maintaining the current range of gold values.
- QA/QC failures require the re-assay of the entire assay batch.

All quality control samples need to be monitored at the time that QA/QC data is received. A monthly review is considered a minimum time frame.

12 Data verification

12.1 Assay database verification

AMC validated the assay databases for the Ndablama and Weaju projects by comparing randomly selected assay values and compared them with laboratory assay certificates in PDF format.

For the Ndablama approximately 10% of project drillholes were selected and assay values for each interval in these drillholes were compared to assay certificates provided by Aureus. A total of 1,459 assays were checked. No errors were found.

For the Weaju project 16% of assays within the mineralized wireframes were randomly chosen and compared to assay certificates provided by Aureus. A total of 217 assays were checked. No errors were found.

12.2 Assay laboratory audit

AMC visited the SGS sample preparation and analytical laboratory located in Monrovia, Liberia, on 20 September 2013. AMC reviewed laboratory management, sample preparation, fire assay procedures, cupellation and digestion procedures, gravimetric determination of gold, and AAS determination of gold procedures.

The Laboratory Manager and his team provided AMC with details of the laboratory operations. Neither sample preparation nor analysis was being undertaken during the time of the visit, however the laboratory staff demonstrated sound knowledge of the processes. The laboratory is not ISO 17025 certified, however management demonstrated that the laboratory was in the process of applying for ISO 17025 certification. The laboratory participates in a series of round-robin tests with Geostat systems. The laboratory also participates in an SGS internal audit aimed at ensuring that all SGS laboratories operate to the same standards. The laboratory was clean and well organized.

Ventilation ducting is installed at sample preparation stations to remove dust from the atmosphere in the laboratory. The equipment appeared to be in good condition. The sample preparation and assay portions of the laboratory are not organized in physical lines, so that samples go from one station to another because of building design constraints. AMC considers this a minor issue and is not likely to have a significant effect in laboratory operations, if managed appropriately.

12.3 Conclusions

Based on the above observations of data collection and preparation activities in the field, reviews of QA/QC protocols and various validations reviews and audits undertaken, AMC considers the drillhole database for the Ndablama and Weaju projects to be sufficiently reliable for the purpose of Mineral Resource estimation at the current level of study.

13 Mineral processing and metallurgical testing

13.1 Introduction

To the extent known, no previous metallurgical testwork has been undertaken at either the Ndablama or Weaju projects.

Aureus requested that DRA Mineral Projects (DRA) scopes and manages scouting testwork to investigate the amenability of material from Ndablama to cyanidation, and to assess the metallurgical response of material from the Weaju orebody.

13.2 Ndablama

13.2.1 Ndablama testwork results

The metallurgical testwork programme was performed on composite samples. Results for the screen fire assays for both the sulphide and oxide composite are shown in Table 13.1

Table 13.1 Screen fire assay results: Ndablama

Composite ID	+75 µm		–75 µm			Calc'd Head Au (g/t)
	Weight (g)	Au (g/t)	Weight (g)	Au1 (g/t)	Au2 (g/t)	
OXIDE COMP	28.24	2.84	941.48	0.57	0.64	0.67
FRESH COMP	20.29	97.1	952.02	1.36	1.38	3.37

The following comments apply to the head assays:

- A nugget effect can be seen, especially with the sulphide composite which shows a large spread of results over the assays performed.
- The screen fire assays showed upgrading on the 75 micron screen fraction, especially for the sulphide composite, confirming the nugget effect. This may prove to provide some challenges to both the metal accounting in the testwork as well as potential resource estimation. From a processing point of view, the nuggetty nature of the ore should result in effective gravity concentration ahead of the leach.

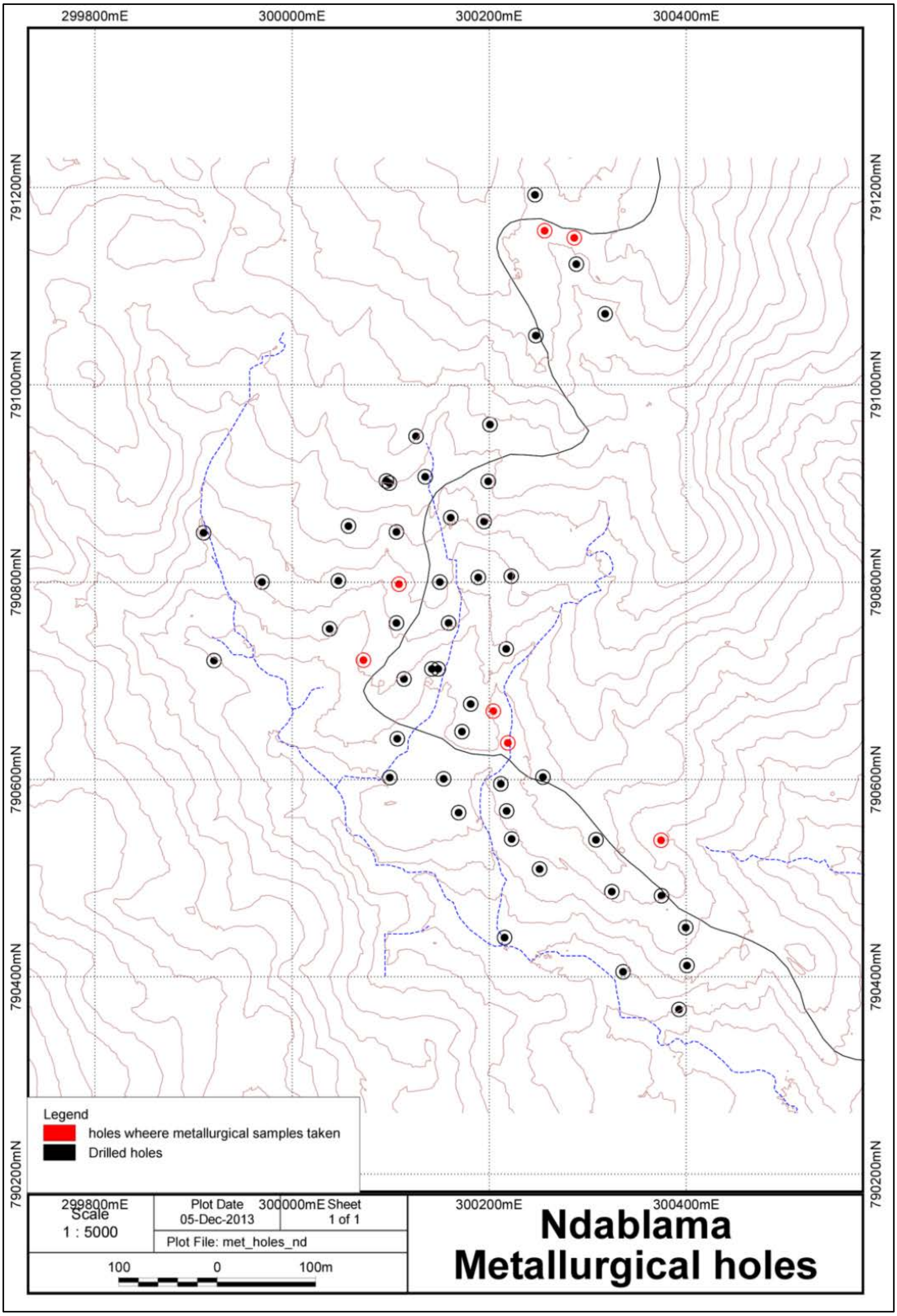
13.2.1.1 Composite samples

In November 2013, 55 kg of drill core samples were supplied for oxide and sulphide material and delivered to ALS Laboratories in Perth, where the testwork was conducted.

The sample material was composited to produce a 17kg oxide master composite and a 20 kg sulphide master composite. These master composites were comprised of core samples from central and southern zone portions of the deposit at various depths. The oxide master composite had an average assayed gold grade of 0.91 g/t, while the sulphide composite had an assayed grade of 2.24 g/t (Table 13.1).

The distribution of the metallurgical composite test sample drillholes are presented in Figure 13.1.

Figure 13.1 Composite test sample drillholes: Ndablama



13.2.1.2 Gravity/cyanidation testwork

Table 13.2 shows a summary of all the gravity/cyanidation work that was conducted on the Ndablama orebody.

Table 13.2 Gravity/cyanidation summary: Ndablama

Composite ID	Test No.	% Au extraction @ hours					Au Grade (g/t)		Consumption (kg/t)	
		Gravity	2	8	16	24	Calc'd Head	Residue	NaCN	Lime
Oxide	JR791	33.70	88.49	88.49	88.49	91.89	1.03	0.08	1.28	4.86
	JR792	34.55	91.33	91.33	91.33	92.82	1.00	0.07	1.39	4.87
Sulphide	JR593	70.77	94.02	94.02	95.17	94.90	2.42	0.12	1.17	0.48
	JR594	69.60	92.78	92.78	92.78	94.03	2.46	0.15	1.06	0.48

Oxide gravity recoveries

Gravity testwork was performed on the oxide composite utilizing a laboratory scale Knelson apparatus. A total of 2 separate tests were performed giving recoveries of 33.70% and 34.55%, returning an average of 34.13%. These results are detailed in Table 13.2.

Sulphide gravity recoveries

Gravity testwork was performed on the sulphide composite utilizing a laboratory scale Knelson apparatus. A total of 2 separate tests were performed with recoveries ranging from 70.77% to 69.60% returning an average of 70.19%. These results are detailed in Table 13.2.

Whereas these tests provide an indication of the expected gravity recovery of the oxide and sulphide ore, it is recommended that detailed gravity testwork, including mathematical modelling for a predicted plant recovery, is conducted as part of a more detailed test programme.

Oxide leach recoveries

Table 13.2 shows an average tail grade of 0.08 g/t for the oxide material. From a composite head assay grade of 0.91 g/t, this gave an average recovery of 92% for the two tests conducted.

Cyanide consumption averaged at 1.34 kg/t while lime consumption averaged at 4.87 kg/t for the two tests conducted.

Additional testwork should assess the effect of viscosity on the oxide material.

Sulphide leach recoveries

Table 13.2 shows an average tail grade of 0.14 g/t for the sulphide material. From a composite head assay grade of 2.24 g/t, this gave an average recovery of 94% for the two tests conducted.

Cyanide consumption averaged at 1.12 kg/t while lime consumption averaged at 0.48 kg/t for the two tests conducted.

13.3 Weaju

13.3.1 Weaju testwork procedures

Aureus supplied representative samples of both oxide and sulphide material to ALS laboratories in Perth, where the testwork was conducted under the management of DRA. This assessment provides the background to the testwork scoping and a summary of the results.

As the testwork scoped by DRA was requested by Aureus to be preliminary only, key metallurgical aspects were identified for both the oxides and the sulphide:

For the gravity testwork, sample was ground to p80 75 microns and passed through a laboratory sized Knelson concentrator with amalgamation of the gravity concentrate. The amalgam tail was combined with the Knelson tail to provide the feed to the leach tests.

The leach tests were designed to evaluate the following:

- Effect of preg-robbing
- Effect of grind
- Effect of shear pre-oxygenation and acidic pre-conditioning.

In addition, preliminary rheology tests were conducted.

13.3.2 Weaju testwork results

The metallurgical optimization testwork programme was performed on composite samples only. Results for the Screen Fire Assays for both the sulphide and oxide composite are shown in Table 13.3.

Table 13.3 Screen fire assay results: Weaju

Composite ID	+75 microns		–75 microns			Calc'd Head Au (g/t)
	Weight (g)	Au (g/t)	Weight (g)	Au1 (g/t)	Au2 (g/t)	
Sulphide Comp	19.37	130	972.34	3.12	3.01	5.54
Sulphide Comp rpt	26.94	89.8	968.19	3.81	3.74	6.10
Oxide Comp	19.41	51.9	943.10	2.63	2.01	3.32

Comments on the head assays are as follows:

- A nugget effect can be seen, especially with the sulphide composite which shows a spread of results over the assays performed.
- The screen fire assays showed upgrading on the 75 micron screen fraction, especially for the sulphide composite confirming that both the sulphide and oxide ore display a nugget effect.
- The screen fire assays show Au Head Grades for the sulphide and oxide composites of Weaju of 5.82 g/t and 3.32 g/t respectively.

13.3.2.1 Composite samples

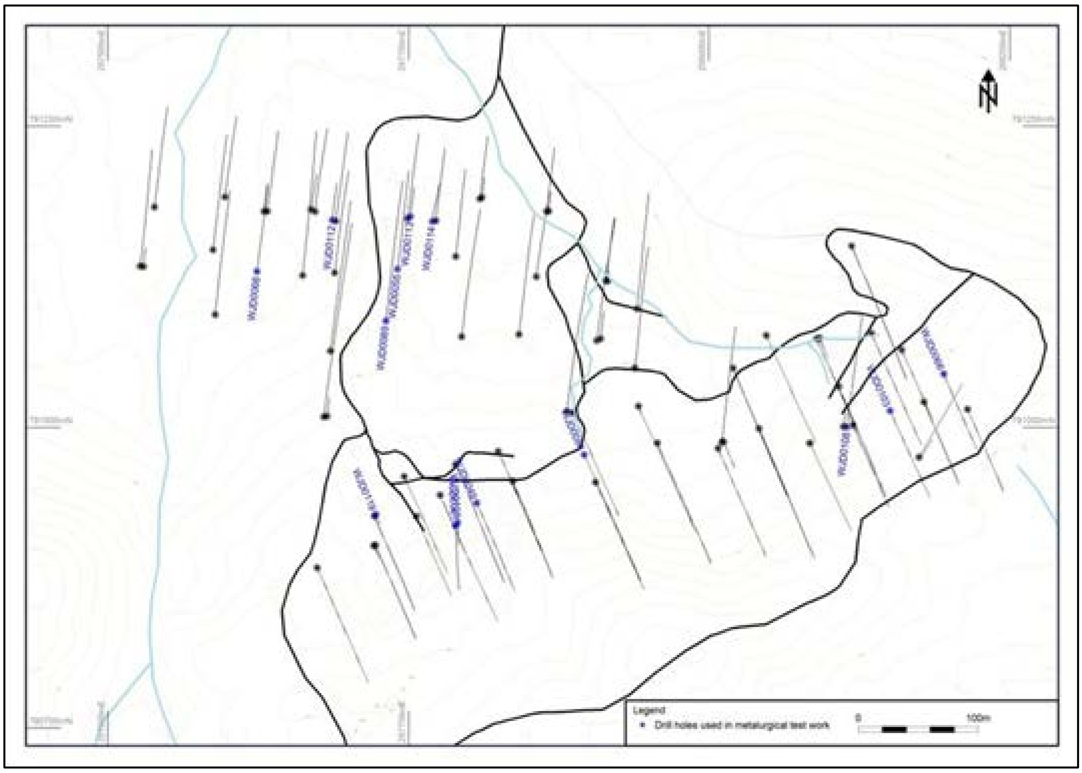
In July 2013, approximately 200 kg of drill core samples were supplied for oxide and sulphide material and delivered to ALS Laboratories in Perth, where the testwork was conducted.

The sulphide sample material was composited to produce a 70 kg bulk master composite sample – 40 kg was used for comminution work and a 30 kg was used for leach testing. This bulk sample was comprised of core samples from the Main Zone, North Zone and some Ridge Zone portions of the deposit at various depths. The sulphide master composite had an assayed gold grade of 5.54 g/t as determined by screened fire assay (see Table 13.3 above).

The oxide sample material was composited to produce a 30 kg bulk master composite sample which was used for leach testing. This bulk sample was comprised of core samples from the main zone, north zone and some ridge zone portions of the deposit at various depths. The oxide master composite had an assayed gold grade of 3.32 g/t as determined by screened fire assay (see Table 13.3 above).

The distribution of the optimization phase metallurgical composite test sample drillholes are presented in Figure 13.2 (highlighted in blue).

Figure 13.2 Composite test sample drillholes: Weaju



13.3.2.2 Sulphide comminution testwork

Communition testwork was conducted on the sulphide composite only with the test results summarized in Table 13.4.

Table 13.4 Sulphide comminution results: Weaju

Composite ID	SMC Dwi (kWh/m^3)	Bond Ai	Bond Rwi (kWh/t)	Bond Bwi (kWh/t)*
Weaju sulphide	6.46	0.1891	12.9	16.7

*Closing screen 106 microns

13.3.2.3 Gravity separation/cyanidation testwork

A summary of all of the gravity/cyanidation work conducted in this programme is shown in Table 13.5.

These tests are discussed in detail in the receding sections of this report.

Table 13.5 Gravity/cyanidation summary: Weaju

Composite ID	Test No.	% Au Extraction @ hours					Au Grade (g/t)		Consumption (kg/t)	
		Gravity	2	8	16	24	Calc'd Head	Residue	NaCN	Lime
Oxide	JR593	48.35	85.60	96.47	96.47	93.69	2.51	0.16	0.76	8.27
	JR594	38.69	76.78	84.05	83.93	83.41	3.14	0.52	0.82	7.93
	JR595	45.16	68.45	80.45	85.92	92.06	2.69	0.21	0.85	7.42
	JR599	44.40	90.96	97.52	97.52	95.46	2.73	0.12	0.86	7.87
	JR601	38.87	93.90	93.36	96.21	95.78	3.12	0.13	0.86	6.83
	JR603	45.05	95.71	98.05	98.20	98.20	2.69	0.05	0.60	5.38
Sulphide	JR596	39.63	90.93	92.45	94.12	90.75	5.32	0.49	0.82	0.80
	JR597	41.25	77.02	89.60	90.92	89.27	5.11	0.55	0.70	0.59
	JR598	41.79	80.25	87.87	89.14	90.78	5.04	0.47	0.44	0.48
	JR600	43.45	81.05	89.33	94.97	88.82	4.85	0.54	0.85	0.74
	JR602	40.88	87.23	95.38	97.21	91.50	5.15	0.44	0.85	0.54
	JR604	48.18	92.61	94.79	90.68	90.68	4.37	0.39	0.68	0.68
	JR605	33.58	90.15	92.75	90.51	90.51	3.25	0.31	0.77	4.84

Gravity recovery

Both the oxide and sulphide composites were subjected to gravity separation testwork utilizing a laboratory scale Knelson apparatus.

Oxide composite gravity recoveries

A total of 6 separate tests were performed on the oxide composite with recoveries ranging from 39% to 48% returning an average of 43%. These results are detailed in Table 13.5.

Sulphide composite gravity recoveries

A total of 7 separate tests were performed on the sulphide composite with recoveries ranging from 40% to 48% returning an average of 43%. These results are detailed in Table 13.5.

Whereas these tests provide a good indication of the expected gravity recovery of the oxide and sulphide ore, it is recommended that detailed gravity testwork, including mathematical modelling for a predicted plant scale recovery, be conducted as part of a more detailed test programme.

Cyanidation testwork

Both oxide and sulphide composites were submitted for cyanidation testwork as part of the test programme to investigate gold extraction.

In order to assess and understand the leachability of the ore, the testwork was divided into 3 stages in the following sequence:

- Preg-robbing evaluation.
- Effect of grind size.
- Effect of pre-oxygenation with shear.

The Sulphide Composite was also tested to investigate the effect of shear pre- oxygenation in combination with acidic pre-conditioning also with shear.

13.3.2.4 Oxide composite leach tests

Oxide composite preg-robber evaluation

As part of the preg-robber evaluation procedure leach tests were conducted with and without carbon addition, as well as carbon addition after 4hrs of leaching. There was no pre-oxygenation on these tests.

A summary of the test results obtained is displayed in Table 13.6 below.

Table 13.6 Oxide preg-robber evaluation: Weaju

Sample	Test ID	Grind p80 microns	Carbon add time (hrs)	Leach Residue Grade g/t	Total Extraction %	NaCN Consumption kg/t	Lime Consumption kg/t
Oxide	JR593	75	0	0.16	93.69	0.76	8.27
	JR594	75	4	0.52	83.41	0.82	7.93
	JR595	75	N/A	0.21	92.06	0.85	7.42
Average						0.81	7.87

Comparing the residues of test JR593 where carbon was added at the start of the leach, to that of test JR595 where no carbon was added to the leach at all, it is evident that there is only a marginal increase in residue grade on the test with no carbon. The residue grade obtained on test JR594 where carbon was added after 4hrs of leaching is regarded as anomalous. It would be reasonable to conclude that any preg-robbing tendencies that the ore may display would be insignificant. This is also supported by the relatively low organic carbon assays of <0.03% obtained on the head samples.

Cyanide consumptions ranged from 0.76 kg/t to 0.85 kg/t averaging at 0.81 kg/t. Lime consumptions varied from 7.42 kg/t to 8.27 kg/t averaging at 7.87 kg/t.

Oxide composite effect of grind

The grind optimization leaches for the oxide composite was conducted at p80 75 microns and p80 45 microns and showed a negligible increase in gold extraction for a p80 45 micron grind. Table 13.7 summarizes the results.

Table 13.7 Oxide effect of grind: Weaju

Sample	Test ID	Grind p80 microns	Carbon add time (hrs)	Leach Residue Grade g/t	Total Extraction %	NaCN Consumption kg/t	Lime Consumption kg/t
Oxide	JR599	75	0	0.12	95.46	0.86	7.87
	JR601	45	0	0.13	95.78	0.86	6.83
Average						0.86	7.35

Oxide composite effect of pre-oxygenation with shear

The results for the test on the Oxide Composite with pre-oxygenation and shear, test JR603, demonstrated a clear benefit from the addition of this step. When compared to test JR601 which did not have pre-oxygenation, gold extraction increased from 95.78% to 98.20%, cyanide consumption decreased by 30% from 0.86 kg/t to 0.60 kg/t and lime consumption decreased by 15% from 6.83 kg/t to 5.38 kg/t. The results are depicted in Table 13.8.

Table 13.8 Oxide shear pre-oxygenation: Weaju

Sample	Test ID	Grind p80 microns	Shear Pre-oxidation	Leach Residue Grade g/t	Total Extraction %	NaCN Consumption kg/t	Lime Consumption kg/t
Oxide	JR601	45	No	0.13	95.78	0.86	6.83
	JR603	45	Yes	0.05	98.2	0.6	5.38

13.3.2.5 Sulphide composite leach tests

Sulphide composite preg-robber evaluation

As part of the preg-robber evaluation procedure leach tests were conducted with and without carbon addition as well as carbon addition after 4hrs of leaching. There was no pre-oxygenation on these tests.

A summary of the test results obtained is displayed in Table 13.9.

Table 13.9 Sulphide preg-robber evaluation: Weaju

Sample	Test ID	Grind p80 microns	Carbon add time (hrs)	Leach Residue Grade g/t	Total Extraction %	NaCN Consumption kg/t	Lime Consumption kg/t
Sulphide	JR596	75	0	0.49	90.75	0.82	0.8
	JR597	75	4	0.55	89.27	0.7	0.59
	JR598	75	N/A	0.47	90.78	0.44	0.48
Average						0.65	0.62

The recovery results obtained from the three tests conducted were comparable with one another. Any differences can be attributed to experimental error and not to any preg- robbing activity.

It would be reasonable to conclude that any preg-robbing tendencies that the ore may display would be insignificant. This is also supported by the relatively low organic carbon assays of <0.03% obtained on the head samples.

Cyanide consumption varied between 0.44 kg/t to 0.82 kg/t averaging at 0.65 kg/t for these tests.

Lime consumption varied from 0.48 kg/t to 0.80 kg/t averaging at 0.62 kg/t.

Sulphide composite effect of grind

The grind optimization leaches for the sulphide composite was conducted at p80 75 microns and p80 45 microns and showed an increase in gold extraction for a grind size of p80 45 microns. Extraction increased from 88.82% to 91.50% with a decrease in final leach residue grade from 0.54 g/t to 0.44 g/t. Table 13.10 summarizes the results.

Table 13.10 Sulphide effect of grind: Weaju

Sample	Test ID	Grind p80 microns	Carbon add time (hrs)	Leach Residue Grade g/t	Total Extraction %	NaCN Consumption kg/t	Lime Consumption kg/t
Sulphide	JR600	75	0	0.54	88.82	0.85	0.74
	JR602	45	0	0.44	91.50	0.85	0.54
Average						0.85	0.64

These tests gave a cyanide consumption of 0.85 kg/t and lime consumption varying from 0.54 kg/t to 0.74 kg/t averaging at 0.64 kg/t.

A grind of p80 45 microns was used for further testwork.

Sulphide composite effect of pre-oxygenation with shear

The results for the test on the Sulphide composite with a lime pre-oxygenation and shear, test JR604, demonstrated a marginal benefit from the addition of this step. Compared to test JR602, the residue grade reduced from 0.44 g/t to 0.39 g/t. Recoveries are slightly lower owing to head grade differences. In Test JR605 the inclusion of an acidic pre-oxygenation step ahead of the lime pre-oxygenation further reduced the residue grade to 0.31 g/t. The results are depicted in Table 13.11 below.

Table 13.11 Sulphide shear pre-oxygenation: Weaju

Sample	Test ID	Grind p80 microns	Shear pre-oxidation	Leach Residue Grade g/t	Total Extraction %	NaCN Consumption kg/t	Lime Consumption kg/t
Sulphide	JR602	45	No	0.44	91.50	0.85	0.54
	JR604	45	Yes	0.39	91.01	0.68	0.68
	JR605	45	Yes	0.31	93.17	0.85	1.54

There was a 20% reduction in cyanide consumption with lime shear pre-oxygenation from 0.85 kg/t to 0.68 kg/t accompanied by a 20% increase in lime consumption from 0.54 kg/t to 0.68 kg/t.

Acidic pre-conditioning with shear gave the same cyanide consumption as the test without pre-oxygenation at 0.85 kg/t with an increase in lime consumption from 0.54 kg/t to 1.54 kg/t.

14 Mineral Resource estimates

14.1 Overview and approach

The mineral resource estimation work for the Ndablama and Weaju deposits has been based on interpretations from integrated geological and grade information recorded from diamond core logging and assaying. Apart from the initial sample data preparation and intermediate spreadsheet processing, all of the mineral resource interpretation, modelling and estimation work was conducted using the CAE Datamine Studio 3, Isatis and GSLib software packages.

The Datamine 2D interactive and 3D visualization graphical environments were used to generate triangulated wireframe models, as well as for visual validation. Extensive use was made of the Datamine macro facilities for almost all of the data processing, as well as the analytical, cell modelling, estimation and reporting functions, and hence these macros constitute an internal audit trail for much of the work undertaken.

The deposits have been evaluated with reference to the UTM 29N coordinate system, and all directional references in the resource portions of this report are according to this coordinate system.

14.2 Data storage and preparation

Aureus supplied AMC with a suite of trench and drilling data files in comma-separated values-format files, being exports from Aureus's Century Systems database, as well as a collection of data and analytical files relating to Aureus QA/QC protocol. The dates of receipt of the final data for each of Ndablama and Weaju deposits are listed in Table 14.1.

Table 14.1 Data—dates of receipt

Deposit	Date of Data Receipt
Ndablama	2 October 2013
Weaju	18 October 2013

Table 14.2 and Table 14.3 respectively summarize the breakdown of drillholes by drilling type, and drilling database tables. The diamond drillhole data only was used for the estimation of grade.

Table 14.2 Exploration drilling used for resource estimation

Deposit	Drillhole Type	Number of Holes	Average Length	Total Metres	Number of Assays
Ndablama	Diamond	54	154	8,314	8,224
Weaju	Diamond	115	112	12,888	1,244

Table 14.3 Sample database data tables

Table	Records	
	Ndablama	Weaju
Collar	54	115
Survey	815	1072
Assay	8,513	12440
Lithology	2,863	4477
Alteration	2,837	n/a
Structure	323	4302
Density	3,271	4743

Drillhole data is comprised of gold assays, lithological codes, alteration data, and structural measurements. Aureus also provided geotechnical data for the drillholes, including RQD and core recovery for each drilling run. The resource data provided by Aureus was validated by:

- Reviewing collar and downhole survey data;

- Checking the minimum and maximum values for each field in the drillhole database and confirming those values outside of expected values;
- Checking for gaps, overlaps, and out-of-sequence intervals;
- Generating drillhole in Datamine, and then reviewing drillhole on a section-by-section basis to ensure that assayed intervals and mineralization outlines are consistent with drilling.

For the Ndablama project ten drillholes were excluded from the project, these being located in the Ndablama North Zone which is still being explored. Based on site visit investigations, core recovery within the mineralized zones is considered to be good.

For the Weaju project, Aureus excluded fourteen drillholes completed by the previous operator of the project, because the drillhole information in these holes is considered unreliable. The excluded holes comprised drillholes WJD0001 to WJD0014.

Core recovery for the Weaju mineralization is relatively high. However, a review of Weaju core recovery data within mineralized zones indicated significant inconsistencies in core recovery data, including instances of:

- Core recovery values above 100%;
- Core recovery data which is inconsistent with intervals not sampled because of missing core;
- Consecutive sequences of drill runs that were significantly above 100% core recovery.

Problems with core recovery data occurred predominately in intervals within saprolite rocks, but also occurred in unweathered or fresh rock. Based on core re-logging during the site visit and setting all recovery values above 100% to 100% the overall core recovery within the mineralized intervals is expected to average at about 85%. AMC considers recovery data for the Weaju deposit problematic but not sufficient to invalidate the data for the purpose of completing a resource estimate.

The database tables were subjected to standard validation procedures. In the case of gold grades, only primary assay field was extracted for use in the resource estimate. Soil geochemistry and trenching data obtained during the exploration activities were not used in the estimation of mineral resources.

14.3 Interpretations

14.3.1 Ndablama

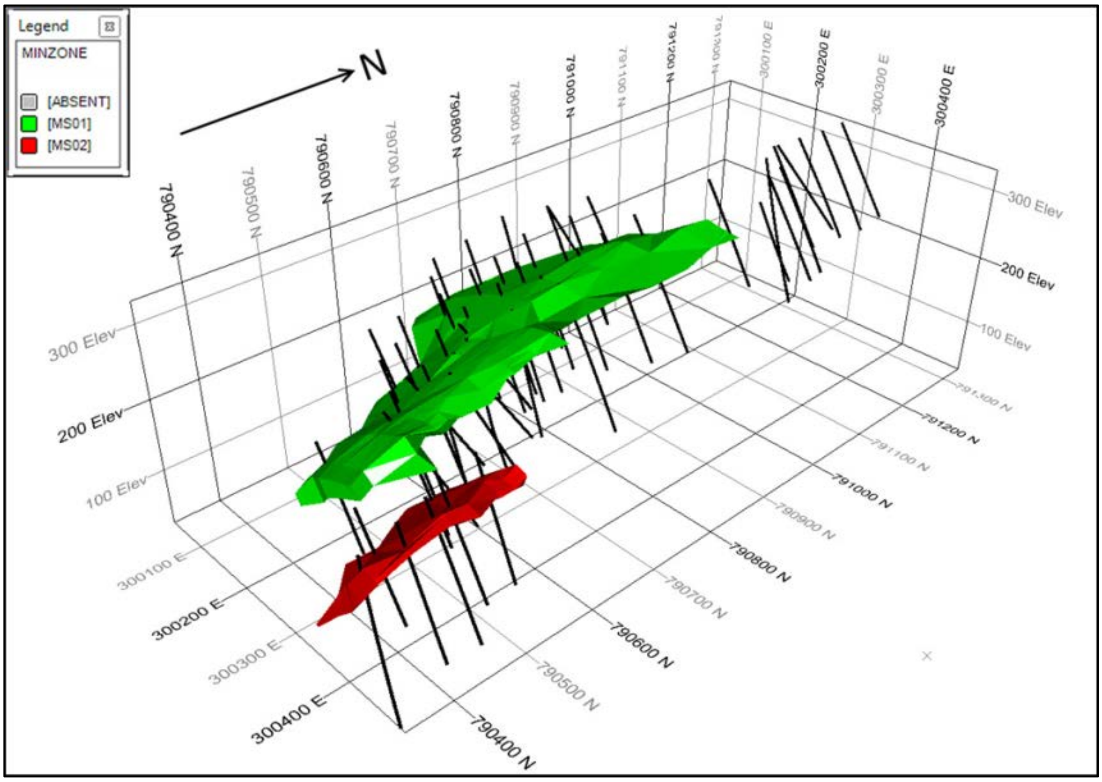
Geology

Interpretation of litholoIgy was initially guided by the ultramafics unit, which hosts most of the mineralization. However, this unit could not be used to control the interpretation of zones of concentrated gold mineralization, because the ultramafics units are intercalated with gneisses and are intruded by granitic rocks, and the mineralization is not confined to any one geological unit.

Structure

Aureus provided AMC with a wireframe solid representing the interpreted shear zone which hosts the mineralization. The shear zone interpretation had been constructed by Aureus from a combination of correlated drill intersections and inferred shear zone locations derived from mapping and other geological indicators (Figure 14.1). AMC accepted the shear zone interpretation unmodified and used it as a guide to define the mineralization zone wireframes. The interpreted shear zone strikes approximately north–south and dips at 30° to the west.

Figure 14.1 Shear zone: Ndablama deposit



Mineralization

Aureus provided AMC with a wireframe interpretation of mineralization consisting of three zones. AMC modified this interpretation by combining two zones in the central portion of the Central Zone. The remaining South East zone was slightly modified by AMC. AMC’s modification to the Aureus wireframe was focused on using a nominal 0.1 g/t bottom threshold so that the lower part of the grade distribution would be included in the anticipated grade estimation procedure. Within these mineralized shells, elevated grade intersections of potentially economic interest are much more restricted in number and extent. Correlations between these higher grade intersections, typically above 0.5 g/t Au, reveal an orientation that is broadly aligned with the shear zone, although in some cases very high-grade intersections can occur in close association with low-grade intersections.

The mineralization wireframes have shallow westerly dips, on average 30°, and striking to the north. The wireframes are typically 60 m in width, tapering to the south, cover a strike length of 650 m, and extend to a maximum vertical depth of 120 m

To facilitate both interpretation of the mineralization and subsequent resource modelling, a coding system, using the field name MINZONE, was implemented.

Oxidation

Aureus provided a wireframe which represents an interpretation of the base-of-weathering and top-of-fresh surface based on geological logging from near-surface intersections in diamond core drilling. The logged weathering surface was derived from a suite of weathered rock lithologies. AMC modified the Aureus wireframe slightly by snapping the base of weathered lithologies where unweathered rock lithology in the drillhole occurred above the interpreted top of fresh surface.

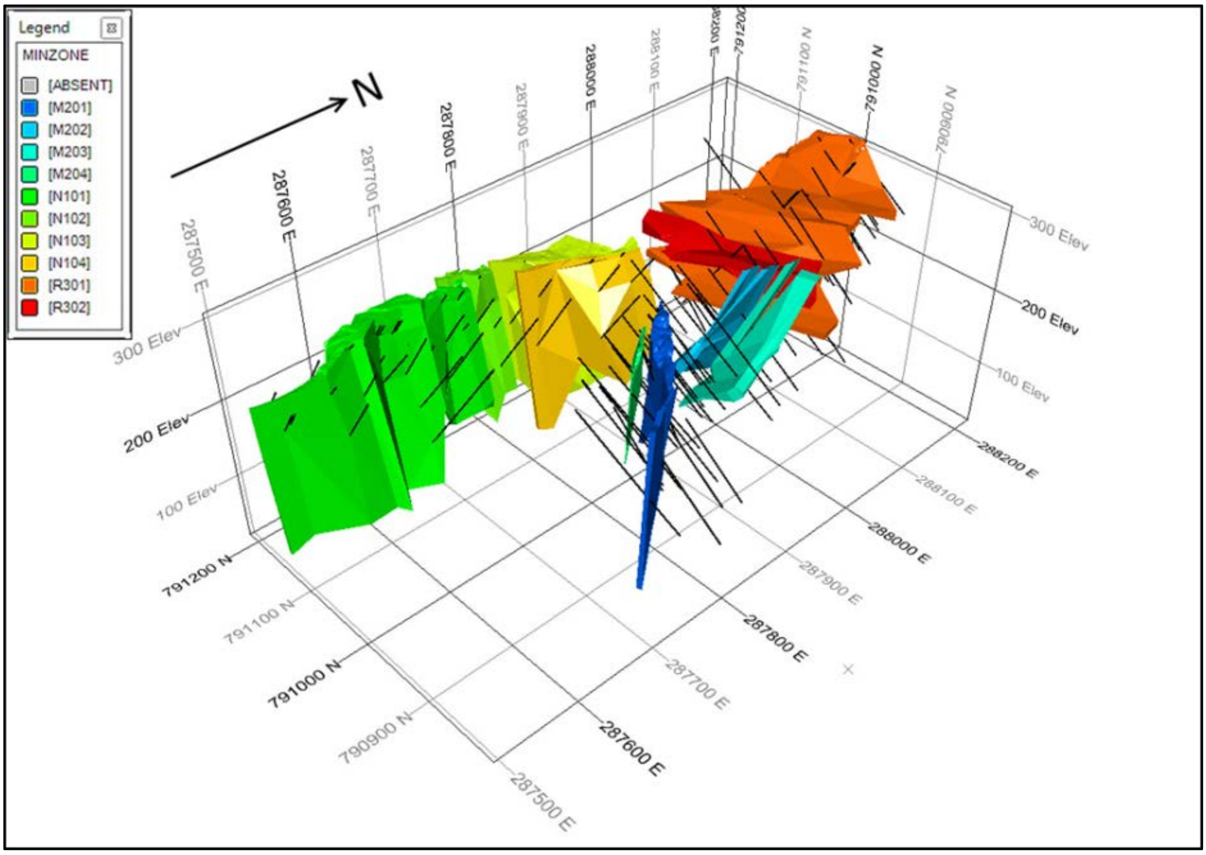
14.3.2 Weaju

Geology and mineralization

Mineralization at Weaju is associated with a shear zone that forms a synformal structure, with an axial trace trending south-west at a shallow dip. Mineralization is not confined to particular ultramafic or gneiss rock units and therefore is most appropriately modelled using gold grade shells.

Aureus has developed ten mineralization zones for the Weaju project, based on structural interpretations of the deposit area and gold grade shell interpretations developed using the LeapFrog software package. Aureus used a nominal 0.3 g/t gold threshold for constructing wireframed zones that follow trends outlined by LeapFrog grade shells and the structural interpretation. Most of the wireframe boundaries are snapped to drillhole intervals. Four mineralization wireframes have been developed for the northern limb of the synformal, comprising the North Zone (N101, N102, N103 and N104). Two zones were interpreted in the nose of the synformal, comprising the Ridge Zone (R301 and R302), while four mineralization zones were developed for the south-eastern limb, comprising the Main Zone (M201, M202, M203 and M204). A 3D view of these zones is provided in Figure 14.2.

Figure 14.2 Weaju wireframe zones and drillholes



Oxidation

The ten mineralization zones have been further subdivided on the basis of a weathering profile over the deposit area. Aureus has developed a wireframe surface based on logging of saprolite and unweathered rock to subdivide the mineralization outlines into saprolite mineralization and unweathered or fresh rock. The final mineralization wireframes developed for the deposit are comprised of ten unweathered domains and eight saprolite domains, Domain codes used by Aureus and slightly modified by AMC are outlined in Table 14.4.

Table 14.4 Mineralization domain codes used for Weaju Project

Zone	Domain	
	Fresh	Weathered
North	N101	N121
	N102	N122
	N103	N123
	N104	N124
Main	M201	M221
	M202	
	M203	
	M204	M224
Ridge	R301	R321
	R302	R322

14.4 Topography

Aureus provided AMC with high-resolution LiDAR topographic survey data for both the Ndablama and Weaju projects, in DXF wireframe format.

14.5 Cell model construction and coding

14.5.1 Ndablama

Base cell models for each deposit were constructed from suites of sub-models, referencing the coordinate limits shown in Table 14.5, along with the parent cell (block) configurations. The parent cell dimensions were selected on the basis of the overall drill spacing in the more densely drilled portions of the deposit (50 m x 50 m for Ndablama), and parent cells were permitted to split along bounding surfaces down to the minimum subcell dimensions shown.

Table 14.5 Ndablama model dimensions

Direction	Origin	Limit	Range
Easting	300000	300500	500
Northing	790300	791000	700
RL	0	350	350

Table 14.6 Ndablama block model parameters

Direction	Origin	Panel Cell	No. Cells	SMU Cell
Easting	299800	20	35	5
Northing	790300	20	52	5
RL	60	10	29	5

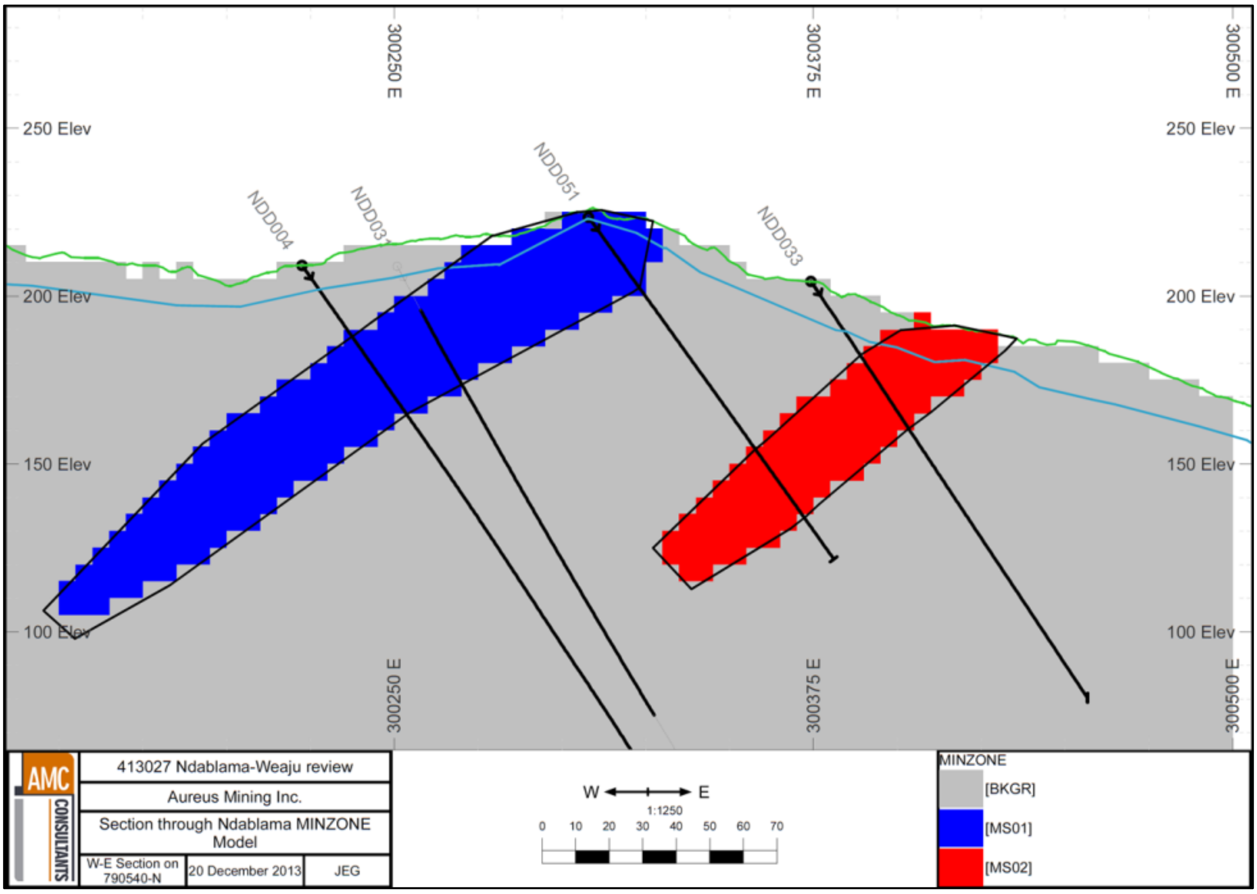
A submodel of geological units was constructed by filling below the topography. The solid wireframes representing the ultramafic and granites respectively were filled with blocks, and ultramafics block model was stamped over the gneiss. The granite model was stamped on the combined gneiss and ultramafics model. A solid model above the base of fresh representing saprolite was then built and stamped over the combined gneiss ultramafic and granite model.

For the mineralized zone submodel, each mineralized shell wireframe was filled with cells. A coding convention, using the attribute field MINZONE, as shown in Table 14.7, was applied to distinguish the different mineralized shells. Any material not within any of the shells was assigned a MINZONE code of BKGR and was excluded from the estimation of resources. An example of the mineralization submodel for the Ndablama deposit is shown in cross-section in Figure 14.3.

Table 14.7 Mineralized shell codes (MINZONE field)

Zone	MINZONE Field Code
Main zone	MS01
Minor zone in south east	MS02
Background	BKGR

Figure 14.3 Key mineralization units for the Ndablama deposit, section 413027 north



Submodels representing topography and each of the completely weathered and fresh volumes were created by building cells above the respective triangulated surfaces. The weathering submodel was coded using the WEAZONE field, set with codes as shown in Table 14.8.

Table 14.8 Oxidation Zone codes (WEAZONE field)

Zone	WEAZONE Field Code
Completely Oxidized	WEAT
Fresh	FRSH

The submodels for each of mineralization, geology, weathering and topography (air) were combined to produce unified and coded models consisting of mineralization zones stamped over geological units, flagged by weathering code and trimmed along the topographic surface.

The various model code and attribute fields are listed in Table 14.9.

Table 14.9 Coded model field descriptions

Coded	Field	Description
Pre-estimation	MINZONE	Mineralized zone
	WEAZONE	Weathering zone
Post-estimation	AU	Gold grade (g/t)
	DENSITY	Estimated/assigned bulk density

14.5.2 Weaju

A block model of the Weaju project was constructed from a suite of sub-models using a base configuration of 10 m (Easting) × 10 m (Northing) × 10 m (elevation) parent cells, as shown in Table 14.10. While some drill spacing in the Weaju deposit is locally at 20 m, the overall drill spacing varies widely. The cell geometry was selected on the basis of providing a parent block size that suitably fills zones orientated at multiple trend directions.

Table 14.10 Block model parameters

Coordinates	Origin (m)	Block Size	No. of Blocks	Minimum Sub-Cell (m)
X:	287,000	10	150	1.25
Y:	790,700	10	80	1.25
Z:	-100	10	50	0.2

For each mineralized domain, the wireframe was filled with cells such that parent cells were permitted to split along bounding surfaces down to the minimum dimensions shown in Table 14.5. Cells were coded with the relevant domain codes. Model variables are summarized in Table 14.11.

Table 14.11 Coded model field descriptions

Coded	Field	Description
Pre-estimation	ESTZONE	Mineralized Domain (see Table 14.4)
Post-estimation	AU	Estimated Gold grade (g/t)
	DENSITY	Assigned bulk density (t/m^3)
	SV	Search ellipse pass (1,2)
	NUMSAM	Number of samples used to estimate cell
	RESCAT	Resource classification codes

14.6 Sample coding

14.6.1 Ndablama

Coding of samples according to mineralization, geology unit and weathering zones followed a similar sequence of steps to the construction of the cell model.

Samples were coded with the relevant geological units (GUNZONE) field codes by a tagging process incorporating a table of downhole intercepts which had been used to create the geological unit wireframes.

At Ndablama, the wireframe solids of the ultramafic and granites and the top-of-fresh surface were applied to the samples to achieve this.

To assign the MINZONE field codes the samples were captured within the wireframe solids of the mineralized shells, and the top-of-fresh weathering surface was applied to the samples to code those which locate within the weathered horizon.

The resulting coding is consistent with the cell model codes.

14.6.2 Weaju

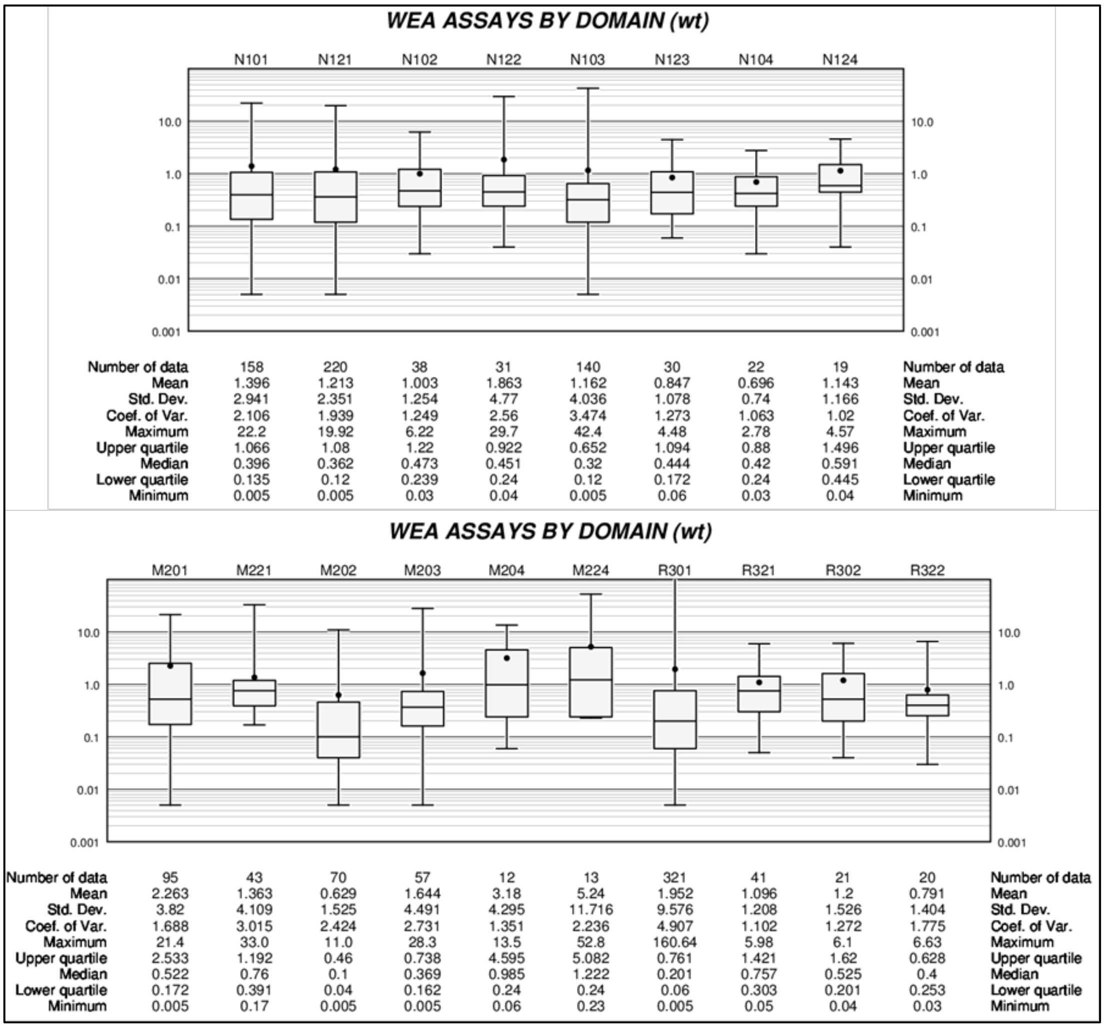
Coding of samples at Weaju according to mineralization domain and weathering zones followed a similar sequence of steps to the construction of the cell model. Drillhole intervals that were located inside the domain wireframes were coded with the same domain codes as the block model.

The Aureus drillhole assay database identifies approximately 8% of intervals within the mineralized domains that were not sampled due to poor or no core recovery. This data is independent of core recovery data problems discussed in Section 14.2 and is considered to be more reliable. AMC reviewed eleven twinned drillholes pairs (listed in Table 14.12) to examine the most appropriate method to treat the intervals with no core recovery. Unassayed intervals did not preferentially represent low-grade intersections, although grade continuity between twinned holes was weak to moderate. AMC concluded that unassayed intervals should not be assigned trace values but rather should be excluded from database that will be used for gold grade estimation. All other zero or blank assay intervals were assigned a trace value of 0.005 g/t gold, as these intervals are assumed to be low-grade intersections that were not sampled. Summary statistics of gold assays, illustrated with box and whisker plots, are presented in Figure 14.4.

Table 14.12 Twin hole pairs reviewed by AMC

WJD0111	WJD0078
WJD0112	WJD0053
WJD0113	WJD0054
WJD0114	WJD0079
WJD0115	WJD0072
WJD0116	WJD0074
WJD0118	WJD0069
WJD0121	WJD0081
WJD0122	WJD0059
WJD0124	WJD0080
WJD0126	WJD0073

Figure 14.4 Summary statistics for Weaju gold domains*



*Sample length weighted

14.7 Bulk density evaluation

14.7.1 Ndablama

Of the suite of 3,280 bulk density measurements available for evaluation, 867 fall within the fresh mineralized zone and 47 within weathered mineralized zone. A review of the spatial distribution of values showed a clear distinction between weathered zone and fresh sample densities, but exhibited no particular trends or associations within these. Mean density values by mineralization zone and weathering horizon are summarized in Table 14.3.

Table 14.13 Mean bulk density values (by Weathering Zone)

	Fresh		Weathered	
MINZONE	Mean Density (t/m^2)	Number of Samples	Mean Density (t/m^2)	Number of Samples
MS01	2.96	797	1.43	44
MS02	2.96	70	1.22	3
BKGR	2.89	2,114	1.31	235

14.7.2 Weaju

The bulk density database for the Weaju project consisted of 518 measurements within 17 of the mineralized domains (no density data for R321). Statistics by domains are summarized in Figure 14.5.

Average density values for each domain were assigned to all model blocks for that domain. These averages exclude density values below 1.0. Average density values assigned to each domain are summarized in Table 14.14.

The density value for zone N124 saprolite is high relative to other saprolite zones. Only three density values are contained within this zone with one higher value of 2.66 that is identified as gneissic rock. However, AMC considers that there are insufficient reasons to exclude this value in determining an average value for the N124 domain.

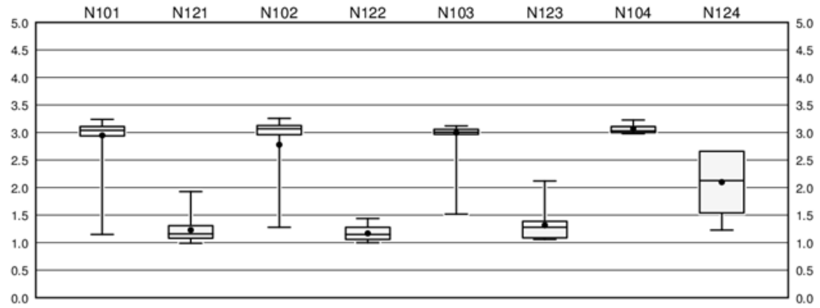
Table 14.14 Average density values assigned to block model domains

Zone	Domain	Average Density (t/m^2)	Zone	Domain	Average Density (t/m^2)	Zone	Domain	Average Density (t/m^2)
North	N101	2.91	Main	M201	2.97	Ridge	R301	3.00
	N121	1.24		M221	1.43		R321	1.45
	N102	2.80		M202	2.94		R302	2.99
	N122	1.18		M203	3.05		R322	*1.30
	N103	2.97		M204	2.92			
	N123	1.43		M224	1.06			
	N104	3.07						
	N124	1.93						

*No density data, average of all saprolite zones assigned.

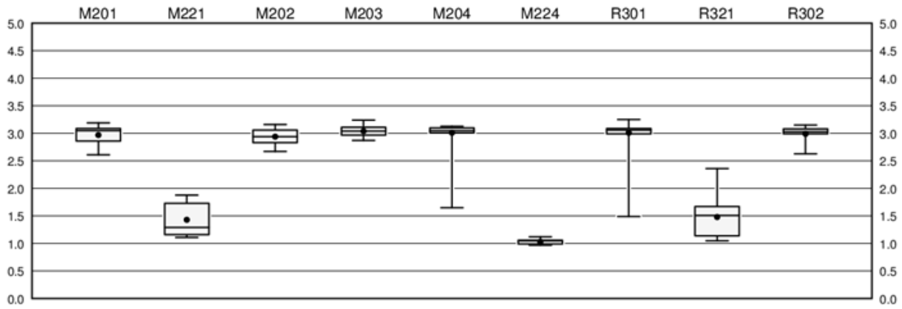
Figure 14.5 Summary statistics for Weaju density data by domain*

WEA DENSITY BY DOMAIN (wt)



	N101	N121	N102	N122	N103	N123	N104	N124	
Number of data	94	53	13	15	60	10	12	3	Number of data
Mean	2.95	1.23	2.78	1.17	3.0	1.32	3.07	2.1	Mean
Std. Dev.	0.36	0.22	0.68	0.12	0.13	0.28	0.08	0.61	Std. Dev.
Coef. of Var.	0.12	0.17	0.25	0.1	0.04	0.21	0.03	0.29	Coef. of Var.
Maximum	3.24	1.93	3.26	1.44	3.12	2.12	3.23	2.66	Maximum
Upper quartile	3.11	1.31	3.13	1.28	3.06	1.39	3.11	2.66	Upper quartile
Median	3.04	1.16	3.07	1.15	3.01	1.28	3.03	2.13	Median
Lower quartile	2.94	1.08	2.96	1.06	2.97	1.09	3.0	1.54	Lower quartile
Minimum	1.15	0.99	1.28	1.0	1.52	1.06	2.98	1.23	Minimum

WEA DENSITY BY DOMAIN (wt)



	M201	M221	M202	M203	M204	M224	R301	R321	R302	
Number of data	62	3	30	35	11	10	91	12	10	Number of data
Mean	2.97	1.43	2.94	3.04	3.01	1.03	3.01	1.48	2.99	Mean
Std. Dev.	0.17	0.33	0.13	0.1	0.23	0.05	0.21	0.35	0.17	Std. Dev.
Coef. of Var.	0.06	0.23	0.05	0.03	0.08	0.05	0.07	0.23	0.06	Coef. of Var.
Maximum	3.19	1.88	3.16	3.24	3.13	1.12	3.25	2.36	3.15	Maximum
Upper quartile	3.09	1.73	3.06	3.11	3.1	1.06	3.09	1.67	3.08	Upper quartile
Median	3.05	1.29	2.94	3.04	3.05	1.05	3.06	1.51	3.03	Median
Lower quartile	2.86	1.16	2.83	2.97	3.01	0.99	2.99	1.14	2.99	Lower quartile
Minimum	2.61	1.11	2.67	2.87	1.65	0.97	1.49	1.05	2.63	Minimum

*Length weighted

14.8 Sample compositing and statistics

14.8.1 Ndablama

Composites

Approximately 99% of samples within interpreted mineralized zones have lengths less than or equal to 1 m. On this basis, and with consideration for the need to reflect the high-grade parts of the deposit, 1.0 m was selected as a composite length for mineralized zone statistical analysis, and for estimation.

Declustering

Declustering, using a cell method, was undertaken to assess the impact of different spatial densities of samples on the global mean grades for each estimation domain. The global mean grade was computed for a range of declustering cell sizes, and the cell size which returned a mean closest to the global MIK grade was accepted for further analysis. Cell declustering was used with the dimensions shown in Table 14.15.

Table 14.15 Declustering cell dimensions

MINZONE	Declustering Cell
MS01	60 m E x 60 M n x 25 m RL
MS02	80 m E x 80 M n x 30 m RL

Statistical procedures and characteristics

Table 14.16 shows the gold grade univariate statistics for 1 m composites and population characteristics for each of the mineralized zones. The corresponding sample distributions were plotted graphically as histograms and log probability charts. Figure 14.6 and Figure 14.7 presents example charts for the Central and South East zone.

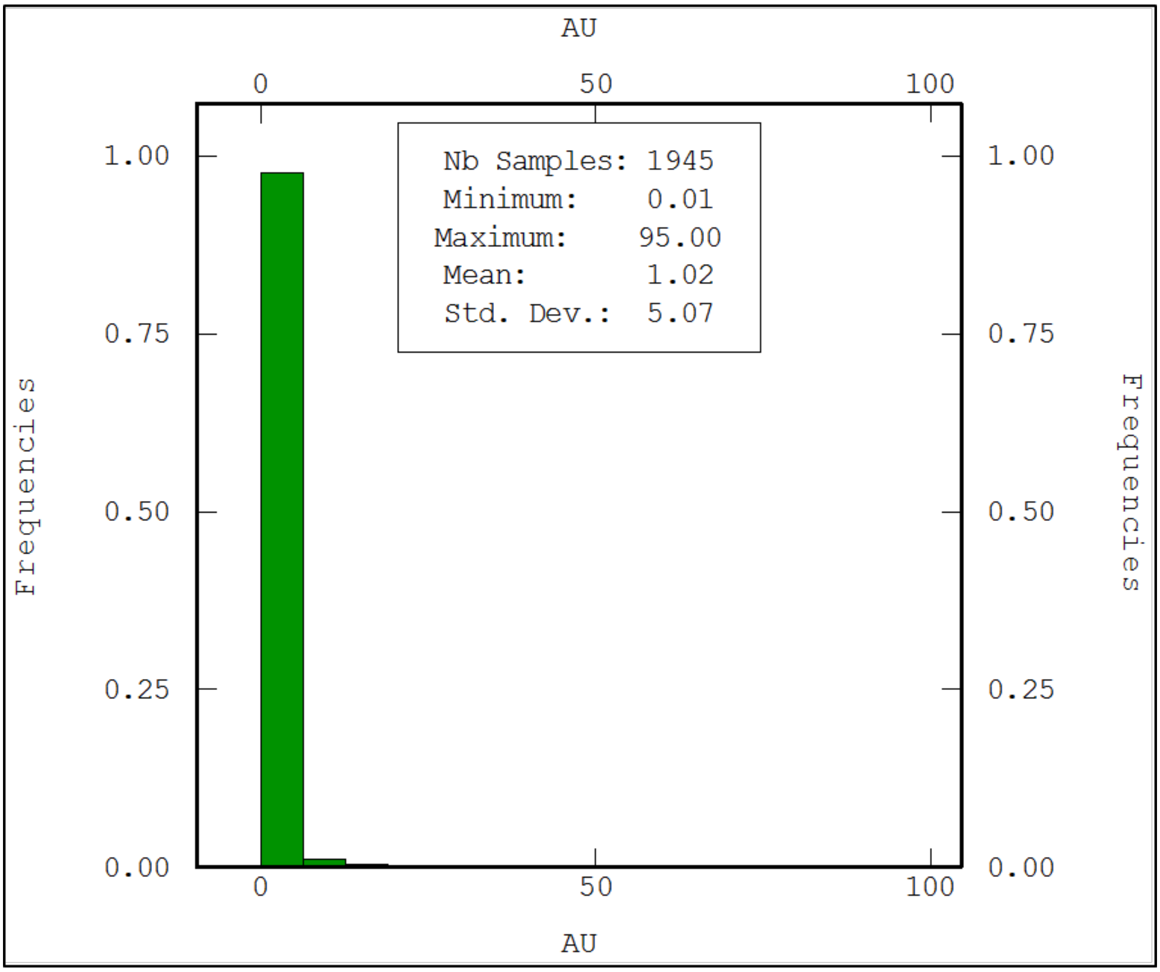
Table 14.16 Summary statistics within mineralized zones

MINZONE	Sample Type	Field	Number	Min.	Max.	Mean	Standard Deviation
MS01	Raw Composites	Au	1945	0.01	95	0.99	5.05
	Declustered Composites	Au	1945	0.01	95	1.02	5.07
MS02	Raw Composites	Au	168	0.01	15.60	0.78	1.92
	Declustered Composites	Au	168	0.01	15.60	0.78	1.92

Consistent with observations from the mineralization interpretation work, the MS01 global mean is relatively high compared to MS02.

Higher grades intersected in each of the two domains represent a relatively small proportion of the complete domain grade distribution. These high-grades are spatially discontinuous at small scale but at a large scale form part of more consistent trends of elevated grades within the shear zone. Very high-grades in each domain are even more spatially discontinuous, even though they represent legitimate high-grades associated with occurrences of visible gold in the mineralization.

Figure 14.6 Histogram and log probability chart: declustered Au in MS01



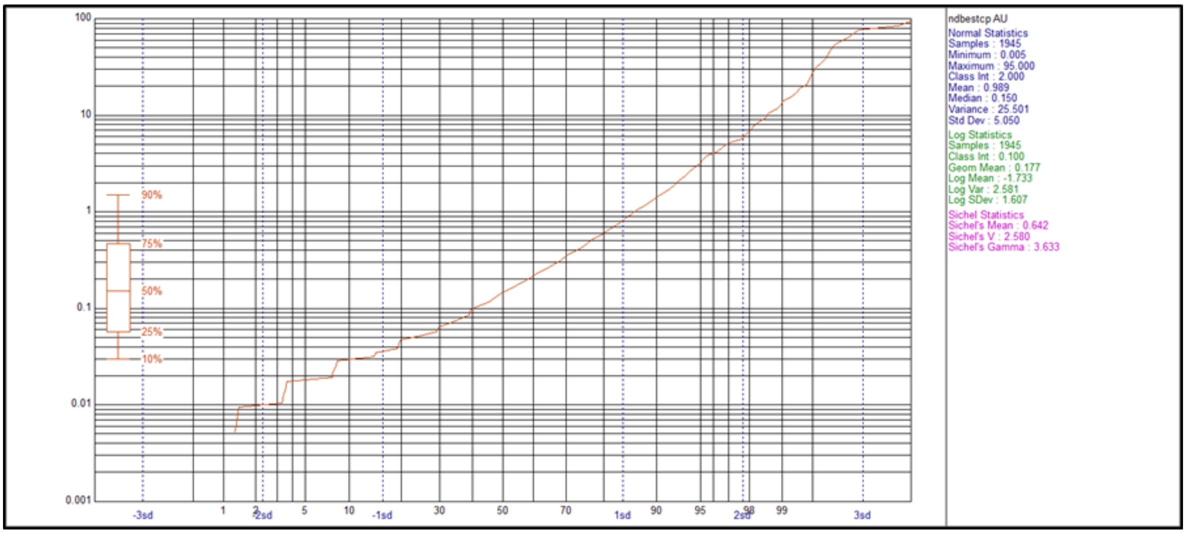
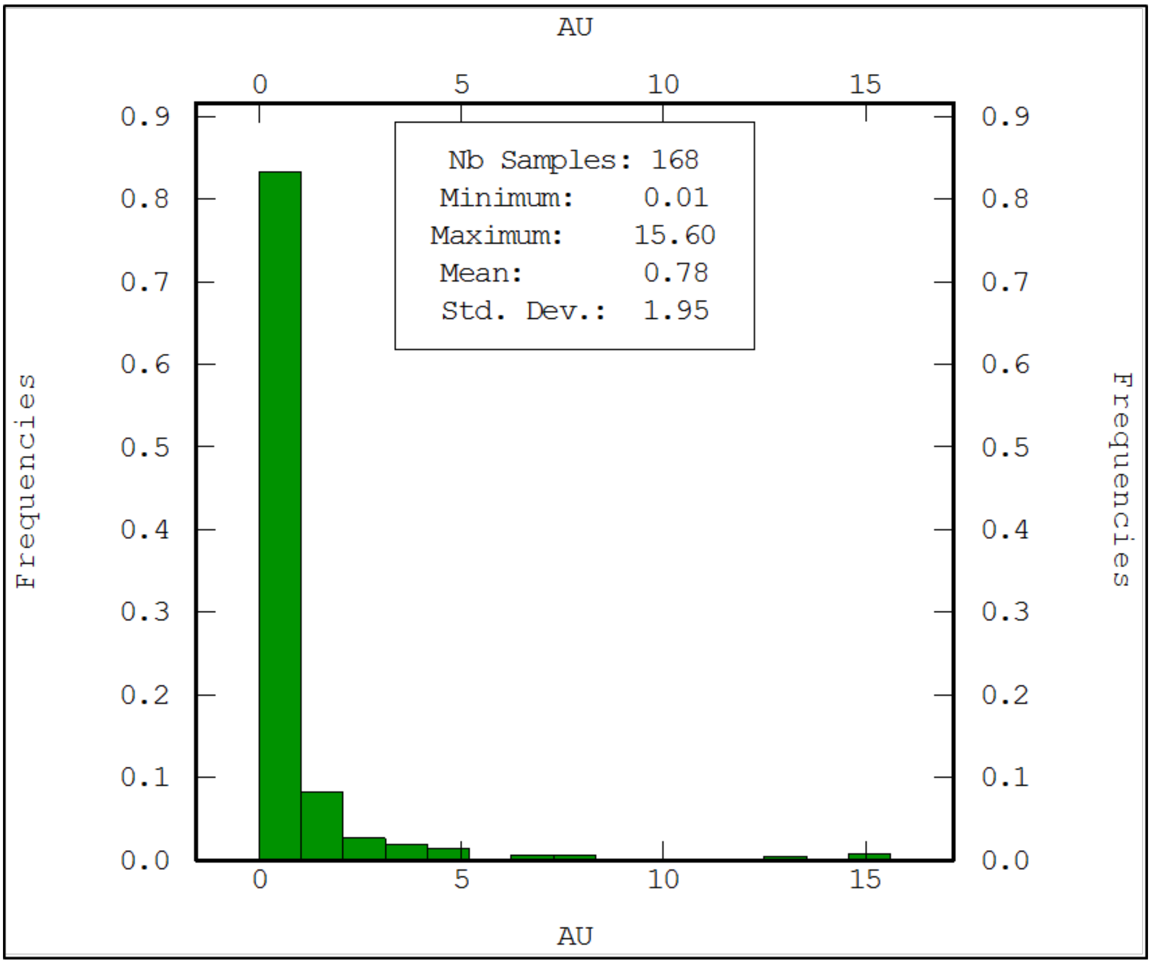
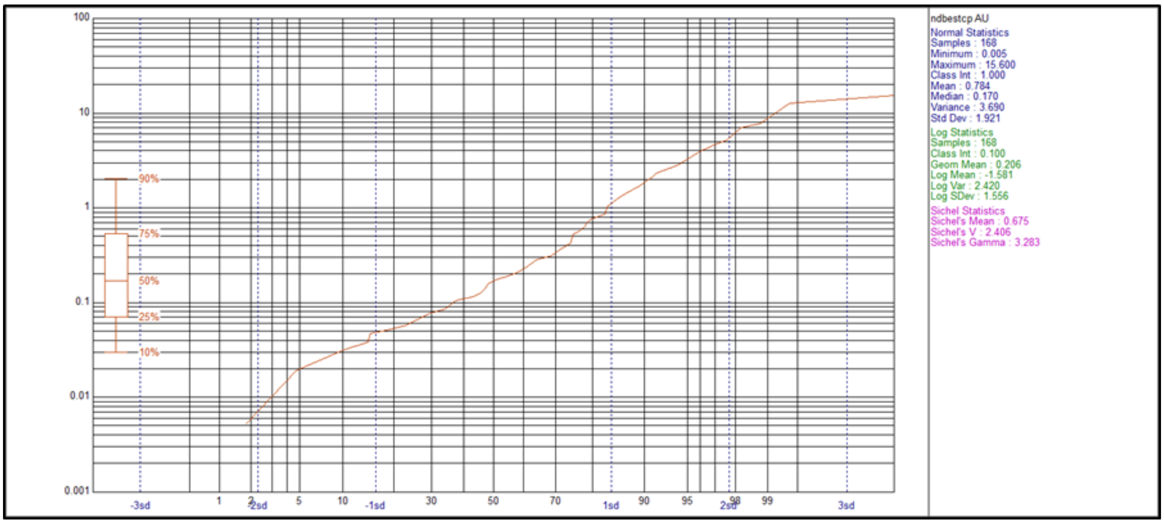


Figure 14.7 Histogram and log probability chart: declustered Au in MS02





Statistical observations, along with visualization of mineralization characteristics, were used to guide the selection of grade estimation technique. Ordinary kriging was considered however, given the diffuse nature of the grade boundaries, the presence of legitimate extremely high-grade values within the mineralization domains and the likely targeted mining selectivity, a non-linear grade estimation technique was considered likely to yield superior results, in this case multiple indicator kriging (MIK).

Grade capping strategy

Log probability plots and spatial distributions of higher grades for each mineralized zone domain were examined for higher grade outlier values. At Ndablama the high-grade portion of the gold distribution is consistent with the presence of visible gold as seen in the drillhole core, therefore no capping was applied to the composites. Nonetheless, during MIK estimation, some limits were placed on the very high-grade bin estimates.

Indicator statistics

Conditional statistics were generated for each of the mineralized shells (estimation domains) and used to determine appropriate indicator thresholds and intra-class mean grades to be used for post processing of the model panel grade estimates.

Nineteen thresholds were selected for each of the domains, as these were considered sufficient to discretise both the sample and the metal values. The selected indicators and intra-class means are shown in Table 14.17 and Table 14.18.

Table 14.17 Summary indicator statistics within mineralized zones (MS01)

Ind No	Threshold Percentile	Indicator Threshold Au(g/t)	Count	Minimum	Maximum	Mean	Std.Dev.	Metal%
0	8	0	163	0.01	0.03	0.02	0.01	0.1
1	20	0.03	220	0.03	0.05	0.03	0.01	0.6
2	30	0.05	197	0.05	0.07	0.06	0.01	1.2
3	39	0.07	186	0.07	0.10	0.08	0.01	2.0
4	49	0.1	186	0.10	0.15	0.12	0.01	3.2
5	55	0.15	115	0.15	0.19	0.17	0.01	4.2
6	59	0.19	89	0.19	0.22	0.20	0.01	5.2
7	65	0.23	98	0.23	0.28	0.25	0.01	6.5
8	70	0.28	104	0.28	0.35	0.31	0.02	8.3
9	75	0.36	101	0.36	0.47	0.41	0.03	10.6
10	80	0.47	97	0.47	0.63	0.55	0.04	13.5
11	85	0.64	96	0.64	0.92	0.77	0.08	17.5
12	90	0.93	97	0.93	1.48	1.16	0.15	23.6
13	93	1.49	51	1.49	2.04	1.72	0.15	28.4
14	95	2.04	48	2.04	3.31	2.64	0.39	35.4
15	97	3.31	38	3.46	5.31	4.31	0.51	44.3
16	98	5.33	20	5.33	7.05	5.94	0.51	50.8
17	99	7.07	19	7.07	13.30	9.89	1.80	61.1
18	100	13.6	10	13.60	26.55	18.32	3.50	71.1
19	100	31.4	9	31.40	85.80	58.78	20.49	100.0

Table 14.18 Summary indicator statistics within mineralized zones (MS02)

Ind No	Threshold Percentile	Indicator Threshold Au(g/t)	Count	Minimum	Maximum	Mean	Std.Dev.	Metal%
0	5	0	8	0.01	0.02	0.01	0.01	0.1
1	10	0.03	9	0.03	0.03	0.03	-	0.3
2	19	0.04	15	0.04	0.05	0.05	0.00	0.9
3	30	0.06	18	0.06	0.08	0.07	0.01	2.0
4	41	0.09	18	0.09	0.12	0.10	0.01	3.5
5	50	0.12	16	0.12	0.17	0.14	0.02	5.4
6	55	0.18	8	0.18	0.20	0.19	0.01	6.7
7	60	0.21	8	0.21	0.24	0.22	0.01	8.3
8	65	0.24	8	0.24	0.29	0.27	0.02	10.1
9	69	0.3	8	0.30	0.33	0.31	0.01	12.3
10	75	0.34	10	0.34	0.53	0.40	0.05	15.7
11	80	0.54	8	0.55	0.78	0.65	0.08	20.2
12	85	0.82	8	0.82	1.23	0.95	0.17	26.7
13	90	1.29	9	1.29	2.04	1.54	0.24	38.7
14	93	2.06	4	2.06	2.72	2.30	0.26	46.6
15	95	2.76	4	2.76	3.77	3.07	0.41	57.2
16	97	3.79	3	3.79	4.36	4.04	0.24	67.7
17	98	4.73	2	4.73	4.92	4.83	0.10	76.0
18	99	7.04	2	7.04	7.55	7.30	0.26	88.5
19	100	13.3	1	13.30	13.30	13.30	-	100.0

14.8.2 Weaju

Composites

At Weaju, drillhole intervals for each of the 18 domains were composited to 2 m to provide common support for statistical analysis and estimation of gold. Approximately 99.5% of sampled intervals in the drillhole database had been sampled at 2 m or less. Compositing remainders of less than 0.5 m represent approximately 1% of the total composite data and therefore have been retained in the composite database. These intervals have a minimal effect on the entire composite database and maintain full intersection grades for each domain. Summary statistics for composites are shown in Figure 14.8.

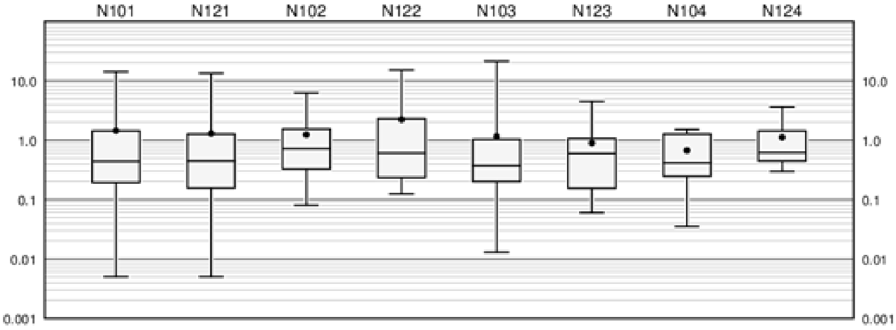
Grade capping strategy

A statistical analysis of saprolite and corresponding unweathered composites for each of the 10 zones was made to evaluate whether the two assay data sets should be combined for estimation or separated. Based on this analysis AMC concluded that saprolite gold composites were sufficiently statistically different from corresponding unweathered domain composites and therefore the sets were not combined for variography or estimation of gold.

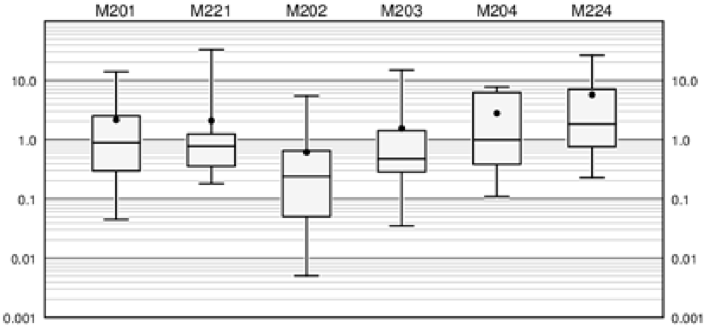
Log probability plots, histograms and the spatial distribution of high-grade gold composite outliers were reviewed for each domain. Analysis indicates that the capping of some high-grade gold composites is appropriate during grade estimation so that the influence of high-grade outliers is reduced. Capped values by domain are provided in Table 14.19 and summary statistics in Figure 14.9.

Figure 14.8 Summary statistics for Weaju composite domains

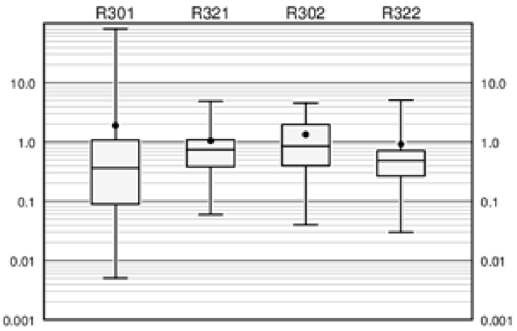
WEA COMPOSITES BY DOMAIN



	N101	N121	N102	N122	N103	N123	N104	N124	
Number of data	88	139	23	19	72	19	12	13	Number of data
Mean	1.448	1.299	1.239	2.222	1.156	0.898	0.672	1.117	Mean
Std. Dev.	2.53	2.196	1.41	3.669	2.781	1.081	0.525	1.036	Std. Dev.
Coef. of Var.	1.748	1.691	1.138	1.651	2.405	1.204	0.781	0.928	Coef. of Var.
Maximum	14.3	13.367	6.22	15.19	21.245	4.48	1.52	3.64	Maximum
Upper quartile	1.435	1.265	1.551	2.285	1.028	1.066	1.272	1.435	Upper quartile
Median	0.44	0.445	0.719	0.609	0.372	0.6	0.415	0.62	Median
Lower quartile	0.193	0.156	0.326	0.235	0.2	0.155	0.247	0.445	Lower quartile
Minimum	0.005	0.005	0.08	0.125	0.013	0.06	0.035	0.299	Minimum



	M201	M221	M202	M203	M204	M224	
Number of data	51	25	38	31	7	9	Number of data
Mean	2.151	2.081	0.612	1.545	2.782	5.721	Mean
Std. Dev.	2.889	6.327	1.083	3.0	3.111	7.911	Std. Dev.
Coef. of Var.	1.343	3.04	1.77	1.942	1.118	1.383	Coef. of Var.
Maximum	13.9	33.0	5.503	14.85	7.665	26.515	Maximum
Upper quartile	2.507	1.233	0.65	1.415	6.219	7.062	Upper quartile
Median	0.89	0.781	0.24	0.475	0.985	1.825	Median
Lower quartile	0.296	0.357	0.05	0.285	0.383	0.764	Lower quartile
Minimum	0.045	0.18	0.005	0.035	0.11	0.23	Minimum

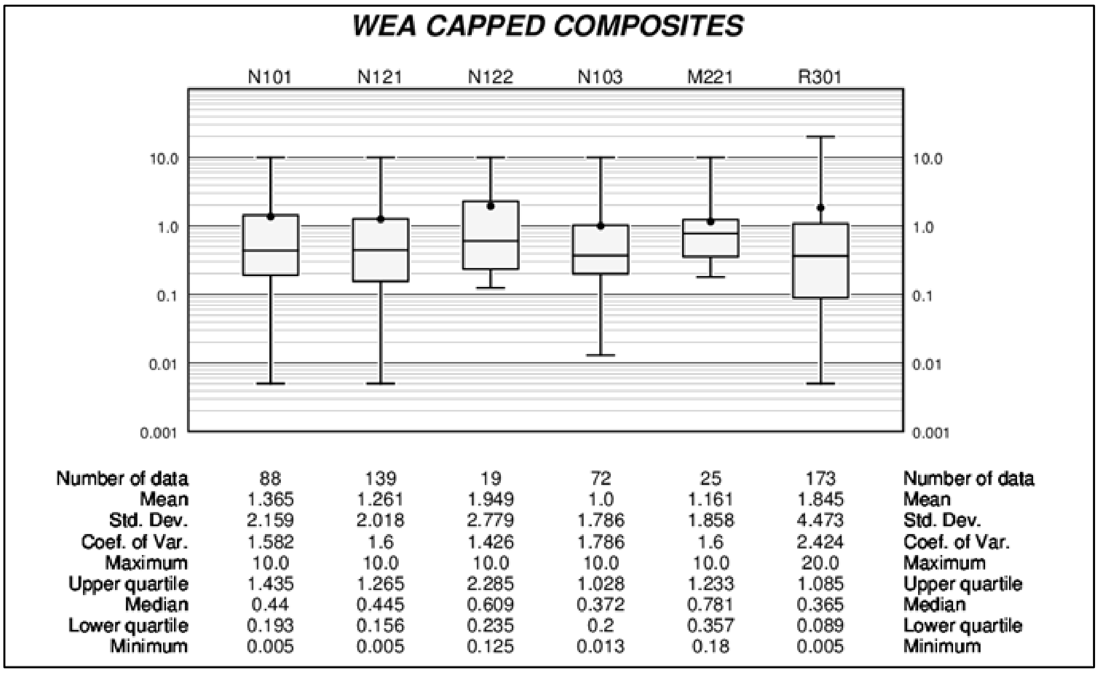


	R301	R321	R302	R322	
Number of data	173	28	12	16	Number of data
Mean	1.904	1.05	1.337	0.919	Mean
Std. Dev.	6.802	1.066	1.308	1.335	Std. Dev.
Coef. of Var.	3.572	1.016	0.979	1.453	Coef. of Var.
Maximum	81.46	4.85	4.56	5.07	Maximum
Upper quartile	1.085	1.09	1.985	0.715	Upper quartile
Median	0.365	0.745	0.852	0.487	Median
Lower quartile	0.089	0.38	0.398	0.267	Lower quartile
Minimum	0.005	0.06	0.04	0.03	Minimum

Table 14.19 Capping values for Weaju

Domain	Cap Value (g/t Au)	Number Capped
N101	10	2
N121	10	3
N122	10	1
N103	10	1
N221	10	1
R301	20	9

Figure 14.9 Summary statistics for capped composite domains



14.9 Variography

14.9.1 Ndablama

A suite of experimental variograms were generated Ndablama and modelled based on 1 m gold composites within the interpreted mineralization domains. Variograms were generated for both gold and a representative number of indicator thresholds. Traditional semi-variograms were used as the spatial model for this study with variographic analysis completed using Isatis software. Indicator variograms are used to estimate gold grade distributions (histograms). Gold variograms are used to derive change of support correction factors.

Indicator variograms

Five indicator thresholds were selected for variogram modelling for the MS01 domain at Ndablama. The selected thresholds represent the entire grade range, and therefore spatial variability, of the mineralization. There were insufficient composites in the MS02 domain for use in calculating variograms, therefore the indicator variograms for MS01 were adopted for MS02.

The experimental indicator variography has been modelled with two-structure spherical variogram models and a nugget effect.

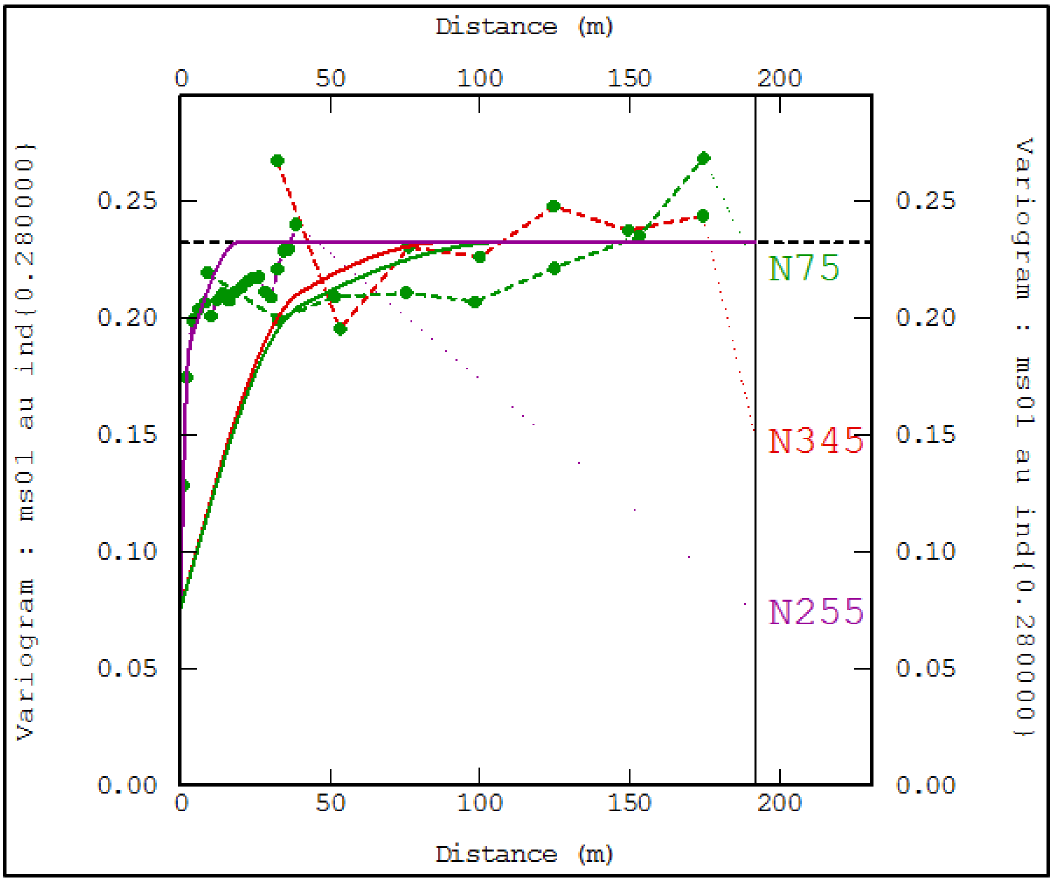
The variogram parameters for Ndablama are listed in Table 14.19. As illustrative examples, the experimental and models variograms for the median indicators are shown in Figure 14.10.

Table 14.20 MS01 indicator variogram parameters

Threshold	Nugget Value $(g/t)^2$	Relative Nugget (%)	Structure	Spatial Variance$(g/t)^2$	Ranges(m)			Z-Axis Rotation*	X-Axis Rotation*
					X	Y	Z		
0.1	0.075	32	1	0.1	40	40	3	255	30
			2	0.06	80	110	20		
0.28	0.075	32	1	0.1	40	40	3	255	30
			2	0.06	80	100	20		
0.46	0.075	39	1	0.074	50	50	12	255	30
			2	0.045	100	130	15		
0.96	0.071	55	1	0.024	50	50	2	255	30
			2	0.033	100	130	15		
1.49	0.046	51	1	0.039	20	20	2	255	30
			2	0.006	40	30	15		
2.04	0.035	38	1	0.024	3	3	3	255	30
			2	0.033	20	20	20		
5.33	0.018	35	1	0.0001	2	2	2	255	30
			2	0.033	15	15	15		

*Datamine convention

Figure 14.10 Median indicator variogram for MS01



Gold variograms

For the experimental gold variograms, a nugget effect and two spherical structures were modelled. The corresponding variogram parameters are listed in Table 14.21, with variogram models in Figure 14.11.

The MS01 domain variogram is characterized by a very high relative nugget of 74% and extended overall ranges of up to 80 m (major axis), although shorter scale variability is modelled with close range structures of 30 m, 40 m and 7 m respectively for the major, semi-major and minor axes. The variograms for all domains have been oriented with a dip direction of 255° and a dip of 30°. It was not possible to obtain meaningful variograms for MS02 so the variogram for MS01 was rescaled such that it had a sill equal to the variance of MS02 and the rescaled variogram used for MS02.

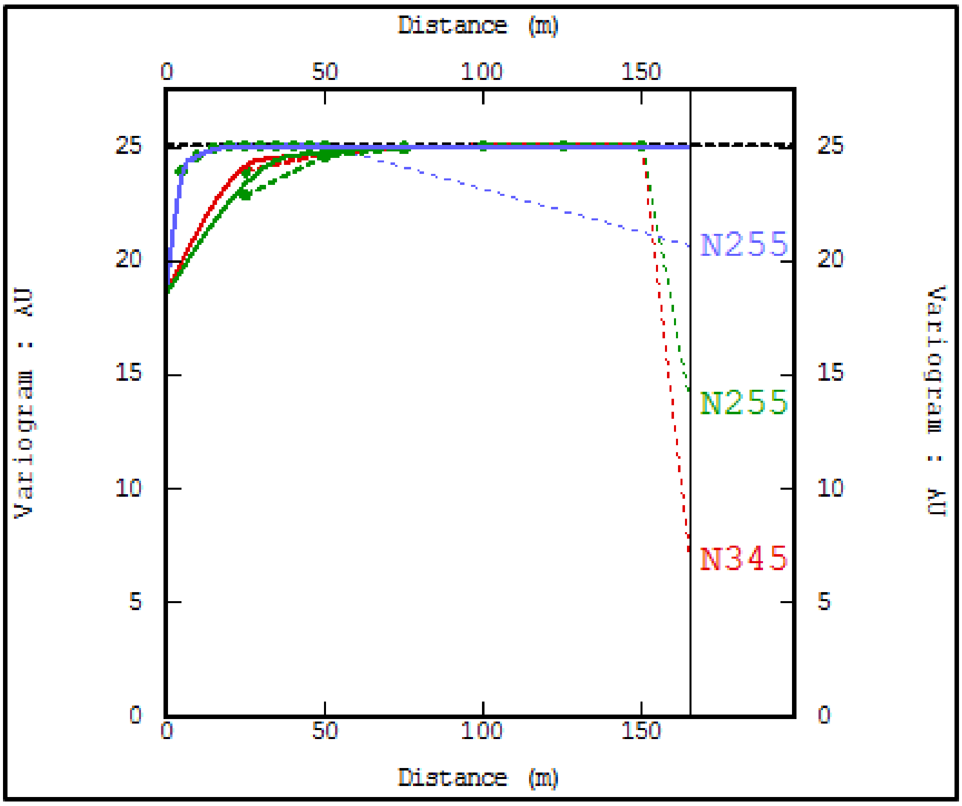
The relatively poorly-structured variograms, characterized by a high relative nugget effect indicates that a significant amount of smoothing is likely in grade estimation.

Table 14.21 Gold grade variogram parameters

Minzone	Nugget Value $(g/t)^2$	Relative Nugget (%)	Structure	Spatial Variance$(g/t)^2$	Ranges (m)			Z-Axis Rotation*	X-Axis Rotation*
					X	Y	Z		
MS01	18.5	74	1	5.33	30	40	7	255	30
			2	1.18	80	80	20		

*Datamine convention

Figure 14.11 Variogram of gold grades in MS01



14.9.2 Weaju

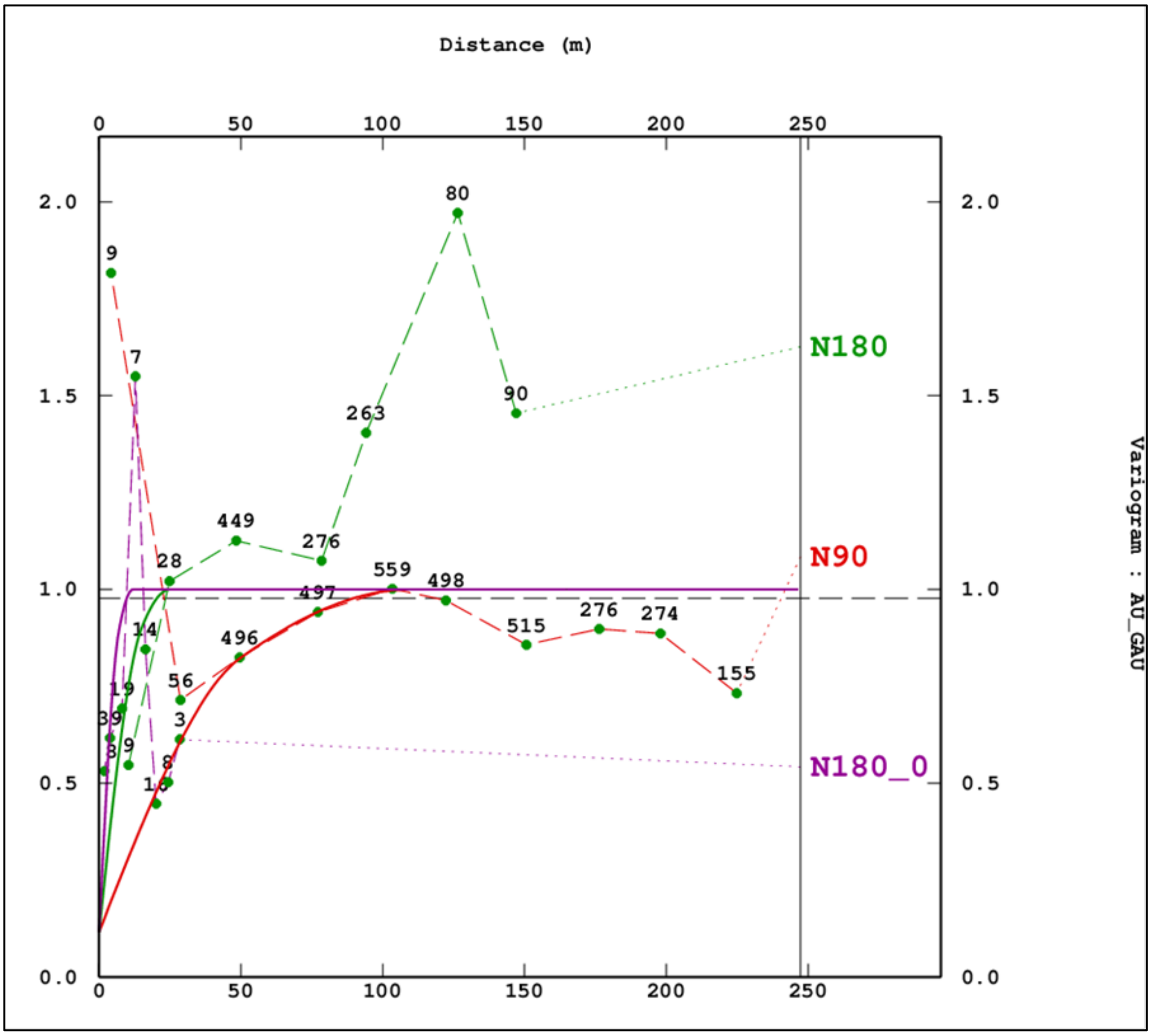
Three variograms models were generated for the Weaju project. Due to limited numbers of composites in each of the domains, composites for unweathered N101 and N102, saprolite N101 and N102, and unweathered R301 and R302 were combined for variogram analysis. Gold composite values were transformed to Gaussian variables for traditional variograms. Variogram models could not be generated for the semi-major axis of N101-N102 saprolite and R301-302 unweathered composites. In these cases the major variogram axis ranges were assumed for the semi-major axis. Variogram models for the project are summarized in Table 14.22. The N101-N102 variogram model is provided in Figure 14.12.

Table 14.22 Summary of Weaju variogram models

VARIABLE	ZONE	C_0	Cn	Structure Model	Rx [m]	Ry [m]	Rz [m]	Z AXIS*	X-AXIS*	Z-AXIS*
Au	N101-N102	0.116	0.402	Spherical	50	15	7	0	-70	0
			0.482	Spherical	110	25	12			
Au	N121-N122	0.058	0.942	Spherical	20	20	20	0	-70	0
Au	R301-R302	0.123	0.877	Spherical	29	29	15.5	80	-20	90

*Datamine convention

Figure 14.12 Gold variogram for combined Weaju domains N101 and N102



14.10 Gold grade estimation

14.10.1 Ndablama

Introduction

The Ndablama deposit resource estimates are based on drillholes that intersect the interpreted and wireframed mineralized shells.

Gold grades were estimated using multiple indicator kriging (MIK). MIK was considered an appropriate estimation method, as significant short-scale variability is noted for the gold mineralization within the defined broad, low-grade mineralization shells which also includes zones of very high-grade mineralization. MIK is a robust estimation approach that allows the estimation of targeted selective mining units (SMUs) within larger panels, and is suitable for estimation within relatively broadly spaced data sets.

A change of support was completed using an indirect lognormal/affine approach. The process involves completing an initial indirect lognormal correction, followed by a smaller affine correction to adjust for any variance distortion. A series of iterations were completed with the change of support to ensure the targeted variance correction was reproduced. These results have been calibrated against global change of support corrections generated using the discrete Gaussian change of support.

The MIK estimate was further post-processed to produce single SMU cell grades based on a similar approach to that used by Marat Abzalov (2006), as described in the paper titled “Localised uniform conditioning (LUC): A new approach for direct modelling of small blocks”. This method uses the MIK SMU-corrected histogram and divides the estimated tonnage and metal evenly into SMU cells within the panel. In this manner, grades are estimated into each of the SMU-sized cells, thereby replicating the targeted mining selectivity. Ranking of the SMU-sized cells within a panel is based on SMU grades estimated by ordinary kriging.

The estimation of gold grades by MIK, within the mineralized shell domains, was completed using 1 m composite gold data for each domain, with kriging parameters determined from variography. Panels with dimensions of 20 m E × 20 m N × 10 m RL were used for the initial MIK estimate. In preparation of ranking of localized MIK estimates, gold grades were estimated by ordinary kriging into 5 m E × 5 m N × 5 m RL cells, which correspond to the designated SMU size.

Gold grades were estimated in two search ellipsoid passes for the MS01 and MS02 domains as set out in in Table 14.23. The search ellipsoid orientations for all estimation runs are controlled by assigning a single dip and dip direction value into the input model for each estimation domain. Octant searching was not applied.

No distinction was made between weathered and fresh rock, because only a small proportion of mineralization is affected by weathering and there were insufficient samples available for estimating the weathered zone separately.

Table 14.23 Search ellipsoid parameters Ndablama

Values Estimated	Estimation Pass	Domains	Dimensions (m)			Minimum Composites	Maximum Composites
			X	Y	Z		
Gold, indicators	1	MS01	60	60	20	5	40
	2		90	90	30	5	20
Gold, indicators	1	MS02	60	60	10	1	20
Density	1	All geological units	100	100	30	4	40
	2		200	200	60	4	20

The panel estimates were subjected to a series of corrections to reflect the change of support:

- Log normal change of support
- Readjustment to retain permanence of distribution
- Affine correction to ensure variance target is met

A global change of support was generated using the discrete Gaussian change of support and compared against the results generated in the MIK model. The final change of support coefficients (variance adjustment factor - f) applied to the domains is shown in Table 14.24.

Table 14.24 Change of support coefficients – Ndablama

MINZONE	Variance Adjustment Factor
MS01	0.210
MS02	0.20

The distribution of gold for each panel, as estimated by MIK, was mapped to the corresponding SMU cells within the panel according to a ranking based on the OK-estimated gold grades.

Density was estimated into 20 m × 20 m × 10 m parent cells, using a constraint in which only samples from a given weathering domain were used to estimate the corresponding unit in the model. An inverse distance weighting squared estimator was applied, with search orientations conforming to local planes of the stratigraphy.

14.10.2 Weaju

Gold grades were estimated using composites (capped where appropriate) and ordinary kriging (OK) or inverse distance squared (ID2) estimators. OK was used for domains for which variograms models were developed, including saprolite zones R301 and R302 (variography for unweathered zones was assumed for saprolite zones). Two estimation runs were used, with progressively expanded ellipsoid search ranges.

Each of the 18 domains was estimated separately using only composites from that specific domain. Variograms developed from combined data sets were used for individual domains. A summary of estimation parameters used for estimating gold grades into the block model is summarized in Table 14.25. Block estimates were made for parent blocks only, all sub-blocks being assigned parent block values.

Average density values for each domain were assigned to all model blocks for that domain.

Table 14.25 Weaju summary of estimation parameters

						Ranges [m]			Search Ellipse Rotation*		
Estimator	Zone	Estimation Run	Minimum	Maximum	Octant Search	SVx [m]	SVy [m]	SVz [m]	Z AXIS	X-AXIS	Y-AXIS
OK	N101, N102	1	2	25	NO	100	50	30	0	-70	0
		2	2	20	NO	150	75	45			
OK	N121, N122	1	2	25	NO	50	50	25	0	-70	0
		2	2	20	NO	100	100	50			
ID2	N103, N104	1	2	25	NO	100	50	30	222	70	0
		2	2	20	NO	150	75	45			
1D2	N123, N124	1	2	25	NO	50	50	25	222	70	0
		2	2	20	NO	100	100	50			
OK	R301	1	2	10	NO	50	50	25	80	-20	90
		2	2	20	NO	100	100	50			
	R302	1	2	25	NO	50	50	25	80	-20	90
		2	2	20	NO	100	100	50			
OK	R321, R322	1	2	25	NO	50	50	25	80	-20	90
		2	2	20	NO	100	100	50			
ID2	M201, M204	1	2	25	NO	100	50	30	180	-75	-20
		2	2	20	NO	150	75	45			
ID2	M202, M203	1	2	25	NO	100	50	30	133	90	-20
		2	2	20	NO	150	75	45			
ID2	M221, M224	1	2	25	NO	50	50	25	180	-75	-20
		2	2	20	NO	100	100	50			

*Datamine rotation conventions

14.11 Model validation

Ndablama

Detailed validations of both the panel MIK and the local MIK estimates were completed. This included exhaustive visual and statistical reviews of the models against the input composite data. The validation checks for the estimated gold grades are:

- A comparison of the mean grades of the declustered composites against the model SMU mean grades;
- Swath plots of declustered composites and SMU model grades;

- Grade and tonnage curves for declustered composites, with change of support targeted on the SMU variance (GCS) versus the SMU cell model (LMIK).

At Ndablama, comparisons of cell model mean gold estimates with declustered composites mean gold grades indicate moderate differences, most markedly for the MS02 zone (Table 14.26).

Swath plots of gold grades for domain models and declustered composites, using an 80 m wide swath for easting and northing, and a 20 m thick swath for elevation, show a moderately good correlation of gold grades within areas representing the bulk of tonnage or highest numbers of composites for each domain. Example swath plot results are presented in Figure 14.13.

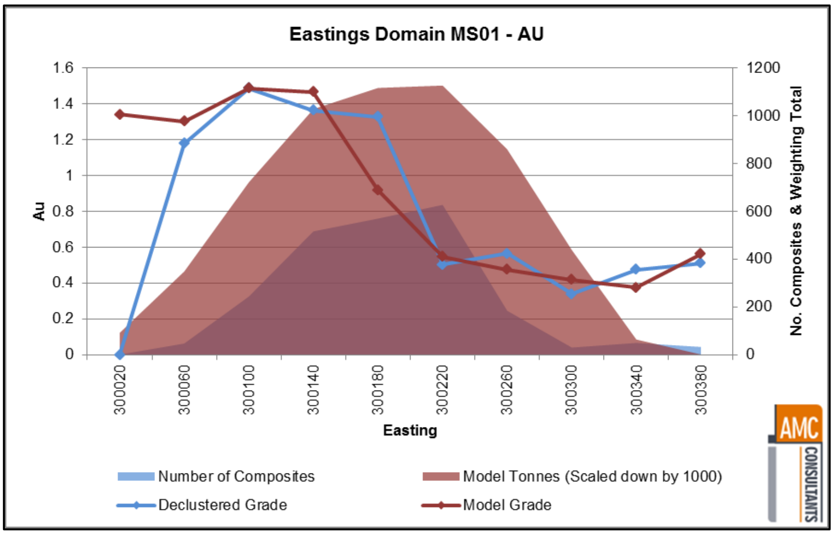
Grade plots of global change of support against the LMIK model show a good correlation for the Main (MS01) and South (MS02) Zones up to a 1 g/t Au cut-off. Tonnage and grade plots for the various mineralized domains are presented in Figure 14.14 and Figure 14.15.

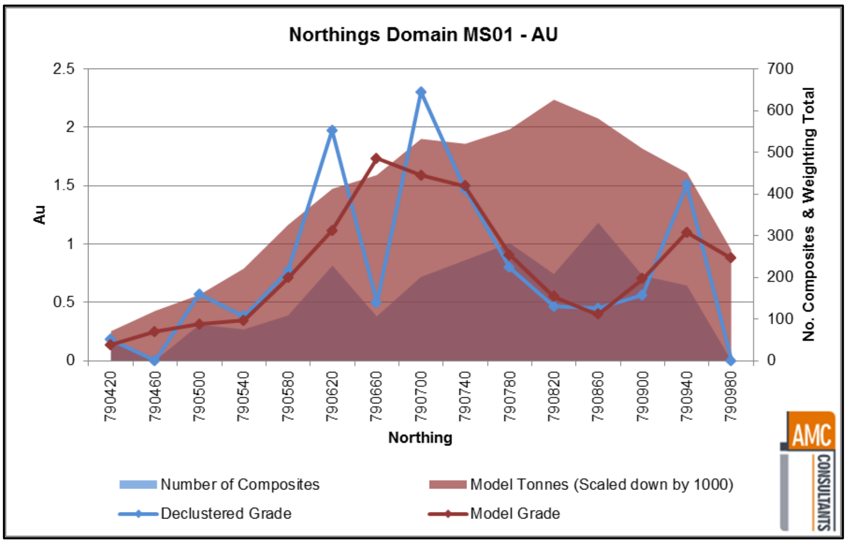
The gold grade block model for the Ndablama project is shown in Figure 14.16 and Figure 14.17.

Table 14.26 Mean gold values: model and declustered composites Ndablama

Deposit	MINZONE Domain	Model Mean (g/t Au)	Declustered Composites Mean (g/t Au)	Difference	Percent Difference
Ndablama	MS01	0.93	1.02	-0.09	-9
	MS02	0.61	0.78	-0.17	-22

Figure 14.13 Swath plots for central zone block model and declustered composites Ndablama deposit





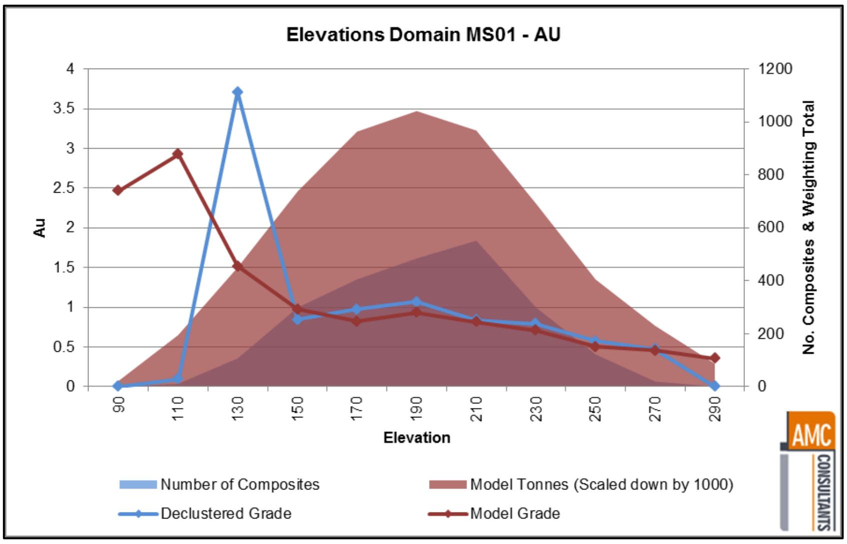


Figure 14.14 Grade plot for Central Zone Ndablama LMIK estimate

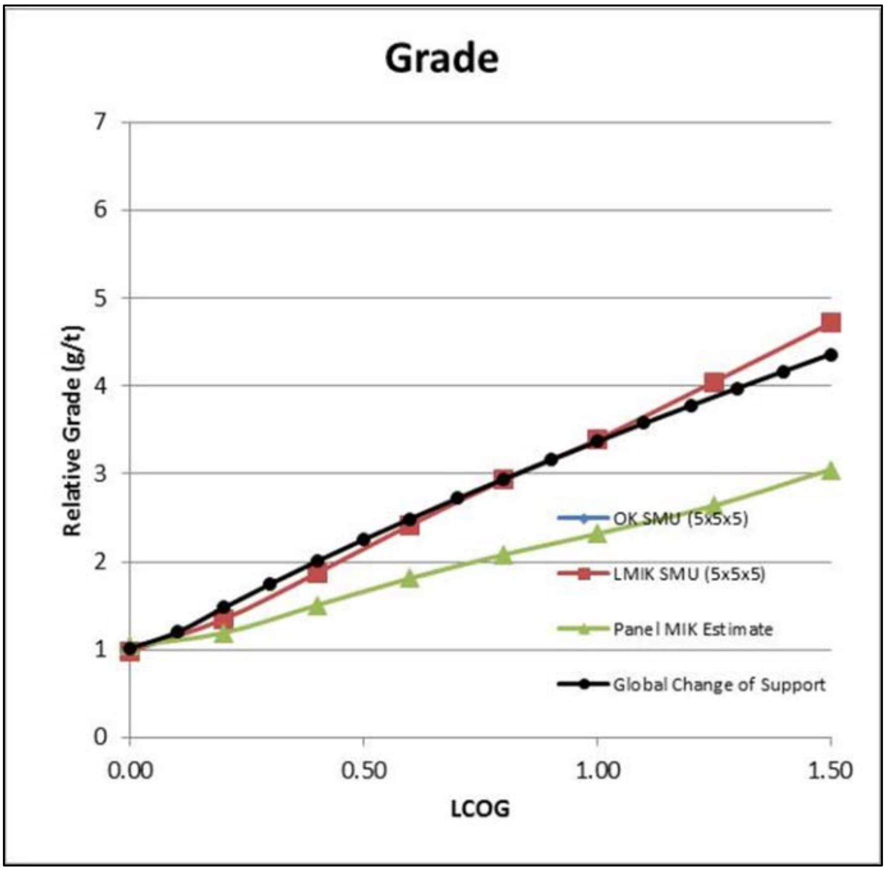


Figure 14.15 Grade plot for South East Zone Ndablama LMIK estimate

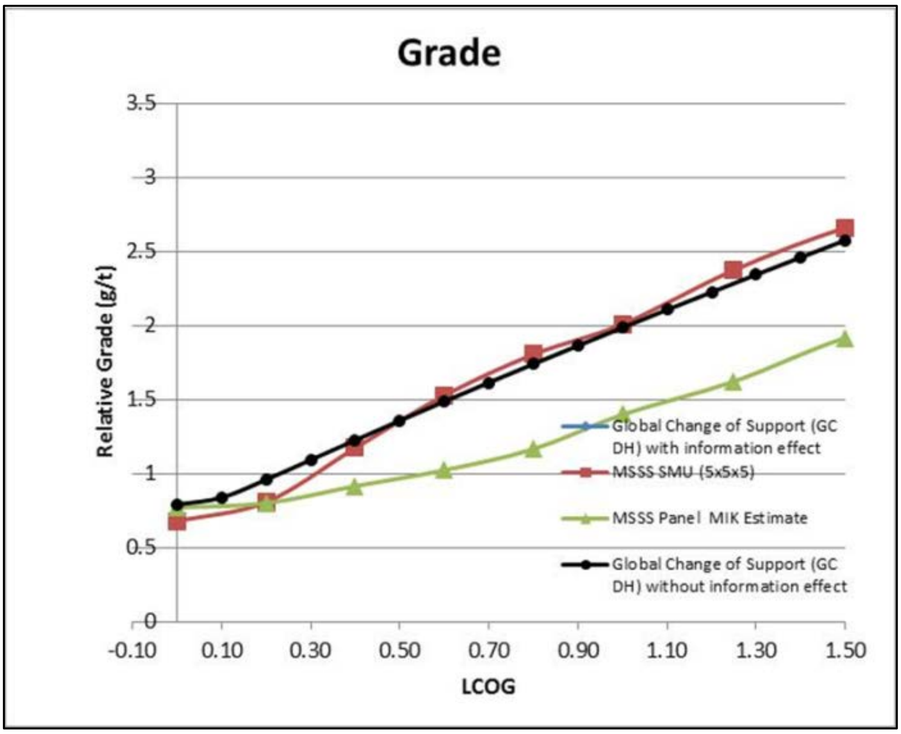


Figure 14.16 Oblique 3D view of Ndablama project gold grade block model

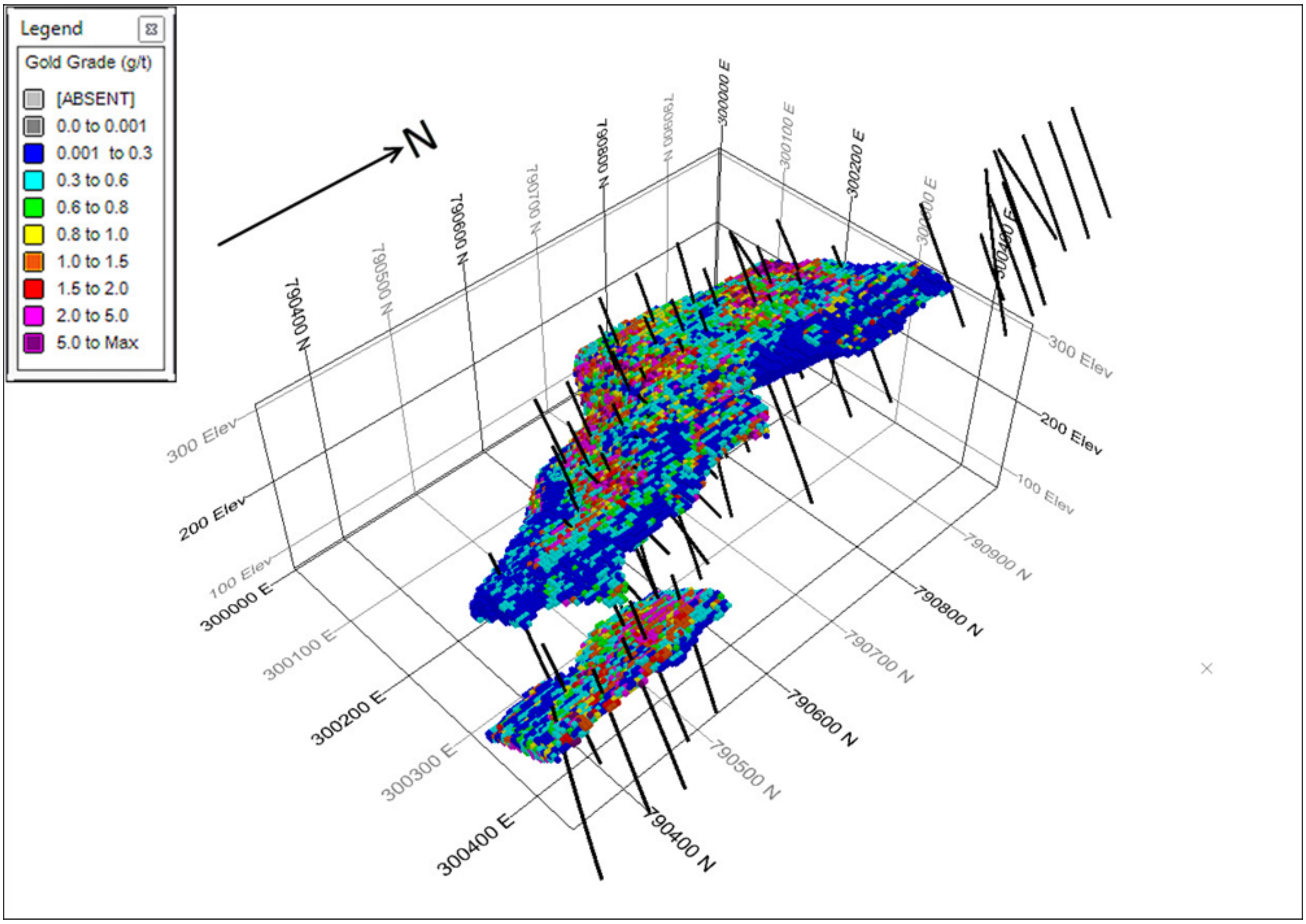
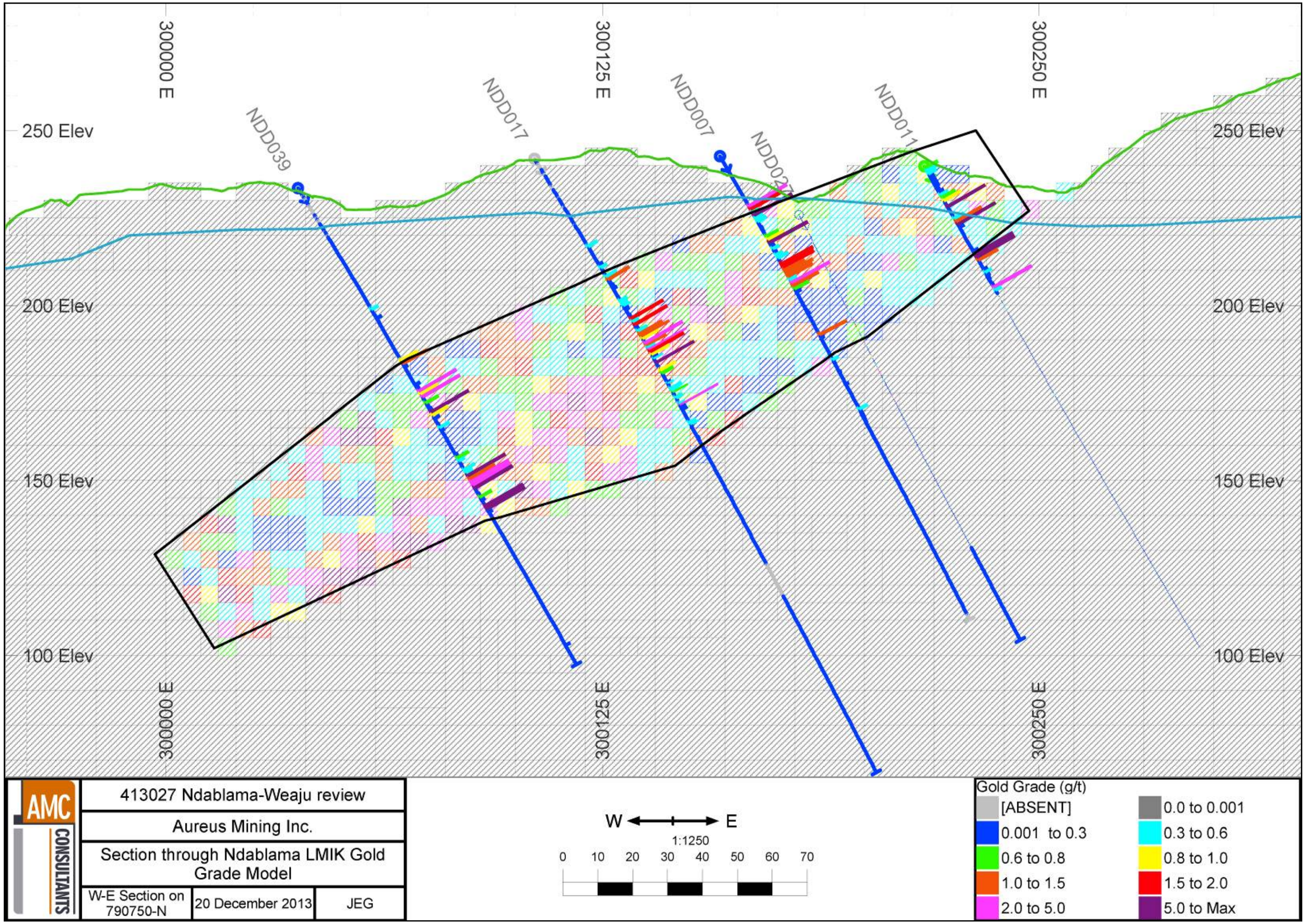


Figure 14.17 Cross-section 413027 north for Ndablama project gold grade block model



Weaju

Validation checks were completed for the Weaju gold estimate including:

- Comparison of drillhole sections and plans to estimated block grades;
- As a test case, comparisons of declustered composites, nearest neighbour, and global kriging estimates to OK estimates for the unweathered N101 domain.

Validation checks confirm the block model estimates for the Weaju zone are appropriate and reasonably reflect the underlying sampling data.

The gold grade block model for the project is shown in Figure 14.18 through to Figure 14.20.

Figure 14.18 3D view of Weaju gold grade block model

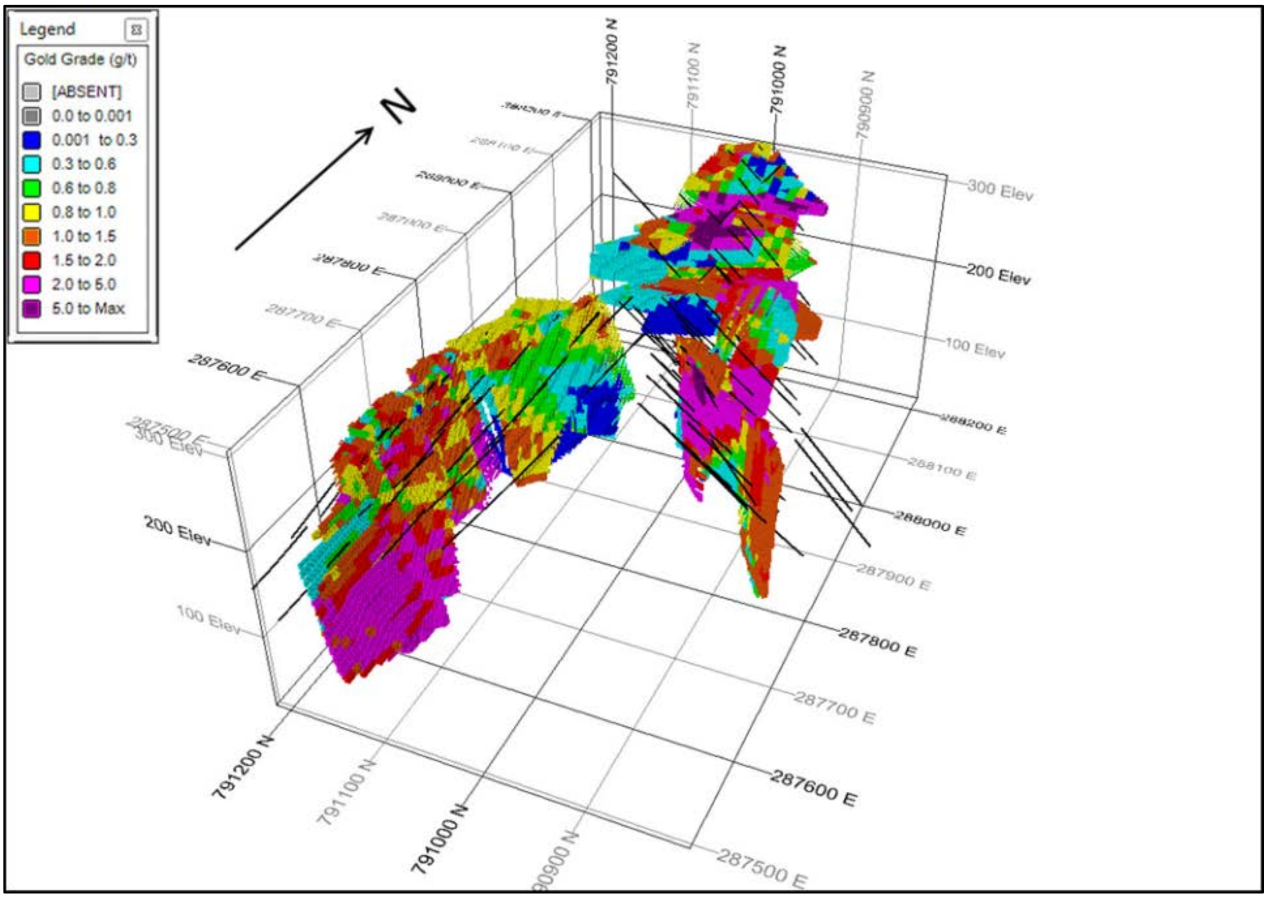


Figure 14.19 Cross-section 287595 east for Weaju project block model, North Zone

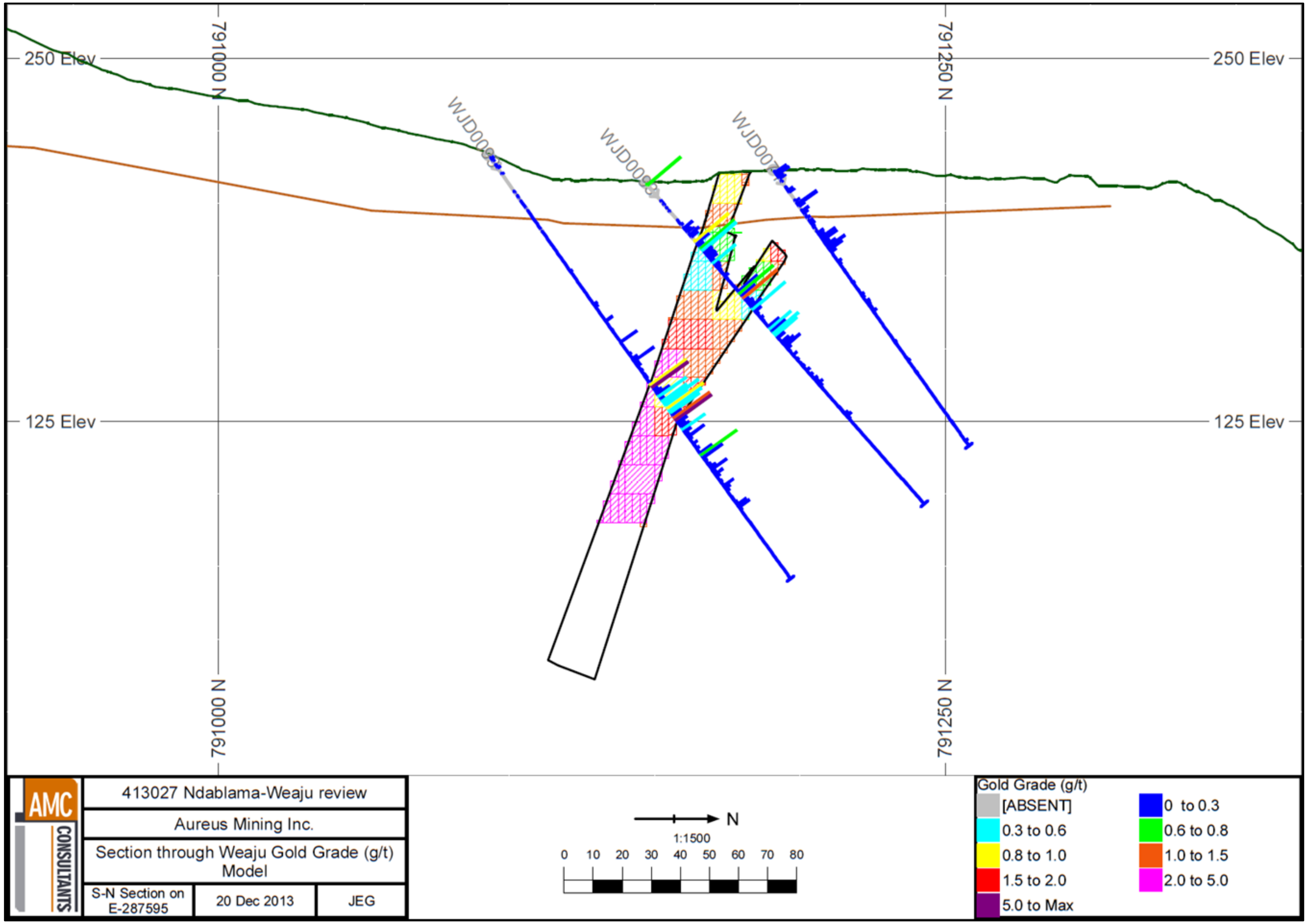
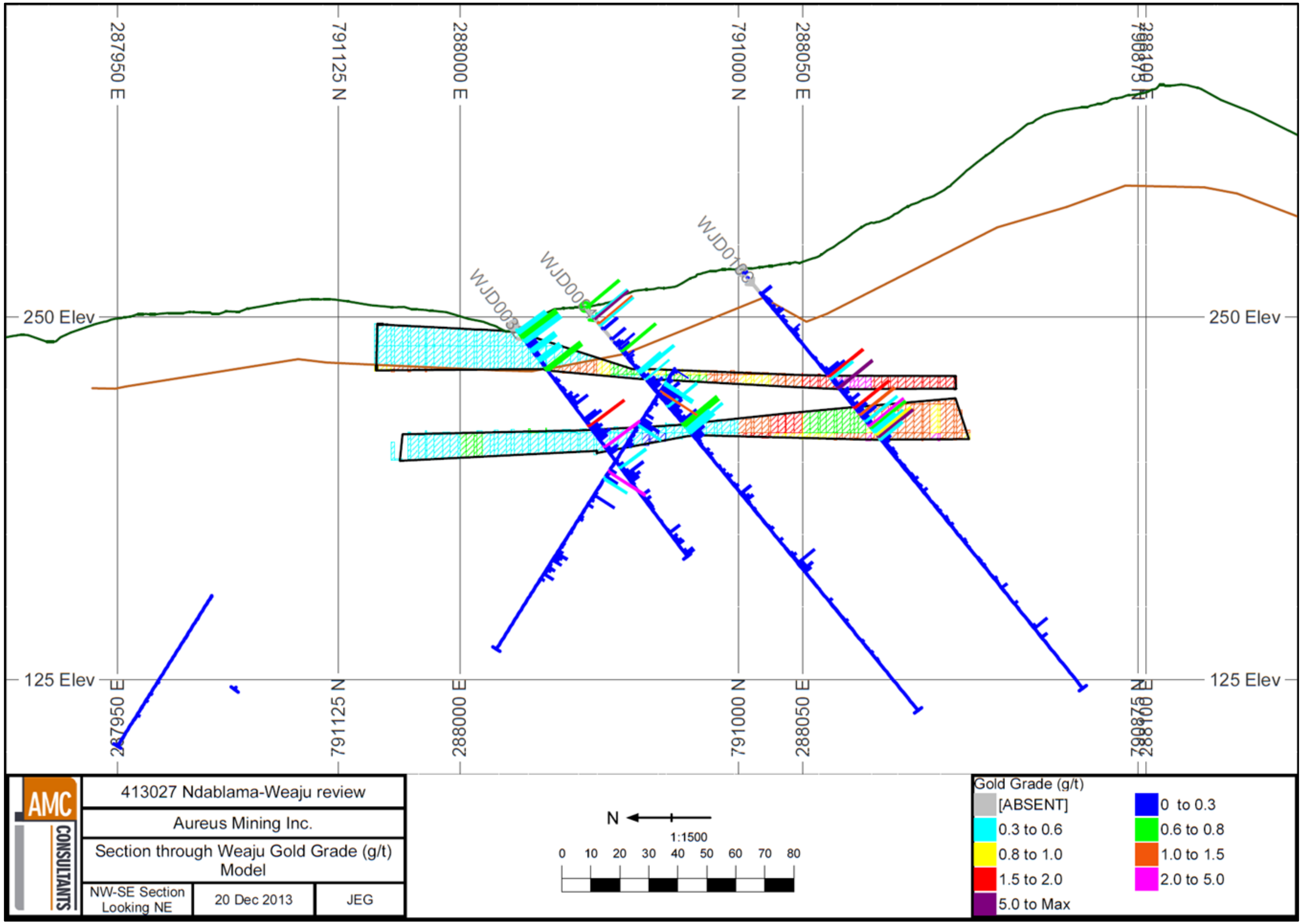


Figure 14.20 Oblique cross-section of block model Weaju project, Ridge Zone



14.12 Resource classification

The Mineral Resources for the Ndablama and Weaju gold projects have been estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101 (NI 43-101).

Resource classification procedures have been undertaken with consideration of the following criteria:

- Quality and reliability of raw data (sampling, assaying, surveying)
- Confidence in the geological interpretation
- Number, spacing and orientation of intercepts through mineralized zones.
- Knowledge of grade continuities gained from observations and geostatistical analyses.
- The likelihood of material meeting economic mining constraints over a range of reasonable future scenarios, and expectations of relatively low selectivity of mining.

14.12.1 Ndablama

At Ndablama, the geometry of the interpreted 0.1 g/t Au mineralized shells is relatively simple, based on the down-dip and along-strike drill intersection spacings, which typically range between 30 m and 80 m. This simplicity masks the much reduced ability to correlate intersections as cut-off grades approach likely economically significant values

Although the MIK method of grade estimation has been applied to represent as closely as possible the character of the mineralization at the anticipated mining scale, AMC nonetheless considers the current overall drill spacing to be only sufficient for the Ndablama tonnage and grade estimates to be classified as Inferred category.

14.12.2 Weaju

The intervals between drill intersections at Weaju are highly variable. In general, the drill spacing is more closely spaced near surface, reducing in density with depth as the drilling tracks each mineralized zone down dip. On drill spacing alone, therefore, the level of confidence in the resource typically declines with depth.

In addition to the overall difficulty associated with interpreting the Weaju mineralization, the contribution of the set of drillhole intersections to the general level of confidence in the Weaju tonnes and grades estimates is limited by:

- The necessity to exclude 14 early drillholes from the database.
- The need to partition accepted drillhole intersections between ten different mineralized zones.
- The need to partition samples for grade and density estimation between weathered and unweathered material.

Furthermore, statistical and geostatistical analyses of the gold sample data indicates that the mineralization is not yet confidently represented by the available data. Consequently the Weaju tonnes and grades estimates have been assigned a classification level of inferred. Furthermore, some extrapolated parts of the modelled interpretation have been excluded from the classified resource.

14.13 Tonnage grade reporting

The Ndablama and Weaju resource estimates were prepared by AMC Consultants (UK) Limited (AMC) in accordance with the requirements of National Instrument 43-101 “Standards of Disclosure for Mineral Projects”, of the Canadian Securities Administrators (“NI-43-101″). The mineral resource statement for the two deposits consists of an Inferred Mineral Resource estimate of 451,000 ounces at 2.1 g/t Au using a 0.5 g/t cut-off for the Ndablama deposit, and an Inferred Mineral Resource estimate of 178,000 ounces at 2.1 g/t Au using a 1.0 g/t cut-off for the Weaju deposit. The Mineral Resource Statement for the deposits is presented in Table 14.27.

Table 14.27 Resource Statements for the Ndablama and Weaju Gold Deposits, Liberia. AMC Consultants (UK) Limited, November 20 2013.

Deposit	Cut-off grade (g/t Au)	Classification	Quantity	Au	
			(Kt)	(g/t)	(Koz)
Ndablama	0.5	Inferred	6,829	2.1	451
Weaju	1.0	Inferred	2,680	2.1	178

[1] Mineral Resources for the Ndablama deposit are reported at a cut-off grade of 0.5 g/t Au and for the Weaju deposit at 1.0 g/t Au.

[2] The effective date of the Ndablama and Weaju gold deposit mineral resource estimates is 11 November 2013.

[3] Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.

[4] The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as indicated and measured mineral resources.

[5] Totals and average grades are subject to rounding to the appropriate precision.

14.14 Sensitivity analysis

The mineral resources for the Ndablama and Weaju projects are sensitive to the selection of the reporting cut-off grade. To illustrate this sensitivity, the global quantities and grade estimates are presented at different cut-off grades in Table 14.28 for the Ndablama deposit and Table 14.29 for the Weaju deposit. The numbers presented in these tables do not represent a Mineral Resource Statement, and are provided only to show the sensitivity of the block model estimates to a selection of cut-off grades. Figures 14.21 and Figure 14.22 present this sensitivity as grade and tonnage plots.

A summary of tonnage and grades by Ndablama zones and Weaju domains are presented in Table 14.30 and Table 14.31.

Table 14.28 Ndablama deposit tonnage-grade estimates at a range of cut-off grades

Cut-off [Au g/t]	Au [g/t]	Quantity [Kt]	Metal [oz x 1000]
Total Inferred Resources			
0.2	1.3	12,239	507
0.3	1.5	9,848	488
0.4	1.8	8,096	469
0.5	2.1	6,829	451
0.6	2.3	5,843	434
0.7	2.5	5,111	419
0.8	2.8	4,546	405
0.9	3.0	4,054	392
1	3.2	3,692	381

Note:
[1] Tonnage and grade are reported at a cut-off grade of 0.5 g/t Au.
[2] Inferred Resources only
[3] Not tabulated to significant figures.
[4] Table is not a resource statement.

Table 14.29 Weaju deposit tonnage-grade estimates at a range of cut-off grades

Cut-off [Au g/t]	Au [g/t]	Quantity [Kt]	Metal [oz x1000]
Total Inferred Resources			
0.6	1.7	3,780	206
0.8	1.9	3,250	194
1.0	2.1	2,680	178
1.2	2.3	2,210	161

Note:
[1] Tonnage and grade are reported at a cut-off grade of 1.0 g/t Au.
[2] Inferred Resources only
[3] Not tabulated to significant figures.
[4] Table is not a resource statement.

Figure 14.21 Tonnage and grade curve for Ndablama Inferred Resources

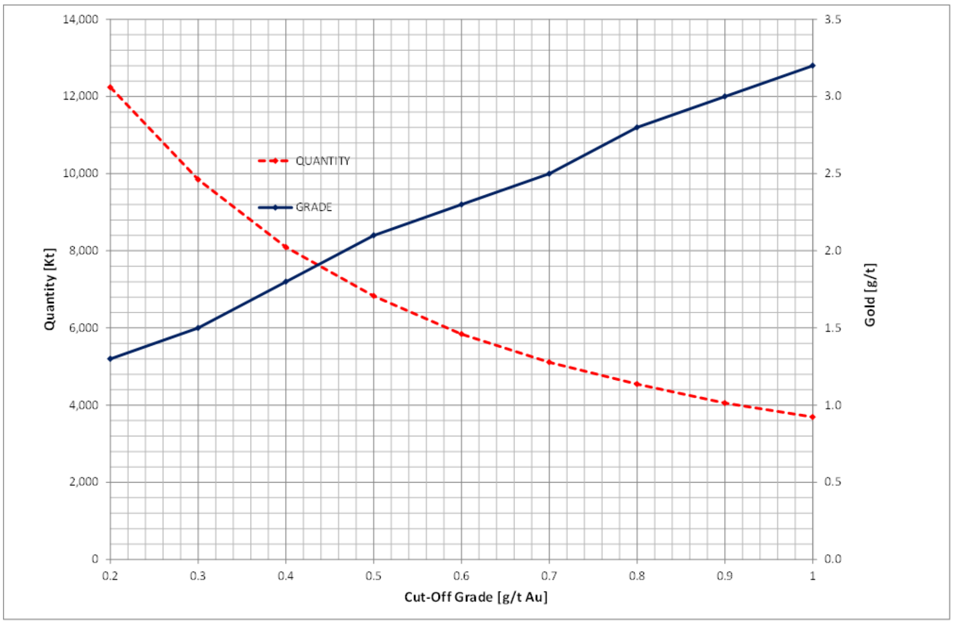


Figure 14.22 Tonnage and grade curve for Weaju Inferred Resources

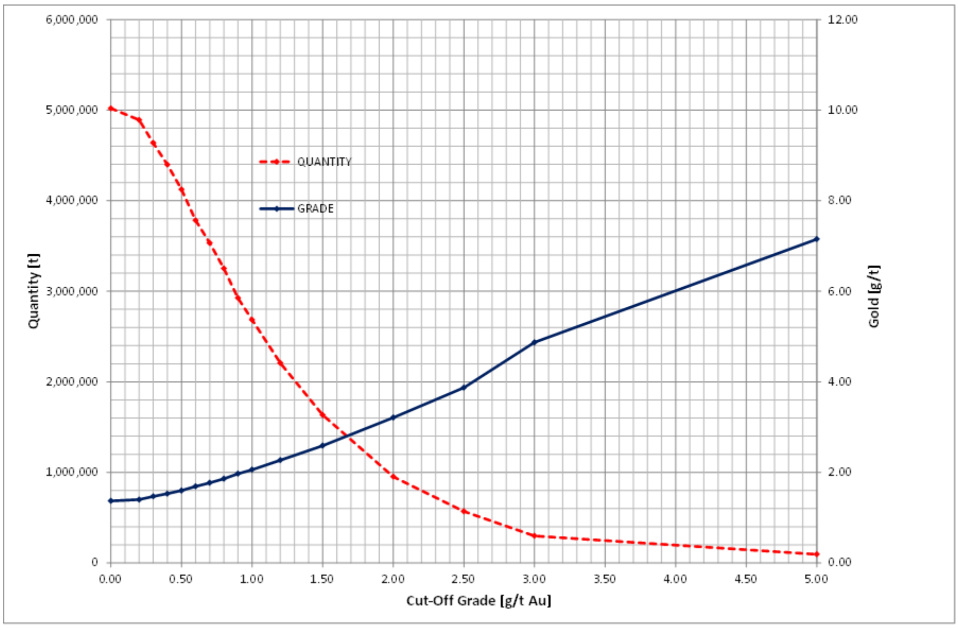


Table 14.30 Tonnage and grade for Ndablama zones

Cut-off Au g/t	Central Zone (MS01)			South East Zone (MS02)		
	Tonnes	Au		Tonnes	Au	
	(Kt)	(g/t)	(Koz)	(Kt)	(g/t)	(Koz)
Weathered	222	1.4	10	34	1.5	2
Fresh	6,165	2.1	423	408	1.2	16

Note:
[1] Reported at cut-off grade 0.5 g/t gold
[2] Inferred Resources only
[3] Not tabulated to significant figures.
[4] Table is not a resource statement.

Table 14.31 Tonnage and grade for Weaju domains

Domain	Au [g/t]	Quantity [t]	Gold [oz]
N101	1.83	1,055,000	62,100
N102	1.94	94,000	5,900
N103	1.44	165,000	7,600
N104	1.03	22,000	700
N121	1.49	70,000	3,400
N122	1.67	16,000	850
N123	1.09	2,000	100
N124	1.34	11,000	500
M201	1.98	321,000	20,400
M202	1.31	38,000	1,600
M203	1.94	223,000	13,902
M204	2.81	49,000	4,500
M221	1.20	25,000	1,000
M224	5.90	3,000	500
R301	3.24	450,000	46,900
R302	1.74	113,000	6,300
R321	1.40	24,000	1,100
R322	2.23	4,000	300

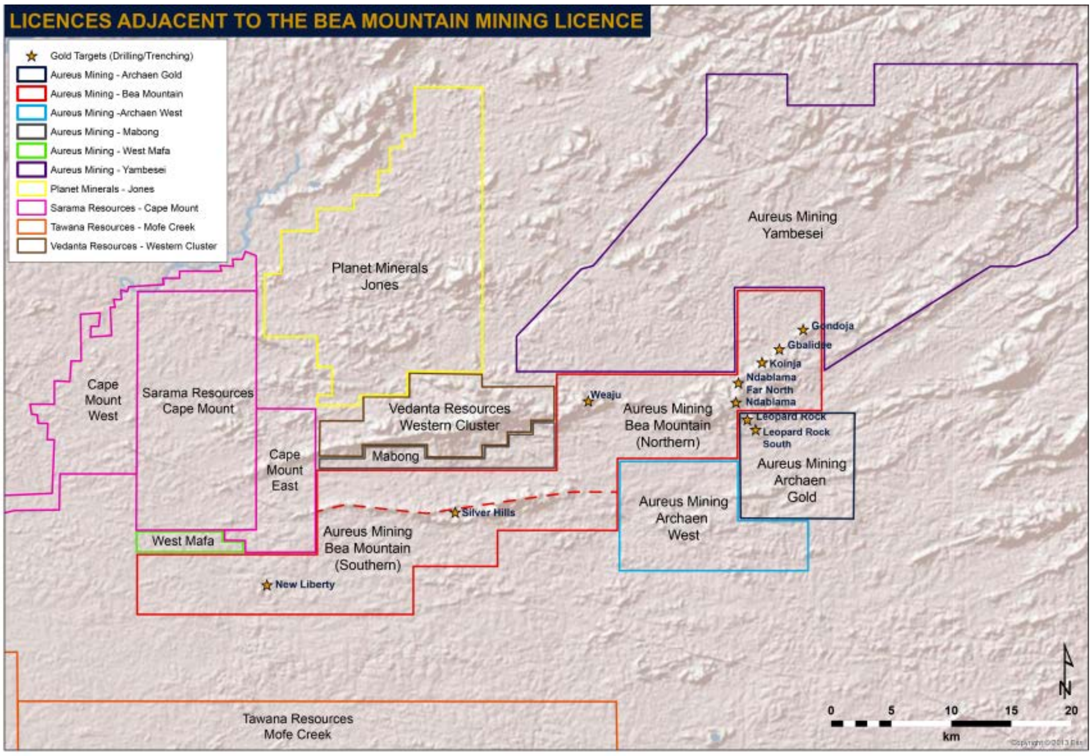
Note:
[1] Reported at cut-off grade 1.0 g/t gold
[2] Inferred Resources only
[3] Not tabulated to significant figures.
[4] Table is not a resource statement.

15 Adjacent properties

15.1 Overview

The properties adjacent to the Bea-MDA licence are illustrated in Figure 15.1.

Figure 15.1 Properties adjacent to the BEA-MDA Mountain mining licence



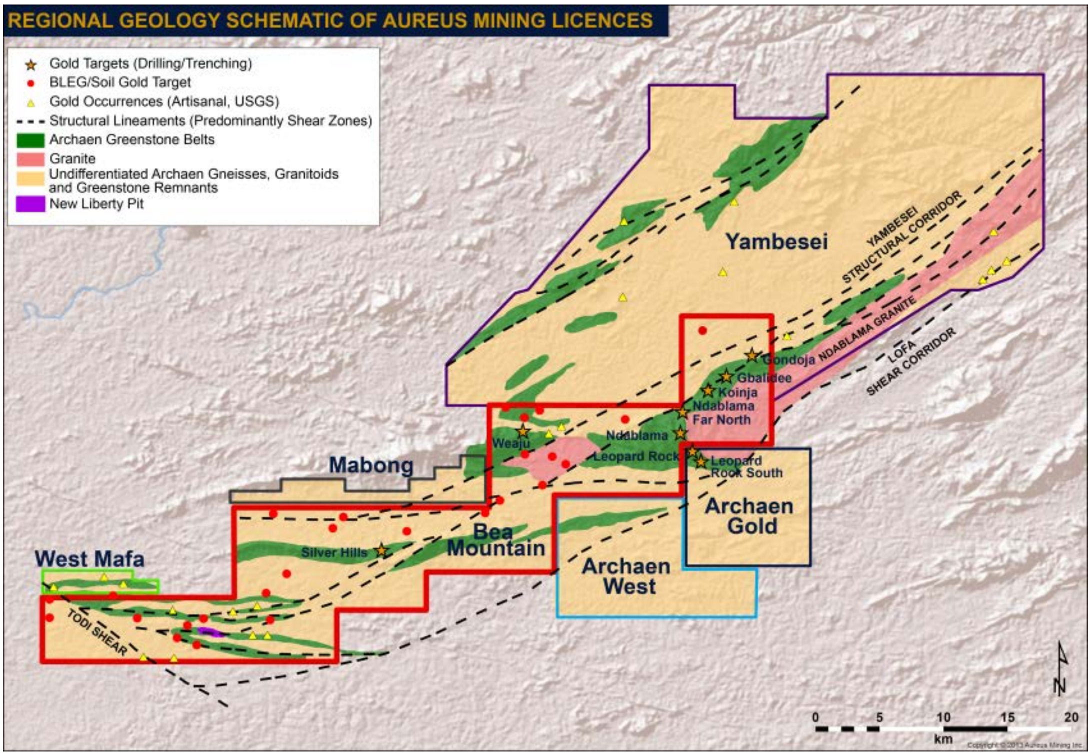
The immediate property neighbours from the most recent April 2011 update of the Mineral Land Holding map of the Ministry of Lands Mines and Energy and various exploration / mining company websites are shown in Figure 15.1.

Since the publication of this government data, Aureus Mining Inc. has acquired an exploration licence known as Archaen Gold (89 km^2) from Archaen Gold Ltd, as announced on 21 September 2011. Additionally, as reported on 19 November 2013, Aureus has been granted four new exploration licences, contiguous to the Bea Mountain Mining licence by the Ministry of Land, Mines and Energy. The four new exploration licences are referred to as Yambesei (759 km^2), Archaen West (112.6 km^2), Mabong (36.6 km^2) and Mafa West (15.6 km^2). In all cases, the company has 100% ownership, and these acquisitions bring the company's contiguous land holdings to an area of 1,470 km^2

For the purposes of this report, the Bea Mountain Mining licence (457 km^2) has been split along a ridge running east to west through the Silver Hills project area. This ridge separates the northern and southern portions of the Bea Mountain Mining Area. The Ndablama and Weaju Projects are located in the northern portion of the licence and are described in this Technical Report. Information relating to the New Liberty Gold Project, situated in the southern portion of the licence area is available within the technical report dated 3 July 2013, entitled "New Liberty Gold Project, Liberia, West Africa, Updated Technical Report", and available on SEDAR.

The licence portfolio hosts multiple greenstone belts and associated shear structures which to date have been the principal hosts to the gold mineralization systems discovered in Liberia. At the time of this report, and with the exception of the Archaean Gold licence, very limited exploration work has been under taken by Aureus on these newly acquired licence areas, however following a desktop review of existing data, in excess of 50 gold occurrences and gold geochemical anomalies have been outlined on the Company's ground holdings. This is detailed in Figure 15.2. Gold mineralization is associated with the primary shear systems or in subordinate structures related to these major breaks.

Figure 15.2 Geological interpretation of Aureus mining licence package



16 Other relevant data and information

To the extent known, there is no other relevant data or information relating to the Bea Mountain Mining Licence, Northern Block.

17 Interpretation and conclusions

The Ndablama and Weaju orogenic lode gold deposits have been defined as a result of a systematic sequence of exploration activities undertaken over a period from 2007 to 2013 for Ndablama and from 1999 to 2013 for Weaju. Activities started from regional stream sampling, soil geochemistry surveys, geological mapping, trench sampling and airborne magnetic gradient and gamma-ray spectrometer geophysical surveys, and structural interpretation and diamond core drilling. Exploration work for the project has been professionally managed using procedures that meet generally-accepted industry best practice. Preliminary metallurgical testwork has been completed on both deposits. Based on this work AMC has estimated Inferred mineral resources for both the Ndablama and Weaju gold deposits.

Mineral resources for the Ndablama deposit are derived from gold mineralization related to a shear zone developed in the pressure shadow of the Ndablama batholith. The shear trends approximately north–south with a moderate dip 35° to the west. Mineralization occurs in amphibolites and ultramafic rocks with some intercalated gneisses and granitic intrusives within the shear zone. A wireframe envelope of mineralization was developed for the deposit using a nominal 0.1 g/t gold threshold and is the basis for estimating mineral resources. The mineralized envelope was further subdivided into weathered and unweathered rock domains. Mineralization within this shear zone contains discontinuous higher grade gold trends and in the opinion of AMC is best estimated using a multiple indicator approach to grade estimation. AMC used localized multiple indicator kriging to estimate gold resources for the Ndablama deposit.

Mineral resource defined for the Weaju deposit are based on gold mineralization related to a synformal fold structure with an axial trace trending shallowly to the south-west. A wireframe envelope for mineralization was based on structural geological interpretations and a nominal 0.3 g/t gold threshold. Three major zones for the deposit have been identified as the North Zone comprising the northern limb of the fold, the Ridge Zone comprising the nose of the fold and the Main Zone comprising the southern limb. The three zones are divided in to 18 domains including weathered and unweathered rock domains.

Resources are reported on the basis a 0.5 g/t gold cut-off grade for the Ndablama deposit and 1.0 g/t gold for the Weaju deposit.

Based on a review of exploration data, AMC concludes that mineral resources for the Ndablama project have potential to be expanded down dip of the shear zone to the west, both to the north and south along the strike trend.

Weaju resources are open at depth at the limbs of the synformal (North and Main Zones). Additional mineralization may also be found south of the North Zone and south-west of the Main Zone. Exploration drilling also needs to confirm the closure of mineralization for the Ridge zone, east of the fold closure.

Scouting metallurgical testwork on the Ndablama and Weaju material was scoped and managed by DRA, with the objective of assessing the metallurgical responses, of both oxide and sulphide material, to a gravity/leach treatment route.

For Ndablama, both the oxide and sulphide composites showed good amenability to cyanidation, returning gold leach residue grades of 0.08 g/t and 0.14 g/t respectively at a p80 75 micron grind. From head grades of 0.91 g/t and 2.24 g/t, this translates into gold recoveries of 92% and 94% for the oxide and sulphide material respectively. It is likely that gold recovery will vary according to head grade.

The sulphide composite showed a nugget effect which can be exploited to positive effect in the process plant design, while gravity recoveries of 34% and 70% were obtained for the Ndablama oxide and sulphide composites respectively.

For Weaju, both the oxide and sulphide composites showed a nugget effect. Screen fire assays for the sulphide and oxide composites returned values of 5.54 g/t and 3.32 g/t respectively. The sulphide composite returned a Bond BWi value of 16.7 kwh/t, and no problems are foreseen with achieving grinds of p80 75 microns and p80 45 microns.

Gravity recoveries of 43% were obtained for both the sulphide and oxide composites, while both the oxide and sulphide composites, as supplied and tested, are deemed to be amenable to cyanidation. For the sulphide composite, residue grades ranging between 0.55 g/t to 0.31 g/t, giving recoveries between 89% and 93%, depending on the head grade, were obtained across all gravity/cyanidation tests conducted.

An acidic pre-oxygenation stage, in addition to a lime pre-oxygenation stage, was required to obtain a 0.31 g/t residue on the sulphide composite to obtain a recovery of 93%

For the Weaju oxide composite, residue grades ranging between 0.05 g/t to 0.21 g/t giving recoveries between 92% and 98%, depending on the head grade, were obtained across all gravity/cyanidation tests conducted. There is some potential for OpEx savings by employing a primary grind only, of around p80 75 microns, on the oxide material, if this material is to be treated separately.

18 Recommendations

The exploration procedures and protocols used by Aureus are appropriate to the current level of study for the project. Mineral resources for both projects can be potentially increased with drilling campaigns to explore extensions of identified mineralization and infill drilling of defined mineral resources.

Core recovery within mineralized zones is overall good for the Ndablama and Weaju projects. However for the Weaju project, core recovery recorded in drillhole logs are inconsistent. Some core recovery data contains successive intervals significantly above 100%. Also, intervals not sampled (because of missing core) correlate weakly with intervals with low recovery core data. AMC recommends that protocols for recording core recovery should be reviewed. Particular items to focus the review on are:

- Improving core recovery logging procedures to ensure that recovery is not above 100%, through measuring detailed core recovery for sampled intervals and ensuring that run markers are correctly placed and do not include drilled core from the previous run.
- Reviewing core recovery database for errors and inconsistent values after drillhole data is entered into database, and ensuring consistency with core samples.

Quality control samples currently used for both the Ndablama and Weaju projects provide a good basis for determining the accuracy of SGS Monrovia laboratory. However, quality control samples to monitor the reproducibility of laboratory assays are not submitted or are not being submitted on a regular basis into the Aureus sample stream. AMC recommends that:

- Submission of quality control samples should target a frequency of 10% or more for each type of control sample submitted;
- Pulp duplicates need to be submitted regularly in the sample stream to the SGS Monrovia laboratory, coarse rejects duplicates should also be considered;
- Pulp duplicates need to be regularly submitted to an external laboratory in addition to coarse reject duplicates;
- Results from quality control samples should be reviewed at least monthly using scatter plots, quantile-quantile plots, ranked half absolute relative difference (HARD) or ranked relative paired difference plots (RPD), as well as standard and blank plots
- Failure of control samples should require the re-assay of the entire assay batch.

AMC recommends step-out drilling for both Ndablama and Weaju projects to systematically extend known areas of mineralization and potentially increase mineral resources for the two deposits. An infill drilling programme is recommended for the Ndablama project. Exploration drilling targets for the Ndablama project are north of current resources along the trend of the mineralized shear zone, down dip extension of mineralization to the west, and along the southward trend of the shear zone. AMC suggests that exploration of the north extension of Ndablama is a priority exploration target. AMC estimates that the step-out drilling programme will require approximately 40 drillholes at an average length of 250 m. Ndablama infill drilling is estimated to require approximately 50 drillholes at an average length of 250 m. Infill drilling is expected to provide a higher classification of resources for the Ndablama project.

The Weaju step-out drilling will target primarily the west and south-west portions of the Weaju synformal limbs (North and Main Zones) as well as checking for additional mineralization trends north-east of the Ridge Zone. This programme is estimated to require approximately 14 drillholes at an average length of 140 m.

The total cost of this exploration programme is estimated at 4.5 million US dollars. A summary of estimated costs is provided in Table 18.1.

Table 18.1 Estimated costs for recommended exploration drilling for Ndablama and Weaju projects

Item	Estimated Cost
Exploration Drilling Ndablama (9,000 m)	$1,800,000
Infill Drilling Ndablama (12,000 m)	$2,400,000
Exploration Drilling Weaju (2,000 m)	$280,000
Total	**$4,480,000**

An extensive metallurgical test programme is recommended by DRA, on representative samples from the Ndablama orebody to confirm the results obtained in the initial test programme, as well as to investigate other areas pertaining to crushability and grindability of the ore, reagent consumptions and rheology, amongst others.

DRA recommends that further gravity/leach testwork is undertaken to comprehensively confirm metallurgical response across the Weaju orebody for plant design and evaluation of recovery and reagent consumption. Additional work covering modelling of the gravity circuit, settling tests as well as cyanide destruction and arsenic precipitation tests, together with kinetic column leaching, is also recommended, amongst others.

It should be noted that recoveries quoted are under laboratory conditions and have not been discounted for plant inefficiencies associated with the carbon-in-pulp process.

19 References

A.C.A. Howe International Ltd. (2000). Gold Resources and Exploration Potential of the Bea Mountains Licence, Northwest Liberia, including an appendix on Diamond Exploration. Internal Report to Mano River Resources.

AMC Consultants (UK) Limited 2013. New Liberty Gold Project, Liberia, West Africa Updated Technical Report, AMC 413003 for Aureus Mining Inc. July 2013.

Bongers F, Poorter L, Van Rompaey RSAR, Parren MPE (1999), Distribution of twelve moist forest canopy tree species in Liberia and Cote d'Ivoire: response curves to a climatic gradient. J Veg Sci 10: 371 – 382

Goldfarb, R. J., Groves, D.I., and Gardoll, S. (2001), 'Orogenic gold and geologic time: a global synthesis', Ore Geology Reviews, 18, 1-75.

Groves, D.I., Goldfarb, R.J., Robert, F., and Hart, C.J.R (2003), 'Gold Deposits in Metamorphic belts: Overview of Current understanding, Outstanding problems, future research, and exploration significance', Economic Geology, 98, 1-29.

Hagemann, S.G. and Cassidy, K.F. (2000), 'Archean Orogenic Lode Gold Deposits', Reviews in Economic Geology, 13, 9-68.

Hurley, P. M., Leo, G. W., White, R. W. and Fairbairn, H. W. (1971). Liberian age province (about 2700 Ma) and adjacent provinces in Liberia and Sierra Leone. Geological Society America Bulletin ,62. 3483-3490.

Milesi, J. P., Feybesse, J. L., Ledru, P., Dommanget, A, and Marcoux, E., 1992: Early Proterozoic ore deposits and tectonics of the Birimian orogenic belt, West Africa,Precambrian Research, vol. 58, p. 305-344.

Richards, J. P. and Tosdal, R. M. (2001), 'Structural Controls on ore genesis', Reviews in Economic Geology, 14, 25-50.

Roberts, R.G. and Sheahan, P.A. (1989) 'Archaean Lode Deposits' in Roberts, R.G. Sheahan, P.A, 1989 Ore Deposit Models (eds), 'Ore deposit models (Geosicence Canada Reprint Series 3), 1989, Geological Association of Canada, Newfoundland Canada, 1-18.

Robb, L. (2005), Introduction to ore forming processes in Robb, L. Blackwell Publishing, Oxford.

Robb, V.M. 2001, Petrographic Examination of Two Diamond Drill Core Samples From the Bea Moutain License Area, Western Lliberia, consultant report.

Our Offices

Adelaide

Level 1, 4 Greenhill Road

Wayville SA 5034 Australia

T +61 8 8201 1800

Brisbane

Level 21, 179 Turbot Street

Brisbane Qld 4000 Australia

T +61 7 3230 9000

Melbourne

Level 19, 114 William Street

Melbourne Vic 3000 Australia

T +61 3 8601 3300

Perth

9 Havelock Street

West Perth WA 6005 Australia

T +61 8 6330 1100

Toronto

90 Adelaide Street West, Suite 300

Toronto, Ontario M5H 3V9 Canada

T +1 416 640 1212

Vancouver

Suite 202, 200 Granville Street

Vancouver BC V6C 1S4 Canada

T +1 604 669 0044

Maidenhead

Registered in England and Wales

Company No. 3688365
Level 7, Nicholsons House

Nicholsons Walk, Maidenhead

Berkshire SL6 1LD United Kingdom

T +44 1628 778 256

F +44 1628 638 956

amcconsultants.com

AMC Consultants (UK) Limited
Registered in England and Wales
Company No 3688365

Level 7, Nicholsons House
Nicholsons Walk, Maidenhead
Berkshire SL6 1LD
UNITED KINGDOM

T +44 1628 778 256
F +44 1628 638 956
E amcmaidenhead@amcconsultants.com

CERTIFICATE OF QUALIFIED PERSON

Christopher G Arnold
AMC Consultants (UK) Limited
Level 7 Nicholsons House
Nicholsons Walk
Maidenhead
Berkshire
SL6 1LD

Telephone: +44 (0) 1628 778 256
Fax: +44 (0) 1628 638 956
Email: carnold@amcconsultants.com

This certificate applies to the technical report titled "Ndablama and Weaju Gold Projects, Bea Mountain Mining Licence Northern Block, Liberia, West Africa" (the "Technical Report") for Aureus Mining Inc. with the effective date November 11, 2013.

I, Christopher G Arnold, do hereby certify that:

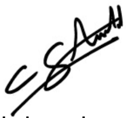
1. I am a Principal Geologist and General Manager for AMC Consultants (UK) Limited, Level 7 Nicholsons House, Nicholsons Walk, Maidenhead, Berkshire, SL6 1LD, United Kingdom.
2. I graduated with BSc (Hons) in Geology from Natal University, South Africa in 1979, and an MSc in Natural Resource Management from the University of Western Australia in 1986.
3. I am a Chartered Professional—MAusIMM (CP) member of the Australasian Institute of Mining and Metallurgy.
4. I have practiced my profession continuously since 1980, save for a two year interval of postgraduate study, and have been involved in mineral exploration, mine geology and mineral resource consulting for a total of 31 years.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am responsible for the preparation of all sections, apart from section 13 of the Technical Report.
7. I visited the adjacent Bea Mountain Mining Licence Southern Block property between 1–3 December 2009 and between 1– 5 October 2011.
8. I have not had any involvement with the property that is the subject of the Technical Report prior to my engagement as a Principal Geologist and General Manager for the preparation of the work which forms part of the Technical Report.
9. I am independent of the issuer as described in section 1.5 of NI 43-101.

10. I have read NI 43-101 and Form 43-101F1, and all sections, apart from section 13 of the Technical Report have been prepared in compliance with that instrument and form.

11. As of the effective date of the Technical Report, to the best of my information, knowledge and belief, all sections, apart from section 13 of the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

12. I consent to the use of my name and to the public filing of the Technical Report by Aureus Mining Inc.

Dated the 20 December 2013



Christopher G Arnold MAusIMM (CP)
Principal Geologist and General Manager
AMC Consultants (UK) Limited

CERTIFICATE OF QUALIFIED PERSON

G Bezuidenhout
DRA Mineral Projects
3 Inyanga Close
Sunninghill 2157
Johannesburg
South Africa

Telephone: +27 11 202 8686
Email: glennb@drasa.co.za

This certificate applies to the technical report titled "Ndablama and Weaju Gold Projects, Bea Mountain Mining Licence Northern Block, Liberia, West Africa" (the "Technical Report") for Aureus Mining Inc. with the effective date November 11, 2013.

I, Glenn Bezuidenhout, do hereby certify that:

1. I am a Process Director for DRA Mineral Projects, 3 Inynga Close, Sunninghill, Johannesburg, South Africa.

2. I graduated with a National Diploma in Extractive Metallurgy from the Witwatersrand Technicon South Africa in 1979.

3. I have been a Fellow of the South African Institute of Mining and Metallurgy since 2012 (FSAIMM) (Membership Number 705704).

4. I have practiced continuously as a Process Engineer since 1992, and have been involved in mineral processing and mining projects for a period of 21 years.

5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "Qualified Person" for the purposes of NI 43-101.

6. I am responsible for the preparation of section 13, as well as parts of section 1, parts of section 17 and parts of section 18 of the Technical Report.

7. I visited the adjacent Bea Mountain Mining Licence Southern Block property on 29th November 2012.

8. I have not had any involvement with the property that is the subject of the Technical Report prior to my engagement as a Process Director for the preparation of the work which forms part of the Technical Report.

9. I am independent of the issuer as described in section 1.5 of NI 43-101.

10. I have read NI 43-101 and Form 43-101F1 and section 13, as well as parts of section 1, parts of section 17 and parts of section 18 of the Technical Report have been prepared in compliance with that instrument and form.

11. As of the effective date of the Technical Report, to the best of my information, knowledge and belief, section 13, as well as parts of section 1, parts of section 17 and parts of section 18 of the Technical Report and its supporting documentation contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

12. I consent to the use of my name and to the public filing of the Technical Report by Aureus Mining Inc.

Dated the 20 December 2013

Glenn Bezuidenhout
NDT Ex. Met, FSAIMM
Process Director
DRA Mineral Projects