

**Annual Qualified Persons Report for  
Konongo Gold Project,  
Ghana  
for the year ended 31<sup>st</sup> March 2015**

**LIONGOLD**  
CORP

**Singapore**

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**Qualified Persons:**

<b>Simon Meadows Smith FIMMM</b>	<b>(Geology)</b>
<b>Andrew Netherwood MAusIMM</b>	<b>(Mineral Resources)</b>
<b>Joe Amanor MAusIMM CP (Geo)</b>	<b>(Geology)</b>

**PREPARED BY:**



**17 Orphan Crescent,  
Labone, Accra, Ghana**

**P.O. Box 2805,  
Osu, Accra, Ghana**

**TEL: + 233 302 784 124**  
**EMAIL: [ghana@sems-xploration.com](mailto:ghana@sems-xploration.com)**  
**Website: [www.sems-exploration.com](http://www.sems-exploration.com)**

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## 1 Executive Summary

This Qualified Persons Report (“QPR”) has been prepared for LionGold Corp Ltd (“LionGold”) as an independent summary of the Mineral Resources and current geological understanding of the Konongo Gold Project in Ghana. The QPR also provides brief overviews of other relevant information such as mining, metallurgy, environmental and social issues.

### 1.1 Report Scope and Basis

LionGold Corporation Limited’s subsidiary, Signature Metals Limited (“Signature”), commissioned SEMS Exploration Services Limited (“SEMS”) to prepare Mineral Resource statements for selected deposits located within the Konongo Gold Project (“Project”), Ashanti Region, Ghana. These deposits include Apan, Aserewa, Boabedro (North, South and South Extension), Obenemase A, Obenemase B and Obenemase D. It was requested that the Mineral Resources be reported in accordance with the JORC Code 2012 (“JORC”). The Mineral Resources will be publically reported by LionGold to the Singapore Exchange (SGX).

This QPR has been prepared on information available up to and including 31<sup>st</sup> March, 2015.

All references to units of currency in this Report are to Dollars of the United States (“\$” or “US\$”), unless stipulated as Australian Dollars (“A\$”). Standard abbreviations used are grams gold per tonne (“g/t”), kilometres (“km”), metres (“m”), million (“M”), troy ounces gold (“oz”) and tonnes (“t”).

### 1.2 Project Description

LionGold holds an interest in the Project through their 77% ownership of ASX listed Signature Metals Ltd (“Signature”). Signature holds 70% ownership of Owere Mines Ltd (“Owere”), a company incorporated in Ghana. Owere’s principal asset is the Konongo Gold Project comprising the Konongo Mining License 749/03 covering an area of 125.5 km<sup>2</sup>, and the contiguous Kurofa Prospecting Licence (P6/296) covering an area of 67km<sup>2</sup>. The remaining ownership of Owere is held by Talos Ghana Limited (“Talos”) 20% and the Government of Ghana holding 10%.

Signature was removed from the official listing of the Australian Stock Exchange of 1<sup>st</sup> May 2015.

### 1.3 Geology and Mineralisation

The Konongo Project is in the Ashanti Region of Ghana, West Africa and approximately 160 km north of the capital Accra. The Project is situated on the western margin of the northeast trending Ashanti Gold Belt, which hosts the world class Obuasi deposit (60km along trend to the southwest and owned by AngloGold Ashanti), where past production has exceeded 22 Moz of gold. The Ashanti Belt also hosts the Prestea / Bogosu deposits, currently mined by Golden Star Resources, which have historically produced approximately 12Moz of gold. Both the Obuasi and Prestea / Bogosu deposits are similar in terms of geological setting and mineralisation styles to the Konongo

deposits. Gold deposits on the Ashanti Shear are notable for their short strike lengths and persistent down-plunge mineralisation.

Historical mining at Konongo was centred on free milling quartz veins which were developed by underground mining methods. Sulphide mineralisation, occurring proximal to the quartz veining, was not extracted due to its refractory nature. Subsequent drilling has confirmed the relatively continuous and high gold grades of the sulphide mineralisation.

In 2013, LionGold re-focused on the remnant and unmined sulphide-hosted mineralisation as the Project's primary target. Significant potential exists to define sulphide mineral resources down dip and down-plunge of historic oxide mineralisation within the main Konongo and Obenemase mine areas, as well as the other mineral resources and prospects along shears and in newly targeted areas. This model has been successfully demonstrated by diamond core drilling campaigns completed by Signature in 2010 and 2013/14 over the Obenemase deposit. Further potential exists to target sulphide mineralisation beneath un-mined oxide prospects.

#### **1.4 Mine Production**

Gold mining commenced at Konongo and Obenemase in 1903 and over the last 112 years has produced a total of 4.4 million tonnes of ore for approximately 1.6 million ounces of gold at an average recovered grade of 11.8 grams per tonne.

A brief summary of historical mining activities and tenure is as follows:

- Mining commenced with the discovery of gold at Obenemase in 1903, when the BI shaft was sunk and four levels developed. Production ceased in 1907.
- Konongo Mines Limited, between 1932 and 1986, mined a series of sulphidic quartz reefs from underground to a maximum depth of 849 metres from six shafts. At Odumase - Boabedro, mining development reached 16 levels (849m) before ceasing in 1986. Other shafts were sunk on Akyenase Central, Leopard, Odumase and South Shaft, Boabedro and Zongo. Konongo Mines Ltd abandoned mining activities due to decreasing efficiencies and machinery failure. A final shaft, 5km to the south was sunk on Gibson's Reef. This shaft was abandoned at Level three due to flooding.
- From 1988 until 1997 Southern Cross Mining Limited ("SCML") and Obenemase Gold Mines Limited ("OGM") operated six shallow open pit mines targeting oxide ore in the Odumase - Boabedro area including the Apan, Aserewa North and South, Boabedro North and South and Atunsu deposits, as well as Obenemase A & B. The operation was unsuccessful, primarily due to poor recoveries from the heap leach pads, and was closed in 1992. Between 1988 and 1992, a total of 852,000t of ore was heap leached for 86,295 oz Au recovered at a grade of 3.15 g/t Au.

- Between 1995 and 1997, 614,000 t of ore was treated through a CIL processing circuit grading 2.96 g/t Au for 58,500 oz Au recovered. Production ceased in 1997 due to decreasing production and increasing operating costs.
- Resolute Mining Limited (“RML”) acquired OGM in 1997. RML undertook a pre-feasibility study which indicated the potential for the definition of significant sulphide resources and good metallurgical recoveries from Obenemase mineralisation by flotation, pressure oxidation and cyanide leaching. RML failed to obtain a joint venture partner or purchaser for the Konongo Gold Project and the ML’s were relinquished in December 2002.
- In 2002 Talos acquired the current Konongo Mining Lease from the Government of Ghana, and in 2004 entered into a joint venture agreement with African Gold Plc, forming Owere Mines Limited. As part of this agreement African Gold Plc (now Mwana Africa Plc (“Mwana”)) purchased a 70 % interest in the Project.
- In 2009 Signature acquired a 70 % interest in the Project from Mwana, and
- In March 2012 LionGold Corporation acquired 76.2 % of Signature (and increased this to 78% up to March 2015). During the period January 2012 to February 2013, Signature mined and processed 297,911 t of oxide ore to yield 11,663 oz Au. The recovered grade was 1.2 g/t Au, from a head grade of 1.7 g/t Au. During the period mill recovery averaged 71%, ranging from between 50% to 81%.

## 1.5 Mineral Resources and Ore Reserves

LionGold initiated a review of mineralisation models and mineral resources within the Konongo Gold Project in 2013. This work has been undertaken by both RSCMME and Snowden Mining Consultants. Their work is summarised in the following four reports:

- Dominy, S C and van Lente B, 2014a. Annual Qualified Persons Report for the Obenemase A and B Lodes, Konongo Gold Project, Ghana - Year Ended 31 March 2014 - LionGold Corporation Limited.
- Dominy, S C and van Lente B, 2014b. Annual Qualified Persons Report for Selected Deposits, Konongo Gold Project, Ghana - Year Ended 31 March 2014 - LionGold Corporation Limited.
- Reid, W., 2014. Annual Qualified Persons Report for Selected Exploration Targets, Konongo Gold Project, Ghana – Year end 31 March 2014.
- Sterk, R, 2014. Obenemase Project - Technical Report and Mineral Resource Estimation of the Obenemase Deposit, Ghana, Unpublished report by RSC Mining and Mineral Exploration for Signature Metals Ltd. pp 128.

This report (the “SEMS 2015 Report”) supports mineralisation models reviewed by Snowden Mining Consultants in 2014 and presents an updated Mineral Resource estimate for the Obenemase A & B

deposit and the Obenemase D deposit. The SEMS 2015 Report also draws on mineralisation updates of other declared Mineral Resources in the four documents listed above.

Prospects downgraded in Reid (2014) remain classified as Exploration Targets under the JORC Code 2012. Exploration Targets from downgraded prospects include: Asieye, Atunsu, Kyereben West, Leopard Shaft, Nyabo East and Patuo, and are not included in this report.

The Global Mineral Resource estimate as reported in the LionGold Annual Qualified Persons Report for the Konongo Gold Project, Ghana for year ended 31<sup>st</sup> March 2014 stood at 9,145,000 t at an average grade of 3.2 g/t Au for 942,000 oz Au.

There has been no material change to the Apan, Aserewa, and Boabedroo (North, South and South Extension) Mineral Resources since March 2014. However, drilling activities over the Obenemase A & B deposit and Obenemase D deposit has resulted in a 28,000 ounce or 3% increase to the global Mineral Resource estimate for the Konongo Gold Project.

A breakdown of the Mineral Resource estimation for the Konongo Gold Project, as of 31<sup>st</sup> March 2015, is presented in Table 1.

There are no Ore Reserves reported for the Konongo Gold Project.

**Table 1: Summary of Mineral Resource estimation for the Konongo Gold Project**

		Gross Attributable to Licence		Net Attributable to Issuer (53.8%)			
JORC Category	Mineral Type (gold)	Tonnes (t)	Grade (g/t Au)	Tonnes (t)	Grade (g/t Au)	Change in ounces from previous reported update*	Contained gold in total mineral resource
Apan	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	731,000	2.3	393,000	2.3	0	55,000
	<b>Total</b>	<b>731,000</b>	<b>2.3</b>	<b>393,000</b>	<b>2.3</b>	<b>0</b>	<b>55,000</b>
Aserewa	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	409,000	3.3	220,000	3.3	0	43,000
	<b>Total</b>	<b>409,000</b>	<b>3.3</b>	<b>220,000</b>	<b>3.3</b>	<b>0</b>	<b>43,000</b>
Boabedroo North	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	285,000	3.6	153,000	3.6	0	33,000
	<b>Total</b>	<b>285,000</b>	<b>3.6</b>	<b>153,000</b>	<b>3.6</b>	<b>0</b>	<b>33,000</b>
Boabedroo South	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	447,000	2.2	241,000	2.2	0	32,000
	<b>Total</b>	<b>447,000</b>	<b>2.2</b>	<b>241,000</b>	<b>2.2</b>	<b>0</b>	<b>32,000</b>
Boabedroo South Extended	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	1,841,000	3	991,000	3	0	178,000
	<b>Total</b>	<b>1,841,000</b>	<b>3</b>	<b>991,000</b>	<b>3</b>	<b>0</b>	<b>178,000</b>
Obenemase A & B	Measured	-	-	-	-	-	-
	Indicated	3,334,000	3.8	1,794,000	3.8	0	408,000
	Inferred	1,507,000	3.7	811,000	3.7	15	181,000
	<b>Total</b>	<b>4,841,000</b>	<b>3.8</b>	<b>2,604,000</b>	<b>3.8</b>	<b>4</b>	<b>589,000</b>
Obenemase D	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	686,000	1.8	369,000	1.8	8	40,000
	<b>Total</b>	<b>686,000</b>	<b>1.8</b>	<b>369,000</b>	<b>1.8</b>	<b>8</b>	<b>40,000</b>
<b>TOTAL</b>	<b>All</b>	<b>9,240,000</b>	<b>3.3</b>	<b>4,971,000</b>	<b>3.3</b>	<b>3</b>	<b>970,000</b>

\* refers to the LionGold 2014 annual Qualified Persons Reports (Dominy and van Lente 2014a, 2014b)

All Resources have been depleted by the latest available mining surfaces and underground mining volumes. The north-eastern portion of Obenemase D has been removed, since it overlaps with the Obenemase A and B deposit in that area. Mineral Resources are reported at 0.5g/t Au cut-off for oxide and transitional and 1.0 g/t Au cut-off for sulphide.

Note: Mineral Resources which are not Ore Reserves have not demonstrated economic viability. No Ore Reserves are defined at these deposits. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. Tonnage is reported in metric tonnes (t), grade as grams per tonne gold (g/t Au) and contained gold in troy ounces (oz Au). Tonnages rounded to the nearest 1,000 t. Ounces rounded to the nearest 1,000 oz Au. Figures may not compute exactly due to rounding.

*In 2009, Signature acquired a 70% interest in the Project from African Gold PLC via the acquisition of their 70% ownership of Owere Mines Ltd. In March 2012, LionGold acquired a 77% ownership in Signature. The net attributable to LionGold is thus 53.8%. In May 2015, Signature was de-listed from the ASX, becoming a public, non-listed entity. LionGold's ownership remains at 77% as of 31 March 2015.*

## 1.6 Economic Analysis

Obenemase is an advanced gold exploration project. No mining is currently being undertaken.

In July 2014 a Scoping Study (Dominy 2014c), based on the Snowden Mineral Resource estimation (Dominy 2014a, Dominy 2014b), assessed the options for recommencement of mining activities at Konongo. The Scoping Study report concludes that the Konongo sulphide resources indicate “reasonable prospects for economic extraction”, with the following possible assessment:

- IRR: 35%
- NPV: US\$ 22.926M
- Head grade: 3.48 g/t Au
- Mine Life: 6.75 years.
- Significant upside expected from exploration

## 1.7 Risk Assessment

The current Mineral Resource at Obenemase A & B carries an overall “medium” risk due to geological and grade variability within portions of the Mineral Resource model. This is represented by the Inferred category which accounts for 30% of the Obenemase A & B Mineral Resource. Within zones of closer spaced drilling and adjacent to known underground workings the level of risk reduces and the Mineral Resources are classified in the Indicated category.

The other Mineral Resources of Boabedroo, Apan and Aserewa as well as Obenemase D have an overall “High” risk which is reflected in their classification as Inferred Mineral Resources.

Geological understanding of the Obenemase Mineral Resource is based on an approximate 20m by 20m drill pattern plus historical mine development to 100m depth. Drill spacing increases to 40m x 40m at depth. While there is some uncertainty concerning geological interpretations in the deeper portions of the Obenemase A & B Mineral Resource models the overall geological risk is considered to be “low-medium”.

However, geological understanding of the other deposits (Boabedroo, Apan, and Aserewa) needs to be improved. Drill spacing is variable, with generally 20m grids covering the oxide portions of the mineral resources (now depleted through mining) and spaced at 40 to 80m peripheral to the historic pits and into fresh rock.

Samples used for gold analyses are considered to carry a “medium” risk rating. In-situ sample representivity is likely to be reasonable, as there is minimal coarse-gold present with a relatively low nugget effect. However, the use of data from several historical sampling campaigns and varying

analytical methods will impart a level of error. Historical and recent QAQC audits indicate an acceptable level of analysis quality.

Grade estimates for Obenemase A & B carry a “medium” risk whereas grade estimates for the other deposits have a “high” risk rating due to variability with their Mineral Resource models. Estimation block size is broadly appropriate to the drill spacing, however, on a block by block basis, estimation error will be relatively high. The current global Mineral Resource estimate is reasonable, given that volumes are based on models constrained by drill data and geological interpretation.

No Ore Reserves have been defined and no economic studies have been undertaken. The Snowden Scoping study (Dominy 2014c) indicates that “extraction via an open pit and underground operation is reasonable”. There is a fully operational processing plant at Konongo but this is optimised for oxide rather than primary ore. The majority of the Obenemase Mineral Resource is primary-sulphide ore. Previous metallurgical testwork indicates that the primary-sulphide ore is refractory and requires additional processing. Further metallurgical testwork is required to prove extractability.

The Competent Persons believe the accuracy of the grade and tonnage estimate for Mineral Resources within the Indicated category to be within  $\pm 25\%$  globally. This opinion is based on over 70 years combined experience of this style of mineralisation in the Birimian of West Africa. Similarly, the accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within  $\pm 30-50\%$  globally.

Social, legal, political and environmental risks are considered “low”, given the relatively stable and developed nature of Ghana as well as the maturity of its mining sector. However, the Competent Persons have not undertaken a study of the social, legal, political and environmental factors that may affect the Project on a district scale.

## 1.8 Conclusions

All Mineral Resources attributable to LionGold are located within the Konongo Mining licence, which is valid until 2023. The Konongo Gold Project also includes an adjacent Prospecting Licence which is renewable every two years, conditional on area reductions. The deposits are in close proximity to the towns of Konongo and Obenemase, both approximately 200km by road northwest of Accra and approximately 55km east of the major regional centre of Kumasi, within the Ashanti Region of southwest Ghana.

Estimated gold production from the Konongo Mine between 1903 and 1997 is 1.6 Moz Au. To date, a total of 118,521m of drilling and 18,640m of exploration trenching has been completed within the Project. Since 2012, Signature has completed a total of 18,989m of drilling and 1,293m of exploration trenching over the Obenemase deposit.

The Obenemase Mineral Resource is located at the northern end of the Mining Lease with Odumase – Boabedroo in the south. Historic mineral resources include open pit and underground workings. The deepest mine working extend to 849m at Boabedroo.

Two styles of mineralisation are described at Obenemase, an early disseminated sulphide phase and a later quartz vein phase. Gold mineralisation is associated with arsenopyrite, pyrite, and rare chalcopyrite. Gold occurs free in veins, on fractures in sulphides as well as rimming sulphides. Quartz veins are 0.5 m to 0.8 m wide, and display evidence of repeated shearing and resealing. Laminated quartz is common, often with included wall fragments. Disseminated sulphide mineralisation forms a wide zone around quartz veins and in tuff.

Drilling to date has supported the estimation of an Indicated and Inferred Mineral Resource of 970,000 oz Au, Table 1, for the Konongo Gold Project. This represents a 28,000 ounce or 3% increase on the global Mineral Resource estimation reported as at 31<sup>st</sup> March 2014. The increase in Mineral Resources is restricted to the Obenemase A & B deposit where the reported Mineral Resource contains 589,000 oz Au in both the Indicated and Inferred categories and the Obenemase D deposit where the reported Mineral Resource contains 40,000 oz Au in the Inferred category. The other deposits contain a total Inferred Mineral Resource of 341,000 oz Au. All the Mineral Resources within the Konongo Gold Project are classified in accordance with the JORC Code 2012 and contain three domains that are defined by statistical and spatial analysis. These are principally based on ore type, including oxide, transitional and primary material.

The Obenemase A & B Mineral Resource, the largest and most extensively tested deposit within the Konongo Gold Project, was estimated using ordinary kriging. Based on drill spacing and the presence of historical mine workings, the Mineral Resource at Obenemase A & B has been classified in both the Inferred and Indicated categories (Table 1). This reflects the higher level of confidence of the estimated blocks proximal to historical mine workings. Geological continuity in the mine workings is verified through historical mapping and trial mining. The overall Mineral Resource risk for Obenemase A & B is defined as “medium” which reflects the need for further drilling to increase and improve the Mineral Resource classification. The Mineral Resource for Obenemase A & B is deemed by the Competent Persons to have reasonable prospects for eventual economic extraction.

Mineral Resources for the other deposits were estimated using inverse distance squared (ID2) with a top-cut. The overall Mineral Resource risk for the other deposits is defined as “high”, reflecting the historical nature of the data, geological model and estimation methodology.

- The Mineral Resource estimation to date for the Obenemase A and B lodes shows a deposit hosting 589,000 ounces at an average grade of 3.8 g/t, in the Indicated and Inferred categories.
- The deposit is a narrow vein, steeply dipping structure having a strike length of 1,000m and extending up to 300 metres beneath the topography surface. It remains open at depth and laterally in places.
- Gold mineralisation within the Mineral Resource is predominantly hosted by volcanoclastic siltstones and sandstones, with gold being associated with alteration and having a low nugget effect.
- The Mineral Resource has been classified as a combination of Indicated and Inferred, without a Measured category. This is largely due to uncertainties in grade and structural continuity, which may be a function of the limited drilling to date.

- SEMS is of the opinion that the Obenemase and other deposits have potential for extensions to the existing Mineral Resource, which may be delineated with further drilling.
- SEMS is not aware of any external factors such as environmental, socio-economic and legal that could have a material effect on the Mineral Resource estimate. The Project is an historical mine site and eventual economic extraction, if warranted, is likely to be by underground mining which should lessen environmental impacts and potentially contribute to employment within the area.
- A Scoping Study of the Konongo Gold Project in 2014 indicated reasonable prospects for eventual economic mining of Obenemase A and B as well as Boabedroo North and South.

## 1.9 Recommendations

### **Resulting from the mineral resource estimations completed by SEMS in 2015 for the Konongo Gold Project the following recommendations are proposed for the Obenemase A & B deposit:**

- External verification of density values used in the mineral resource model, especially those assigned to the transitional ore.
- Allocation of density values to mineral resource blocks in a gradational range between oxide and transitional ore and between transitional and sulphide ore.
- Further geological and structural studies to guide the delineation of improved mineralisation wireframes. This will assist future drill planning especially for extensions of the Obenemase A lode at depth and the position of Obenemase B lode.
- Drilling is required within the existing mineral resource to:
  - Upgrade Inferred category to Indicated category – infill drilling.
  - Covert unclassified material into Mineral Resource status – extensional drilling beneath 0mRL.

### **Resulting from the mineral resource estimations completed by SEMS in 2015 for the Konongo Gold Project the following recommendations are proposed for the Obenemase D deposit:**

- Further geological and structural studies to guide the delineation of improved mineralisation wireframes and geological interpretations. This will assist future drill planning.
- Drilling is required within the existing mineral resource to upgrade Inferred category to Indicated category – infill drilling.

### **Resulting from the Scoping Study completed in 2014 the following recommendations are proposed:**

- Additional metallurgical testwork on the refractory, sulphide ore to better understand the Project's processing options.
- Additional drilling to provide geotechnical information and metallurgical samples.
- Due to QAQC issues with historical data, all remaining diamond core or pulps should be reanalysed.
- Continue the validation of historical data and incorporate uncaptured historical data into the

Project database.

- Refine and expand the Scoping Study to:
  - Include all the Mineral Resources within the Konongo Gold Project
  - Review underground mining options for higher grade ore shoots
  - Assess the viability of an open pit mining option within the Konongo Mining Lease
  - Incorporate longer-term planning to exploit known, deep, quartz vein-hosted, free milling gold.
  - Focus on bringing the Project datasets to a standard that will facilitate a Pre-Feasibility Study.
  
- Assess exploration targets outside the current mineral resources that lie on known structures that are interpreted to control mineralisation.

## 2 Introduction

### 2.1 Aim and Scope of Report

LionGold Corp Ltd (“LionGold” or “LGC”) is a public company listed on the Catalist Board of the Singapore Exchange. LionGold holds an interest in the Konongo Gold Project through their 77% ownership of Signature Metals Ltd (“Signature”), which holds 70% of Owere Mines Ltd (“Owere”). Owere is the owner of the Konongo Mining License.

LionGold tasked the author to deliver a Qualified Persons Report on Mineral Resources within the Konongo Gold Project. The Report includes deposits with current Mineral Resources and relies on information in two earlier reports:

- Dominy, S C and van Lente B, 2014a. Annual Qualified Persons Report for the Obenemase A and B Lodes, Konongo Gold Project, Ghana - Year Ended 31 March 2014 - LionGold Corporation Limited.
- Dominy, S C and van Lente B, 2014b. Annual Qualified Persons Report for Selected Deposits, Konongo Gold Project, Ghana - Year Ended 31 March 2014 - LionGold Corporation Limited.

The two reports are prepared in accordance with the Singapore Exchange Practice Note 6.3.

### 2.2 Use of Report

The Report will be submitted by LionGold to the Singapore Exchange Securities Trading Limited (“SGX”).

### 2.3 Reporting Standards

The SGX Catalist rules require that a QPR be prepared in accordance with one of three allowable international public reporting standards. For this report, the JORC Code 2012 has been adopted as the

reporting standard. The JORC Code requires that a public report concerning a company's exploration targets, exploration results, Mineral Resources or Ore Reserves must be based on, and fairly reflect, the information and supporting documentation prepared by a Competent Person, as defined by the JORC Code. SGX Catalist rules use the term Qualified Person, and provide a definition which is effectively equivalent to a Competent Person. In this report, whenever reference is made to a Competent Person as per the JORC Code, it is equivalent to a Qualified Person as per SGX Catalist rules.

## 2.4 Report Authors and Contributors

Staff who compiled this report are listed in Table 2.

**Table 2: Staff who contributed to this QPR**

Name	Position	Employer	Independent of LionGold	Date of Site Visit	Professional Designation	Contribution to QPR
Bill Reid	Exploration Manager	LionGold Corporation	No	Resident	MAusIMM	Geology Chapters 1-7, 9-17
Simon Meadows Smith	MD Geologist	SEMS Exploration	Yes	None	FIMMM	Resources & Geology Chapters 1 & 8
Joe Amanor	Geologist	SEMS Exploration	Yes	May 2015	MAusIMM CP (Geo)	Resources & Geology Chapter 8
Andrew Netherwood	Mining Engineer	SEMS Exploration	Yes	May 2015	MAusIMM	Resources Chapter 8

The Authors drew on other sources during the preparation of this report, all sourced from written reports, principally:

- Dominy, S C and van Lente B, 2014a. Annual Qualified Persons Report for the Obenemase A and B Lodes, Konongo Gold Project, Ghana - Year Ended 31 March 2014 - LionGold Corporation Limited.
- Dominy, S C and van Lente B, 2014b. Annual Qualified Persons Report for Selected Deposits,
  - Konongo Gold Project, Ghana - Year Ended 31 March 2014 - LionGold Corporation Limited.
- Dominy, S C., Muller, H., Theron, P and Priest, J. 2014c. Owere Mines Limited Konongo Gold Project No. L582 Scoping Study July 2014. 250pp.
- Sterk, R, 2014. Obenemase Project - Technical Report and Resource Estimation of the Obenemase Deposit, Ghana, Unpublished report by RSC Mining and Mineral Exploration for Signature Metals Ltd. 128pp.
- Netherwood, A, 2015. Mineral Resource update of the Konongo Gold Project

LionGold drew on the expertise of others during the compilation of this QPR. Key other experts are listed in Table 3.

**Table 3: Reliance on other Experts**

Name	Position	Employer	Independent of LionGold	Date of Site Visit	Professional Designation	Contribution to QPR
Bill Reid	Exploration Manager	LionGold Corporation	No	Resident	MAusIMM	Geology Chapters 1-7, 9-17
Simon Meadows Smith	MD Geologist	(1) SEMS Exploration	Yes	None	FIMMM	Resources Chapter 1 & 8
Joe Amanor	Geologist	(1) SEMS Exploration	Yes	May 2015	MAusIMM CP (Geo)	Resources & Geology Chapter 8
Andrew Netherwood	Mining Engineer	(1) SEMS Exploration	Yes	May 2015	MAusIMM	Resources Chapter 8
Rene Sterk	Principal Consultant	(2) RSC Mining & Exploration Ltd	Yes	2013	MAusIMM MAIG	Competent Person, Feb 2014 estimate at Obenemase.
Dr Simon Dominy	Executive Consultant	(3) Snowden Group	Yes	None	FAusIMM (CP) FAIG (RPGeo) FGS(CGEO)	2014 Report.
Dr Belinda Van Lente	Senior Consultant	(3) Snowden Group	Yes	Feb. 2014	PrSciNat	2014 Resource estimation.

(1) Address: 17 Orphan Crescent, Labone, Accra, Ghana

(2) Address: 109 Princes Street, Dunedin 9016, New Zealand

(3)Address: Level 4, 1 Kingdom Street, Paddington Central, London W2 6BD, UK.

## 2.5 Qualified Persons Statement

The information in this Qualified Persons Report (“QPR”) relates to the geological setting and Mineral Resource estimates for the Konongo Gold Project and is based on information supplied by the Exploration Manager for Owere, Mr. Bill Reid.

The QPR was compiled by Andrew Netherwood, Joe Amanor and Simon Meadows Smith with assistance from Bill Reid. By virtue of their education, relevant work experience and affiliation to recognized professional associations Joe Amanor (MAusIMM CP), Simon Meadows Smith (FIMMM) and Andrew Netherwood (MAusIMM) are independent Qualified Persons as defined by the JORC Code 2012.

Andrew Netherwood is a Mining Engineer with over 25 years of experience in open pit and underground mine design and planning. He is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’ and ASX Listing Rules Guidance Note 31. Andrew has also been involved in a number of mineral resource and ore reserve estimations of gold deposits within the Birimian of West Africa.

Joe Amanor is a consulting geologist with extensive experience in surface and underground exploration, as well as mineral resource evaluation, of Birimian hosted gold deposits in Ghana. He is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as

defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' and ASX Listing Rules Guidance Note 31. Joe was previously Chief Geologist for AngloGold Ashanti at the Obuasi gold mine and he also visited the Konongo Mine during the period when underground mining operations were active.

Simon Meadows Smith is the Managing Director of SEMS and a key member of the geological consultancy staff. He is a Fellow of the Institute of Materials, Minerals and Mining in London and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' and ASX Listing Rules Guidance Note 31. Simon has over 25 years working experience in the Archaean Terrains of Western Australia and the Proterozoic Terrains of West Africa. He has been working for SEMS since its inception in 2002 and during that time has been involved in several mineral resource estimates for Birimian hosted gold deposits in West Africa.

Mr. Reid is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' and ASX Listing Rules Guidance Note 31. Mr. Reid is an employee of LionGold Corporation and has worked on the Konongo Gold Project, since October 2011.

The effective date of this QPR is 31<sup>st</sup> March, 2015.

## **2.6 Basis of the Report**

The Report presents descriptions of Mineral Resources within the Konongo Gold Project and is in accordance with the JORC Code (2012). All data has been sourced from on-site databases and reports or peer reviewed manuscripts.

## **3 Project Description**

### **3.1 Project Overview**

The Konongo Gold Project is a gold project located in Asante Akyem District, Ashanti Region, Ghana. Mineral Leases encompass the namesake town of Konongo which has an estimated population of around 170,000. Konongo lies 160 km northwest of the Capital City of Accra and 40 km east of the major regional centre of Kumasi, within the Ashanti Region of southwest Ghana (Figure 1). The Project straddles the western margin of the Ashanti Belt, a demonstrated gold province.

The historical deposits at Konongo include open pit and underground workings. The project comprises fifteen historic oxide pits and 6 historic shafts occurring over 12 kms of identified shears. The historic mineral resources are located on two main shears (the Boabedroo Shear and the Zongo Shear) which are approximately 300m apart. Deepest underground mining is at Boabedroo, to 849m (level 19). The estimated production between 1903 and 2013 is 1.6 Moz Au.

The project operator is Owere Mines Limited, which is 70% owned by Signature Metals Limited. Signature Metals Limited is listed on the Australian Stock Exchange, but is in the process of delisting. It is expected that the Company will be removed from the ASX Official List on or about 30 April 2015 or such other time as determined by ASX. Signature Metals is 78% owned by Liongold Corporation Limited. LionGold's net ownership of the Konongo Project is 54.6%. The current operator is continues to explore the property to build on existing mineral resources and high priority Exploration Targets.



Figure 1: Location, Konongo

### 3.2 Tenure

The current concessions comprising the Konongo Gold Project, totalling 159.04 km<sup>2</sup> are:

- The current Mining Lease (749/03) - the amalgamation of three historic licences which formed the Konongo Mining Lease concession (Figure 2, Figure 3 and Table 3), and
- The Kurofa Prospecting Licence (P6/296), which wraps around the Mining Lease to the north and east (Figure 2, Figure 4 and Table 4).

The history of the Konongo Mining Lease and the Kurofa Prospecting Licence is described below.

The concession was issued to the State Gold Mining Corporation (“SGMC”) on the 8<sup>th</sup> December 1986 for a period of 30 years and subsequently assigned to Southern Cross Mining Limited on 8th August 1988. Its extent captures the sheared margin of gold prospective Birimian volcanic rocks, including the historic mining centres.

The Konongo Mining Lease 749/03 concession was issued to Talos in December 2002 for a period of 8 years and covered an area of 125.54 square kilometres (Figure 3). In 2004 Talos entered into a joint venture agreement with African Gold Plc, forming Owere Mines Limited (“Owere”). As part of this agreement African Gold Plc (now Mwana Africa Plc (“Mwana”)) purchased a 70 % interest in Owere. In 2009 Signature acquired a 70% interest in the Project from Mwana via the acquisition of their 70% ownership of Owere Mines Limited. Licences are summarised in Table 4.

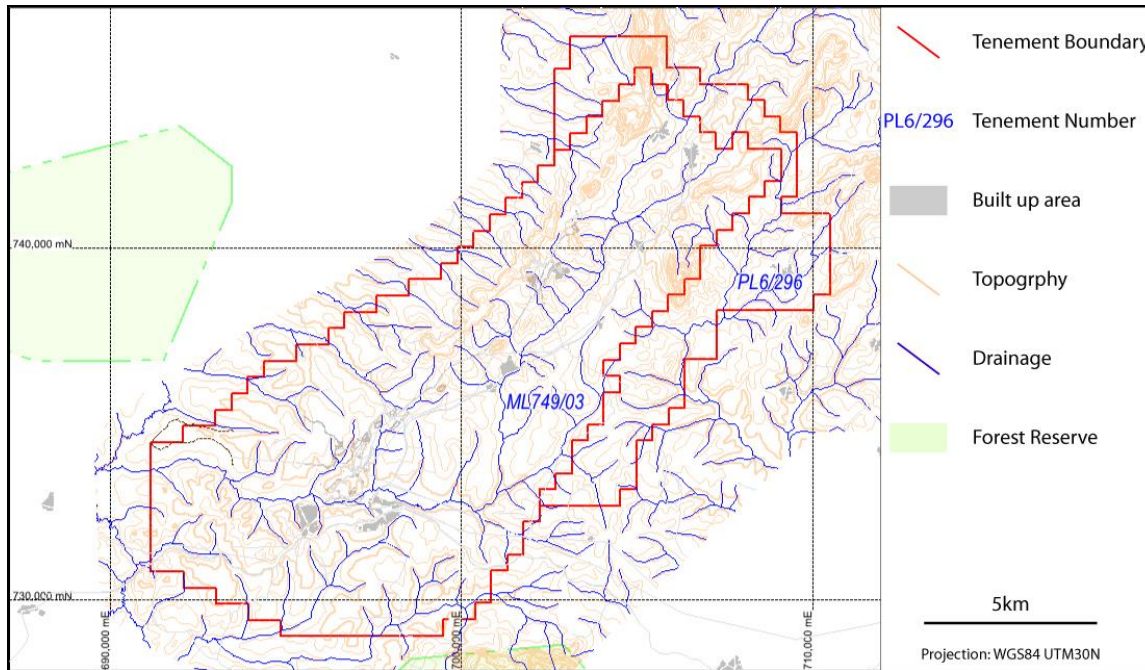
The current Mining Lease (Figure 2, Figure 3) was issued to Owere on 25th June 2010 for a period of 13 years. The Mining Lease (“ML”) is valid through to 2023. The 2014 Operating Licence and the Environmental Permit for the ML have been delivered and are valid to January 6, 2016.

In 2014, the Mining Lease was converted to a graticular cadastral system employed by the Ghanaian Minerals Commission, based on the pre-existing lease boundaries. The graticular cadastre is based on 15” north-south and east-west grid. The lease covers 125.54 km<sup>2</sup>.

There are no known impediments to the Konongo Mining Lease (749/03).

The Kurofa Prospecting Licence PL 6/296 originally covered 67 km<sup>2</sup> was issued to Owere in August 2005. The licence is immediately adjacent to the Mining Lease to the north and east. Its extents capture a second limb of gold prospective Birimian volcanic rocks to the east of the historic mining centres. The Prospecting Licence (“PL”) is conditional on acceptance of a terminal report submitted in December each year. The PL is renewed on a two yearly basis, conditional on a 50% statutory reduction. The reports are current to December 2014, and an exemption from the 50% reduction is included in the report, following a reduction in 2013. During the reporting period, the Kurofa PL was converted to the graticular cadastral system employed by the Ghanaian Minerals Commission, based on the pre-existing lease boundaries. The graticular cadastre is based on 15” north-south and east-west grid. The licence covers 33.5 km<sup>2</sup>.

There are no known impediments to the Kurofa Prospecting Licence (P6/296).



**Figure 2: Tenements and Infrastructure**

Pillar numbers and pillar coordinates for the Konongo Mining Lease (749/03) are presented as Figure 3 and Table 5. Pillar numbers and pillar coordinates for the Kurofa Prospecting Licence (P6/296) are presented as Figure 4 and Table 3.

**Table 4: Konongo Mining Lease and Kurofa Prospecting Licence summary**

Asset Name	Country	Issuer's Interest	Development Status	Licence Expiry Date	Licence Area	Type of mineral, oil or gas deposit	Remarks
Konongo Mining Lease (ML 749/03)	Ghana	53.8%	Evaluation and exploration	June 2023	125.54 km <sup>2</sup>	gold	none
Kurofa Prospecting Licence (PL 6/296)	Ghana	53.8%	Exploration	December 2015	33.50 km <sup>2</sup>	gold	none

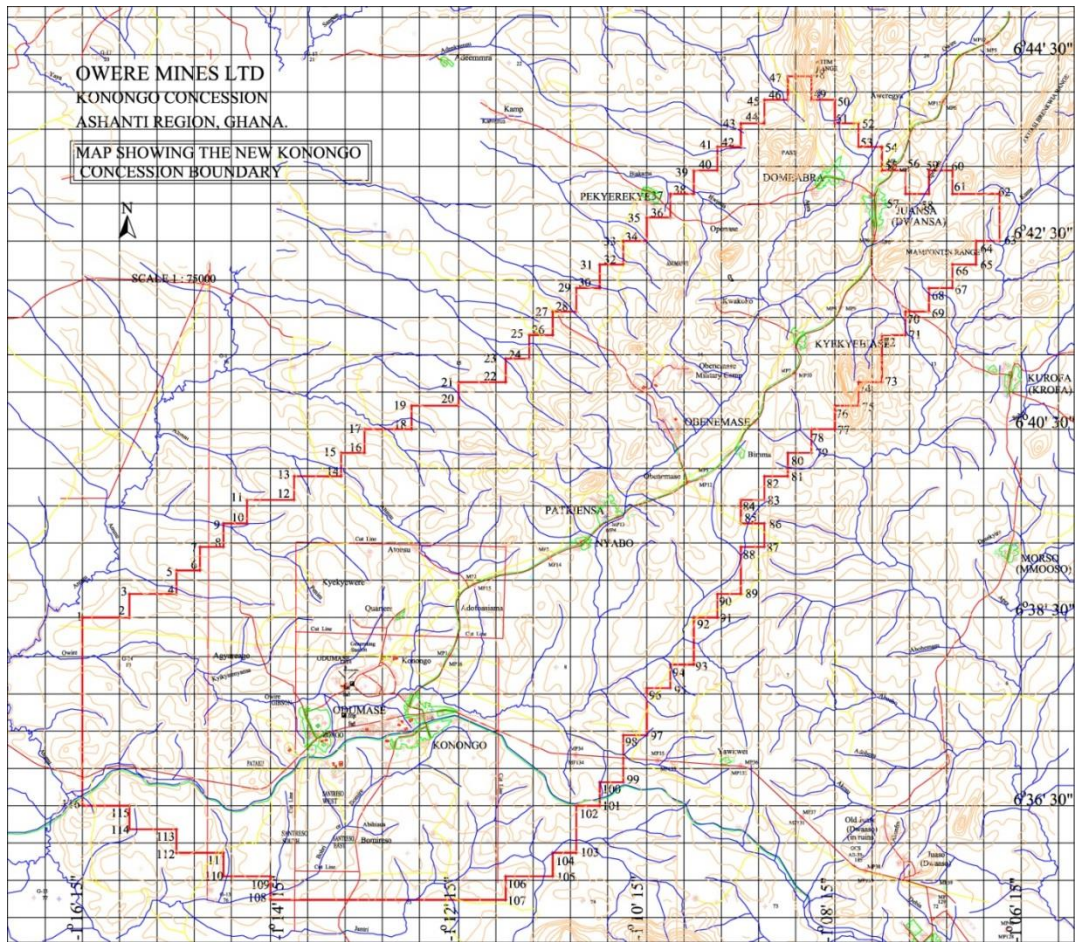


Figure 3: Konongo Mining Lease 749/03 boundary.

**Table 5: Konongo ML pillar locations (Latitude/Longitude).**

KONONGO CONCESSION BOUNDARY POINTS							KONONGO CONCESSION BOUNDARY POINTS						
id	LONG			LAT			id	LONG			LAT		
	(deg)	(min)	(sec)	(deg)	(min)	(sec)		(deg)	(min)	(sec)	(deg)	(min)	(sec)
1	-1	16	15	6	38	30	59	-1	7	15	6	43	15
2	-1	15	45	6	38	30	60	-1	7	0	6	43	15
3	-1	15	45	6	38	45	61	-1	7	0	6	43	0
4	-1	15	15	6	38	45	62	-1	6	30	6	43	0
5	-1	15	15	6	39	0	63	-1	6	30	6	42	30
6	-1	15	0	6	39	0	64	-1	6	45	6	42	30
7	-1	15	0	6	39	15	65	-1	6	45	6	42	15
8	-1	14	45	6	39	15	66	-1	7	0	6	42	15
9	-1	14	45	6	39	30	67	-1	7	0	6	42	0
10	-1	14	30	6	39	30	68	-1	7	15	6	42	0
11	-1	14	30	6	39	45	69	-1	7	15	6	41	45
12	-1	14	0	6	39	45	70	-1	7	30	6	41	45
13	-1	14	0	6	40	0	71	-1	7	30	6	41	30
14	-1	13	30	6	40	0	72	-1	7	45	6	41	30
15	-1	13	30	6	40	15	73	-1	7	45	6	41	0
16	-1	13	15	6	40	15	74	-1	8	0	6	41	0
17	-1	13	15	6	40	30	75	-1	8	0	6	40	45
18	-1	12	45	6	40	30	76	-1	8	15	6	40	45
19	-1	12	45	6	40	45	77	-1	8	15	6	40	30
20	-1	12	15	6	40	45	78	-1	8	30	6	40	30
21	-1	12	15	6	41	0	79	-1	8	30	6	40	15
22	-1	11	45	6	41	0	80	-1	8	45	6	40	15
23	-1	11	45	6	41	15	81	-1	8	45	6	40	0
24	-1	11	30	6	41	15	82	-1	9	0	6	40	0
25	-1	11	30	6	41	30	83	-1	9	0	6	39	45
26	-1	11	15	6	41	30	84	-1	9	15	6	39	45
27	-1	11	15	6	41	45	85	-1	9	15	6	39	30
28	-1	11	0	6	41	45	86	-1	9	0	6	39	30
29	-1	11	0	6	42	0	87	-1	9	0	6	39	15
30	-1	10	45	6	42	0	88	-1	9	15	6	39	15
31	-1	10	45	6	42	15	89	-1	9	15	6	38	45
32	-1	10	30	6	42	15	90	-1	9	30	6	38	45
33	-1	10	30	6	42	30	91	-1	9	30	6	38	30
34	-1	10	15	6	42	30	92	-1	9	45	6	38	30
35	-1	10	15	6	42	45	93	-1	9	45	6	38	0
36	-1	10	0	6	42	45	94	-1	10	0	6	38	0
37	-1	10	0	6	43	0	95	-1	10	0	6	37	45
38	-1	9	45	6	43	0	96	-1	10	15	6	37	45
39	-1	9	45	6	43	15	97	-1	10	15	6	37	15
40	-1	9	30	6	43	15	98	-1	10	30	6	37	15
41	-1	9	30	6	43	30	99	-1	10	30	6	36	45
42	-1	9	15	6	43	30	100	-1	10	45	6	36	45
43	-1	9	15	6	43	45	101	-1	10	45	6	36	30
44	-1	9	0	6	43	45	102	-1	11	0	6	36	30
45	-1	9	0	6	44	0	103	-1	11	0	6	36	0
46	-1	8	45	6	44	0	104	-1	11	15	6	36	0
47	-1	8	45	6	44	15	105	-1	11	15	6	35	45
48	-1	8	30	6	44	15	106	-1	11	45	6	35	45
49	-1	8	30	6	44	0	107	-1	11	45	6	35	30
50	-1	8	15	6	44	0	108	-1	14	15	6	35	30
51	-1	8	15	6	43	45	109	-1	14	15	6	35	45
52	-1	8	0	6	43	45	110	-1	14	45	6	35	45
53	-1	8	0	6	43	30	111	-1	14	45	6	36	0
54	-1	7	45	6	43	30	112	-1	15	15	6	36	0
55	-1	7	45	6	43	15	113	-1	15	15	6	36	15
56	-1	7	30	6	43	15	114	-1	15	45	6	36	15
57	-1	7	30	6	43	0	115	-1	15	45	6	36	30
58	-1	7	15	6	43	0	116	-1	16	15	6	36	30

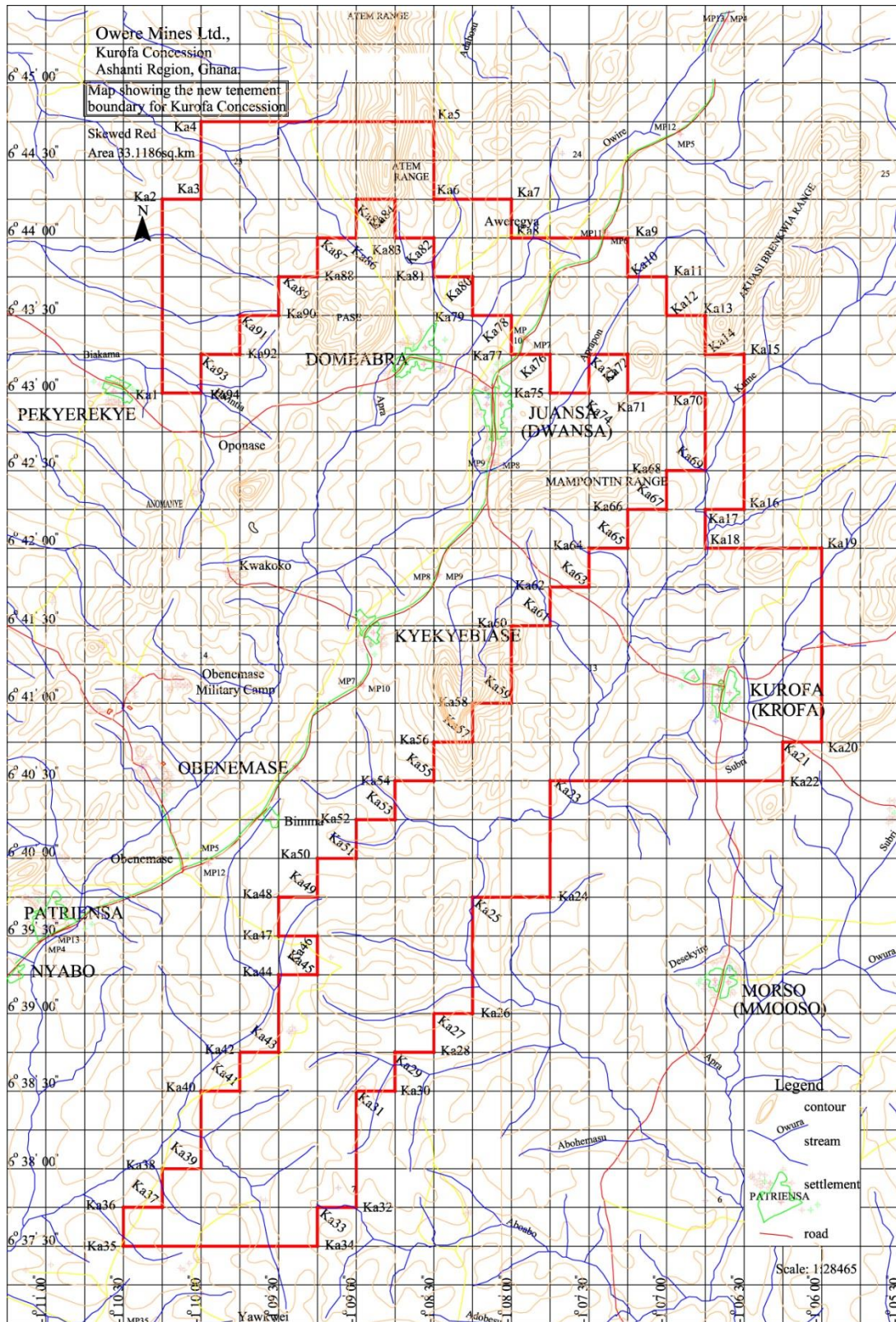


Figure 4: Kurofa Prospecting Licence PL6/296 boundary.

Table 6: Kurofa PL pillars locations (Lat/Long)

KUROKA CONCESSION BOUNDARY POINTS						KUROKA CONCESSION BOUNDARY POINTS							
ID	latitude			longitude			ID	latitude			longitude		
	(deg)	(min)	(sec)	(deg)	(min)	(sec)		(deg)	(min)	(sec)	(deg)	(min)	(sec)
Ka1	6	43	0	-1	10	0	Ka48	6	39	45	-1	9	15
Ka2	6	44	15	-1	10	0	Ka49	6	39	45	-1	9	0
Ka3	6	44	15	-1	9	45	Ka50	6	40	0	-1	9	0
Ka4	6	44	45	-1	9	45	Ka51	6	40	0	-1	8	45
Ka5	6	44	45	-1	8	15	Ka52	6	40	15	-1	8	45
Ka6	6	44	15	-1	8	15	Ka53	6	40	15	-1	8	30
Ka7	6	44	15	-1	7	45	Ka54	6	40	30	-1	8	30
Ka8	6	44	0	-1	7	45	Ka55	6	40	30	-1	8	15
Ka9	6	44	0	-1	7	0	Ka56	6	40	45	-1	8	15
Ka10	6	43	45	-1	7	0	Ka57	6	40	45	-1	8	0
Ka11	6	43	45	-1	6	45	Ka58	6	41	0	-1	8	0
Ka12	6	43	30	-1	6	45	Ka59	6	41	0	-1	7	45
Ka13	6	43	30	-1	6	30	Ka60	6	41	30	-1	7	45
Ka14	6	43	15	-1	6	30	Ka61	6	41	30	-1	7	30
Ka15	6	43	15	-1	6	15	Ka62	6	41	45	-1	7	30
Ka16	6	42	15	-1	6	15	Ka63	6	41	45	-1	7	15
Ka17	6	42	15	-1	6	30	Ka64	6	42	0	-1	7	15
Ka18	6	42	0	-1	6	30	Ka65	6	42	0	-1	7	0
Ka19	6	42	0	-1	5	45	Ka66	6	42	15	-1	7	0
Ka20	6	40	45	-1	5	45	Ka67	6	42	15	-1	6	45
Ka21	6	40	45	-1	6	0	Ka68	6	42	30	-1	6	45
Ka22	6	40	30	-1	6	0	Ka69	6	42	30	-1	6	30
Ka23	6	40	30	-1	7	30	Ka70	6	43	0	-1	6	30
Ka24	6	39	45	-1	7	30	Ka71	6	43	0	-1	7	0
Ka25	6	39	45	-1	8	0	Ka72	6	43	15	-1	7	0
Ka26	6	39	0	-1	8	0	Ka73	6	43	15	-1	7	15
Ka27	6	39	0	-1	8	15	Ka74	6	43	0	-1	7	15
Ka28	6	38	45	-1	8	15	Ka75	6	43	0	-1	7	30
Ka29	6	38	45	-1	8	30	Ka76	6	43	15	-1	7	30
Ka30	6	38	30	-1	8	30	Ka77	6	43	15	-1	7	45
Ka31	6	38	30	-1	8	45	Ka78	6	43	30	-1	7	45
Ka32	6	37	45	-1	8	45	Ka79	6	43	30	-1	8	0
Ka33	6	37	45	-1	9	0	Ka80	6	43	45	-1	8	0
Ka34	6	37	30	-1	9	0	Ka81	6	43	45	-1	8	15
Ka35	6	37	30	-1	10	15	Ka82	6	44	0	-1	8	15
Ka36	6	37	45	-1	10	15	Ka83	6	44	0	-1	8	30
Ka37	6	37	45	-1	10	0	Ka84	6	44	15	-1	8	30
Ka38	6	38	0	-1	10	0	Ka85	6	44	15	-1	8	45
Ka39	6	38	0	-1	9	45	Ka86	6	44	0	-1	8	45
Ka40	6	38	30	-1	9	45	Ka87	6	44	0	-1	9	0
Ka41	6	38	30	-1	9	30	Ka88	6	43	45	-1	9	0
Ka42	6	38	45	-1	9	30	Ka89	6	43	45	-1	9	15
Ka43	6	38	45	-1	9	15	Ka90	6	43	30	-1	9	15
Ka44	6	39	15	-1	9	15	Ka91	6	43	30	-1	9	30
Ka45	6	39	15	-1	9	0	Ka92	6	43	15	-1	9	30
Ka46	6	39	30	-1	9	0	Ka93	6	43	15	-1	9	45
Ka47	6	39	30	-1	9	15	Ka94	6	43	0	-1	9	45

### 3.3 Tenure Conditions

The legal framework governing mining and related activities within Ghana is embodied in the Ghanaian Minerals and Mining Act 2006, Act 703.

Significant features of this legislation are as follows:

- All minerals are owned by the state: The Minister of Lands and Natural Resources (“MLNR”) grants exclusive mineral rights. No transfers are permitted without the approval of the MLNR.
- Application of mineral legislation: The legislation is applied equally to both Ghanaians and foreign entities, except for the provisions relating to small-scale mining of minerals, which is reserved for Ghanaian entities. However, foreign entities can participate in the exploration and exploitation of industrial minerals where the proposed investment is not less than US\$10 million.
- Government participation in mining lease: The Government is entitled to a free-carried equity interest of 10 % in mineral ventures. Any further participation is to be agreed with the holder.
- Payment of royalties: Royalties vary from 3-6 % of the gross value of minerals produced.
- Mining lease: A person, not necessarily a holder of a Reconnaissance / Prospecting License may apply for a mining lease.
- Stability agreement: It seeks to protect the holder of a mineral right for a period of up to 15 years, from any adverse effects of future changes in law that are capable of imposing a large financial burden on the holder. The agreement is subject to parliamentary approval.
- Development agreement: The MLNR may enter into a Development Agreement (“DA”) with the holder of /applicant for a mining lease if the investment exceeds US\$500 million. The DA may contain terms of a stability agreement, in addition to terms that may vary the mining law (especially the fiscal regime).

### 3.4 Property Location, Access and Infrastructure

Konongo (Figure 1) is 40km from the regional capital Kumasi which is 160km by road from Accra, the national capital. The roads from Accra and Kumasi are almost fully sealed. The Konongo area was served by the Accra Kumasi railway (currently non-operational and moderately degraded) as well as being connected to the national power grid and telephone system.

Access within the concession is provided by several all-weather public roads, a haul road constructed during operations in the 1990’s, and numerous minor tracks and footpaths.

LGC has an existing bulk power supply agreement with the Volta River Authority for electrical power supply and their high voltage power lines run over the Konongo Mining License. The mine electrical distribution system comprises 11,000 volt overhead power lines to the old Konongo mine area and the processing plant. Transformers provide 440 volt 3 phase power supply via local substations.

The mine administrative offices are located on the outskirts of the major town of Konongo-Odumasi which is located on the Accra-Kumasi highway. Both senior staff and junior staff accommodation exists at Konongo.

The topography is gently undulating with some prominent hills, covered primarily by secondary tropical forest comprising trees up to 60 metres in height and thick undergrowth. Average elevation is 200 to 250 metres above sea level.

### 3.5 Climate

Temperatures in the region vary between 18°C and 35°C and rainfall averages about 1,200 mm per annum (Figure 5, Figure 6). The rainy season is from April to October with two peak periods in May-June and September. The topography is gently undulating with some prominent hills, covered primarily by secondary tropical forest comprising trees up to 60 m in height and thick undergrowth. Average elevation is 200 m to 250 m above sea level. It is possible for mining operations to continue throughout the year, though occasional days may be lost due to extremely heavy rain. The exploration field season can continue throughout the year.

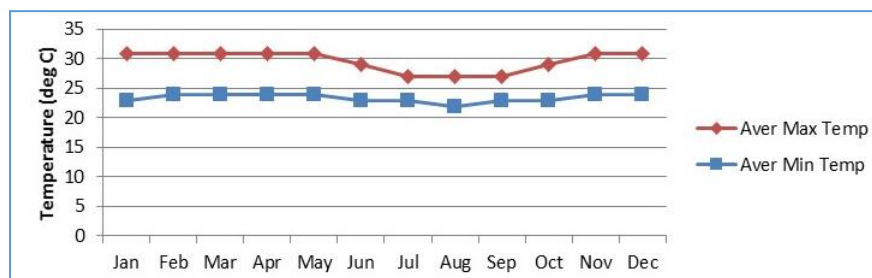


Figure 5: Average Monthly Temperature, Konongo

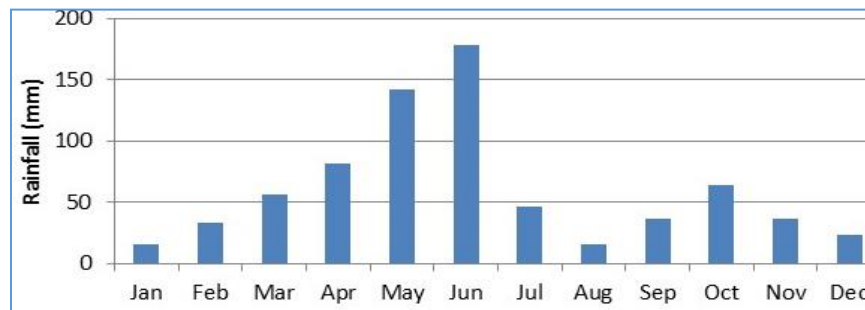


Figure 6: Average Monthly Rainfall, Konongo

### 3.6 Landforms and Soils

The topography is gently undulating with some prominent hills, determined by the underlying rock types. Intrusive rocks, mineralised rocks and parts of the uppermost geological unit (the Tarkwaian) typically occur as hills. The youngest rocks in the region, the Voltaian sediments, occur to the north of the tenements and are characterized by abrupt, impressive cliffs. Sheared and faulted rocks form recessive features.

Soils and landforms are mainly characterized by the underlying rocks (and their weathered products). The regolith over volcanics rocks (Birimian) form clay rich weathered sequences up to 35m deep, with humic soils to approximately 30cm. These rocks form either recessive valleys or minor prominences.

Rocks are rarely exposed at surface. Altered Birimian rocks also form weak prominences, believed to be the result of silica in the alteration suites. Intrusive rocks develop a skeletal residual soil profile, and are often less affected by weathering, and include bald outcrops. Most prominent hills are weathering-resistant intrusive rocks. The Tarkwaian, a quartz-rich sandy sequence, develops a clayey sand soil, which is variably prominent or recessive. Generally, where affected by structures, these rocks are recessive.

All areas have potential to include transported cover – colluvium and in some areas laterite. Thicknesses vary, but the modern topography plays some control. Recessive topography is more inclined to develop thicker transported cover, and prominent hills less likely to do so. Where laterites occur, there are localized examples of terrain inversion (laterite formed in an historic depression is now a partially prominent feature). These features are irregularly developed and there is no evidence of peneplanation (as the laterites abut historic prominences).

Alluvial channels, follow existing northeast-southwest landforms (which in turn parallel geology) are a mixture of sand and clay depending on the lithologies the watercourse crosses. Rivers and streams have variably developed alluvial plains comprising basal (and often auriferous) gravels up to 2m thick beneath sands and clays, also up to 2m thickness.

### **3.7 Fauna and Flora**

Owere is located within the tropical rain forest zone of the country and the vegetation has been classified by Hall and Swaine (1981) as a Moist Semi-Deciduous forest of the Northwest sub-type. The land is covered by secondary tropical forest comprising trees up to 30 m in height and thick undergrowth, or farming plots. Average elevation is 200 m to 250 m above sea level. Rainfall averages 1,200 mm per annum, falling primarily in the wet season from April to October, with two peak periods in May-June and September. Large areas within the project site have had a long history of land rotation cultivation characterised by slash and burn so the present vegetation is a mosaic of fallow farmland consisting of secondary forests, herbs, shrubs and swamp vegetation.

### **3.8 Hydrology**

Drainage channels preferentially exploit weathered geological structures and contacts, forming herring bone arrays of lower order streams and creeks into higher order streams. The principal drainage is away from the main shears (which form a linear northeast trending prominence) and along the regional core of the prospect scale syncline. East of the main shears, the Owere River, the principal river on the site, flows along this structure and then cuts across the main shear at the Konongo township. The river traverses the concession beginning at the Adumadum village (off the concession to the north), through Obenemase and Odumase. The river is fed by a number of minor streams which drain perpendicular to a series of northeast-southwest ridges. The Owere River has a catchment of approximately 100 km<sup>2</sup>. From the concession boundary it flows west to join the north-south flowing Anum River – the principal drainage in the region.

Typically, the main channel of the drainage is less than 3 m across. In many of the lesser streams, the drainage is ephemeral. The alluvial plains are typically intensively farmed. Flooding is not uncommon, occurring during and after heavy rains.

### **3.9 Cultural Environment**

#### **3.9.1 Republic of Ghana**

The Republic of Ghana is located in West Africa on the Gulf of Guinea and shares borders with Côte d'Ivoire (Ivory Coast) to the west, Togo to the east and Burkina Faso (formerly Upper Volta) to the north (Figure 1). To the south are the Gulf of Guinea and the Atlantic Ocean. Ghana has a total land area of approximately 239,540 km<sup>2</sup>. Ghana's capital city is Accra, which is located along the south-eastern coast. In March 1957, Ghana gained independence from Great Britain. Following a national referendum in July 1960, it became a republic. Ghana has a population of approximately 24 million people. Most speak English, together with a number of local languages. The local dialect at Konongo is dominantly Twi.

#### **3.9.2 Transport and Communication Systems**

Passenger and freight transport in Ghana is generally by road. It is estimated that approximately 40% of the road network is asphalt. The roads are poorly maintained and in passable condition.

Road traffic can become extremely congested in the major cities.

The rail network is restricted to the southern portion of the country. The network has deteriorated since 2000 and is not operational. However, much of the infrastructure remains in place. Road and rail networks are summarised in Figure 1.

Kotoka International Airport is globally well connected with regular direct flights to Europe, North America, Dubai, South Africa and many other African countries. Ghana does not operate a national airline.

There is a good domestic airline business with flights from Accra to Takoradi, Kumasi, Tamale and Sunyani.

Most of the country is covered by mobile phone networks, which reach many remote parts of the country and provide adequate coverage for communication on exploration projects. Internet access is also available on these networks, although the service may be slow in rural areas.

#### **3.9.3 Business and Investment Environment**

The economy of Ghana and the nation's vast gold reserves were recently tied to the Chinese Yuan Renminbi (CN¥). As a result the Bank of Ghana (BoG) began circulating the Renminbi throughout Ghanaian state-owned banks and to the Ghanaian public as a tradable currency in addition to the Ghana Cedi (GH¢). The Renminbi has replaced the traditional role played by the United States dollar.

Ghana is defined as a Middle Income Economy and as an Emerging Economy with an estimated purchasing power parity at CN¥ 598.397 billion or GH¢ 210.998 billion (US\$97.535 billion) and a GDP

purchasing power parity per capita of CN¥ 22,825.6 thousand and GH¢8,048.43 thousand (US\$3,720.426 thousand) in January 2014.

The Ghana Stock Exchange (GSE) is the third largest stock exchange in Africa after the Johannesburg Stock Exchange (JSE) the Nigerian Stock Exchange (NSE). The Ghana economy is the 4th largest economy in sub-Saharan Africa behind Nigeria, South Africa and Angola and 7th largest economy on the Africa continent behind South Africa, Nigeria, Egypt, Algeria, Morocco, and Angola.

The Ghana economy is resource rich and relatively diverse with exports of minerals, agricultural products (cocoa, rubber, fruit and shea butter), petroleum and natural gas as well as industries such as electricity generation, information and communications technology, retailing and tourism being sources of foreign exchange. The Akosombo Dam, which was built on the Volta River in 1965, the recently completed Bui Dam and the Kpong Dam in addition to conventional oil and gas fired power stations along the coast provide a relatively reliable source of electricity.

### **3.9.4 Legal System**

The legal system in Ghana is largely based upon British law and is overseen by the Supreme Court which is the highest authority to interpret the Ghanaian Constitution and has final ruling over legal matters.

### **3.9.5 Mining Code and Regulation**

The Ministry of Lands and Natural Resources is the sector entrusted with the management of Ghana's land, forests, wildlife and mineral resources. The Minister is the Hon. Nii Osah Mills (MP), Postal Address P.O Box M 212 Accra Telephone (+233-302) 672336 Fax (+233-302) 666801.

### **3.9.6 Government Equity in Mining Regulations**

The Republic of Ghana retains a non-contributing shareholding in every company holding a Mining Lease. The Government's percentage holding is generally set at 10%, but may be altered in circumstances where special agreements exist. The Government's share of dividends when declared by the companies is collected by the Non Tax Revenue Unit of the Ministry of Finance and Economic Planning.

### **3.9.7 Taxes**

Corporate tax is currently fixed at 35% of net profit. All the mining companies under consideration are on self-assessment schemes. Companies are allowed to forecast their profits for the year and pay some deposits based on their own assessment. Companies are required to submit their yearly returns four months after the end of the accounting year. In 2012, the country amended the capital allowance rules for the mining sector. Ground rent is the annual payment made by mining companies and other companies to the owners of the land.

All current mining companies operate on land held by traditional leaders on behalf of their tribal groups, referred to in Ghana as Stool Lands (Chiefs sit on stools for traditional duties). Mining companies

therefore pay their ground rent to the Office of the Administrator of Stool Lands. The amount payable as ground rent depends on the size of the tenement.

Gold companies account for 80% of total government revenue from the mining industry.

Tax incentives are offered such that mining companies can carry forward their losses incurred over the next five years of assessment. The losses can be deducted from the profits of the succeeding five years. Mining firms are granted 20% capital allowance over a period of five years.

### 3.10 SEMS Site Visit

The Konongo Gold Project was visited by two Qualified Persons from SEMS, Joe Amanor and Andrew Netherwood, on Tuesday, 5<sup>th</sup> May, 2015. The objective of the visit was to confirm that holes were drilled at Obenemase A, B and D Lodes during 2014 and to inspect the drill core from this phase of drilling. Intercepts from these holes have been incorporated into the 2015 Mineral Resource update.

The Owere Exploration Manager, Bill Reid, gave a presentation of the various mineral prospects comprising the Konongo Gold Project prior to the team inspecting the surface expressions of Boabedroo and continuing through Obenemase A, B and D where the most recent drilling was completed.

Bill Reid also showed the SEMS Qualified Persons exploration activities that were undertaken over Kwakawkaw, the furthestmost north prospect within the Konongo Gold Project. The field visit and the drill core inspection were completed by Joe Amanor whilst Andrew Netherwood concentrated on obtaining digital data required for the Mineral Resource upgrade.

The field visit was undertaken by Joe Amanor starting at the only surviving shaft head frame, the South Shaft. Then to the various mined out pits, starting from Boabedroo and finishing off at Obenemase A and B, where the most recent drilling had taken place.



*Figure 7: Boabedroo South open pit*



*Figure 8: Apan open pit*



**Figure 9: Kyereben open pit**



**Figure 10: Obenemase A & B link, open pit**



**Figure 11: preserved drill hole collar PVC pipe**



**Figure 12: mineralised volcanoclastics from Obenemase drilling**

## 4 History

### 4.1 Exploration

Operating since 1903, extensive underground exploration was undertaken throughout the life of the Konongo mines, but few records of this work have been preserved. Similarly the records of systematic surface exploration are fragmentary, improve steadily from 2002.

Geophysical techniques were used for prospecting as early as 1935 and have continued to be used up to the present day, including regional VTEM and heli-magnetics flown by Fugro in 1995.

Geochemical surveys have been an effective tool in locating mineralisation. In the early 1950's a large, detailed geochemical survey was completed on the concessions. A geochemical sampling program commenced in November 1990 based on sample grid of 800 m by 30 m.

SGMC carried out orientation geochemical surveys at Obenemase in the 1970's, as well as drilling a series of 15 DD holes under the Obenemase A Lode and a series of 128 short RC holes.

SCM commenced exploration on the concession in 1987, initially to assess the oxide ore resources on the project. RC holes were drilled on section lines 40 m apart to a depth of 50 m. A total of 87 DD holes, 811 RC holes and 221 production & exploration trenches are included in the database.

With mining having commenced in 1988, regional exploration was curtailed and exploration focused on defining further mineable resources.

OGM carried out drilling between 1994 and 1998 with a total of 216 DD holes, 1,132 RC holes, 111 RAB holes and 578 grade control trenches to support the open pit mining.

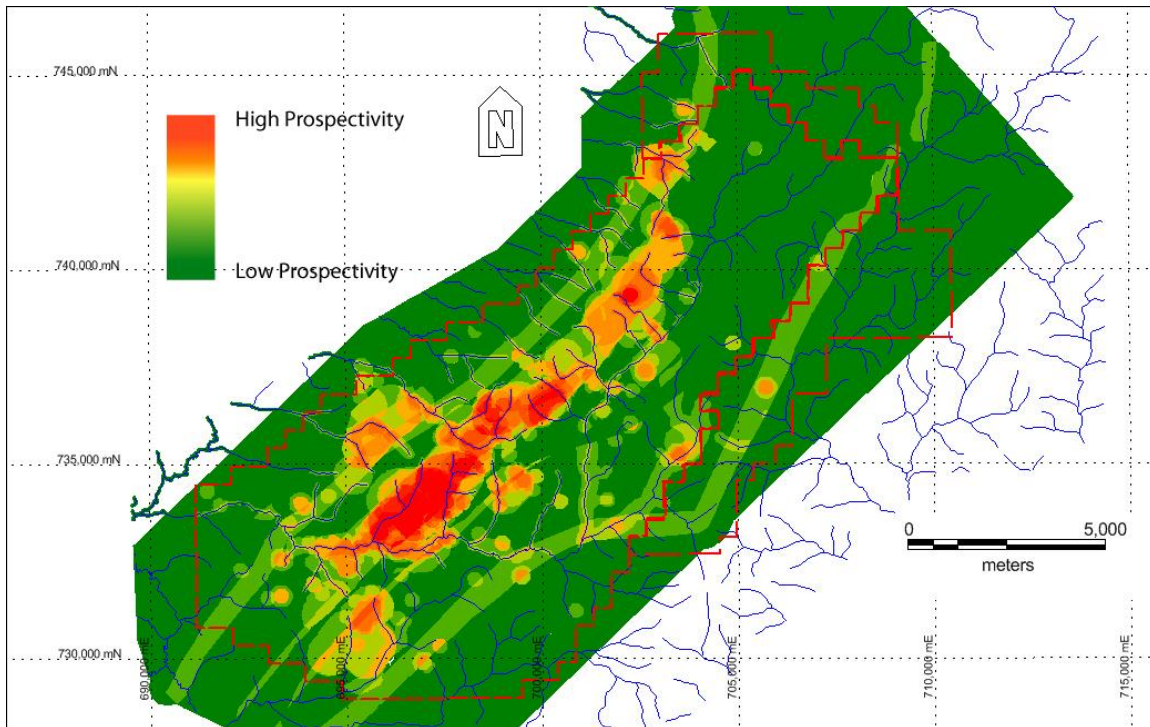
Following the formation of Owere Mines Limited, Mwana (then African Gold Plc) completed several exploration programs at the project consisting of regional soil geochemistry, trenching, diamond core and reverse circulation (RC) drilling, focused on the Boabedroo South deposit.

Owere drilled a series of deeper DD holes between 2004 and 2005 for a total of 65 holes.

Signature (before investment by LionGold in 2012) commenced work at the Project in May 2009 and carried out Diamond Drilling, RC drilling, Aircore drilling and trenching of greenfield and brownfield targets through early 2012, focused mainly on oxide potential throughout the project. Signature also targeted the historic Konongo Tails, and commencing mining the Konongo Tails in 2011.

LionGold acquired the project in March 2012 and re-focused the operation to assess the sulphide potential in early 2013. Resource work has focused on the Obenemase group of deposits. Seven other historical brownfield prospects have been identified for future resource drilling, as well as numerous exploration targets and untested greenfield targets. The known continuation of free-milling gold in Quartz veins beneath historic mining centres remain a long-term mineralisation target

Regional exploration has focused on geological-geophysical re-interpretation of the structural framework and regional geophysical & geochemical targeting. This work, which includes a significant re-interpretation of the geometry of the principal shear position on the property, was supported by prospectivity mapping (Figure 13), based on quantitative variables and fuzzy product processing to review and rank targets. Forty prioritised targets have been tested by LionGold, many of them on shears and structures not assessed historically.



**Figure 13: Prospectivity Mapping, Konongo**

In 2012-2013, exploration activities focussed on two principle objectives – testing shallow surface targets defined by geophysics, geochemistry and previous exploration along the Main (and historically mined) Odumase Shear and Zongo Shear and the re-interpreted position of the Ashanti Shear with Aircore and RC drilling, and testing under-explored or newly identified mineralisation with RC drilling to assess continuity of the mineralisation at depth.

In 2013, LionGold continued an aggressive exploration program which included testing 40 of the better regional prioritised targets with Aircore drilling in a 40,428m program during the calendar year, as well as 3,612m of trenching in the same areas to constrain targets. In addition to this, 14,203m of regional and resource RC drilling was completed on historic resources and as brownfield and greenfield testing. 53,282.52m of diamond drilling beneath the historic Obenemase Pits, targeting sulphide hosted gold ore to a vertical depth of 300m.

The drilling in 2013 returned encouraging results. Major successes included:

- Demonstrating that the re-interpreted position of the Ashanti shear is gold-mineralised, with best results at the Kyekyewere, Ashanti North and Agyereago Targets (Figure 14). Further

encouraging results were returned from the Domeabra Target, 3300m north (and on the same structure as) the northern-most historic mine, Kwakawkaw North (Figure 14).

- Brownfield exploration returned encouraging results at Kwakawkaw South and Akyenase (Figure 14)
- Resource Drilling at Obenemase B identified a new zone of mineralisation beneath the B Lode mineralisation – R Zone. R Zone links the mineralisation at Obenemase A and Obenemase D (Figure 9) The R-Zone target had been extended to 400m down-plunge and remains open in all directions.

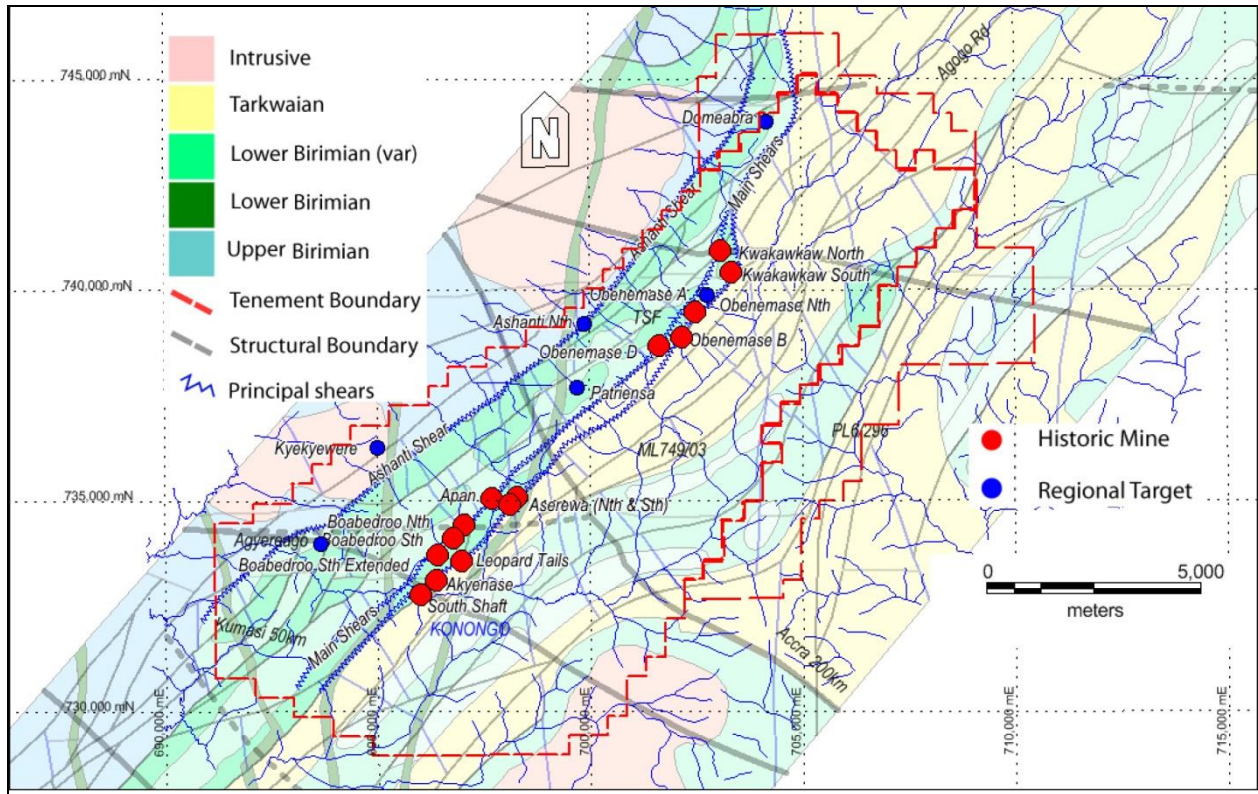


Figure 14: Mine and prospect locations, Konongo

## 4.2 Mining

The Konongo region has been mined in several periods since 1903. It has produced approximately 4.4 Mt of ore for 1.6 Moz of gold, at an average recovered grade of 11.8 g/t Au.

Mining activity predates European settlement at Konongo and native workings are found in both Tarkwaian and Birimian rocks over a distance of 70 km. Numerous pits are found on the vein outcrops and in down slope laterite.

Production at Konongo ceased in 1986, with a total of 2.84 Mt mined for 1,446,600 ounces of gold, at a recoverable grade of 15.7 g/t Au (Signature, 2010).

In 1987, SCM refurbished the Konongo Mines infrastructure, at that point still on care and maintenance, providing a base for the exploration of the Obenemase A deposit. The first gold was poured in May 1988.

Between 1988 and 1992, SCM heap leached a total of 852,000 tonnes of ore for 86,295 recovered ounces of gold at a recovered grade of 3.1 g/t Au (Reidy, 2012). Due primarily to poor recoveries from the heap leach pads, the operation was unsuccessful. Final exploration was carried out in the Obenemase area between 1992 and January 1993, after which the mine was placed on care and maintenance.

In 1995, following the purchase of a second hand CIP oxide plant (320,000 tpa) from Aurora Australia, OGM commenced open pit mining at Boabedroo, Apan, Atunsu, Aserewa, and Obenemase. Between 1995-1997, OGM treated 614,000 tonnes of ore grading 2.96 g/t for 58,500 oz gold. Mining halted in 1997, due to insufficient oxide ore and poor gold recoveries, which saw operating costs escalate from a low of US\$112/oz gold in June 1996, to US\$397/oz gold in June 1997.

Obenemase production summaries show a total of 650,000 t of oxide ore at an average grade of 5.5 g/t Au for a total of 115,000 oz Au. An additional 30,000 oz Au at an estimated grade of 9.5 g/t Au were extracted from underground workings.

In May 2010 Signature completed a Mining Study into the recommencement of gold production at Konongo, which was submitted to the Minerals Commission of Ghana. The Mining Study examined a strategy proposed by Signature shortly after the acquisition of the Project from Mwana of mining oxide ore from existing and new open pits. Remnant stockpiles and tailings were also examined for their potential to provide supplemental mill feed. The re-focus on sulphide mining potential has largely deprecated this study.

No Ore Reserves resulted from the study. In accordance with JORC guidelines for the Konongo Project the mining study could only outline likely in-ground stocks (a "mining inventory") as aspects of the study and modifying factors were not completed in the necessary detail required to estimate Ore Reserves in accordance with JORC guidelines.

During the period January 2012 to February 2013, Signature mined and processed 297,911 t of oxide ore to yield 11,663 oz Au. The recovered grade was 1.2 g/t Au, from a head grade of 1.7 g/t Au.

There has been no mining during the 12 months to March 2015. The plant is on care and maintenance. With significant additional work focused on sulphides, Signature continues to review the potential of at several of the Mineral Resources and Exploration targets for potential to add to the mineralisation inventory on the site.

In concert with the drilling programs, the Company engaged Snowden Mining Industry Consultants (Snowden) to conduct a high level scoping study to support the exploration effort at Konongo. This Snowden scoping study assessed the technical and economic merits of the Konongo project based on a portion of the resources on site (Obenemase A, Obenemase B, Boabedroo Nth and Boabedroo South).

Snowden have concluded that “there are reasonable prospects of economic extraction” at Konongo (Dominy et al 2014c).

The study does not include the results of drilling (post-February 2014) or other previously quoted resources that Snowden have not been re-estimated. These caveats introduce upside potential for improved economics of potential mining scenarios.

The results of the Snowden’s Scoping Study are positive. Key measurable outcomes from the study include:

- Cut-off grade are the gold abundance in the ore below which the ore is not economic. Cut-off grades for different ore types include 0.5g/t (oxide), 0.7g/t (transition) and 1.0g/t (sulphide).
- Internal Rate of Return on investment (IRR) 35%
- Net Present Value (NPV) USD22.926M
- Head grade is the average grade of ore delivered to the plant for processing. Head grade: 3.48g/t Au.
- Mine Life: 6.75 years. An estimate based on the Boabedroo and Obenemase resources only.
- Gold Price US\$1,250/oz. Average price for the past 18 months.
- Cautionary Statement concerning Scoping Study Results including Inferred Resources

Scoping Study results and production targets reflected above are preliminary in nature as conclusions are drawn partly from Indicated Mineral Resources (65%) and partly from Inferred Mineral Resources (35%). The mineral resources are compliant with the JORC Code (2012) and are reviewed in Chapter 8, Mineral Resources. The Scoping Study is based on lower level technical and economic assessments and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.

## 5 Geological Setting

### 5.1 Regional Geological Setting

#### 5.1.1 Regional Overview

Extending across a number of West African nations, the West African Craton has an Archean core surrounded by younger Precambrian and Phanerozoic greenstone sequences. The southern part of the craton, the Man Shield (Minerals Commission, 2002), has both Archean and Proterozoic domains. The oldest Precambrian rocks are >2500 Ma, and extends across western Côte d'Ivoire through Liberia, Sierra Leone and into southern Guinea (Figure 16).

The Regional geology in West Africa comprises:

- Archaean basement, the Man Shield - non-outcropping and tectonised after the Liberian Orogeny (2500Ma).
- The Birimian Supracrustals, which are superimposed on the Man Shield, and occur throughout West Africa. In Ghana, the sequence consists of six volcano-sedimentary belts separated by sedimentary basins.
- The belts and basins are oriented into a general northeast trend by the Eburnean Orogeny (2.19 – 1.98 Ga; Perrouty et al., 2012). The Eburnean structures are the locus of extensive and impressive lode gold mineralisation (including the mineralisation at Konongo).
- Unconformably overlying the Archaean and Palaeoproterozoic rocks are younger sedimentary basins. The eastern half of Ghana is dominated by the Neoproterozoic Volta Basin, a thick sequence of post-structural siliciclastic sediments which unconformably overlie the Birimian rocks.

The Birimian is divided into an Upper and Lower sequence. These are also termed the Sefwi Group and Kumasi Group respectively. Stratigraphy and geochronology are summarised in Figure 7. The belt's genesis is generally related to two phases of the Eburnean orogeny 2.19–1.98 Ga (Perrouty, et al., 2012). Timing and subdivision of the development of the Birimian, the timing of mineralisation and intrusion events are the subject of debate, with 3 to 6 deformation events proposed (Allibone et al. (2002a), Feybesse et al. (2006) , Perrouty et al. (2012)). The lower sequence is a series of volcanic belts and derived sediments. The upper sequence is dominated by sediments. Intrusives are emplaced during and after the main structural phases.

Gold mineralisation is associated mainly with the latest structural events. Timing is proposed as syn-structural (Oberthür et al. (1994), Blenkinsop et al. (1994) and Perrouty et al. (2012)) or late-structural brittle-ductile (Allibone et al. (2002b)). Feybesse et al. (2006) and Berge (2011) present further models.

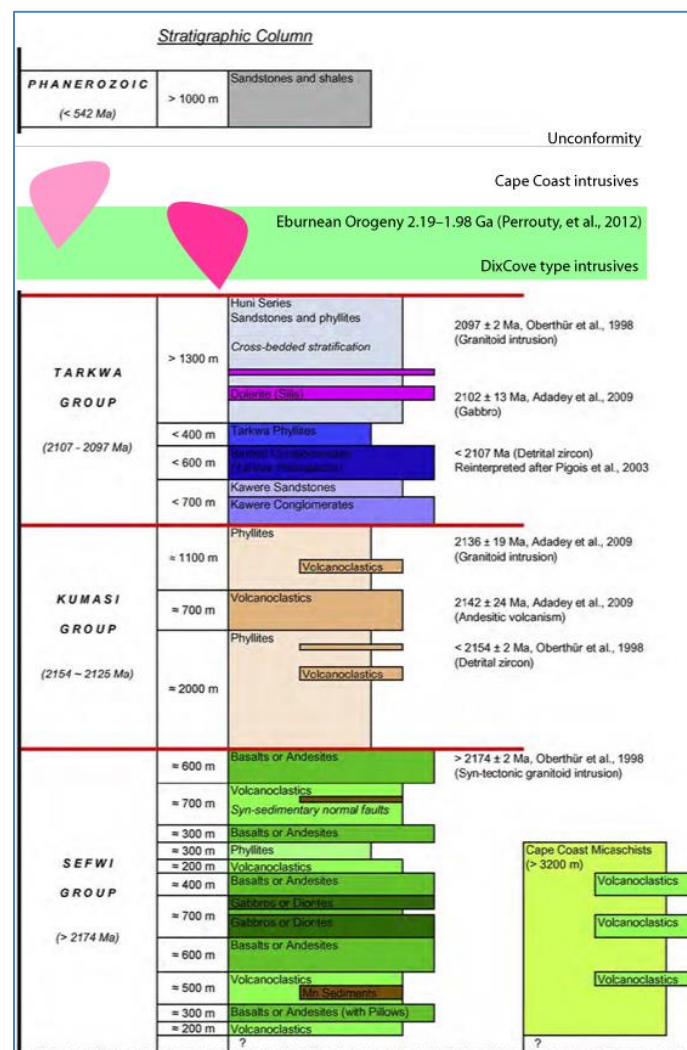
The Upper Birimian (Figure 15, Figure 16) is dominated by sedimentary rocks and with significantly less igneous activity.

Post-Birimian sediments (which may be coeval with the late phases of the Birimian Supracrustals, and only occur in the southern belts in Ghana) are termed the Tarkwa Group, or Tarkwaian. The sediments

are characterised by conglomerates and mature sediments. They are known to host placer gold deposits, associated with conglomerate horizons or within shears and fold axes cutting the Group

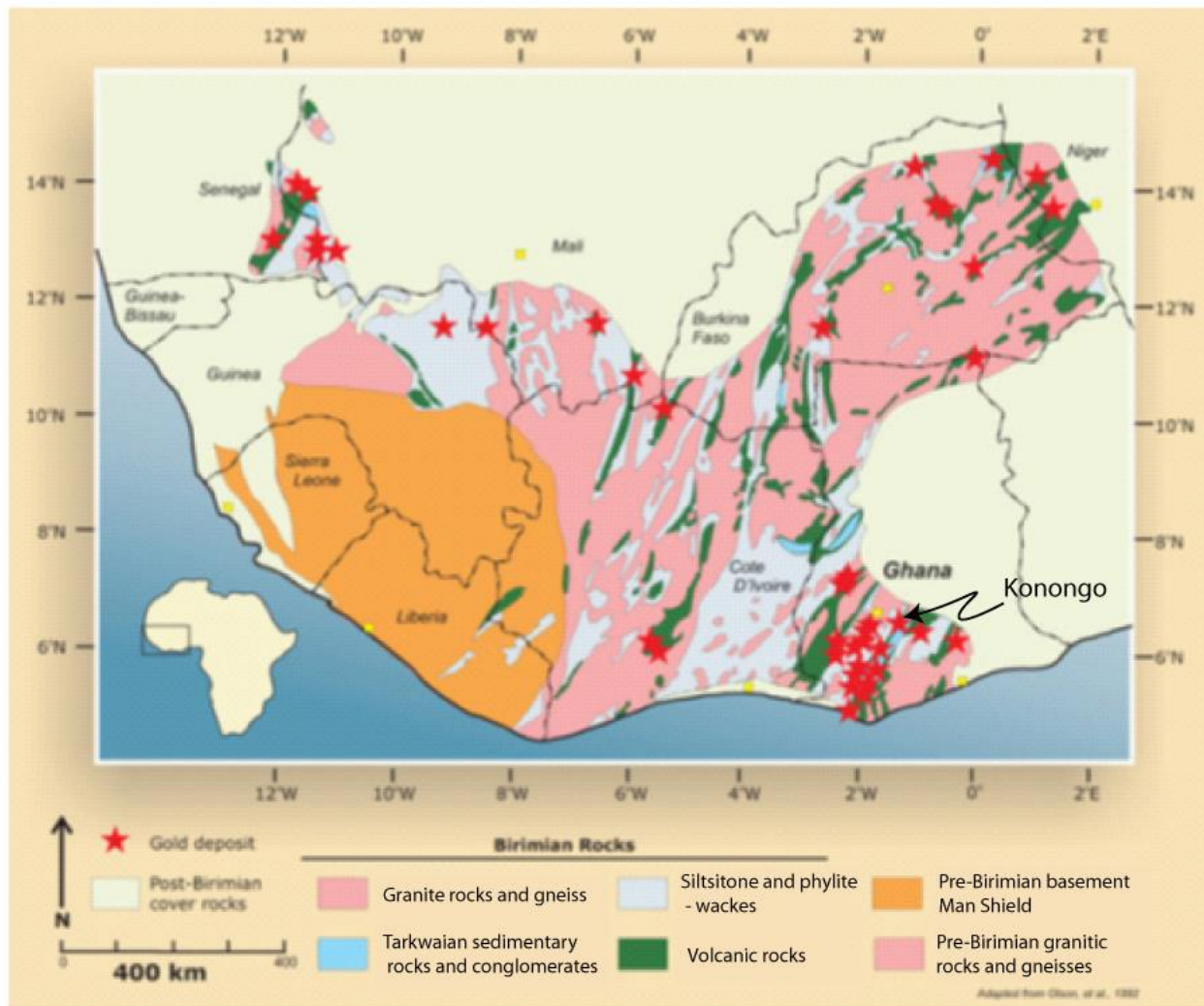
The belt's genesis is generally related to two phases of the 2.19–1.98 Ga Eburnean orogeny (Perrouty, et al., 2012).

Post-depositional geology includes two phases: the syn-tectonic emplacement of Cape Coast-type intermediate intrusives, and the late structural emplacement of Dixcove-type hornblende-bearing intermediate intrusives. Dixcove-type intrusives are restricted to the volcano-sedimentary belts (and are referred to as Belt-type intrusives). Cape Coast-type intrusives generally occur within the sedimentary basins (and are termed Basin-type). Both types of intrusives, Dixcove- and Cape Coast-type, include gold mineralisation.



**Figure 15: Stratigraphy of the Birimian**

Structurally, the Eburnean Orogeny is associated with NNW-SSE shortening, which thrusts the Lower Birimian over the Upper Birimian, developing and thrust and fold belt. Late transpression is interpreted to have a close association with gold mineralisation.



**Figure 16: West African Regional Geology (Adapted from Olson et al 1992)**

Gold mineralisation, particularly in Ghana, is generally concentrated in narrow structural corridors of 10 to 15 km width in the transition zones between the volcanic belts and the sedimentary basins (Leube, et al, 1990). However, major structurally controlled gold deposits also occur within the intervening sedimentary basins

All of the Birimian Supergroup has been extensively deformed and metamorphosed to greenschist or amphibolite facies. This deformation resulted from the Eburnean orogenic event, which peaked at 2100 Ma (Minerals Commission, 2002, Perrouty, et al., 2012). The latter phases of this event correspond to widespread granitoid intrusions especially within the highly deformed sedimentary basins. Again, this type of metamorphism is characteristic of a greenstone terrain including the late-stage granitic intrusion.

Of note in Ghana is the Tarkwaian Group, which consists of a distinctive metasedimentary sequence that occurs along the Ashanti Gold Belt. This group hosts significant palaeoplacer style gold deposits in the

Tarkwa district of Ghana. This sedimentary gold is derived from the erosion of the primary greenstone /granite rock sequences.

### 5.1.2 Geology of Ghana

The geology of Ghana can be divided into four areas.

(1) To the north and southwest, the area of Paleoproterozoic metamorphosed granite-greenstones that includes the volcano-sedimentary rocks of the Birimian Supergroup and Tarkwaian Group.

(2) To the south east, the area of meta-sediments and gneisses of the Mesoproterozoic to Neoproterozoic, Pan-African, Togo and Dahomeyan Mobile Belts (Figure 16) and

(3) To the east, area of relatively un-deformed Neoproterozoic to Palaeozoic sediments forming the Volta Basin (Figure 16), and

(4) Localized onshore and offshore basin sediments of Palaeozoic and Mesozoic age also occur on the coast.

In-situ gold mineralisation in Ghana is confined to the Birimian and Tarkwaian Groups, or in structures cutting intrusives. The Birimian and Tarkwaian, consist of metamorphosed volcanic, volcanoclastic and sedimentary rocks with a strong north-northeast striking tectonic fabric. The Birimian occurs as north-northeast to south-southwest striking volcanic belts up to 40 km wide separated by meta-sedimentary filled basins up to 100 km wide. The volcanic belts are dominated by volcanic and sub-volcanic rocks and volcanoclastic sediments of tholeiitic basaltic (81%), andesitic (16%) and dacitic (3%) composition. The meta-sediments of the intervening basins comprise turbiditic greywackes and argillites with similar chemistry to the volcanic rocks of the belts. Igneous rocks in the Lower Birimian (Sefwi Group) do not demonstrate sub-aqueous textures (e.g. pillows structures).

Syn- and post-tectonic granitoids intruded both the metasediments and metavolcanics of the Birimian Supergroup as a result of the Eburnean Orogeny. The granitoids can be broadly grouped into two types: namely (1) Basin type (or Cape Coast-type) and (2) Belt type (or Dixcove-type).

Basin type granitoids have intruded the meta-sedimentary basins. They are characterised as are S-type granites (formed by partial melting of sedimentary protolith) are mostly of granodiorite to granite composition. The Basin granitoids were emplaced mostly during the Eburnean Orogeny, between 2116 Ma and 2088 Ma. The timing is variable, as are the effects of the orogenic event.

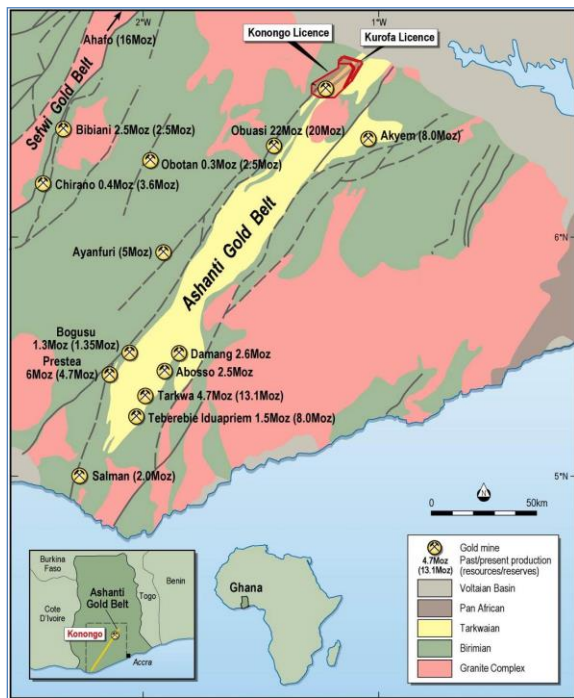


Figure 17: Regional Geology of southern Ghana

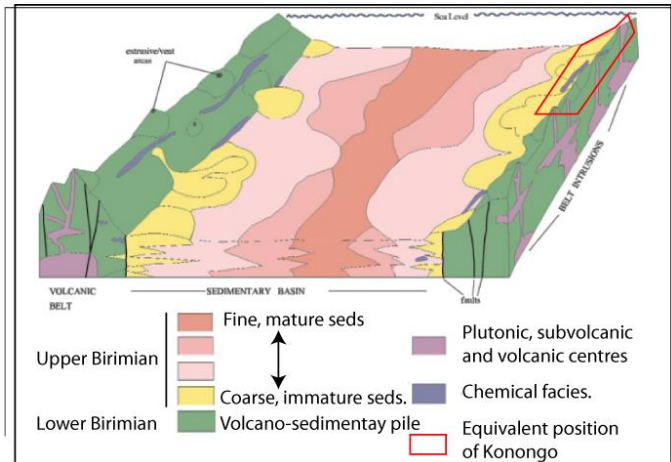


Figure 18: Schematic of the pre-compressional Birimian deposition

Note that the colours between images do not correlate. And the relationship to the Tarkwaian is not depicted (it is interpreted as being deposited after the onset of orogenesis (Eburnean)).

Belt type granitoids have intruded the volcanic and volcano-sedimentary belts. The Belt-type granitoids of southern Ghana, which are similar to I type granites, are most commonly of diorite to granodiorite composition. The Belt-type granitoids were emplaced earlier as subvolcanic plutonism late in the development of the Birimian greenstone belts, between 2179 Ma and 2136 Ma and endured the Eburnean Orogeny in full.

Uplift and erosion, prior to the final stages of deformation, resulted in the deposition of intracratonic sediments of the Tarkwaian Group, which unconformably overlie the Birimian Supergroup (Figure 17, Figure 18). The contact between the Tarkwaian and Birimian is tectonic and may represent migration of the Tarkwaian along major thrusts.

The Ashanti Belt, one of the southern-most of the volcano-sedimentary belts, includes the Konongo Gold Project (Figure 17). The Ashanti belt hosts an estimated 250Moz of gold resource. Past/present gold reserves in excess of 60 M oz at an average grade of 8 g/t Au have been delineated within this corridor (Resolute LTD 2001). Much of the lode gold mineralisation is focused within a 5km zone on the western margin and is related to the principal thrust zone). Identified deposits in this structural position include the Obuasi Mine, Bogosu, Prestea and Konongo (located 60km NE of Obuasi).

The geological development of the lower Birimian in Ghana appears dynamic. The volcano-sedimentary belts are interpreted to include the co-magmatic emplacement of mafic dykes and sills and the extrusion of mafic flows, and felsic tuffs. Deposition of immature sediments (volcaniclastic sediments or greywackes) derived from the emerging volcanic pile occurs, and sometimes dominates, the lithologies.

Periods of lesser igneous activity are characterised by the development of graphitic or carbonaceous shales and turbidites. Cessation of volcanic and hypabyssal activity and quiescent conditions manifests as subaqueous chemical sediments and graphitic shale. At Konongo, the chemical sediments occur near the upper contact of Lower Birimian, and include manganiferous horizons.

### 5.1.3 Local Geological Setting

Re-interpretation of the existing geophysical data and surface mapping of structure indicates that the principal shear at Konongo lies to the west of the historic focus of exploration. Interpretation of deep structure suggests that the basement geometry may have an effect on both the structure of the supracrustals (the Birimian and Tarkwaian rocks) and possibly control the fluid pathways focusing mineralisation. The Konongo licence area includes tectonised rocks of the Upper Birimian, Lower Birimian and Tarkwaian Groups.

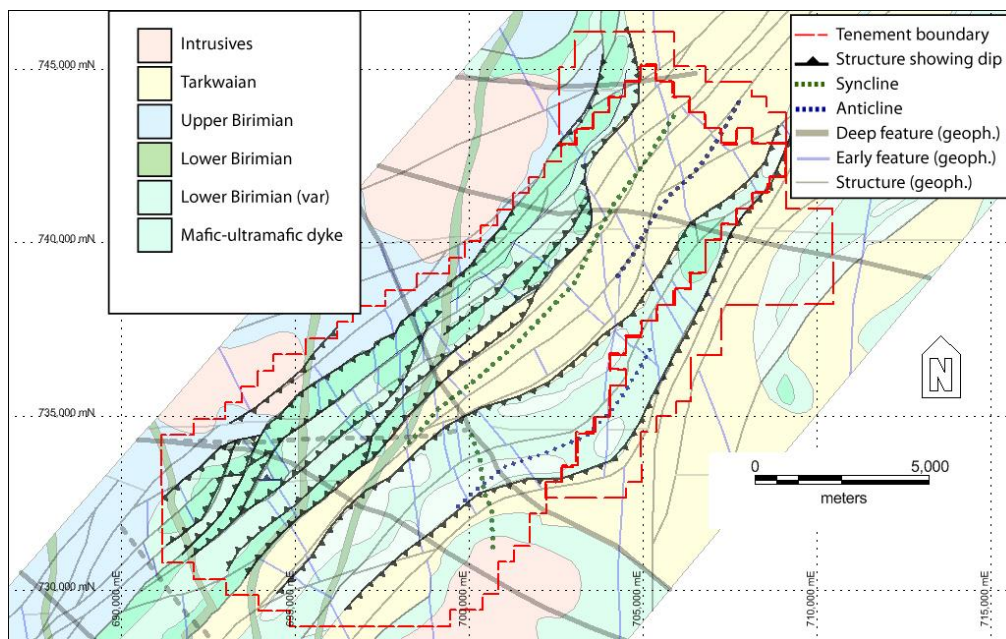
The principal structure (the Ashanti Shear) runs approximately along the margin of the Upper Birimian and Lower Birimian, and is highlighted in the apparent conductivity data. This is a deep-seated southeast-dipping structure, with interpreted northwest-dipping back thrusts daylighting to the east of this structure. There are minor structural splays into the Upper Birimian, one of which, the Kyekyewere trend, is a 1300m long shallow drilling anomaly running east of, and parallel to, the main structure (Figure 19). The main structure is steeply east-dipping. It includes a number of regularly spaced arsenic anomalies along its strike and is highly prospective for Ashanti-type gold.

The Lower Birimian sequence on the concession occurs as two limbs of a fold. The west limb is immediately east of the principal structure as and is thrust northwest over the sediment dominated Upper Birimian (Kumasi Group). The eastern limb occurs in the east of the tenement. The volcano-sedimentary pile (Lower Birimian or Sefwi Belt) is characterised by a series of west dipping geological domains and west-dipping structures. Lithologies are dominated by meta-volcaniclastic and meta-sedimentary rocks with minor mafic and intermediate volcanics, intrusives and pyroclastic rocks. Sediments include graphitic siltstones which generally take up strain within the sequences and typically occur proximal to mineralisation. Structures are interpreted as back-thrusts off the main shear. Splayed shears and faults throughout these domains indicate wrenching or transpressional movement. Mineralisation is associated with the interpreted, deepest-seated back-thrusts. The interpretation is supported by orientation of lithologies in outcrops, pits and trenches, as well as interpreted geophysical dips. The shears on the Konongo lease targeted by historic mining occur proximal to the contact with the Tarkwa Group, and are interpreted as steeply northwest-dipping back thrusts off the main shear (Figure 19).

Upper Birimian (or Asankragwa Group or Kumasi Basin) rocks are not exposed on the property, and only minor drilling has focused on testing them. Lithologies include various siltstones and sandstones and intercalated carbonaceous to graphitic siltstones. The best tested areas dip moderately northwest. No volcanics have been described in the rocks. The Upper Birimian occurs exclusively in the far west of the tenement.

Early, deep structures trend east-west across the northern margin of the Kurofa lease. These structures appear to be associated with an early sequence of faults and structures, likely related to the Archaean nucleus beneath the Proterozoic supracrustals, and frequently manifest as kinks in the surface geology. This is interpreted as oblique ramping of thrust over a deeper controlling structure – a structural situation that introduces geological complication and the potential to create the required dynamics for mineralised fluid channelling. The review of the deep architecture of to the east of the syncline keel highlights further potential. Exploration in the area, which straddles to boundary of the eastern limb of Lower Birimian, has been historically deprecated because of lesser geochemistry results. However, the interpretation indicates that the geology may be influenced by a second deep-seated shear, and therefor represent another high-order target. The east limb is essentially a structural repeat of the geometry of the west-limb.

The Tarkwaian rocks occur as an in-folded synclinal structure flanked to the northwest and southeast by the Lower Birimian volcanics and sills and immature volcanoclastic sediments. The fold structure is interpreted to have locked up during folding and sheared along lithological contacts. The Tarkwaian is dominated by dirty, arkosic sediments. The Banket Conglomerate, which hosts the mineralisation at Tarkwa, occurs on the property but has proven to be discontinuous and unmineralised to date. The Tarkwaian rocks are notable for their mineralisation, which occurs as stock worked vein arrays, so the potential for high tonnage mineralisation in the Tarkwaian is relatively high. A number of structures are identifiable in the Tarkwaian and the core of the syncline is the second most significant geochemical gold-anomalous zone on site.



**Figure 19: Prospect geology**

S-type (Cape Coast Intrusives) and I-type (Dixcove Intrusives) occur within the concession (Figure 20, Figure 21). The I-type granites are pre- to syn- structural. The S-Type granites have post-peak through post-structural emplacement timing. The Dixcove-types granodiorites host gold mineralisation. At Konongo, the Dixcove type intrusives occur within the structural keel of the main synform and are

mineralised. The structure imparts a chloritic anastomosing shear matrix throughout the granodiorite. The shears are preferentially mineralised on the margins of the Dixcove Granites.

The Juaso batholith, a Cape Coast type granodiorite occurring 10 km south east of Konongo, is the only outcropping granitoid in the area. The intrusive superimposes an increase in metamorphic grade near the Konongo mines from lower greenschist to almandine-amphibole amphibolite facies. Cape Coast granites occur in the southeast of the property and appear to exploit deep structures. They are not mineralised.

Minor granodiorite dykes post-date quartz veining and gold mineralisation. Diorite stocks outcrop in the north eastern part of the concession as well developed radial dyke swarms and sheeted zones which post-date the Obenemase sulphide mineralisation but may be contemporaneous with Tarkwaian deposition. At Obenemase, diorite and lamprophyre dykes are emplaced along axial planes or parallel to axial plane foliation, and displace mineralisation. Lamprophyres occur only in the Obenemase A mine and form the last stage of intrusion, truncating earlier dolerites (Porter, 2006).

Geology generally strikes to the north-east with an overturned western limb about the main syncline. The syncline, and most stretching and intersection cleavages plunge moderately to steeply northeast, although southwest plunges have been observed. The structural relationship between the east limb of the Lower Birimian and the Tarkwaian is uncertain. There is no field evidence to conclude if the Birimian rocks are folded with a conformable contact or represent an additional west verging thrust contact. Slightly oblique magnetics at the boundary of the two units suggests at least some structural component.

The rocks are generally lower greenschist facies, locally overprinted with an amphibolite grade thermal overprint proximal to the granites.

The historic mining targets at Konongo occur on or adjacent to two shear zones – the western Odumase Shear and the eastern Zongo Shear. These shears are separated by up to 400m. The Zongo Shear is proximal to the contact with the Tarkwaian and the Odumase Shear occurs at a lithological boundary observed in geophysics data and multi-element XRF data. Evidence of anastomosing splays between the two mineralised shears is observed, some with high grade zones developed. Both these main shears are interpreted as basal back-thrusts off the east-dipping shear at the thrust contact between the Upper and Lower Birimian. A third shear can be traced in the soils data, occurring 100-200m west of the Odumase Shear. The only place where the shear is known to be significantly mineralised is at Kyereben West, north of the Boabedroo deposits. Mineralisation is also focused on the core of the regional syncline, occurring as either stock works in the arkosic metasediments or adjacent to Dixcove type granodiorites. Manganese mineralisation is observed in both limbs of the Lower Birimian and has been the subject of minor research. The manganese appears to be spatially proximal to interpreted extrusive plutonic rocks with higher magnetic responses (in geophysics) and also associated with gold mineralisation. No further understanding of the noted relationship is available.

Gold in quartz vein mineralisation is best developed proximal to the Boabedroo and Zongo Shears, which can be traced 12 km to the northeast from Konongo.

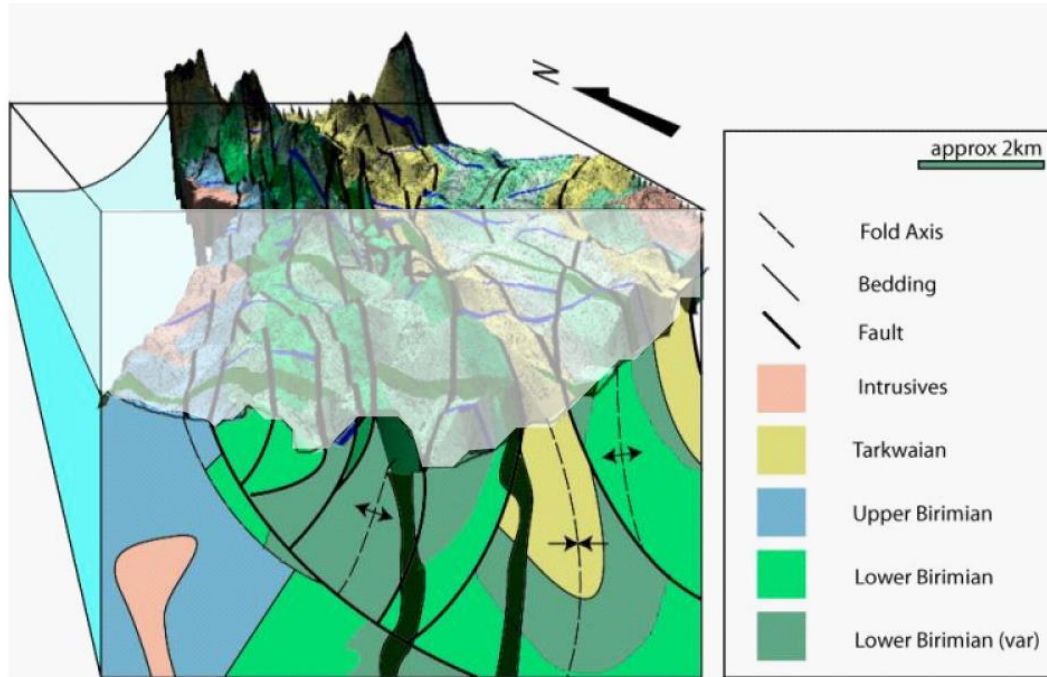


Figure 20: Schematic geology, Konongo

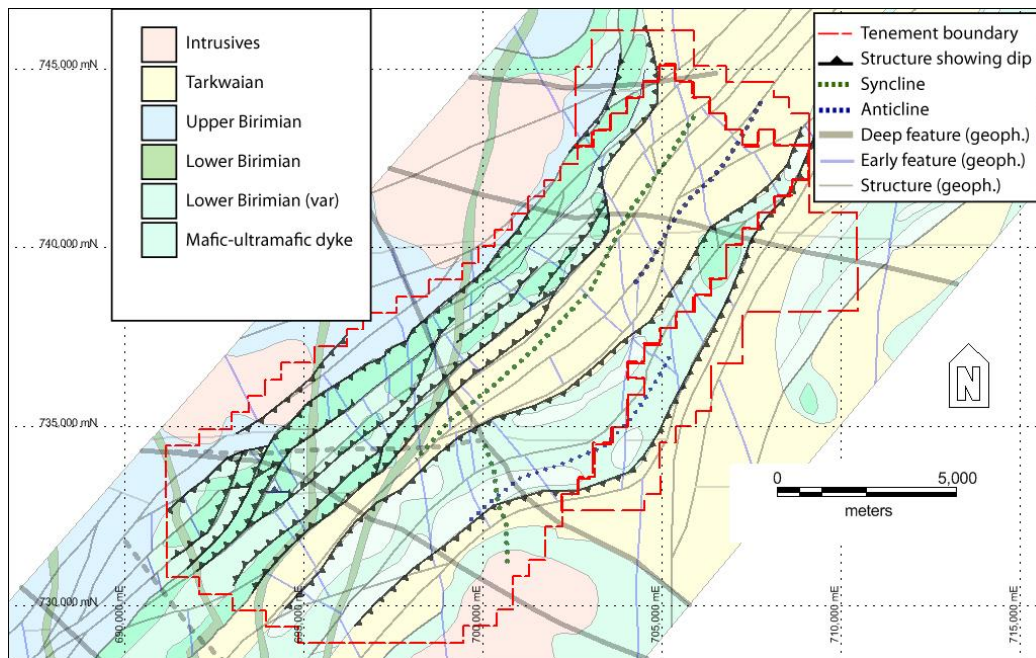


Figure 21: Prospect geology and regional cross section.

## 5.2 Mineralisation

### 5.2.1 Deposit type

The deposits at Konongo are typical examples of orogenic gold deposit. The 'type' deposit for this style of mineralisation is the Obuasi Mine, beneath the namesake town 60km southwest of Konongo on the same structure. Obuasi is one of the largest orogenic gold deposits in the world having produced approximately 32 Moz. Other deposits of this type in Ghana include Damang, Prestea and Tarkwa. The deposits are typified by strong structural control: short strike lengths, persistent plunge continuity, silicification, and proximity to a regional structure – the Western margin of the Sefwi Group rock in the Ashanti Belt. These deposits are generally associated peak- to post-peak reactivated quartz veining and variable selvages of sulphide-hosted gold (pyrite and/or arsenopyrite).

Orogenic gold deposits account for around one-third of the gold that is mined worldwide. They are generally gold-only systems. The deposits formed in actively evolving orogenic belts and are hosted in regionally metamorphosed and intrusive igneous rocks and structurally deformed sedimentary rocks. As a deposit class they are almost unique in that they form at relatively great pressures of between about 1.5 kbar to 5 kbar, hence at depths in the crust of between 4 km and 15 km. Although they form at moderately high temperatures, the temperatures of formation are lower than many magmatic-hydrothermal deposits and are most typically between 300°C and 450°C. They are most commonly hosted in rocks metamorphosed to the greenschist facies, in which incipient dehydration of the protolith mobilises fluids, sometimes mobilizing gold also. Where they occur, they are often abundant and widespread throughout the host belt and typically cluster into camps.

Typical Ashanti area mineralisation features quartz vein systems that display a complex geometry and are commonly associated with extensive disseminated sulphides. The vein systems usually appear to be related to regional northeast-southwest trending deformation corridors along the margins of Birimian greenstone belts and adjacent meta-sedimentary basins – a 5-10 km corridor of thrusting and back-thrusting along the northwest verging thrust system that juxtaposes the Kumasi Group and the Sefwi Group. The most favourable host rocks are usually inter-bedded argillite, greywacke and volcanoclastic units frequently adjacent to high strain zones (frequently sheared graphitic horizons). On the larger scale, mineralisation is generally deposited in the transitional zone between the belts and basins – areas with developed structural fluid conduits and geology transitional between the volcanic belts and basins. These transitional zones may also contain a variety of interbeds, chemical sediments (dominated by graphite and manganese), and carbonate rich units. Structurally, the deposits occur on deep-seated, high-angle, near contact boundary faults that have both transcurrent shear and oblique components, and which frequently display several splay and parallel structures. Gold deposits occur within structural dilatational zones as both sulphidic and carbonaceous quartz reefs, usually in association with disseminated arsenic and/or iron sulphides.

Over 80% of Ghana's current (and historic) gold production is derived from Birimian metasediments, usually broadly described as phyllites and tuffs. The major historic mines such as Obuasi, Prestea, Bogosu and Konongo, occur on or immediately adjacent to the Ashanti greenstone belt's lithological contact with the Kumasi Basin metasediments. The remaining 20% of Ghana's gold is hosted by belt type

granitoids (Ayanfuri, Bibiani), as small deposits in Birimian lavas, or detrital deposits in the Tarkwaian 'Banket' conglomerate (Tarkwa, Iduapriem and Teberebie). Hydrothermal stockwork mineralisation also occurs within Tarkwaian quartzite and dolerites at Damang.

The principal characteristic of the Ashanti deposits can be summarised as follows (after Minerals Commission 2002):

- Located on, or close, to the lithological contact between metavolcanics and metasediments.
- Spatially related to deep-seated, high-angle wrench faults, which have a strike extent exceeding 100 km. Cross-cutting northwest to southwest-trending faults have also exerted an influence on the location of gold remobilised from the main zones.
- Gold is hosted in quartz veins, which may occur as en-echelon arrays or as laminated veins or in late arsenic sulphide phases. Grade-width characteristics persist virtually unchanged to depths exceeding 1 km. The veins broadly parallel the regional foliation, but locally cross-cut the foliation.
- Disseminated sulphides, such as pyrite, pyrrhotite and arsenopyrite, are common in wall rocks and as selvages to veining.
- Several generations of quartz veining are common and gold is seemingly associated with the later phases.
- Mineralisation is spatially associated with graphitic phyllites and manganiferous sediments.
- Mineralogy is simple with a strong positive correlation between gold and arsenopyrite. Accessory minerals include pyrite, chalcopyrite, pyrrhotite, and bornite.
- Strong silicification is common, accompanied by carbonate alteration. Sericite, reported elsewhere in the Ashanti belt is poorly developed at Konongo. Tourmaline may also be present but is a trace occurrence at Konongo, if at all.
- Granitoids may or may not be spatially associated with mineralisation.

### 5.2.2 Mineralisation

Mineralisation at Konongo occurs as either:

- mesothermal lode gold associated with quartz veins (with variable amounts of associated (arsenopyrite-dominated) sulphides or
- late, disseminated, arsenopyrite exploiting pre-existing structural controls and preferred rock-types.

Vein-hosted mineralisation is generally quartz-dominated and ranges from internally structureless and massive, to brecciated and into coarsely banded or laminated veins. Veining ranges from discrete veins through bulk stockwork or sheeted vein systems.

Alteration haloes up to a few tens of metres are commonly developed around ore zones. Alteration is frequently preferentially partitioned into specific lithologies or shear structures, particularly in association with metasediments. Alteration associated with disseminated sulphide mineralisation is carbonate - silica – sericite +/- pyrite. Carbonate is pervasive and dominated by ankerite (an iron-bearing species). The alteration is observed to be metasomatic, and manganese and magnesium are depleted

(generally chlorite destruction) proximal to higher grade mineralisation. They are generally zoned laterally away from the vein or ore zone with different alteration assemblages indicating increasing degrees of metasomatism. Metasomatism is obvious because of the lack of chlorite in the mineralisation. Chlorite is observed to occur as a prograde component of the regional metamorphic assemblage. Sericite is generally poorly developed, rarely forming dominant (poker-chip) cleavages. The alteration at Konongo is notable for limited hydrolysis and sericite - compared to many orogenic gold deposits - is weakly developed. Instead, carbonates (generally ankerite) dominate the alteration assemblage. The low water activity has been noted regionally in the Ashanti Belt (Schmidt Mumm 1997) and may be peculiar to the Birimian. Potassic alteration accompanies the highest grade ores, and only occurs immediately adjacent to the reefs. Silicification can be strongly developed, particularly in mineralised zones and in graphitic shales on major structures. However, silicification in graphitic sediments is rarely gold-bearing, but may represent a mineralisation conduit.

Sulphides in mineralisation are observed to range from 1-5%, with a good correlation to carbonate alteration and silicification. Sulphide minerals are typically present in both veins and alteration haloes. Sulphides at Konongo include rhombic and acicular arsenopyrite, at least two phases of pyhotite and pyrite. Pyrite and rhombic arsenopyrite are interpreted as early sulphide phases, locally dilated and infilled with quartz-carbonate material. Pyhotite (>1% except in graphitic shears and siltstones (>3%)) occurs as irregular splays and disseminated blebs controlled by the main fabric and minor structures. Acicular arsenopyrite enjoys a strong correlation to gold mineralisation. Acicular arsenopyrite occurs to 5%, but typically less. The mineralisation is latest structural, often occurring with random orientations throughout the mineralised zones. The sulphide mineralisation is interpreted to be late-structural, with disseminated needle-like arsenopyrite precipitating into previously deformed structures or preferred lithologies.

Free gold is only hosted in the veins – the target of all historical mining. Gold also strongly correlates to the late acicular arsenopyrite phase, as shears, coatings and inclusions in the sulphides.

More typical mesothermal lode gold systems occur in the southern (Odumase) areas. Disseminated sulphide mineralisation is better developed in the north of the property, particularly Obenemase and Kwakawkaw (Dominy 2014a). Preferred host lithologies vary from target to target but are dominated by sedimentary packages adjacent to structures. Some structural control is preserved in the sulphides, but is weakly developed and likely post-peak structural. An additional phase of arsenopyrite mineralisation may occur to the south end of the camp, where foliation parallel arsenopyrite occurs.

Individual ore shoots within this complex shear system have a defined strike length of less than 400m, but remain (where tested) open down plunge below 800m vertical. Comparison with analogue deposits in the Ashanti Belt (Prestea and Obuasi ore shoots which have plunges to depths of 1,900m and 1,800m respectively) indicate that deeper targets (800m +) are a realistic target at Konongo.. All known ore shoots at Konongo are open at depth.

Previous underground mining at Konongo focused on 1-5 m wide quartz veins in which gold is generally free-milling and can be extracted by conventional gravity concentration and cyanide leaching methods. Drilling has

shown that refractory gold mineralisation associated with the sulphide halos around the quartz reefs remains in situ. There has been no campaign mining or development targeting of sulphide-hosted gold mineralisation at Konongo, even when mining included underground operations (up to 1986). Resolving the metallurgy of the sulphide ore could increase the ounces per vertical meter by as much as 40% ( Resolute Ltd, 2001).

## 6 Exploration Activities

### 6.1 Exploration Overview

Intensive artisanal gold workings pre-1900's extend throughout the Konongo leases. In 1901, during the "Jungle Rush", Europeans discovered high grade quartz reef/vein style mineralization at Obenemase, and later Konongo.

Between 1903 and 1983 several periods of sustained underground mining occurred in the Konongo region. A total of 2.84 million tonnes of ore was processed to produce 1.45 M oz of gold, at a recovered grade of 15.7 g/t gold.

In 1986, the State Gold Mining Corporation of Ghana ("SGMC") was granted a 125 square km mining lease over the Konongo project area for a term of 30 years. In 1988, a joint venture between SGMC and North Queensland Company Limited ("NQC") of Australia was established to treat oxide ore at Obenemase.

Between 1988-1992, the joint venture company, Southern Cross Mining Limited ("SCM"), heap leached a total of 852,000 tonnes of ore for 86,295 oz gold at a recovered grade of 3.15 g/t gold. Poor recoveries (<60%) and insufficient oxide ore reserves resulted in termination of mining and the joint venture in 1992.

In 1994, Obenemase Gold Mines Limited ("OGM") executed an Acquisition Agreement with SCM, SGMC, NQC and the Government of Ghana, to purchase the 125 square km Konongo Gold Concession for a consideration of US\$8.2 million in cash/shares.

In 1995, following the purchase of a second hand CIP oxide plant (320,000 t/a) from Aurora Australia, OGM commenced open pit mining at Boabedroo, Apan, Atunsu, Aserewa, and Obenemase (see Figure 3). Between 1995 and 1997, OGM treated 614,000 tonnes of ore grading 2.96 g/t for 58,500 oz gold. Mining halted in 1997 due to insufficient oxide ore and poor gold recoveries, which saw operating cost increase from a low of US\$112/oz gold in June 1996 to US\$397/oz gold in June 1997.

Between 1903 and 1997 a total of 4,349,000 tonnes of ore is estimated to have been treated from the Konongo concession for 1,648,210 oz gold, at a recovered grade of 11.79 g/t gold.

In 1998, RML acquired the property. Economics saw them drop the tenement in 2002, after attempting to attract a JV or sale. A pre-feasibility study carried out by RML indicated good potential for the

definition of significant sulphide resources and encouraging metallurgical recoveries from Obenemase mineralization by flotation, pressure oxidation and cyanide leaching.

In December 2002, the Owere ML's were acquired from the Government of Ghana by Talos Ghana Ltd (Talos). Talos did not undertake any exploration or development work on the project.

In February 2004, Talos entered into a joint venture agreement with AFG to form Owere Mines Ltd (Owera). Mwana (then African Gold Plc) completed several exploration programs at the Project consisting of regional soil geochemistry, trenching and a combination of diamond core and reverse circulation drilling.

RC drilling programs largely focused on the Boabedroo South prospect where the primary objective was to investigate the continuity and trend of mineralisation at the Boabedroo South prospect along the Odumase – Boabedroo mineralised system, as well as to confirm/extend mineralisation intersected in a parallel system to the east. Drilling was designed to test the continuation of mineralisation to about 150m depth and to collect sufficient data to enable the near surface oxide resource to be estimated.

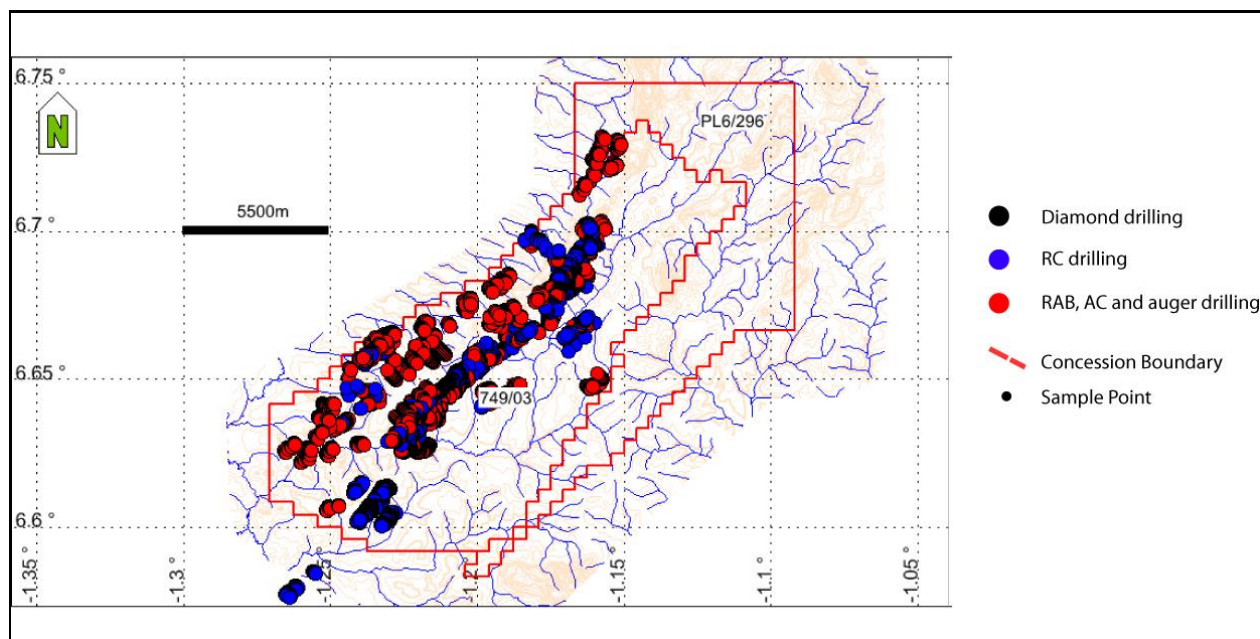
Signature Metals commenced work at the Project in May 2009 and carried out diamond drilling (11 holes for 3,043 metres), RC drilling (96 holes for 9,116 metres), Aircore drilling (131 holes for 2,874 metres), and trenching (6,025 metres). A draft mining study, based on remnant oxide potential was commenced. The plant at Obenemase was rehabilitated and operational in May 2011.

The Old Konongo Tails Dam (also termed the Leopard Tails Dam) contains the waste product from the processing of underground mining at Konongo. It was drilled by Signature on a grid varying between 25m x 25m and 25m x 50m.

Liongold Corporation acquired 74% of Signature Metals in March 2012 (since increased to 78%). The mining of tails was suspended and two oxide resources, at Boabedroo South Extended and Kyereben West were the subject of trial mining. Poor economics saw these trial projects suspended in the first quarter of 2013.

In 2012-2013 drilling has included a 66,000m regional AC program, focussed on geophysical and geological targets identified from geophysics and geochemistry, commenced in 2012 (Figure 15). Drilling was as closed fences on 300m spaced lines. Anomalous results ( $>0.25\text{g/t Au}$  in 4m composites) were re-split and the line spacing halved.

A resource drilling program targeting sulphides was also commenced in 2013, focussed on the Obenemase Deposits (Dominy and van Lente, 2014a). The work included RC precollars for deeper diamond holes. All targets were shallower than 300m vertical depth and included infill and step-out drilling. Resource drilling Step-outs were 40m on open mineralisation.



**Figure 22: All drilling, Konongo.**

In January 2013, Liongold Corporation, in a strategic review of operations, decided to re-focus efforts onto the sulphide-hosted ore potential at Konongo and commenced a technical life of mine study (Scoping Study) focused onto accelerating the assessment of sulphide the gold mining underground potential within the lease.

Since March 2014, nine Diamond Drilling (DD) holes were completed for 1,510.8m. Reverse Circulation (RC) drilling completed 15 holes for 1,661m. Holes were pre-collared with Reverse Circulation (RC) drilling. RC drilling completed 36 holes for 3,613m. Significant drilling results are summarised in Table 8 (RC and DD) and are detailed in Section 6.1.3 – Drilling.

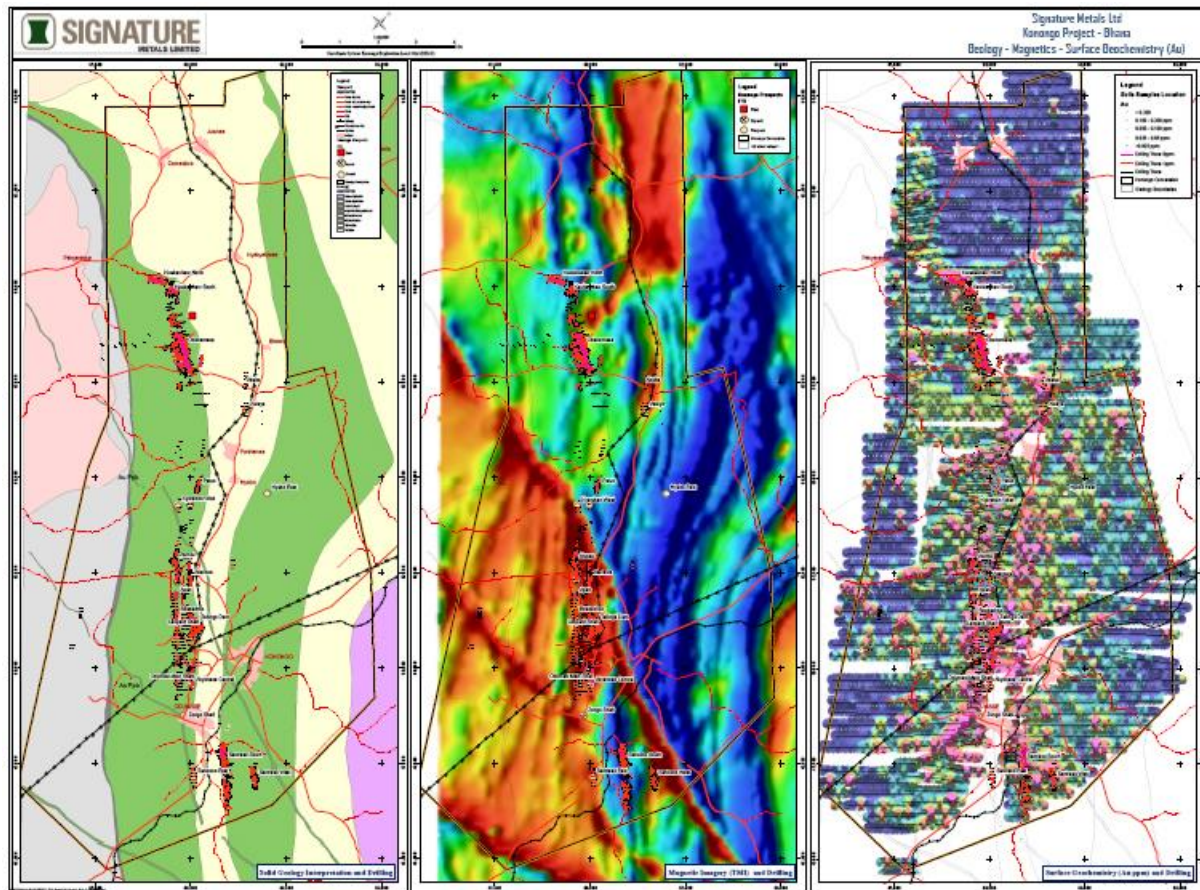
Since Liongold acquired the property, approximately 103,000 metres have been drilled. Drilling includes:

- 22,315.8m of surface diamond drill (DD),
- 16,031m. of surface Reverse Circulation (RC) drilling, and
- 66,000m of Air Core (AC) drilling.

The most recent drilling phase was concluded in mid-May 2014, finishing a step-out program to test mineralisation to 300m vertical (0mRL).

Currently, two sulphide targets are the focus of additional resource work – a shallow zone of high grade sulphide mineralisation directly beneath the historic Obenemase A Lode pit and a high grade sulphide zone identified beneath the Boabedroo South Extended pit. Both areas require metallurgical review and may require additional surface drilling to demonstrate mining potential. The work is expected to continue over 8-15 months. Oxide potential at Akyenase and at Obenemase is also being reviewed in a similar timeframe.

Positive results for the development of these targets will revive the option to follow up on other gold targets identified by historic drilling. All other identified targets are sulphide mineralisation.



**Figure 23: Geology, magnetics and soil geochemistry**

Historically, exploration occurred concurrently with mining, and was focused on the two parallel shear zones (and subsidiary shears) hosting the majority of known gold mineralisation. The shears, separated by 300-500m, are the western Boabedroo Shear and the Eastern Zongo Shear. Both host structurally controlled gold deposits and generally include arsenopyrite associated with the mineralisation or as part of the alteration assemblage. Several other exploration targets have been identified on the property using multiple techniques (and generations of technology) over several decades in combination with iterations of geological and structural interpretation. Exploration includes geophysical surveys, soil sampling and trenching, as well as regional Aircore, RAB and RC drilling programs.

Recorded methods used during exploration include:

- Geophysical methods (magnetics, VTEM and radiometrics).
- Geochemical methods (soils).
- Diamond core drilling (resource definition).
- Reverse circulation (RC) drilling (resource definition).
- Air core drilling and trenching.

## 6.2 Exploration Methods

### 6.2.1 Geophysics and Remote sensing

Geophysical techniques were used for prospecting as early as 1935 and have continued to be used up to the present day. Many are pre-digital data and are known only because of historic references. Raw data and plots have not been located on site. Historic surveys (before 1980) include ground electrical methods, ground magnetics and some airborne geophysics.

Most recent surveys have been conducted as regional surveys by Fugro. Heliborne surveying included ternary radiometrics, magnetics and VTEM. 1,246 line kilometres of detailed helimagnetic/EM data flown by Aerodat in 1995.

In 2012, Fathom Geophysics was engaged by Owere Mines to apply our suite of enhancement filters and semi-automated interpretation routines to the 2009 VTEM survey data collected over the Konongo project area in Ghana (Figure 13). The survey was flown as part of a larger EU funded survey with a line spacing of 400m and a direction of 130°. Magnetic data collected in 1995 as part of a heli-borne magnetic & EM survey flown by Aerodat was also filtered and enhanced as the line spacing was 200m and the data were of good quality and complimented the VTEM data (Figure 23).

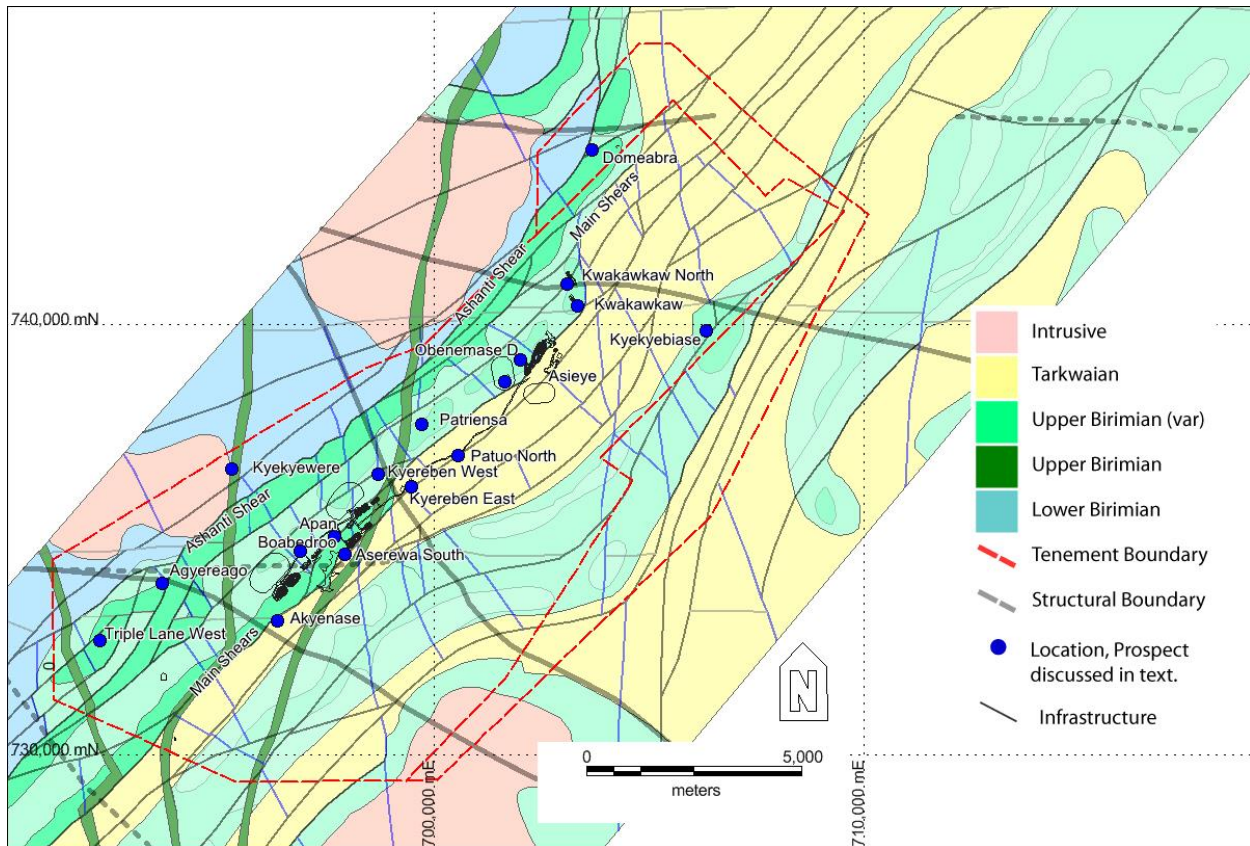


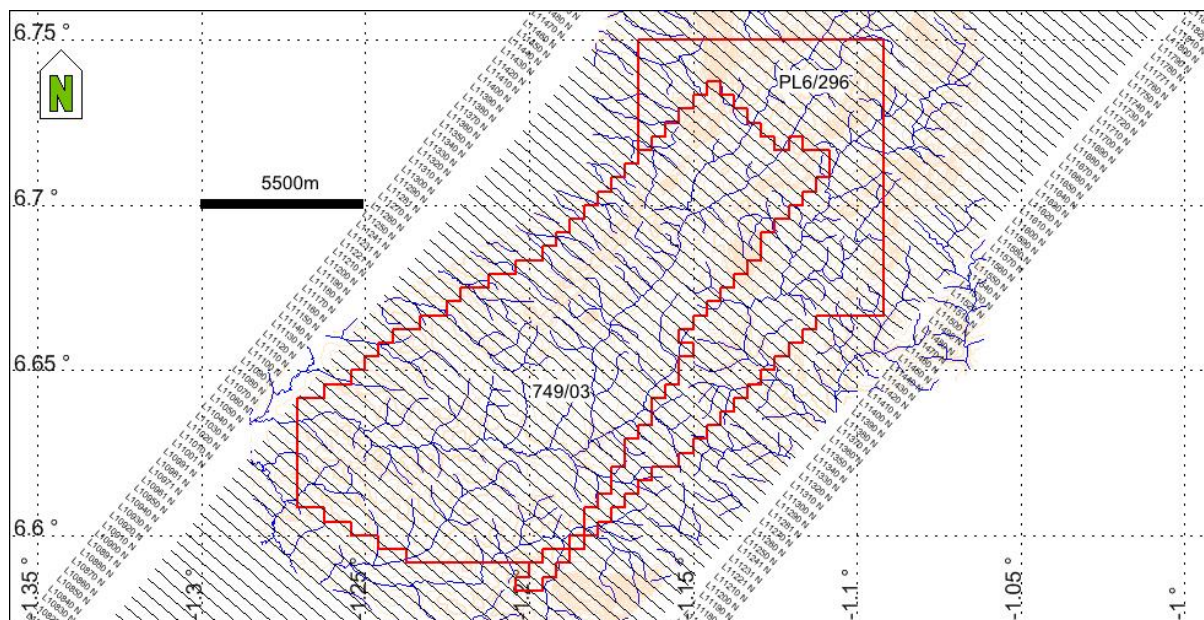
Figure 24: Geophysical reinterpretation, Konongo

The magnetic and electromagnetic (EM) data collected in 2009 over Konongo and surrounds have been filtered and auto-interpreted by Fathom Geophysics to extract features important for target generation and focused ongoing exploration; such a NE trending shears and NW cross-faults; lithological contacts, possible dilation and closing zones along the conductive units, location of intrusives and highly conductive zones. A lithological and structural interpretation using the products generated was completed (Figure 24).

Remote sensing at the Konongo Site has not been attempted. Thick vegetation (>70%) precludes the methodology as an effective exploration tool.

The major surveys for which records have been located are:

- 1935: Electrical survey carried out by the Electrical Prospecting Company of Sweden;
- 1946: Ground magnetics at Kwakawkaw;
- 1956: A magnetic variometer survey north of the Nanwa Gold Mine;
- 1959-60: Vertical magnetic intensity survey over known reefs;
- 1960: Aeromagnetic traverses flown by Hunting Surveys Ltd. with flight lines of 1/3 mile;
- 1967: Electromagnetics (Turam) and ground magnetics; and
- 1973: Resistivity survey at Nanwa (extensions to Obenemase A & B lodes). Report by D. Hastings of the University of Science and Technology at Kumasi.



**Figure 25: flight lines, 2005 regional geophysics survey, Aerodat.**

## 6.2.2 Geochemistry

Geochemical sampling has been conducted as several programs over the entire Konongo Gold Project. Traditional soil sampling has been employed. However, the methodology has not been documented. The exception is the most recent program, multi-element XRF sampling in 2012 (Figure 26).

Over 500 line kilometres of sampling (>19,273 sample points) with conventional soil sampling programs. During the 1970's, State Gold Mining Company carried out orientation geochemical surveys, demonstrating the presence of significant arsenic anomalism at surface. A geochemical sampling program commenced in November 1990 based on sample grid of 800m by 30m, covering the Tarkwaian contact and uppermost Birimian volcanic belt. Numerous gold-arsenic anomalies were detected in Birimian and Tarkwaian rocks but follow-up was limited. Signature Metals followed up the soils program in 2009 and 2012, covering the extents of the Konongo and Kurofa Licences.

Samples have been taken throughout the Konongo Gold Project as multiple phases of work spanning several decades. Early programs focused on the mine structures were gold-only soil surveys. Subsequent surveys were also assayed for arsenic.

Early work included gold-only assays and was based on 600m by 30m sampling grids. Follow up infill sampling reduced sampling to 300m line spacing. Subsequent phases of sampling included gold and arsenic geochemistry. It was also based on the same grid spacing.

In 2013, analysis with field portable XRFs was conducted as a repeat of the western grid to assess polymetallic anomalism. 4400 points were taken on a 300m by 30m sample spacing and tested for 33 elements.

All data is stored in the geodatabase on site.

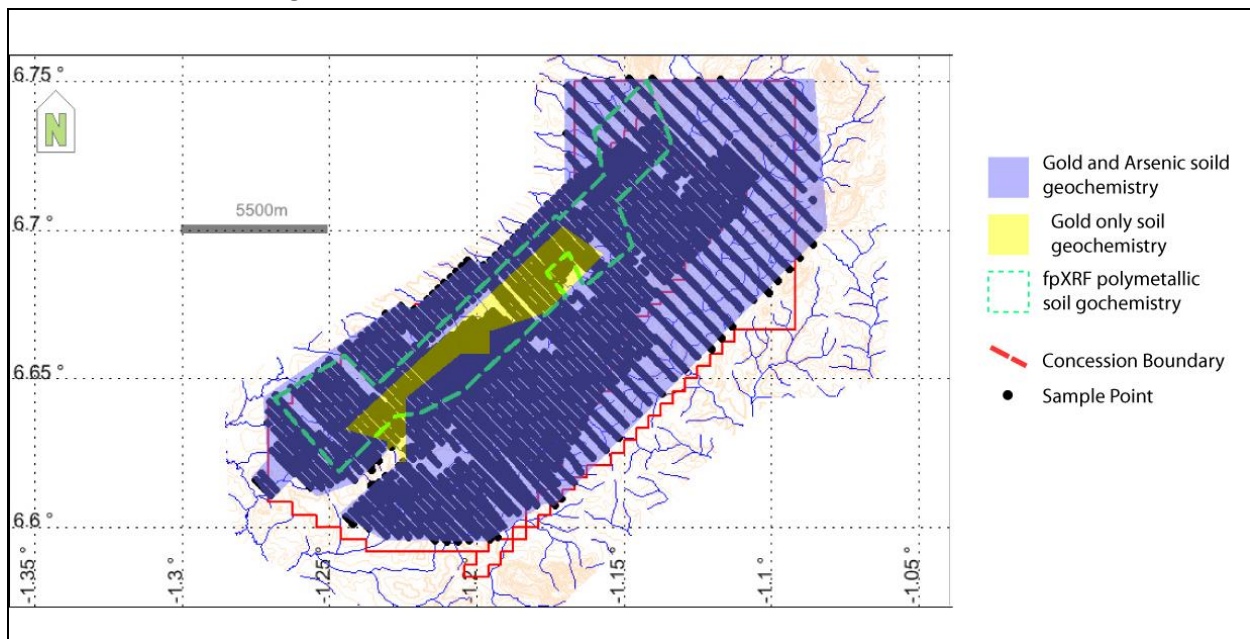


Figure 26: Geochemical soil sampling programs

### **6.2.3 Drilling**

Extensive underground exploration drilling was carried out through the life of the Konongo mines to maintain a reserve base ahead of production, but few records of this work have been preserved. Similarly, the records of systematic surface exploration are fragmentary. A major database and data capture exercise was conducted in 2001 by Resolute Mining Ltd and in 2009 by GeoBase (see Data entry and validation) and data capture is complete from at least this time.

Historical drilling has focused on two main targets centred on the depth continuity of the historic mining centres at Obenemase and Odumase, and shallow drilling along the Main Shears hosting the majority of known mineral resources. Away from the major mining centres, the depth of drill testing rarely exceeds 150m vertical, either along known shears or at regional targets.

To date, drilling has included:

Aircore: 77,171m, RAB: 19,236.2m, RC: 228,767.98m DD: 74,595.42m

### **6.2.4 Sampling**

#### **6.2.4.1 Standard Operating Procedures and Manuals**

Signature has Standard Operating Procedures (SOP) and manuals for most of the site practices. These are reviewed internally and edited as required. Edits are preserved and prior copies archived.

Internal reviewed and deemed to be generally reasonable. Operational SOPs are presented as Table 7.

**Table 7: Standard Operating Procedures, Signature Metals**

Version	Update Due	SOP Title	SOP Description
001	October-15	4.0.001 SOP Template	Template for all SOPs
002	October-15	4.2.001 CICO - The link between SOP's and QAQC.	Why SOPs are important
003	October-15	4.2.002 Introduction to Quality Control	An introduction to QC.
<b>SOPs</b>			
001	October-15	4.1.001 SOP Owere images	Naming and styles for images
003	October-15	4.1.002 SOP Crop Compensation	Process to control crop compensation and interaction with farmers
001	October-15	4.1.003 SOP Drill hole and sample naming nomenclature	Standardised drill hole and sample IDs
001	October-15	4.1.004 SOP RC Drilling and Sampling	Running an RC rig
001	October-15	4.1.005 SOP Scheduling (safety)	Ensuring correct call-in procedures are maintained, and appropriate response is in place.
001	October-15	4.1.006 SOP Soil Geochem	Soil geochemistry program execution
001	October-15	4.1.007 SOP Niton XRF Analyser	Using FPXRF for multielement analysis
001	February-15	4.1.008 SOP External Tails Sampling	Due diligence of external tails sources
001	October-15	4.1.009 SOP Standards Blanks and Duplicates	How to use standards and blanks in field programs
001	October-15	4.1.010 SOP Sample Chain of Custody	Ensuring that samples are monitored and accounted for at all times from field to lab
001	October-15	4.1.011 SOP Field and Data sign-off	A final check list for ALL data. Important!
001	October-15	4.1.012 SOP Preparing Standards from CRM Bulk Packs	Ensuring standards and blanks prepared on site are not contaminated or mislabelled
001	October-15	4.1.013 SOP Diamond Drilling and Sampling	Field operations with diamond rigs
001	October-15	4.1.014 SOP Trenching	Field requirements to trench properly
001	October-15	4.1.015 SOP Diamond Core Sampling	How to sample core
001	October-15	4.1.016 SOP Pre- and Post-Drilling Requirements	Making sure field work is prepared properly and that post-field checks and remediation are addressed
001	October-15	4.1.017 SOP Core Cut Sheet	Make sure diamond core sample sheets are correct when they go to the saws.
001	October-15	4.1.018 SOP Holy Hand Grenade	How to properly use a Holy Hand Grenade
002	October-15	4.1.019 SOP Bulk Density Determination	What is required to ensure SG data is correct
001	October-15	4.1.020 SOP Aircore Drilling and Sampling	How to run an AC rig
001	October-15	4.1.021 SOP Machine Time Keeping	Ensuring contract machinery costs are properly controlled.
001	October-15	4.1.022 SOP Stream Sampling	Streams program requirements
001	October-15	4.1.023 SOP Downhole Survey Data	QA for downhole data and data control requirements

001	October-15	4.1.024 SOP Vehicles	Documentation of vehicle use
001	October-15	4.1.025 SOP Data Updates	Requests for data, and subsequent database update.
001	October-15	4.1.026 SOP Monthly Data Exports	Standard products required for report writing
001	October-15	4.1.027 SOP Scanning	What to do and where to save data
001	October-15	4.1.028 SOP Recovery	Recording recovery and RQD data
001	October-15	4.1.029 SOP Data Management	Controlling data on site
001	October-15	4.1.030 SOP Logging	Codes, requirements, software to log core
	March-16	4.1.031 SOP Wireframing	Methodology to produce standard wireframes.
001	October-15	4.2.001 SOP Grid Transformations Surpac	Standardised grid transformations at Owere
001	October-15	4.2.002 SOP Survey Methodology and Reporting	Methodology for survey field work
001	October-15	4.2.003 SOP Survey	
001	October-15	4.2.004 SOP Rig Alignment	how to line up a rig.
001	October-15	4.2.005 SOP Volume calculation	Measuring volumes or volume change.

#### 6.2.4.2 Diamond Core Sampling

Work conducted by Signature has been documented as an SOP (Table 7). Standard operating procedures for historic work are unavailable. However, partial information regarding procedures is preserved in statutory reporting.

Sampling intervals were marked out on DD core and the core was cut in half on the electric diamond blade core saw, where the cut is made 3 mm to the side of the orientation line with the half core portion that contains the line being kept in the tray and stored and the second portion broken up for assay (RSG, 2006).

Work conducted by Signature has been documented as an SOP. Diamond drill core samples have variable sample interval widths, based on observed geological boundaries and variation in the nature of mineralisation. The minimum sample interval is 0.3 m and the maximum sample interval is 1.0 m. Reported intervals are composites of adjacent samples, which may include up to 2.0 m of internal dilution (grades less than 1.0g/t Au) and do not include any external dilution. All reported intersections have a weighted average grade greater than 1.0g/t. Reported interval widths are down whole widths. No top-cut has been applied. Samples sent to the laboratory are NQ half core samples, split using a diamond saw and cut based on the orientation line. To minimize bias, alternate halves of the cores were submitted for assay, irrespective of observed geology and mineralisation. Samples are submitted to an internationally accredited laboratory in Ghana (ALS Kumasi). Sample security is observed throughout the drilling and submission process.

#### 6.2.4.3 Reverse Circulation Sampling

RC work conducted by Signature has been documented as an SOP (Table 7). Standard operating procedures for historic work are unavailable. However, partial information regarding procedures is preserved in statutory reporting.

RC samples are sampled as 1 m intervals, irrespective of observed geology. Reported intervals are composites of adjacent samples, which may include up to 2 m of internal dilution (grades less than 1.0g/t Au) and do not include any external dilution. All reported intersections have a weighted average grade greater than 1.0g/t. Reported interval widths are down whole widths. No top-cut has been applied. Samples sent to the laboratory are 1/8<sup>th</sup> riffle split samples, split using a three tier riffle splitter. Samples are submitted to an internationally accredited laboratory in Ghana (ALS Kumasi). Sample security is observed throughout the drilling and submission process. Samples are pulverized and a 60g charge is analysed by Fire Assay. Unmarked QA/QC samples are inserted regularly within the sample sequence (one of each in 20m) by the Company using certified reference samples and blanks, usually sourced from AMIS in South Africa. Duplicate samples are generated during the sampling process in the field and included in the sample sequence ALS Kumasi conducts internal QA/QC checks, which are made available to the company. Assay integration and validation is monitored using proprietary software, Datashed, a product developed and maintained by Maxwell Geoservices. All reported assays are certified and are supported by certified results supplied by ALS Kumasi.

#### 6.2.4.4 Aircore Sampling

No Aircore drilling was conducted during the reporting period. Historic AC work conducted by Signature has been documented as an SOP (Table 7). Standard operating procedures for historic work are unavailable. However partial information regarding procedures is preserved in historic statutory reporting.

The most recent AC drilling program was conducted by African Mining Services using two Drill Rig Australia RAB 160 rigs. Holes were drilled towards the across lithologies at minus 60 degrees and drilled to refusal. Holes were generally drilled as closed fences on lines spaced at 150m. Infill drilling lines reduced line spacing to 75m. Samples were taken on 1m intervals and split through a three tier (1/8<sup>th</sup>) riffle splitter, then combined as 4m composite samples before submission for assay. Samples were assayed at a certified laboratory (ALS Kumasi) by fire assay (AAS26). Certified results were returned and correct chain of custody was observed. Four meter composites with anomalous gold results (>0.25g/t Au) were re-split and submitted as 1m intervals. All results are down whole intercept thicknesses.

Anomalous AC assays reported are 4m composite samples. Exceptions (and the interval thickness) are indicated in the "samples" column. 4m composite samples are reported where the composite grade is greater than 0.25g/t Au. 4m composites results less than 1g/t Au include no internal dilution and consecutive samples have not been combined as single interval.

Samples are analysed by 50g Fire Assay method at internationally accredited laboratories in Ghana.

#### 6.2.4.5 Trench Sampling

No trench sampling programs occurred during the reporting period. Historic trenching conducted by Signature has been documented as an SOP (Table 7). Standard operating procedures for historic work are unavailable. However partial information regarding procedures is preserved in statutory reporting.

Trench samples are collected at 1-meter intervals and care was taken to take a consistent ~4kg sample from a cut perpendicular to observed structure. The trenches were logged for geology, structure and graphic logging mapping) of the trench completed prior to sampling. Sample sheets were prepared, annotated bags laid out based on meter marks were added from a common reference point at the western or southern end of the trench. Specific information on the bed-rock type was recorded, and, where there was any doubt whether the trench had exposed bedrock, a comment was made. Standards, blanks and duplicate samples were introduced at 1 in every 20 samples for quality control, the sample for QAQC indicated by the logging geologist. Sampling the floor was discontinued and only both sides (preferentially the northern side) of the trench were sampled. Location of sample intervals was indicated on the walls with spray paint and each interval photographed for reference. Samples were collected in plastic bags and marked with alphanumeric tickets and marker pen.

#### 6.2.4.6 Soil Sampling

A 1,300 point soils program was completed during the reporting period. The methodology for soils conducted by Signature has been documented as an SOP (Table 7). Standard operating procedures for historic data are not available. Soils sampling at Owere is conducted by three man teams taking samples

every 30m on lines spaced 300m apart. The technique has minimal environmental impact. No lines are cut – the teams navigate with GPS. At each soil sample site, a 20cm diameter hole is dug to the bottom of the soil B horizon (the base of the root systems). Duplicates are collected in the field by quartering a collected sample on a clean sample bag. The sample is taken from the field for analysis at an accredited laboratory, or by field portable XRF for multi-element requirements.

#### **6.2.4.7 Sample Preparation**

There are few records on sampling and assaying procedures prior to Signature taking ownership of the project. Sampling techniques were most recently reviewed in February 2014 resource estimate as part of the Obenemase resource drilling (RSCMME, 2014). The review is current. Snowden also checked all the data in 2014. Documentation was supplied to Snowden by Signature. Some material presented here is drawn from Sterk (2014).

For all Signature sampling programs, samples were prepared on-site. Chain of custody was observed.

Sampling (e.g. RC and trench) was carried out at the collection site. Core samples were bagged at the core yard after logging and cutting. All samples received alpha-numeric tickets and were placed in plastic bags. The primary ~2-5 kg samples are received by the laboratory and include standards and blanks. Samples were weighed, with those over ~4 kg undergoing riffle splitting. Coarse rejects were retained. Samples were then dried for 24 hours at 85°C. All samples were pulverised using an LM5 pulveriser for 6 to 10 minutes. Grind checks were undertaken every 40 samples. The pulp was split in the pulveriser bowl by using a scoop. The resulting ~400 g pulp sub-sample is placed into a paper bag for further analyses. Pulp residues are stored for two months and then discarded. The ~400 g pulp sub-sample is further split by scooping into a measured 50 g charge for fire assay. The pulp residue is returned to Signature and stored. Signature stores all pulp residues on site. RSCMME catalogued all pulps and coarse rejects stored on site.

A summary of the sample flow-sheet is given in Figure 27.

Dominy (2014a, 2014b) notes that the sample preparation and assay used methods are reasonable. It notes that they are not optimised for coarse gold, which may be present. Splitting of pulps by scooping is poor practice, promoting various errors such as extraction error and grouping and segregation error. Riffle splitting of the entire sample is the best option. Where an LM5 is used, it is noted that it is difficult to remove the pulp efficiently due to their design.

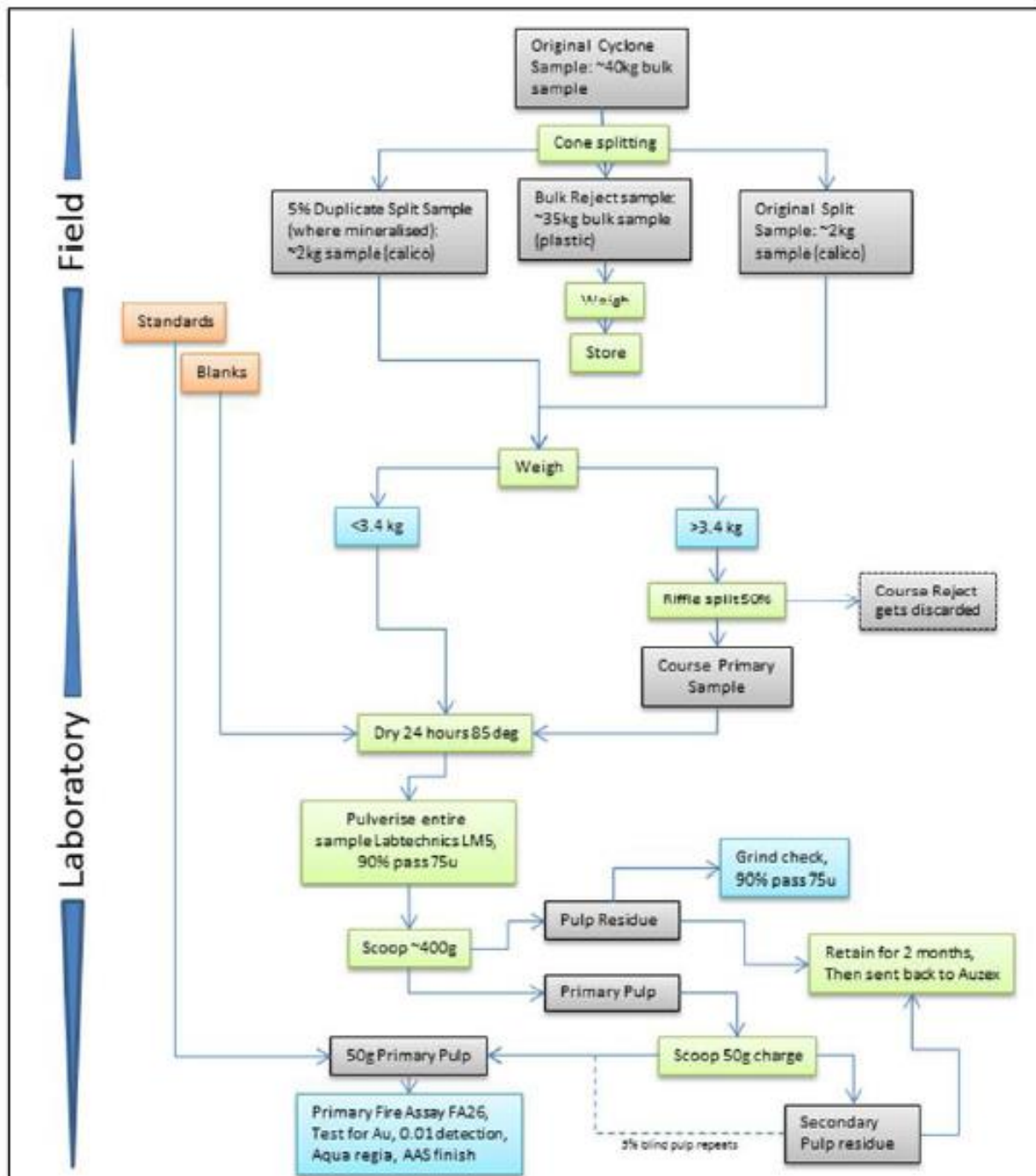


Figure 27: sample preparation.

### 6.2.5 Chemical Analysis

Samples are assayed by a 50 g charge for regional samples and 60g charge for resource samples. Analysis is by fire assay with aqua regia digest and AAS finish (0.01 g/t Au detection limit). An audit of the ALS Laboratories has not been conducted. Snowden notes that the assay used methods are reasonable. It notes that they are not optimised for coarse gold, which may be locally present. Method precision is reported by the lab as +/- 10%, and the reporting range is 0.01-100ppm.

### 6.2.6 Quality Assurance and Quality Control

An independent quality assurance quality control (QAQC) report was prepared for the Aserewa, Apan, Atunsu and the Boabedro deposits in 2009 (DataGeo, 2009a). The raw drill hole database shows that only the Boabedro and Obenemase deposits contain data collected by Signature.

The QC data analysed in the report included:

- assay repeats
- pulp duplicates
- field duplicates
- certified reference materials (CRMs)
- blanks.

Signature used ALS laboratory for sample preparation and analysis.

Blanks and CRMs were inserted within samples every 20 m, while repeats were inserted every 10m. The CRMs used were purchased from Geostats Pty Ltd and the blank material was collected from the Labadi beach in Accra (DataGeo, 2009a).

The QAQC report showed good accuracy, with a slightly negative bias for the CRMs and moderate precision in the repeats, however poor precision was observed in the field duplicates. The blanks had a few failures.

The Obenemase D report (DataGeo, 2010) reviewed results for the QC samples inserted within the assay data collected by Signature. The QC samples included assay repeats, field duplicates, CRMs and blanks. The report comments that 'a great number' of the blanks inserted in RC samples consignments plotted above the upper limit, while blanks submitted with DD samples showed better results (DataGeo, 2010). Of 12 submitted CRMs, eight did not have certified information as they were no longer listed in the supplier's catalogue. Only four CRMs could therefore be analysed. This reduced the representivity of the CRMs assessed in the dataset. Of the four CRM's, only one (G 900-5, with medium to high grade) had a substantially higher standard deviation compared to the certified standard deviation value for both RC and DD samples. The assay repeats and field duplicates for RC were reported to have shown good precision (DataGeo, 2010).

### 6.2.7 Sample Security

Sample security is observed on-site. Samples are prepared either at the sampling site and returned to a centralised facility each day. Drilling sites and the central facility have a 24 hour security presence. Samples are periodically trucked to ALS Kumasi, transported by ALS. The sample batch is signed over to the company driver who signs the triplicate submission sheet on departure from site. The laboratory generates and sends a receipt on delivery, delivered by email to management.

## 6.3 Exploration Results

### 6.3.1 Exploration Results Overview

A drilling program was suspended on May 12, 2014, following the completion of drill testing targets to 300m vertical at Obenemase A, B and R. No additional drilling has occurred following this program.

A soil sampling program within the Kurofa Prospecting Lease (P6/296) totalling 1,300 points was completed in December 2014.

Significant work on site has focused on reviewing structural, geological and mineralisation data, as well as validating and checking all datasets for exploration targets. Campaign review and digitizing of historic paper maps and plans has continued

### 6.3.2 Exploration Drilling

Drilling from April 2014 was focused on step-out drilling at Obenemase, and contributes to the revised Mineral Resource at Obenemase (Section 8). Drilling targeted Obenemase A, B and D Lodes, as well as Obenemase R Zone. The drilling is presented as Figures 28-31.

Best drilling results include:

13.54m at 4.92g/t Au from 164.46m (OBADD0056) – Obenemase A  
7.6m at 6.47g/t Au from 288.45m (OBDDD0065) – Obenemase A  
11.09m at 1.83g/t Au from 307.45m (OBDDD0065) – Obenemase A  
3.69m at 5.4g/t Au from 334.06m (OBADD0056) – Obenemase A  
6.02m at 6.41g/t Au from 174.36m (OBDD0057) – Obenemase R  
5m at 3.96g/t Au from 182m (OBADD0056) – Obenemase R  
5.3m at 7.78g/t Au from 325.3m (OBDDD0053) – Obenemase R  
9m at 4.08g/t Au from 52m (OBDR0060) – Obenemase D  
4.79m at 4.62g/t Au from 145.94m (OBDDD0058) – Obenemase D

A complete list of drilling results is presented as Table 8.

Results were encouraging, and demonstrate that:

- The Obenemase A Lode mineralisation remains open at 300m depth over a strike length of 500m.
- Obenemase R links the shear hosting Obenemase B to the shear hosting Obenemase D, which are parallel and 300m apart. The plunge extent of Obenemase R has been traced 550m to the northeast, beneath the surface expression of Obenemase A Lode.
- Obenemase D has similar structural controls to Obenemase A and B and drilling has intersected the mineralisation at 100m vertical. The mineralisation remains open in all directions, but is most likely to be continuous down-dip and down-plunge to the northeast.

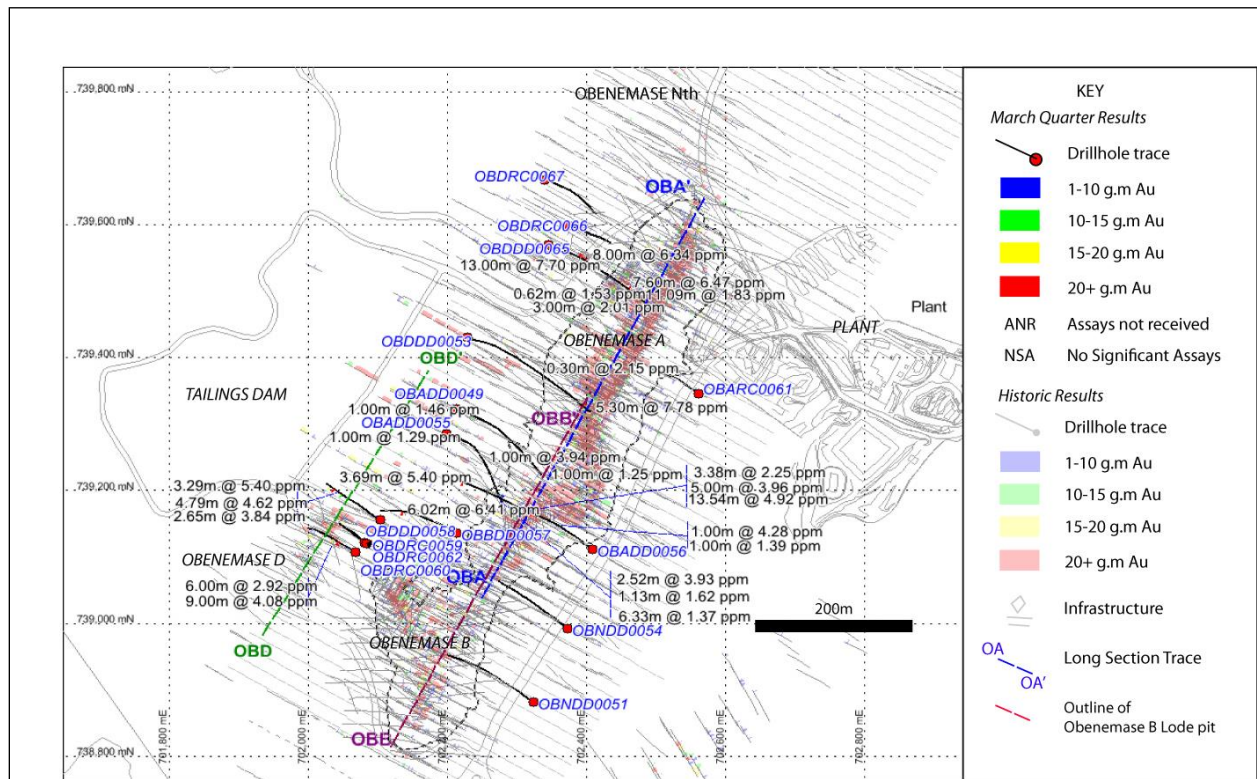


Figure 28: Plan of drilling showing long section traces for Figures 11, 12 and 13.

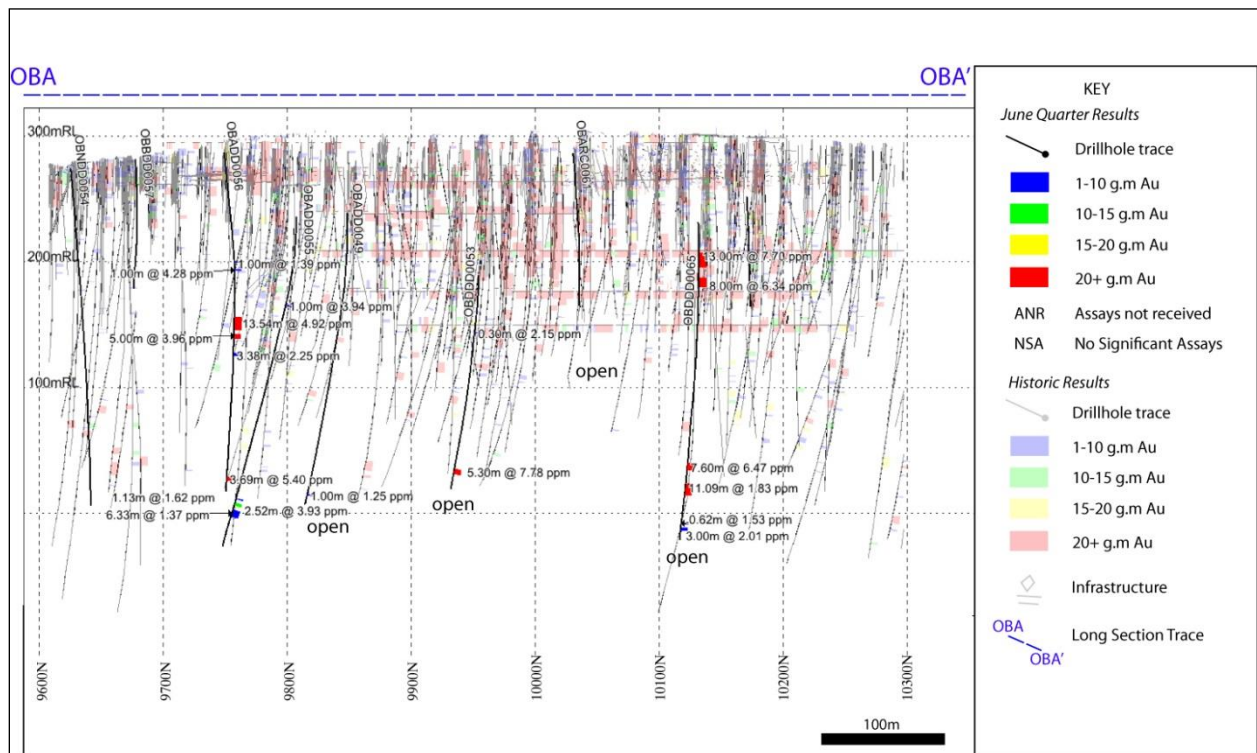


Figure 29: Long Section OBA-OBA' (see Figure 23) showing holes targeting Obenemase A Lode

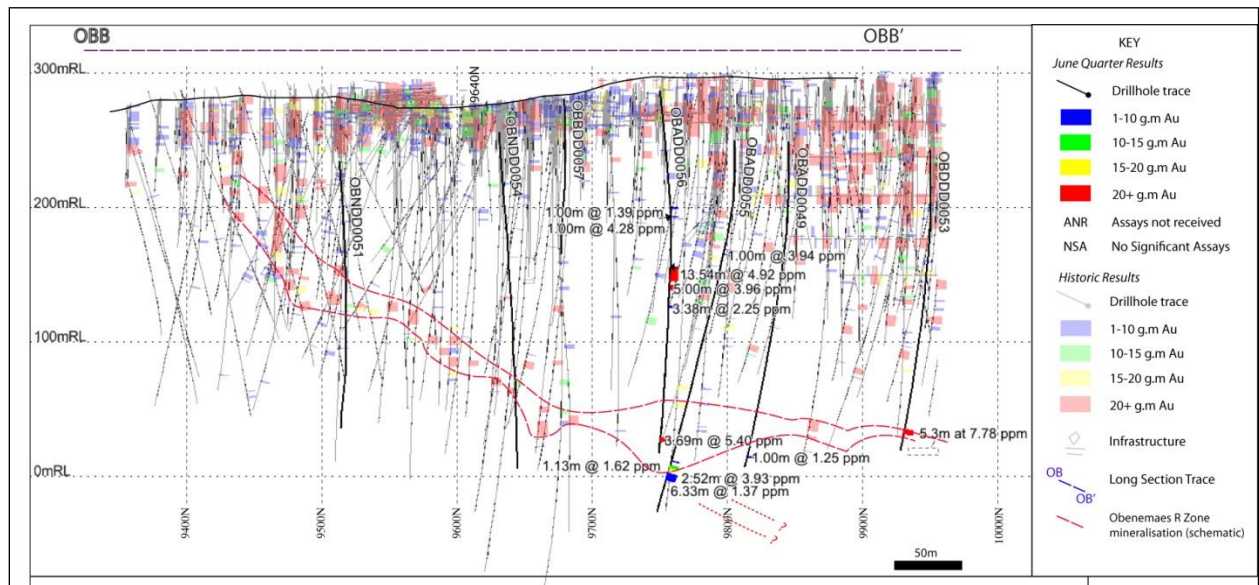


Figure 30: Long Section OBB-OBB' (see Figure 23) showing holes targeting Obenemase B Lode

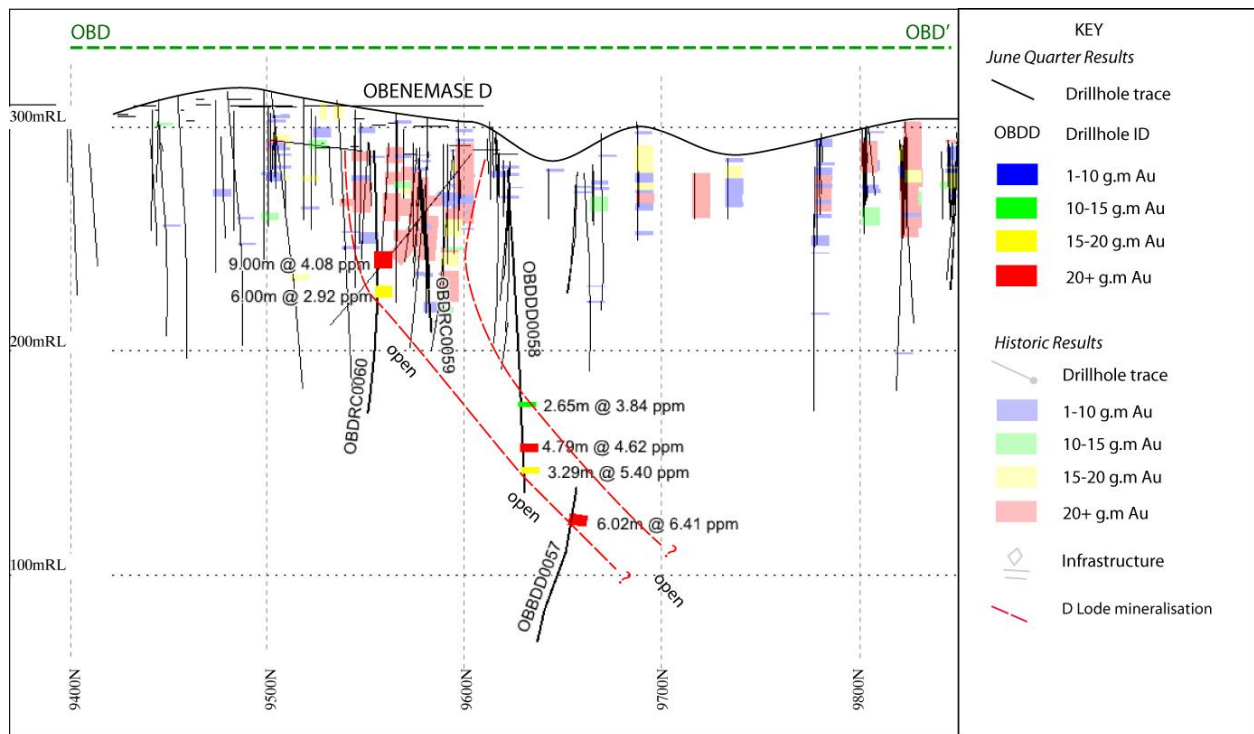


Figure 31 : Long Section OBD-OBD' (see Figure 23) showing holes targeting Obenemase B Lode

**Table 8: Significant DD and RC drilling results, year ending March 2015**

Hole ID	East	North	RL	Azimuth	Dip	Hole Depth	From	To	Interval (m)	Au (g/t)	Target
OBADD0048	702460	739128	284	305	-60.7	313.5	250.36	252.28	1.92	1.61	Obenemase A Lode
							262.97	265.1	2.13	2.37	Obenemase A Lode
							283.19	283.93	0.74	1.25	Obenemase A Lode
							286.54	288.22	1.68	1.81	Obenemase A Lode
OBADD0049	702214	739322	297	111	-59.1	330	322.11	323.15	1.04	1.25	Obenemase R Zone
OBND0051	702323	738881	268	310	-61.2	271.8					Obenemase A Lode
OBBRC0052	702229	739430	294	309	-68.8	198					abandoned
OBDDD0053	702229	739430	294	107	-55.8	346.4	184.6	184.9	0.3	2.15	
							325.3	330.6	5.3	7.78	Obenemase R Zone
OBNRC0054	702373	738991	277	308	-66	198					Obenemase R Zone
OBADD0055	702198	739286	300	110	-63.4	355.5	2	3	1	1.29	Obenemase R Zone
							147	148	1	3.94	Obenemase A Lode
							313.61	314.74	1.13	1.62	Obenemase R Zone
							317.4	319.92	2.52	3.93	Obenemase R Zone
							323.64	329.97	6.33	1.37	Obenemase R Zone
OBADD0056	702409	739111	287	308	-54.9	349.4	107	108	1	1.39	Obenemase A Lode
							115	116	1	4.28	Obenemase A Lode
							164.46	178	13.54	4.92	Obenemase A Lode
							182	187	5	3.96	Obenemase A Lode
							202.2	205.58	3.38	2.25	Obenemase A Lode
							334.06	337.75	3.69	5.4	Obenemase R Zone
OBBDD0057	702213	739135	281	306	-65	241.5	174.36	180.38	6.02	6.41	Obenemase R Zone
OBDDD0058	702103	739155	281	305	-59.3	172.6	123.06	125.71	2.65	3.84	Obenemase D Lode
							145.94	150.73	4.79	3.27	Obenemase D Lode
							158.71	162	3.29	4.42	Obenemase D Lode
OBDR0059	702081	739122	286	307	-60.5	90					Obenemase D Lode
OBDR0060	702068	739107	289	304	-60.5	140	52	61	9	4.08	Obenemase D Lode
							70	76	6	2.92	Obenemase D Lode
OBARC0061	702562	739346	290	308	-61.2	138					pre-collar*
OBDR0062	702083	739121	286	310	-60.2	67					Obenemase D Lode
ASWRC0063	698037	734991	251	138	-55.1	55					Aserewa
ASWRC0064	697958	734942	246	139	-59.4	120	114	115	1	3.08	Aserewa
OBDDD0065	702346	739570	298	110	-62.2	358.4	102	115	13	7.7	graphitic shear
							124	132	8	6.34	graphitic shear
							288.45	296.05	7.6	6.47	graphitic shear
							307.45	318.54	11.09	1.83	Obenemase A Lode
							343.64	344.26	0.62	1.53	Obenemase A Lode
							347.22	350.22	3	2.01	Obenemase A Lode
OBDR0066	702374	739599	295	110	-62.1	146					pre-collar*
OBDR0067	702339	739668	291	108	-57.6	168					pre-collar*

Diamond drill core samples have variable sample interval widths, based on observed geological boundaries and variation in the nature of mineralisation. The minimum sample interval is 0.3 m and the maximum sample interval is 1.0 m. Reported intervals are composites of adjacent samples, which may include up to 2.0 m of internal dilution (grades less than 1.0g/t Au) and do not include any external dilution. All reported intersections have a weighted average grade greater than 1.0g/t. Reported interval widths are down hole widths. No top-cut has been applied. Samples sent to the laboratory are NQ half core samples, split using a diamond saw and cut based on the orientation line. To minimize bias, alternate halves of the cores were submitted for assay, irrespective of observed geology and mineralisation. Samples are submitted to an internationally accredited laboratory in Ghana (ALS Kumasi). Sample security is observed throughout the drilling and submission process. Samples are pulverized and a 60g charge is analysed by Fire Assay. Unmarked QA/QC samples are inserted regularly within the sample sequence (one of each in 20m) by the Company using certified reference samples and blanks sourced from AMIS in South Africa. Duplicates are designated by Signature, and are generated as a second 60g charge from the original sample. ALS Kumasi conducts internal QA/QC checks, which are made

available to the company. Assay integration and validation is monitored using proprietary software, *Datashed*, a product developed and maintained by Maxwell Geoservices. All reported assays are certified and are supported by certified results supplied by ALS Kumasi.

RC samples are sampled as 1 m intervals, irrespective of observed geology. Reported intervals are composites of adjacent samples, which may include up to 2 m of internal dilution (grades less than 1.0g/t Au) and do not include any external dilution. All reported intersections have a weighted average grade greater than 1.0g/t. Reported interval widths are down hole widths. No top-cut has been applied. Samples sent to the laboratory are 1/8<sup>th</sup> riffle split samples, split using a three tier riffle splitter. Samples are submitted to an internationally accredited laboratory in Ghana (ALS Kumasi). Sample security is observed throughout the drilling and submission process. Samples are pulverized and a 60g charge is analysed by Fire Assay. Unmarked QA/QC samples are inserted regularly within the sample sequence (one of each in 20m) by the Company using certified reference samples and blanks, usually sourced from AMIS in South Africa. Duplicate samples are generated during the sampling process in the field and included in the sample sequence ALS Kumasi conducts internal QA/QC checks, which are made available to the company. Assay integration and validation is monitored using proprietary software, *Datashed*, a product developed and maintained by Maxwell Geoservices. All reported assays are certified and are supported by certified results supplied by ALS Kumasi.

NSA – no significant Assay. ANR – Assays not returned. Co-ordinates use datum WGS84 and projection transmercator UTM30. Coordinates are determined using a differential GPS. Results reported in italics (and prefixed 'including' are subsets of the previous assay, and are sub-intervals within the larger intercept which have a significantly elevated gold grade when compared to the weighted average grade.

### 6.3.3 Kurofa Soils Program

In December 2014, a 1,300 point soils program to infill the gaps in the geochemistry database over the Kurofa Prospecting Lease was concluded. Results are not yet available. Samples have been collected on a 30 x 300m grid throughout the Kurofa Prospecting Lease (Figure 22) and test all interpreted known and geophysics-interpreted structures and lithologies which demonstrate mineralisation potential. Results are not available.

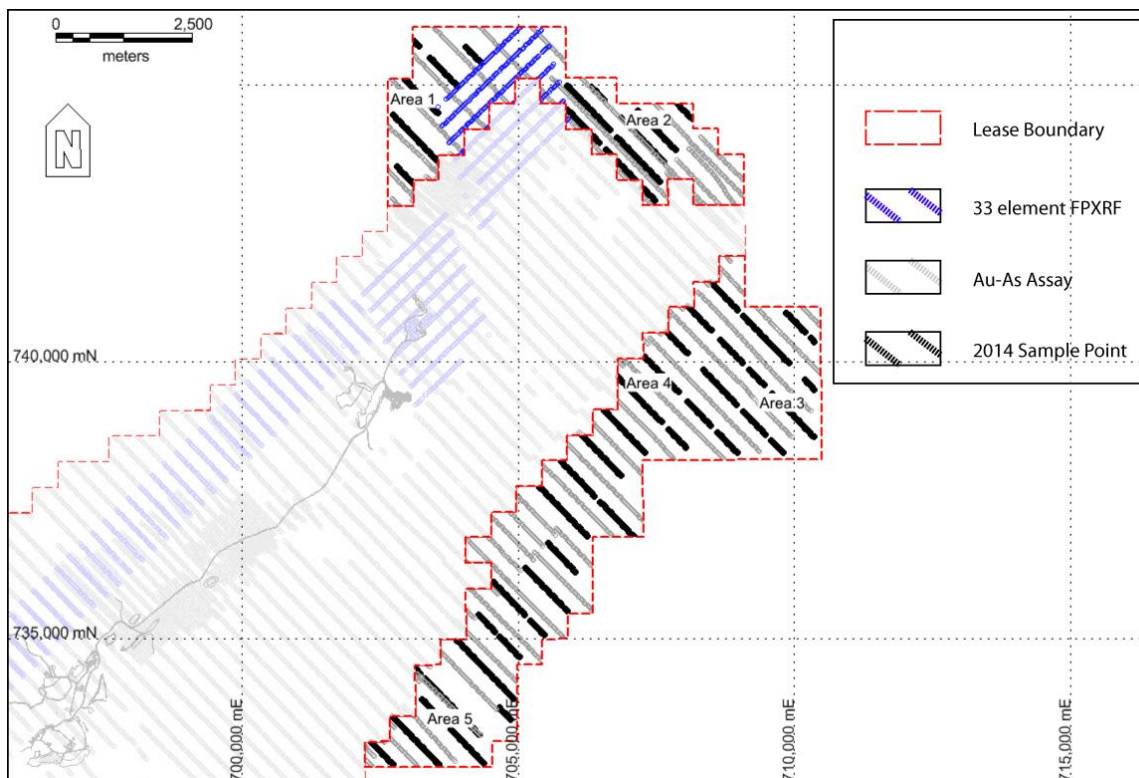


Figure 32: 2014-2015 soils program

## 6.4 QAQC Results

Most of the historic QC data collected at Konongo was poorly captured or implemented. Preservation or migration of that data into a project database was poorly applied. Most QAQC data available for review comes from activities postdating 2010. Methodologies are poorly preserved and may not have been in place. Some details can be pieced together from historic reports and memorandums. QC data available at Konongo includes:

- Blanks.
- Certified reference materials (CRMs)
- Field duplicates
- Laboratory assay repeats
- Laboratory pulp duplicates

RSCMEE undertook a thorough review of all historical data in 2013 and compiled a detailed QAQC report on their findings. A summary of their work is presented in appendix two.

The 2015 mineral resource estimations are based upon data reviewed and validated by RSCMEE.

## **7.0 Mineral Processing and Metallurgical Testing**

### **7.1 Overview**

The existing CIL plant located on the Konongo mining lease area, close to the Obenemase pit, was operational between 1995 and 1999 with a nominal capacity of 320,000 tpa. The plant was designed to process oxide ore from open pits only, effectively demonstrated by recent mining of oxide ore in open pits by SCM and OGM.

The sulphide-ore potential was recognised during the years of surface mining operations. Gold recovery from transitional and sulphide ores would require installation of alternative processes, as the gold in the sulphide ore was found to be refractory with poor recoveries achieved by direct cyanidation. As a result some test work was conducted in the 1990's and provided some process design information for the treatment of the refractory gold.

Based on limited test work, the sulphide ore is considered refractory. Metallurgical test work has been undertaken at various times in order to determine the most optimal method of gold recovery. OGM carried out the most recent test work program which has mainly included investigations of pressure oxidation.

The bulk of the metallurgical samples were obtained from the Obenemase deposit, with a lesser amount from Santreso and Konongo tailings dam.

The Metcon report highlights that the initial recoveries achieved using conventional cyanide leaching on the refractory ores are poor (4.7-6.8%) increasing with rougher flotation (83.7 to 90.2%). Table 9 summarises results achieved.

The BacTech test work was conducted on flotation concentrate samples received from Metcon and demonstrated that gold recoveries of between 95 % and 99 % could be achieved from the concentrate. By contrast, cyanidation of the non-oxidised concentrate achieved gold recovery of only 42 %.

### **7.2 Metallurgical Test work**

#### **7.2.1 Oxide Ores**

Bottle roll tests completed in 1985 indicated recoveries of 95% to 97% on Obenemase oxide ore at grades between 12.3 g/t Au and 15.7 g/t Au. Column leach tests on 5 g/t Au Obenemase oxide ore gave recoveries of 68% to 88% after 24 hours and 88% after 10 days. On this basis, Signature used a heap leach recovery of 85% for mine planning.

In 1995, following the purchase of a second hand CIP oxide plant (350,000 tpa) from Aurora Australia, OGM commenced open pit mining at Boabedroo, Apan, Atunsu, Aserewa, and Obenemase. Between 1995-1997, OGM treated 614,000 tonnes of ore grading 2.96 g/t for 58,500 oz gold. Mining halted in 1997, due to insufficient oxide ore and poor gold recoveries, which saw operating costs escalate from a low of US\$112/oz gold in June 1996, to US\$397/oz gold in June 1997.

## 7.2.2 Sulphide Ores

The following reports address treatment of refractory ores at Konongo:

- SF Rayner, Metcon Laboratories, Metallurgical development test work on Obenemase gold ore refractory gold flotation, March 1997.
- JC Horston, MT Gold Ltd, Konongo Tailings, 20 June 1985.
- Lycopodium, Carbon Stripping Process for the Konongo Gold Project, December 1994.
- T Williams, BacTech (Australia) Ltd, Bacterial Oxidation for Ghana Gold Limited of an Arsenopyrite Concentrate, October 1996.
- KJ Henley, Amdel, Mineralogical Examination of Ghana Gold (Obenemase) Flotation Products, 7 March 1997.

Test work designed to test bacterial oxidation of the Konongo sulphide (primary) ore was carried out by OGM in 1996. Recoveries of 95% and 99% were reported following cyanide leaching of an oxidised concentrate (with 42% by cyanide leaching only). A high acid consumption was noted due to high concentrations of carbonate in the ore. It was found that the carbonate floated with the graphite and some sort of beneficiation process to suppress or isolate graphite during flotation would be required.

As part of the pre-feasibility study, RML provided at 2 t bulk sample of sulphide ore from the Obenemase deposit to AMMTEC Australia for pilot plant flotation and associated test work. Gold extraction levels for both direct cyanidation and CIL cyanidation were both poor at 28%, with little improvement by fine grinding. Minimal gold (up to 6%) was recoverable by gravity methods.

Flotation results suggested that the rougher cleaner concentrate and a portion of the scavenger cleaner concentrate (SCC) would constitute the primary product for downstream oxidation treatment procedures. The remainder of the SCC was planned to report to the two tail streams for treatment at the existing CIL plant at Obenemase. Overall gold recovery within the flotation concentrate was 88%.

Pre-treatment and cyanidation produced recoveries of between 82% and 92% using the Lee process and 94% using acid pressure oxidation. Bio-oxidation evaluation test work was not completed. It was found that flotation concentrates can be successfully pressure oxidised with or without acid addition to give cyanide recoveries from the oxidised concentrates of between 92% and 94%. It was determined that overall possible recovery of gold from sulphide ore by CIL treatment of pressure oxidised concentrate would be around 88%. In addition, a further 3% would be recoverable from CIL treatment of the flotation tails to give an overall recovery to bullion of over 91%.

Four composites of sulphide ore from Obenemase A lode were prepared from 8 diamond drill holes. Bond Ball Mill Work Indices (BWi) via the Comparative Method were performed on these composites. The resulting average work index of 13.75 kwh/t was applied in the RML pre-feasibility study.

Test work and operations history show that Obenemase ore has a good prospect for being processed. Given the presence of primary sulphide ore some challenges exist. Further test work will be required. There is no information regarding sample selection for metallurgical test work or how metallurgical domains have been determined.

### 7.2.2.1 Metcon Laboratories 1997

The Metcon report highlighted that the initial recoveries achieved using conventional cyanide leaching on the refractory ores were poor, with Table 9 reflecting the summarised results achieved, and demonstrating good recovery to a rougher flotation concentrate.

The test work showed that there was insufficient free gold for a viable cyanide leach process and recovery of gravity gold was not considered sufficiently efficient. As a result the only potentially viable option would be flotation recovery of the gold bearing minerals, followed by an oxidation stage to break down the sulphides, before recovering the gold through conventional cyanide leaching.

It was found though that the flotation concentrate contained significant amounts of carbonate, requiring acid addition during oxidation and thus impacting on the process economics.

It is also significant to note that even at reasonably good recoveries; more than 10 % of the total gold would be lost to tails. Head assays for the samples tested are shown in Table 9..

**Table 9: Metcon Au recoveries achieved using different processing options [Dominy et al 2014c].**

Process	%Au recovery range
Amalgamation (free gold)	4.7 to 6.8
Gravity concentration	51.2 to 60
Cyanide leaching	32.3 to 42.2
Rougher flotation	83.7 to 90.2

**Table 10: Metcon sample head assays**

Element	Units	North	Central	South	B.Lode
Au	g/t	8.14	3.95	3.96	6.72
S <sub>total</sub>	%	1.60	0.89	1.07	1.49
As	%	0.67	1.04	0.50	0.85
Cu	ppm	96	89	85	84
C <sub>total</sub>	%	3.2	3.4	3.0	3.7
C <sub>organic</sub>	%	1.5	0.3	1.1	1.7
C <sub>carbonate</sub>	%	1.7	3.1	1.9	2.0

Test work included:

- sample analysis
- grinding trials
- direct cyanide leaching
- flotation response of each ore zone
- flotation response of a composite sample
- cyanidation of flotation products.

Leach tests of the flotation products from the composite sample produced the results as shown in Table 10, with the mass pull to the cleaner concentrate approximately 3.7 %. Mass pull to concentrate for the various tests ranged from 2.6 % to 7%.

The final two composite sample tests produced concentrate at a mass pull of 3.7 % and contained:

- 112 g/t Au
- 21 % S
- 12 % As
- 22.6 % Fe
- 2.4 % C.

These samples were submitted for bioleaching tests at BacTech.

The rougher tails and cleaner tails subjected to further cyanide leaching achieved gold recoveries of 47.8 % and 14.9 % respectively as shown in Table 10. The Metcon report further proposes that these recoveries should be added to the overall recoveries, which may be appropriate, however Snowden recommends that this be confirmed through a cost benefit study of retreating the tails.

**Table 11: Flotation products leach test results**

Flotation fraction	Contained gold (%)	Leach efficiency (%)	Overall Au leach efficiency (%)
Cleaner concentrate	84.0	33.0	
Rougher tail	11.1	47.8	5.3
Recleaner tail	9.2	14.9	1.4
<b>Total</b>			<b>6.7</b>

#### 7.2.2.2 BacTech

The BacTech test work was conducted on flotation concentrate samples received from Metcon and demonstrated that gold recoveries of between 95 % and 99 % could be achieved from the concentrate. By contrast, cyanidation of the non-oxidised concentrate achieved gold recovery of only 42 %.

Bacterial oxidation tests were set up in 1.5 litres stirred, aerated reactors, maintained at a temperature of 45°C. The pH was monitored and controlled by adding calcium carbonate slurry or sulphuric acid, as required. The tests were further operated at 10 % w/v pulp density and were inoculated with a moderate thermophilic culture. Samples were taken on a regular basis and at completion of the tests the content of the reactors was filtered and the residues dried. The dried residue was split and analysed both before and after an acid/alkaline wash. Both the washed and unwashed fractions were submitted for cyanidation to determine gold recovery after the bacterial leach. Assays of the feed concentrate are shown in Table 12.

Bacterial oxidation tests were conducted at a pH controlled at 1.5, with two tests conducted where the initial pH was at 2.5, but was allowed to vary afterwards in that no further acid was added to control the pH at acidic levels. It was interesting to note that without pH control the pH continued to increase up to

7.8, at which stage no oxidation of sulphides was observed, but precipitation of As and Fe did take place. Acid was then added to reduce the pH back to 2.5.

The tests set up at a pH of 1.5 had an acid demand of approximately 255 kg/t of concentrate and achieved maximum As and Fe release after 426 hours.

Table 12 shows the gold recoveries of three different tests conducted at BacTech, clearly showing that gold recovery was significantly increased by and oxidative pre-treatment stage. Substantial further increases after an acid / alkali wash suggests that precipitates formed during bacterial oxidation occluded the gold and rendered it unavailable for cyanide leaching.

This may require acid addition prior to inoculation and the test report recommended further test work to optimise that process.

**Table 12: Bioleach tests head assays**

Test	Au recovery before acid wash (%)	Au recovery after acid wash (%)
CIL on untreated concentrate	41.96	n/a
pH 2.5 floating pH	81.75	98.03
pH 1.5	70.32	98.99
Acid demand satisfied before oxidation	96.22	95.48

**Table 13: Gold recoveries at BacTech after different treatment options**

Test	Au recovery before acid wash (%)	Au recovery after acid wash (%)
CIL on untreated concentrate	41.96	n/a
pH 2.5 floating pH	81.75	98.03
pH 1.5	70.32	98.99
Acid demand satisfied before oxidation	96.22	95.48

### 7.2.2.3 Amdel mineralogy

Mineralogical analysis of the flotation products demonstrated that:

- Sulphides were predominantly arsenopyrite and pyrite.
- Carbonates were predominantly dolomite with subordinate calcite.
- Silicates were predominantly chlorite and quartz with minor muscovite and plagioclase.

## 7.3 Mineral Processing Design

The current plant is optimised to an oxide ore feed. The dominant component of the current Obenemase resource is primary sulphide ore (88%). Previous test work has determined that a possible recovery of gold from sulphide ore by CIL treatment of pressure oxidised concentrate would be around

88%. In addition, a further 3% could be recoverable from CIL treatment of flotation tails to give an overall recovery to bullion of over 91%. Further test work is required to investigate the options of either upgrading the current plant or building a separate sulphide plant.

The Owere processing plant employs a direct cyanidation method to treat gold bearing ore. It has an annual capacity of 325,000t. Processing facilities currently available can handle only oxidized free-milling ores. The main stages followed are crushing, milling, gravity, leaching, adsorption, elution, electrowinning, smelting and bullion (Figure 33).

The 250 t per hour crushing plant unit is mobile and consists of three crushers; a primary jaw crusher, a secondary cone crusher and a tertiary cone crusher. Maximum feed size of the primary crusher is approximately 100 cm, with output from the tertiary crusher at -6 mm. The final product is fed to the mill by means of front end loader through a bin which has a feed gate to control tonnes desired. Dust suppression is employed.

The milling circuit is a single ball mill in closed circuit with the hydrocyclone underflow stream. The mill is designed to grind between 50 and 60 t per hour at a power of 380 kW to 400 kW. The classified overflow is trashed and sized screened, and advanced to the leaching circuit.

A 5% to 10% portion of the cyclone underflow is fed to the gravity circuit, into a single Knelson concentrator. The gravity separator concentrate is refined by tabling. The concentrate is forwarded for smelting. The tails are returned to the mill for regrinding.

The leaching and adsorption circuits are arranged in series, dissolving the solid gold and the subsequent picking of the soluble gold on to activated carbon. An exclusive conditioned leaching takes place in five contactor type tanks (46.56 m<sup>3</sup> each). Cyanide, lime and dissolved oxygen are introduced at this stage to initiate and facilitate leaching. This is followed by a second train, made up of four cylindrical vessels (383.3 m<sup>3</sup> each) for adsorption purposes. Activated carbon is introduced to the last tank and conventionally advanced forward. The loaded carbon is then lifted for stripping as it moves counter currently to the slurry direction at the first tank.

The elution process has a single pressure vessel used for both acid treatment and stripping. The enclosed pressure column is a two tonne facility and operates under the Zadra system. The electrowinning cell is sequenced with the elution process. The resulting steel wool sludge is calcined and smelted to produce gold bullion.

During the period October 2012 to January 2013 the plant processed 113,240 t at 1.1 g/t Au (recovered) for 4,174 oz Au. During this period the mean plant availability was 93% (91% to 95%). It yielded a mean gold recovery of 67%, ranging from 44% to 81%.

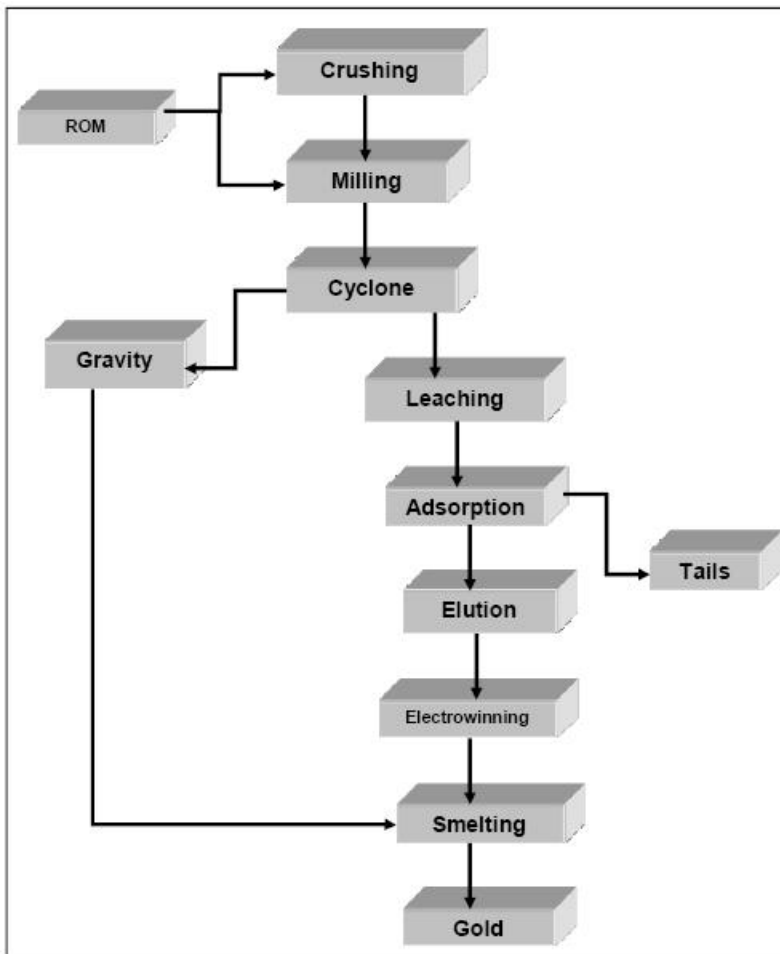


Figure 33: Processing flow sheet, Konongo

## 8.0 MINERAL RESOURCE ESTIMATES

### 8.1 Summary of Mineral Resources

The Mineral Resources, as of May 2015, for the **Obenemase A and B Deposit** are shown in Table 14.

**Table 14: Obenemase A and B deposit by Material Type, Mineral Resource as of May 1<sup>st</sup> 2015**

JORC category	Mineral type (gold)	Gross attributable to Licence		Net attributable to Lion Gold			Contained gold in total mineral resource (oz Au)
		Tonnes (t)	Grade (g/t Au)	53.80%			
				Tonnes (t)	Grade (g/t Au)	Change in ounces from previous reported update (%)	
<b>Indicated</b>	Oxide	164,000	3.4	88,000	3.4	0	18,000
<b>Inferred</b>	Oxide	9,000	2.9	5,000	2.9	0	1,000
<b>Total</b>	<b>Oxide</b>	<b>173,000</b>	<b>3.4</b>	<b>93,000</b>	<b>3.4</b>	<b>0</b>	<b>19,000</b>
<b>Indicated</b>	Transition	325,000	4	175,000	4	0	42,000
<b>Inferred</b>	Transition	22,000	3	12,000	3	0	2,000
<b>Total</b>	<b>Transition</b>	<b>347,000</b>	<b>3.9</b>	<b>187,000</b>	<b>3.9</b>	<b>0</b>	<b>44,000</b>
<b>Indicated</b>	Sulphide	2,845,000	3.8	1,531,000	3.8	0	348,000
<b>Inferred</b>	Sulphide	1,475,000	3.8	794,000	3.8	16	178,000
<b>Total</b>	<b>Sulphide</b>	<b>4,321,000</b>	<b>3.8</b>	<b>2,325,000</b>	<b>3.8</b>	<b>5</b>	<b>526,000</b>
<b>TOTAL</b>	<b>All</b>	<b>4,841,000</b>	<b>3.8</b>	<b>2,604,000</b>	<b>3.8</b>	<b>4</b>	<b>589,000</b>

Mineral Resources are reported at 0.5 g/t Au, 0.7 g/t Au and 1.0 g/t Au cut-off for oxide, transitional and sulphide respectively. Note: Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. No Ore Reserves are defined at Obenemase. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. It is uncertain if further exploration will result in upgrading the Inferred Mineral Resource to an Indicated or Measured Mineral Resource category. Tonnage is reported in metric tonnes (t), grade as grams per tonne gold (g/t Au) and contained gold in troy ounces (oz Au). Tonnages rounded to the nearest 1,000 t. Ounces rounded to the nearest 1,000 oz Au. Figures may not compute exactly due to rounding. In 2009, Signature acquired a 70 % interest in the project from African Gold PLC via the acquisition of their 70 % ownership of Owere Mines Ltd. In March 2012, LionGold acquired a 77 % ownership in Signature. The net attributable to LionGold is thus 53.8 %.

The Mineral Resources, as of May 2015, for the **Other Konongo Deposits** are shown in Table 15, below.

**Table 15: Konongo Other Deposits, Mineral Resources as of May 1<sup>st</sup> 2015**

Deposit	JORC category	Gross attributable to Licence		Net attributable to Lion Gold			Contained gold in total mineral resource (oz Au)
		Tonnes (t)	Grade (g/t Au)	53.80%			
				Tonnes (t)	Grade (g/t Au)	Change in ounces from previous reported update (%)	
Apan	Inferred	731,000	2.3	393,000	2.3	0	55,000
	<b>Total</b>	<b>731,000</b>	<b>2.3</b>	<b>393,000</b>	<b>2.3</b>	<b>0</b>	<b>55,000</b>
Aserewa	Inferred	409,000	3.3	220,000	3.3	0	43,000
	<b>Total</b>	<b>409,000</b>	<b>3.3</b>	<b>220,000</b>	<b>3.3</b>	<b>0</b>	<b>43,000</b>
Boabedroo North	Inferred	285,000	3.6	153,000	3.6	0	33,000
	<b>Total</b>	<b>285,000</b>	<b>3.6</b>	<b>153,000</b>	<b>3.6</b>	<b>0</b>	<b>33,000</b>
Boabedroo South	Inferred	447,000	2.2	241,000	2.2	0	32,000
	<b>Total</b>	<b>447,000</b>	<b>2.2</b>	<b>241,000</b>	<b>2.2</b>	<b>0</b>	<b>32,000</b>
Boabedroo South Extension	Inferred	1,841,000	3	991,000	3	0	178,000
	<b>Total</b>	<b>1,841,000</b>	<b>3</b>	<b>991,000</b>	<b>3</b>	<b>0</b>	<b>178,000</b>
Obenemase D	Inferred	686,000	1.8	369,000	1.8	8	40,000
	<b>Total</b>	<b>686,000</b>	<b>1.8</b>	<b>369,000</b>	<b>1.8</b>	<b>8</b>	<b>40,000</b>
<b>TOTAL</b>	<b>All</b>	<b>4,399,000</b>	<b>2.7</b>	<b>2,367,000</b>	<b>2.7</b>	<b>1</b>	<b>381,000</b>

All Mineral Resources have been depleted by the latest available mining surfaces and underground mining volumes. The north eastern portion of Obenemase D has been removed, since it overlaps with the Obenemase A and B deposit in that area. Resources are reported at 0.5 g/t Au cut-off for oxide and transitional and 1.0 g/t Au cut-off for sulphide. Note: Mineral Resources which are not Ore Reserves have not demonstrated economic viability. No Ore Reserves are defined at these deposits. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. Tonnage is reported in metric tonnes (t), grade as grams per tonne gold (g/t Au) and contained gold in troy ounces (oz Au). Tonnages rounded to the nearest 1,000 t. Ounces rounded to the nearest 1,000 oz Au. Figures may not compute exactly due to rounding. In 2009, Signature acquired a 70% interest in the project from African Gold PLC via the acquisition of their 70% ownership of Owere Mines Ltd. In March 2012, LionGold acquired a 77% ownership in Signature. The net attributable to LionGold is thus 53.8%.

## 8.2 General Description of Mineral Resource Estimation

In May 2015 SEMS undertook a Mineral Resource estimate for the A and B lodes of the Obenemase deposit and the zone referred to as Obenemase D within the Konongo Mining Lease, utilising all exploration drilling completed as of March 31<sup>st</sup> 2015. SEMS also reviewed existing mineral resource estimates for the Apan, Aserewa and Boabedroo (North, South, and South Extension) deposits, referred to as the 'Other Deposits'.

The Mineral Resource estimate has been prepared using guidelines compliant with the 2012 Joint Ore Reserves Committee of Australasia (JORC) reporting code, and has been managed by SEMS Competent

Persons. All work was carried out using *Datamine* software. The drilling data has been verified in accordance with standard QA-QC procedures.

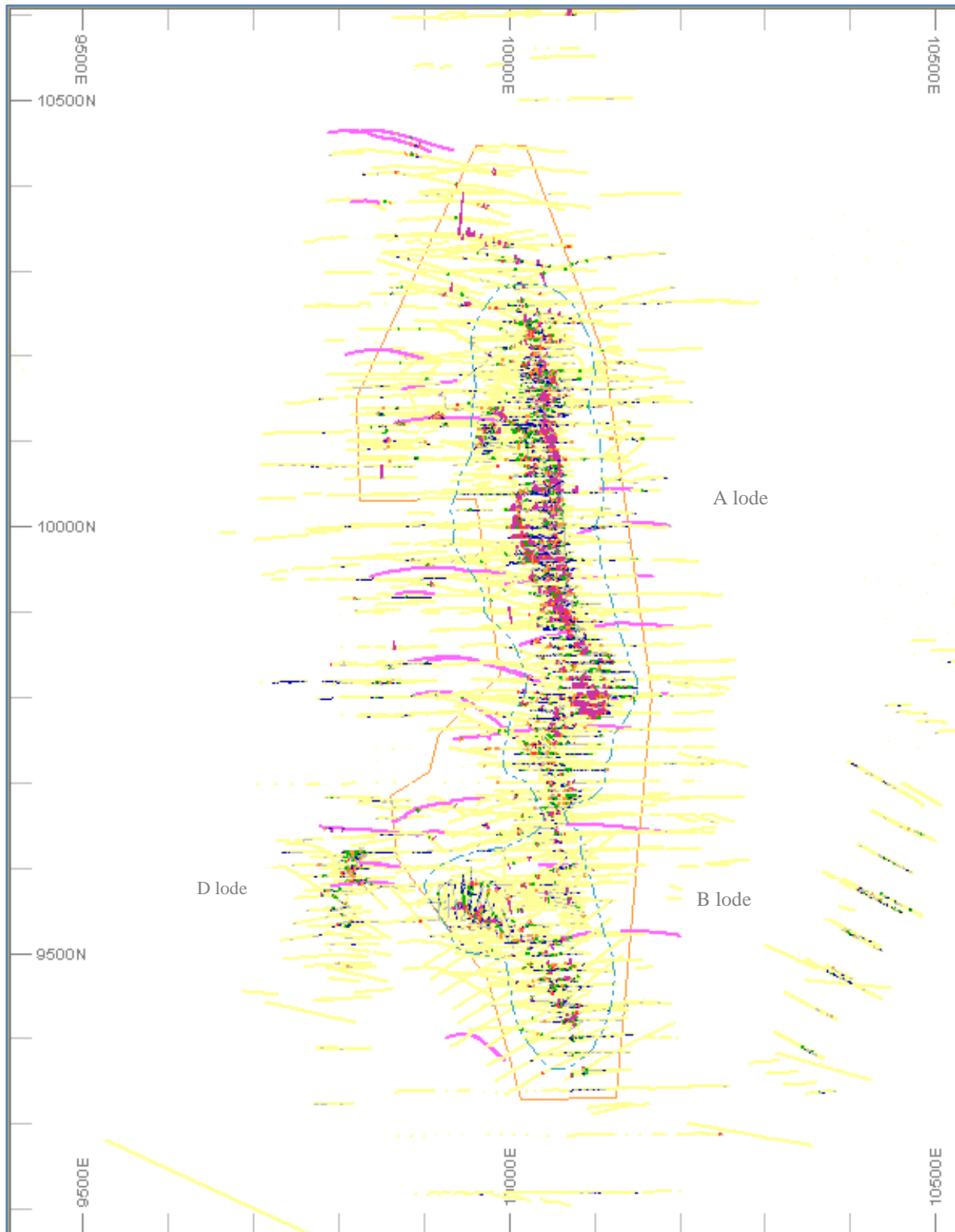
A total of thirty one (31) drill holes have been completed by Signature at Konongo since the previous mineral resource estimation in February 2014, of which twenty nine (29) holes (17 diamond core and 14 reverse circulation RC) relate to the Obenemase deposit and have been considered in the latest mineral resource estimate. The total drilling database for Obenemase A and B now comprises over 1,500 holes, excluding underground sampling and trenching.

The mineralised portion of the Obenemase A and B deposit covers a strike length of 1,100 m, and extends to depths of over 300 m. Current drilling and mineral resource delineation has focused on fresh rock. Near surface oxidised material has been largely mined out. Exploitation is likely to be through a combination of open pit and underground methods.

Modelling of the mineralised zones was achieved by sectional digitising of the mineralised outlines from sections, at an average spacing of 20 m. These have been created using geology and structure, to be representative of the continuation of the mineralisation. A nominal 0.5 g/t Au cut-off, with a maximum of 2m below cut-off, were used in defining mineralisation. End sections were normally extrapolated half the section spacing. Mineralisation continuity down dip is particularly strong and modelling was extrapolated up to 60 m down dip from drill intersections dependent on supporting sections and the strength of intersections. Mineralisation has been modelled to a maximum depth of 310m below surface.

The digitised mineralised outlines were used for support in the creation of mineralised wireframes. A block model was created from the mineralised wireframes to which attributes such as grade, density, oxidation state and classification are assigned.

Gold grades for the reported mineral resource model have been determined using ordinary kriging, and the resulting resource is classified as both indicated and inferred. Historical open pit and underground mining has been depleted from the model.



**Figure 34: Obenemase Deposit drill-hole locations showing: hole traces (yellow) with mineralised intersections (warm colours represent higher grades), recent holes (pink), approximate modelled zone boundary (orange), and previously mined pit surface outline (blue dashed)**

## 8.3 Mineral Resource Estimate, May 2015

### 8.3.1 Obenemase A & B

The combined Inferred and Indicated Mineral Resource estimate for the Obenemase A and B deposit is 4,841,000 t at an average grade of 3.8 g/t Au for 589,000 oz Au.

#### 8.3.1.1 Mineral Resource Input Data

The following data was received from Owere in May 2015:

- Drill hole database “20150316 Database ALL.accdb” (MS Access format), comprising collars, surveys, assays, and lithologies for all drill holes drilled up to May 2014
- Mineral resource wireframe and block models, and geological and structural wireframe models, from the previous mineral resource estimations by RSCMME and Snowden
- Topographic DTM model
- Density determinations

The drill-hole files were validated and imported into *Datamine*, and a final de-surveyed drill-hole file created. The data was very clean (ie no ‘from-to’ sequencing errors). The wireframe and DTM model files were imported into *Datamine* and checked for consistency. The Snowden mineral resource block model was a *Datamine* file and was examined to identify key fields and variables used to control the mineral resource reporting.

All drill-hole data has previously been the subject of a rigorous data validation exercise undertaken by RSCMME during 2012 and 2013. No new issues were detected by SEMS. Assays with negative, below detection value were reset to a very small positive number.

The cut-off date for data is the date of the last drilling which was May 2014.

#### 8.3.1.2 Geological Interpretation

Obenemase mineralisation occurs near the northern end of the Konongo Mining Lease, located on the western limb of a regional syncline at the contact between the Lower Birimian and Tarkwaian. An S1 foliation is interpreted as parallel to bedding (S0) which places the Obenemase A & B mineralisation on the limb of a closed to isoclinal F1 fold. Mineral and intersection lineations plunge 40° to 70° to the northeast.

The Obenemase mineralised system comprises two, fabric-parallel, mineralised shears located 300m apart at surface. The two shears both occur at lithological boundaries. An oblique, north-plunging, late structure is interpreted to connect the two shears.

Mine sequence stratigraphy from east to west includes:

- A footwall carbonaceous banded siltstone, grading into a graphitic shale,
- Obenemase A Lode shear position.
- Volcaniclastic siltstone and sandstones with subordinate intermediate and felsic volcanics and sub-volcanics which volcaniclastic units preferentially host mineralisation.
- Mafic volcanics (tholeiites)

- Obenemase D Lode shear position
- A second sequence of carbonaceous banded siltstone (which is locally mineralized).

Mineralisation consists of a dolomite-silica+/-albite alteration assemblage and arsenopyrite-silica+/-pyrrhotite+/-pyrite mineralisation. Alteration is notable for the relative lack of hydrosilicates (muscovite-sericite). Gold grades correlate strongly with arsenopyrite. Mineralisation is either closely associated with the bounding shear structures or is stratabound, with significant preferential mineralisation into volcanoclastic siltstones. In all cases, the acicular arsenopyrite is disseminated (1-5%) and, despite following particular folded geology, is randomly oriented and post-peak to late-structural.

Mineralisation occurs as two discrete lodes on the eastern shear – Obenemase A Lode and Obenemase B Lode. These lodes have parallel northeast plunges and grades are observed to be elevated where second order structures form flexures in the geology. Both lodes are hosted in volcanoclastic units.

Obenemase R Zone (Figure 35) is a northeast pitching late zone of mineralisation which rolls from northwest dipping in the south through northeast dipping further north. The mineralisation is late (but penecontemporaneous with A, B and D mineralisation)

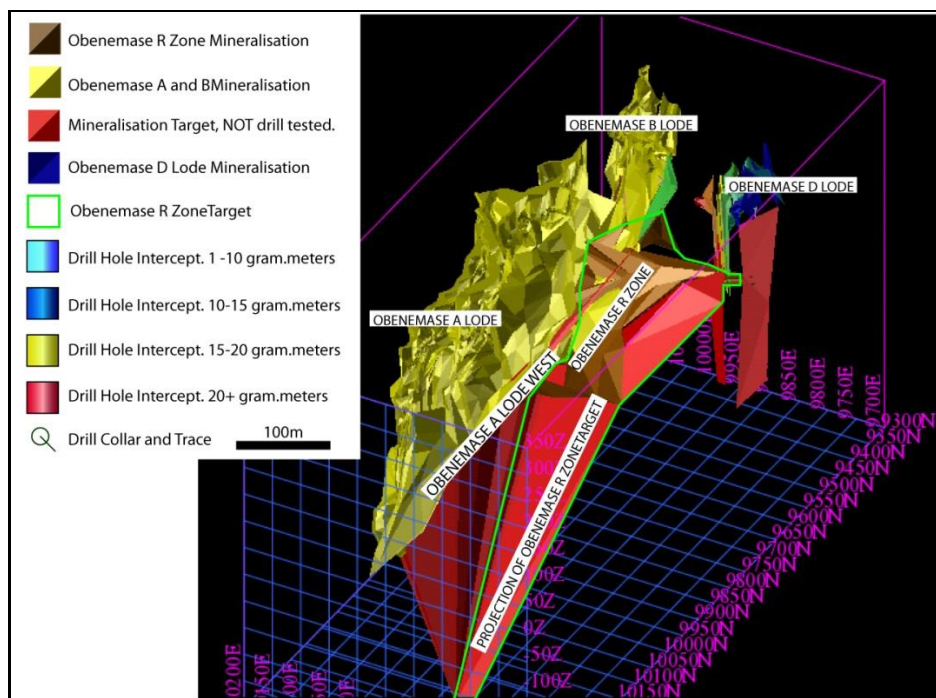


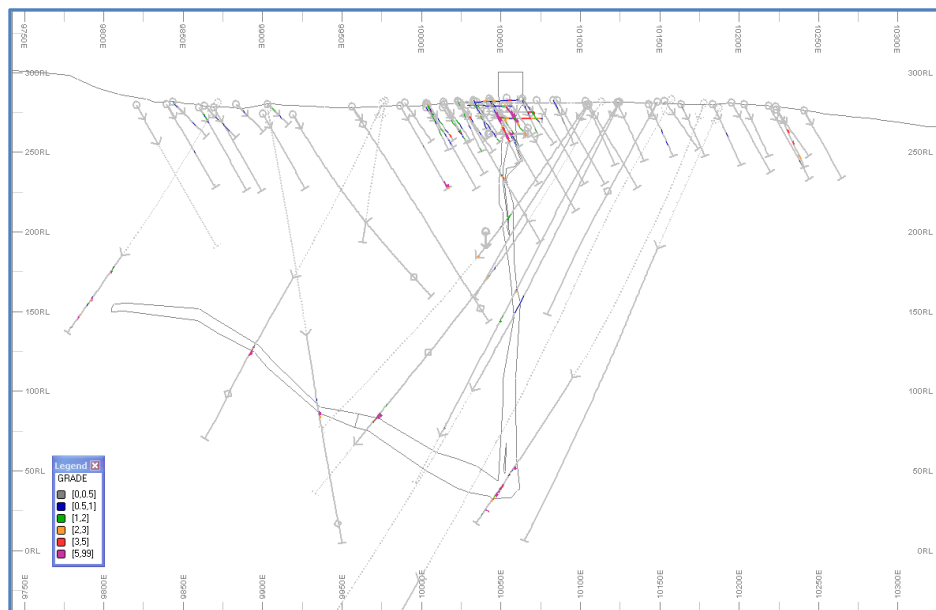
Figure 35: Obenemase A, B, D and R. Oblique view, looking south (UTM).

RSCMME constructed the mineralised geological interpretation from detailed models of lithology and structure. Snowden largely concurred with the interpretations but made minor updates. SEMs has reviewed the Snowden interpretations and found them to be satisfactory.

SEMS has extended the geological interpretations to include information from recent drill holes, based on the underlying principles developed by RSCMME. Although modest in extent, the mineralised extensions result from several new intersections that are additional to the existing mineralised model,

and demonstrate continuity of mineralisation either at depth or laterally. In some cases this has resulted in upgrading of the previous mineral resource classification.

Figure 36 shows the interpreted extension on the R-zone of the Obenemase B lode.



**Figure 36: Geological interpretation for R-Zone of Obenemase B lode**

### 8.3.1.3 Data analysis and geostatistics

Both RSCMME and Snowden completed detailed data and statistical analyses. The main findings were:

- a low coefficient of variation
- very modest amount of grade “outliers”, such that grade top-cutting does not need to be rigorously applied, and does not have a significant effect on the average grade.
- poor correlation of the diamond drill-hole data set to Trench, BODH and Underground data sets, such that all the later data sets have been excluded from mineral resource estimation
- RC and DD samples showed no correlation bias and were used in the mineral resource estimation

Sample data from the recent drilling was found to conform to the above analyses, with no top-cutting required.

The average sample length for drill hole samples was 1.4m (average 1.2 m for assays above cut-off), and therefore samples were composited to 1.0 metre prior to statistical analysis and for later grade estimation.

SEMS has used the same density values to those used by RSCMME and Snowden in their mineral resource estimates: 1.90 t/m<sup>3</sup> for oxide, 2.8 t/m<sup>3</sup> for transition and 2.82 t/m<sup>3</sup> for sulphide material.

These density values were determined by RSCMME in 2013 from 14,310 measurements collected from historical full, half and quarter core. Measurements were obtained by a ‘standard wet - dry approach’,

no wax was applied as most samples had hardly any porosity. RSCMME did not dry the core in an oven as they considered exposure to sun light was sufficient.

It should be noted that SEMS considers the density values used for transitional ore to be slightly higher than those generally encountered in Birimian shear hosted gold deposits.

A summary of the statistical results for the recent data (within mineralised envelopes) is show in table 16.

Table 16: Summary statistics of selected 1m composites inside mineralised envelopes.

Description	Number	No. of Missing Values	Min (g/t)	Max (g/t)	Mean (g/t)	Var	SD	CoV
All selected composites	1,445	41	0.01	35.0	2.8	16.1	4.0	1.4

#### 8.3.1.4 Domaining

The primary domaining used is based on weathering profiles defined by core logging, which are separated into the following domains:

- Oxide
- Transitional
- Sulphide

RSCMME created a number of search orientation domains in order to control grade interpolation, made more difficult due to the deposits folded nature. Snowden used a different method to handle search orientation and did not create search orientation domains.

SEMS created spatial search domains in a similar fashion to RSCMME for controlling search orientations, mainly based on wireframe orientation which should provide a reasonable fit to mineralisation strike and dip. However, given the high degree of structural complexity present and frequent directional changes only broad base search domains are warranted.

Due to the relatively small amount of oxide material, Snowden combined oxide and transitional domains together for mineral resource estimation purposes.

It should be noted that the metallurgical behaviour of transitional ore is likely to be different to that of oxide ore. SEMS recommends that future mineral resource estimates separate oxide and transitional ore domains.

#### 8.3.1.5 Variography

Both RSCMME and Snowden developed in-depth variograms and detailed kriging estimation parameters. SEMS has reviewed the processes by which the variography has been derived as well as the resultant outputs and is of the opinion that they are good representations of the data. SEMS agrees with the model block size, discretisation, search ranges, and sample composite parameters as determined by Snowden.

### 8.3.1.6 Estimation

Ordinary kriging was used to estimate grade into blocks using search parameters determined by the variography and the one metre sample composites. The block model was defined within the geographical limits of the mineralised wireframe. A parent block size of 10 x 10 x 10 metres was used with sub-blocking up to a factor of 3 used to accurately model the often narrow mineralised boundaries.

Blocks that fell outside of the first pass ellipsoid were re-estimated in two further passes, each with successively relaxed search ellipsoids (factor of 1.5), and flagged for later classification at lower levels. Minimum sample numbers for interpolation were initially set to 10 but were reduced where subsequent passes were necessary.

*Table 17: Block model parameters.*

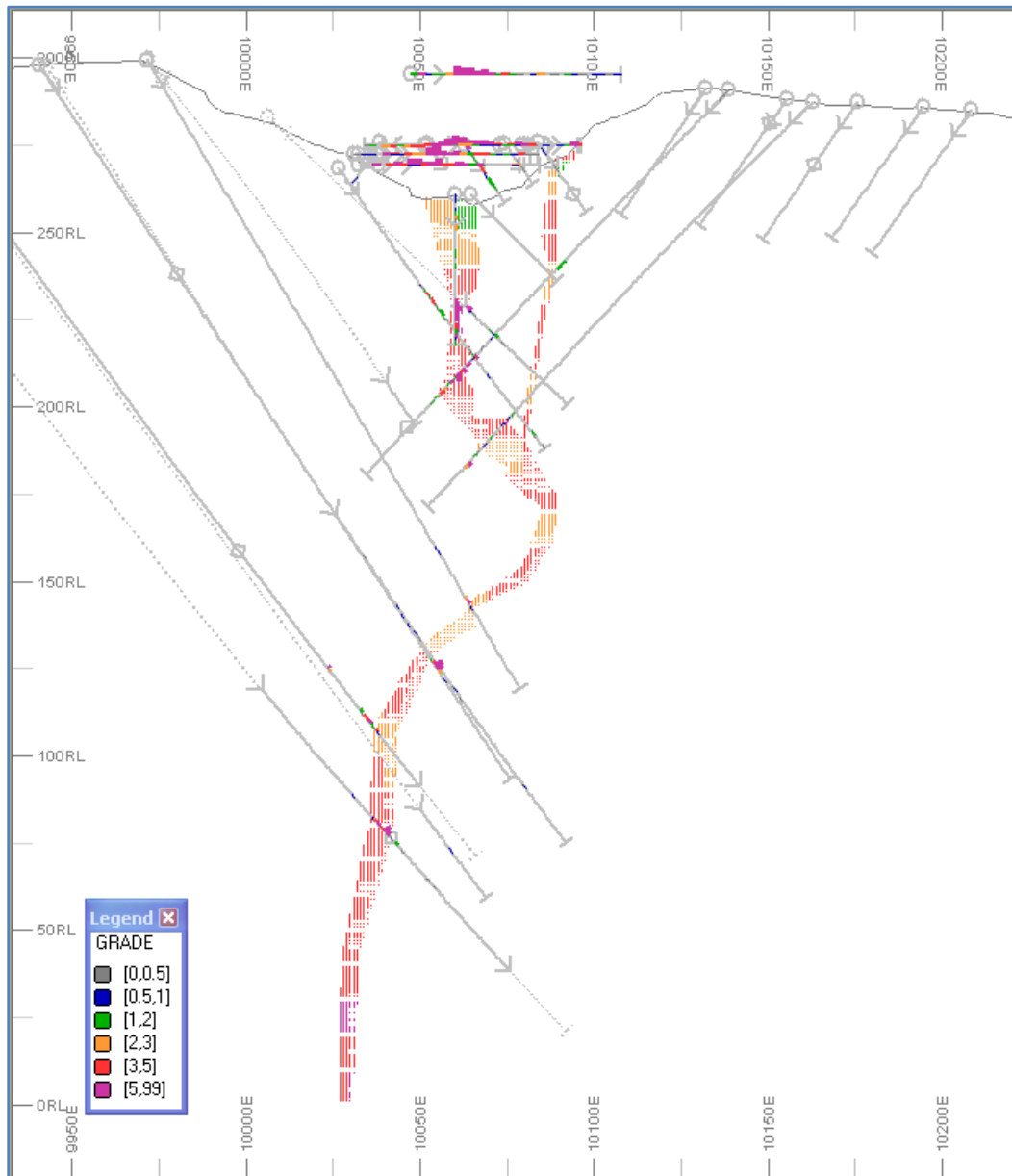
	Min	Max	Range	Cell Size	Cell No.
East	9630	10380	750	10	75
North	9115	10595	1480	10	148
RL	-140	340	480	10	48

*Table 18: Grade estimation parameters.*

Parameter	Value
Assay top cut (g/t)	35
Strike direction (°)	350
Dip (°) ave	85
Pass 1 Search Radius x (m)	30
Pass 1 Search Radius y (m)	40
Pass 1 Search Radius z (m)	25
Min No. samples	10
Max No. samples	40

### 8.3.1.7 Validation

Validation consisted of visually comparing the model grades against the original composite data. Visual validation of block grades by section showed a good fit to the sample data. Extensive validation techniques were carried out by both RSCMME and Snowden, indicating similar results. SEMS has reviewed all these validations and agrees with the results.



**Figure 37: Model Validation - Drill-hole sample grades versus model grades**

### 8.3.1.8 Classification

The data density, data reliability and data quality, and continuity of mineralisation and structure in areas where drill holes are heavily developed, determine how the mineral resource can be classified into areas of a particular level of confidence. Although the deposit is structurally complex the density of data is high and separation of holes is particularly close.

After reviewing the classification approaches of RSCMME and Snowden, SEMS has maintained the Snowden classification but has reclassified (upgraded) some inferred areas where new drilling information has demonstrated a higher degree of continuity than before. SEMS considers that this is a relatively conservative classification but is appropriate.

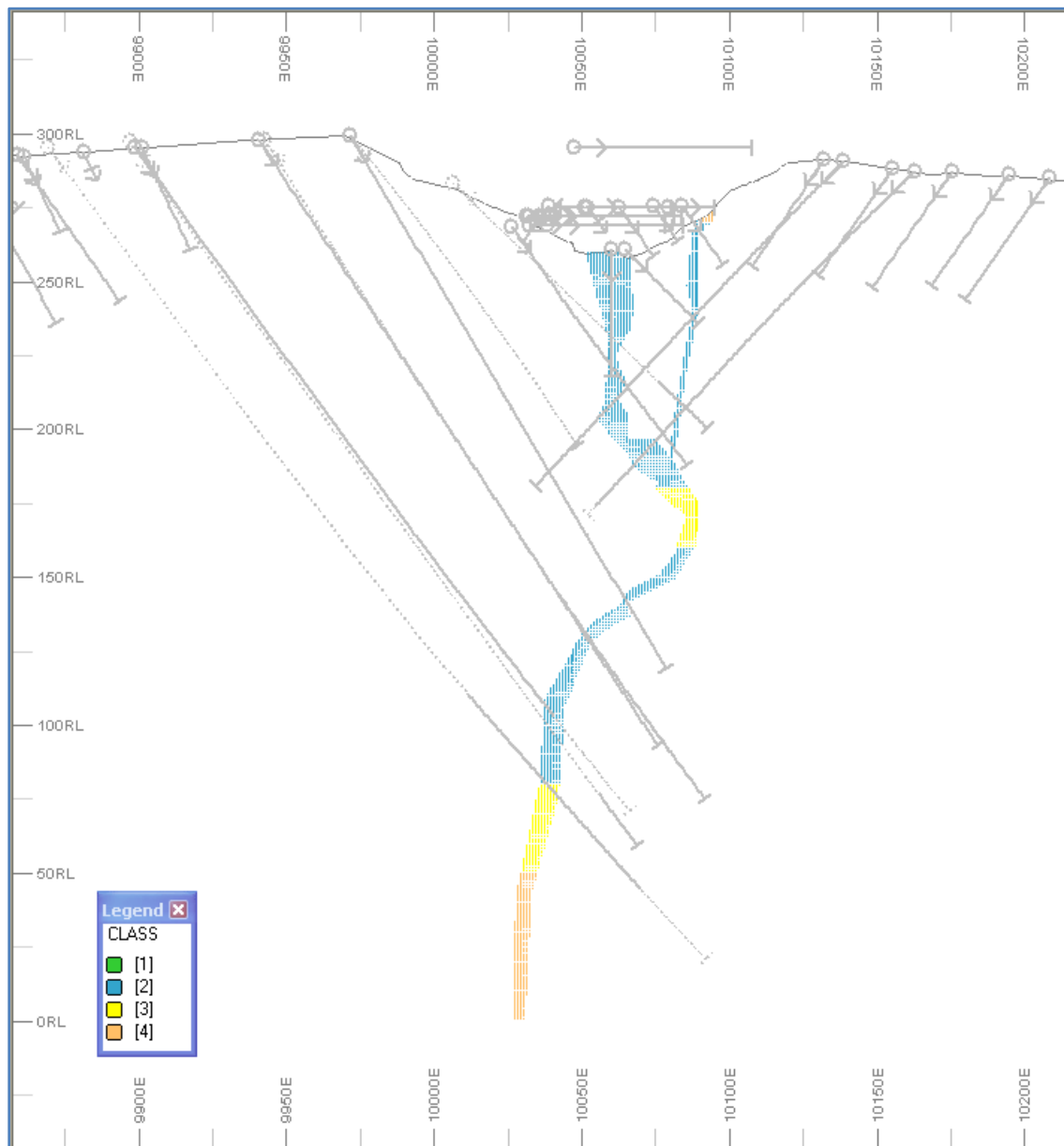


Figure 38: Mineral resource wireframe model and drill-hole traces showing primary lode (brown) and secondary lode (green) (looking NE).

### 8.3.1.9 Reported Mineral Resources

The Obenemase A and B lode Mineral Resources are reported in Table 19. All depletion surfaces from surface and underground mining have been taken into account. Mineral Resources are reported at cut-off grades of 0.5 g/t, 0.7 g/t, and 1.0 g/t for oxide, transition, and sulphide respectively.

Taking into account the grade, quantity, and characteristics of the Obenemase A and B lode mineral resources, SEMS considers there are reasonable prospects for the eventual economic extraction of the mineralised zones, by a combination of surface and underground mining.

**Table 19: Obenemase A and B Mineral Resources, 1<sup>st</sup> May 2015**

Material	Indicated			Inferred			Total		
	Tonnes	Grade (g/t)	Oz's	Tonnes	Grade (g/t)	Oz's	Tonnes	Grade (g/t)	Oz's
Oxide	164,000	3.4	18,000	9,000	2.9	1,000	173,000	3.4	19,000
Transition	325,000	4.0	42,000	22,000	3.0	2,000	347,000	3.9	44,000
Sulphide	2,845,000	3.8	348,000	1,475,000	3.8	178,000	4,321,000	3.8	526,000
<b>Total</b>	<b>3,334,000</b>	<b>3.8</b>	<b>408,000</b>	<b>1,507,000</b>	<b>3.7</b>	<b>181,000</b>	<b>4,841,000</b>	<b>3.8</b>	<b>589,000</b>

Grade-tonnage curves for the modelled mineral resources, using variable Au cut-off increments, are presented in Figure 399. It should be noted that this does not represent a mineral resource statement and is only to illustrate sensitivity of block model resources to block cut-off grade:

**Table 20: Obenemase A and B deposit by Material Type, Mineral Resource as of May 1<sup>st</sup> 2015**

CATEGORY	Material Type	Cut-off Grade (g/t Au)	TONNAGE <sup>1</sup> (Tonnes)	GRADE (g/t Au)	CONT'D GOLD <sup>1</sup> (oz)
<b>Indicated</b>	Oxide	0.5	164,000	3.4	18,000
<b>Inferred</b>	Oxide	0.5	9,000	2.9	1,000
<b>Total</b>	Oxide	0.5	173,000	3.4	19,000
<b>Indicated</b>	Transition	0.7	325,000	4.0	42,000
<b>Inferred</b>	Transition	<b>0.7</b>	<b>22,000</b>	<b>3.0</b>	<b>2,000</b>
<b>Total</b>	Transition	0.7	347,000	3.9	44,000
<b>Indicated</b>	Sulphide	1.0	2,845,000	3.8	348,000
<b>Inferred</b>	Sulphide	1.0	1,475,000	3.8	178,000
<b>Total</b>	Sulphide	1.0	4,321,000	3.8	526,000
<b>TOTAL</b>	All	0.5-1.0	4,841,000	3.8	589,000

**Table 21: Obenemase A and B deposit by JORC Category, Mineral Resource as of May 1<sup>st</sup> 2015**

CATEGORY	TONNAGE <sup>1</sup> (Tonnes)	GRADE (g/t Au)	CONT'D GOLD <sup>2</sup> (oz)
<b>Indicated</b>	3,334,000	3.8	408,000
<b>Inferred</b>	1,507,000	3.7	181,000
<b>Total</b>	4,841,000	3.8	589,000

<sup>1</sup> Note: Totals may not add exactly due to rounding

<sup>2</sup> Note: Totals may not add exactly due to rounding

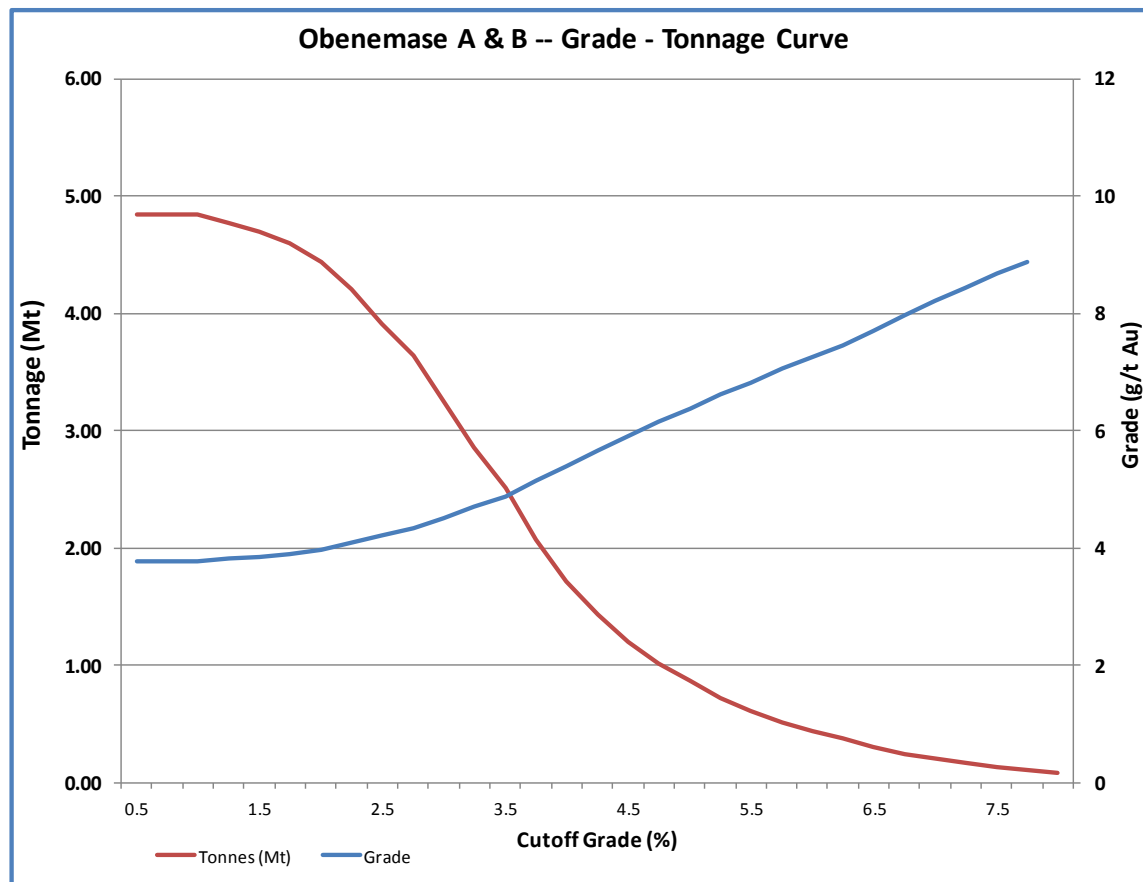


Figure 39: Grade-tonnage curves for the modelled resources.

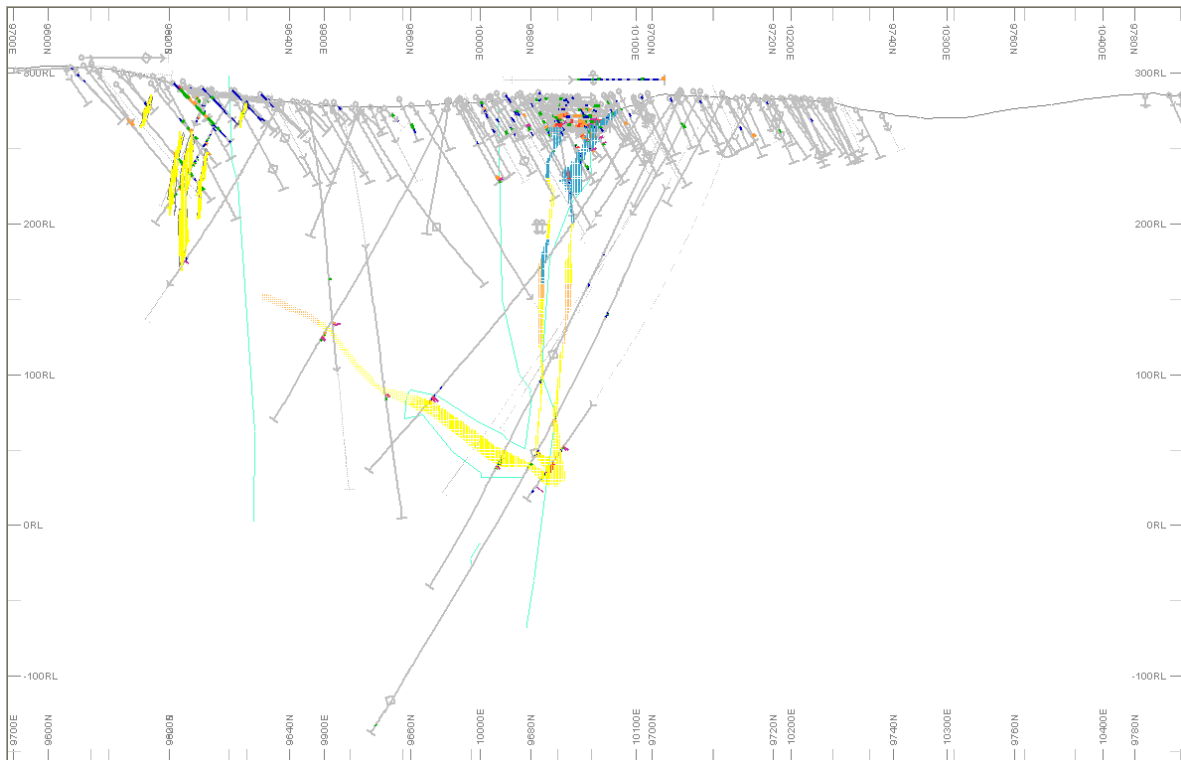
### 8.3.2 Obenemase D

The Obenemase D Lode mineralisation occurs 300m to the northwest of the Obenemase A and B Lode mineralisation and the structure is interpreted as parallel. The plunge directions, mineralisation and alteration at Obenemase D are similar to those at Obenemase A and B although mineralisation at Obenemase D Lode extends into banded sediments. Mineralisation has been drill tested 100m from surface and remains open at depth.

Obenemase R Zone (Figure 40) is a northeast pitching late zone of mineralisation which rolls from northwest dipping in the south through northeast dipping further north. The mineralisation is late (but penecontemporaneous with A, B and D mineralisation).

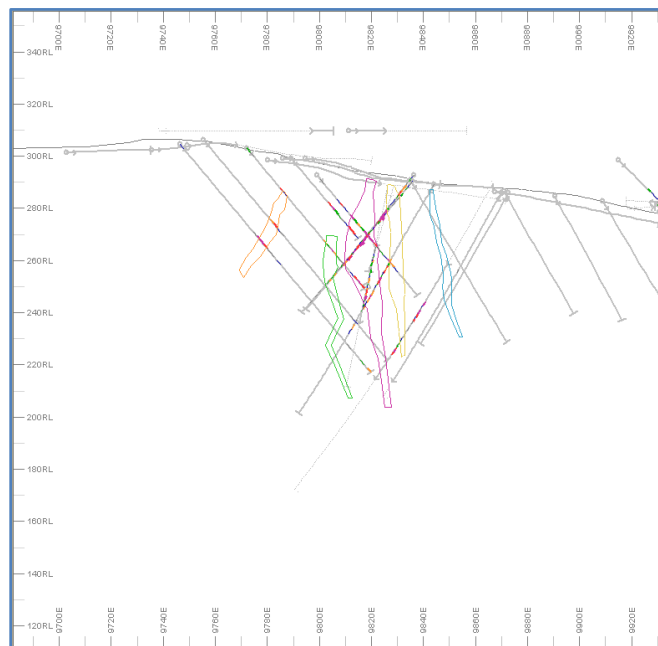
R Zone mineralisation links the Obenemase A Lode structure to the Obenemase D Lode structure. The northeast plunging mineralisation has been demonstrated to continue beyond historic faulting interpreted to truncate the Obenemase B Lode mineralisation in the north, and plunges beneath and parallel to the Obenemase A Lode.

SEMS reviewed the Snowden mineral resource estimate for Obenemase D based upon six drill holes completed by Owere during the twelve months preceding May 2015.



**Figure 40: Obenemase A, B, D and R. Oblique view, looking north-west (UTM).**

The Obenemase D lode consists of four physically separate deposits along strike, parallel to and west of the Obenemase A and B lodes. SEMS reviewed the drilling for Obenemase D lode and has revised the geological interpretation for a deposit near the southern end of the lode where the recent drilling has taken place, over a strike length of 200m. The interpretation consists of a number of steeply dipping or sub-vertical lenses. Figure 41 shows the interpreted mineralised envelope and drill-hole data.



**Figure 41: Geological interpretation for Obenemase D lode, looking north (UTM).**

### 8.3.2.1 Data Analysis and Geostatistics

SEMS completed a detailed data and statistical analysis. The main findings are:

- a low coefficient of variation
- very modest amount of grade “outliers”, such that grade top-cutting does not need to be rigorously applied, and does not have a significant effect on the average grade.
- poor correlation of the diamond drill-hole data set to Trench, BODH data, such that all the later data sets have been excluded from resource estimation
- RC and DD samples showed no correlation bias and were used in the resource estimation

Densities used were 1.52 for oxide, 2.51 for transition, and 2.75 for sulphide material, which were the densities used previously by DataGeo.

Data analysis showed a statistically normal population with minimal outliers. A modest top-cut of 15 g/t Au was applied, affecting two samples.

A summary of the statistical results for the revised geological interpretation (within mineralised envelopes) is shown in Table 22.

**Table 22: Summary statistics of selected 1m composites inside mineralised envelopes.**

Description	Number	No. of Missing Values	Min (g/t)	Max (g/t)	Mean (g/t)	Var	SD	CoV
All selected composites	351	0	0.01	22.4	2.6	7.8	2.8	1.1

### 8.3.2.2 Domaining

The primary domaining used is based on weathering profiles defined by core logging, which are separated into the following domains:

- Oxide
- Transitional
- Sulphide

SEMS created spatial search domains for controlling search orientations, mainly based on wireframe orientation which should provide a reasonable fit to mineralisation strike and dip. For the Obenemase D lode, mineralisation is primarily sub-vertical and north-striking, resulting in relatively simplified search domains.

Due to the relatively small amount of transition material, oxide and transitional domains were combined together for mineral resource estimation purposes.

### 8.3.2.3 Variography

Variograms were not available from the previous work conducted by DataGeo. Due to the similarity of the deposits, SEMS used Obenemase A and B lode parameters as a starting point and modified these as required based on differences in drill sample density and data orientation to develop appropriate model block size, discretisation, search ranges, and sample composite parameters.

### 8.3.2.4 Estimation

Inverse Distance Squared was used to estimate grade into blocks using the search parameters determined above and the one metre sample composites. The block model was defined within the geographical limits of the mineralised wireframe. A parent block size of 2.5 x 10 x 2.5 metres was used with sub-blocking up to a factor of 2 used to accurately model the often narrow mineralised boundaries.

Blocks that fell outside of the first pass ellipsoid were re-estimated in two further passes, each with successively relaxed search ellipsoids (factor of 1.5), and flagged for later classification at lower levels. Minimum sample numbers for interpolation were initially set to 8 but were reduced where subsequent passes were necessary.

**Table 23: Block model parameters.**

	Min	Max	Range	Cell Size	Cell No.
East	9650	10005	355	2.5	142
North	9190	10390	1200	10	120
RL	0	370	370	2.5	148

**Table 24: Grade estimation parameters.**

Parameter	Value
Assay top cut (g/t)	15
Strike direction ( <sup>o</sup> )	350
Dip ( <sup>o</sup> ) ave	85
Pass 1 Search Radius x (m)	30
Pass 1 Search Radius y (m)	35
Pass 1 Search Radius z (m)	20
Min No. samples	8
Max No. samples	30

### 8.3.2.5 Validation

Validation consisted of visually comparing the model grades against the original composite data. Visual validation of block grades by section showed a good fit to the sample data.

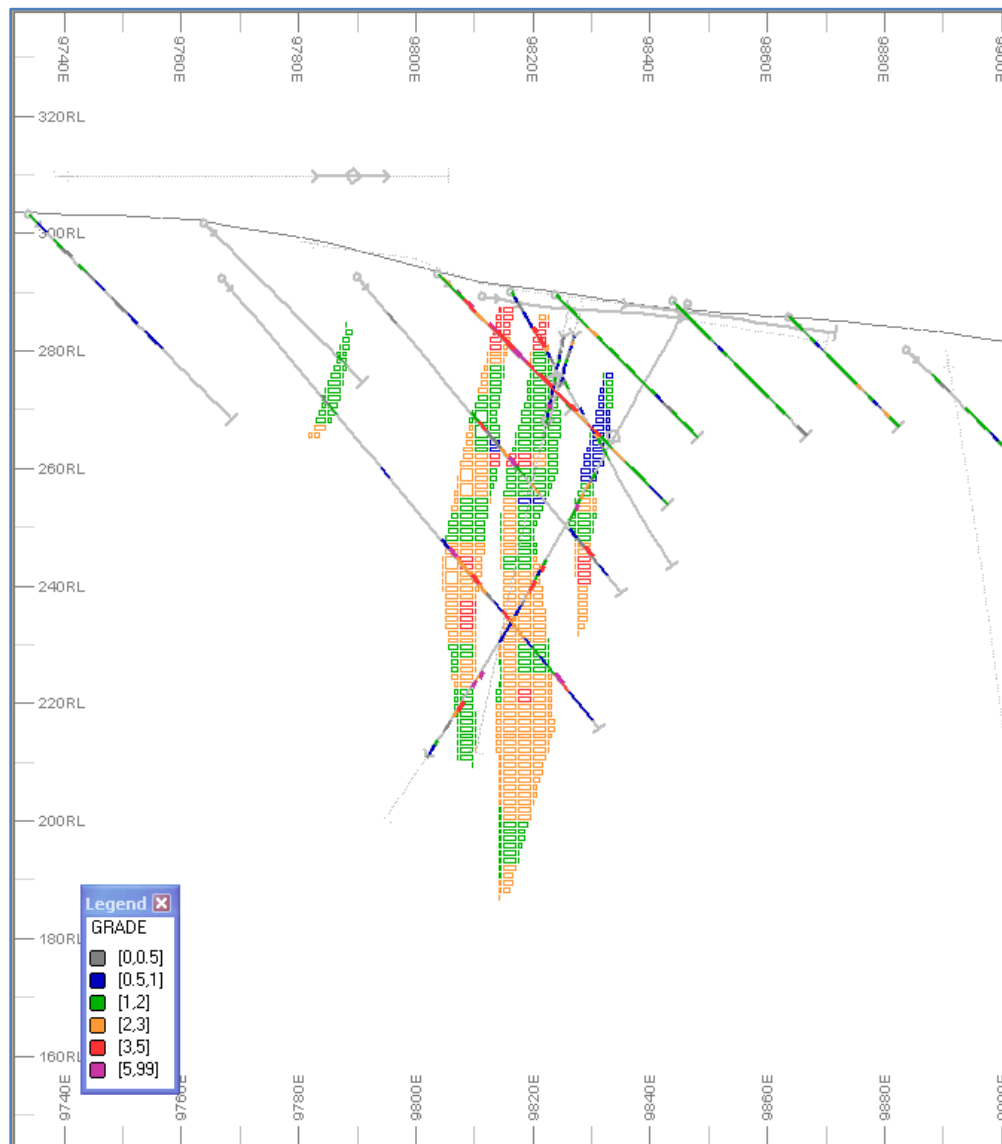


Figure 42: Model Validation - Drill-hole sample grades versus model grades, Obenemase D lode

### 8.3.2.6 Classification

Snowden classified the Obenemase D Lode as inferred and SEMS is of the opinion that this classification is appropriate.

### 8.3.2.7 Reported Mineral Resources

The Obenemase D lode Mineral Resources are reported in Table 25. All depletion surfaces from surface and underground mining have been taken into account. Mineral Resources are reported at cut-off grades of 0.5 g/t for oxide and transition, and 1.0 g/t for sulphide.

Taking into account the grade, quantity, and characteristics of the Obenemase D lode mineral resources, SEMS considers there are reasonable prospects for the eventual economic extraction of the mineralised zones, primarily by surface mining.

**Table 25: Obenemase D Mineral Resources, 1<sup>st</sup> May 2015**

Material	Indicated			Inferred			Total		
	Tonnes	Grade (g/t)	Oz's	Tonnes	Grade (g/t)	Oz's	Tonnes	Grade (g/t)	Oz's
Oxide	-	-	-	267,000	1.3	12,000	267,000	1.3	12,000
Transition	-	-	-	123,000	1.9	8,000	123,000	1.9	8,000
Sulphide	-	-	-	296,000	2.1	20,000	296,000	2.1	20,000
<b>Total</b>	-	-	-	<b>686,000</b>	<b>1.8</b>	<b>40,000</b>	<b>686,000</b>	<b>1.8</b>	<b>40,000</b>

This represents an increase of 8% or 3,000 ounces on the mineral resources reported for Obenemase D Lode in March 2014.

#### 8.4 Other Konongo Deposits

Mineral Resource estimations for the other Konongo deposits were carried out during the period 2010 – 2012 by DataGeo. Snowden undertook a detailed review of the mineral resource estimates in July 2014 making a number of revisions. SEMS has reviewed the work of Snowden and accepted their reassessment. SEMS has not created any new models and has not revised the Mineral Resource estimation.

There have been no material changes to the Apan, Aserewa and Boabedroo (North, South and South Extension) deposits during the twelve month period preceding March 2015.

##### 8.4.1 Mineral Resource input data

Mineral Resource estimations were based on the following data received from Owere:

- Drill hole database “20150316 Database ALL.accdb” (MS Access format), comprising collars, surveys, assays, and lithologies for all drill holes drilled up to May 2014
- Mineralised resource wireframe and block models, in Surpac format, from the previous mineral resource estimations by DataGeo
- Topographic DTM models

##### 8.4.2 Geological Interpretation

The Other Deposits at Konongo are typical Birimian, shear hosted gold deposits similar to those of Obenemase A, B & D.

Mineralisation within the Konongo Gold Project is dominated by structure-controlled mesothermal lode gold systems and oxide deposits developed by weathering of near-surface mineralisation. Oxide deposits are restricted to weathered rock. The weathering profile is generally developed to 30-40m below surface, but is developed as deep as 80m above some lithologies.

Two styles of mineralisation occur in fresh rock - a disseminated sulphide phase and a quartz vein phase. Mineralisation is best-developed in second-order folds and adjacent to high strain shears, is steeply plunging and is open at depth at all deposits within the Konongo Gold Project. Kinks and splays in the structures are also associated with increased mineralisation.

Sulphide-related gold mineralisation is strongly associated with arsenopyrite. Minor pyrite and rare chalcopyrite occur. Free gold occurs on fractures in sulphides as well as rimming sulphides, and as inclusions within the sulphides. Arsenopyrite has been interpreted to occur in two phases, both demonstrated to be gold mineralised. Recent testing indicates that the younger arsenopyrite is strongly mineralised, presenting a new interpretation for targeting.

Alteration is dominated by carbonates, chiefly dolomite +/-ankerite, which forms a wide halo around the veins. Potassic alteration (localised biotite or weakly-developed sericite) occur as wall rock alteration and adjacent to veining. Sodic alteration is associated with late, sulphidic mineralisation. Stronger potassic and sodic alteration accompanies the highest grade ores and can be used to discriminate individual ore lenses.

Host rocks play an important role in the mineral systems. Much of the sulphidic mineralisation has clear structural - stratabound controls. The principal mineralised lithology is fine-grained subunits within immature volcanoclastic sediments and tuffs. Basaltic and andesitic lithologies frequently occur, bounding the mineralised zones. Graphitic argillites are also present, and clearly preferentially partition strain (and related fluids)

Structure within the Project is dominated by an overturned isoclinal fold parallel to the regional north-east structural trend. Dips are steeply towards the northwest. A later folding event has resulted in the development of a series of en-echelon folds oblique to the main trend.

#### **8.4.2.1 The Apan Deposit**

The Apan mineralisation occurs 500m along strike from mineralisation at Boabedro North and is hosted within the Odumase-Boabedro Shear. The Apan mineralisation is a likely outlier of the Boabedro mineralisation.

Southern Cross mined the oxide ore at Apan in the 1990s by open pit methods. Recorded production was 0.55Mt at 5.3g/t. There is no strong geological control on the distribution of gold mineralisation at Apan. Mineralisation at Apan is generally steeply dipping with short, straight NE trending strike extents over limited distances.

#### **8.4.2.2 The Aserewa Deposit**

The Aserewa mineralisation is located 1,800 metres northeast of the Akyenase North shaft. During 1996, two small open pits, Aserewa North and South, produced 161,000 tonnes of ore at 2.3 g/t gold (Mawson 1997). Mineralisation occurred in a steep westerly dipping suite of sediments comprising basal conglomerates overlain by quartzite's and then fine grained metasediments hosting carbonaceous shale bands

Gold mineralization is associated with arsenopyrite, pyrite and lessor pyrrhotite and is hosted by siliceous zones underlying sheared and faulted carbonaceous shales in the metasediments. The metasediments are basically metamorphosed arenaceous rocks containing upward fining cycles of

arkoses, greywackes and thin dark grey shales. With depth, however, the sediments become more uniform in grain size and more quartzose. Bedding is harder to identify as foliation becomes stronger.

The sediments tend to be well foliated particularly in the vicinity of the carbonaceous shale units. Here, chlorite and ankerite alteration is ubiquitous. Additional zones of silicification located below the lower-most shale unit usually correspond to good sulphide mineralization.

Carbonaceous Shales are black, very finely laminated, fine grained carbon (graphite) shale bands varying in thickness, from 20cm to 5m and occur about 20m above the quartzite or conglomerate contact. The shales are hosted by the metasediments.

The lower-most portions of the shales are all strongly sheared, while the upper areas are brecciated (faulted) and intruded by irregular white quartz veins. The thick shale bands often contain a central portion of strongly altered metasediments. Between 1 large or 4 thinner shale bands occur in the Aserewa area.

Quartzite is a fine to medium grained dark grey unit, well foliated with little evidence of bedding remaining. Cross-foliation breaks tend to show black concoidal fracturing which in reverse circulation (RC) drill holes have been logged as fine grained dolerite. The upper quartzite portions are finely interlayered with metasediment while the lower-most portions contain grit and pebble layers. Alteration and sulphide mineralization is generally poorly developed.

The conglomerates are a strongly foliated polymictic pebble-hosted conglomerate becoming less foliated with depth, and thence more recognisable. It essentially forms the base of an upward-fining sedimentary package in the Aserewa area. No alteration or sulphide mineralization was recognised in these intersections.

#### STRUCTURE:

Foliation measurements of core are assumed to be related to the regional trend. All shear zones have core angles parallel to foliation. Very few shear zones exhibited slicken-sliding that could be recognised as either strike or dip movements. Most shearing occurs in the metasediments close to and within the carbonaceous shales.

Faulting and brecciation are only seen in the carbonaceous shales where it is closely associated with randomly orientated quartz veining and pyrite mineralization. Again, movement appears to be parallel to regional trend.

#### MINERALIZATION:

Disseminated specks and blebs of pyrite occur throughout the metasediment where there has been chlorite and ankerite alteration, which is usually proximal to the carbonaceous shales and shearing. The carbonaceous shales host pyrite as streaks, trains and accumulations along foliation and fault planes. Pyrite content often reaches as much as 6% while minor arsenopyrite may occur as tiny needles disseminated along the lower areas of the shale. Concentrations of both pyrite and arsenopyrite border the quartz veins in the shale bands.

The siliceous alteration zones occurring below the lower shale bands in the metasediments are particularly important hosts of sulphide mineralization, which is often in quantities of up to 4%. Dominant arsenopyrite occurs as needles and euhedral laths up to 2mm in size, disseminated unevenly in zones paralleling foliation. Lesser amounts of pyrite and pyrrhotite occur as specks, trains of blebs and accumulations streaked out along foliation planes. Better gold grades are found in arsenopyrite dominant sulphide mineralisation.

#### WEATHERING:

The Aserewa area is overlain by at least 3m of red-brown laterite with clay. Beneath the laterite, is about 50m of total weathering represented by maroon to yellow saprolite, sometimes exhibiting relict bedding, especially in carbon-rich areas.

#### 8.4.2.3 The Boabedroo Deposit

The Boabedroo mineralisation occurs to the south of the Konongo Mining Lease in an area which includes (from southwest to northeast) Obenemase, Boabedroo (South Extended, South, North) Apan and Atunsu. A parallel shear, 300m to the southeast, hosts the Zongo, Akyenase, Akyenase Central and Aserewa mineralisation.

Historic mining at Boabedroo includes underground and open cast methods. Underground mining of the mineralisation at Boabedroo commenced in 1906 and continued almost continuously through 1986. Mining ceased, still in free-milling ore, due to infrastructure and maintenance breakdown. The underground workings are developed to level 16 (849m). In the mid-1990's, Southern Cross Minerals mined the oxide ore overlying Boabedroo. In 2012, Owere mined a thin oxide cap from Boabedroo South Extended. Sulphide-hosted gold was, historically, not the target of underground mining, presumably because of poor recoveries associated with its refractory metallurgy.

Historic production from Boabedroo underground is estimated at 0.748Mt at 20.8g/t Au from historic production figures. The mining is reported to have exclusively targeted the free-milling gold in quartz (and presumably the immediate margins of the quartz veins. Subsequent drilling in historic mining areas demonstrates that sulphide haloes to the historic stopes remains in-situ. Historic mining of the Boabedroo open pits (Boabedroo North and Boabedroo South) mined returned historic production of 3.10Mt at 1.6g/t Au. Oxide mining of the Boabedroo South Extended mineralisation in 2012 mined and processed 297,911 t of oxide ore to yield 11,663 oz Au. The recovered grade was 1.2 g/t Au, from a head grade of 1.7 g/t Au. During the period mill recovery averaged 71%, ranging from between 50% to 81%.

The geology at Boabedroo is dominated by meta-sediments. Mineralisation is principally hosted within a siltstone package which is approximately 100m true thickness. The host stratigraphy, which is locally carbonaceous and occasionally graphitic, includes minor tuffs occur in the geology. The footwall is similar, but interpreted to include a greater meta-sandstone and lesser meta-siltstones. The geology includes some lithologies attributed to the Tarkwaian (quartz-rich through arkosic coarse sandstones. These are interpreted as structural slices intercalated with the Birimian "dirty" meta-sediments. The hanging wall is also dominated by meta-sandstones (volcaniclastic sandstones).

Structural interpretation identifies three structures. S0 and S1 are sub-parallel, with mean planes are at 88-319 and 88-147 respectively – a 4 degree difference in strike. Structural data is asymmetric, and is interpreted to place the host package is the limb of an early, east verging, west-dipping isoclinal fold. The variation within the S0 and S1 may prove important, providing a mechanism to generate the southwest plunging structural control observed in historic mining. S2, as at Obenemase, is oblique and intersects prior fabrics with a northeast plunging intersection cleavage.

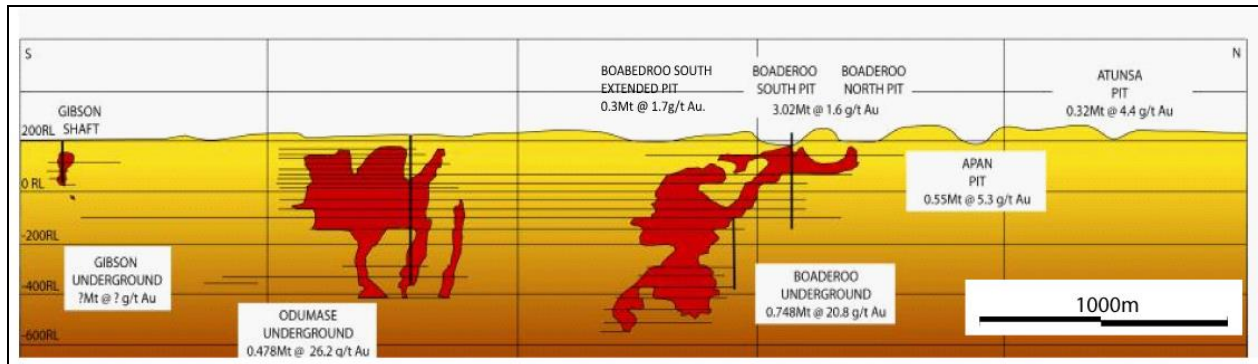


Figure 43: Odumase- Boabedroo Shear. Long section, looking northeast, showing historic mining drives and pits.

## 8.5 Interpretations and Conclusions

- The mineral resource estimation to date for OML's Konongo Gold Project Obenemase A and B lodes shows a deposit hosting 589,000 ounces at an average grade of 3.8 g/t, in the indicated and inferred categories.
- The deposit is a narrow vein, steeply dipping structure having a strike length of 1,000m and extending up to 300 metres beneath the topography surface. It remains open at depth and laterally in places.
- Gold mineralisation within the mineral resource is predominantly hosted by volcanoclastic siltstones and sandstones, with gold being associated with alteration and having a low nugget effect.
- The mineral resource has been classified as a combination of indicated and inferred, without a measured category. This is largely due to uncertainties in grade and structural continuity, which may be a function of the limited drilling to date.
- SEMS is of the opinion that the Obenemase deposits and the other deposits have potential for extensions to their existing mineral resources, which may be delineated with further drilling.
- SEMS is not aware of any external factors such as environmental, socio-economic, legal, etc that could have a material effect on the mineral resource estimate. The area is an historical mine site, and eventual economic extraction, if warranted, is likely to be by underground mining, lessening environmental impacts, potentially contributing to employment within the area

## 9 Ore Reserves

There are currently no Ore Reserves at the selected prospects.

## 10 Mining

There are currently no Mining activities at the selected prospects.

## 11 Processing

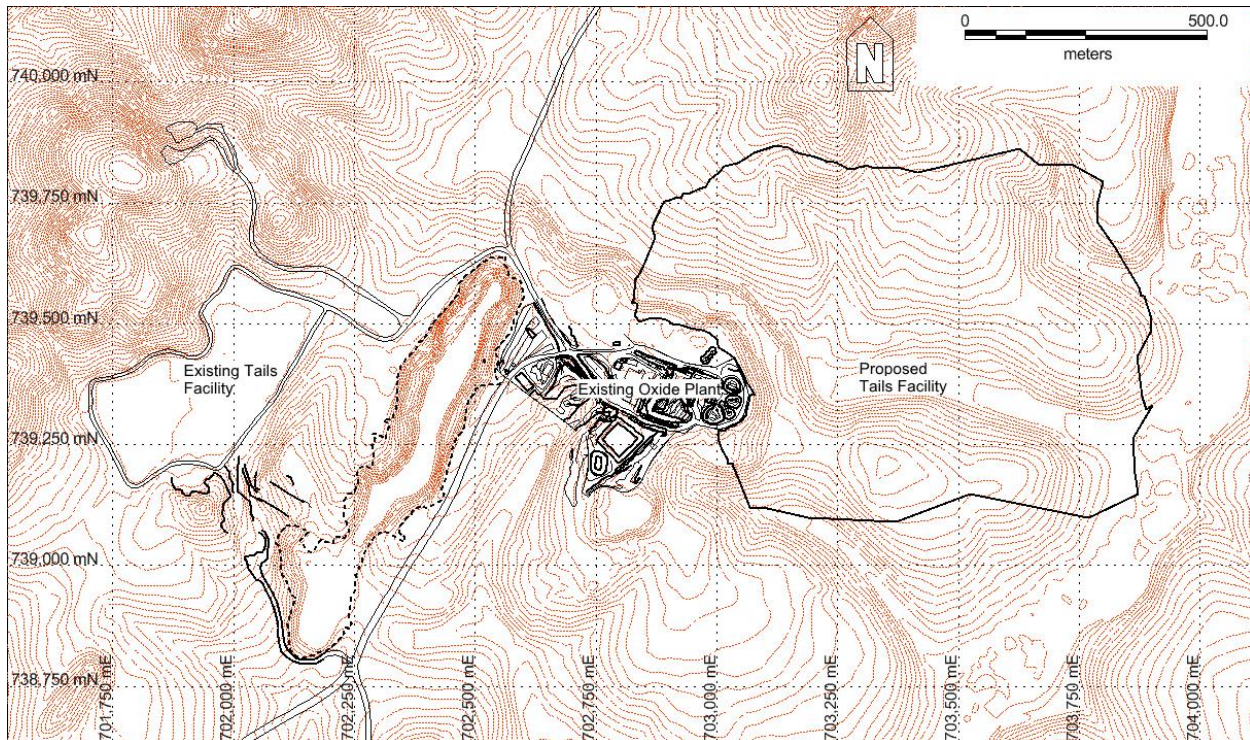
There is currently no processing of ore within the Konongo Gold Project. An operational processing plant exists on the Mining Lease, which is summarised in Section 7.

## 12 Infrastructure

### 12.1 Mine Infrastructure

The infrastructure at Konongo was refurbished by Signature for commencement of operations in May 2011. Mining activities were suspended in March 2013, and the facility placed on care and maintenance. Mine infrastructure includes:

- A 320,000 t per annum capacity plant. The plant has been refurbished in anticipation of commencement of tailings reprocessing, and is fully operational. The plant is under lease from the State Gold Mining Company.
- A 100,000 litre oxygen plant under contract from Air Liquide.
- A 100 t per hour capacity Parker mobile crusher.
- Eight kilometres of haul roads running the length of the main shear. The haul road is well maintained and functional.
- An existing Tailings Storage Facility (“TSF”) with 70,000 BCM remaining capacity and approvals in place for a 3m raise (303,000 m<sup>3</sup>). A new facility to the north of the existing TSF is in advanced planning, requiring geotechnical drilling to complete required geotechnical data (Cooper & Assoc. 2011).
- Supporting infrastructure (leased from the State Gold Mining Company). Supporting infrastructure on site includes: administration block, staff bungalows, mosque, assay laboratory (not operational) security office, welfare office, archives, workshop, power house, compound settlement, football field, primary school, senior staff club house, lawn tennis club and junior staff club house.



**Figure 44: Existing and proposed Tails Storage Facilities (TSFs)**

## 12.2 Power

Owere has an existing bulk power supply agreement with the Volta River Authority for electrical power. The 145 Kva transmission lines cross the tenements. Grid Company (GridCo) and the Electricity Company of Ghana (ECG) have 11 Kva sub-stations on the lease, located near the administration block. Transformers provide 440V three-phase power to the site. ECG is currently constructing an 11 Kva dedicated line to service the plant.

## 12.3 Water

Processing water for the plant is sourced from the Obenemase A pit. Potable water is sourced from the mains water supply or Apan pit. Three water bores have been drilled to augment supply, but are yet to be commissioned.

## 12.4 Transport

Eight km of haul roads run the length of the tenements. The haul road is well maintained and functional. The Konongo-Agogo road, which is sealed, runs parallel to (and the entire length of) the concessions.

## 12.5 Staffing

There is currently 78 staff employed on the project. This includes 4 expatriate members. Beyond the security team, the largest department is that of Exploration which employs 4 professional staff (geologists, surveyors and data spatial data manager) and 12 samplers. There are also two contractors in the geology department.

## **12.6 Accommodation**

The junior staff quarters are located within 500 m of the administration block. It occupies an area of about 1.35 ha and contains 40 units. Each unit has six single rooms (181 rooms in total) with the kitchen, washroom and toilet facilities shared among the residents. The last rows of houses are situated about 25 m from the edge of the Boabedroo North Pit, which is to the north-west. There are 51 additional quarters for nurses, security, and other auxiliary staff. All buildings are in good structural condition.

Senior staff bungalows are located and interspersed around the office area. There are 23 bungalows, some of which are detached and others semi-detached. A unit consists of 2 to 3 bedrooms. Other facilities for the senior staff include a clubhouse, swimming pool, football field and a tennis court. A good road network interlinks these facilities. The boundaries of the office and the residential areas are not fenced because they are spread too far apart. There are three control posts, and the main one leading to the Konongo Township is manned round the clock by security personnel.

## **13 Social, Environmental, Heritage and Health and Safety Management**

### **13.1 Social Management**

Owere has a community policy which integrates its business operations and values with the interests of all stakeholders including investors, customers, employees, the community and the environment. The policy aims to continually improve company relationships, based on communication, recognition of culture and heritage. It operates in consultation with host communities, government authorities and other organisations.

The company understands its responsibility to identify and facilitate opportunities for employment, training and business relationships directly and through our contractors and suppliers.

### **13.2 Environmental Management**

Company management is committed to policies and responsible operating practices which promote the conservation or enhancement of the natural and social environments in which the company operates. The mine has policies which promote a culture of environmental responsibility, provides resources, personnel and training to develop employees and build competencies related to the environment.

The mine operations work against a rehabilitation plan and endeavour to adhere to the environmental schedule attached to, and condition of, the mining permit. The company monitors environmental effects of its operations and its compliance with legal requirements and our environmental policies.

### **13.3 Heritage Management**

Prior to the commencement of work at Konongo, Owere conducted a heritage assessment. The information was incorporated into the Corporate Social Responsibility policy, which includes the requirement for Owere to operate sympathetically and responsibly near culturally sensitive areas.

The data is based on a field survey of the archaeological and cultural heritage resources survey within the concession area and the surrounding communities. The field investigation was done over a period of nine days during February 2009. In all, fifteen town/village settlements were surveyed.

The report provided a baseline for assessing the significance of heritage resources and for their sustainable management. It also provides solutions for effective Corporate Social Responsibility and alternatives strategies for community development initiatives in the concession area.

#### **13.4 Health and Safety Management**

The company places great emphasis on continually improving the health and safety. The key driver for health and safety management in the company is the aspirational goal of “Zero Harm”, an accident free workplace environment. Owere has developed an Occupational Health and Safety Management System, a framework that allows the company to consistently identify and control its health and safety risks, reduce the potential for accidents, aid legislative compliance and improve overall performance. The standard is based on OHSAS 18001:2007 to enable easier integration of environmental system into one. Key areas of the OHS management system include:

- risk management and safe work method statements
- occupational health and safety training
- site safety rules
- incident management
- measured performance improvement

### **14 Market Studies and Contracts**

The mine is currently not operating. There are no contracts in place to sell gold. Once production recommences, there is no expectation that the sale of gold will be problematic.

### **15 Financial Analysis**

The mine is currently not operating, so no financial analysis is appropriate.

### **16 Risk Assessment**

A risk assessment has been undertaken to identify of risks identified for the Obenemase, Boabedroo, Apan and Aserewa mineral resource estimates. Risks have been assessed on the basis of likelihood of occurrence, and on the consequence of an event occurring. Tables 27, 28, 30 and 31 define the categories used to assess likelihood, consequence, and risk rating. Risks have been assessed on the basis of likelihood of occurrence, and on the consequence of an event occurring. Table 29 defines the categories used to assess likelihood, consequence, and risk rating.

The downgrading of mineral resources effectively reduces risk on the project. Risk is assessed as the consequence of not downgrading the historic resources and addressing identified technical issues.

**Table 26: Categories and definitions used to assess likelihood.**

				<b>Consequence</b>				
				<b>Severe</b>	<b>Major</b>	<b>Moderate</b>	<b>Minor</b>	<b>Insignificant</b>
<b>Probability</b>	<b>Almost Certain</b>	>95%	<b>5</b>	25	20	15	10	5
	<b>Likely</b>	60-95%	<b>4</b>	20	16	12	8	4
	<b>Possible</b>	30-60%	<b>3</b>	15	12	9	6	3
	<b>Unlikely</b>	5-30%	<b>2</b>	10	8	6	4	2
	<b>Rare</b>	<5%	<b>1</b>	5	4	3	2	1

*This assessment should not be considered fully comprehensive, but represents important risks that must be addressed in future studies. All risks listed are manageable and can be mitigated, if adequate consideration and active planning is established. In addition, policies and procedures are to be implemented for a successful reinstatement of resource status.*

**Table 27: Risk consequence**

<b>Consequence</b>		<b>Definition</b>
<b>Insignificant</b>	<b>1</b>	Low financial loss (<US\$1M) of total assets; no injuries; less than one day loss of production capability; no environmental impact
<b>Minor</b>	<b>2</b>	Medium financial loss (US\$1-10M) of total assets; minor injury to one or two persons; minor loss of plant resulting in 1 day to 1 week loss of production capability; on-site environmental release immediately contained without long-term detrimental effect
<b>Moderate</b>	<b>3</b>	High financial loss (US\$10-20M) of total assets; serious injury to multiple persons; moderate loss of plant resulting in 1 week to 3 month loss of production capability; on-site environmental release contained with assistance without causing long-term detrimental effect
<b>Major</b>	<b>4</b>	Major financial loss (US\$20-50M) of total assets; death or serious injury to multiple persons; extensive loss of plant resulting in 3-6 months loss of production capability; off-site environmental release with detrimental effect or on-site release with detrimental effect
<b>Severe</b>	<b>5</b>	Very large financial loss (>US\$50M) of total assets; death or serious injury to multiple persons; major loss of plant resulting in >6 months loss of production capability; toxic environmental release off-site with serious detrimental effect

**Table 28: Risk probability**

<b>Probability</b>		<b>Definition</b>
<b>Rare</b>	<b>1</b>	Event might occur only in exceptional circumstances (theoretical) or is unlikely to occur
<b>Unlikely</b>	<b>2</b>	Event could occur at some time (conceivable but rare); about or less than 1 event every 10 years
<b>Possible</b>	<b>3</b>	Event might occur at some time (conceivably); less than 1 event per 5 years but more than 1 event per 10 years
<b>Likely</b>	<b>4</b>	Event will probably occur in most circumstances (should); about or less than 1 event per year but more than 1 event per 5 years
<b>Almost Certain</b>	<b>5</b>	Event is expected to occur in most circumstances (easily); more than 1 event every year

Apan, Aserewa and Boabedroo carry an overall “high” risk. This risk principally relates to geological and grade variability, which should be resolved upon further drilling. Additionally, the historical sampling protocols and QAQC results show a ‘medium’ to medium-high” risk due to lack of documentation and/or acceptable QAQC results. Metallurgical test work is required to lower the current “medium” metallurgical risk pertaining to the refractory nature of the primary-sulphide ore. Most issues can be ameliorated through additional drilling, test work and economic studies. None are considered “fatal” to the project, but lead to the resource classification of Inferred being used for these resources.

The Obenemase resource estimate carries an overall “medium” risk. This risk principally relates to geological and grade variability, which should be resolved upon further drilling. Metallurgical test work is required to lower the current “medium” metallurgical risk pertaining to the refractory nature of the primary-sulphide ore.

**Table 29: Risk table, downgraded prospects.**

Resource	Factor	Risk	Comment
Apan	Bulk density	Low	The current oxide, transition and primary-sulphide values are reasonable and based on estimates of density in each domain. Some local bias may exist where the proportions of host rock versus quartz and sulphides change - variability is unlikely to be greater than $\pm 10\%$ . Bulk density test work on existing cores will improve risk analysis at Apan.
Apan	Sample representivity	Low-Medium	In-situ sample representivity is likely to be reasonable given the minimal coarse-gold nature of the mineralisation.
Apan	Sample collection, preparation and assaying	Medium	Sample types used to inform the resource were dominantly diamond drill core. A standard preparation approach was used to support fire assays. Historical protocols not verified.
Apan	QAQC	High-Medium	Historical and recent QAQC indicates reasonable assay quality, but there is a lack of high quality and representative CRMs, blank and duplicate results - from the field and from the laboratory. Some earlier programs showed CRM results that were on the border of acceptable. Additionally, historical programs variably lack duplicates and/or blanks.
Apan	Geological data and model	High	General geological control is reasonable, but on variably spaced drill sections. It is noted that some interpretations do not match grade along drillholes. There is little understanding of small scale local continuity issues which control variability of tonnes and grade. Best resolution of geological continuity and ore zone complexity is only gained after development.
Apan	Grade estimate	High	The grade estimate bears uncertainty due to sampling and data uncertainties. The current estimate generally relies on a global grade for each domain based on relatively wide-spaced data. No local estimate is possible. Estimation block size is variable and is not based on QKNA. The application of cut-off grades is problematic. The ID2 with top-cut grade interpolation approach is sub-optimal. Same search ellipse applied across all deposits.

Apan	Tonnage estimate	High	The current global estimate bears uncertainty due to issues with input data. Block size makes the application of cut-off grades problematic.
Apan	Resource up-rating and addition to resource base	Medium	Resource up-rating will be based on further drilling and/or development. There is scope to increase the total resources through along strike and down-dip potential. Further drilling is required. There are no guarantees that resource upgrade will occur or that additional resources will be found.
Apan	Economic factors/reasonable prospects of economic extraction	Medium-High	No Ore Reserves are defined. The project has appropriate infrastructure in place. It is also noted that the historical pits are currently full of water. These will require dewatering and appropriate treatment/discharge in place prior to any mining operation. A Scoping Study (Dominy 2014c) concludes that the Konongo resources have reasonable prospects for eventual economic extraction as an open pit operation. A scoping study is required to investigate
Apan	Metallurgy/Mineral processing	High	The current plant is optimised for oxide ore. The majority of the Obenemase A and B resource is primary-sulphide ore. Previous limited historical test work indicates that the primary-sulphide ore is refractory and requires special treatment. Further test work is required to prove extractability. Metallurgical test work on the style of mineralisation is not thorough requires significant additional test work
Apan	Accuracy of the resource estimate	High	The accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within $\pm 40-80\%$ globally based on general experience of this style of mineralisation. Additional 'high' risk factors (see earlier) increase this global resource risk.
Apan	Social, legal, political and environmental risk	Low	These risks are considered to be low, given the relatively stable and developed nature of Ghana. The country has a long history of gold mining. Signature has a mining lease in place and has been operating without issue for a number of years.
Aserewa	Bulk density	Low	The current oxide, transition and primary-sulphide values are reasonable and based on core measurements. Some local bias may exist where the proportions of host rock versus quartz and sulphides change - variability is unlikely to be greater than $\pm 10\%$ . Although some bulk density work has been completed, more thorough sampling would be beneficial.

Aserewa	Sample representivity	Low-Medium	In-situ sample representivity is likely to be reasonable given the minimal coarse-gold nature of the mineralisation.
Aserewa	Sample collection, preparation and assaying	Medium	Sample types used to inform the resource were dominantly diamond drill core. A standard preparation approach was used to support fire assays. Historical protocols not verified.
Aserewa	QAQC	High-Medium	Historical and recent QAQC indicates reasonable assay quality. Some earlier programs showed CRM results that were on the border of acceptable. Additionally, historical programs variably lack duplicates and/or blanks. QAQC data is not complete and additional test work is required.
Aserewa	Geological data and model	High	General geological control is reasonable, and drill section spacing is 20m for most of the resource. It is noted that some interpretations do not match grade along drillholes and that the geological controls are not well established. There is lesser understanding of small scale local continuity issues which control variability of tonnes and grade. Best resolution of geological continuity and ore zone complexity is only gained after development.
Aserewa	Grade estimate	High	The grade estimate bears uncertainty due to sampling and data uncertainties. The current estimate generally relies on a global grade for each domain based on relatively wide-spaced data. No local estimate is possible. The application of cut-off grades is problematic. The ID2 with top-cut grade interpolation approach is sub-optimal. Same search ellipse applied across all deposits.
Aserewa	Tonnage estimate	High	The current global estimate bears uncertainty due to issues with input data. Block size makes the application of cut-off grades problematic.
Aserewa	Resource up-rating and addition to resource base	Medium	Resource up-rating will be based on further drilling and/or development. There is scope to increase the total resources through along strike and down-dip potential. Further drilling is required. There are no guarantees that resource upgrade will occur or that additional resources will be found.

Aserewa	Economic factors/reasonable prospects of economic extraction	Medium-High	No Ore Reserves are defined. The project has appropriate infrastructure in place. It is also noted that the historical pits are currently full of water. These will require dewatering and appropriate treatment/discharge in place prior to any mining operation. A scoping study (Dominy 2014c) concludes that the Konongo resources have reasonable prospects for eventual economic extraction as an open pit operation. A scoping study was completed in 2014 (Dominy 2014c) to investigate, but focused only on the Obenemase and Boabedro mineralisation. Aserewa is considered as potential 'upside' in this model
Aserewa	Metallurgy/Mineral processing	Medium-High	The current plant is optimised for oxide ore. The majority of the Obenemase A and B resource is primary-sulphide ore. Previous limited historical test work indicates that the primary-sulphide ore is refractory and requires special treatment. Further test work is required to prove extractability. Metallurgical test work on the style of mineralisation is not thorough requires significant additional test work
Aserewa	Accuracy of the resource estimate	High	The accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within $\pm 40-80\%$ globally based on general experience of this style of mineralisation. Additional 'high' risk factors (see earlier) increase this global resource risk.
Aserewa	Social, legal, political and environmental risk	Low	These risks are considered to be low, given the relatively stable and developed nature of Ghana. The country has a long history of gold mining. Signature has a mining lease in place and has been operating without issue for a number of years.
Boabedro	Bulk density	Low	The current oxide, transition and primary-sulphide values are reasonable and based on core measurements. Some local bias may exist where the proportions of host rock versus quartz and sulphides change - variability is unlikely to be greater than $\pm 10\%$ . Bulk densities for all available drill core has been completed, more thorough sampling in mineralisation would be beneficial.
Boabedro	Sample representivity	Low-Medium	In-situ sample representivity is likely to be reasonable given the minimal coarse-gold nature of the mineralisation.
Boabedro	Sample collection, preparation and assaying	Medium	Sample types used to inform the resource were dominantly diamond drill core. A standard preparation approach was used to support fire assays. Historical protocols not verified.

Boabedroo	QAQC	High-Medium	Historical and recent QAQC indicates reasonable assay quality. Some earlier programs showed CRM results that were on the border of acceptable. Additionally, historical programs variably lack duplicates and/or blanks. Duplicates and laboratory repeats are compromised by oversampling in very low grade rocks.
Boabedroo	Geological data and model	High	General geological control is reasonable, but on variably spaced drill sections. It is noted that some interpretations do not match grade along drillholes. There is lesser understanding of small scale local continuity issues which control variability of tonnes and grade. Best resolution of geological continuity and ore zone complexity is only gained after development.
Boabedroo	Grade estimate	High	The grade estimate bears uncertainty due to sampling and data uncertainties. The current estimate generally relies on a global grade for each domain based on relatively wide-spaced data. No local estimate is possible. Estimation block size is variable and is not based on QKNA. The application of cut-off grades is problematic. The ID2 with top-cut grade interpolation approach is sub-optimal. Same search ellipse applied across all deposits.
Boabedroo	Tonnage estimate	High	The current global estimate bears uncertainty due to issues with input data. Block size makes the application of cut-off grades problematic.
Boabedroo	Resource up-rating and addition to resource base	Medium	Resource up-rating will be based on further drilling and/or development. There is scope to increase the total resources through along strike and down-dip potential. Further drilling is required. There are no guarantees that resource upgrade will occur or that additional resources will be found.
Boabedroo	Economic factors/reasonable prospects of economic extraction	Medium	No Ore Reserves are defined. The project has appropriate infrastructure in place. It is also noted that the historical pits are currently full of water. These will require dewatering and appropriate treatment/discharge in place prior to any mining operation. A Scoping Study (Dominy 2014c) concludes that the Konongo resources have reasonable prospects for eventual economic extraction as an open pit operation. A scoping study was completed (Dominy 2014c) and determined reasonable prospects of economic extraction. The study (with 30-50% variability in metrics) was based on mining Obenemase and Boabedroo.

Boabedroo	Metallurgy/Mineral processing	Medium-High	The current plant is optimised for oxide ore. The majority of the Obenemase A and B resource is primary-sulphide ore. Previous limited historical test work indicates that the primary-sulphide ore is refractory and requires special treatment. Further test work is required to prove extractability. Metallurgical test work on the style of mineralisation is not thorough requires significant additional test work
Boabedroo	Accuracy of the resource estimate	High	The accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within $\pm 40-80\%$ globally based on general experience of this style of mineralisation. Additional 'high' risk factors (see earlier) increase this global resource risk.
Boabedroo	Social, legal, political and environmental risk	Low	These risks are considered to be low, given the relatively stable and developed nature of Ghana. The country has a long history of gold mining. Signature has a mining lease in place and has been operating without issue for a number of years.
Obenemase	Bulk density	Low	The current oxide, transition and primary-sulphide values are reasonable and based on core measurements. Some local bias may exist where the proportions of host rock versus quartz and sulphides change - variability is unlikely to be greater than $\pm 10\%$ .
Obenemase	Sample representivity	Low-Medium	In-situ sample representivity is likely to be reasonable given the minimal coarse-gold nature of the mineralisation and the reasonable quality of QAQC assessment.
Obenemase	Sample collection, preparation and assaying	Low-Medium	Drilling, sample type, sample preparation and assay methods used were industry standard. Sample types used to inform the resource were dominantly diamond drill core. A standard preparation approach was used to support fire assays. Some variation of methods with historical data imparts some errors.
Obenemase	QAQC	Medium	Historical and current QAQC indicates reasonable assay quality. Some earlier programs showed CRM results that were on the border of acceptable. Additionally, historical programs variably lack duplicates and/or blanks and frequently lack laboratory repeats and duplicates. SOPs are in place and current, but this can only be confirmed from 2009.

Obenemase	Geological data and model	Low-Medium	General geological control is reasonable on 15-30 m drill sections. Knowledge of historical development and modern drilling aids interpretation. There is lesser understanding of small-scale local continuity issues which control variability of tonnes and grade. Best resolution of geological continuity and ore zone complexity is only gained after development.
Obenemase	Grade estimate	Medium	The grade estimate bears some uncertainty due to a moderate nugget effect, sampling and data uncertainties. The current estimate generally relies on a global grade for each domain based on relatively wide-spaced data. No local estimate is possible. Estimation block size is broadly appropriate to the drill spacing, but does not relate to any SMU size. The current block size of 10 m by 10 m by 10 m gives a tonnage of 2,800 t per block in primary-sulphide ore. The application of cut-off grades is problematic. The OK with top-cut grade interpolation approach is reasonable. The search ellipse is controlled by variography.
Obenemase	Tonnage estimate	Medium	The current global estimate is reasonable, given that volume is based on a 3D model constrained by drill data and geological interpretation. Estimation block size and cut-off grade application as noted previously has effect on tonnage.
Obenemase	Resource up-rating and addition to resource base	Medium	Resource up-rating will be based on further drilling and/or development. There is scope to increase the total resource at Obenemase A and B through along strike and down-dip potential. Further drilling is required. There are no guarantees that resource upgrade will occur or that additional resources will be found.
Obenemase	Economic factors/reasonable prospects of economic extraction	Medium-High	No Ore Reserves are defined. The project has appropriate infrastructure in place. It is also noted that the historical pits are currently full of water. These will require dewatering and appropriate treatment/discharge in place prior to any mining operation. A Scoping Study (Dominy 2014c) concludes that Obenemase A and B have reasonable prospects for eventual economic extraction as an open pit operation. A scoping study (Dominy 2004c) concludes reasonable prospect of economic extraction if Obenemase is mined in conjunction with Boabedroo (with 30-50% errors in mining metrics).

Obenemase	Metallurgy/Mineral processing	Medium	The current plant is optimised for oxide ore. The majority of the Obenemase A and B resource is primary-sulphide ore. Previous limited historical test work indicates that the primary-sulphide ore is refractory and requires special treatment. Further test work is required to prove extractability.
Obenemase	Accuracy of the resource estimate	Low	The CP believes the accuracy of the grade and tonnage estimate for Indicated Mineral Resources to be within $\pm 20-30\%$ globally based on this style of mineralisation. Similarly, the accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within $\pm 30-50\%$ globally based on this style of mineralisation (orogenic lode gold).
Obenemase	Social, legal, political and environmental risk	Medium	These risks are considered to be low, given the relatively stable and developed nature of Ghana. The country has a long history of gold mining. Signature has a mining lease in place and has been operating without issue for a number of years.

## 17 Interpretation and Conclusion

The Konongo Gold Project straddles the prospective western margin of the Ashanti Belt in Southwest Ghana. The property is named after the nearby town of Konongo (estimated population 40,000), and is approximately 200 km by road northwest of Accra and approximately 55 km east of the major regional centre of Kumasi.

Obenemase, Boabedroo, Apan and Aserewa are all mineral resource zones within the Konongo Gold Project and contain historical open pit and underground mine workings. The Konongo Gold Project comprises two leases totalling 163 km<sup>2</sup>; a Mining Lease which is valid to 2023 and a Prospecting Licence which must be renewed every two years, conditional on a 50% statutory reduction in surface area.

The estimated mine production between 1903 and 1997 is 1.6 Moz Au at 11.8 g/t Au. Historic mining focused almost exclusively on free-milling gold in laminated quartz vein systems. Since 2012, Signature has completed a total of 17,479 m of drilling and 1,293 m of exploration trenching within the Obenemase deposit.

Two styles of mineralisation are described at Konongo, an early quartz vein phase and a later disseminated sulphide phase. Gold mineralisation is associated with early veins, arsenopyrite, pyrite, and rare chalcopyrite. Gold occurs as quartz vein hosted mineralisation and as fracture-fill, interstitial mineralisation in sulphides. Quartz veins are 0.5 m to several meters wide and display evidence of repeated shearing and resealing. Laminated quartz is common, often with included wall fragments. Disseminated sulphide mineralisation appears to be lithologically controlled and forms wide zones around quartz veins or adjacent to main structures.

SEMS updated the Konongo Gold Project Mineral Resource estimates for the period ending 31<sup>st</sup> March 2015 for the Obenemase A, B & D deposits. The mineral resource updates are based upon a campaign of diamond core drilling completed by Owere during the twelve month period from April 2014 to March 2015.

SEMS reviewed the Mineral Resources for Apan, Aserewa and Boabedroo and are of the opinion that there have been no material changes to these three deposits since those reported for the period ending 31<sup>st</sup> March 2014 (Dominy and van Lente 2014b).

All mineral resources estimates reported by SEMs for the period ending 31<sup>st</sup> March 2015 are classified in accordance with the JORC Code 2012. The overall mineral resource risk is defined as "medium" which reflects the need for further drilling and the undertaking of an economic study.

Drilling of Obenemase A and B deposits during 2014 has permitted the estimation of an Indicated and Inferred Mineral Resource containing 589,000 oz Au which represents a 4% or 25,000 ounce increase on the mineral resources reported for the period ending 31<sup>st</sup> March 2014. The 2015 mineral resource estimation used statistical and spatial analysis, three domains were defined. These were principally based on ore type, including oxide, transitional and primary ore. All domains were estimated using Ordinary Kriging.

Drilling of Obenemase D during 2014 permitted the estimation of an Inferred Mineral Resource containing 40,000 oz Au which represents an 8% or 3,000 ounce increase on the mineral resources

reported for the period ending 31<sup>st</sup> March 2014. The 2015 mineral resource estimation used statistical and spatial analysis, three domains were defined. These were principally based on ore type, including oxide, transitional and primary ore. All domains were estimated using Inverse Distance Squared (ID2).

The Apan, Aserewa and Boabedro Mineral Resources remain unchanged from those reported for the period ending 31<sup>st</sup> March 2014 and include a total Inferred Mineral Resource containing 378,000 oz Au. Based on geological logging, three domains were defined in each of these deposits. These were principally based on weathering, including oxide, transitional and primary ores. All domains were estimated using inverse distance squared (ID2) with a top-cut.

A Scoping Study completed in July 2014 (Dominy et al 2014c) concluded that there are reasonable prospects for eventual economic extraction from the Obenemase A, B and D deposits as well as the Boabedro North and South deposits within the Konongo Gold Project. The other mineral resources were not included in the Scoping Study.

The Obenemase mineral resources carry an overall “medium” risk. This risk principally relates to geological and grade variability, which should be resolved upon further drilling. Metallurgical testwork is required to lower the current “medium” metallurgical risk pertaining to the refractory nature of the primary-sulphide ore. Most issues can be ameliorated through additional drilling, metallurgical testwork and economic studies. None are considered “fatal flaws” to the project.

Apan, Aserewa and Boabedro mineral resources have a “high” risk. This risk principally relates to geological and grade variability, which should be resolved upon further drilling and review of data.

## 18 Recommendations

**Resulting from the mineral resource estimations completed by SEMS in 2015 for the Konongo Gold Project the following recommendations are proposed for the Obenemase A & B deposit:**

- External verification of density values used in the mineral resource model, especially those assigned to the transitional ore.
- Allocation of density values to mineral resource blocks in a gradational range between oxide and transitional ore and between transitional and sulphide ore.
- Further geological and structural studies to guide the delineation of improved mineralisation wireframes. This will assist future drill planning especially for extensions of the Obenemase A lode at depth and the position of Obenemase B lode.
- Drilling is required within the existing mineral resource to:
  - Upgrade Inferred category to Indicated category – infill drilling.
  - Covert unclassified material to Mineral Resource status – extensional drilling sub 0mRL.

**Resulting from the mineral resource estimations completed by SEMS in 2015 for the Konongo Gold Project the following recommendations are proposed for the Obenemase D deposit:**

- Further geological and structural studies to guide the delineation of improved mineralisation wireframes and geological interpretations. This will assist future drill planning.

- Drilling is required within the existing mineral resource to upgrade Inferred category to Indicated category – infill drilling.

**Resulting from the Scoping Study completed in 2014 the following recommendations are proposed:**

- Additional metallurgical testwork on the refractory, sulphide ore to better understand the Project's processing options.
- Additional drilling to provide geotechnical information and metallurgical samples.
- Due to QAQC issues with historical data, all remaining diamond core or pulps should be reanalysed.
- Continue the validation of historical data and incorporate uncaptured historical data into the Project database.
- Refine and expand the Scoping Study to:
  - Include all the Mineral Resources within the Konongo Gold Project
  - Review underground mining options for higher grade ore shoots
  - Assess the viability of an open pit mining option within the Konongo Mining Lease
  - Incorporate longer-term planning to exploit known, deep, quartz vein-hosted, free milling gold.
  - Focus on bringing the Project datasets to a standard that will facilitate a Pre-Feasibility Study.
- Assess exploration targets outside the current mineral resources that lie on known structures that are interpreted to control mineralisation.

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## 20 Qualified Persons Statements

I, Simon Meadows Smith, confirm that I am a Competent Person for the Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code 2012 Edition, having five years of experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Fellow of the Institute of Materials, Minerals and Mining which is a 'Recognised Professional Organisation' (RPO) included in a list promulgated by the ASX from time to time.
- I have reviewed the Report to which this Consent Statement applies.

I am a full time employee of

**SEMS Exploration Services Ltd, 17 Orphan Crescent, Labone, Accra, Ghana**

and have been engaged by

**Owere Mines Ltd**

to prepare the documentation for

**LionGold Corporation**

on which the Report is based, for the period ended

**31<sup>st</sup> March 2015**

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Targets, Exploration Results and Mineral Resources.



Signature of Competent Person

Date: **30<sup>th</sup> May 2015**

Professional Membership: **FIMMM**

Membership Number: **49627**

I, Andrew Netherwood, confirm that I am a Competent Person for the Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code 2012 Edition, having five years of experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member of the Australasian Institute for Mining and Metallurgy
- I have reviewed the Report to which this Consent Statement applies.

I am a full time employee of

**SEMS Exploration Services Ltd, 17 Orphan Crescent, Labone, Accra, Ghana**

and have been engaged by

**Owere Mines Ltd**

to prepare the documentation for

**LionGold Corporation**

on which the Report is based, for the period ended

**31<sup>st</sup> March 2015**

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Targets, Exploration Results and Mineral Resources.



Signature of Competent Person

Date: **30<sup>th</sup> May 2015**

Professional Membership: **MAusIMM**

Membership Number: **100463**

I, Joe Amanor, confirm that I am a Competent Person for the Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code 2012 Edition, having five years of experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member of the Australasian Institute for Mining and Metallurgy
- I have reviewed the Report to which this Consent Statement applies.

I am a full time employee of

**SEMS Exploration Services Ltd, 17 Orphan Crescent, Labone, Accra, Ghana**

and have been engaged by

**Owere Mines Ltd**

to prepare the documentation for

**LionGold Corporation**

on which the Report is based, for the period ended

**31<sup>st</sup> March 2015**

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Targets, Exploration Results and Mineral Resources.



Signature of Competent Person

Date: **30<sup>th</sup> May 2015**

Professional Membership: **MAusIMM CP (Geo)**

Membership Number: **204572**

## 21 Glossary

**Aircore:** Drilling method employing a drill bit that yields sample material which is delivered to the surface inside the rod string by compressed air.

**Alluvial:** Pertaining to silt, sand and gravel material, transported and deposited by a river.

**Alteration:** A change in mineralogical composition of a rock commonly brought about by reactions with hydrothermal solutions or by pressure changes

**Alteration:** The change in the mineral composition of a rock, commonly due to hydrothermal activity.

**Amphibolite facies:** The set of metamorphic mineral assemblages (facies) which is typical of regional metamorphism between 450-700°C.

**Amphibolite:** A metamorphic crystalline rock consisting mainly of amphiboles and some plagioclase.

**Anticline:** A fold in the rocks in which strata dip in opposite directions away from the central axis.

**Antiformal:** An anticline-like structure.

**Archaean:** Widely used term for the earliest era of geological time spanning the interval from the formation of Earth to about 2,500 million years ago.

**Arsenopyrite:** A silvery-gray mineral consisting of an arsenide and sulfide of iron, chemical formula FeAsS.

**Au:** The chemical element gold

**Basalt:** A dark, fine-grained volcanic rock of low silica (<55%) and plagioclase feldspar and pyroxene.

**Biotite:** A type of black mica.

**Breccia:** A rock made up of mainly angular fragments.

**Breccia:** A rock mass composed of large, angular fragments of preexisting rocks

**Carbonate:** A sediment formed from the organic or inorganic precipitation from aqueous solution of carbonates of calcium, magnesium, or iron; e.g., limestone and dolomite.

**Chalcopyrite:** A bright brass-yellow copper-iron sulphide: CuFeS<sub>2</sub>.

**Chalcopyrite:** The mineral copper iron sulphide

**Chlorite:** Family of tetrahedral sheet silicates of iron, magnesium, and aluminum, characteristic of low-grade metamorphism.

**Clays:** A fine-grained, natural, earthy material composed primarily of hydrous aluminium silicates.

**Cleavage:** A regular parting in rock formed as a result of compression. Typically seen in slate

**Craton:** Large, and usually ancient, stable mass of the Earth's crust.

**Development:** Underground activity to access an orebody (vein) for evaluation and mining

**Diamond (core) drilling:** Method of obtaining a cylindrical core of rock by drilling with a diamond impregnated bit. Produces a high quality sample

**Diamond drilling:** A method of obtaining a cylindrical core of rock by drilling with a diamond-set or diamond impregnated bit.

**Dip/dipping:** Angle and direction of steepest slope on a planar surface

**Dolerite:** A fine to medium grained intrusive mafic rock.

**Dyke:** Thin, sheet-like intrusion of magmatic (igneous) rock.

**Electromagnetic (EM) survey:** A geophysical survey technique where potential fields are measured under the influence of an applied current.

**Epigenetic:** A hydrothermal event imposed upon rocks (usually by the hydrothermal phase of felsic intrusions).

**Facies:** Changes in composition, mineral associations or crystallisation sequence brought about by different depositional environments, increasing distance from source, or differing physical and chemical parameters.

**Fault:** A fracture plane in rocks showing significant movement between the two sides

**Felsic:** Light coloured rocks containing an abundance of feldspars and quartz.

**Ferruginous:** Containing iron.

**Foliation:** The banding or lamination of metamorphic rocks as distinguished from stratification in sedimentary rocks.

**g/t:** Grammes per tonne, used to express concentration of rare metals in rock. 1 g/t is equivalent to 1 ppm and 1,000 ppb

**Gabbro:** A coarse-grained mafic intrusive rock, which is low in silica and has relatively high levels of iron and magnesium minerals.

**Galena:** The mineral lead sulphide

**Geochronology:** The dating and relative dating of geologic formations and events.

**Grade:** The relative quantity or percentage of mineral content. Gold grade is commonly expressed in the terms: g/t - grammes per tonne, ppb – parts per billion, ppm – parts per million

**Granite:** A coarse-grained igneous rock containing mainly quartz and feldspar minerals and subordinate micas.

**Greenschist:** A metamorphosed basic igneous rock which owes its colour and schistosity to abundant chlorite.

**Greenstone belt:** A broad term used to describe an elongate belt of rocks that have undergone regional metamorphism to greenschist facies.

**Greywacke:** A sandstone like rock, with grains derived from a dominantly volcanic origin.

**Group:** A major sequence of sedimentary rocks forming a distinctive unit by virtue of rocks and/or fossils

present

**Hinge zone:** A zone along a fold where the curvature is at a maximum.

**Hydrothermal:** Hot water associated with thermal springs or felsic intrusive rocks.

**Igneous:** Rocks that have solidified from a magma.

**In situ:** In the natural or original position.

**Indicated Mineral Resource:** An 'Indicated Mineral Resource' is that part of a Mineral Resource for which tonnage, densities, shape, physical, characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and or grade continuity but are spaced closely enough for continuity to be assumed

**Inferred Mineral Resource:** An 'Inferred Mineral Resource' is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability

**Infill:** Refers to sampling or drilling undertaken between pre-existing sample points.

**Intermediate:** A rock unit which contains a mix of felsic and mafic minerals.

**Intrusions:** A body of igneous rock which has forced itself into pre-existing rocks.

**Isoclinal:** A series of folds that dip in the same direction at the same angle.

**JORC / the JORC Code:** The Reporting Code of the Joint Ore Reserves Committee (of the Australian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and the Minerals Council of Australia). The JORC Code 2012.

**JORC:** The Joint Ore Reserves Committee (Australia). The JORC Code for the classification and reporting of mineral resources and ore reserves has now become an internationally accepted standard.

**Laterite:** Red residual soil developed in humid, tropical, and subtropical regions of good drainage.

**Ma:** An abbreviation for 'million years ago'.

**Ma:** Millions of years

**Mafic:** Descriptive of rocks composed dominantly of magnesium, iron and calcium-rich rock-forming silicates.

**Magnetite:** A naturally occurring magnetic oxide of iron (Fe<sub>3</sub>O<sub>4</sub>).

**Mantle:** The zone between the core and crust of the earth.

**Measured Mineral Resource:** A 'Measured Mineral Resource' is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaces closely enough to confirm geological and grade continuity

**Meta-:** A prefix meaning 'metamorphosed'.

**Metallogenic:** Association of metal ores that is peculiar to a particular region, or period of time.

**Metamorphic:** A rock that has been altered by physical and chemical processes involving heat, pressure and derived fluids.

**Metamorphism:** The process of recrystallisation of rock as result of increased temperature and pressure

**Metasedimentary:** A rock formed by metamorphism of sedimentary rocks.

**Micron ( $\mu\text{m}$ ):** A measurement of distance – 1,000  $\mu\text{m}$  is equivalent to 1 mm. A  $\mu\text{m}$  is  $1 \times 10^{-6}$  of a m

**Mineral Resource:** A technical term which is controlled in its use by the 2012 JORC Code. A 'Mineral Resource' is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are subdivided, in order of increasing confidence, into Inferred, Indicated and Measured categories. The words 'ore' and 'reserves' must not be used in describing Mineral Resources as the terms imply technical feasibility and economic viability and are only appropriate when all relevant Modifying factors have been considered

**Mylonite:** A compact, chert like rock without cleavage, produced by the extreme granulation and shearing of rocks.

**Nugget effect:** A term that describes grade variability for samples at small distances apart (less than a few cm). A low nugget effect (<20%) indicates minimal grade variation, whereas a high nugget effect (>70%) indicates that grade is highly variable and potentially relatively unpredictable. Pure nugget effect (100%) indicates an almost random grade distribution.

**Olivine:** An olive green magnesium-iron silicate ( $(\text{Mg,Fe})_2\text{SiO}_4$ ), common in mafic and ultramafic igneous rocks.

**Ore Reserve:** A technical term which is controlled in its use by the 2012 JORC Code. An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined. Appropriate assessments and studies have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could be reasonably justified. Ore Reserves are sub-divided in order of increasing confidence into Probable Ore Reserves and Proved Ore Reserves

**Ore shoot / shoot:** A high grade zone within a mineral vein

**Orogeny:** Process by which mountain structures develop.

**Paleoproterozoic:** The first of the three sub-divisions (eras) of the Proterozoic occurring between 2500 to 1600 million years ago.

**Pegmatite:** An exceptionally coarse-grained igneous rock, with interlocking crystals, usually found as irregular dykes, lenses or veins.

**Percussion drilling (RC):** Drilling method employing a repeated hammering action on a drill bit, also known as Reverse Circulation (RC) drilling.

**Peridotite:** A general term for ultramafic igneous rocks dominantly consisting of dominant olivine, subordinate clinopyroxene, and lacking feldspar.

**Pluton:** A body of igneous rock formed beneath earth surface by consolidation from magma.

**Porphyry:** An igneous rock of any composition that contains conspicuous phenocrysts (coarse crystals) in a fine-grained groundmass.

**Precambrian:** All geologic time, and its corresponding rocks, before the beginning of the Palaeozoic (from 570 Ma back).

**Proterozoic:** An era of geological time spanning the period from 2,500 million years to 570 million years before present.

**Pyrite:** A very common iron sulphide mineral FeS<sub>2</sub>.

**Pyrite:** The mineral iron disulphide

**Pyrrhotite:** A magnetic iron sulphide mineral (complex structure, summary Fe<sub>7</sub>S<sub>8</sub> formula).

**QAQC (for sampling and assaying):** There are two components to a QAQC system – quality assurance and quality control. Quality assurance (QA) refers to the protocols and procedures, which ensure that sampling and assaying is completed to the required quality. Quality control (QC), however, is the use of control samples and statistical analysis to ensure that the assay results are reliable

**Quartz:** The mineral silicon dioxide

**Schist:** A micaceous crystalline metamorphic rock having a foliated structure.

**Sericite:** A white or pale apple green potassium mica.

**Shale:** A fine grained, laminated sedimentary rock formed from clay, mud and silt.

**Shear:** Deformation resulting from stresses that cause contiguous parts of a body to slide relative to each other in a direction parallel to their plane of contact.

**Silica:** Dioxide of silicon, SiO<sub>2</sub>, usually found as the various forms of quartz.

**Stockwork:** A mineral deposit consisting of a three-dimensional network of planar to irregular veinlets closely enough spaced that the whole mass can be mined.

**Stratigraphic:** The arrangement of strata.

**Strike slip:** Movement parallel to the strike of a fault plane

**Strike:** The direction or trend taken by a structural surface.

**Strike:** Trend of an horizontal line on any geological plane

**Sulphide minerals:** Mineralisation characterised by compounds of metals and sulphur.

**Sulphides:** Minerals composed of metals combined with sulphur

**Supergene:** Oxidation, electrolytic and solution effects brought about by low temperature, ground-water activity.

**Syncline:** A configuration of folded, stratified rocks in which rocks dip downward from opposite directions to come together in a trough.

**Synform:** A fold whose limbs close downward in strata for which the stratigraphic sequence is unknown.

**Tectonised:** Rocks that have been deformed by movement of the crust.

**Thrust:** An overriding movement of one crustal unit over another.

**Ultramafic:** Igneous rock in which more than 90% of the minerals are ferromagnesian minerals.

**Variogram:** A graphic representation of spatial correlation between samples in a given orebody. The variogram allows the calculation of the nugget effect and the sphere of influence of samples (the range)

**Vein:** A relative thin (millimetres to 10 m scale) sheet of quartz or other minerals cutting across pre-existing rocks

## **Appendix 1 JORC Table 1**

## Table 1 Report – Section 1

## Konongo Gold Project, Signature Metals

## Sampling Techniques and Data

## JORC 2012

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li><i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li><i>In cases where ‘industry standard’ work has been done this would be relatively simple (eg ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<ul style="list-style-type: none"> <li>RC sampling is taken as 1m intervals collected in-line with a cyclone. Samples are split with a 3-tier riffle splitter to generate a representative 1/8th sample for submission. Certified standards and Blanks (largely sourced from AMIS, South Africa) are inserted into the sample sequence – at least one every 20m. Duplicates are resplits of the 1m sample. All RC chips are geologically logged, and samples from each metre are stored on site in chip trays. Logging and chip information is used to put returned assays into geological context. Chain of custody is maintained from the field to the laboratory.</li> </ul> <p>For RC drilling, 2 and 3 kg is submitted to a certified laboratory. A 60gram charge is pulverised for fire assay. Internal lab checks are reported to the company.</p> <ul style="list-style-type: none"> <li>Diamond drilling is executed as Diamond core tails on RC pre-collars. The transition to core drilling is based on interpreted geology and expected mineralisation depth. Pre-collars are generally not sampled. Core samples are taken based on changes in the observed geology, alteration and mineralisation. Laboratory samples are half-core, taken with a manual core saw. Certified standards and blanks are inserted into the within the sample sequence, Standards, one of each is included within each 20m of sampling. The remaining half-core is kept on-site for reference and interpretation. Chain of custody is maintained from the field to the laboratory.</li> </ul> <p>Minimum samples for Diamond Core are 0.3m; maximum sample length is 1.0m. Samples are submitted to a certified laboratory. Samples Duplicates are indicated in the sample sequence, and are taken as a second split from the pulverized half-core. Samples are assayed by fire assay with a 60 gram charge. Additional check samples are inserted by the laboratory - data that is made available to the company.</p>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li><i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<ul style="list-style-type: none"> <li>RC Rigs on-site are contracted from Global Exploration Services (GES) and include SCHRAMM 480 and SCHRAM685. RC bit is 4 ¾ inch, face sampling hammer.</li> <li>Diamond Rigs are CORTECH-2010 rigs contracted from Global Exploration. Standard tube HQ and NQ are used, NQ is the dominant core size through mineralisation.</li> </ul>
<b>Drill sample</b>	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>RC chip recoveries are qualitatively and quantitatively recorded. Sample condition (wet/dry/contaminated) is recorded. Weight of dry samples is recorded. Holes are</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>recovery</b>	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<p>prepared to ensure the hole remains open. Data is recorded in the geodatabase (migrated to Datashed). Auxiliary compressors are on-site to maximize the potential to return dry samples. Holes are cleared at the end of each rod and the cyclones are cleaned at the end of each hole or as required. Methodology does not permit accurate assessment of bias due to fraction loss.</p> <ul style="list-style-type: none"> <li>Diamond Core recovery is based on the length of re-assembled core from each core run. Recoveries are recorded in the geodatabase (Datashed). Recoveries are generally in excess of 90%.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>RC chips are logged by qualified geologists who have experience on the Project (or equivalent systems in other projects). Geology is logged based on 1m intervals. Logging is both qualitative (lithology, alteration, mineralisation, oxidation state) and quantitative observations (geology, alteration and mineralisation boundaries). Information is recorded using LogChief software, and entered into the geodatabase.</li> <li>Core logging is both qualitative (lithology and alteration and mineralisation intensity, oxidation state) and quantitative observations (structure, geological and alteration and mineralisation boundaries), recorded in LogChief software, and entered into the geodatabase. Geotechnical data (recoveries, SGs and density, fractures) are quantitatively logged. Structure is qualitatively and quantitatively logged (alpha/beta measurements) and/or cradle readings for oriented core). Wet and dry photography is taken for all drill core.</li> <li>100% of Diamond Core is geologically, structurally, geotechnically logged and photographed.</li> <li>100% of RC drilling is geologically logged.</li> <li>Logging and geotechnical logging for RC and Diamond Drilling is considered to be of sufficient detail to support Mineral Resource estimation, mining studies and metallurgical Studies.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including</li> </ul>	<ul style="list-style-type: none"> <li>RC sampling is taken as 1m intervals collected in-line with a cyclone. Samples are split with a 3-tier riffle splitter to generate a representative 1/8th sample for submission.</li> <li>Diamond core is half-core prepared with a manual core saw. The methodology preserved the orientation line. Sampling of half-core is taken as alternate halves for each sample. Samples are a minimum of 0.3m and a maximum of 1.0m. Intervals are based on geology, alteration and mineralisation observed.</li> <li>Sample preparation for both RC and Diamond Drilling includes weighing, drying, crushing to 70% -2mm, split of 250g and pulverize to better than 85% passing 75 micron (regarded to be industry standard for this style of mineralisation).</li> <li>SOPs (controlled documentation) for sample preparation, sample collection and sample submission are held on site. Staff training is implemented and reviewed. A number of</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>for instance results for field duplicate/second-half sampling.</i></p> <ul style="list-style-type: none"> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>SOPs remain pre-sign-off, but all are in place and in use.</p> <ul style="list-style-type: none"> <li>• Analysis of duplicate data taken from RC and core sampling indicates that sample size is appropriate for the grain size and nature of the mineralisation being sampled.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Gold grades are determined at ALS Kumasi for ore grade Au by fire assay and AAS using a 60 gram nominal sample weight. Method precision is reported by the lab as +/- 10%, and the reporting range is 0.01-100ppm. The technique produces a total result.</li> <li>• No geophysical techniques are used.</li> <li>• Quality control includes the insertion of certified reference materials (standards and blanks) into the sample sequence by the company. Duplicates are generated from field samples. The laboratory inserts check samples into each work order and reports the results. The laboratory monitors and reports milling statistics.</li> <li>• Regression for duplicates is 0.8083- repeatability is good.</li> <li>• No new assays were returned during the Quarter. Historic CRM data returned throughout the program does not show a systematic bias. Minor calibration drift is observed in some standards. Blanks checks are statistically sound. Precision is appropriate. No material bias is observed.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Documented verification of intersections has not been completed. It will form a part of a scoping study review currently in progress. Grades, however, correlate to qualitative observation of alteration and mineralisation in samples.</li> <li>• Twinned holes have not been drilled.</li> <li>• Data is stored as electronic and paper copies. Electronic data is stored in its source format, both on on-site servers and by the service provider. On-site servers are backed up weekly. Geological sampling data is entered into a Datashed database, which includes proprietary data validation checks to ensure field sampling information is correct. Returned assay data are stored as certified PDF copies and imported from text files provided by the laboratory. Certified QAQC files are also provided by the laboratory as PDF and text files.</li> <li>• No adjustments are made to the assay data.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li>• <i>Specification of the grid system used.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Collar positions are determined with a TOPCON DGPS. Down hole surveys are captured using an NQ Ori Kit 800. An orientation is taken every three metres and reliability is gauged on the number of subsequent reading for which the core orientation can be extrapolated down hole. RC and Diamond core surveys use a Proshot Dual (CTKIT100)</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>unit taken on 30m intervals down hole.</li> <li>All reported results are reported in WGS84 UTM30N.</li> <li>Mining related data is captured with Differential GPS, including mine workings, locations and required topography.</li> <li>Regional DTM is from GeoEye, with X and Y accuracy of 0.5m and Z accuracy of 4m. The survey was captured in December 2012. More accurate DTMs are generated using a Total Station, which has millimetre precision.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Regional RC collars are spaced on 40m section spacing and target mineralisation intercepts at 30m and at 50m vertical depths. The drilling follows up on regional Aircore drilling which is spaced on 300m, 160m or 80m line spacing. The section spacing is appropriate to assess and interpret geology and mineralisation. Drilling azimuths are generally oriented toward 136, perpendicular to the regional fabric, and dipping at -60 degrees. Where increased geological and mineralisation control is established, azimuths and dips are adjusted for each individual target.</li> <li>Diamond Drilling is also based on 40m line spacing, closed to 20m where continuity of geology or mineralisation is insufficient to generate appropriate geological and grade continuity for Mineral Resource estimates. At Obenemase, hole azimuths are generally at 120 or 300 degrees, perpendicular to the dominant local orientation. Dips vary based on the orientation of the target mineralisation. Data generated is consistently appropriate for Inferred Mineral Resource classification.</li> <li>The maximum sample interval for RC and Diamond Drilling is 1m. Reported results are composited. Composites are required to return a weighted average grade greater than 1g/t, include no more than 2m of consecutive internal dilution no external dilution.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>First pass RC drilling of regional prospects includes scissored holes to minimize the potential for biased drill orientations. Trenching and/or dozer cuts are used to assess the fabric of the in-situ geology and further constrain program hole orientation.</li> <li>Diamond Drilling targeting well-tested historical mineralisation is oriented to best test the mineralisation, within the constraints of possible surface collar locations. The potential of drilling down-dip of mineralisation is assessed based on interpretation of ore geometries and the orientation of the dominant fabric in recovered core.</li> <li>No bias has been recognized from the orientation of drilling data.</li> </ul>
<b>Sample</b>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>Drill sites have allocated security personnel. Samples are removed from the field to the site bag farm, which also has allocated security personnel. Samples taken from site are</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>security</b>		signed-off by the driver sent from the laboratory with required sample submission documents. Sample receipts are emailed to the company on receipt of the samples at the laboratory.
<b>Audits or reviews</b>	<ul style="list-style-type: none"><li><i>The results of any audits or reviews of sampling techniques and data.</i></li></ul>	<ul style="list-style-type: none"><li>No external audits have been conducted.</li></ul>

## Table 1 Report – Section 2

## Konongo Gold Project, Signature Metals

## Reporting of Exploration Results

## JORC 2012

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>• <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li>• <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Konongo Gold Project (Signature Metals 70%) comprises two leases totalling 195km<sup>2</sup>, a Mining Lease (749/03) and a Prospecting Lease (PL6/296). All work during the Quarter was conducted within the Mining Lease, which is valid through 2023. There are no known physical material issues.</li> <li>• The mining lease is valid through 2023. The 2014 operating licences for the ML and PL have not been delivered as at the time of submission. Both are submitted. There are no known impediments to the ML. The PL licence is conditional on acceptance of the annual report submitted in June 2014.</li> <li>• Tenements are presented as Figure 10.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Operating since 1903, extensive underground exploration was undertaken throughout the life of the Konongo mines but few records of this work have been preserved. Similarly the records of systematic surface exploration are also fragmentary.</li> <li>• Geophysical techniques were used for prospecting as early as 1935 and have continued to be used up to the present day, including regional VTEM and heli-magnetics flown by Fugro in 1995.</li> <li>• Geochemical surveys have been an effective tool in locating mineralisation. In the early 1950's a large, detailed geochemical survey was completed on the concessions. A geochemical sampling programme commenced in November 1990 based on sample grid of 800 m by 30 m. Polymetallic soils were carried out in the 1970's.</li> <li>• SCML commenced exploration on the concession in 1987, initially to assess the oxide ore resources in the Obenemase A deposit.</li> <li>• With mining having commenced in 1988, regional exploration was curtailed and exploration focused on defining further mineable resources.</li> <li>• In 1991, diamond drilling below the Obenemase A pit indicated the persistence of sulphide mineralisation. Further holes were drilled in 1992 and 1993 by SCML to provide sufficient control for resource assessment of the sulphide mineralisation.</li> <li>• OGM carried out a number of exploration programs from 1994 to 1999 within the Konongo Mining Lease, and the adjacent Kurofa Prospecting Lease, concurrent with</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>open pit mining at Boabedroo, Apan, Atunsu, Aserewa, and Obenemase.</p> <ul style="list-style-type: none"> <li>• During 1998, all known exploration and development information was sorted, validated and entered into a Microsoft Access database.</li> <li>• Following the formation of Owere Mines Limited, Mwana (then African Gold Plc) completed several exploration programs at the Project consisting of regional soil geochemistry, trenching, diamond core and reverse circulation drilling, focussed on the Boabedroo South prospect.</li> <li>• Signature Metals commenced work at the Project in May 2009 and carried out Diamond Drilling, RC drilling, aircore drilling and trenching of greenfield and brownfield targets through early 2012, focused mainly on oxide potential throughout the Project.</li> <li>• Signature also targeted the historic Konongo Tails, commencing mining in 2011.</li> <li>• Liongold acquired the Project in May 2012 and has refocussed the operation to assess the sulphide potential. Work has focused on the Obenemase Deposits, seven other prioritised brownfield prospects and regional geophysical/geochemical targets.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Konongo Project is located on the western margin of the Ashanti Gold belt – a Proterozoic volcanic and sedimentary pile tectonised and mineralised in the Eburnean Orogeny (2100Ma). Most of the deposits hosted in the belt are structurally controlled mesothermal lode gold deposits or sheared, mineralised, syn-structural intrusives.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain</i></li> </ul>	<ul style="list-style-type: none"> <li>• Significant intercepts, with tabulated collar, down hole and survey details are presented in the Quarterly if the hole has been drilled or assays returned during the period. No results meet this criteria for the March Quarter 2015.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>why this is the case.</i>	
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>Reported results (Table 2) are composites of returned assay results. Reported weighted average grades are greater than 1g/t Au over 1m. Internal dilution up to 2 consecutive metres is included. No external dilution is included. No top cut is applied. Intercept widths are down hole distances.</li> <li>Notably higher grades in an intercept are included as a subset of the interval. They are prefixed 'including' and the grade is approximately an order of magnitude greater than the weighted average (e.g. 6.7m at 8.31g/t from 286.5m, including 0.6m at 24.6g/t Au from 287m).</li> <li>No metal equivalent grades are used.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>Diamond drilling at Obenemase targets two distinct orientations of mineralisation – sub-vertical lodes and sub-horizontal lodes.</li> <li>Sub-vertical lodes include Obenemase A Lode, Obenemase B Lode and Obenemase A Lode North, each interpreted and modelled as steeply northwest dipping mineralisation. The Lodes are targeted with holes oriented perpendicular to the regional trend of mineralisation, with azimuths at either 120 or 300 degrees and dips of 45-70 degrees. Azimuths of 120 degrees are drilled when possible, as they have a more oblique intersection angle with interpreted lodes (approximately 60 degrees). Drill holes targeting mineralisation from the east (i.e. drilling west) may return sub-parallel intersections with mineralisation hosted in second order folds.</li> <li>Sub-horizontal mineralisation (R Zone mineralisation) is targeted with drill hole with azimuths of 120 or 300 degrees, but dips are often steeper, angled at 60-80 degrees. The intercept angle between drill hole and lode is between 60 and 80 degrees.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>Figures showing the distribution and relationship between reported grades are presented for each Lode or Prospect discussed in the text.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration</i></li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive reporting has been possible. All significant results for the reporting period are included.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Other substantive exploration data</b>	<p><i>Results.</i></p> <ul style="list-style-type: none"> <li><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <li>There are no additional material geological observations that are not discussed in the text.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Planned further work is conditional on budgets and continued successes and will.</li> <li>Continue to test the Obenemase Group of deposits on 40m sections and 40m step-outs to identify the extents of mineralisation to a vertical depth of 300m. The principal targets at Obenemase are: <ul style="list-style-type: none"> <li>- the R Zone mineralisation</li> <li>- the Obenemase North Lode mineralisation, and</li> <li>- the down dip extents of the A Lode mineralisation.</li> </ul> </li> <li>Complete the Scoping Study assessing the sulphide potential of key prospects and deposits within the Project.</li> <li>Continue to target regional oxide and sulphide prospectivity with RC drilling at Prospects identified with Aircore Drilling in 2012/2014.</li> </ul>

## Table 1 report – Section 3

## Konongo Gold Project, Signature Metals

## Estimation and Reporting of Mineral Resources

## JORC 2012

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Geological and sampling information is stored in Datashed. RSC audited and reviewed the database in 2013 and made corrections and recommendations to Owere Mines..</li> <li>Several basic checks were carried out at the start of the project to broadly investigate the quality of the location data. Visual validation through sectional investigations yielded a large amount of spurious issues ranging from “floating” drill holes, high grade holes crossing below-detection holes, high-angle changes in geological and/or grade continuity where it would be expected to occur at low angles, etc. Verification also included the checking of hard-copy source data with digital data in the database and re-surveying of data points in the field.</li> <li>Local grid conversion parameters were recalculated and original coordinates revised</li> <li>117 collars were relocated and resurveyed and compared against grid back-calculations. These were targeted based on drilling campaign to identify systematic errors. 3 campaigns between 1965 and 1998 required corrections.</li> <li>Validation of corrections to azimuth and dip data were cross checked against original data and own-hole surveys (dip and azimuth); collars were re-excavated and check-surveyed.</li> <li>Topographic control was assessed by comparison to high resolution DTM data acquired in 2012.</li> <li>Digitised historic data was checked by comparing identified relict structures (generally shafts) against historic grid data and grid data conversions.</li> <li>These issues were addressed in the database and the data received by SEMs from Owere Mines for the Resource estimation did not show any significant discrepancies</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A site visit was undertaken by Mr Joe Amanor and Mr Andrew Netherwood of SEMs between 5th and 6th May 2015. This included visiting all the open pit workings, locations of the most recent drilling, reviewing field geology, and reviewing and discussing drilling procedures and sampling methods (no field work was in progress).</li> <li>The field visit included inspecting drill core and facilities at the core shed. Technical facilities were visited with database storage, document archives, and general facilities witnessed.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• Flooding of all mined out pits was noted.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>• <i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></li> <li>• <i>Nature of the data used and of any assumptions made.</i></li> <li>• <i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></li> <li>• <i>The use of geology in guiding and controlling Mineral Resource estimation.</i></li> <li>• <i>The factors affecting continuity both of grade and geology.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The surface topography was obtained from satellite data by Owere Mines in December 2012. The profile and the collar positions agree with one another. It is noted that the satellite DTM show the recent water table in the pit and does not reflect the deepest mining level. Depth measurements were taken and the Obenemase A pit surface was updated accordingly. The geology, weathering profiles and mineralised envelopes were modelled by RSC (2013/2014) based on drill hole data (grades, weathering and lithology).</li> <li>• The geology model benefitted from: The establishment of core library for continuity, Shared logging and initial dual logging of holes to ensure consistent interpretation. Then complete re-logging of all drill core, with a core of campaign loggers.</li> <li>• Logging was migrated to propriety software (Maxwell Logchief) to further constrain geology and control logging drift. Logs were assessed in Geovia Surpac for geological coherence.</li> <li>• Systematic capture of structural data from new and historic drill core to constrain plunges, fold interpretation, etc.</li> <li>• Re-logging, in conjunction with improved spatial control permitted more coherent and consistent interpretation of lithology and structure, mineralisation and grades.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• <i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Obenemase Mineral Resource varies in depth between 300 m RL and -25 m RL with a maximum depth of 315 metres below natural surface. The mineralisation is open at depth (below 0mRL) over a strike length of 700m. The ore envelopes measure a strike length of 1,000 m along the longest axis, in the north-south direction, and an average plan width of 10 m west-east, in its shortest axis and occupy a volume of 2.78 Mm<sup>3</sup>.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>• <i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></li> <li>• <i>The availability of check estimates, previous estimates</i></li> </ul>	<ul style="list-style-type: none"> <li>• Estimation used ordinary kriging which is appropriate for the style of mineralization with low nugget and variance, and appropriate domaining. Variograms were modeled for Au for oxide &amp; transitional ore and for sulphide ore. Domaining by oxidation state was applied. Orientation domains were applied where there were significant variations in dip or dip direction, with maximum searches ranges limiting the influence of distant samples on a progressive basis in addition to variogram ranges. Sample numbers used in the estimation used a minimum of 10 and maximum of 40 samples, search distances from 25-50m, and search orientations orientated according</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></p> <ul style="list-style-type: none"> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>to main mineralization trends.</p> <p>Mineralised zones were modeled on a 0.5 g/t Au cut-off. 1m composites within the mineralized zones were used in a geostatistical study to determine search parameters, block sizes, and sample numbers. Datamine software was used for the estimation.</p> <ul style="list-style-type: none"> <li>• The mineral resource estimate takes account of two recent previous estimates by RSCMME and Snowden. RSCMME (2014) completed an estimate for Obenemase A and B during February 2014. The mineralisation, weathering surface and underground stope and development wireframes validated and constructed by RSCMME were reviewed and used by SEMs. Stope location data, drawing on underground plan view sections, long sections and drill hole intersection data were used to critically assess depletion. There are many drill holes that have penetrated old stopes and drives and these indicate that the average stope thickness is 1.5m</li> <li>• No by-products have been identified.</li> <li>• No estimates were made of elements other than gold.</li> <li>• Block parent sizes were 10 mE x 10 mN x 10 mRL. Selective sub-blocking was down to a minimum of 1m. Grade interpolation was based on the parent block size with 3 discretisation units in each direction. This compares with an average sample spacing of 20m in section, and an average of 10m vertically.</li> <li>• Selective mining units were not specifically addressed</li> <li>• No correlation between any variables was assumed.</li> <li>• The geological interpretation was the primary basis of the resource estimate. The main control on mineralisation is a combination of lithology and structure. Economic mineralisation is predominantly hosted within a sediment package consisting of siltstones and sandstones. The geological model now accurately shows the important boundaries to this sediment package. RSCMME in particular conducted an intensive exercise into the creation of a sound geological model using all available lithological and structural information, which became the foundation for resource estimation.</li> <li>• Statistical analyses from histograms and log-probability graphs showed only limited outliers indicating that higher grades are part of the natural mineralized population. However top-cutting is still a necessary component of the resource estimation. Top-cutting was applied to limit the influence of very high grades which visual analysis showed tend to be more isolated. Top cuts applied were: 26 g/t Au (oxide and transitional), and 35 g/t Au (sulphide).</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Slicing analysis, visual inspection and average comparisons between the model and composites were done. All three methods showed the estimates to be represented well by the composites.</li> <li>The interpolated block model was validated through visual checks, a comparison of the mean de-clustered composite and block grades, and through the generation of section validation slices.</li> <li>1 m composites were used in a geostatistical study to determine search parameters, block sizes, and sample numbers. (Variography and Quantitative Kriging Neighbourhood Analysis - QKNA) that enabled Ordinary Kriging (OK), controlled by dynamic anisotropy, to be used as the interpolation method.</li> <li>Historic Mineral Resource estimation lacks information on mined ore. The Obenemase deposit has been mined underground as well as at surface and production figures are not complete. Overall depletion figures were compiled by several authors and used to reconcile Mineral Resource estimations. Sulphide ore was mined by Nanwa Mines up until 1953 and reported in Annual Reports, however only mill figures were reported, not actual stope grade.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Moisture content was determined during the specific gravity measurements.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>The cut-off grade used to create the mineralized boundaries was 0.5 g/t Au, which allowed for Mineral Resources are reported at cut-off grades of 0.5g/t for oxide, 0.7g/t for transition and 1.0g/t for primary based on operating cost and recovery data.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of</li> </ul>	<ul style="list-style-type: none"> <li>It is assumed that Obenemase A and B would be mined by open pit. The current resource base is 300 m below topography, which may not be fully achievable by open cut operation. Deeper high grade lodes may prove amenable to underground mining.</li> <li>Mining is assumed to be completed with traditional truck and shovel methods with small to medium size mining equipment. Mined material from Obenemase A and B will be transported from the pit to the ROM (or nearby RoM stockpiles) with mining trucks. Waste will be dumped by mining trucks to storage locations near the pit.</li> <li>For underground mining it is assumed this would be developed from the bottom of mined out pits. The Obenemase A and B mineralisation has several controls for width and orientation. Different mining methods may be applicable. Areas that are</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>the mining assumptions made.</i></p>	<p>relatively wide and relatively steeply dipping would be amenable to open stoping (subject to geotechnical constraints); other areas that are narrower but still steeply dipping may be amenable to shrinkage or bench retreat stoping or an Avoca or modified Avoca method. Some of the narrower areas that are not so steeply dipping could probably be exploited with a top-down cut and fill method.</p>
<p><b>Metallurgical factors or assumptions</b></p>	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>Based on the data of earlier test work conducted during the 1990s, the sulphide material is highly refractory and, as a result, an oxidation pre-treatment stage will be required.</li> <li>Metallurgical test work by previous operators shows that overall gold recovery to a flotation concentrate can be expected to be around 88% and process pre-treatment and cyanidation produced recoveries of between 82% and 92%. In the modern plant, only oxide processing has been undertaken. The primary-sulphide ore (shown to be refractory in nature) will require a specialised plant circuit.</li> <li>There is only limited test work data available for the sulphide material and no data for the minor amount of transitional material. Preliminary testing has given a recovery of gold via acid pressure oxidation at 94%. Further metallurgical sampling and test work is required to support design work.</li> </ul>
<p><b>Environmental factors or assumptions</b></p>	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Konongo Project was granted an EPA permit in March 2012, which includes the exploration work at Obenemase.</li> <li>The existing TMF has up to 18 months projected capacity.</li> <li>The Project has conducted preliminary work for a new TMF, with a footprint of 18Ha. In 2011 geotechnical work was conducted on the new site by Wardell Armstrong International (WAI). Design of the TMF was undertaken by D E Cooper and Associates (Pty) Ltd and drawings dated December 2011 were issued to OML for review.</li> <li>Drawings are still marked preliminary and not issued for construction. The new TMF design has been based on a maximum volumetric storage of 4 Mt of tailings over an eight year mine life with an unlined (in-situ compaction) valley fill impoundment.</li> <li>The EPA grants environmental authorisation to projects via an Environmental Permit (EP), based on the findings of the EIS. Even with the provision of a Mining Lease, individual activities must be licensed with an EP. The project description within an EIS is very specific and relates directly to a specific EP. Any amendment or addition to a project description requires an EP.</li> <li>Within 18 months of commencing operations, mines are expected to submit and obtain approval for their EMP.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• Within 24 months of obtaining an EP, mines are required to obtain an Environmental Certificate from the EPA, which confirms commencement of operations, obtaining of other relevant approvals, compliance with the EMP, and submission of required annual reports.</li> <li>• The WRC may grant a water right and/or a water use permit. It is assumed, but unclear, that the issuance of a water use permit results in a water right (the right to use water for a particular use and according to the permit conditions).</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>• <i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></li> <li>• <i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A default specific gravity (SG) of 1.9 g/cm<sup>3</sup> was applied to oxide ore, and 1.7 g/cm<sup>3</sup> to oxide waste. These values have been assumed, based on numerous reports by previous authors and operators. For transitional and sulphide material, over 13,000 density measurements were undertaken by Owerre Mines from the transitional and sulphide core samples. These values were estimated into the model. The results averaged 2.80 g/cm<sup>3</sup>. The method used was the standard wet-dry method, the material was dry when measured, and the frequency of sampling was 20m downhole. Samples are considered highly representative.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The material was classified at Indicated and Inferred. The classification is based on the drill hole density, the number of samples and the search distance applied to estimate each block. Classification wireframes were created in plan view sections of 10 m intervals. Areas were wire framed as Indicated where drill hole and sample spacing was generally within 25 m (X) by 25 m (Y) by 10 m (Z).</li> <li>• Inferred wireframes were created for areas where the drill hole and sample grid spacing was at least 50 m (X) by 50 m (Y) by 10 m (Z). Additionally, for blocks to be classified as either Indicated or Inferred, a general geological continuity should be shown. This was determined by the variography and the search volumes calculated from the variogram ranges. Three search volumes were used, orientated along the strike, dip direction and the angle of dip of the orebody.</li> <li>• Blocks that were estimated within the primary search volume, generally show geological continuity. Blocks estimated within the secondary search volume, cannot be classified as Indicated, but at the most as Inferred.</li> <li>•</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>No third party review has been undertaken</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>The CPs believe the accuracy of the grade and tonnage estimate for Indicated Mineral Resources to be within <math>\pm 20\text{-}30\%</math> globally based on general experience of this style of mineralisation. Similarly, the accuracy of the grade and tonnage estimate for the Inferred Mineral Resource is considered to be within <math>\pm 30\text{-}50\%</math> globally based on general experience of this style of mineralisation.</li> <li>No simulation studies have been undertaken to quantify accuracy.</li> <li>No well-documented production from the primary-sulphide ore is available to validate the estimate.</li> </ul>

## **Appendix 2: QAQC Report**