

**PRESS RELEASE**

**ASX/TSX: CDV**

31 January 2019

2018-03

## **QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 DECEMBER 2018**

**Cardinal Resources Limited** (ASX: CDV; TSX: CDV) ("**Cardinal**" or "**the Company**"), an African gold focused exploration company, is pleased to present its Quarterly Activities report for the period ended 31 December 2018. Currently Cardinal holds tenements within Ghana being the Bolgatanga Project and Subranum in central Ghana (Figure 1).

The Company is focused on the development of the Namdini Gold Project with a **Maiden Ore Reserve of 4.76Moz** and is now advancing the Bankable Feasibility Study (BFS).

Exploration programmes are also underway at the Company's Bolgatanga (Northern Ghana) and Subranum (Southern Ghana) Projects.

### **HIGHLIGHTS**

- On September 13, 2018 the Company commenced with an Enterprise Optimisation study on the Namdini Gold Project with Whittle Consulting Pty Ltd. This involves a rigorous analytical and computational process at a detailed spatial and technical level to increase the value of the project. The optimised results of which will be fed into the BFS.
- On October 18, 2018 the Company commenced with a geochemical assessment of the Namdini Gold Project and to provide a management support programme for any potential Acid and Metalliferous Drainage (AMD) associated with the development of the deposit into operation and eventual closure.
- On October 26, 2018 the Company submitted its draft Environmental Impact Statement (EIS) for the Namdini Gold Project to the Environmental Protection Agency (EPA) of Ghana.
- On November 11, 2018 BFS value added activities commenced on the Namdini Gold Project. This included optimisation studies to improve the level definition of the current pit design as well to explore opportunities in enhancing and increasing project value. These are being undertaken by the same consultants that completed the Pre-Feasibility Study (PFS) on behalf of the Company.
- On November 28, 2018 the Company announced high grade intercepts on the Ndongo East Discovery located within the Ndongo License area approximately 24km north of the Namdini deposit. Additional shallow gold intersections to the exploration drill results previously announced on July 16, 2018, were located at the new Ndongo East Discovery.

## OUTLOOK

The principal activity of the Company (and its subsidiaries) is gold exploration and mine development in Ghana. The Company holds interests in five tenements prospective for gold mineralisation in Ghana in two NE-SW trending Paleo-Proterozoic granite-greenstone belts: the Bolgatanga Project and the Namdini Gold Project ("Namdini Gold Project" or "Namdini"), which are, respectively, located within the Nangodi and Bole-Bolgatanga Greenstone Belts in northeast Ghana and the Subranum Project, which is located within the Sefwi Greenstone Belt in southwest Ghana.

The main focus of activity is the Namdini Gold Project which has a maiden Probable Ore Reserve of **129.6 Mt** grading **1.14 g/t Au** for **4.76 Moz Au** at a 0.5 g/t Au cut-off grade. The Company expects to continue to generate positive news flow from its ongoing greenfield exploration assets and Bankable Feasibility Study activities.

The map below shows the location of the Namdini Gold Project and the Company's other properties in Ghana.



Figure 1: Cardinal Resources Tenements in Ghana

## THE NAMDINI GOLD PROJECT

### Property Title / Mining Lease

A Large-Scale Mining Licence covering the Namdini Mining Lease was granted to Cardinal Namdini Mining Limited (“**Cardinal Namdini**”), a wholly owned subsidiary of Cardinal, by the Minister of Lands and Natural Resources under the Ghanaian Minerals and Mining Act 2006 (Act 703) in December 2017. The Large-Scale Mining Licence, covers 19.54 km<sup>2</sup> in the Dakoto area of the Talensi District Assembly in Upper East Region of Ghana evidenced by a Mining Lease is for an initial period of 15 years and is renewable.

### Project Development Activities

Cardinal is progressing with its BFS programme to further advance the Namdini Gold Project. This consists of continuing with previously selected and newly selected consultants to assist with the phased development of the Namdini Gold Project. The consultants and their roles are tabulated below:

| COMPANY                                      | ROLE   |
|--|--|
| Lycopodium Limited                           | Study Managers. Process plant and associated infrastructure. Capital and Operating cost estimation and compilation of the JORC and NI 43-101 Technical reports |
| Golder Associates Pty Ltd                    | Mine planning and optimisation, pit design and mine scheduling, Geotechnical, Hydrology and Hydrogeology engineering.  |
| Orway Minerals Consultants                   | Comminution data analysis, crushing and grinding circuit option study  |
| ALS Laboratory (Perth)                       | Metallurgical testwork to support the process design criteria  |
| Knight Piésold Consulting                    | Tailings Storage Facility and associated infrastructure design   |
| Independent Metallurgical Operations Pty Ltd | Metallurgical testwork analysis and process flowsheet development  |
| MPR Geological Consultants Pty Ltd           | Mineral Resource Modelling of the Namdini Deposit  |
| Orefind Pty Ltd                              | Geology and deposit structural genesis   |
| Sebbag Group International Pty Ltd           | Mine Design review   |
| NEMAS Consult Pty Ltd                        | Environmental Impact Assessment Study  |
| Whittle Consulting Pty Ltd                   | Enterprise Optimisation of the Namdini Project   |

**Table 1: Study Team**

### Project Development Timeline

The following preliminary schedule (Table 2) is subject to available funding, positive outcomes for the BFS and favorable timelines for permitting;

| Milestone                              | Target Timeline |
|--|-----------------|
| Completion of PFS ( <b>Completed</b> ) | Q3 2018         |
| Completion of DFS                      | Q3 2019         |
| Final Investment Decision              | Q4 2019         |
| Target Production Commencement         | H1 2022         |

**Table 2: Namdini Project Development Timeline**

A mining design review of the PFS was completed by Sebbag Group International. Their finding was that the overall project economics support a positive cash flow and go forward case from PFS to BFS meeting the regulatory requirements for the conversion of a Ore Reserve statement at the current level of assessment. The work completed did not show any fatal flaws or red flags with Cardinals PFS. The areas where further minor work was identified in the report recommendations, can be resolved, optimised or completed before the end of the BFS in Q3 - 2019. The project economics were found to be robust and met the acceptable industry standard variances in Opex (operating expense) and Capex (capital expense) respectively to support a positive NPV and go forward case for the 9.5 Mtpa option.

A proposal from a HV power supply company was received which included back-up power and alternative power supply opportunities. This option included assessment of the current power generation capabilities through grid connection and an independent power generation solution on the basis of an independent power producer (IPP) or Build Own Operate Transfer (BOOT) type contract structure. The first option is a total independent heavy fuel oil (HFO), Solar Photovoltaic (PV) and Battery energy storage hybrid system and the second option is a Solar PV and battery system with a hydro generated power grid connection. The Company is assessing the merit of the proposal and are receiving further proposals for evaluation.

Cardinal requested Golder to assess the potential of increasing the current declarable Ore Reserves for the Namdini Gold Project, without negatively impacting project financial return, thereby improving the Mineral Resource to Ore Reserve conversion factor. Targeting near pit ore was considered to be the most viable option for exploring this potential Ore Reserve increase.

The geochemical assessment by Golder which commenced in the quarter is to identify any potential issues and opportunities with the material to be mined, stockpiled and stored on site as well as to clarify any potential implications for material handling, construction and operations. Cardinal has developed a Sulphur and Arsenic Mineral Resource distribution model including most of the in-pit waste and has drill core and pulps available for sampling and testing. The geochemical assessment will be executed in support of mine planning and closure, conducted in accordance with Ghanaian and International Acid Prevention (2009) Global Acid Rock Drainage guidelines.

### Namdini Sterilization Drilling

A total of 7 reverse circulation (RC) holes were drilled on the Namdini tenement during the quarter with 488 samples, including QAQC controls, submitted to SGS and ALS Ghana based laboratories for gold analysis using the Fire Assay analytical method (Table 3).

Further sterilization drilling is planned for 2019 over areas proposed for mine infrastructure.

Lithologies encountered include metavolcanics, thin granitoid slivers in the metasediments and diorite.

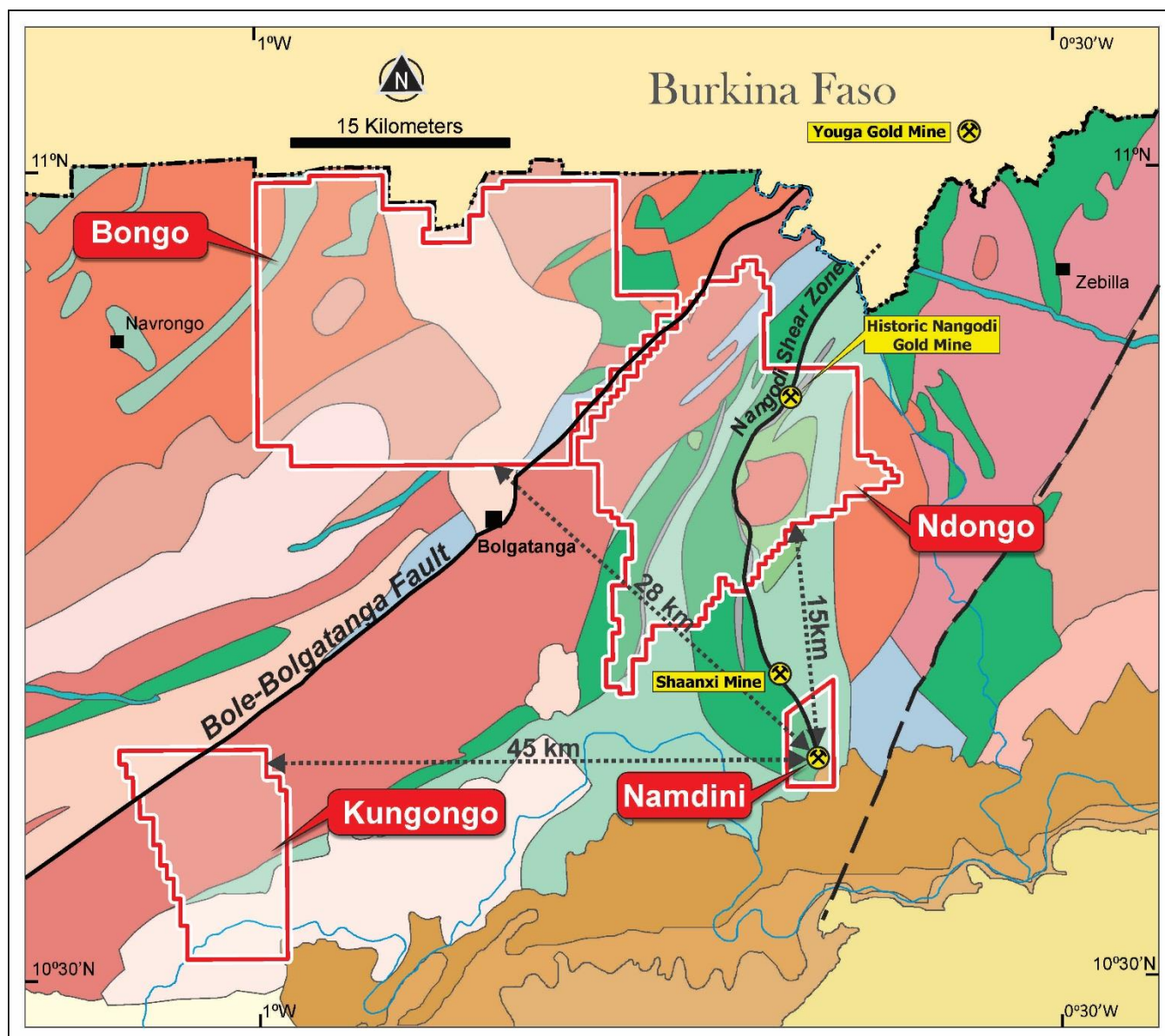
| Prospect     | Drill Method | No. Holes | Total (m)  | No. Samples | Duplicates | Blanks    | Stds      | Total Samples |
|--------------|--------------|-----------|------------|-------------|------------|-----------|-----------|---------------|
| Namdini      | RC           | 7         | 832        | 446         | 20         | 11        | 11        | 488           |
| <b>Total</b> |              | <b>7</b>  | <b>832</b> | <b>446</b>  | <b>20</b>  | <b>11</b> | <b>11</b> | <b>488</b>    |

**Table 3: Namdini Sterilization Drilling for Q4 2018**

## REGIONAL EXPLORATION UPDATE

### ***Bolgatanga Project***

The Bolgatanga Project includes the Ndongo, Kungongo and Bongo License areas (Figure 2). The main focus of the Company's diamond (DD) and reverse circulation (RC) drilling was on the highly prospective areas along the Nangodi Shear Zone during this quarter. Detailed ground geophysical surveys were also in progress over the Ndongo and Kungongo Licenses.



**Figure 2: Bolgatanga Project Tenements**

### ***Subranum Project***

The Subranum Project is located in southwest Ghana (Figure 1). Diamond drilling was completed on this project late in the quarter, please see below for details.



## BOLGATANGA PROJECT

### Exploration Drilling

A total of 22 DD holes were drilled on the Ndongo East Prospect with 8 DD holes on Kungongo Extension during the quarter with 2,286 samples, including QAQC controls, submitted to Ghana based laboratories for analysis for gold using the Fire Assay analytical method (Table 4).

| Prospect     | Drill Method | No. Holes | Total (m)       | No. Samples  | Duplicates | Blanks    | Std's     | Total Samples |
|--------------|--------------|-----------|-----------------|--------------|------------|-----------|-----------|---------------|
| Ndongo       | DD           | 14        | 1,303           | 1,300        | -          | 30        | 32        | 1,362         |
| Kungongo     | DD           | 8         | 881.17          | 882          | -          | 21        | 21        | 924           |
| <b>Total</b> |              | <b>22</b> | <b>2,184.17</b> | <b>2,182</b> | <b>-</b>   | <b>51</b> | <b>53</b> | <b>2,286</b>  |

Table 4: Exploration Drilling for Q4 2018

### Ndongo License Area

The Company has continued to concentrate its exploration focus this quarter on the Ndongo Licence which covers an area of 295km<sup>2</sup> (Figure 3). Exploration has defined six prospects totalling 70km in strike length only 15-25km north of the Namdini Gold Project.

The Company considers the Ndongo Licence area to be highly prospective for the discovery of economic gold mineralisation associated with the prolific Nangodi Shear Zone, a splay fault off the main regional-scale Bole-Bolgatanga Shear. Elsewhere, the Nangodi Shear Zone is spatially related to no fewer than four major gold discoveries, including the Company's Namdini Gold Project, the Shaanxi Mine, the historic Nangodi Gold Mine and the Youga Gold Mine in Burkina Faso, adjacent to the Ghana border (Figure 3). In addition, there are numerous historic shallow artisanal workings along many parts of this shear zone.

### Ndongo East Prospect

The Ndongo East Prospect is located within NE-SW trending Birimian metavolcanics and metasediments.

Cardinal recommenced drilling after the wet season during November 2018 in order to test the strike and depth extents of the mineralised system. Post wet season drill results were announced on 23<sup>rd</sup> January 2019.

During H2 – 2018, Cardinal reported several intersections of high-grade gold at its new Ndongo East discovery within the Ndongo License and has now intersected further high-grade gold in recently completed diamond drilling of this high-grade gold target. Currently, Cardinal has one diamond rig continuing to evaluate the Ndongo East discovery. Best intercepts in the new holes reported include:

- **14m @ 7.0 g/t Au** from 69m in NDDD046 (including **2m @ 42.2g/t** from 80m)
- **3m @ 29.3 g/t Au** from 45m in NDDD036
- **3m @ 4.1 g/t Au** from 122m in NDDD037

Intersections encountered in the drilling, have gold mineralisation developed at, or near, the diorite-granodiorite contacts, where competency differences create brittle fracturing which allows the ingress and precipitation of mineralising fluids. The mineralised horizons contain variable chlorite-silica-carbonate-sericite alteration with sulphides (mainly pyrite with very minor arsenopyrite).

The mineralised system is open along a northeast-southwest strike and at depth with multiple mineralised intersections. To date most of the high-grade mineralisation has been encountered from surface to a vertical depth of 70 metres (Figure 4).

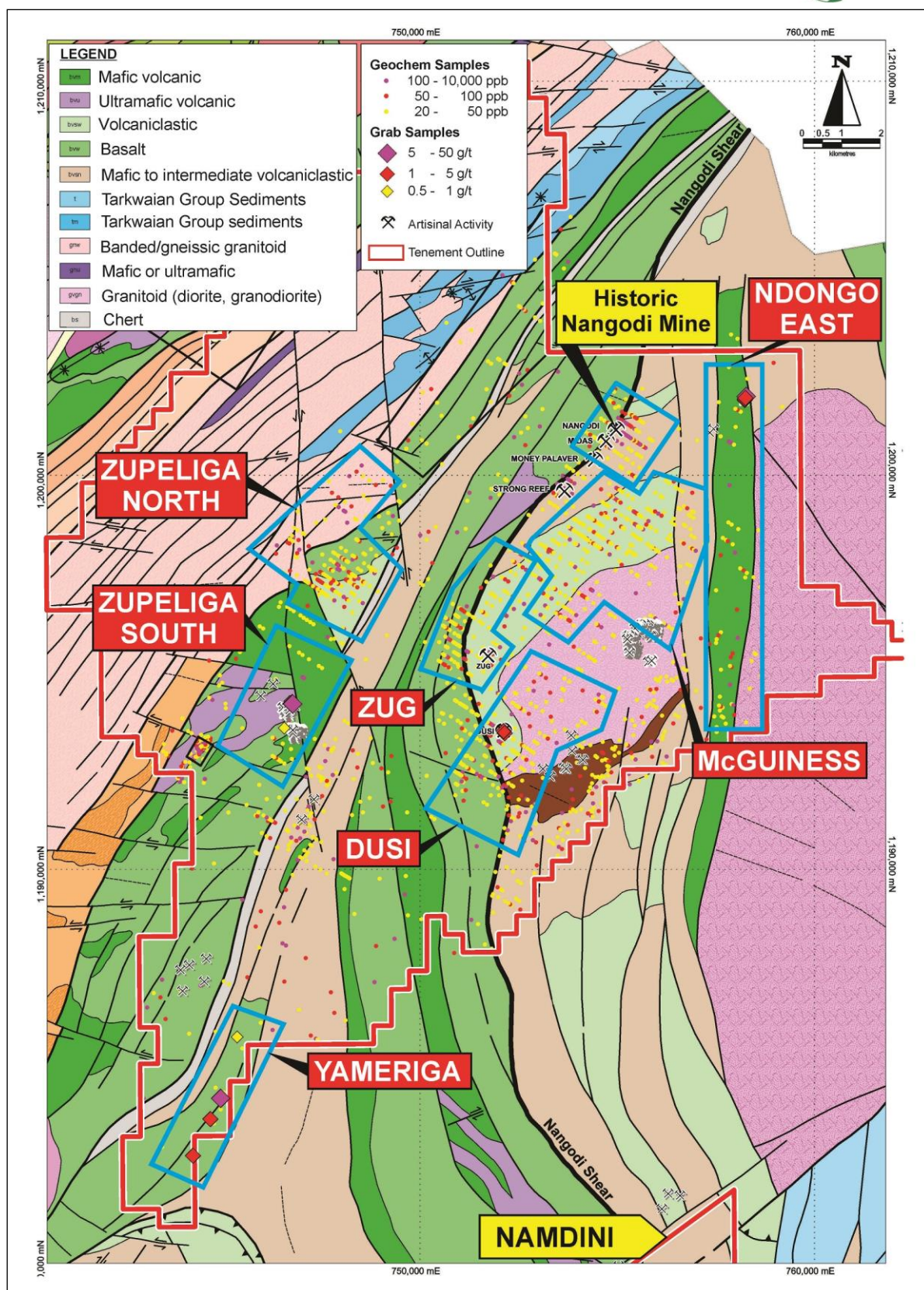
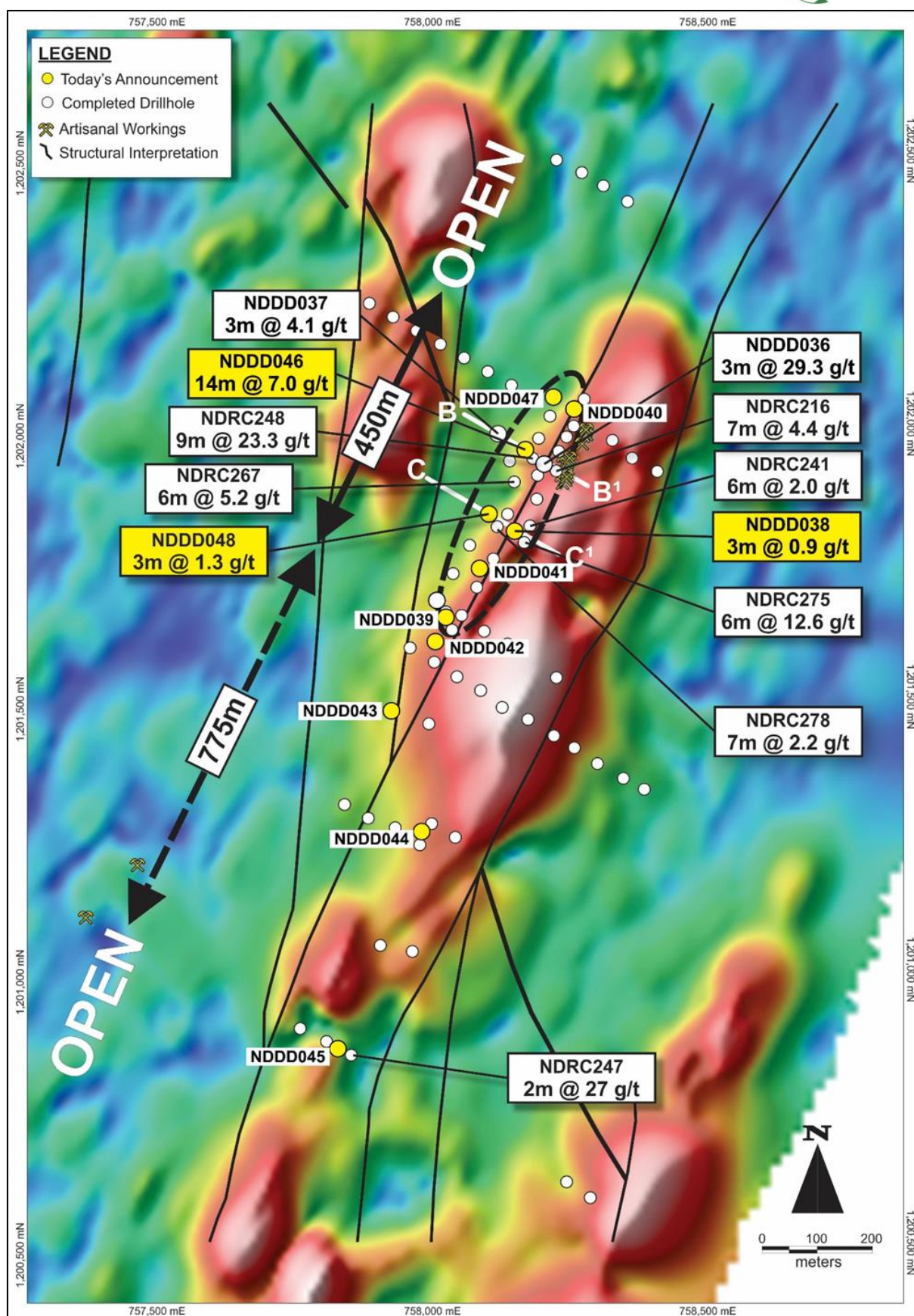


Figure 3: Ndongo Prospecting Licence showing local prospects





**Figure 4: Ndongo East Prospect with drill locations on Ground Magnetic Image showing NE-SW mineralised structures open along strike.**

## Kungongo Tenement

The Kungongo Licence is located in northeast Ghana some 45km west of the Company's Namdini Gold Project. The Licence covers an area of 122 km<sup>2</sup> and is a renewable Exploration Licence (Figure 2).

Recent drilling focused mainly on the northern section of Kungongo to test rock chips gold anomalies, possible extensions of artisanal workings and ground magnetic anomalies. Lithologies encountered by drilling include metasediments and mafic volcanics. The initial RC/DD programme was planned on fences 200m apart with collars at 100m covering approximately 1.6km of strike length along the geophysical target (Figure 5 and Figure 6).

The total DD drilled for this initial programme was 881.17m. The most promising Intercepts thus far are tabulated in Table 6 of Appendix 1.

A ground magnetic survey was completed over 249 lines totalling 666.25-line kilometres on a line spacing of 50m covering the entire prospective Bole-Bolgatanga shear zone.

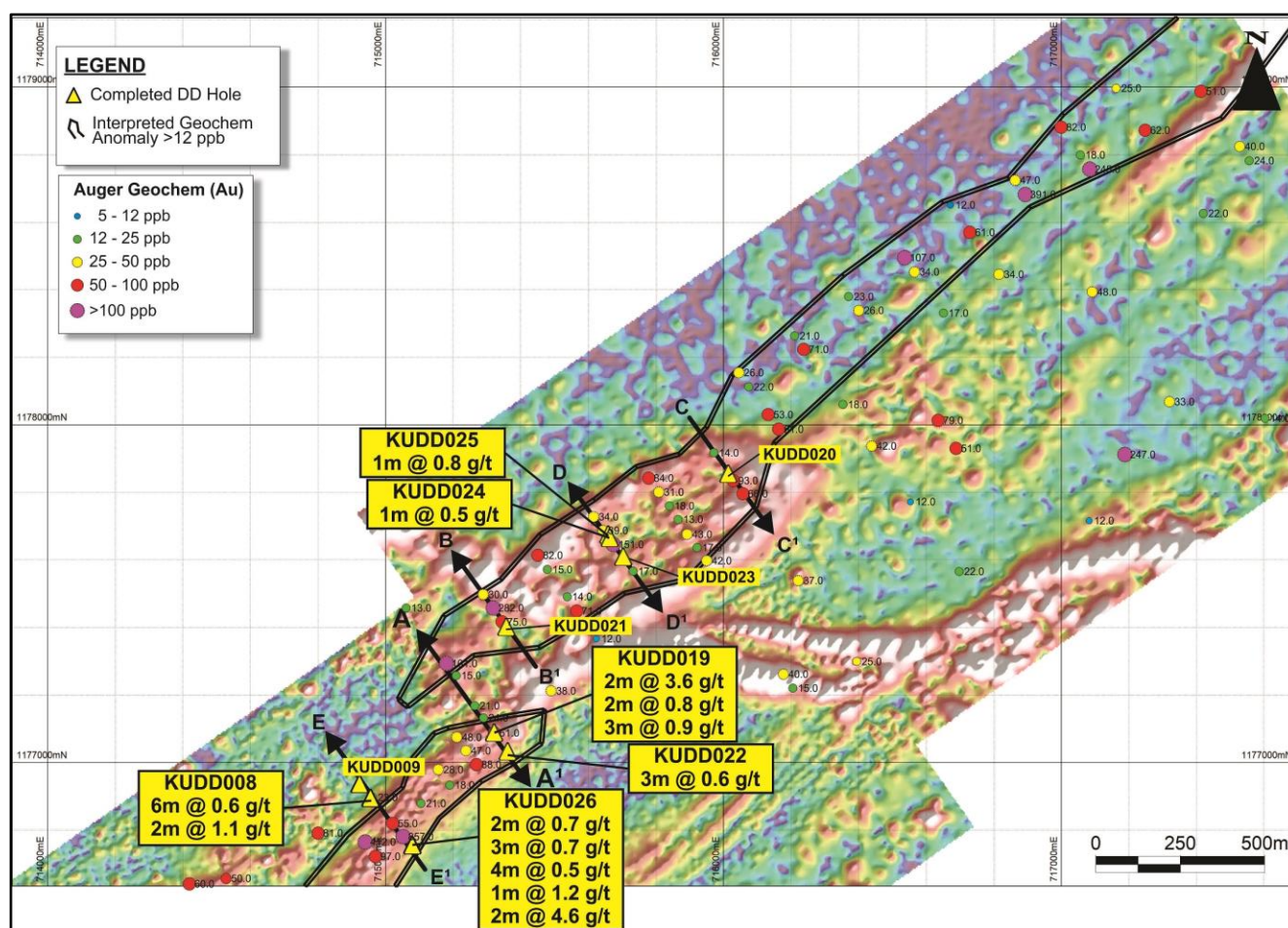


Figure 5: Kungongo DD Drill and Geochemical Sample Locations on Ground Magnetic Image



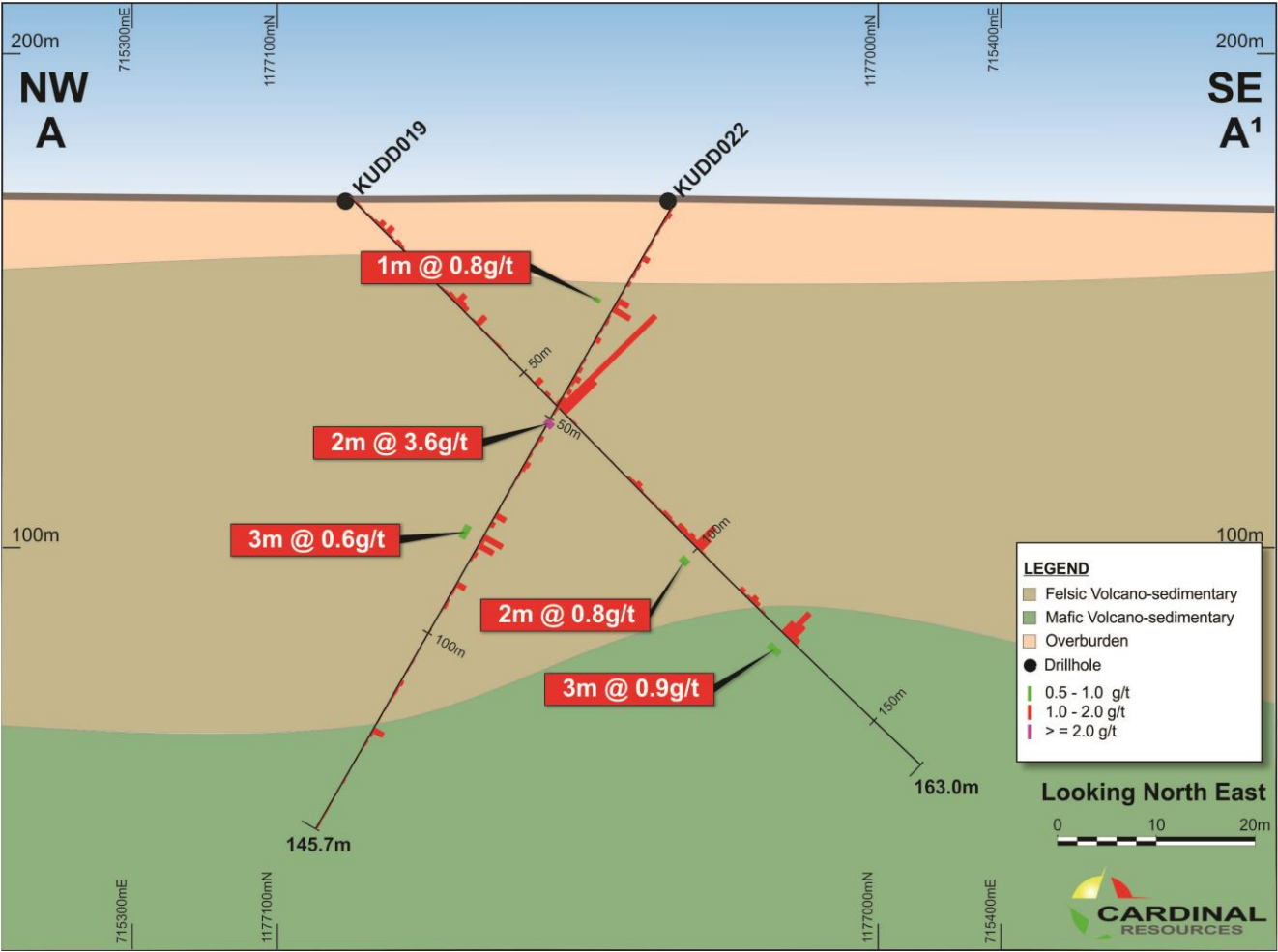
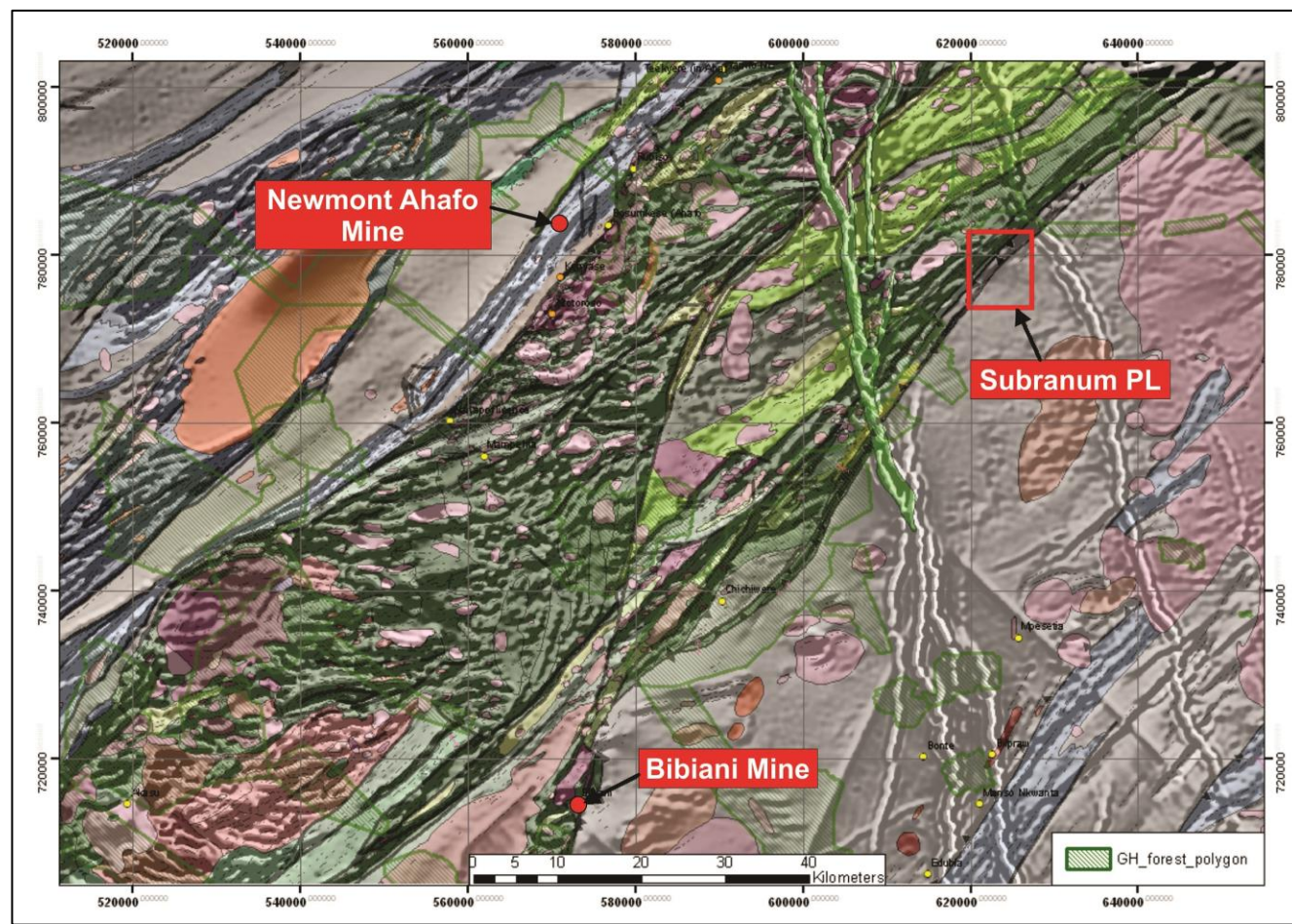


Figure 6: Kungongo Section AA1

## SUBRANUM PROJECT

The Subranum Project covers an area of 69km<sup>2</sup> located in southwest Ghana. The license straddles the eastern margin of the Sefwi Gold Belt which is bounded by the regional Bibiani Shear Zone (“BSZ”) stretching about 200km across southwestern Ghana. (Figure 7)

The Sefwi Belt is highly prospective and is spatially related to major discoveries including the 7Moz Bibiani Gold Mine (approximately 70km southwest), Newmont’s Ahafo 23Moz Gold Mine (approximately 53km west), and Kinross’ Chirano 5Moz Gold Mine (approximately 110km southwest).



**Figure 7: Regional Geology with Subranum Tenement straddling Bibiani Shear Zone**

There is 9km of the BSZ developed within the Subranum license trending NE to SW. The BSZ forms a very prospective, sheared contact between Birimian phyllites and greywackes to the southeast and mafic to intermediate volcanics and volcaniclastics to the northwest. Granitoid stocks of the Dixcove suite intrude this shear zone.

Previous exploration by the previous owner, Newmont Corporation, included BLEG stream sediment sampling, regolith and soil sampling, trenching and RC drilling, defined a gold mineralised zone in the southwestern portion of the BSZ. This mineralised zone of 5km strike length was estimated by Newmont to contain an estimated inferred historic gold resource of 100,000 oz Au grading 1.8 g/t to a vertical depth of only 50m.

### Diamond Drill (DD) Programme

The diamond drilling programme was to drill approximately 1,000m to assess this tenement after acquiring the exploration geological, geophysical and RC drilling data, from Newmont. The programme was to drill holes to compare and expand on the previous Newmont RC drilling results, by targeting the BSZ which is known to contain gold mineralisation. (Figure 8)



### Diamond Drill (DD) Results

A total of 7 diamond drill (DD) holes were completed, with a further 3 holes abandoned due to adverse drill conditions. The near surface portions of each hole were drilled by HQ core size, totalling 487.60m, while the deeper portions were drilled by NQ core size, totalling 716.40m. The total DD drilled for this initial programme was 1,200.00m. The most promising intercepts thus far are tabulated in Table 8 of Appendix 2.

The drill core was transported to Cardinal's Bolgatanga exploration compound, for cutting and sampling, with the remaining half core stored at the Cardinal storage shed in Bolgatanga.

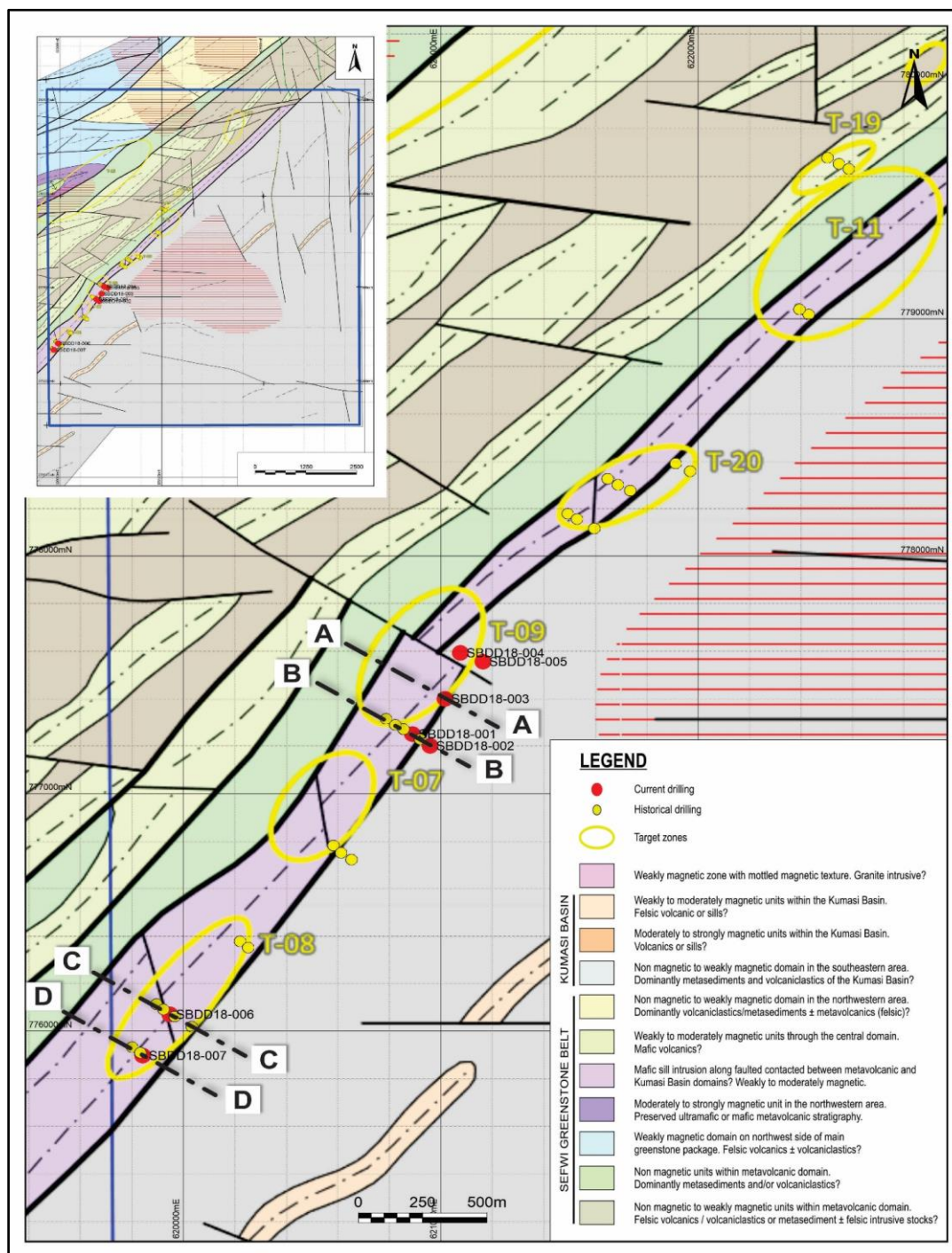
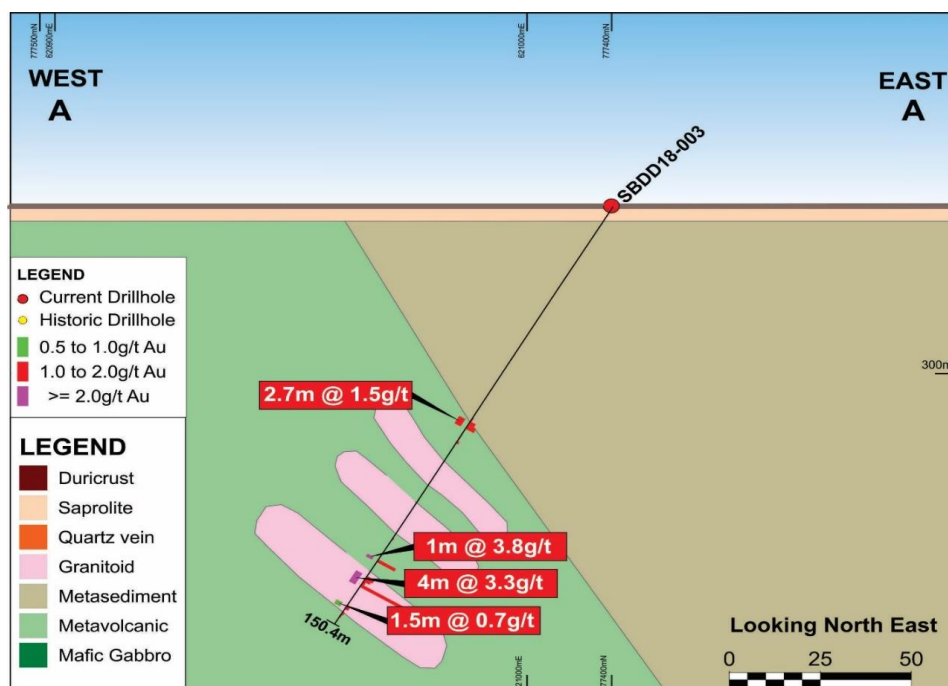


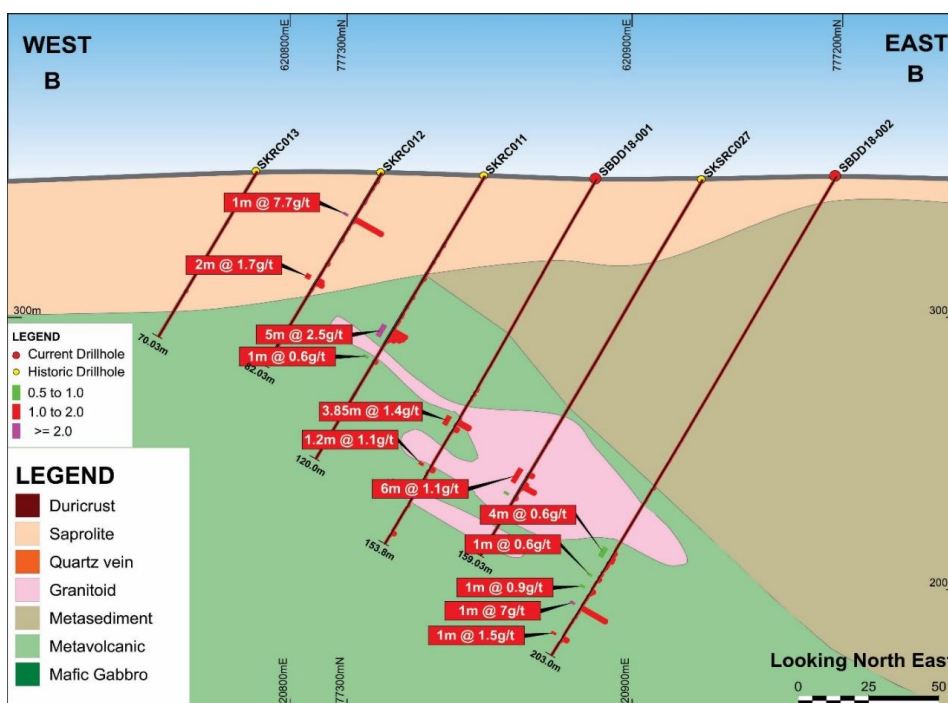
Figure 8: Locality of Cardinal Diamond Drill Holes on Bibiani Shear Zone at Subranum

DD hole **SBDD18-003** intercepted a wider zone of mineralisation, occurring at the metasediment-metavolcanic contact, with the higher gold grades developed adjacent to, or within, a granitoid intrusive (Figure 9).



**Figure 9: Subranum – Drill Hole SBDD18-003 (on Section A-A, Figure 4)**

DD holes, **SBDD18-001** and **SBDD18-002**, were sited along a previous Newmont drill fence to confirm the gold mineralisation which had previously been intersected (Section B-B, Figure 10).



**Figure 10: Subranum – Drill Holes SBDD18-001 & SBDD18-002**

Drill holes **SBDD18-006** (Figure 11) and **SBDD18-007** (Figure 12) were collared very close to the SW boundary of the tenement where historical drilling was reported to have intersected relatively higher gold grades (Figure 11).

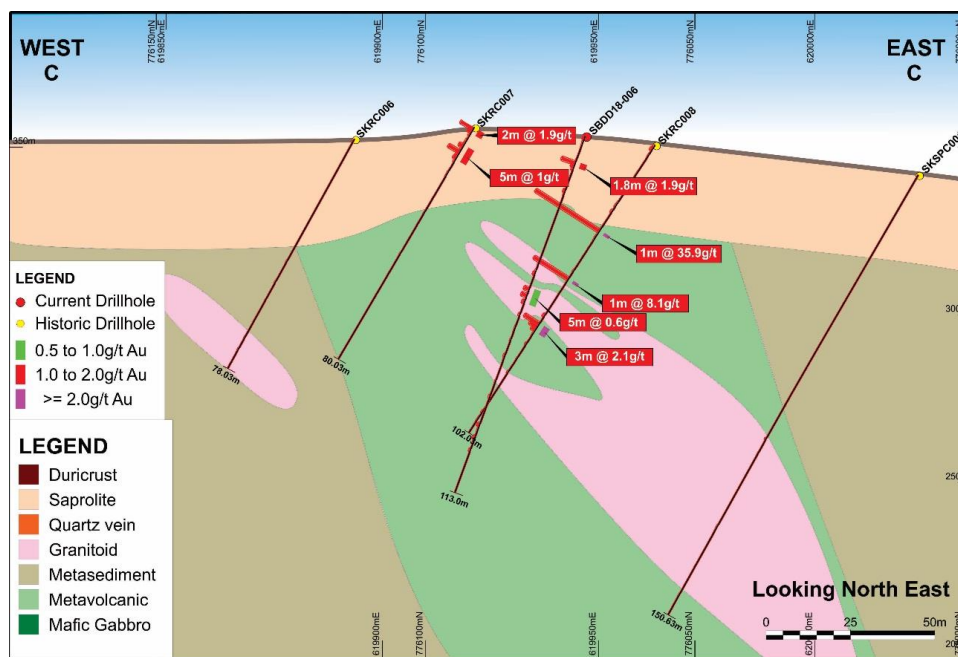


Figure 11: Subranum – Drill Hole SBDD18-006

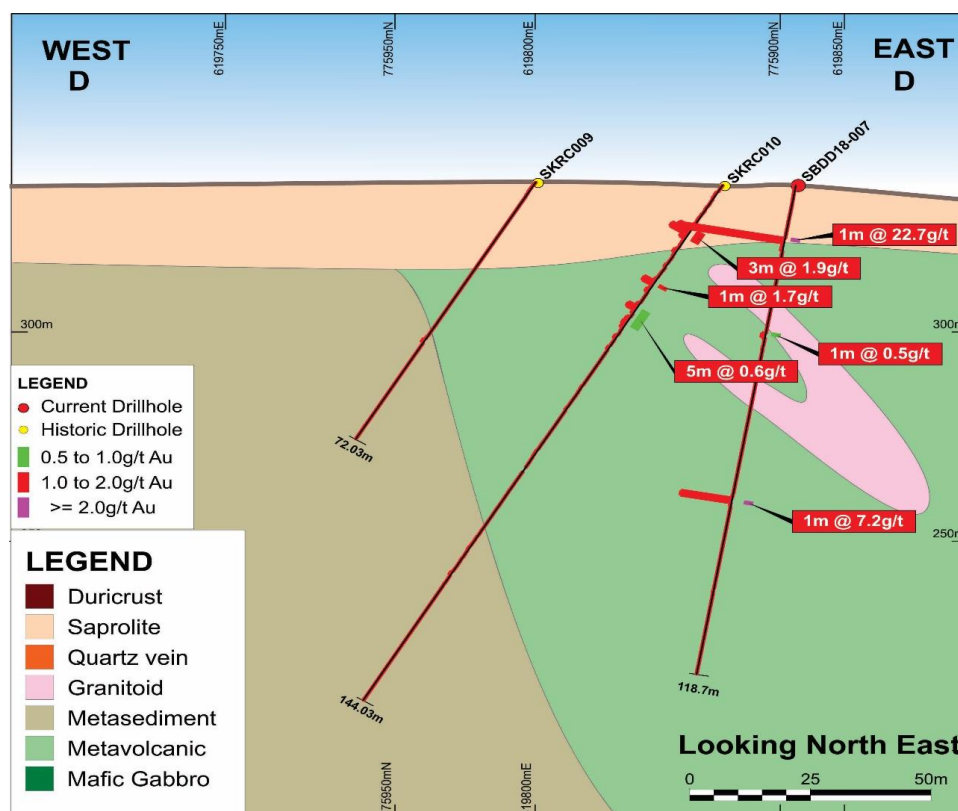


Figure 12: Subranum – Drill Hole SBDD18-007

Narrow gold mineralisation mostly occurs adjacent to, or within, a granitoid intruded into metavolcanics. A narrow, high grade gold intersection also occurs at the metasediment-metavolcanic contact.

The portion of the Bibiani Shear Zone occurring within the Subranum tenement is 9km long, trending SW to NE. Previous extensive exploration has outlined a 5 km long gold target, extending from the SW tenement boundary towards the NE, with the remaining 4 km of the 9 km strike length remaining relatively unexplored.

Only a very small portion of this 5km long gold target has been drilled in this initial drilling programme.

## CORPORATE

### SUBSEQUENT TO THE QUARTER END

The Company was pleased to announce on January 2, 2019 the appointment of Non-Executive Director Trevor Stanley Schultz.

Mr Schultz has over 45 years in the mining industry with experience in project development, construction and operations. Between 2008 and 2018 he was an Executive and Non-Executive Director with Centamin Egypt and was responsible for the construction of the 12Mtpa processing plant which has a similar flowsheet to Cardinal's proposed flowsheet.

Prior to this, he served as Chief Operating Officer at Ashanti Goldfields Corporation (now Anglo Gold Ashanti Ltd) and was a resident of Ghana for 6 years. Furthermore, he worked for BHP in Australia and America and in South Africa with Anglo American Corporation.

Trevor has an MA in Economics from Trinity College, England (1968), an MSc in Mining Engineering, from Witwatersrand University, South Africa (1972) and an Advanced Management Programme Diploma from Harvard Business School, USA (1986).

Archie Koimtsidis, CEO / MD of Cardinal, said:

"We are pleased to have Trevor join the Cardinal Board where his many years of expertise in project development will be of significant value to Cardinal and its stakeholders as the company moves the Namdini Gold Project towards the next level, its Definitive Feasibility Study which is anticipated in Q3 - 2019.

"The Board and Management would like to thank Mr Robert Schafer for his geological contribution. We appreciate Robert's offer to provide advice as an independent consultant as we develop our district and near mine targets and wish him the best in his future endeavours."

### TENEMENT SCHEDULE - ASX LISTING RULE 5.3.3

The following mining tenement information is provided pursuant to ASX Listing Rule 5.3.3. No tenements in part or whole were relinquished, surrendered or otherwise divested during the quarter ended 31 December 2018.

| Tenement                         | Licence Status | Ref                          | Note | Interest Acquired During Quarter | Interest Divested During Quarter | Interest Held at End of Quarter |
|----------------------------------|----------------|------------------------------|------|----------------------------------|----------------------------------|---------------------------------|
| <b>Ghana</b>                     |                |                              |      |                                  |                                  |                                 |
| <b><i>Bolgatanga Project</i></b> |                |                              |      |                                  |                                  |                                 |
| Ndongo                           | Prospecting    | PL9/22                       | -    | -                                | -                                | 100%                            |
| Kungongo                         | Prospecting    | RL9/28                       | -    | -                                | -                                | 100%                            |
| Bongo                            | Prospecting    | PL9/29,<br>PL9/37 &<br>PL938 | -    | -                                | -                                | 100%                            |



|                         |                |                               |   |   |   |      |
|-------------------------|----------------|-------------------------------|---|---|---|------|
| Nangodi                 | Prospecting    | PL9/13,<br>PL9/19 &<br>PL9/36 | - | - | - | 100% |
| <b>Namdini Project</b>  |                |                               |   |   |   |      |
| Namdini                 | Mining Licence | LVB14619/09                   | - | - | - | 100% |
| <b>Subranum Project</b> |                |                               |   |   |   |      |
| Subranum                | Prospecting    | PL/309                        | - | - | - | 100% |

## CAPITAL STRUCTURE

As at 31 December 2018 the Company had the following capital structure;

| Capital Structure   | Listed      | Unlisted   | Total       |
|---|-------------|------------|-------------|
| Fully Paid Ordinary Shares (CDV)                            | 380,237,817 | -          | 380,237,817 |
| Options Ex. \$0.15 on or before 30 September 2019           | 112,935,006 | -          | 112,935,006 |
| Options Ex. \$0.22 on or before 18 March 2020               | -           | 6,000,000  | 6,000,000   |
| Options Ex. \$0.75 on or before 21 December 2022            | -           | 1,000,000  | 1,000,000   |
| Milestone Options Ex. \$0.50 on or before 12 April 2022     | -           | 18,500,000 | 18,500,000  |
| Milestone Options Ex. \$0.825 on or before 21 December 2022 | -           | 5,758,000  | 5,758,000   |
| Milestone Options Ex. \$0.965 on or before 21 December 2022 | -           | 4,036,200  | 4,036,200   |
| - Class C Performance Shares                                | -           | 60         | 60          |

## Cash Balance

The Company's cash balance at 31 December 2018 was approximately AU\$29 million.

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## Competent / Qualified Person Statement

The scientific and technical information in this Quarterly report that relates to the Namdini Gold Project has been reviewed and approved by Mr. Richard Bray, a Registered Professional Geologist with the Australian Institute of Geoscientists and Mr. Ekow Taylor, a Chartered Professional Geologist with the Australasian Institute of Mining and Metallurgy. Mr. Bray and Mr. Taylor have more than five years' experience relevant to the styles of mineralisation and type of deposits under consideration and to the activity which is being undertaken 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 as a Qualified Person for the purposes of NI43-101. Mr. Bray and Mr. Taylor are full-time employees of Cardinal and hold equity securities in the Company.

The scientific and technical information in this Quarterly report that relates to Exploration Results, Mineral Resources or Ore Reserves at the Bolgatanga Project and Subranum Project is based on information prepared by Mr. Paul Abbott, a full-time employee of Cardinal Resources Limited, who is a Member of the Geological Society of South Africa. Mr. Abbott has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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".

Cardinal confirms that it is not aware of any new information or data that materially affects the information included in its announcement of the Maiden Ore Reserve of 18 September 2018. All material assumptions and technical parameters underpinning this estimate continue to apply and have not materially changed.

## JORC 2012

This report contains information extracted from the following reports which are available for viewing on the Company's website [www.cardinalresources.com.au](http://www.cardinalresources.com.au) :

- 23 Jan 2019 Cardinal Hits More High-Grade Shallow Gold at Ndongo East
- 28 Nov 2018 New Drill Season hits high-grade shallow gold at Ndongo East
- 18 Sept 2018 Cardinal Namdini Pre-Feasibility Study 4.76Moz Ore Reserve
- 29 Aug 2018 Cardinal Extends Ndongo East Discovery Strike Length
- 31 July 2018 Cardinal Executes U\$5 Million Term Sheet with Sprott
- 16 July 2018 Cardinal Makes New Gold Discovery at Ndongo East
- 28 May 2018 Encouraging First Pass Gold Results at Ndongo
- 19 April 2018 Technical Report on Namdini Gold Project Filed on SEDAR
- 04 April 2018 First Pass Regional Exploration Drilling Underway
- 05 Mar 2018 Cardinal Upgrades Indicated Mineral Resource to 6.5Moz
- 22 Feb 2018 Cardinal Infill Drilling Results Returned
- 05 Feb 2018 Namdini Gold Project Preliminary Economic Assessment
- 22 Jan 2018 Namdini Infill Drilling Results Returned
- 14 Dec 2017 Namdini Drilling and Regional Exploration Update
- 12 Dec 2017 Cardinal Grade Control Drill Results Returned

The Company confirms it is not aware of any new information or data that materially affects the information included in this report relating to exploration activities and all material assumptions and technical parameters underpinning the exploration activities in those market announcements continue to apply and have not been changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements. Cardinal is not aware of any new information or data that materially affects the information included in its announcement of the Maiden Ore Reserve of 18 September 2018. All material assumptions and technical parameters underpinning this estimate continue to apply and have not materially changed.

**Disclaimer**

This ASX / TSX press release has been prepared by Cardinal Resources Limited (ABN: 56 147 325 620) ("Cardinal" or "the Company"). Neither the ASX or the TSX, nor their regulation service providers accept responsibility for the adequacy or accuracy of this press release.

This press release contains summary information about Cardinal, its subsidiaries and their activities, which is current as at the date of this press release. The information in this press release is of a general nature and does not purport to be complete nor does it contain all the information, which a prospective investor may require in evaluating a possible investment in Cardinal.

By its very nature exploration for minerals is a high-risk business and is not suitable for certain investors. Cardinal's securities are speculative. Potential investors should consult their stockbroker or financial advisor. There are a number of risks, both specific to Cardinal and of a general nature which may affect the future operating and financial performance of Cardinal and the value of an investment in Cardinal including but not limited to economic conditions, stock market fluctuations, gold price movements, regional infrastructure constraints, timing of approvals from relevant authorities, regulatory risks, operational risks and reliance on key personnel and foreign currency fluctuations.

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**Forward-looking statements**

Certain statements contained in this press release, including information as to the future financial or operating performance of Cardinal and its projects may also include statements which are 'forward-looking statements' that may include, amongst other things, statements regarding targets, anticipated timing of the feasibility study (FS) on the Namdini project, estimates and assumptions in respect of mineral resources and anticipated grades and recovery rates, production and prices, recovery costs and results, capital expenditures and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. These 'forward – looking statements' are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Cardinal, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies and involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements.

Cardinal disclaims any intent or obligation to update publicly or release any revisions to any forward-looking statements, whether as a result of new information, future events, circumstances or results or otherwise after today's date or to reflect the occurrence of unanticipated events, other than required by the Corporations Act and ASX and TSX Listing Rules. The words 'believe', 'expect', 'anticipate', 'indicate', 'contemplate', 'target', 'plan', 'intends', 'continue', 'budget', 'estimate', 'may', 'will', 'schedule' and similar expressions identify forward-looking statements.

All forward-looking statements made in this press release are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

**APPENDIX 1**  
**KUNGONGO LICENSE AREA DRILL META-DATA**

| Hole ID | Depth (m) | Dip | Azimuth | Grid_ID   | mEast      | mNorth       | mRL     |
|---------|-----------|-----|---------|-----------|------------|--------------|---------|
| KUDD019 | 128.02    | -45 | 145     | WGS84_30N | 715,324.18 | 1,177,088.39 | 170.111 |
| KUDD020 | 131.1     | -45 | 145     | WGS84_30N | 716,016.04 | 1,177,858.30 | 178.594 |
| KUDD021 | 115.64    | -45 | 325     | WGS84_30N | 715,357.28 | 1,177,403.75 | 171.171 |
| KUDD022 | 145.72    | -60 | 325     | WGS84_30N | 715,362.95 | 1,177,035.85 | 170.132 |
| KUDD023 | 49.21     | -60 | 325     | WGS84_30N | 715,704.1  | 1,177,609.44 | 175.182 |
| KUDD024 | 58.55     | -45 | 145     | WGS84_30N | 715,662.45 | 1,177,668.72 | 175.956 |
| KUDD025 | 104.03    | -83 | 145     | WGS84_30N | 715,661.36 | 1,177,670.29 | 175.999 |
| KUDD026 | 118.56    | -45 | 326     | WGS84_30N | 715,070.48 | 1,176,762.56 | 166.052 |

**Table 5: Meta-Data Listing of Kungongo Drill Holes**

| Hole_ID | mFrom | mTo | mWidth | Au g/t |
|---------|-------|-----|--------|--------|
| KUDD019 | 60    | 62  | 2      | 3.6    |
| KUDD019 | 99    | 101 | 2      | 0.8    |
| KUDD019 | 124   | 125 | 3      | 0.9    |
| KUDD022 | 24    | 25  | 1      | 0.8    |
| KUDD022 | 77    | 100 | 3      | 0.6    |
| KUDD024 | 6     | 7   | 1      | 0.5    |
| KUDD025 | 21    | 22  | 1      | 0.8    |

**Table 6: Summary of Individual Intercepts of Kungongo drilling**

**Notes:**

- Cut-off grade for reporting of each individual intercept is  $\geq 0.5\text{g/t Au}$  with a maximum of 3m of consecutive internal dilution included within the intercept; only intercepts  $\geq 1\text{m}$  are reported
- Intervals are HQ diamond core which are sampled at 1.0m intervals
- Samples are analyzed for Au (SGS Lab FAA505 method) which is a 50g fire assay fusion with AAS instrument finish
- Grid coordinates are in WGS84 Zone 30 North

The intercepts were calculated, using a  $0.5\text{g/t}$  cut-off, which approximates the cut-off for Reasonable Prospects of Eventual Economic Extraction ("RPEEE") as per the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code") 2012 and the Canadian Institute of Mining ("CIM") 2010 guidelines and internal dilution of no more than 3m at  $<0.5\text{g/t Au}$ .



**JORC CODE 2012 EDITION – TABLE 1****REPORTING OF EXPLORATION RESULTS – KUNGONGO LICENSE****Section 1 – Sampling Technique and Data**

| Criteria                   | JORC Code Explanation  | Commentary  |
|----------------------------|--|---|
| <b>Sampling techniques</b> | Nature and quality of sampling (e.g. 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.  | <p>Sampling is by a combination of diamond drill (DD) and reverse circulation (RC) holes.</p> <p>Nature and quality of sampling is carried out under QAQC procedures as per industry standards.</p> <p>Diamond sampling is completed by half-core of HQ core size and Reverse Circulation drilling samples are collected by a three-tier riffle splitter using downhole sampling hammers with nominal 127 to 140mm holes.</p>   |
|                            | Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.  | <p>Sampling is guided by Cardinal Resources protocols and Quality Control procedures as per industry standard.</p> <p>To ensure representative sampling:</p> <p>1m RC samples are collected from a cyclone, passing them through a three-tier riffle splitter, and taking duplicate samples every 20<sup>th</sup> sample.</p> <p>HQ core sampling is based on lithological characteristics and sample lengths range between 0.5m to 1.6m.</p>   |
|                            | <p>Aspects of the determination of mineralisation that are Material to the Public Report.</p> <p>In cases where ‘industry standard’ work has been done this would be relatively simple (e.g. ‘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 (e.g. submarine nodules) may warrant disclosure of detailed information.</p> | <p>The determination of mineralisation is based on observed alterations and lithological differences.</p> <p>Diamond drill samples are crushed to -2mm and a less than 1kg split sample is then pulverised via LM2 to a nominal 85% passing -75µm.</p> <p>Reverse circulation drill samples are crushed to -2mm and pulverised via LM2 to a nominal 85% passing -75µm.</p> <p>A 200g sub-sample is taken for analysis. A 50g charge weight is fused with litharge-based flux, cupelled and the prill dissolved in aqua regia and gold tenor is determined by AAS.</p> |
| <b>Drilling techniques</b> | Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-  | Diamond core drilling is completed with core size of HQ with a standard tube. Triple tube is used in saprolite at the tops of the hole. Core is orientated using digital Reflex ACT II RD orientation tool.   |

| Criteria                     | JORC Code Explanation  | Commentary   |
|------------------------------|--|--|
|                              | sampling bit or other type, whether core is oriented and if so, by what method, etc.).   | Reverse circulation drilling uses sampling hammer of nominal 127 to 140mm diameter holes.<br><br>All drillholes are inclined at varying angles for optimal zone intersection. All drill collars are surveyed using Trimble R8 RTK GPS with downhole surveying every 30m.   |
| <b>Drill sample recovery</b> | Method of recording and assessing core and chip sample recoveries and results assessed.  | Diamond core recovery is logged and captured into the database. Method of recording chip and core sample recoveries was to enter the relevant data on a hand-held Motion F5te Tablet PC using a set of standard templates supplied by Maxwell Geoservices, Perth (Maxwell).<br><br>Reverse circulation sampling is good. Chips are logged and weighed and captured to the database. RC sample recoveries are assessed by weighing 1m samples from the cyclone on a scale in the field and comparing with the theoretical volume contained in a 1m x 140mm diameter hole to calculate an estimated percentage sample recovery.<br><br>Core recovered from each drill run is measured and compared with the drill run length drilled to calculate an estimated percentage core recovery. For core drilling overall recoveries are excellent, weighted average recovery greater than 99.5%.   |
|                              | Measures taken to maximise sample recovery and ensure representative nature of the samples.  | Measures taken include the use of bigger HQ core size diamond drilling to maximise recovery, having a geologist onsite to examine core and core metres marked and orientated to check against the driller's blocks and ensuring that all core loss is taken into account.<br><br>At the reverse circulation rig, sampling systems are routinely cleaned to minimise the opportunity for contamination and drilling methods are focused on sample quality. The measures taken to maximize RC sample recovery are through a cyclone and a 3-tier riffle splitter. Each 1m sample is passed twice through the splitter before sampling to ensure maximum homogenisation of each sample and to collect an unbiased representative sample to be assayed.<br><br>The reverse circulation rigs have auxiliary compressors and boosters to help maintain dry samples. Where wet samples are encountered, the reverse circulation drilling is discontinued. |
|                              | 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. | No relationship is seen to exist between sample recovery and grade, and no sample bias due to preferential loss/gain of any fine/coarse material due to the acceptable sample recoveries obtained by both drilling methods employed.   |
| <b>Logging</b>               | Whether core and chip samples have been geologically and geotechnically  | All drill holes are fully logged. The lithology, alteration and geotechnical characteristics of core are logged directly to a  |

| Criteria  | JORC Code Explanation   | Commentary  |
|---|---|---|
|   | logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. | digital format on a Field Toughbook laptop logging system following procedures and using Cardinal geologic codes. Data is imported into Cardinal's central database after validation in LogChief™. All geological logging is to a level of detail to support Mineral Resource estimation.   |
|   | Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.                   | Logging is both qualitative and quantitative depending on the field being logged. Both RC chips in trays and HQ core are photographed both in dry and wet form.   |
|   | The total length and percentage of the relevant intersections logged.   | All drillholes are logged in full and to the total length of each drillhole. 100% of each relevant intersection is logged in detail.  |
| <b>Sub-sampling techniques and sample preparation</b> | If core, whether cut or sawn and whether quarter, half or all core taken.   | Core orientation is completed for all diamond holes and all are marked prior to sampling. Longitudinally cut half core samples are produced using a Core Saw. Samples are weighed and recorded.   |
|   | If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.                            | RC samples are split using a three-tier riffle splitter. The majority of RC samples are dry. On occasions that wet samples are encountered, they are dried prior to splitting with a riffle splitter.   |
|   | For all sample types, the nature, quality and appropriateness of the sample preparation technique.                        | <p>Drill core samples are sorted, dried at 105°C for 4 hours and weighed. Samples are crushed to a nominal -2mm and then split to less than 1.0kg. The reject sample is retained in the original bag and stored. The split is pulverised in a LM2 to a nominal 85% passing 75µm and approximately 200g sub-sample of the pulverised material is used for assay.</p> <p>Chip samples are sorted and dried in an oven for eight hours and weighed. They are then crushed to -2mm using a RSD Boyd crusher and a &lt;1.0kg split is taken. The reject sample is retained in the original bag and stored. The split is pulverised in a LM2 to a nominal 85% passing 75µm and a 200g sub-sample is used for analysis.</p> <p>All preparation equipment is flushed with barren material prior to commencement of the job.</p> |
|   | Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.                     | <p>Cardinal Resources has protocols that cover the sample preparation at the laboratories and the collection and assessment of data to ensure that accurate steps are used in producing representative samples for the analytical process. Key performance indices include:</p> <ul style="list-style-type: none"> <li>• Contamination index of 95% (that is at least 95% of blanks pass); failures can only be attributed to probable minor laboratory contamination.</li> <li>• Crushed Size index of 95% passing 2mm (1:50 sample screened).</li> <li>• Grind Size index of 85% passing 75 microns</li> </ul>  |

| Criteria  | JORC Code Explanation   | Commentary  |
|---|---|---|
|   |   | <p>(minimum 1:50 sample screened).</p> <ul style="list-style-type: none"> <li>Check Samples returning at worst 20% precision at 90th percentile and bias of 5% or better.</li> </ul> <p>Crusher and pulveriser are flushed with barren material at the start of every batch.</p>  |
|   | Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.  | <p>Measures taken to ensure that the RC sampling is representative of the in-situ material collected are to take field duplicate samples every 20th sample. Approximately 3kg samples from the splitter are retained from each sample and stored at the company's secured premises for possible re-assay.</p> <p>Results of Check Samples for both RC and DD samples are all evaluated to ensure that the results of each assay batch are acceptable.</p>   |
|   | Whether sample sizes are appropriate to the grain size of the material being sampled.   | Sample sizes are considered appropriate to the grain size of the material being sampled.  |
| <b>Quality of Assay data and laboratory tests</b> | The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.  | <p>Samples are analysed for gold by lead collection fire assay of a 50g charge with AAS finish; the assay charge is fused with the litharge-based flux, cupelled and prill dissolved in aqua regia and gold tenor determined by flame AAS.</p> <p>The analytical method is considered appropriate for this mineralisation style and is of industry standards. The quality of the Fire Assaying and laboratory procedures are considered to be entirely appropriate for this deposit type.</p>   |
|   | 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. | No handheld geophysical tools are used.   |
|   | Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.                  | <p>Sample preparation checks for pulp fineness are carried out by the laboratory as part of their internal procedures to ensure the grind size of 85% passing 75µm is being attained. Laboratories' QAQC involves the use of internal lab standards using certified reference material (CRM) and blanks.</p> <p>Cardinal's QAQC protocol is considered industry standard with CRMs submitted on a regular basis with routine samples. The CRMs having a range of values and blanks are inserted in the ratio of 1:20. Duplicates are taken at the riffle splitter every 20<sup>th</sup> sample. No duplicate samples are taken from core samples.</p> |



| Criteria                                     | JORC Code Explanation  | Commentary   |
|--|--|--|
|  |  | Pulps are submitted to a secondary laboratory for checks on accuracy and precision of the primary laboratory. Coarse rejects are submitted back to the primary laboratory to assess the adequacy of the sub-sampling process.  |
| <b>Verification of sampling and assaying</b> | The verification of significant intersections by either independent or alternative company personnel.  | Significant intersections have been verified by alternative company personnel.   |
|  | The use of twinned holes.  | None of the drillholes in this report are twinned.   |
|  | Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.   | Primary data are captured on field tough book laptops using LogChief™ Software. The software has validation routines and data is then imported onto a secure central database.   |
|  | Discuss any adjustment to assay data.  | The primary data is always kept and is never replaced by adjusted or interpreted data.   |
| <b>Location of data points</b>               | 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.  | Planned drill hole collar coordinates are surveyed using handheld Garmin GPSmap 62s GPS within $\pm 3\text{m}$ accuracy.<br><br>All drill collars are accurately surveyed using Trimble R8 RTK GPS system within $\pm 10\text{mm}$ of accuracy (X, Y, Z).<br><br>Coordinates are based on three control stations established at Kungongo site by Sahara Mining Services.<br><br>Downhole survey is completed by using Reflex Ez-Shot survey instrument at regular intervals. |
|  | Specification of the grid system used.   | Coordinate and azimuth are reported in UTM WGS84 Zone 30 North.  |
|  | Quality and adequacy of topographic control.   | Topographic control was supplied by Southern Geoscience Consultants (Perth) using satellite imagery.   |
| <b>Data spacing and distribution</b>         | Data spacing for reporting of Exploration Results.   | The drilling was carried out on three fence lines that are 1,600m apart with hole spacing on line of 100m testing mineralization to a vertical depth of approximately 170m and covering a strike length of 3,600m  |
|  | 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. | Drill data spacing and distribution are insufficient to establish geological and grade continuity that are appropriate for reporting Mineral Resources and Ore Reserves.   |
| <b>Orientation of data in relation to</b>    | Whether sample compositing has been applied.   | No sample compositing has been applied.  |

| Criteria                    | JORC Code Explanation  | Commentary  |
|-----------------------------|--|---|
| <b>geological structure</b> | Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.   | <p>The drill holes are orientated to achieve intersection angles as close to perpendicular to the mineralization as practicable based on ground magnetic modelling data.</p> <p>All diamond drillholes were drilled to determine lithologies, orientation of dips and structures and as such some sampling bias may have occurred.</p>  |
|                             | 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. | No significant orientation-based sampling bias is known at this time.   |
| <b>Sample security</b>      | The measures taken to ensure sample security.  | <p>An independent Ghanaian security contractor is used to ensure sample security.</p> <p>The drilling contractor is accountable for drill core and RC chip production at the drill site. Final delivery from the drill site to the laydown area within the core yard is managed by Cardinal. The core yard technicians, field technicians and Geologists ensure the core and chips are logged, prepared and stored under security until collected by SGS for delivery to the laboratories.</p> <p>At the time of sample collection, a sign-off process between Cardinal and the laboratory delivery truck driver ensures that samples and paperwork correspond. The samples are then transported to the laboratory where they are receipted against the dispatch documents. The assay laboratories are responsible for the samples from the time of collection from Cardinal until final results are returned and checked by Cardinal Geologists.</p> <p>Sample pulps and coarse rejects are retained by the laboratories and are shipped back to Cardinal after final results are returned where they are stored under security.</p> |
| <b>Audits or reviews</b>    | The results of any audits or reviews of sampling techniques and data.  | Sampling techniques are of industry standards. Data is audited by Maxwell Geoservices (Perth), who have not made any other recommendations.   |

## Section 2 – Reporting of Exploration Results

(Criteria listed in section 1 will also apply to this section where relevant)

| Criteria                                 | JORC Code Explanation   | Commentary   |
|--|---|--|
| <b>Mineral Tenement and Land Status</b>  | Type, name/reference number, location and ownership including agreements or material issues with third parties including joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.  | The Exploration Permit covering Cardinal's Kungongo Prospect is over an area of 122.4 sq. km located in the North-East region of Ghana.  |
|  | The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.  | The Kungongo tenement is current and in good standing.   |
| <b>Exploration Done by Other Parties</b> | Acknowledgment and appraisal of exploration by other parties.   | Aside from Cardinal there has been no recent systematic exploration undertaken on the Kungongo Prospect.   |
| <b>Geology</b>                           | Deposit type, geological setting and style of mineralisation  | <p>The deposit type comprises gold mineralization within sheared and folded rocks containing sulphides; mainly pyrite with minor arsenopyrite.</p> <p>The geological setting is a Paleoproterozoic Greenstone Belt comprising Birimian metavolcanics, volcanoclastics and metasediments located along portion of the regional Bole-Bolgatanga Shear Zone.</p> <p>The style of mineralisation is yet to be determined</p> |
| <b>Drill hole information</b>            | <p>A summary of all information material to the understanding of the exploration results including tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> <li>• Easting and northing of the drill hole collar</li> <li>• Elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar</li> <li>• Dip and azimuth of the hole</li> <li>• Down hole length and interception depth</li> <li>• Hole length</li> </ul> | A summary of drill hole information is provided in this document.  |
|  | 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   | There has been no exclusion of information.  |

| Criteria  | JORC Code Explanation   | Commentary  |
|---|---|---|
|   | Competent Person should clearly explain why this is the case.   |   |
| <b>Data aggregation methods</b>   | In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.  | No weighting averaging techniques nor cutting of high grades have yet been undertaken.  |
|   | Where aggregated 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.             | Aggregated intercepts incorporating short lengths of high-grade results within the lithological units are calculated to include no more than intervals of 3m below grades of <0.5 g/t Au when assay results are reported. |
|   | The assumptions used for any reporting of metal equivalent values should be clearly stated.   | No metal equivalents are used in the intersection calculation.  |
| <b>Relationship between mineralisation widths and intercept lengths</b> | These relationships are particularly important in the reporting of exploration results.   | The relationship between mineralisation widths and intercept length is not yet known.   |
|   | If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.   | The geometry of the mineralisation with respect to the drill hole angle is not yet known.   |
|   | If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').   | The geometry of the mineralisation is unknown; only downhole length is reported (no true width of mineralisation is reported).  |
| <b>Diagrams</b>   | 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 plane view of drill hole collar locations and appropriate sectional views. | Appropriate maps and cross-sections with scale are included within the body of the accompanying document.   |
| <b>Balanced Reporting</b>   | Where comprehensive reporting of all Exploration Results is not practical, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.   | The accompanying document is considered to represent a balanced report.   |

| Criteria                                  | JORC Code Explanation  | Commentary  |
|---|--|---|
| <b>Other substantive exploration data</b> | Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observation; 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. | Other exploration data collected is not considered material to this document at this stage.<br><br>The interpretation of the geological observations shown in the cross and long sections are subject to possible change as new information is gathered.<br><br>Further data collection will be reviewed and reported when considered material. |
| <b>Further Work</b>                       | <p>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large – scale step – out drilling).</p> <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>                           | Further definition drilling and geophysical surveys are planned for the Kungongo Prospect.  |



**APPENDIX 2**  
**SUBRANUM LICENSE AREA DRILL META-DATA**

| Hole ID    | Depth (m) | Dip(°) | Azimuth(°) | Grid_ID   | mEast      | mNorth    | mRL    |
|------------|-----------|--------|------------|-----------|------------|-----------|--------|
| SBDD18-001 | 153.8     | -60    | 307.5      | WGS84_30N | 620,888.15 | 777,250.1 | 348.67 |
| SBDD18-002 | 203.0     | -60    | 304.5      | WGS84_30N | 620,956.66 | 777,204.2 | 348.15 |
| SBDD18-003 | 150.4     | -60    | 306.5      | WGS84_30N | 621,018.65 | 777,404.2 | 355.91 |
| SBDD18-004 | 173.2     | -60    | 304.5      | WGS84_30N | 621,074.47 | 777,592.6 | 358.70 |
| SBDD18-005 | 217.3     | -60    | 304.5      | WGS84_30N | 621,162.61 | 777,557.9 | 354.14 |
| SBDD18-006 | 113.0     | -70    | 298.0      | WGS84_30N | 619,946.2  | 776,073.3 | 351.03 |
| SBDD18-007 | 118.7     | -80    | 305.0      | WGS84_30N | 619,844.65 | 775,899   | 330.85 |

**Table 7: Meta-Data Listing of Subranum Drill Holes**

| Hole_ID    | mFrom | mTo   | mWidth | Aug/t |
|------------|-------|-------|--------|-------|
| SBDD18-001 | 101.5 | 105.4 | 3.9    | 1.4   |
| SBDD18-001 | 121.2 | 122.4 | 1.2    | 1.1   |
| SBDD18-002 | 159   | 163   | 4      | 0.6   |
| SBDD18-002 | 170   | 171   | 1      | 0.6   |
| SBDD18-002 | 175   | 176   | 1      | 0.9   |
| SBDD18-002 | 182   | 183   | 1      | 7.0   |
| SBDD18-002 | 195   | 196   | 1      | 1.5   |
| SBDD18-003 | 77.3  | 80    | 2.7    | 1.5   |
| SBDD18-003 | 127   | 128   | 1      | 3.8   |
| SBDD18-003 | 133   | 137   | 4      | 3.3   |
| SBDD18-003 | 143.5 | 145   | 1.5    | 10.7  |
| SBDD18-006 | 8     | 9.8   | 1.8    | 1.9   |
| SBDD18-006 | 48    | 53    | 5      | 0.6   |
| SBDD18-007 | 13    | 14    | 1      | 22.7  |
| SBDD18-007 | 36    | 37    | 1      | 0.5   |
| SBDD18-007 | 76    | 77    | 1      | 7.2   |

**Table 8: Summary of Individual Intercepts of Subranum drilling**

**Notes:**

- Cut-off grade for reporting of each individual intercept is  $\geq 0.5\text{g/t Au}$  with a maximum of 3m of consecutive internal dilution included within the intercept; only intercepts  $\geq 1\text{m}$  are reported
- Intervals are HQ/NQ diamond core which are lithologically sampled ranging between 0.5m to 1.5m
- Samples are analyzed for Au (SGS Lab FAA505 method) which is a 50g fire assay fusion with AAS instrument finish
- Grid coordinates are in WGS84 Zone 30 North

The intercepts were calculated, using a  $\geq 0.5\text{g/t}$  cut-off, which approximates the cut-off for Reasonable Prospects of Eventual Economic Extraction ("RPEEE") as per the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code") 2012 and the Canadian Institute of Mining ("CIM") 2010 guidelines and internal dilution of no more than 3m at  $<0.5\text{g/t Au}$ .

**JORC CODE 2012 EDITION TABLE 1**  
**REPORTING OF EXPLORATION RESULTS – SUBRANUM LICENSE**
**Section 1 – Sampling Technique and Data**

| Criteria                     | JORC Code Explanation   | Commentary   |
|------------------------------|---|--|
| <b>Sampling techniques</b>   | Nature and quality of sampling (e.g. 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.   | Recent sampling by Cardinal Resources is collected from 7 diamond (DD) holes. The near surface portions of each hole were sampled by HQ core size, totalling 487.6m, while the deeper portions were drilled by NQ core size totalling 716.4m.<br><br>Historic sampling was by Reverse Circulation (RC) drilling.   |
|                              | Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.   | Sampling and sample preparation followed guidelines established by Cardinal Resources which are considered industry standard and deemed appropriate.<br><br>Representativity of sampling is ensured by sampling according to lithological characteristics and with sample lengths ranging between 0.5m to 1.5m.  |
|                              | Aspects of the determination of mineralisation that are Material to the Public Report.<br><br>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information. | The determination of mineralisation is based on observed alterations and lithological differences.<br><br>Diamond drill samples is crushed to -2mm and a less than 1kg split sample is pulverised via LM2 to a nominal 85% passing - 75µm.<br><br>A 200g sub-sample is used for analysis. A 50g charge weight is fused with litharge-based flux, cupelled and the prill dissolved in aqua regia and gold tenor is determined by AAS. |
| <b>Drilling techniques</b>   | Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).   | Diamond core drilling is completed with core size of HQ for the near surface portions of each hole while the deeper portion is drilled with core size of NQ. Triple tube is used in saprolite at the tops of the hole. Core is orientated using digital Reflex ACT II RD orientation tool.<br><br>All drill collars are surveyed using GPS with downhole surveying every 30m.  |
| <b>Drill sample recovery</b> | Method of recording and assessing core and chip sample recoveries and results assessed.   | Diamond core recovery is logged and captured into the database. Method of recording core sample recoveries was to enter the relevant data on a hand-held Motion F5te Tablet PC using a set of standard templates supplied by Maxwell Geoservices, Perth (Maxwell).<br><br>Core recovered from each drill run is measured and compared with the drill run length drilled to calculate an  |

| Criteria  | JORC Code Explanation   | Commentary   |
|---|---|--|
|   |   | estimated percentage core recovery. The overall recoveries are excellent, weighted average recovery greater than 95.7%.  |
|   | Measures taken to maximise sample recovery and ensure representative nature of the samples.   | Measures taken include having a geologist onsite to examine core and core metres marked and orientated to check against the driller's blocks and ensuring that all core loss is taken into account.  |
|   | 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.                                  | No known sample recovery issues have impacted on potential sample bias.  |
| <b>Logging</b>  | 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. | All drill holes are fully logged. The lithology, alteration and geotechnical characteristics of core are logged directly to a digital format on a Field Toughbook laptop logging system following procedures and using Cardinal geologic codes. Data is imported into Cardinal's central database after validation in LogChief™. All geological logging is to a level of detail that can support Mineral Resource estimation.  |
|   | Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.   | Logging is both qualitative and quantitative depending on the field being logged. Core is photographed both in dry and wet form.   |
|   | The total length and percentage of the relevant intersections logged.   | All holes are logged in full and to the total length of each drill hole.   |
| <b>Sub-sampling techniques and sample preparation</b> | If core, whether cut or sawn and whether quarter, half or all core taken.   | Core orientation is completed for all diamond holes and all are marked prior to sampling. Longitudinally cut half core samples are produced using a Core Saw. Samples are weighed and recorded.  |
|   | If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.  | No non-core samples are included.  |
|   | For all sample types, the nature, quality and appropriateness of the sample preparation technique.  | Drill core samples are sorted, dried at 105°C for 4 hours and weighed. Samples are crushed to a nominal -2mm and then split to <1.0kg. The reject sample is retained in the original bag and stored. The split is pulverised in a LM2 to a nominal 85% passing 75µm and approximately 200g sub-sample of the pulverised material is used for assay.<br><br>All preparation equipment is flushed with barren material prior to commencement of the job.   |
|   | Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.   | Cardinal Resources has protocols that cover the sample preparation at the laboratories and the collection and assessment of data to ensure that accurate steps are used in producing representative samples for the analytical process. Key performance indices include: <ul style="list-style-type: none"> <li>• Contamination index of 95% (that is at least 95% of blanks pass); failures can only be attributed to probable minor laboratory contamination.</li> <li>• Crushed Size index of 95% passing 2mm (1:50 sample screened).</li> <li>• Grind Size index of 85% passing 75 µm (minimum 1:50 sample screened).</li> <li>• Check Samples returning at worst 20% precision at 90th percentile and bias of 5% or better.</li> </ul> Crusher and pulveriser are flushed with barren material at the |

| Criteria  | JORC Code Explanation   | Commentary   |
|---|---|--|
|   |   | start of every batch.  |
|   | Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.  | Sampling is carried out in accordance with Cardinal protocols as per industry best practice. Quality control procedures are adopted for all sub-sampling stages to maximize representativeness of samples including the use of Check Samples.<br><br>The Laboratory assays duplicate samples of each sample batch (20%) so that representation of the samples can be checked.  |
|   | Whether sample sizes are appropriate to the grain size of the material being sampled.   | The sample sizes are considered appropriate for the mineralisation style.  |
| <b>Quality of Assay data and laboratory tests</b> | The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.  | Samples are analysed for gold by lead collection fire assay of a 50g charge with AAS finish; the assay charge is fused with the litharge-based flux, cupelled and prill dissolved in aqua regia and gold tenor determined by flame AAS.<br><br>The analytical method is considered appropriate for the mineralisation style and is of industry standards. The quality of the Fire Assaying and laboratory procedures are considered to be entirely appropriate for this deposit type.  |
|   | 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. | No hand-held geophysical tools are used.   |
|   | Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.                  | Sample preparation checks for pulp fineness are carried out by the laboratory as part of their internal procedures to ensure the grind size of 85% passing 75µm is being attained. Laboratories' QAQC involves the use of internal lab standards using certified reference material (CRM) and blanks.<br><br>Cardinal's QAQC protocol is considered industry standard with CRMs submitted on a regular basis with routine samples. The CRMs having a range of values and blanks are inserted in the ratio of 1:20. No duplicate samples are taken from core samples.<br><br>Pulps (Check Assays) are submitted to a secondary laboratory for checks on accuracy and precision of the primary laboratory. Coarse rejects (Check Samples) are submitted back to the primary laboratory to assess the adequacy of the sub-sampling process. |
|   |   |  |
| <b>Verification of sampling and assaying</b>      | The verification of significant intersections by either independent or alternative company personnel.   | Significant intersections have been verified by alternative company personnel.   |
|   | The use of twinned holes.   | None of the recent drill holes in this report are twinned.   |
|   | Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.  | Primary data are captured on field tough book laptops using LogChief™ Software. The software has validation routines and data is then imported onto a secure central database.   |



| Criteria   | JORC Code Explanation  | Commentary   |
|--|--|--|
|  | Discuss any adjustment to assay data.  | The primary data is always kept and is never replaced by adjusted or interpreted data.   |
| <b>Location of data points</b>                                 | 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.  | All drill collars are accurately surveyed using Trimble R8 RTK GPS system within $\pm 10\text{mm}$ of accuracy (X, Y, Z). Downhole survey is completed by using Reflex Ez-Shot survey instrument at regular intervals.   |
|  | Specification of the grid system used.   | Coordinate and azimuth are reported in UTM WGS84 Zone 30 North.  |
|  | Quality and adequacy of topographic control.   | Topographic control at Subranum was with a hand-held Garmin GPS.   |
| <b>Data spacing and distribution</b>                           | Data spacing for reporting of Exploration Results.   | The drilling was carried out on one fence lines spaced between 200m to 1.5km.  |
|  | 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. | Drill data spacing and distribution are insufficient to establish geological and grade continuity that are appropriate for reporting Mineral Resources and Ore Reserves.   |
| <b>Orientation of data in relation to geological structure</b> | Whether sample compositing has been applied.   | No sample compositing has been applied.  |
|  | Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.   | The drill holes are orientated to achieve intersection angles as close to perpendicular to the mineralisation as practicable based on ground magnetic modelling data. All diamond drill holes were drilled to determine lithologies, orientation of dips and structures and as such some sampling bias may have occurred.  |
|  | 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.                   | No significant orientation-based sampling bias is known at this time.  |
| <b>Sample security</b>   | The measures taken to ensure sample security.  | <p>An independent Ghanaian security contractor is used to ensure sample security.</p> <p>The drilling contractor is accountable for drill core and RC chip production at the drill site. Final delivery from the drill site to the laydown area within the core yard is managed by Cardinal. The core yard technicians, field technicians and Geologists ensure the core and chips are logged, prepared and stored under security until collected for delivery to the laboratories.</p> <p>At the time of sample collection, a sign-off process between Cardinal and the laboratory delivery truck driver ensures that samples and paperwork correspond. The samples are then transported to the laboratory where they are receipted against the dispatch documents. The assay laboratories are responsible for the samples from the time of collection from Cardinal until final results are returned and checked by Cardinal Geologists.</p> |

| Criteria                 | JORC Code Explanation   | Commentary   |
|--------------------------|---|--|
|                          |   | Sample pulps and coarse rejects are retained by the laboratories and are shipped back to Cardinal after final results are returned where they are stored under security. |
| <b>Audits or reviews</b> | The results of any audits or reviews of sampling techniques and data. | No external audits or reviews of the sampling techniques and data have been completed.   |

## Section 2 – Reporting of Exploration Results

(Criteria listed in section 1 will also apply to this section where relevant)

| Criteria                                 | JORC Code Explanation  | Commentary   |
|--|--|--|
| <b>Mineral Tenement and Land Status</b>  | Type, name/reference number, location and ownership including agreements or material issues with third parties including joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.   | The Subranum Project covers an area of 69km <sup>2</sup> located in southwest Ghana. The license straddles the eastern margin of the Sefwi Gold Belt.  |
|  | The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.   | All tenements are current and in good standing.  |
| <b>Exploration Done by Other Parties</b> | Acknowledgment and appraisal of exploration by other parties.  | Initial exploration was done by Western Minerals (1996-1999), then Cambrian Mining Plc (2002-2003) and latterly by Newmont (2008-2010): <ul style="list-style-type: none"> <li>Western Minerals: soil sampling, trenching &amp; RC drilling</li> <li>Cambrian Mining: trenching &amp; limited RC drilling</li> <li>Newmont: BLEG stream sediment sampling, regolith &amp; soil geochemistry, trenching, ground geophysics &amp; RC drilling</li> </ul> |
| <b>Geology</b>                           | Deposit type, geological setting and style of mineralisation   | The deposit straddles the eastern margin of the Sefwi Belt and has 9km of the prospective Bibiani Regional sheared contact between Birimian metasediments to the east and Birimian volcanics/volcaniclastics to the west<br><br>Mineralisation is associated with quartz veining and sericite-silica-carbonate alteration halos within the country rocks. Disseminated pyrite and arsenopyrite are associated with the gold mineralisation.            |
| <b>Drill hole information</b>            | A summary of all information material to the understanding of the exploration results including tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>Easting and northing of the drill hole collar</li> <li>Elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar</li> <li>Dip and azimuth of the hole</li> <li>Down hole length and</li> </ul> | A summary of drill hole information is provided in this document.  |

| Criteria  | JORC Code Explanation  | Commentary  |
|---|--|---|
|   | <p>interception depth</p> <ul style="list-style-type: none"> <li>Hole length</li> </ul> <p>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 why this is the case.</p> | <p>There has been no exclusion of information.</p>  |
| <b>Data aggregation methods</b>   | In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.   | No weighting averaging techniques nor cutting of high grades have yet been undertaken.  |
|   | Where aggregated 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.  | Aggregated intercepts incorporating short lengths of high-grade results within the lithological units are calculated to include no more than intervals of 3m below grades of <0.5 g/t Au when assay results are reported. |
|   | The assumptions used for any reporting of metal equivalent values should be clearly stated.  | No metal equivalents are used in the intersection calculation.  |
| <b>Relationship between mineralisation widths and intercept lengths</b> | These relationships are particularly important in the reporting of exploration results.  | The relationship between mineralisation widths and intercept length are not yet known.  |
|   | If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.  | The geometry of the mineralisation with respect to the drill hole angle is not yet known.   |
|   | If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').  | The geometry of the mineralisation is unknown; only downhole length is reported (no true width of mineralisation is reported).  |
| <b>Diagrams</b>   | 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 plane view of drill hole collar locations and appropriate sectional views.  | Appropriate maps and cross-sections with scale are included within the body of the accompanying document.   |
| <b>Balanced Reporting</b>   | Where comprehensive reporting of all Exploration Results is not practical, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.  | The accompanying document is considered to represent a balanced report.   |
| <b>Other substantive exploration data</b>                               | Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observation; geophysical survey  | Other exploration data collected is not considered material to this document at this stage.   |

| Criteria            | JORC Code Explanation  | Commentary  |
|---------------------|--|---|
|                     | <p>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.</p>  | <p>The interpretation of the geological observations shown in the cross and long sections are subject to possible change as new information is gathered.</p> <p>Further data collection will be reviewed and reported when considered material.</p> |
| <b>Further Work</b> | <p>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large – scale step – out drilling).</p> <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p> | <p>Systematic exploration initially along the 5km long gold target, and later along the remaining 7km strike length of the Chirano Shear Zone to be planned.</p>  |



## Appendix 5B

### Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

#### Name of entity

Cardinal Resources Limited

#### ABN

56 147 325 620

#### Quarter ended ("current quarter")

31 December 2018

| Consolidated statement of cash flows |   | Current quarter<br>\$A'000 | Year to date<br>(6 months)<br>\$A'000 |
|--------------------------------------|---|----------------------------|---------------------------------------|
| <b>1.</b>                            | <b>Cash flows from operating activities</b>                       |                            |                                       |
| 1.1                                  | Receipts from customers   | -                          | -                                     |
| 1.2                                  | Payments for  |                            |                                       |
|                                      | (a) exploration & evaluation                                      | (4,431)                    | (8,116)                               |
|                                      | (b) development   | -                          | -                                     |
|                                      | (c) production  | -                          | -                                     |
|                                      | (d) staff costs   | (494)                      | (876)                                 |
|                                      | (e) administration and corporate costs                            | (1,561)                    | (2,608)                               |
| 1.3                                  | Dividends received (see note 3)                                   | -                          | -                                     |
| 1.4                                  | Interest received   | 63                         | 81                                    |
| 1.5                                  | Interest and other costs of finance paid                          | (307)                      | (495)                                 |
| 1.6                                  | Income taxes paid   | -                          | -                                     |
| 1.7                                  | Research and development refunds                                  | -                          | -                                     |
| 1.8                                  | Other (provide details if material) –<br>VAT/GST/Foreign Exchange | (229)                      | (887)                                 |
| <b>1.9</b>                           | <b>Net cash from / (used in) operating activities</b>             | <b>(6,959)</b>             | <b>(12,901)</b>                       |
| <b>2.</b>                            | <b>Cash flows from investing activities</b>                       |                            |                                       |
| 2.1                                  | Payments to acquire:  |                            |                                       |
|                                      | (a) property, plant and equipment                                 | (313)                      | (349)                                 |
|                                      | (b) tenements (see item 10)                                       | -                          | -                                     |

| Consolidated statement of cash flows |   | Current quarter<br>\$A'000 | Year to date<br>(6 months)<br>\$A'000 |
|--------------------------------------|---|----------------------------|---------------------------------------|
|                                      | (c) investments                                       | -                          | -                                     |
|                                      | (d) other non-current assets                          | -                          | -                                     |
| 2.2                                  | Proceeds from the disposal of:                        |                            |                                       |
|                                      | (a) property, plant and equipment                     | -                          | -                                     |
|                                      | (b) tenements (see item 10)                           | -                          | -                                     |
|                                      | (c) investments                                       | -                          | -                                     |
|                                      | (d) other non-current assets                          | -                          | -                                     |
| 2.3                                  | Cash flows from loans to other entities               | -                          | -                                     |
| 2.4                                  | Dividends received (see note 3)                       | -                          | -                                     |
| 2.5                                  | Other (provide details if material)                   | -                          | -                                     |
| 2.6                                  | <b>Net cash from / (used in) investing activities</b> | <b>(313)</b>               | <b>(349)</b>                          |

|           |   |            |               |
|-----------|---|------------|---------------|
| <b>3.</b> | <b>Cash flows from financing activities</b>                                 |            |               |
| 3.1       | Proceeds from issues of shares  | -          | -             |
| 3.2       | Proceeds from issue of convertible notes                                    | -          | -             |
| 3.3       | Proceeds from exercise of share options                                     | 103        | 179           |
| 3.4       | Transaction costs related to issues of shares, convertible notes or options | -          | -             |
| 3.5       | Proceeds from credit facility, net of costs                                 | -          | 33,653        |
| 3.6       | Repayment of borrowings   | -          | -             |
| 3.7       | Transaction costs related to loans and borrowings                           | -          | -             |
| 3.8       | Dividends paid  | -          | -             |
| 3.9       | Other (provide details if material)   | -          | -             |
| 3.10      | <b>Net cash from / (used in) financing activities</b>                       | <b>103</b> | <b>33,832</b> |

|           |  |         |          |
|-----------|--|---------|----------|
| <b>4.</b> | <b>Net increase / (decrease) in cash and cash equivalents for the period</b> |         |          |
| 4.1       | Cash and cash equivalents at beginning of period                             | 35,760  | 7,294    |
| 4.2       | Net cash from / (used in) operating activities (item 1.9 above)              | (6,959) | (12,901) |
| 4.3       | Net cash from / (used in) investing activities (item 2.6 above)              | (313)   | (349)    |
| 4.4       | Net cash from / (used in) financing activities (item 3.10 above)             | 103     | 33,832   |

## Mining exploration entity and oil and gas exploration entity quarterly report

| Consolidated statement of cash flows |   | Current quarter<br>\$A'000 | Year to date<br>(6 months)<br>\$A'000 |
|--------------------------------------|---|----------------------------|---------------------------------------|
| 4.5                                  | Effect of movement in exchange rates on cash held | 580                        | 1,295                                 |
| 4.6                                  | Cash and cash equivalents at end of period        | 29,171                     | 29,171                                |

| 5.  | Reconciliation of cash and cash equivalents<br>at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts | Current quarter<br>\$A'000 | Previous quarter<br>\$A'000 |
|-----|--|----------------------------|-----------------------------|
| 5.1 | Bank balances  | 1,102                      | 1,845                       |
| 5.2 | Call deposits  | 28,069                     | 33,915                      |
| 5.3 | Bank overdrafts  | -                          | -                           |
| 5.4 | Other (provide details)  | -                          | -                           |
| 5.5 | Cash and cash equivalents at end of quarter<br>(should equal item 4.6 above)   | 29,171                     | 35,760                      |

## 6. Payments to directors of the entity and their associates

- 6.1 Aggregate amount of payments to these parties included in item 1.2
- 6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

| Current quarter<br>\$A'000 |
|----------------------------|
| 322                        |
| -                          |

N/A

## 7. Payments to related entities of the entity and their associates

- 7.1 Aggregate amount of payments to these parties included in item 1.2
- 7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

| Current quarter<br>\$A'000 |
|----------------------------|
| -                          |
| -                          |

N/A

## Mining exploration entity and oil and gas exploration entity quarterly report

| 8.  | <b>Financing facilities available</b><br><i>Add notes as necessary for an understanding of the position</i>  | <b>Total facility amount at quarter end</b> | <b>Amount drawn at quarter end</b> |
|-----|--|---|------------------------------------|
|     |  | <b>\$A'000</b>                              | <b>\$A'000</b>                     |
| 8.1 | Loan facilities  | \$36,147                                    | \$34,793                           |
| 8.2 | Credit standby arrangements  | -   | -                                  |
| 8.3 | Other (please specify)   | -   | -                                  |
| 8.4 | Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well. |   |                                    |

Please see press release dated 31 July 2018 for more information.

| 9.  | <b>Estimated cash outflows for next quarter</b> | <b>\$A'000</b> |
|-----|---|----------------|
| 9.1 | Exploration and evaluation                      | 1,079          |
| 9.2 | Development                                     | -              |
| 9.3 | Production                                      | -              |
| 9.4 | Staff costs                                     | 939            |
| 9.5 | Administration and corporate costs              | 817            |
| 9.6 | Other (provide details if material)             | -              |
| 9.7 | <b>Total estimated cash outflows</b>            | <b>2,835</b>   |

| 10.  | <b>Changes in tenements (items 2.1(b) and 2.2(b) above)</b>                           | <b>Tenement reference and location</b> | <b>Nature of interest</b> | <b>Interest at beginning of quarter</b> | <b>Interest at end of quarter</b> |
|------|---|--|---------------------------|---|-----------------------------------|
| 10.1 | Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced | N/A                                    | N/A                       | N/A                                     | N/A                               |
| 10.2 | Interests in mining tenements and petroleum tenements acquired or increased           | N/A                                    | N/A                       | N/A                                     | N/A                               |



**Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here: Sarah Shipway  
Company Secretary

Date: 31 January 2019

Print name: Sarah Shipway

**Notes**

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.