

# ASX announcement

7 February 2017

## Argonaut Farms-in to Prospective WA Gold/Nickel Tenements

Argonaut Resources NL (ASX: ARE) (*Argonaut* or the *Company*) is pleased to announce it has signed a definitive earn-in agreement for a package of 14 tenements in the Higginsville area of Western Australia. The tenements are prospective for gold and nickel.

### Highlights

- The earn-in agreement covers 14 tenements prospective for **gold and nickel**.
- 13 of these tenements are location near **Higginsville in the Eastern Gold Fields** within the Norseman-Wiluna Belt (Figure 2).
- The earn-in between Argonaut and Loded Dog Prospecting Pty Ltd is in two phases. Argonaut may earn:
  - **51% for \$500,000** in exploration expenditure within two years; and
  - a further 29% interest, for a total of **80%, for an additional \$1,500,000** in exploration expenditure within a further three years.
  - Cash reimbursements totalling \$250,000 are payable by Argonaut progressively.

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## Gold

- Gold targets include:
  - **shallow oxide targets** with the potential for near-term production, located 5km from existing processing facilities; and
  - **deeper primary gold targets** beneath historic shallow drilling that was completed in the 1990s.
- Gold targets known as Amorphous and Footes Find are located on a major N-S oriented structural trend.

### Historic Drilling Highlights – Oxide Gold

#### Amorphous Prospect

- AMC0007: **8m at 2.07g/t gold from 26m**  
including 2m at 7.94g/t gold from 28m
- AMR0013: **5m at 4.03g/t gold from 21m**  
including 2m at 10.37g/t gold from 22m
- AMR0015: **8m at 3.27g/t gold from 17m**  
including 3m at 9.6g/t gold from 21m

#### Footes Find Prospect

- FFP0010: **7m at 2.13g/t gold from 28m**  
including 1m at 12.5g/t gold from 30m

## Nickel

- Nickel targets are located south of Higginsville near the west shore of Lake Cowan. The main target is known as Green Bananas (Figure 1).
- Green Bananas features a nickel geochemistry anomaly with auger samples returning between 0.1 and 0.2% nickel.
- These targets are prospective for massive nickel sulphides such as those discovered by Mincor Resources NL nearby at Cassini and warrant a follow-up geophysical (EM) survey.

## Higginsville Project

The tenements that make-up the Higginsville project are located in Western Australia's Eastern Goldfields (Figure 2). Geologically, the package sits within the Norseman-Wiluna Belt, a belt of ancient rocks endowed with gold and nickel that sits within the broader Yilgarn Craton.

Approximately 70% of Australia's historical gold production has come from the Yilgarn Craton and most of that from the Norseman-Wiluna Belt.

The Higginsville Project is located south of Kambala, west of Lake Cowan and adjacent to Higginsville where over two million ounces of gold has been historically defined. Gold discoveries at Baloo and Monsoon (Polar Bear) by S2 Resources are located immediately east of the Higginsville Project at Lake Cowen.

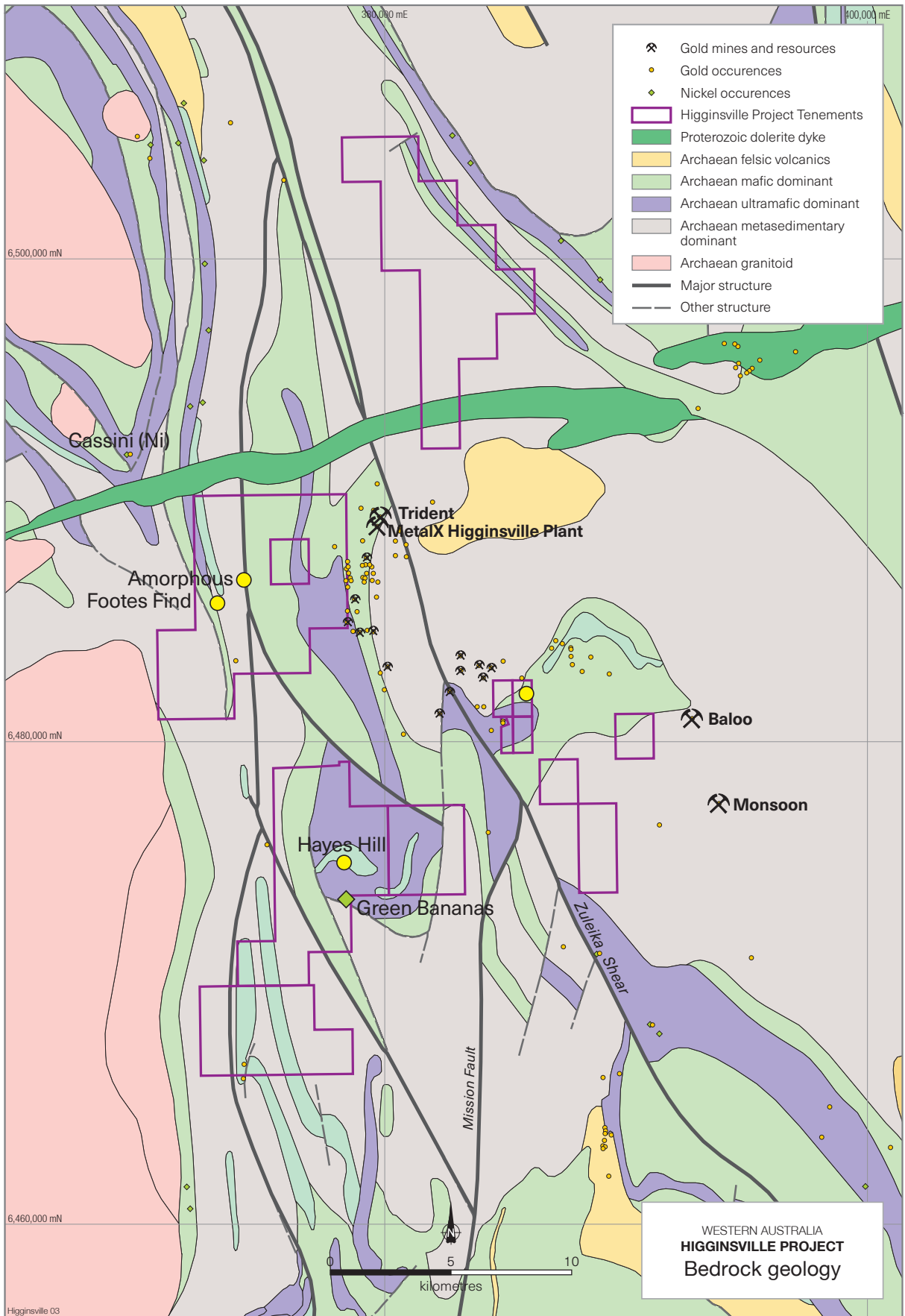


Figure 1

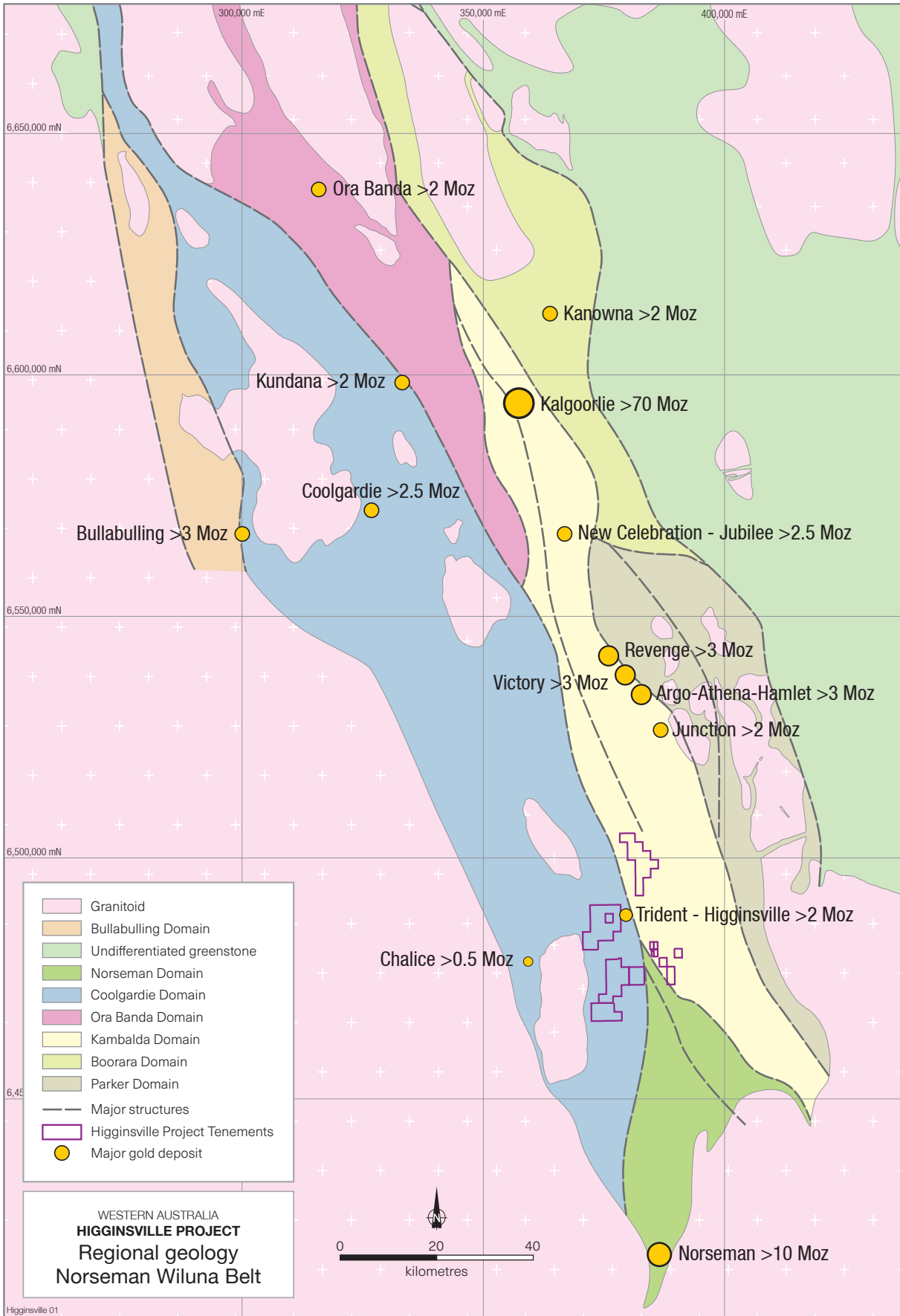


Figure 2

## Gold Exploration

Argonaut's two primary goals in securing the earn-in agreement are to firstly explore for near-surface oxide gold in areas with historic shallow drilling results and secondly to target deeper primary gold mineralisation at depths previously untested by drilling.

### Historic Drilling Highlights – Oxide Gold

Historic shallow drilling in the area of Amorphous and Footes Find prospects was completed by Resolute Mining Ltd in the early 1990s. Highlights of this drilling are show below. Detailed historic results are shown in Appendix 1.

#### Amorphous Prospect

- AMC0007: **8m at 2.07g/t gold from 26m**  
including 2m at 7.94g/t gold from 28m
- AMC0010: 9m at 1.21g/t gold from 71m  
including 2m at 3.78g/t gold from 73m
- AMR0013: **5m at 4.03g/t gold from 21m**  
including 2m at 10.37g/t gold from 22m
- AMR0015: **8m at 3.27g/t gold from 17m**  
including 3m at 9.6g/t gold from 21m

#### Footes Find Prospect

- FFP0010: **7m at 2.13g/t gold from 28m**  
including 1m at 12.5g/t gold from 30m

Amorphous and Footes Find are located approximately 5km along a sealed road from an operating mill (Figure 1) and present an excellent opportunity for a meaningful, near-term exploration outcome.

Argonaut intends to commence RC drilling at Amorphous and Footes Find in April/May 2017 on the grant of the overlying tenement. This program will aim to define gold resources to standards sufficient for an estimation under the JORC code.

## Nickel Exploration

Nickel targets within the Higginsville tenement package are called Hayes Hill and Green Bananas. These targets are located south of Higginsville (Figure 1) near the west shore of Lake Cowan. The targets have been defined by auger drilling and are co-incident with expected magnetic signatures.

Green Bananas features a nickel geochemistry anomaly with auger samples returning between 0.1 and 0.2% nickel.

These targets are prospective for massive nickel sulphides such as those discovered by Mincor Resources NL nearby at Cassini. Targets warrant a follow-up geophysical (EM) surveys.

## Agreement Terms

Argonaut and Loded Dog Prospecting Pty Ltd executed the Eastern Goldfields Earn-In Joint Venture and Royalty Agreement on 7 February 2017. Under the agreement Argonaut has the right to earn an 80% interest in the tenement package according to the following terms:

- Argonaut can earn a 51% interest in the tenement package in exchange for completing \$500,000 in exploration expenditure within two years of commencement; and
- Argonaut may earn a further 29% interest, for a total of 80%, for completing an additional \$1,500,000 in exploration expenditure within a further three years.
- Reimbursement of tenement acquisition expenses totalling \$250,000 are payable by Argonaut progressively under the agreement.
  - reimbursement of \$100,000 is payable on execution of the definitive earn-in agreement;
  - reimbursement of \$75,000 is payable on the first anniversary; and
  - reimbursement of \$75,000 is payable on election to proceed to the second phase of the earn-in.
- An issue of ordinary fully paid Argonaut shares to the value of \$50,000 is due on execution of the definitive earn-in agreement.

## About Argonaut

Argonaut is an Australia Securities Exchange listed exploration and development company. Argonaut operates the Torrens Iron Oxide Copper-Gold Joint Venture with Aeris Resources Ltd in South Australia, the Lumwana West copper-cobalt project with Chilean major, Antofagasta, in north-western Zambia and the Crescent Lake lithium project in Ontario, Canada.

### **Lindsay Owler**

Director and CEO

Argonaut Resources NL

*Sections of information contained in this report that relate to Exploration Results were compiled or supervised by Mr Lindsay Owler BSc, MAusIMM who is a Member of the Australasian Institute of Mining and Metallurgy and is a full time employee of Argonaut Resources NL. Mr Owler holds shares and options in Argonaut Resources NL, details of which are disclosed in the Company's 2015 Annual Report. Mr Owler has sufficient experience which is relevant to the style of mineral deposits 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 Mineral Resources and Ore Reserves". Mr Owler consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*



# JORC Code, 2012 Edition – Table 1

## Section 1 Sampling Techniques and Data – Higginsville Project

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>The Amorphous and Footes Find prospects were sampled using RAB, AC and RC drill holes primarily in the early to mid 1990s. Very limited follow up RAB and RC drillholes were completed during mid 2000's.</li> <li>Drill chips were logged for lithology, weathering, alteration and mineralisation. Sampling was conducted as half core (NQ). Sampling followed Resolute Samantha procedures. No QA/QC procedures are documented for 1990's drilling.</li> <li>RAB and AC drill chips were sampled on were initially collected as 2m composite intervals using a scoop. Where 2m composite samples returned Au values in greater than or equal to 0.1 g/t, 1 metre re-samples were collected. RC drill chips were sampled either as 2m composite spear samples or 1m riffle split samples.</li> <li>RAB, AC and RC samples were dried, crushed, split, pulverised and pulp taken for Aqua Regia digest followed by analysis by AAS techniques. Various laboratories were utilised with early 1990's samples being analysed by Minlabs (formerly GMS) in Kalgoorlie and mid 1990's samples being analysed by Kalgoorlie Assay Laboratories and at Analabs.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>RAB, AC and RC drill holes. A total of 50 RAB drillholes (AMR001-0036, HGRB001-014) for 2479 metres, 46 AC drill holes (AMA001-035, SFA001-011) for 745 metres and 41 RC drill holes (AMC001-017, FFP001-016, FFP018-FFP021, HGC001-004) for 3280 metres completed.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Drill chip recoveries were not recorded in detail in open file documentation. Small samples were noted.</li> <li>Drill chip quality and condition were not recorded in detail in open file documentation. Wet and contaminated samples were noted.</li> <li>RAB drilling can have poor recoveries and contamination issues especially below the water table (i.e. when wet). RAB samples from depth have more chance of contamination than those from near surface.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Drill chips have been logged for geological (lithology, weathering, mineralisation, veining and alteration) information. Drill logs for most drilling is recorded with open file reports.</li> <li>Drill chip logging is qualitative.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>RAB and AC drill chips were sampled on were initially collected as 2m composite intervals using a scoop. Where 2m composite samples returned Au values in greater than or equal to 0.1 g/t, 1 metre re-samples were collected. RC drill chips were sampled either as 2m composite spear samples or 1m riffle split samples.</li> <li>Samples were prepared at and crushed with a subsample split for pulverising. Sizing checks were reported as undertaken but no record exists in open file documentation.</li> <li>Sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>



Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples were dried, crushed, split, pulverised and pulp taken for Aqua Regia digest followed by analysis by AAS techniques. Various laboratories were utilised with early 1990's samples being analysed by Minlabs (formerly GMS) in Kalgoorlie and mid 1990's samples being analysed by Kalgoorlie Assay Laboratories and at Analabs.</li> <li>• QAQC procedures were not recorded for historic drilling.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Significant intersections are reported by ARE personnel from data reported in open file documentation.</li> <li>• No twinned drill holes.</li> <li>• Data extracted from open file documentation.</li> <li>• Gaps existed in historic assay data. Where these gaps occurred, no assay value was assigned and the interval treated as internal dilution. No statistical adjustments to data have been applied.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drillhole locations extracted from open file documentation with an accuracy assumed to be within +/- 20m for 1990's drilling and +/-5 m for drilling conducted in 2000's with GPG control. No down hole surveys were recorded other than that at collar.</li> <li>• The grid system for the Higginsville Project is GDA94 (MGA) Zone 51.</li> <li>• Elevation data extracted from open file documentation with an accuracy assumed to be within +/- 25m for 1990's drilling and +/-10 m for drilling conducted in 2000's with GPG control.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Wide spaced exploration drilling.</li> <li>• No resources or reserves reported.</li> <li>• Composite sampling from historic drilling reported.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Mapping undertaken in license scale to refine regional structural fabric and thus to drill perpendicular to the interpreted structural orientation.</li> <li>• No orientation based bias had been identified in the data to this point.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The chain of custody for sample dispatch was not recorded in open file documentation.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No reviews conducted.</li> </ul>

## Section 2 Reporting of Exploration Results – Higginsville Project

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Amorphous and Footes Find prospects are located within pending Exploration License E15/1489, which is located within the Higginsville Project owned by Loded Dog Prospecting Pty Ltd. Argonaut Resources have an earn in joint venture agreement on the project.</li> <li>The Higginsville project is situated within the Ngadju Native Title Claim (WC99/002).</li> <li>Most licenses within the Higginsville project are applications pending grant.</li> <li>No other known impediments.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Gold Exploration</li> <li>Falcona Exploration and Mining NL (late 1980's?) – Surface geochemistry, RAB drilling at Footes Find (no information available) and subsequent trial open pit mining and small scale heap leach operation.</li> <li>Resolute Samantha (early to mid 1990's) – Soils sampling, mapping, rock chip sampling. Shallow, blade refusal AC drilling in 1990 over Amorphous Au in soil anomaly and NW of Footes Find. RC drilling at Footes Find in 1990. RAB and RC Drilling in 1994 at Amorphous.</li> <li>WMC/Gold Fields (late 1990's – early 2000's) – Review data, no on ground activities.</li> <li>Australian Gold Resources Pty Ltd (mid 2000's) – Soil sampling, RAB drilling on selected traverses over Au in soil anomalies. Follow up RC drilling at Amorphous.</li> <li>Gascoyne Resources Ltd. (2012 –2014) – Broad spaced auger geochemical sampling over Footes Find trend.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Amorphous and Footes Find prospects are situated with the Archaean Norseman - Wiluna Belt which locally includes basalts, komatiites, metasediments, and felsic volcanoclastics.</li> <li>The primary gold mineralisation orogenic style and is related to hydrothermal activity during multiple deformation events. Indications are that gold mineralisation at the prospects is focused on or near to the sheared contact between the gabbro and metasedimentary units.</li> <li>Within the Higginsville region, economic gold mineralisation (Trident, Poseidon South) is hosted primarily within gabbro with subordinate mafic and ultramafic lithologies and comprises a series of north-northeast trending, shallowly north-plunging mineralised zones. These deposits comprise of two main mineralisation styles; large wallrock-hosted ore-zones comprising sigmoidal quartz tensional vein arrays and associated metasomatic wall rock alteration hosted exclusively within the gabbro; and thin, lode-style, nuggetty laminated quartz veins that formed primarily at sheared lithological contacts between the various mafic and ultramafic lithologies.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <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 metres) 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> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>See Table – Higginsville Project Drillholes</li> <li></li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Length-weighted average grades reported. No upper limit has been</li> <li>applied to gold grades in these exploration results.</li> <li>A cut-off grade of 0.1 g/t Au and a maximum internal dilution of 2m</li> <li>(downhole width) are used as a guideline when delineating the drilled thickness intervals of mineralisation.</li> <li>All metal grades reported are single element.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Down hole length, true width not known.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to figures within report.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Results for this drilling derived from open file reports available on WAMEX.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>There is no other exploration data which is considered material to the results reported.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Geological mapping, interpretation and verification of drillhole locations to be completed on these prospects. Drill target testing contingent on positive results, interpretation and exploration ranking.</li> <li>All future exploration work is commercially sensitive and will not be released to the market until results are available.</li> </ul>