ARGONAUT RESOURCES NL

ABN 97 008 084 848

argonautresources.com

#### **ASX:** ARE

#### CAPITAL STRUCTURE:

Issued shares: 1,544 million Listed options: None Unlisted options: 65 million Cash on hand: \$2,994,000

#### **DIRECTORS:**

Patrick Elliott. Non-Exec Chairman

Lindsay Owler, Director/CEO

Andrew Bursill, Director/Secretary

Malcolm Richmond. Non-Exec Director

#### **COPPER PROJECTS**

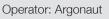
Torrens, South Australia Copper, gold (large IOCG) Phase: Drilling, exploration Interest: Aeris Resources 70%, Argonaut 30% Agreement Phase: Exploration **Operator:** Aeris

#### Lumwana West, Zambia

Copper, cobalt (shear-hosted) Phase: Advanced exploration Interest: Argonaut 90% Agreement Phase: Exploration Operator: Argonaut

#### **GOLD & NICKEL PROJECTS**

Higginsville, Western Australia Oxide and primary gold, nickel Phase: Exploration Interest: Argonaut 51%, earning 80% Agreement Phase: Earn-in, phase two





# Quarterly report

FOR THE PERIOD ENDING 31 MARCH 2019

Argonaut Resources NL (Argonaut or the Company) (ASX: ARE) is pleased to present the following report for the period to 31 March 2019 (the Quarter).

## Highlights

#### Torrens, South Australia – Copper

- The Torrens Joint Venture commenced a major drilling program at the internationally recognised Torrens copper anomaly on 20 January 2019.
  - Drill hole TD7 targeted a coincident gravity and magnetic anomaly with Iron Oxide Copper-Gold (IOCG) characteristics.
    - TD7 was successfully drilled to 859m.
    - TD7 intersected an encouraging 60m zone of hematite alteration within a broader magnetite skarn-like alteration zone.
    - TD7 drill core has been processed and submitted for assay.
  - Drill hole TD8 targeted a partially coincident gravity-magnetic anomaly.
    - TD8 was abandoned at 112m due to complications caused by a high-pressure, artesian aquifer.
  - Drill hole TD9 targeted a coincident gravity-magnetic anomaly.
  - TD9 was abandoned at 145m due to complications also caused by the same artesian aquifer.
  - Drilling at drill hole TD10 commenced during the second half of April 2019, subsequent to the period.
    - Drilling recommenced after drill procedures and equipment were significantly updated.
  - TD10 is targeting the same anomaly as TD9.

#### Murdie, South Australia – Copper

- During the Quarter, Argonaut commenced preparation for drilling at the Murdie and West Lake Torrens tenements (collectively the Murdie Project), adjacent to the Torrens Project in South Australia (Figure 1).
- Geophysical modelling of airborne gravity and aeromagnetic data was completed resulting in the identification of a number of IOCG targets to a resolution suitable for drilling.
- Many of the newly identified targets are gravity-only anomalies, similar to the anomaly that led to discovery of Oak Dam West by BHP.

#### Red Dam, South Australia – Copper

- Argonaut was granted exploration licence EL6320 located adjacent to the Torrens Project (Figure 1).
- The 198 square kilometre licence area is in three parts and encompasses the Red Dam IOCG target, previously identified by WMC.
- The licence areas were relinquished by BHP prior to the announcement of the Oak Dam West discovery.
- Argonaut has assessed relevant historical drill core and plans to acquire additional gravity data to improve resolution for appropriate geophysical modelling.

#### The Outlook for Copper Remains Strong

- Copper remains the metal of choice for medium to long-term investment.
- Copper inventories remain lean and modest demand growth looms over fragile supply.
- New demand from electric vehicle manufacture and the installation of related changing infrastructure will put increasing pressure on supply in coming years.
- Argonaut is well placed with world-class copper assets such as Torrens, Murdie and Lumwana West.

#### **Registered Office**

Level 5, 126 Philip Street Sydney, NSW, 2000, Australia T +61 2 9299 9690 +61 2 9251 7455 F

#### E sydney@argonautresources.com

#### **Adelaide Office**

Level 1, 63 Waymouth Street Adelaide, SA, 5000, Australia T+61 8 8231 0381 F+61 8 8231 6092 E adelaide@argonautresources.com

## Torrens Joint Venture, South Australia

#### (Argonaut 30%)

The Torrens Joint Venture is located within the globally recognised ironoxide coppergold (IOCG) metallogenic province, at the eastern margin of South Australia's Gawler Craton (Stuart Shelf), within 40 kilometres of BHP's Oak Dam West copper discovery, 50 kilometres of Oz Minerals' Carrapateena copper-gold deposit and 75 kilometres from BHP's Olympic Dam mine.

BHP's recent discovery at Oak Dam West, located just 40 kilometres to the southwest of the Torrens Project, has confirmed the validity of the Torrens target and the metallogenic endowment of the Eastern Gawler Craton, beneath the Stuart Shelf.

#### **Exploration Drilling**

The Torrens Joint Venture has now commenced Stage One of a major drilling program. The Torrens anomaly sits under at least 400m of sediment cover and Stage One will involve helicopter-supported drilling to depths of 700-1,500m, targeting priority drill targets. This drilling program will be the first phase of a multi-phase program that is expected to take 18-24 months and comprise 20-30 deep drill holes.

The first hole of the current program, TD7, is located 1.5 kilometres from the shore of Lake Torrens (Figure 2) and targeted a coincident gravity-magnetic anomaly. TD7 was successfully drilled to 859m and intersected an encouraging 60m zone of hematite alteration within a broader magnetite skarn-like alteration zone, consistent with IOCG mineralisation. TD7 drill core has been processed and sent to the laboratory for assay. Assay results from the hematite alteration zone within TD7 drill core are pending.

Drill hole TD8 is located over 8 kilometres from the shore of Lake Torrens (Figure 2) and targeted a partially coincident gravity-magnetic anomaly. TD8 was abandoned at 112m due to complications caused by a high-pressure, artesian aquifer.

The rig was mobilised northward to TD9 to target a coincident gravity-magnetic anomaly (Figure 2). TD9 was abandoned at 145m due to drilling complications caused by the same artesian.

The Joint Venture reviewed drilling procedures for the upper 150m of the cover sequence. Several changes have been implemented to better address the difficult drilling conditions encountered in holes TD8 and TD9.

Drilling recommence subsequent to the Quarter, in the second half of April 2019. Drill hole TD10 is targeting the same coincident gravity-magnetic anomaly as TD9.

#### Geophysics

Geophysical survey data acquired in 2018 defined numerous large areas that have the physical properties of IOCG deposits. This survey has increased the probability of drilling success at Torrens due to its higher precision.

The Torrens Joint Venture Technical Committee has completed several phases of 2D modelling of selected targets to further define potential copper mineralisation at depth. Recent phases of geophysical modelling have benefitted from improved geological interpretations completed by the technical committee and various expert consultants.

#### Gravity Targets

Argonaut has defined 28 gravity targets from modelling of gravity and magnetic data. These targets each display the properties of large IOCG deposits. The targets have been categorised into four groups which are detailed in Table 1 below.

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Table T. Catedorised dravit	/ anomalies identified at Torrens.	See FIGURE 2 TOP LOCATIONS
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Target Type	Description	Targets
Partial to non-coincident gravity and magnetic anomaly	Modelled magnetite anomaly offset from interpreted hematite/ sulphide mineralisation.	5
Coincident gravity and magnetic anomaly	Largely coincident gravity and magnetic anomalies plus or minus abutting non-magnetic interpreted hematite/sulphide mineralisation.	9
Gravity only anomaly	Modelled gravity anomaly without a proximal magnetic anomaly. Carrapateena-style.	10
Deeper gravity anomaly	Modelled gravity anomaly greater than 700m depth plus or minus magnetic anomalism.	4

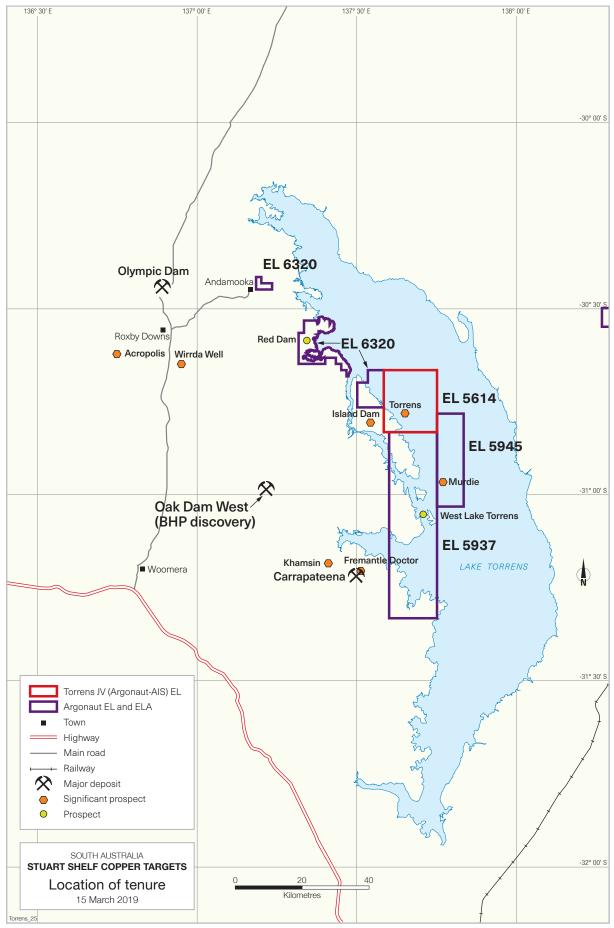


Figure 1 Lake Torrens exploration licences – Argonaut has a commanding land position.

#### IOCG Deposits and Geophysics

Rocks with locally high concentrations of subsurface iron can be distinguished via gravity (high rock density) and magnetic (high or low susceptibility to magnetism) surveys. These iron-rich rocks can be associated with economic concentrations of copper and gold. Drilling of this type of anomaly along the eastern margin of the Gawler Craton has led to the discovery of the Olympic Dam, Prominent Hill and Carrapateena mines, and more recently, the Oak Dam West deposit.

Different IOCG deposits have different geophysical characteristics. This is due to variations in the extent of iron alteration. It is generally accepted that large bodies of high-density, magnetite-rich rock with low concentrations of copper can be altered into non-magnetic hematite which can carry higher copper and gold grades. This alteration from magnetic to non-magnetic iron can be partial, as is the case at Olympic Dam and Prominent Hill, or complete as seen at Carrapateena and Oak Dam West. It follows that IOCG gravity targets with a variety of relationships to magnetics can be prospective for IOCG mineralisation.

3D models of airborne survey data show the spatial relationship between gravity and magnetic anomalies more precisely. This provides better definition of target zones and higher accuracy drill targeting.

The Torrens licence contains numerous gravity anomalies with a variety of gravity-magnetic relationships. These are described in Table 1 and Figure 2.

#### Geophysical Modelling

There are several valid ways to model geophysical data. A common modelling technique is unconstrained inversion modelling. This involves using the geophysical survey data to create three-dimensional, mathematical models without any imposed geological constraints. Then, in the case of targets like Torrens where downhole geophysical measurements are available from existing drill holes, the theoretical models are validated against real density and susceptibility measurements taken from drill core.

The Torrens joint venture has completed the three-dimensional inversion modelling process and these results are presented in Figure 2.

Additional three-dimensional modelling of gravity and magnetic data using alternative modelling techniques has also been completed. The output of this modelling will be used in conjunction with the inversion modelling and geological interpretations.

Finally, two-dimensional modelling techniques are used to confirm and reinforce the targets prior to drilling.

#### Interpretations

Argonaut has categorised all significant gravity inversion highs according to their relationship with magnetics and depth. Anomalies that occur at expected drilling depths and have coincident, partially coincident or non-coincident magnetic associations have been categorised, as have those gravity anomalies without associated magnetic highs. Gravity targets at depths greater than 700m are grouped separately. This categorisation of gravity targets is shown in Figure 2.

#### The Torrens Anomaly

The Torrens anomaly is a coincident magnetic and gravity anomaly with a footprint larger than that of Olympic Dam. The anomaly is located at the Torrens hinge zone, a continent-scale zone of crustal weakness that appears to have been a conduit for mineralising fluids from the Earth's mantle.

Drilling of the Torrens anomaly by Western Mining Corporation in the late 1970s, and by the Torrens joint venture in 2007 and 2008, confirmed the existence of a major IOCG mineralising system beneath several hundred metres of sedimentary cover.

Drilling is required to intercept the modelled copper-gold mineralisation. In the event of a discovery, the Torrens anomaly has the scale to host a world-class copper-gold deposit.

#### The Torrens Joint Venture

The Torrens joint venture is between Argonaut Resources NL (30%) and Aeris Resources Limited (ASX: AIS) (70%) and relates to the Torrens project, EL5614.

Argonaut's subsidiary, Kelaray Pty Ltd, resigned as manager of the joint venture in September 2018. Aeris Resources' subsidiary, Straits Exploration (Australia) Pty Ltd, is now manager.

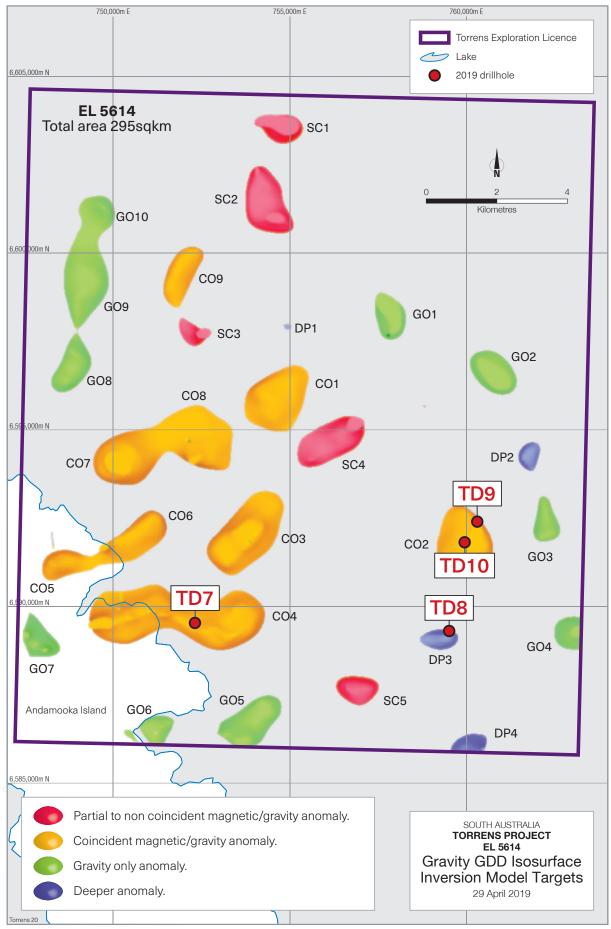


Figure 2 Gravity inversion model targets by category.

#### **Torrens Photo Gallery**

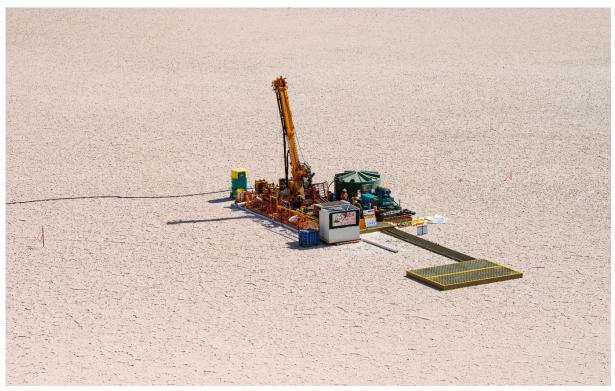


Photo 1 Drilling equipment and helicopter landing pad at Lake Torrens, January 2019.



Photo 2 EDM1500 drilling rig and drilling rods on engineered pontoons, January 2019.



Photo 3 Lake Torrens drilling is helicopter supported to avoid heavy vehicle traffic on the salt lake crust, January 2019.

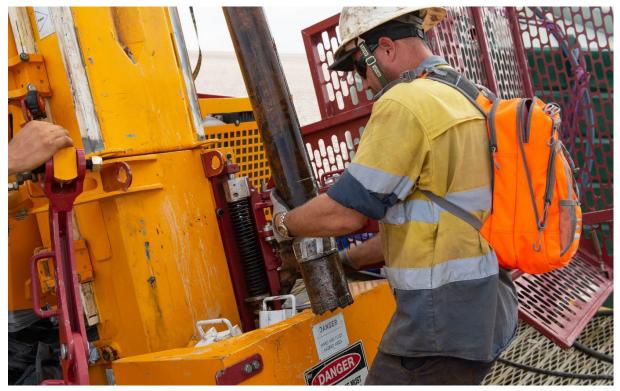


Photo 4 A driller inserts a diamond drilling bit at drillhole TD7, January 2019.

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## Murdie, South Australia

#### (Argonaut 100%)

Argonaut Resources holds two highly prospective South Australian exploration licences, EL5937 and EL5945 (Figure 1). The licences are contiguous with the Company's Torrens joint venture project in South Australia. The licence areas encompass a confirmed IOCG target in an area known as Murdie as well as a second anomaly at West Lake Torrens.

The licences cover an area of 1,015 square kilometres and are located immediately south and east of the Torrens project and east of the Carrapateena deposit (Figure 1).

The Murdie and West Lake Torrens targets constitute excellent exploration opportunities in their own right and provide Argonaut with a commanding land holding in the event of a discovery at Torrens.

Argonaut's subsidiary, Kelaray, has been granted native title authority to access the Murdie and West Lake Torrens targets and exercise exploration rights under the licences.

Initial geophysical modelling of the Murdie and West Lake Torrens targets has commenced. This modelling has succeeded in defining target areas to a resolution suitable for drilling and has also defined a substantial number of new gravity-only targets, along the lines of the anomalies that led to the discovery of Oak Dam West and Carrapateena.

An Exploration Program for Environment Protection and Rehabilitation (E-PEPR) for exploration activities including ground gravity surveys and diamond drilling at Murdie is nearing completion. The Murdie E-PEPR will be submitted in the June quarter.

## Red Dam, South Australia

#### (Argonaut 100%)

Argonaut was granted exploration licence EL6320 located adjacent to the Torrens Project (Figure 1). The 198 square kilometre licence area is in three parts and encompasses the Red Dam IOCG target, previously identified by WMC. The licence areas were relinquished by BHP prior to the announcement of the Oak Dam West discovery.

Argonaut has assessed the relevant, historical drill core and plans to acquire additional gravity data to improve resolution for geophysical modelling and resultant target generation.

## Lumwana West, Zambia

#### (Argonaut 90%)

#### **Highlights**

- Approval for a 2019 drilling program at the Nyungu Deposit was granted by the Zambian Government.
- A program of metallurgical test work on copper-cobalt sulphide and transitional mineralisation commenced following the grant in February 2019 of an ore export permit. Results of this test work will be available in the second half of 2019.
- Metallurgical testing aims to:
  - identify ore types within the Nyungu deposit that deserve additional exploration drilling; and
  - define a process flow-sheet which will in-turn allow Argonaut to meaningfully evaluate the economics of a mine.
- Two new exploration licences were granted to an Argonaut subsidiary.

The Lumwana West project is in the Central African Copperbelt, North-Western Province, Zambia. The area is prospective for large tonnage, low to medium grade copper/cobalt deposits. There are several major mines nearby to Lumwana West that are hosted in similar geological settings (Figure 3).

Argonaut, via its 90% held subsidiary, Mwombezhi Resources Ltd, has been successful in intercepting broad copper and cobalt intercepts at the Nyungu deposit. The upturn in commodity prices has caused the value of the Nyungu deposit to increase sharply. With the benefit of a newly granted licence, Argonaut has proceeded to a scoping mining study and is now developing a process flow-sheet to better understand the economics of a potential mine.

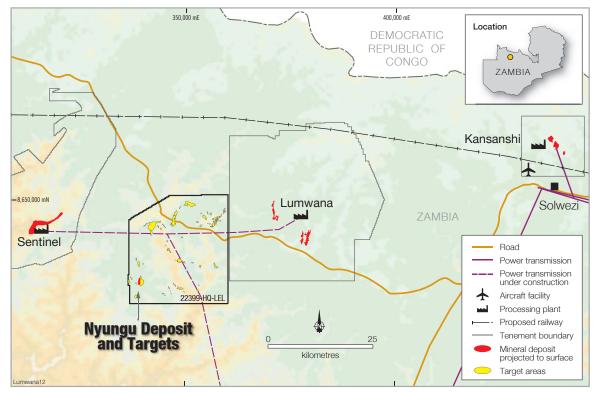


Figure 3 Lumwana West licence showing the Nyungu copper-cobalt deposit plus nearby mines and infrastructure.

#### Metallurgical Test Work

Argonaut has identified the potential for a two-stage, low capital cost, short lead-time copper-cobalt mine. The high priority processes for investigation are:

- Stage one dense media separation of cobalt oxide
- · Stage two heap leach and solvent extraction from copper and cobalt sulphides

Metallurgical samples have been selected from existing drill core and these samples have been exported to Australia for test work. Initial test work will involve a mineralogical study of the four mineralisation types. Results of this initial work will direct further test work and infill drilling at Nyungu Central. Results of metallurgical test work will be available in the second half of 2019.

Follow-up metallurgical work may include:

- dense media separation of copper and cobalt oxide;
- · leaching of copper and copper-cobalt sulphide; and
- conventional flotation of copper-cobalt sulphide.

#### Mining Study

RPM conducted a preliminary open pit optimisation study on the Nyungu Central and Nyungu South deposits. The modelling was conducted for copper production only using costs from similar mines with highly encouraging results.

Modelling shows excellent deposit geometry via a very low stripping ratio.

- Stripping ratio of 1.5 to 1 for the optimum pit at the current copper price; and
- Stripping ratio of 2.3 to 1 to a depth of >300m at 150% of the current copper price, indicating the deposit has a low sensitivity to stripping ratio.

RPM concluded the project had economic potential and warrants further studies.

#### **Copper and Cobalt Exploration Targets**

RPM have previously estimated Exploration Targets for both copper and cobalt mineralisation at Nyungu. These are shown below in Table 2.

#### Table 2 Nyungu March 2017 Exploration Target

Commodity	Tonnage Range (Mt)	Grade Range (%)	Contained Metal Range (kt)
Copper*	130 to 180	0.45 to 0.65	580 to 1,150
Cobalt^	15 to 20	0.08 to 0.12	12 to 24

The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

\* Copper Exploration Target announced to the ASX by Argonaut on 9 April 2013.

^ Cobalt Exploration Target announced to the ASX by Argonaut on 27 March 2017.

Both Exploration Targets are estimated to JORC 2012 standards.

Argonaut is planning to undertake a drilling program targeting cobalt of at least 3,000 metres as soon as possible. Consent for drilling at Nyungu was granted by Zambian authorities during the Quarter.

#### Tenure

The Lumwana West large-scale exploration licence was reissued in February 2018 for a maximum period of 10 years. The licence covers 568 square kilometres.

#### New Zambian Licences

During the Quarter two new Zambian licences were granted to an Argonaut for a total 51 square kilometres. A third licence area was offered, and the terms were accepted.

The application for new licences Zambian licences is part of a strategic program of tenement acquisition over geology the Company believes to be prospective for large-scale copper deposits.

## Alford, South Australia

#### (Argonaut 100%)

The Alford Project on South Australia's Yorke Peninsula lies 20km north-east of Wallaroo within the geological province known as the Olympic Domain. The tenement is prospective for iron oxide copper-gold mineralisation as found at Prominent Hill mine, Olympic Dam mine and the Hillside Project.

No field-based work was undertaken at Alford during the Quarter.

## Kroombit, Queensland

(Argonaut 100%)

#### Background

Argonaut holds a 100% interest in the Kroombit zinc-copper deposit in Central Queensland via its interest in ML5631 and MDL2002. Mining on ML5631 is subject to a 2% net smelter royalty, payable to Aeris Resources Ltd.

On 11 June 2009 Argonaut announced a maiden resource estimation for the Kroombit deposit. The Indicated and Inferred Resources at Kroombit comprise:

- a Zinc Resource of 5.2 million tonnes at 1.9% zinc and 0.15% copper using a cut-off of 1.0% Zn, for 98,800 tonnes of zinc and 7,800 tonnes of copper; and
- a Copper Resource of 0.9 million tonnes at 1.0% copper at a cut-off of 0.5% Cu for 9,000 tonnes of copper.

In addition, Exploration Results are reported comprising a defined Exploration Potential of between:

- 1 million and 1.5 million tonnes at 1.5% to 2.0% zinc, and between
- 0.5 million and 1 million tonnes at 0.7% to 1.3% copper.

No field-based work was undertaken at Kroombit during the Quarter.

## Aroona, South Australia

(Argonaut 100%)

The Aroona licence is subject to a joint venture agreement with Perilya Limited.

No field-based work was undertaken at Aroona during the Quarter.

## Higginsville, Western Australia

#### (Argonaut 51%, earning 80%)

The tenements that make-up the Higginsville project are in Western Australia's Eastern Goldfields. 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 Kambalda, west of Lake Cowan and adjacent to the Higginsville mine where over two million ounces of gold has been defined.

The package of tenements at Higginsville is held by Loded Dog Prospecting Pty Ltd. Argonaut and Loded Dog Prospecting are parties to an earn-in joint venture agreement which grants Argonaut the right to earn up to 80% of the tenements in two phases.

During the Quarter, Argonaut completed the first earn-in phased and earned a 51% interest in the company that holds the Higginsville tenement package.

The earn-in agreement is currently in the second phase.

#### **Gold Exploration**

Argonaut's goals are to explore for near-surface oxide gold in areas with historic shallow drilling results and to target deeper primary gold mineralisation at previously untested depths.

The Amorphous and Footes Find targets are located approximately 5km along existing roads from an operating mill and present an excellent opportunity for a meaningful, near-term exploration outcome.

#### **Nickel Exploration**

Argonaut is currently investigating the nickel potential of the Higginsville Project following the recent high-grade nickel intercepts returned from the Cassini deposit and announced by Mincor in December 2018.

The mineralisation model is typical of Kambalda-style komatiitic nickel sulphide deposits, comprising Ni-Cu-PGE ores identified by using geochemistry, geophysical and stratigraphic analysis. Argonaut will review the electromagnetic surveying exploration technique and a desktop review of the existing data to determine prospectivity was completed in the period. Confirmatory fieldwork is planned for the June 2019 quarter.

#### 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 earned a 51% interest in the tenement package by 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 was paid by Argonaut progressively under the agreement.
  - ¬ Reimbursement of \$100,000 was paid on execution of the definitive earn-in agreement;
  - ¬ Reimbursement of \$75,000 was paid on the first anniversary; and
  - ¬ Reimbursement of \$75,000 was paid on election to proceed to the second phase of the earn-in.
- An issue of ordinary fully paid Argonaut shares valued at \$50,000 was issued on execution of the definitive earnin agreement.

The earn-in agreement is currently in the second phase.

## About Argonaut

Argonaut Resources NL is an Australia Securities Exchange listed exploration and development company focused on the Torrens copper anomaly in joint venture with Aeris Resources Ltd in South Australia and the Nyungu coppercobalt project at Lumwana West in north-western Zambia.

#### 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 2018 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.

The information regarding Resource definition and Exploration Potential for the Kroombit deposit is extracted from a report entitled 'Maiden resource estimate announced for Queensland zinc-copper project'. This report was released on 11 June 2009 and is available to view on www.asx.com.au. The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially 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 announcement.

# **Tenement Schedule**

South Australian Mineral Exploration Licences										
Tenement	Granted	Expiry	Area (km <sup>2</sup> )	Locality	Licensee	Interest				
EL 5998	21/05/2017	20/05/2019	33	Campfire Bore	Coombedown Resources Pty Ltd	10% <sup>1</sup>				
EL 6172	05/11/2017	04/11/2019	351	Alford	Kelaray Pty Ltd	100%				
EL 6199	04/06/2018	03/06/2020	27	Myrtle Springs	Kelaray Pty Ltd	100%				
EL 5614	18/08/2014	17/08/2019	295	Lake Torrens	Kelaray Pty Ltd	30%				
EL 5732	18/10/2015	17/10/2020	104	Sandstone	Coombedown Resources Pty Ltd	10% <sup>1</sup>				
EL 5937 <sup>3</sup>	30/03/2017	29/03/2019	794	West Lake Torrens	Kelaray Pty Ltd	100%				
EL 5945 <sup>3</sup>	20/04/2017	19/04/2019	221	Murdie	Kelaray Pty Ltd	100%				
EL 6320	28/02/2019	27/02/2021	198	Andamooka Station	Kelaray Pty Ltd	100%				

#### Table 1 Summary of mining tenements

	Queensland Mining Lease									
Tenement Granted Expiry Area (km²) Locality Licensee Interest										
ML 5631	16/05/1974	31/05/2026	0.32	Kroombit	Kelaray Pty Ltd	100%				

	Queensland Mineral Development Licence									
Tenement	Tenement Granted Expiry Area (km <sup>2</sup> ) Locality Licensee Interest									
MDL 2002	MDL 2002 03/08/2016 02/08/2021 0.64 Kroombit Kelaray Pty Ltd 100%									

	Zambian Large Scale Exploration Licence									
Tenement	Tenement Granted Expiry Area (km²) Locality Licensee Interest									
22399-HQ- LEL	29/12/2017	28/12/2021	521	North Western Province	Mwombezhi Resources Ltd	90%				

	Zambian Large Scale Exploration Licence Applications									
Tenement	Tenement Applied Expiry Area (km²) Locality Licensee Interest									
23232-HQ- LEL	05/07/2018		225.7	North Western Province	Sunrise Exploration and Mining Limited	100%				

	Ontario Unpatented Mining Claims										
Tenement	Granted	Expiry	Area (km <sup>2</sup> )	Locality	Licensee	Interest					
4244211 <sup>2</sup>	27/10/2008	27/10/2019	1.94	Crescent Lake - Zigzag	Canadian Orebodies Inc.	100%					
4244212 <sup>2</sup>	27/10/2008	27/10/2019	2.56	Crescent Lake - Zigzag	Canadian Orebodies Inc.	100%					
4244213 <sup>2</sup>	27/10/2008	27/10/2019	2.56	Crescent Lake - Zigzag	Canadian Orebodies Inc.	100%					
4213186 <sup>2</sup>	24/09/2009	24/09/2019	2.56	Crescent Lake - Zigzag	Canadian Orebodies Inc.	100%					

		0	ntario Unpater	nted Mining Claims		
Tenement	Granted	Expiry	Area (km <sup>2</sup> )	Locality	Licensee	Interest
4213187 <sup>2</sup>	24/09/2009	24/09/2019	2.24	Crescent Lake - Zigzag	Canadian Orebodies Inc.	100%
4229526 <sup>2</sup>	24/09/2009	24/09/2019	1.93	Crescent Lake - Zigzag	Canadian Orebodies Inc.	100%
4250593 <sup>2</sup>	17/07/2009	17/07/2019	2.56	Crescent Lake - Falcon Lake	Canadian Orebodies Inc.	100%
4250594 <sup>2</sup>	17/07/2009	17/07/2019	2.56	Crescent Lake - Falcon Lake	Canadian Orebodies Inc.	100%
4250595 <sup>2</sup>	17/07/2009	17/07/2019	2.56	Crescent Lake - Falcon Lake	Canadian Orebodies Inc.	100%
4282315	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282316	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282317	01/04/2016	01/04/2019	2.52	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282318	01/04/2016	01/04/2019	2.52	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282319	01/04/2016	01/04/2019	2.52	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282320	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282321	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282322	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282323	01/04/2016	01/04/2019	2.51	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282324	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282325	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282326	01/04/2016	01/04/2019	2.51	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282327	01/04/2016	01/04/2019	2.4	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282328	01/04/2016	01/04/2019	2.55	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282329	01/04/2016	01/04/2019	2.53	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282330	01/04/2016	01/04/2019	2.42	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282331	01/04/2016	01/04/2019	1.47	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282332	01/04/2016	01/04/2019	2.3	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282333	01/04/2016	01/04/2019	2.51	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282334	01/04/2016	01/04/2019	2.59	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282335	01/04/2016	01/04/2019	2.52	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%
4282336	01/04/2016	01/04/2019	2.49	Crescent Lake - North Jackfish	Sunrise Canada Inc.	100%

	Ontario Unpatented Mining Claims									
Tenement	Granted	Expiry	Area (km <sup>2</sup> )	Locality	Licensee	Interest				
4279256	15/04/2016	15/04/2019	2.53	Superb Lake	Sunrise Canada Inc.	100%				
4279257	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				
4279258	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				
4279259	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				
4279260	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				
4279261	15/04/2016	15/04/2019	2.57	Superb Lake	Sunrise Canada Inc.	100%				
4279262	15/04/2016	15/04/2019	2.56	Superb Lake	Sunrise Canada Inc.	100%				
4279263	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				
4279264	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				
4279265	15/04/2016	15/04/2019	2.55	Superb Lake	Sunrise Canada Inc.	100%				

	Western Australian Mineral Exploration Licences									
Tenement	Granted	Expiry	Area (km <sup>2</sup> )	Locality	Licensee	Interest				
E15/1484 <sup>2</sup>	18/07/2016	17/07/2021	12	Nawock-Hayes Hill	Loded Dog Prospecting Pty Ltd	100%				
P63/2071 <sup>2</sup>	24/04/2017	23/04/2021	1.37	Hayes Hill	Loded Dog Prospecting Pty Ltd	100%				
P63/2072 <sup>2</sup>	24/04/2017	23/04/2021	1.27	Hayes Hill	Loded Dog Prospecting Pty Ltd	100%				
P63/2073 <sup>2</sup>	24/04/2017	23/04/2021	1.54	Hayes Hill	Loded Dog Prospecting Pty Ltd	100%				
E15/1509 <sup>2</sup>	03/05/2017	02/05/2022	3	Eundynie	Loded Dog Prospecting Pty Ltd	100%				
E15/1510 <sup>2</sup>	08/05/2017	07/05/2022	3	Eundynie	Loded Dog Prospecting Pty Ltd	100%				
E63/1773 <sup>2</sup>	08/05/2017	07/05/2022	21	Hayes Hill	Loded Dog Prospecting Pty Ltd	100%				
E15/1523 <sup>2</sup>	08/05/2017	07/05/2022	42	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
E15/1540 <sup>2</sup>	17/05/2017	16/05/2022	9	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
P15/6029 <sup>2</sup>	04/07/2017	03/07/2021	1.2	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
P15/6030 <sup>2</sup>	25/05/2017	24/05/2021	1.2	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
P15/6031 <sup>2</sup>	25/05/2017	24/05/2021	1.2	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
P15/6032 <sup>2</sup>	25/05/2017	24/05/2021	1.2	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
E15/1489 <sup>2</sup>	14/08/2017	13/08/2022	52	Higginsville	Loded Dog Prospecting Pty Ltd	100%				
P63/2077 <sup>2</sup>	26/10/2017	25/10/2021	0.7	Hayes Hill	Loded Dog Prospecting Pty Ltd	100%				
E15/1588 <sup>2</sup>	01/12/2017	30/11/2022	61	Higginsville	Loded Dog Prospecting Pty Ltd	100%				

#### Table 2 - Summary of mining tenements acquired in Quarter

The following tenements were acquired in the March 2019 Quarter.

South Australian Mineral Exploration Licence Applications						
Tenement Applied Expiry Area (km²) Locality Licensee Interest						Interest
2019/00020 22/02/2019 993 Lake Torrens Area Kelaray Pty Ltd 100%					100%	

	Zambian Large Scale Exploration Licence					
Tenement Granted Expiry Area (km²) Locality Licensee Interest					Interest	
23474-HQ- LEL	18/12/2018	17/12/2022	41.58	North Western Province	Sunrise Exploration and Mining Limited	100%

	Zambian Small Scale Exploration Licence					
Tenement Applied Expiry Area (km <sup>2</sup> ) Locality Licensee Interest						
23606-HQ- SEL	18/12/2018	17/12/2022	9.4	North Western Province	Sunrise Exploration and Mining Limited	100%

#### Table 3 - Summary of mining tenements surrendered in Quarter

The following tenements were surrendered in the March 2019 Quarter.

	Ontario Unpatented Mining Claims							
Tenement Granted Expiry Area (km²) Locality Licensee Integration					Interest			
4276304 <sup>2</sup>	22/03/2016	22/03/2019	2.53	Greenbush Lake	Canadian Orebodies Inc.	100%		
4276305 <sup>2</sup>	22/03/2016	22/03/2019	2.39	Greenbush Lake	Canadian Orebodies Inc.	100%		
4276306 <sup>2</sup>	22/03/2016	22/03/2019	2.56	Greenbush Lake	Canadian Orebodies Inc.	100%		

1 Kelaray holds a 33% interest in Coombedown Resources Pty. Ltd.

2 Under option agreement.

3 Undergoing renewal.

+Rule 5.5

## 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				
Argonaut Resources NL				
ABN Quarter ended ("current quarter")				
97 008 084 848	31 March 2019			

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
1.	Cash flows from operating activities		
1.1	Receipts from customers		
1.2	Payments for		
	(a) exploration & evaluation	(1,418)	(2,164)
	(b) development		
	(c) production		
	(d) staff costs (including exploration staff)	(138)	(587)
	(e) administration and corporate costs	(154)	(468)
1.3	Dividends received (see note 3)		
1.4	Interest received	13	48
1.5	Interest and other costs of finance paid		
1.6	Income taxes paid		
1.7	Research and development refunds		
1.8	Other (reimbursement from JV partner)	-	839
1.9	Net cash from / (used in) operating activities	(1,697)	(2,332)

2.	Cash flows from investing activities	
2.1	Payments to acquire:	
	(a) property, plant and equipment	
	(b) tenements (see item 10)	
	(c) investments	
	(d) other non-current assets	

+ See chapter 19 for defined terms

## Appendix 5B Mining exploration entity and oil and gas exploration entity quarterly report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
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	Net cash from / (used in) investing activities		

3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares		
3.2	Proceeds from issue of convertible notes		
3.3	Proceeds from exercise of share options		
3.4	Transaction costs related to issues of shares, convertible notes or options	(2)	(10)
3.5	Proceeds from borrowings		
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	Net cash from / (used in) financing activities	(2)	(10)

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	4,693	5,336
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,697)	(2,332)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(2)	(10)
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	2,994	2,994

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	2,994	4,693
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (credit card)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	2,994	4,693

6.	Payments to directors of the entity and their associates	Current quarter \$A'000		
6.1	Aggregate amount of payments to these parties included in item 1.2	107		
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 transaction items 6.1 and 6.2	ns included in		
Remuneration and fees paid to Directors (including backpay) and their related entities.				

7.	Payments to related entities of the entity and their associates	Current quarter \$A'000
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 transaction items 7.1 and 7.2	ons included in

+	See chapter	19 for	defined	terms
1	September 2	2016		

8.	Financing facilities available Add notes as necessary for an understanding of the position	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1	Loan facilities	-	-
8.2	Credit standby arrangements	-	-
8.3	Other (please specify)	-	-
~ 4	have been dealers and the second state of the		· · · · · · · · · · · · · · · · · · ·

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.

9.	Estimated cash outflows for next quarter	\$A'000	
9.1	Exploration and evaluation	866	
9.2	Development	-	
9.3	Production	-	
9.4	Staff costs	187	
9.5	Administration and corporate costs	218	
9.6	Other (provide details if material)	-	
9.7	Total estimated cash outflows *	1,271	

10.	Changes in tenements (items 2.1(b) and 2.2(b) above)	Tenement reference and location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
10.1	Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced		Refer to Quarterly Activities Report		
10.2	Interests in mining tenements and petroleum tenements acquired or increased		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:

Director/Company secretary

Date: 30 April 2019

Print name: Andrew Bursill

#### 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.