

ASX: ARE

#### CAPITAL STRUCTURE:

Issued shares: 1,578 million

Listed options: None

Unlisted options: 65 million

Cash on hand: \$874,000

#### DIRECTORS:

Patrick Elliott,  
Non-Exec Chairman

Lindsay Owler,  
Director/CEO

Andrew Bursill,  
Director/Secretary

Malcolm Richmond,  
Non-Exec Director

#### COPPER PROJECTS:

##### **Murdie, South Australia**

Copper, gold (large IOCG)

Phase: Permitting

Interest: Argonaut 100%

##### **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

Operator: Argonaut



# Quarterly report

FOR THE PERIOD ENDING 31 DECEMBER 2019

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

## Highlights

### Murdie, South Australia – Copper - 100%

- The Murdie Project is 100% held and operated by Argonaut.
- The Murdie licences abut the Torrens Project and sit within 10km of Oz Mineral's Carrapateena deposit and 45km of BHP's high-grade Oak Dam discovery (Figure 1).
- Drilling will target some of the most compelling copper exploration targets in Australia.

#### **Operational and Environmental Approval**

- The South Australian Government approved an application to conduct ground gravity surveys and deep exploration drilling at the Murdie Project.
- This is the second of three approvals required to undertake a major drilling program targeting Iron Oxide Copper-Gold (IOCG) deposits at Murdie.
- The final approval is expected in April 2020. The same authorisation has previously been granted twice for the neighbouring Torrens project.

#### **Drill Targets**

- Geophysical modelling defined numerous large and prospective iron oxide copper-gold (IOCG) drilling targets (Figure 2) at Murdie.
- The Murdie IOCG targets are predominantly 'gravity-only' anomalies in the style of Oak Dam and Carrapateena.
- Targets recently defined at Murdie now considered more prospective than those defined at the Torrens Project.

### Lumwana West, Zambia – Copper-Cobalt – 90%

- A saleable copper concentrate grading 25.6% copper at a recovery 87% was produced in the laboratory during the period.
- Flotation testwork achieved high recovery from both transitional zone copper minerals (88% recovery) and primary zone copper sulphides (96% recovery).
- A scoping economic study of various processing flowsheets has commenced.

### Torrens, South Australia – Copper – 30%

- During the June quarter, Argonaut's joint venture partner, Aeris Resources Ltd, unilaterally ceased drilling at Torrens following the completion of the second hole in an agreed program of 8-10 drill holes.
- Argonaut has focused its attention on sensible pathways to the recommencement of systematic drill testing of the Torrens anomaly under a pro-rata 30:70 joint venture.

## Outlook

- Argonaut is executing plan to recommence drilling into prospective IOCG targets in the Olympic Domain in South Australia.
- Shareholders can expect the value of Argonaut's copper assets to rise as drilling arrangements are finalised and exposure to a major copper discovery is re-established.
- Copper market fundamentals, in particular low warehouse inventories, appear ready to overwhelm negative sentiment caused by the US-China trade war, hence higher copper prices are predicted in 2020.
- Argonaut is well placed to benefit from improved price with world-class copper assets such as Murdie, Lumwana West and Torrens.

#### Registered Office

Level 1, 63 Waymouth Street

Adelaide, SA, 5000, Australia

T +61 8 8231 0381

F +61 8 8231 6092

E [adelaide@argonautresources.com](mailto:adelaide@argonautresources.com)

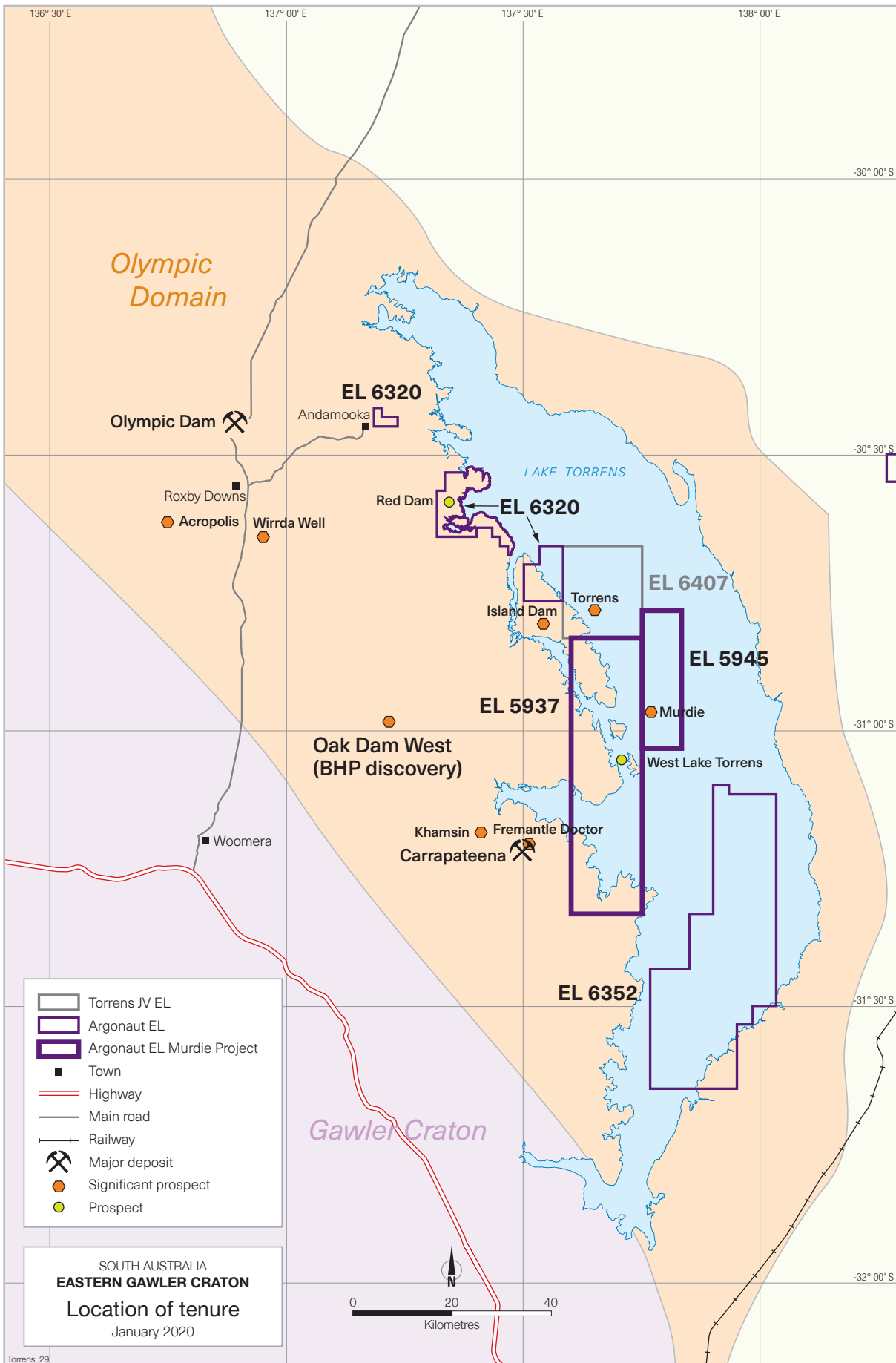


Figure 1 Lake Torrens exploration licences.

# Murdie, South Australia

(Argonaut 100%)

## Highlights

### *Murdie Project*

- The Murdie Project is 100% held and operated by Argonaut.
- The Murdie licences abut the Torrens Project and sit within 10km of Oz Mineral's Carrapateena deposit and 45km of BHP's high-grade Oak Dam discovery (Figure 1).
- Drilling will target some of the most compelling copper exploration targets in Australia.

### *Operational and Environmental Approval*

- The South Australian Government approved an application to conduct ground gravity surveys and deep exploration drilling at the Murdie Project.
- This is the second of three approvals required to undertake a major drilling program targeting Iron Oxide Copper-Gold (IOCG) deposits at Murdie.
- The final approval is expected in April 2020. The same authorisation has previously been granted twice for the neighbouring Torrens project.

### *Drill Targets*

- Geophysical modelling defined numerous large and prospective iron oxide copper-gold (IOCG) drilling targets (Figure 2) at Murdie.
- The Murdie IOCG targets are predominantly 'gravity-only' anomalies in the style of Oak Dam and Carrapateena.
- Targets recently defined at Murdie are now considered more prospective than those defined at the Torrens Project.

## Murdie Project

Argonaut Resources holds a 100% interest in two highly prospective exploration licences, EL5937 and EL5945 via its subsidiary, Kelaray Pty Ltd. The Murdie licences are contiguous with the Company's Torrens licence and are located within 10km of the Carrapateena deposit and 45km of BHP's high-grade Oak Dam West discovery, along the western margin of Lake Torrens (Figure 1).

The Murdie Project encompasses a confirmed magnetite-bearing IOCG system known as Murdie plus a series of non-magnetic, gravity-only targets that straddle the shoreline and islands (Figure 2). Recent geophysical modelling has defined new drilling targets and Argonaut is seeking permits to access these areas for drilling.

## Highly Compelling Targets

Many of these targets have two important and sought-after qualities:

- they are within or at the margin of the same **Donnington Suite granite** body that hosts both the Oak Dam and Carrapateena IOCG deposits; and
- the Oak Dam and Carrapateena deposits and Argonaut's targets are defined by '**gravity only**' geophysical anomalies.

Gravity-only anomalies don't have an associated magnetic anomaly and can be indicative of IOCG deposits that have been entirely altered from magnetite-dominant, low-grade systems to high-grade, hematite-dominant IOCG systems.

Large, gravity-only anomalies within Donnington Suite granite is the most compelling copper exploration rationale in country.

## Targets

Argonaut has geophysically modelled an airborne gravity survey (Barrick, 2010) and an aeromagnetic survey (SA Government, 2017). These data were modelled by 3D inversion and 54 distinctive anomalies were defined (Figure 2).

Of these 54 anomalies, eight gravity-only anomalies were selected for 2D modelling. The 2D modelling resulted in the definition of seven anomalies that warrant drill testing. Further 2D modelling is required to assess many of the remaining 3D anomalies.

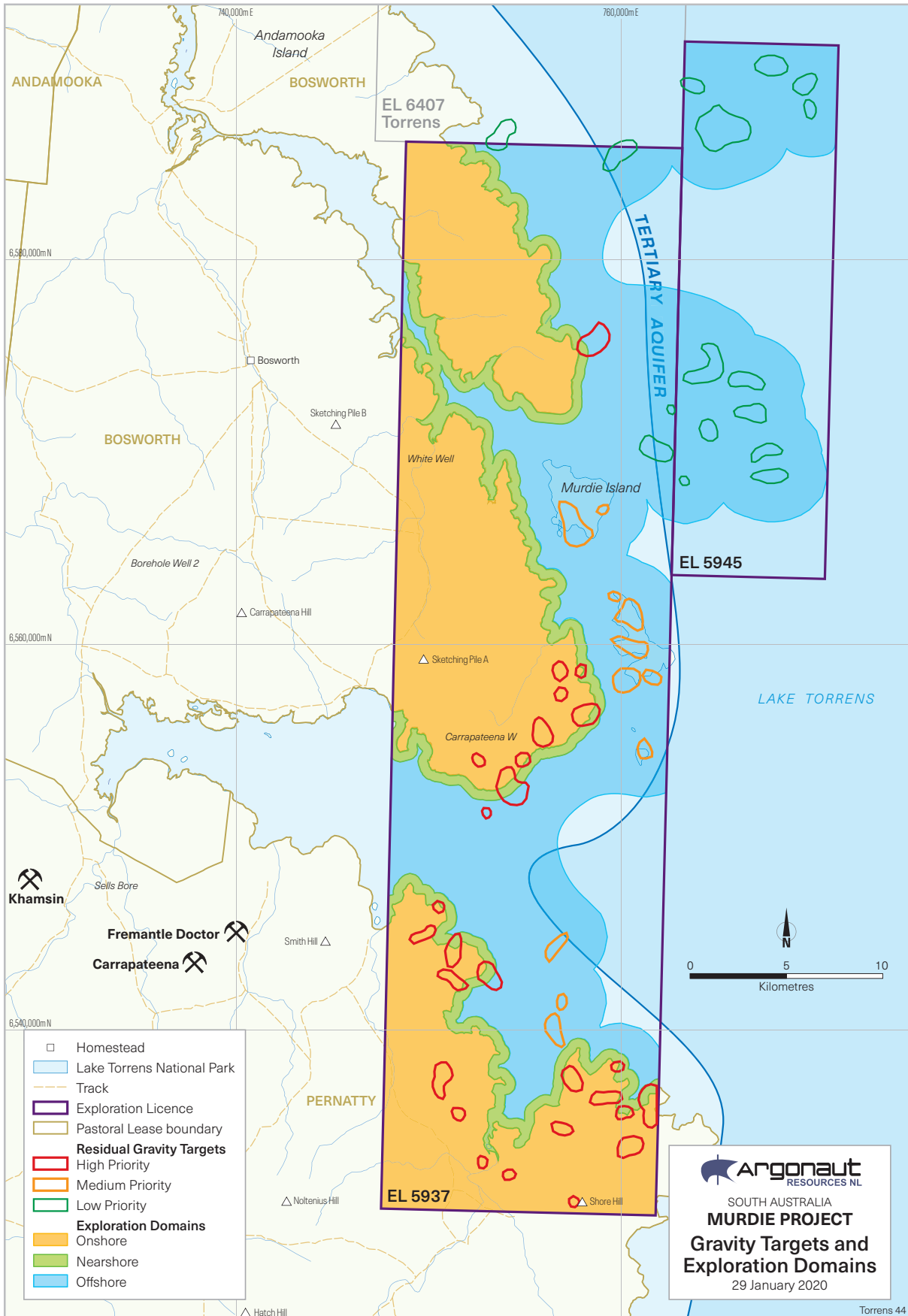


Figure 2 Murdie Project gravity targets and exploration domains.

Preliminary Murdie drill targets were selected on the basis of:

- a high density compared to surrounding rocks;
- size;
- host rock lithology - most targets appear to be in or at the margin of Donnington Suite Granite, the host rock of Oak Dam and Carrapateena; and
- structural setting - targets are near the intersection of major faults which can act as a pathway for mineralising fluids.

*The drill targets at Murdie are now considered to be more prospective than those at the Torrens Project.*

The Argonaut technical team has come to know a great deal about Olympic Domain IOCG deposits, and the team is excited about the Murdie anomalies and their geological setting.

The drill targets at Murdie are equally to prospective to those at the Torrens Project.

## Lower Cost Drilling

Many of the granite-hosted gravity targets at the Murdie project are located at the shoreline of the Lake Torrens (Figure 2), which means that these targets can be drilled without the cost of helicopter support.

The operational approval covers both nearshore and offshore drilling. Nearshore drilling will involve conventional truck or track-mounted drilling utilising protective road-matting to preserve the Lake Torrens salt crust.

Nearshore targets and the most prospective offshore targets can be drilled without intersecting the artesian aquifer that frustrated 2019 drilling efforts at the neighbouring Torrens anomaly.

The Murdie drill targets are in three operational domains (Figure 2): onshore, nearshore and offshore. Each of these domains involves different drilling procedures due to different surface and subsurface conditions. Table 1 below summaries these conditions.

**Table 2 Murdie Project operational domains and required drilling techniques.**

|                       | Drilling Techniques  |                      |                       |
|-----------------------|----------------------|----------------------|-----------------------|
|                       | Helicopter Supported | Artesian Groundwater | Percussion Pre-Collar |
| Onshore               | No                   | No                   | Yes                   |
| Nearshore             | No                   | No                   | Yes                   |
| Offshore – No Aquifer | Yes                  | No                   | No                    |
| Offshore – Aquifer    | Yes                  | Yes                  | No                    |

Argonaut plans to commence drilling at the Murdie project as soon as practical after receiving the final permit.

## Permits

### Native Title

Native title authorisation for nearshore and offshore drilling was granted via an ERD Court determination in 2018.

### Operational Approval

The 'Exploration Program for Environment Protection and Rehabilitation' for ongoing exploration activities including ground gravity surveys and diamond drilling at exploration licences 5937 and 5945 has been approved under the South Australian Mining Act.

The approval permits the drilling of up to 200 deep diamond drill holes into a string of large and prospective Iron Oxide Copper-Gold (IOCG) anomalies from nearshore and offshore locations on the salt crust of Lake Torrens (Figure 2).

### Aboriginal Heritage Act

Argonaut has prepared an application under the SA Aboriginal Heritage Act for authorisation to undertake nearshore and offshore drilling. This authorisation is equivalent to the authorisation secured by Argonaut for the Torrens project in February 2018.

Argonaut will submit this application on receipt of authorisation of the E-PEPR.

This Aboriginal heritage authorisation is not required for onshore drilling in areas away from Lake Torrens.

# Torrens, South Australia

(Argonaut 30%)

## Drilling

On 29 May 2019, parties to the Torrens Joint Venture announced that drilling at the Torrens Project had been unilaterally stopped by Argonaut's 70% joint venture partner, Aeris Resources Ltd, following the completion of the second drill hole, TD10.

The agreed drilling program announced by the parties on 17 September 2018 of 8 to 10 holes to depths of between 700m and 1,500m was not completed.

Argonaut is strongly opposed to the early cessation of the agreed drilling program which was stopped in contravention of an agreed work program.

## Next Steps

### *General Comments*

The Torrens anomaly is a particularly attractive set of exploration targets hosted in a geological domain that has persistently rewarded explorers with large, high-grade copper discoveries. The discovery of an IOCG deposit by a listed junior exploration company creates to a once-in-a-lifetime opportunity for shareholders. Argonaut continues to work towards this goal.

Exploration in the Olympic Domain has historically been hindered by two factors: the thickness of cover formations, and difficulties securing access. These factors, although frustrating, have preserved exploration targets that would have otherwise been tested.

Statistically, the drill testing of gravity targets in the Olympic Domain has delivered a higher than average discovery rate. It makes commercial sense to invest exploration budgets into drilling well defined gravity targets in Eastern Gawler Craton.

Major, diversified miners and mid-cap copper miners are specifically seeking to increase copper production due to forecast copper supply shortages. There was an underinvestment in copper exploration between 2012 and 2017, consequentially there are relatively few copper deposits available to acquire. Copper discoveries are necessary and copper deposits are in-demand.

The combination of geological prospectivity, granted access rights and a global appetite for new copper deposits make the Torrens Project a compelling investment opportunity.

### *Joint Venture Provisions*

Argonaut is of the view that its partner Aeris has acted in contravention of the Torrens Joint Venture Agreement. A dispute notice was served by Argonaut's subsidiary, Kelaray Pty Ltd, on Aeris' subsidiary, Straits Exploration (Australia) Pty Ltd.

### *Looking Forward*

Argonaut is optimistic that the setback suffered at Torrens in late May 2019 can be overcome in a timely manner.

Argonaut has focused its attention on sensible pathways to the recommencement of systematic drill testing of the Torrens anomaly under a pro-rata 30:70 joint venture.

## Torrens Project

The Torrens Project is located within the globally recognised Olympic Domain, at the eastern margin of South Australia's Gawler Craton, within 40 kilometres of BHP Group's Oak Dam 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 has confirmed the validity of the Torrens target and the copper endowment of the Eastern Gawler Craton.

## 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 at Torrens to date has confirmed the existence of a major IOCG mineralising system beneath several hundred metres of sedimentary cover.

Further 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.

## 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, EL6407. Aeris' subsidiary, Straits Exploration (Australia) Pty Ltd, is the manager of the project.

## Red Dam, South Australia

(Argonaut 100%)

Argonaut holds 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 discovery.

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

## Lake Torrens South, South Australia

(Argonaut 100%)

Argonaut holds exploration licence 6352 located southeast of the Torrens and Murdie Projects (Figure 1). The 993 square kilometre licence area covers a portion of southern Lake Torrens. Argonaut now has a commanding 2,501 square kilometre land position.

## Lumwana West, Zambia

(Argonaut 90%)

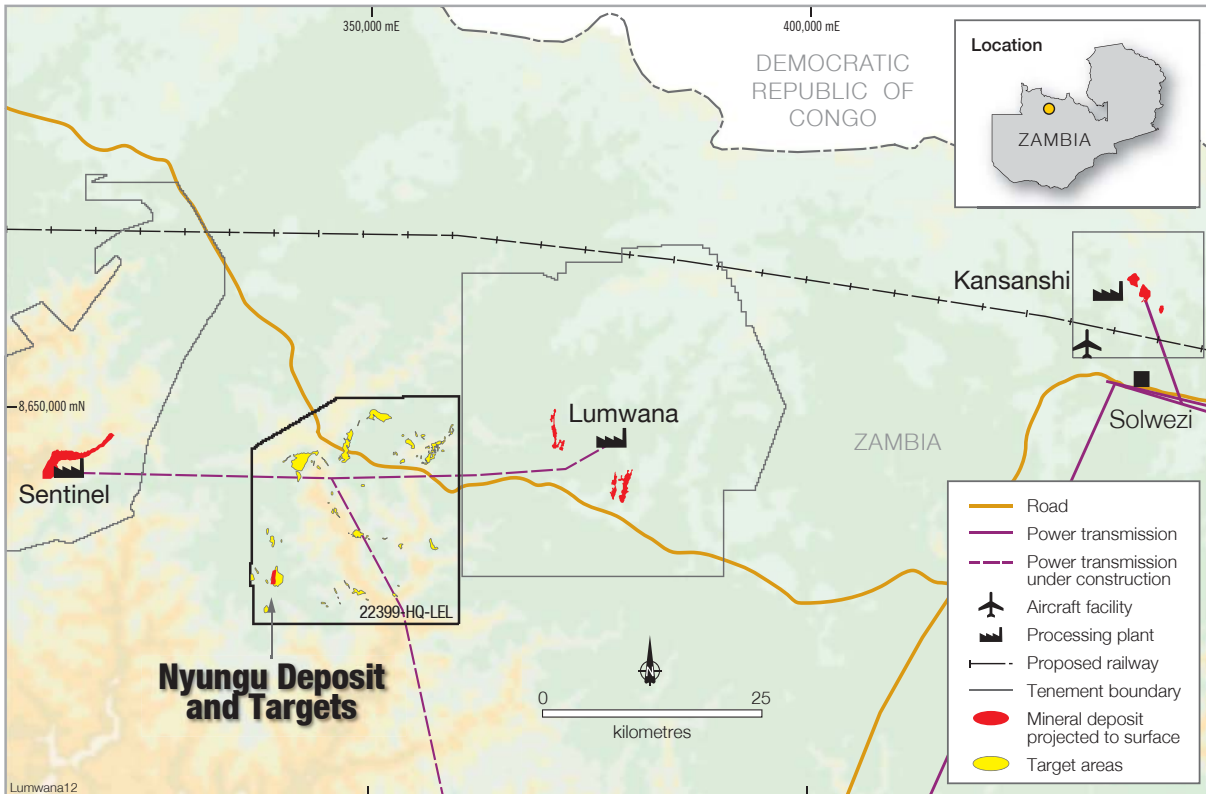
### Highlights

- A program of metallurgical test work on copper-cobalt mineralisation continued during the Quarter.
  - A saleable copper concentrate grading 25.6% copper at a recovery 87% was produced in the laboratory during the period.
  - Flotation testwork achieved high recovery from both:
    - transitional zone copper minerals (88% recovery); and
    - primary zone copper sulphides (96% recovery).
  - Efficient production of a copper concentrate from transitional zone mineralisation makes strong, positive contribution to project economics.
- Scoping economic study for various processing flowsheets has commenced.

### Lumwana West Project

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 in similar geological settings (Figure 3).

Argonaut, via its 90% held subsidiary, Mwombeshi Resources Ltd, has been successful in intercepting broad copper and cobalt intercepts at the Nyungu deposit. Argonaut is working on a series of scoping studies to better understand the economics of a potential mine. Table 2 summaries elements of a potential mining development at Lumwana West.



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

**Table 2** Feasibility factors for a mine development at Lumwana West.

|                       |  |
|-----------------------|--|
| <b>Jurisdiction</b>   | Zambia has a long and ongoing history of large-scale copper mining. Social and Governmental pressures favour the development of new mines. |
| <b>Infrastructure</b> | Lumwana West is located at major electricity and transport corridors (Figure 3).   |
| <b>Resource</b>       | The Nyungu copper-cobalt deposit has predictable geometry and scope for significant growth with continued drilling (Table 3).              |
| <b>Mining</b>         | Very low stripping ratio of 1.5 tonnes of waste rock for every 1 tonne of ore. Resource drilling to greater depths is warranted.           |
| <b>Processing</b>     | Fast, high copper recovery flotation of both transitional and primary copper ore minerals.   |
| <b>Economics</b>      | Scoping economic study has commenced.  |

## Metallurgical Test Work

Argonaut exported metallurgical test samples to Australia for a program of testwork. Mineralogy, comminution and flotation testwork is substantially completed for four samples taken from four potential ore types within the Nyungu copper-cobalt deposit.

A saleable copper concentrate grading 25.6% copper at a recovery 87% was produced in the laboratory during the period. This particular copper concentrate is of a specification that can be sold to nearby smelters.

If project economics determine that a concentrate product can be more profitably processed on-site then concentrates of different specification (i.e. a higher tolerance of gangue minerals) become relevant, hence varied flotation tests have been undertaken.

Flotation tests demonstrate that a flotation circuit can achieve high recovery from both transitional zone copper minerals (88% recovery) and primary zone copper sulphides (96% recovery). It is unusual and encouraging to achieve a copper recovery of 88% via the flotation of transitional (partially oxidised) mineralisation.

*Efficient production of a copper concentrate from transitional zone mineralisation makes strong, positive contribution to project economics.*

Various oxidation and leaching tests plus solvent extraction and electro-winning (SX/EW) testing will follow.

Results from metallurgical studies and the mining study will feed into the scoping economic study.



## 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 February 2018 copper price; and
- Stripping ratio of 2.3 to 1 to a depth of >300m at 150% of the February 2018 copper price, indicating the deposit has a low sensitivity to stripping ratio.

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

Further studies including mining scheduling are being undertaken at present.

## Economic Study

Argonaut has commenced a scoping economic study into three potential processing flowsheets. These flowsheets involve:

1. Crush > grind > flotation > sale of concentrate
2. Crush > grind > flotation > roasting > leaching > SX/EW > sale of copper metal
3. Crush > grind > flotation > albion process > precipitation > SX/EW > sale of copper metal

Data to achieve a meaningful economic projection is being generated at present and economic results will become available progressively.

## 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 3.

**Table 3 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.

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.

Consent for further drilling at Nyungu was granted by Zambian authorities during the previous quarter.

## Kroombit, Queensland

(Argonaut 100%)

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% zinc, 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% copper 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%)

EL5336, Aroona, 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 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.

Argonaut has completed the first earn-in phase 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 has investigated the nickel potential of the Higginsville Project following the 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 using geochemistry, geophysical and stratigraphic analysis. Published mapping, interpretation of the aeromagnetics and review of existing drill logs shows that an ultramafic trend continues through the licence area.

The ultramafics are almost completely concealed by Lake Cowan and represent an obvious target for future testing. Field mapping and sampling is planned over the outcropping ultramafics with follow-up aircore drilling on the target zone under the edge of Lake Cowan to assist in identifying priority areas for follow-up EM surveying and deeper drilling.

## 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 earn-in agreement.

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

## About Argonaut

Argonaut Resources NL is an Australian Securities Exchange listed exploration and development company focused on the Murdie copper project in South Australia, the Torrens project in joint venture with Aeris Resources Ltd, (adjacent to the Murdie project) and the Nyungu copper-cobalt 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](http://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

**Table 1 – Summary of mining tenements**  
**South Australian Mineral Exploration Licences**

| Tenement | Granted    | Expiry     | Area (km <sup>2</sup> ) | Locality          | Licensee                     | Interest         |
|----------|------------|------------|-------------------------|-------------------|------------------------------|------------------|
| EL 5998  | 21/05/2017 | 20/05/2020 | 33                      | Campfire Bore     | Coombedown Resources Pty Ltd | 10% <sup>1</sup> |
| EL 6199  | 04/06/2018 | 03/06/2020 | 27                      | Myrtle Springs    | Kelaray Pty Ltd              | 100%             |
| EL 6407  | 18/08/2019 | 17/08/2022 | 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  | 30/03/2017 | 29/03/2021 | 794                     | West Lake Torrens | Kelaray Pty Ltd              | 100%             |
| EL 5945  | 20/04/2017 | 19/04/2021 | 221                     | Murdie            | Kelaray Pty Ltd              | 100%             |
| EL6320   | 28/02/2019 | 27/02/2021 | 198                     | Andamooka Station | Kelaray Pty Ltd              | 100%             |
| EL6352   | 24/06/2019 | 23/06/2021 | 993                     | Lake Torrens Area | Kelaray Pty Ltd              | 100%             |

## Queensland Mining Lease

| Tenement | Granted    | Expiry     | Area (km <sup>2</sup> ) | Locality | Licensee        | Interest |
|----------|------------|------------|-------------------------|----------|-----------------|----------|
| ML 5631  | 16/05/1974 | 31/05/2026 | 0.32                    | Kroombit | Kelaray Pty Ltd | 100%     |

## Queensland Mineral Development Licence

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

## Zambian Large Scale Exploration Licence

| Tenement     | Granted    | Expiry     | Area (km <sup>2</sup> ) | Locality               | Licensee                               | Interest |
|--------------|------------|------------|-------------------------|------------------------|--|----------|
| 22399-HQ-LEL | 29/12/2017 | 28/12/2021 | 521                     | North Western Province | Mwombezhi Resources Ltd                | 90%      |
| 23232-HQ-LEL | 10/04/2019 | 09/04/2023 | 226                     | North Western Province | Sunrise Exploration and Mining Limited | 100%     |
| 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     | Granted    | 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%     |

**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%     |
| E 15/1510 <sup>2</sup> | 08/05/2017 | 07/05/2022 | 3                       | Eundynie          | Loded Dog Prospecting Pty Ltd | 100%     |
| E 63/1773 <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%     |
| E 15/1540 <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  
Zambian Large Scale Exploration Licence Application**

| Tenement     | Granted   | Expiry | Area (km <sup>2</sup> ) | Locality               | Licensee                               | Interest |
|--------------|-----------|--------|-------------------------|------------------------|--|----------|
| 25495-HQ-LEL | 7/12/2019 |        | 189                     | North Western Province | Sunrise Exploration and Mining Limited | 100%     |

**Table 3 – Summary of mining tenements surrendered in Quarter  
South Australian Mineral Exploration Licences**

| Tenement | Granted    | Expiry     | Area (km <sup>2</sup> ) | Locality | Licensee        | Interest |
|----------|------------|------------|-------------------------|----------|-----------------|----------|
| EL 6172  | 05/11/2017 | 04/11/2019 | 351                     | Alford   | Kelaray Pty Ltd | 100%     |

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

2 Under option agreement.