

ASX announcement

30 January 2020

Operational Approval Granted for 100% Held Murdie IOCG Targets

Argonaut Resources NL (ASX: ARE) (*Argonaut* or the *Company*) is pleased to announce that the South Australian Government has approved an Exploration Program for Environment Protection and Rehabilitation (E-PEPR) for the Murdie project in South Australia.

Highlights

- The South Australian Government has approved an application to conduct ground gravity surveys and deep exploration drilling at the Murdie Project.
- Drilling will target some of the most compelling copper exploration targets in Australia.
- 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.

Argonaut CEO, Lindsay Owler, said: “The approval of our environmental and operational plan is major step towards the discovery of copper by Argonaut in the Eastern Gawler Craton. The project includes numerous large gravity targets that are analogous to BHP’s nearby Oak Dam discovery. The discovery rate from gravity anomalies in this area is so high that none should go undrilled.”

Murdie Project

(100% Argonaut)

The Murdie project is in South Australia near the eastern margin of the Gawler Craton (Figure 1). The project area covers over 1,000 square kilometres of highly prospective Olympic Domain geology and includes over 50 discrete gravity targets.

Argonaut holds a 100% interest in the Murdie project.

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
- Oak Dam, Carrapateena 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," Lindsay Owler.

Target Modelling

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.

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.

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 |

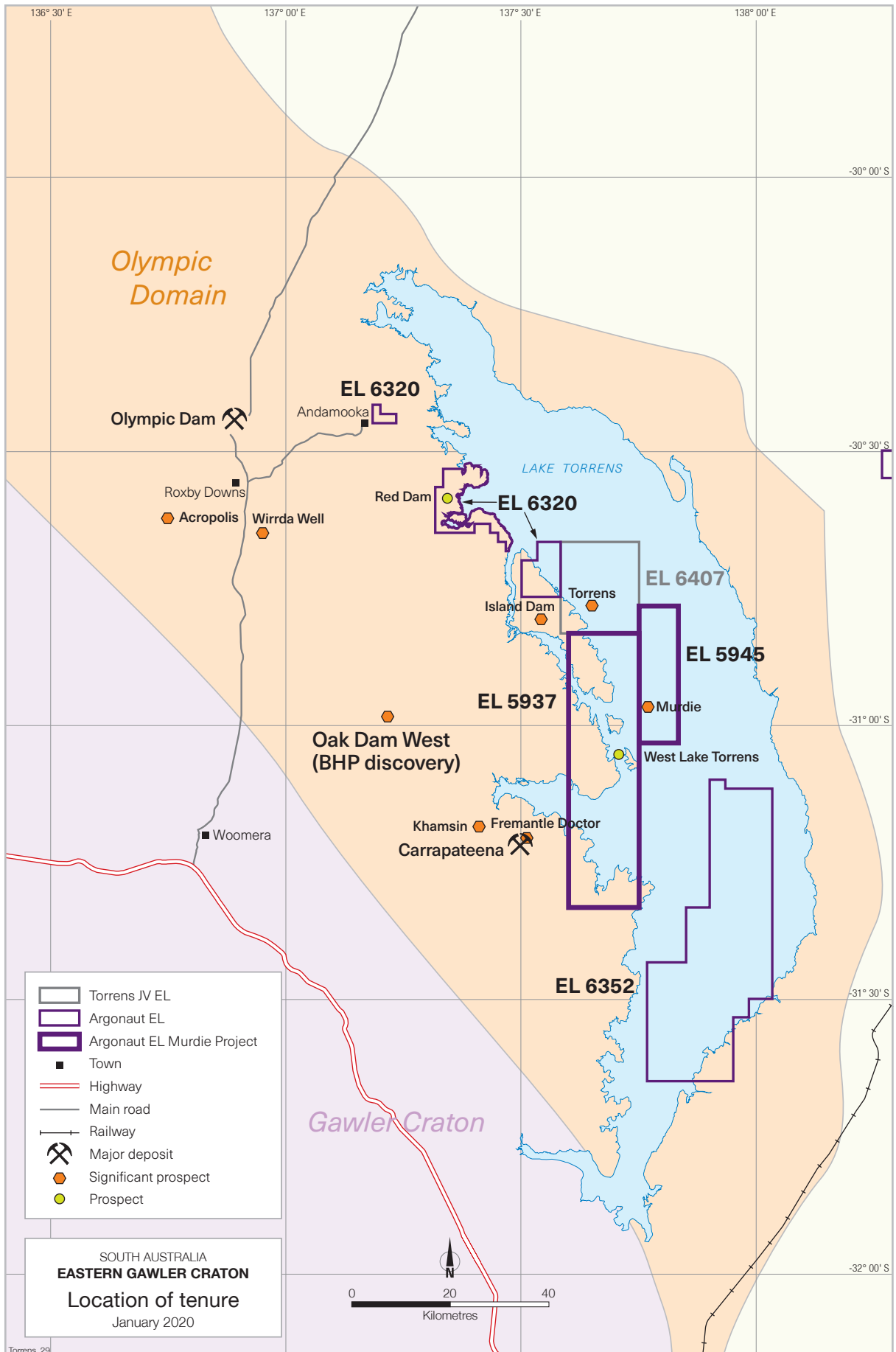


Figure 1 Lake Torrens exploration licences.

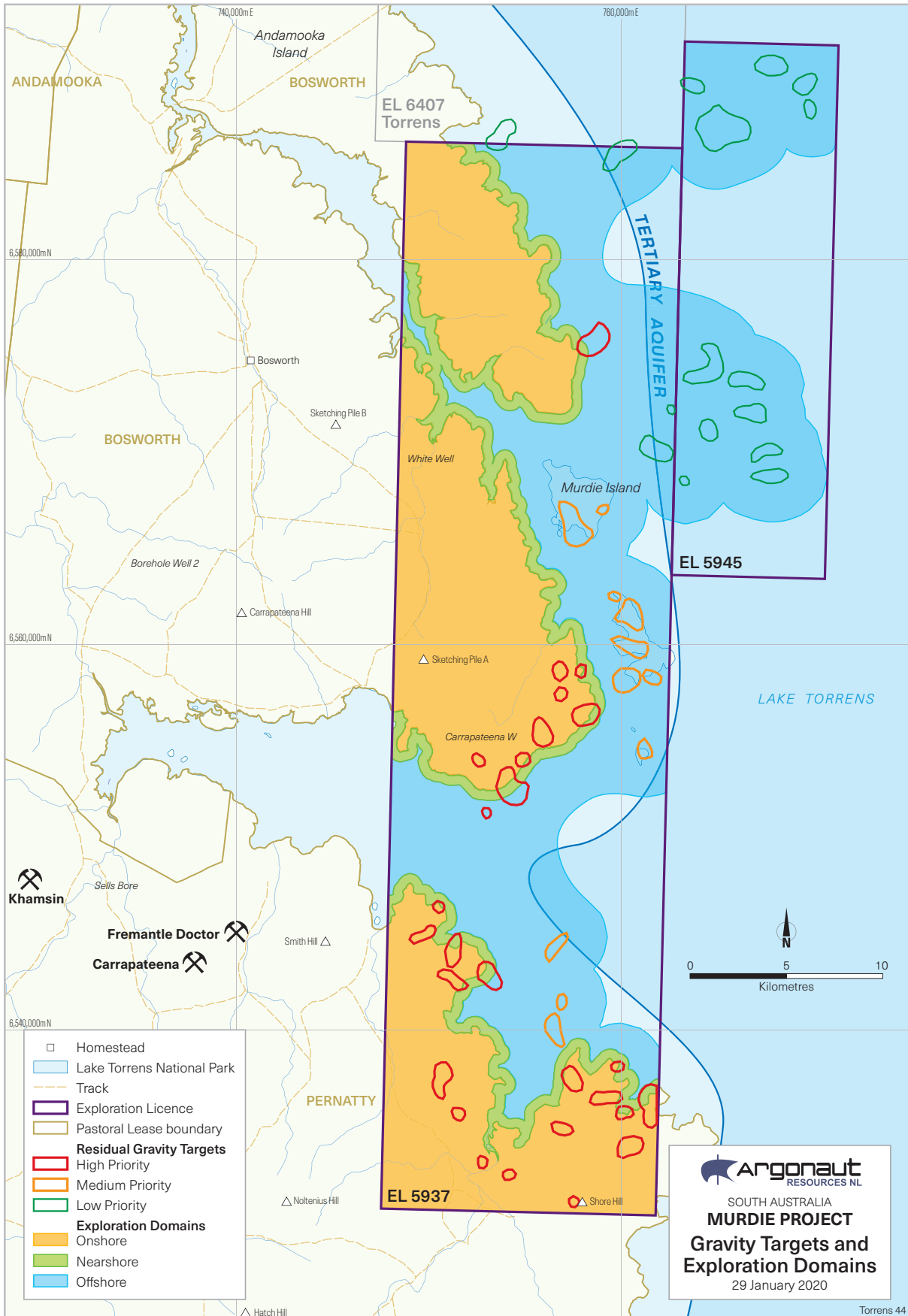


Figure 2 Gravity targets and exploration domains.

Authorisations

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.

Native Title Access

In 2018, the South Australian ERD Court granted native title authority to enter and undertake mining operations (exploration) within the area of EL5937 and EL5045.

Authority under the Aboriginal Heritage Act

Argonaut will now lodge an application under the South Australian Aboriginal Heritage Act. This application seeks authorisation in the same terms as two authorisations previously granted for the neighbouring Torrens project.

The Company expects that the Minister for Aboriginal Affairs and Reconciliation will be able to properly consider the application in April 2020.

Lindsay Owler

CEO and Director

Argonaut Resources NL