

ASX: ARE

CAPITAL STRUCTURE:

Issued shares: 152,724,304

Listed options: None

Unlisted options: 400,000

Cash on hand: \$89,000

DIRECTORS:

Mick Billing, Chairman

Simon Mitchell, Non-exec Director

Richard Willson, Non-exec Director and
Company Secretary

URANIUM PROJECTS

FROME, SOUTH AUSTRALIA

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

MUNDAERNO, SOUTH AUSTRALIA

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

**RADIUM HILL SOUTH,
SOUTH AUSTRALIA**

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

CUMMINS, SOUTH AUSTRALIA

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

MARREE, SOUTH AUSTRALIA

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

**MOUNT DOUGLAS,
NORTHERN TERRITORY**

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

**RANGER NE,
NORTHERN TERRITORY**

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

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Quarterly report

FOR THE PERIOD ENDING 30 SEPTEMBER 2023

Argonaut Resources NL (*Argonaut* or the *Company*) (ASX: ARE) presents the following report for the period to 30 September 2023 (the *Quarter*).

Highlights Corporate

- During the Quarter, Argonaut held a General Meeting to seek shareholder approval for a consolidation of capital, resulting in one share held for each 100-pre-consolidation shares held (*Consolidation*). The consolidation was approved by shareholders.
- Following the Consolidation, the Company announced that it is undertaking a fully underwritten entitlement offer, at the same effective Offer Price as the Placement on a post consolidation basis of \$0.05 per share. The Entitlement Offer¹ has been offered on a one (1) for one (1) basis, to raise a further ~\$3.66 million before costs associated with the issue.
- Subsequent to the end of the Quarter, the Entitlement Offer closed on 17 October 2023 successfully raising ~\$3.66 million before costs associated with the issue.
- The Company extends its acknowledgement to shareholders for their support, commitment and encouragement in enabling this transition.
- Following review of exploration strategy and projects by the board of Argonaut, the Company has elected to shift its strategic direction to focus principally on its Australian uranium assets. Funds raised from the Offer will be directed towards uranium exploration, general working capital and the costs of the Offer.
- Consistent with this shift in strategy, minority shareholders in majority-owned subsidiary Orpheus Minerals Limited were offered shares in Argonaut on a 1-for-1 basis with the parent ownership of the subsidiary moving to 95.5%. In addition, the directors have advised an intention to seek shareholder approval to change the name of the Company to Orpheus Uranium Limited.
- Subsequent to the end of the quarter, Simon Mitchell was appointed non-executive director, and Company Secretary Richard Willson was also appointed as a director. Pat Elliott and Andrew Bursill resigned as directors. Pat and Andrew have guided the company over a very long period, and their contributions and dedication have been significant.

¹ Source: <https://www.argonautresources.com/site/pdf/1c5350d6-cc1c-4a15-bb14-74684760758b/Fully-Underwritten-NonRenounceable-Entitlement-Offer.pdf>

T-BONE, NORTHERN TERRITORY

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

WOOLNER/MARRAKAI, NORTHERN TERRITORY

Uranium

Phase: Exploration

Interest: Argonaut 95.5%

Operator: Orpheus

LITHIUM, GOLD AND NICKEL PROJECT

HIGGINSVILLE, WESTERN AUSTRALIA

Lithium, gold and nickel

Phase: Exploration

Interest: Argonaut 80%

Operator: Argonaut

COPPER PROJECTS:

MURDIE, SOUTH AUSTRALIA

Copper, gold (large IOCG)

Phase: Exploration

Interest: Argonaut 100%

TORRENS, SOUTH AUSTRALIA

Copper, gold (large IOCG)

Interest: Argonaut 100%

Agreement phase: Exploration

KAMAPANDA, KALABA EAST, MUSANGILA, ZAMBIA

Copper, gold

Interest: Argonaut 90%

Agreement phase: Exploration

Operator: Argonaut

Frome, South Australia – Uranium

Passive Seismic Orientation Survey

- During the Quarter, Argonaut completed a Passive Seismic Orientation Survey across six regional traverses at the Frome project. A total of 22.9 line-kilometres comprising 280 Horizontal-to-Vertical-Spectral (HVSF) stations were recorded using four Tromino® seismometers supplied by Resource Potentials Pty Ltd who processed the raw data to provide seismic generated data and imaging of the results.
- The passive seismic HVSF recordings successfully identified the interpreted acoustic bedrock due to a density contrast at the unconformity; between relatively unconsolidated sediments of the Tertiary Namba and Eyre Formations (prospective for uranium mineralisation), overlying consolidated Cambrian sediments (basement rocks).
- The Passive Seismic Orientation Survey confirms the technique is capable of mapping concealed palaeodrainage features and structural architecture of the region and will now be applied at target areas to explore undercover across the extensive Frome project that covers a combined area of 3,037 km².
- The Company considers passive seismic to be an essential exploration tool and when combined with other exploration methodologies may result in considerable cost saving of superfluous drilling in areas where passive seismic does not identify prospective palaeodrainage features. Importantly, passive seismic is a relatively new exploration tool available to the exploration industry and has not been previously applied at the Frome project.
- A Detailed Passive Seismic Survey is now in preparation at the Erudina prospect, for the purposes of defining 2D and 3D models of the palaeodrainage features that contains known uranium mineralisation, expected to commence in November/December 2023.

Uranium Asset Acquisitions, South Australia – Uranium

Mundaerno Project

Located approximately 12 km south of the Honeymoon Uranium Mine

- During the Quarter, an Exploration Licence Application (ELA) was submitted for an area located in the Southern Curnamona Province of South Australia that was remarkably, open ground, available by the Government of South Australia as identified on the tenure portal, an application was submitted following an immediate review.
- Argonaut, via Orpheus holds a 95.5% interest in ELA 2023/00044 Mundaerno project that comprises two Blocks for a combined area of 294 km².
- The Mundaerno project comprises a significant portion of the headwaters of the Yarramba Palaeochannel that hosts a number of sedimentary-hosted uranium deposits, including:
 - Honeymoon Uranium Mine (36 Mlbs contained U₃O₈)²; and
 - Yarramba (Jascons) deposit (11 Mlbs contained U₃O₈)³; held by Boss Energy Ltd (ASX: BOE).
 - As well as a number of uranium occurrences.
- The Mundaerno project, Exploration Licence Application ELA 2023/00044 is located 12 km south of the Honeymoon Uranium Mine and is contiguous with tenure held by Boss Energy Ltd.
- A review of historic datasets to delineate areas for exploration is well advanced, and will enable rapid commencement of exploration activities following grant of tenure.

² Source: <https://bossenergy.com/honeymoon-project>

³ Source: <https://bossenergy.com/honeymoon-project/exploration>

Radium Hill South Project

Successful competitive exploration release area awarded by the SA government

- Subsequent to the Quarter, Orpheus was awarded by the Government of South Australia, an Exploration Release Area (ERA) via a competitive application process.
- ELA 2023/00054 Radium Hill South project contains five (5) exceptional uranium occurrences, part of the Olary Palaeovalley System: Mulga Dam, Gairloch, Kinloch Dam, Jones Dam and Lamberts, identified by a previous explorer during 2005 to 2014, who reported anomalous uranium mineralisation located within palaeochannels interpreted to be at least 5 km in length, that offer an excellent target for future investigation.
- ELA 2023/00054 Radium Hill South project is located approximately 20 km south of the historic Radium Hill Uranium Field and is located directly north of tenure recently granted to Boss Energy Ltd (ASX: BOE – announcement 3 October 2023)⁴.
- A review of historic datasets to delineate areas for exploration is well advanced, enabling rapid commencement of exploration activities following grant of tenure, with several drill ready targets across the tenement.

Torrens, South Australia – Copper

Ministerial consent received

- During the Quarter, Argonaut's 100% held subsidiary, Kelaray Pty Ltd received Ministerial Consent from the Government of South Australia, for the transfer of 70% interest in the Torrens project exploration licence EL 6407, previously held by Straits Exploration (Australia) Pty Ltd, a subsidiary of Aeris Resources Ltd (ASX: AIS).
- Kelaray now holds 100% interest in the Torrens project in South Australia, subject to the Tenement Sale and Purchase Agreement with Straits Exploration (Australia) Pty Ltd in return for a 2.5% net smelter royalty on future production.
- This transfer sees Argonaut take a commanding land position in the highly prospective Olympic Domain near the eastern margin of the Gawler Craton. The Olympic Domain hosts several internationally significant iron oxide copper-gold+uranium (IOCG-U) deposits including Olympic Dam, Carrapateena, Prominent Hill and Oak Dam West.

Outlook

The Company intends to concentrate future exploration activity to the uranium assets in South Australia and the Northern Territory and is now well positioned to commence exploration following successful completion of the Capital Restructure and Rights Issue.

Uranium Assets, South Australia and Northern Territory

(Uranium – Argonaut 95.5%)

Argonaut holds interests in uranium projects in South Australia and the Northern Territory through its 95.5% owned subsidiary, Orpheus Minerals Limited. In South Australia there are five key project areas: Frome, Mundaerno, Radium Hill South, Cummins and Marree. In Northern Territory there are four key project areas: Mount Douglas, Woolner, Alligator Rivers Uranium Field and South Alligator Valley Mineral Field, (Figure 1).

Following review of exploration strategy and projects by the board of Argonaut, the Company has elected to shift its strategic direction to focus principally on these Australian uranium assets.

URANIUM ASSETS

Subsequent to the Quarter, Argonaut announced the acquisition of two new significant projects considered highly prospective for sedimentary-hosted roll-front and tabular-style uranium mineralisation. The Company will focus future exploration activities on these projects following grant of tenure.

- ELA 2023/00044 Mundaerno project is located just 12 km south of the Honeymoon Uranium Mine, comprises the headwaters of the Yarramba Palaeochannel, positioned directly on top of Mesoproterozoic granitic rocks that are potential source rocks of the uranium; and
- ELA 2023/00054 Radium Hill South project was awarded to Orpheus by the Government of South Australia via a competitive application process and comprises five exceptional uranium prospects with drill ready targets.

These recent asset acquisitions cover a considerable surface footprint of paleochannels in the highly prospective region of the Frome Embayment in the north, and to the south, the northern margin of the Murray-Darling Basin, in the exploration for sedimentary-hosted roll-front and tabular-style uranium mineralisation (Figure 2).

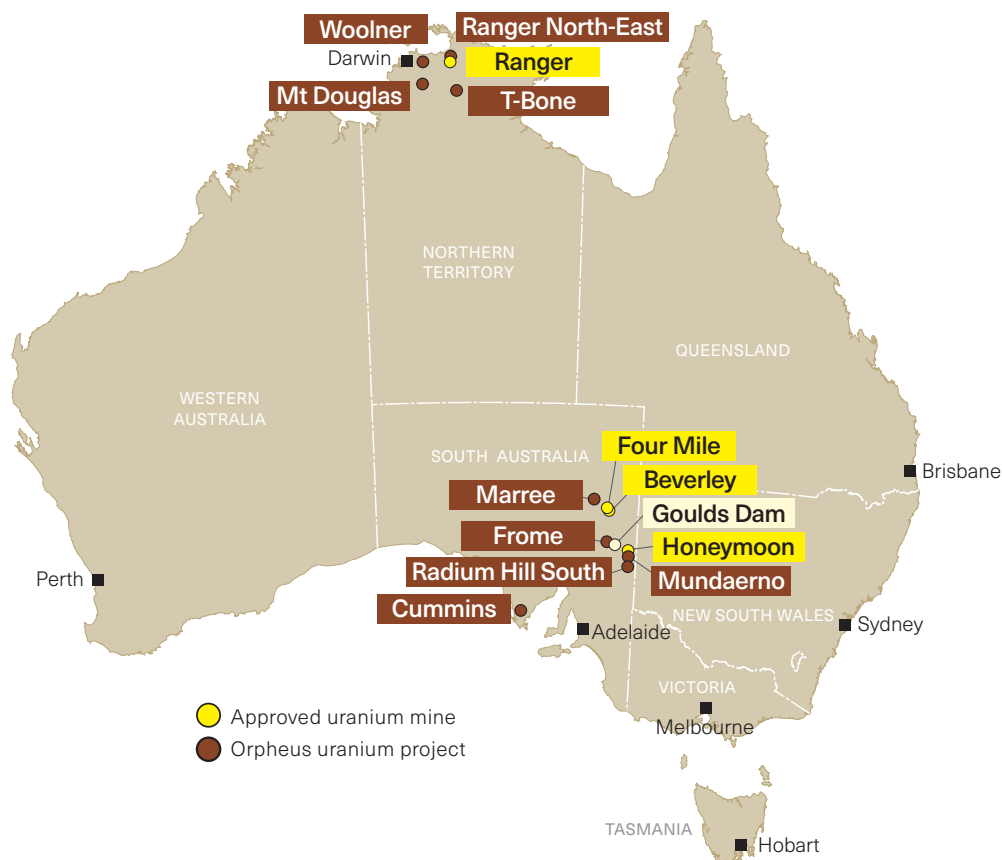


Figure 1 Location map of uranium assets owned by Orpheus located in South Australia and Northern Territory.

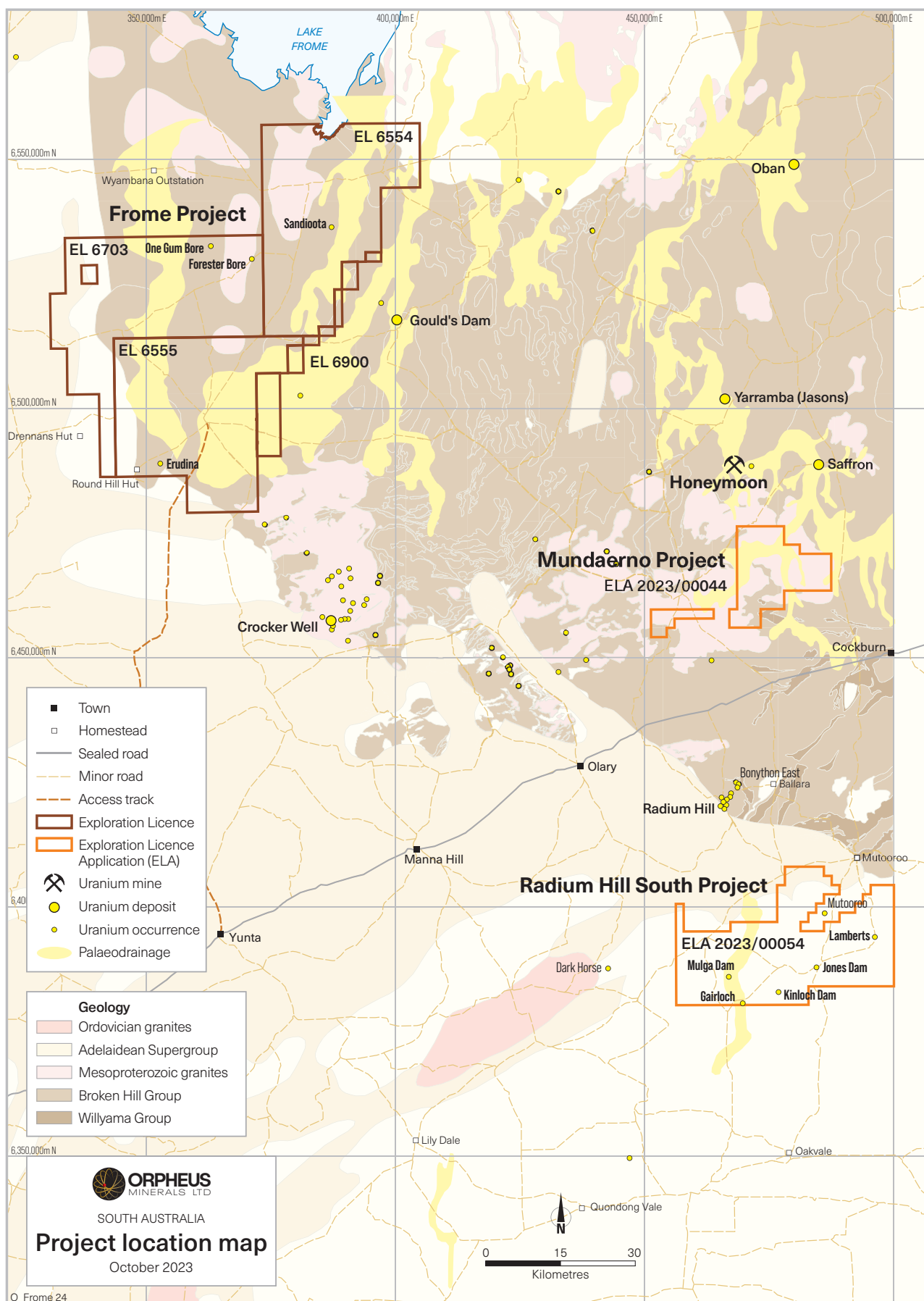


Figure 2 Project locations and uranium occurrences in the highly prospective region of the Frome Embayment and to the south, the northern margin of the Murray-Darling Basin.

South Australia – Frome Project

Passive Seismic Orientation Survey

During the Quarter, Argonaut completed a Passive Seismic Orientation Survey across six regional traverses at the Frome project. A total of 22.9 line-kilometres comprising 280 Horizontal-to-Vertical-Spectral (HVSr) stations were recorded using four Tromino® seismometers supplied by Resource Potentials Pty Ltd who processed the raw data to provide seismic generated data and imaging of the results (Figures 3 and 4).

The passive seismic HVSr recordings successfully identified the interpreted acoustic bedrock (peak frequency) due to a density contrast at the unconformity; between relatively unconsolidated sediments of the Tertiary Namba and Eyre Formations (prospective for uranium mineralisation), overlying consolidated Cambrian sediments (basement rocks).

The Passive Seismic Orientation Survey confirms the technique is capable of mapping concealed palaeodrainage features and structural architecture of the region and will now be applied at target areas to explore undercover across the extensive Frome project that covers a combined area of 3,037 km².

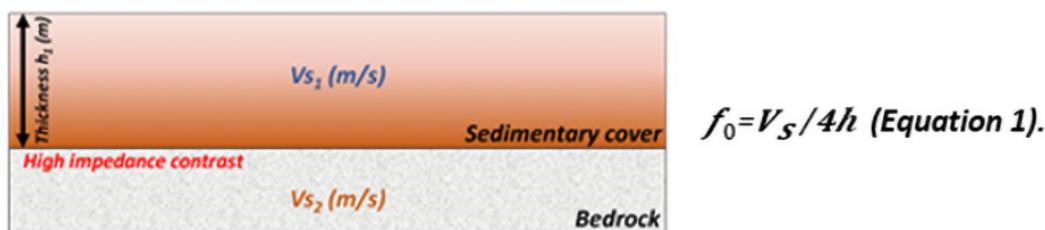
Passive Seismic Orientation Survey – Technique

The passive seismic Horizontal-to-Vertical Spectral Ratio (HVSr) method is a near surface geophysical technique which can be used to quickly define the thickness of soft sedimentary deposits or weathered bedrock (saprolite), overlying harder and fresh bedrock.

This method involves the recording of naturally occurring seismic vibrations (e.g., wind, ocean waves, micro-seismicity, earth tides, etc.) and far field manmade sources, over a specified recording time (usually 20 minutes). Sensitive Tromino® seismometers record the time-series seismic vibration data in three orthogonal components (two horizontal and one vertical), which are later transformed into frequency spectra in order to calculate the Horizontal to Vertical Spectral Ratio (HVSr) by dividing the average of the horizontal components by the vertical component.

The passive seismic HVSr technique is based on horizontal and vertically travelling ambient shear waves which become trapped in softer, slow velocity sedimentary deposits or weathered bedrock (saprolite) overlying harder, higher velocity bedrock, as a form of seismic amplification at a local resonant frequency. This seismic trapping of natural vibrations and local seismic resonance relies on a strong acoustic impedance contrast (the difference between the density multiplied by velocity for each subsurface layer) between the soft overlying layers sitting over hard acoustic bedrock. The resultant HVSr plot will produce a peak at the local seismic resonance of soft deposit layers over hard bedrock and is observed as the lowest frequency peak within a HVSr plot and is generally referred to as ‘acoustic bedrock’.

Depth conversion of the main local HVSr resonant frequency response is based on the resonant frequency (f_0) being related to thickness (h) and average shear wave velocity (V_s in m/s) of the low velocity soft sedimentary cover layer, as depicted in the (schematic below) and the simple equation. This depth conversion process requires fresh bedrock depths from drillholes proximal to clean HVSr station recordings for accurate depth calibration of the HVSr data.



HVSr data are generally acquired as single station recordings along survey traverses and are individually assessed for data quality and noise levels, with manual filtering of the HVSr data carried out on a station-by-station basis in order to remove the overall observed noise in the data recording which helps to refine the main local HVSr resonant frequency response. HVSr data can also be amplitude normalised in order to allow more subtle resonant frequency responses to be amplified and stronger amplitudes to become subdued, enhancing lateral continuity along a survey traverse and across the project area. Following depth conversion, these HVSr results can be visually displayed as HVSr amplitude cross-sections as well as 2D image and contour maps.

Summary provided by Resource Potentials Pty Ltd.

Passive Seismic Orientation Survey – Specifications

The Passive Seismic Orientation Survey traverses were conducted across six regional locations using 50 m and 100 m spaced HVSR station recordings, covering a total of 22.9 line-kilometres and 280 HVSR station recordings (refer to Table 1 for survey line specifications).

Two survey lines were acquired at the Erudina prospect coincident with historic drill traverses that identified palaeochannel features and uranium mineralisation hosted within Eyre Formation; one traverse was surveyed at the Namba Calcarene prospect where historic drilling identified uranium mineralisation within Namba Formation; and the other three traverses were recorded in regional areas with limited drilling to determine if palaeodrainage and fault structures could be identified in the passive seismic HVSR data.

The design of the survey was implemented based on a review of previous historic drilling data and in consultation with geophysical and geological consultants, Resource Potentials Pty Ltd. The initial passive seismic HVSR survey line was acquired using 50 m spaced HVSR station recordings, and then de-sampled to 100 m to ascertain the most suitable station spacing that would offer sufficient detail of the acoustic bedrock topography and paleochannel features. This analysis determined that 100 m spaced HVSR station recordings was appropriate for the remaining orientation survey traverses.

Passive seismic HVSR station recordings were of excellent data quality, with strong local HVSR resonant frequency responses detected on all lines, interpreted to be related to the interface between the soft sediments overlying the harder and fresh bedrock (i.e., Tertiary, relatively unconsolidated sediments plus weathered Cambrian basement rocks overlying more dense Cambrian basement rocks).

Passive seismic HVSR survey specifications:

- Data collected by: Orpheus Minerals Ltd
- Data processed by: Resource Potentials Pty Ltd
- Survey line spacing: Not applicable, regional traverses
- Seismometer: 4 x Tromino® ENG Y TEB seismometers hired from Resource Potentials Pty Ltd
- Recorded vibration sensors: 3 orthogonal velocimeters (N-S and E-W (horizontal), and Z (vertical) components).
- Output sample rate: 128 Hz
- Sensor frequency range: 0.1-64 Hz
- Acquisition length per HVSR station recording: 20 minutes
- Ground coupling: Conical spikes
- GPS navigation system: Inbuilt Tromino® GPS receiver (Datum: WGS84)

Table 1 *Passive seismic HVSR survey line specifications.*

Prospect	Line	Spacing	Line km	HVSR stations
Erudina	LINE_1	50 m	2.7 km	56 stations
Erudina	LINE_2	100 m	4.5 km	52 stations
Curnamona East	LINE_3	100 m	4.1 km	44 stations
Curnamona West	LINE_4	100 m	4.7 km	52 stations
Curnamona South	LINE_5	100 m	2.6 km	28 stations
Namba Calcarene	LINE_6	100 m	4.3 km	48 stations
		TOTAL	22.9 km	280 stations

Passive Seismic Orientation Survey – Results

The passive seismic technique has successfully defined the interpreted acoustic bedrock (peak frequency) at the unconformity, where relatively unconsolidated sediments of the Tertiary Namba and Eyre Formations (prospective for uranium mineralisation) overlies consolidated Cambrian basement. The seismic generated data and imaging (refer Figures 3 and 4) have identified palaeochannel and palaeovalley type drainage features incised into basement rocks that are considered suitable sites to target future exploration, drilling for uranium mineralisation.

Passive seismic traverse – Erudina Line 1

Erudina Line 1 is located on the southern margin of the Erudina prospect where historic, ~100 m spaced drillholes identified a deep incised channel that hosts uranium mineralisation. The passive seismic results confirm a relatively wide palaeochannel feature that is approximately 50 m in depth, (refer to Figure 3). The modelling allows for precise drill hole targeting of inferred deeper basal channel sands of the Eyre Formation.

Passive seismic traverse – Curnamona South Line 5

Curnamona South Line 5 is located back toward the inferred uranium source rocks of the Crocker Well Granite Suite, in a location where there is no historic drilling surrounding the HVSR stations. The passive seismic results provide encouragement of a palaeovalley toward the west and a possible paleochannel in the east, (refer to Figure 4). The seismic traverse will be extended to the west, prior to drill hole targeting.

The Company considers passive seismic to be an essential exploration tool and when combined with other exploration methodologies may result in considerable cost saving of superfluous drilling in areas where passive seismic does not identify prospective palaeodrainage features. Importantly, passive seismic is a relatively new exploration tool available to the exploration industry and has not been previously applied at the Frome project.

A Detailed Passive Seismic Survey is now in preparation at the Erudina prospect, for the purposes of defining 2D and 3D models of the palaeodrainage features that contains known uranium mineralisation, expected to commence in November/December 2023.

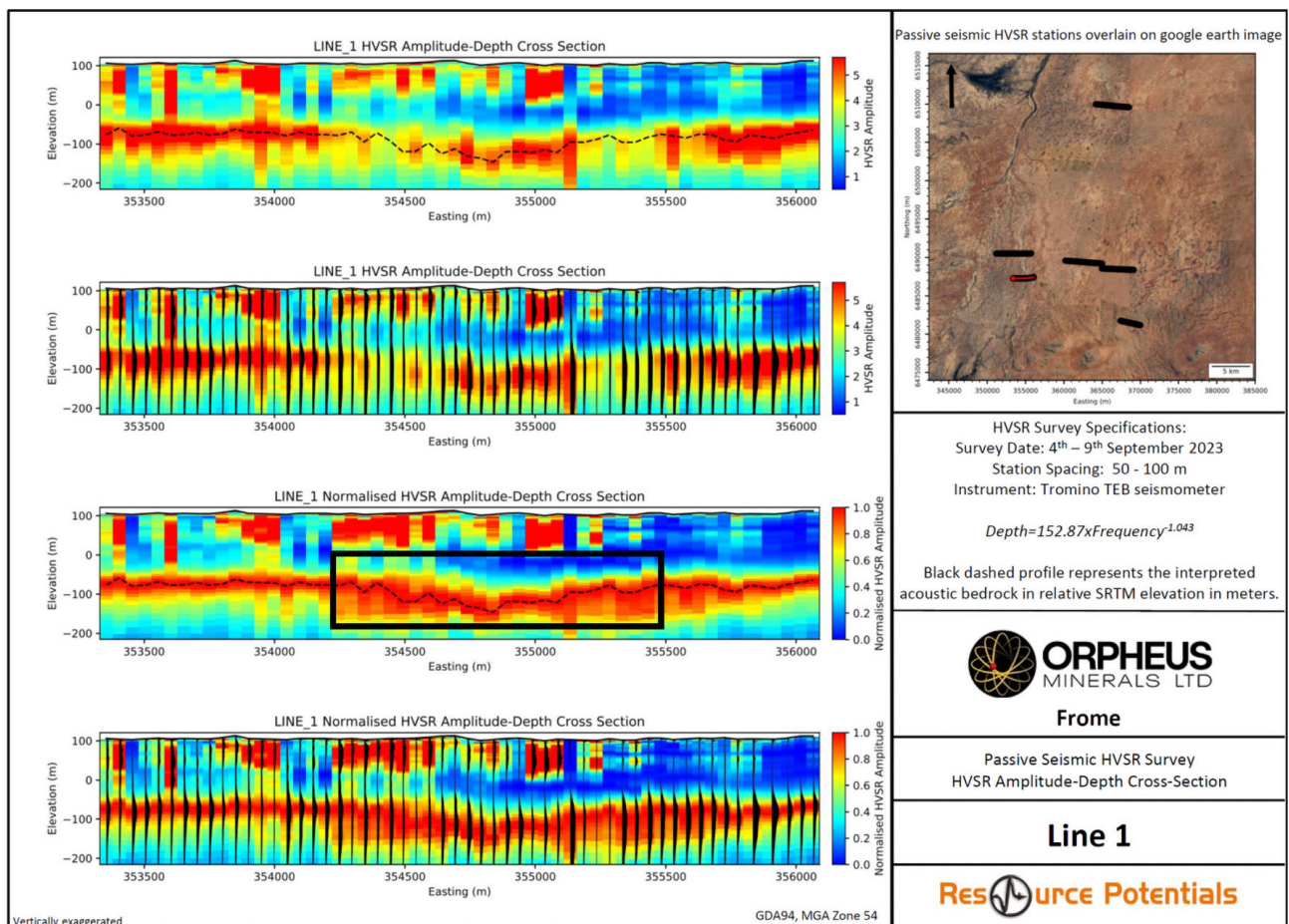


Figure 3 Passive seismic HVSR amplitude-depth cross-section of Erudina Line 1, dashed profile represents the interpreted acoustic bedrock (peak frequency) in relative SRTM elevation in meters, palaeochannel feature highlighted with black outline.

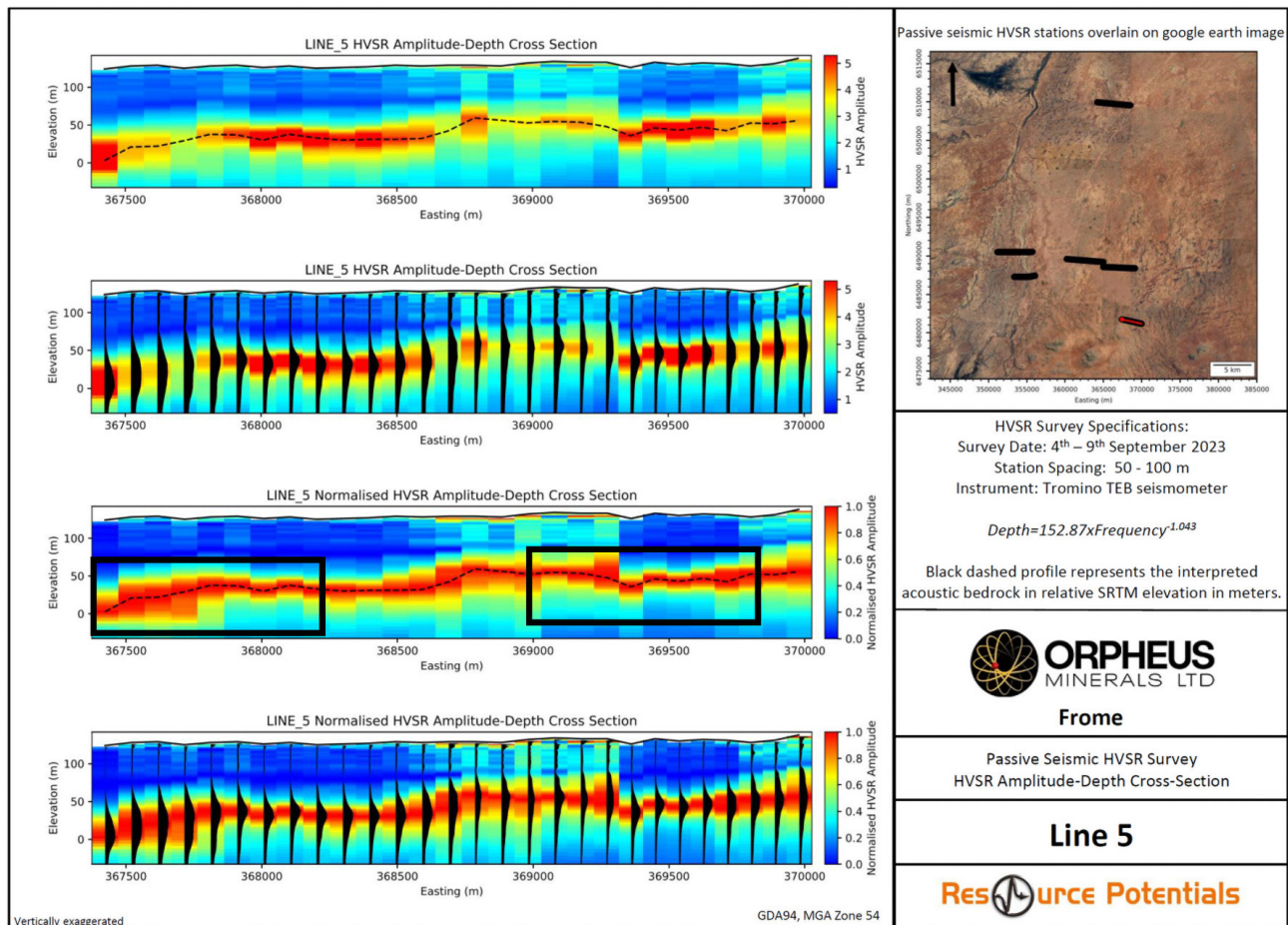


Figure 4 Passive seismic HVSR amplitude-depth cross-section of Curnamona South Line 5, dashed profile represents the interpreted acoustic bedrock (peak frequency) in relative SRTM elevation in meters, the inferred palaeovalley to the west and palaeochannel to the east highlighted with black outline.

Prospectivity

The Frome project is comprised of four highly prospective exploration licences in the Frome Embayment area of South Australia which is arguably the most prospective region in Australia for sandstone-hosted uranium deposits.

The Frome project is located approximately 12 km west of the Goulds Dam deposit held by Boss Energy Ltd who recently announced strong infill drilling results (ASX: BOE – announcement 12 September 2023) and two new satellite prospects adjacent to Goulds Dam (Billeroo and Sunrise) (ASX: BOE – announcement 28 September 2023)⁵.

The licences at Frome cover sandstone-bearing palaeochannels that contain groundwater that drains from uranium-bearing granite (Figure 5). Previous drilling of these palaeochannels confirms the presence of excellent sandstone aquifers at or near the base of the channels. These sandstone aquifers are 4m to 20m thick (typically 10-12m) and contain the necessary permeable coarse sands.

These basal sandstones have been shown to contain both oxidised, uranium-bearing zones and reduced zones. Work by Orpheus has inferred 12 kilometres of redox front within palaeochannels along which high priority exploration is necessary.

Uranium rich source rocks, a permeable sandstone aquifer to carry the oxidised, uranium bearing groundwater, and the introduction of a reductant along faults from a lower, hydrocarbon-bearing aquifer are all key technical characteristics required in this geological environment for potential economic uranium deposits.

⁵ Source: <https://bossenergy.com/investors/asx-announcements>

At the Frome project we see the following geological units:

1. The Eyre Formation (Honeymoon and Goulds Dam deposits) and Namba Formation (Beverley deposit) palaeochannels. These units are contained in the Callabonna Sub-basin of the Lake Eyre Basin.
2. The underlying Arrowie Basin, which includes the hydrocarbon-bearing Wilkawillina Limestone.
3. The Crocker Well Suite granite (Figure 5) which is an excellent uranium source rock and displays a strong radiometric anomaly where it outcrops.
4. Faults that cut both the Arrowie Basin sediments and the overlying Eyre or Namba Formations.

Stakeholder engagement

Orpheus is committed to its stakeholder commitments and undertake ongoing meetings and discussions with pastoralists, station managers and the Traditional Owners.

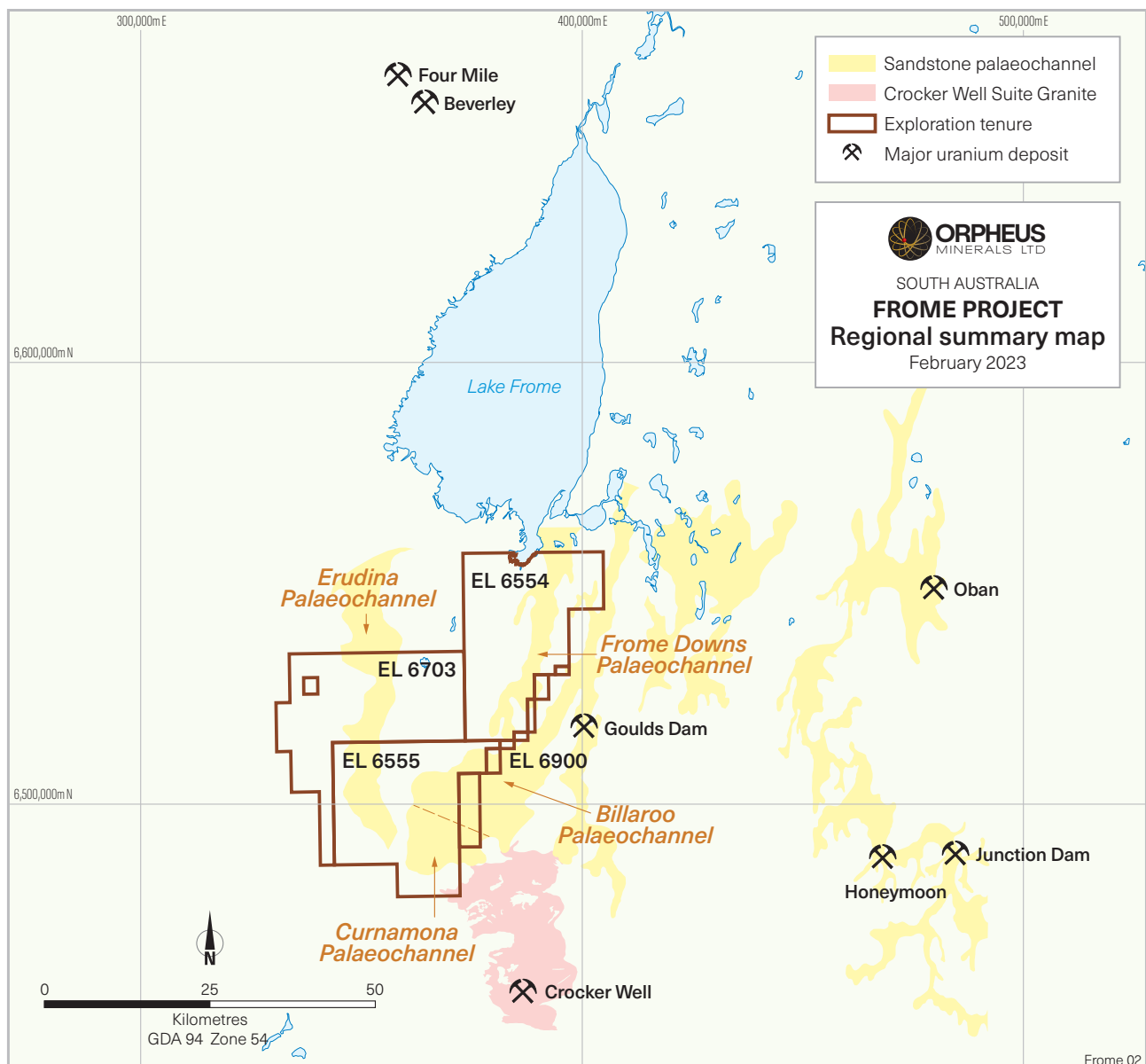


Figure 5 Frome project ELs with interpreted Eyre Formation palaeochannels, extending north from proposed uranium source rocks of the Crocker Granite Suite.

South Australia – Mundaerno Project

The Mundaerno project is considered highly prospective for sedimentary-hosted roll-front and tabular-style uranium mineralisation associated with Tertiary palaeochannels. The project is situated approximately 12 km south of the Honeymoon Uranium Mine and has the same paleochannel feature, the Yarramba Palaeochannel that hosts the Honeymoon Uranium Mine (36 Mlbs contained U_3O_8), Yarramba (Jasons) deposit (11 Mlbs contained U_3O_8) held by Boss Energy Ltd (ASX: BOE) and the Saffron deposit (5.4 Mlbs contained U_3O_8) held by Marmota Limited (ASX: MEU) as well as other uranium occurrences. Refer to Figure 6.

Prospectivity

Previous exploration for uranium was limited to six wide-spaced drillholes in the 1970's that intersected weathered basement granite followed by a regional drilling campaign in 2011 which consisted of 14 vertical Aircore holes drilled ~500 m apart along several very widely spaced traverses. Drillholes were sited to test an interpreted extension of the Yarramba Palaeochannel and intersected sand, silt and clay beds of the prospective cover sequence, including a basal sandy unit, into weathered basement which yielded a peak uranium value of 130 ppm U. A number of drillholes proposed, to target radiometric anomalies across palaeochannel features remain undrilled due to a downturn in the uranium market at that time.

Geology

The Mundaerno project is situated in the Southern Curnamona Province comprising Proterozoic metasediment and metavolcanic units of the Willyama Supergroup and Mesoproterozoic granites of the Bimbowrie Suite, including the Mundaerno Suite. Tertiary and Quaternary sediments lie directly on top of gneissic and granitic basement rocks with varying thickness.

Exploration

Orpheus' exploration objective is to delineate the margins of the Yarramba Palaeochannel via geomorphological reconstruction of the palaeochannel and palaeovalley surface, to locate suitable trap sites for sedimentary-hosted roll-front and/or tabular-style uranium mineralisation. The work program proposed for the Mundaerno project includes:

- Map the palaeosurface via acquisition of passive seismic, detailed ground gravity and electrical methods;
- Prospect scale geochemical sampling via direct measures of uranium (radon sampling, surface geochemical sampling); and
- Drilling of high priority targets within the Yarramba Palaeochannel.

Orpheus has commenced compiling and interpreting all existing datasets.

Tenure

Orpheus holds a 100% interest in ELA 2023/00044 Mundaerno project that comprises two Blocks for a combined area of 294 km². An exploration licence application was submitted by the Company in September 2023. Remarkably, the area was open ground, available by the Government of South Australia as identified on the tenure portal, an application was submitted following an immediate review. The licence is contiguous with Boss Energy Ltd exploration licence, that hosts the Honeymoon Uranium Mine, situated 12 km to the north of the Mundaerno project. Refer to Figure 6.

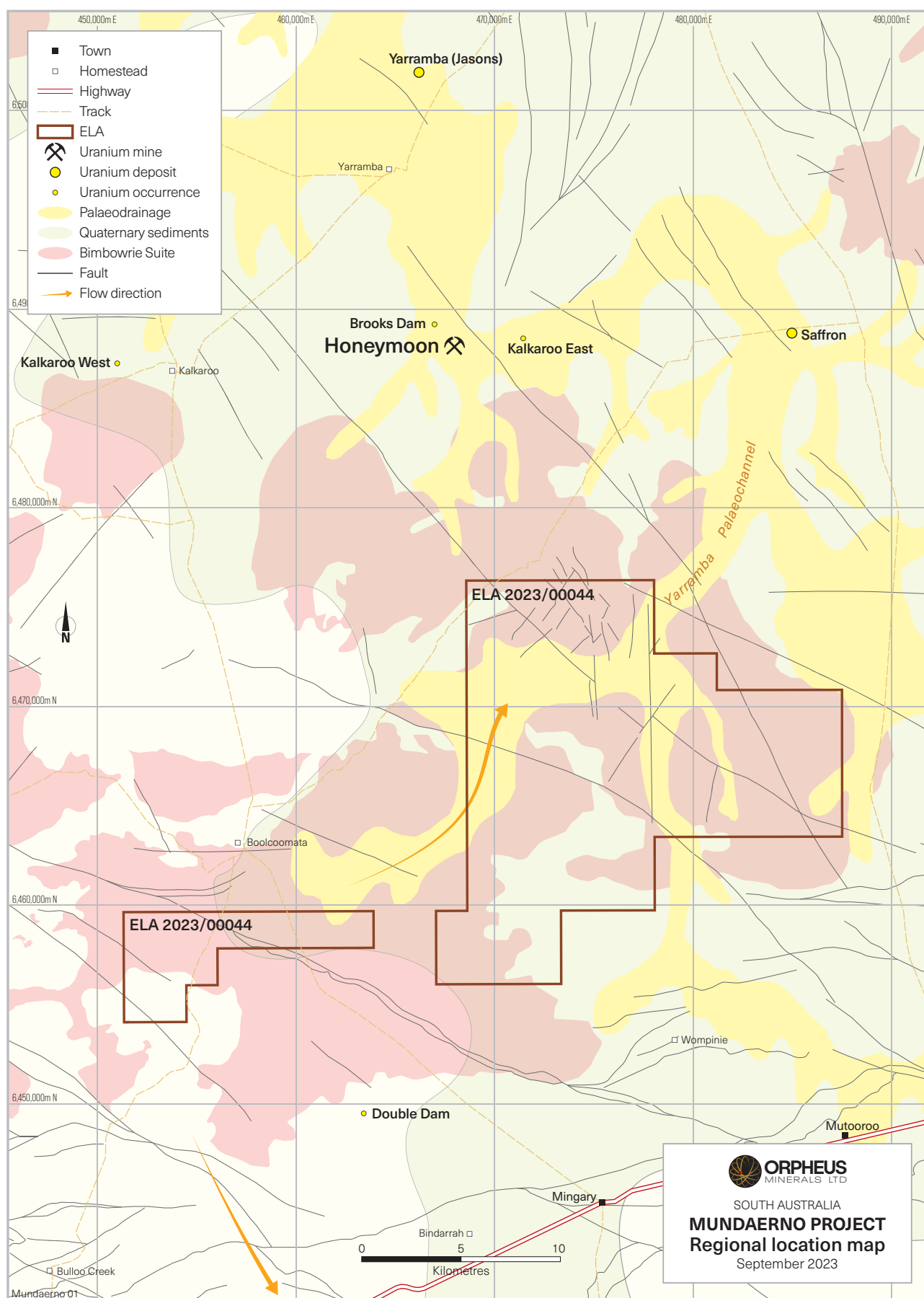


Figure 6 Mundaerno project location and nearby uranium occurrences, highlighting the headwaters of the Yarramba Palaeochannel directly underlain by Mesoproterozoic granitic basement, located just 12 km south of the Honeymoon Uranium Mine.

South Australia – Radium Hill South Project

The Radium Hill South project is considered highly prospective for roll-front and tabular-style, sedimentary-hosted uranium mineralisation associated with Tertiary palaeochannels. The region is situated approximately 20 kilometres south of the radiogenic region of the Radium Hill Uranium Field and 100 km southeast of the Crocker Well Uranium Field host to the hard rock uranium deposits and further to the north, the Honeymoon and Goulds Dam sediment-hosted Tertiary palaeochannel uranium deposits. Refer to Figures 2 and 10.

Prospectivity

The mineralisation model at the Radium Hill South project comprises both sediment-hosted and silcrete-hosted uranium mineralisation within Neogene sediments including the Geera Clay, and Paleogene channel sands including the Warina Sand of the Olary Palaeovalley System known to host uranium mineralisation at the uranium occurrences; Mulga Dam, Gairloch, Kinloch Dam, Jones Dam and Lamberts, at depths of approximately 80m-110m located within, sedimentary and structurally-controlled palaeochannel features.

Previous explorer, Mega Hindmarsh Pty Ltd (2005-2014) analysis of its drillhole geophysical logs revealed the presence of previously undetected, north-south trending sedimentary channels and deltaic sequences, which overlie reducing carbonaceous mudstone. These sedimentary facies were found to be very anomalous in uranium, yielding significant gamma log intercept thicknesses of up to 10.7m at Jones Dam and 8m at Gairloch Dam. The channels were interpreted to be at least 5 km in length, and Mega Hindmarsh Pty Ltd was confident that they offer an excellent target for future investigation.

Historic significant intercepts from the existing five uranium occurrences located within ELA 2023/00054 Radium Hill South project and reported by Mega Hindmarsh Pty Ltd⁶ include:

- **Mulga Dam**
 - 1,350 cps at 95m depth in fluvialite, Lower Miocene carbonaceous clays.
- **Gairloch**
 - 2,266 cps at 104.1m at the contact between the base of the channel and underlying black carbonaceous clay, assay grade obtained by analysis of the drill cuttings from this interval was 400 ppm U_3O_8 over 1.9m from 103.8m.
- **Kinloch Dam**
 - 23m averaging 129 cps of radiometrically anomalous sand and clay.
- **Jones Dam**
 - 401 ppm U_3O_8 over 2m from 86m in drillhole 06RMCD040 in a strongly anomalous zone over 5.1m, within steely grey sand;
 - 10.7m of radiometrically anomalous sand from 82.7m in drill hole 06RMCD048, associated with peak gamma values of 1,041cps, or 263 ppm eU_3O_8 ;
 - 3.6m of radiometrically anomalous sand from 98.9m in drill hole 06RMCD034, with a gamma maximum of 1,056 cps at 265 ppm eU_3O_8 ;
 - 3.4m of radiometrically anomalous oxidised sand and reduced sand with wood fragments in drill hole 07RMCD026 from 91.5m, includes 0.25m at 382 ppm eU_3O_8 .
- **Lamberts**
 - Best intercept was 0.7m at 0.073% U_3O_8 at 102.2 m in drillhole WE1.

Mega Hindmarsh Pty Ltd worked with CSIRO in 2010 developing the sequence stratigraphy, palynology, spectral mineralogy, geochemistry and structure to provide vectors to channels of uranium transport and to depositional sites for drilling by understanding the sedimentation architecture of the region through implementing the SEDSIM flow and sedimentation program (Figure 7). The results provide excellent indication of alternating lignite, sand depositional environments that warrant further investigation.

⁶ Source: Uranium grades extracted from Open File Report, Envelope 11421 compiled by Mega Hindmarsh Pty Ltd during the period 2005 to 2014, Cronje Dam Project.

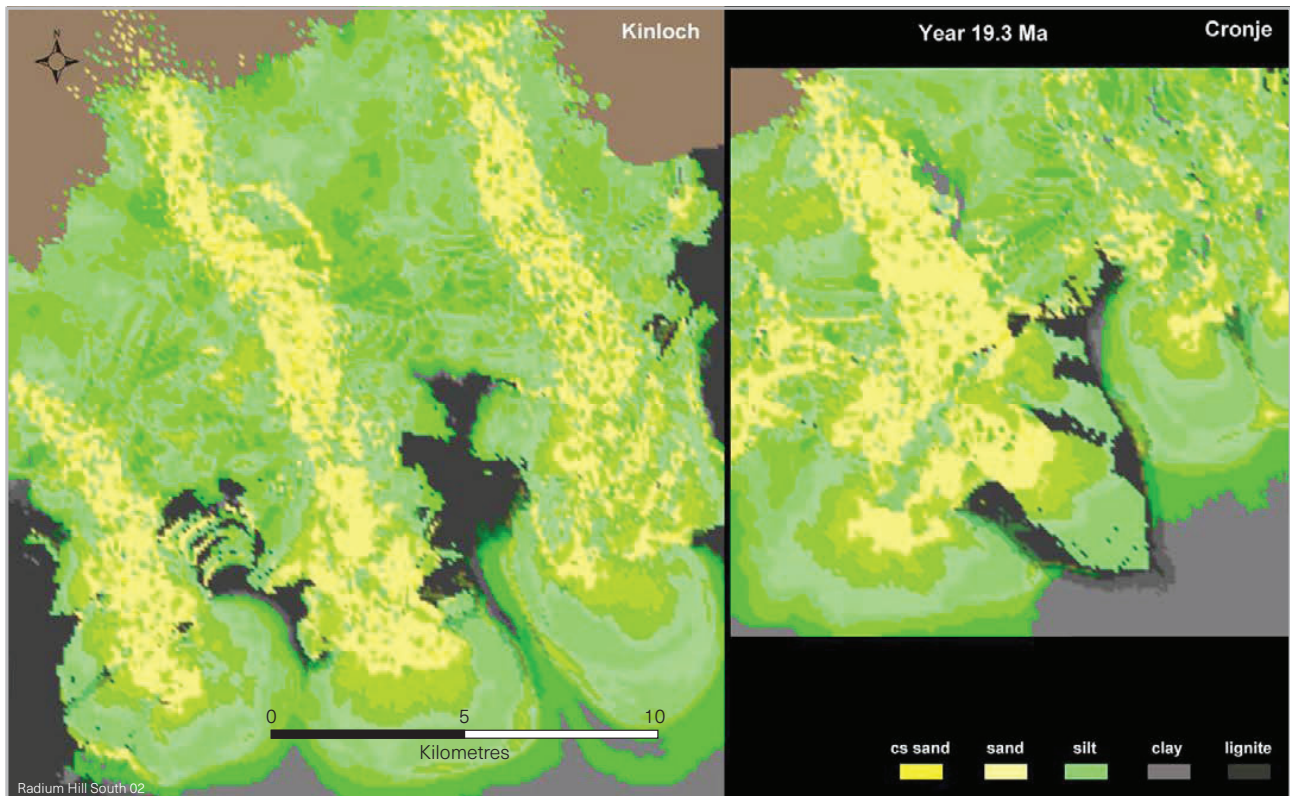


Figure 7 Mega Hindmarsh Pty Ltd / CSIRO plan image from the SEDSIM flow and sedimentation program showing alluvial fan deposition, cutting deep into underlying sediments forming unconformities, source CSIRO, (Johns, et al., 2010).

Results presented as extracted from the CSIRO report⁷ includes the following:

The implications for uranium enrichment are:

- If uranium-bearing fluids were carried in the river water at all times, then all fluvial sediments may have been favourable for uranium enrichment.
- The reductant in the area may have been organic clays or lignite or carried organics in the fluvial channels.
- The interface between clay/lignite and fluvial sediment may provide a potential trap site.
- The SEDSIM model shows potential for trap sites throughout the project area because of the migrating nature of the alluvial fan.
- The trap sites also act if lignite is the source of uranium.
- Any sediment that was eroded and may have had a uranium accumulation would have been transported towards the southern areas onto the floodplain.

Importantly, this study was completed in 2010, at a time when Mega Hindmarsh Pty Ltd changed exploration focus from uranium to iron ore (magnetite) of the Braemar Iron Formation. Orpheus intends to revisit the study to review sedimentation anomalies and to further define regional features to channel scale through geophysical methods (passive seismic, ground gravity, electrical methods) to assist with identifying roll-front environments and locating drillholes.

Geology

The Radium Hill South project lies approximately 20 km south of the Radium Hill Uranium Field that comprises Willyama Supergroup basement rocks. Epigenetic-style uranium mineralisation occurs in the form of davidite as vein 'lodes' within intensely altered shear zones hosted by high metamorphic grade quartzo-feldspathic paragneiss and amphibolite over a strike length of >7 km which has historically been mined to a depth of 290m on nine levels over a strike length of 1,400m⁸. Drainage patterns have formed in a southerly direction toward the Murray-Darling Basin as part of the Olary Palaeochannel System. Sediment-hosted uranium mineralisation is believed to have formed from oxidised groundwaters draining from the Willyama Supergroup basement rocks from the Radium Hill Region. The Tertiary sediments comprise carbonaceous clays and sands suitable for uranium to form sedimentary and/or tabular redox fronts.

⁷ Johns, S., Schmid, S., Dyt, C., Annetts, D., Fisher, L., Robinson, J., & Hill, J. (2010). JSU - Mega Hindmarsh Pty Ltd, Cronje Dam Project, Final Report, Envelope 11421. CSIRO.

⁸ Source: https://minerals.sarig.sa.gov.au/MineralDepositDetails.aspx?DEPOSIT_NO=962.

Reducing host rocks within the project area where uranium mineralisation has been identified include units of the Renmark Group:

- Lower Miocene carbonaceous clays with associated sands of the Geera Clay (equivalent unit to the Namba Formation of the Frome Embayment) within palaeodrainage features of the Olary Palaeovalley System along the northern margin of the Murray-Darling Basin in the vicinity of the Anabama-Redan Fault Zone (Figure 8).
- Lower Eocene sands remain a uranium target to be further explored within palaeochannel features and comprises the Upper Sand and Lower Sand units of the Warina Sand (equivalent unit to the Eyre Formation of the Frome Embayment) (Figure 8).

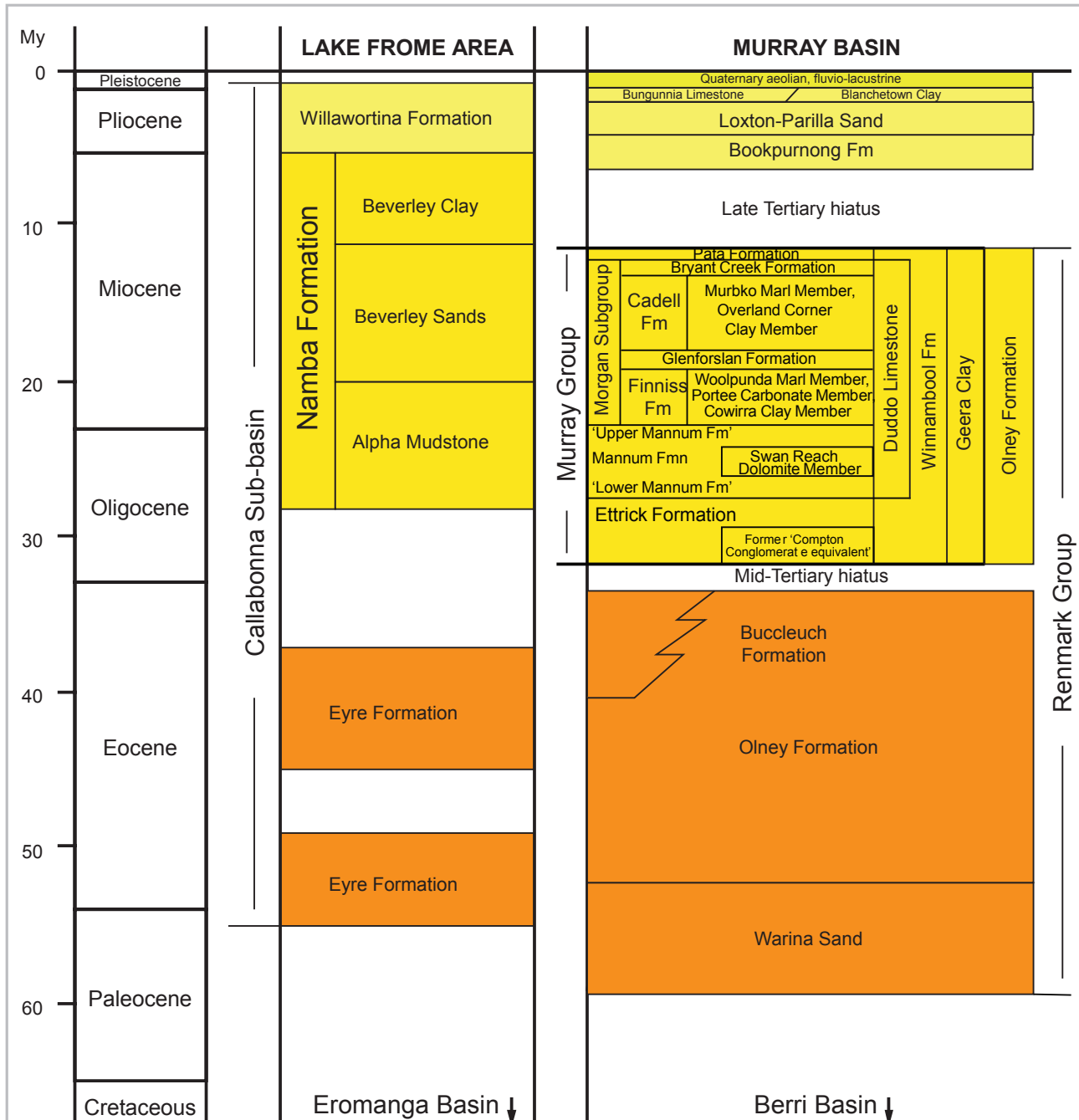


Figure 8 Cenozoic stratigraphy of the Lake Frome area and Murray-Darling Basin. Modified after Cowley and Barnett (2007), Skirrow (2009) and Whitehouse et al. (1999)⁹.

⁹ Source: Roach, I.C., 2012. The Frome airborne electromagnetic survey, South Australia: implications for energy, minerals and regional geology. Geological Survey of South Australia, Report Book 2012/00003.

Uranium enriched source rocks proximal and probable to the project area include:

- Hydrothermal vein uranium mineralisation within gneisses of the Willyama Supergroup, where uranium minerals are present as structurally-controlled uraniferous lodes within foliated migmatitic gneiss such as Radium Hill Uranium Field and the Victoria Hut uranium occurrence;
- Radiogenic granites from the Olary Domain where uranium minerals are present within veins and breccia veins within host Mesoproterozoic granites such as Crocker Well and Mount Victoria uranium deposits;
- Ordovician granites intruding the Adelaidean metasediments where uranium has been identified proximal to the granite margins of the Anabama Granite pluton and the Cromwell Granite, such as the Dark Horse uranium occurrence (Figure 9);
- Influence from hydrothermal, basement-derived, fault-localised, fluids during uranium precipitation in the sediments proximal to the Anabama-Redan Fault Zone/Escarpment.

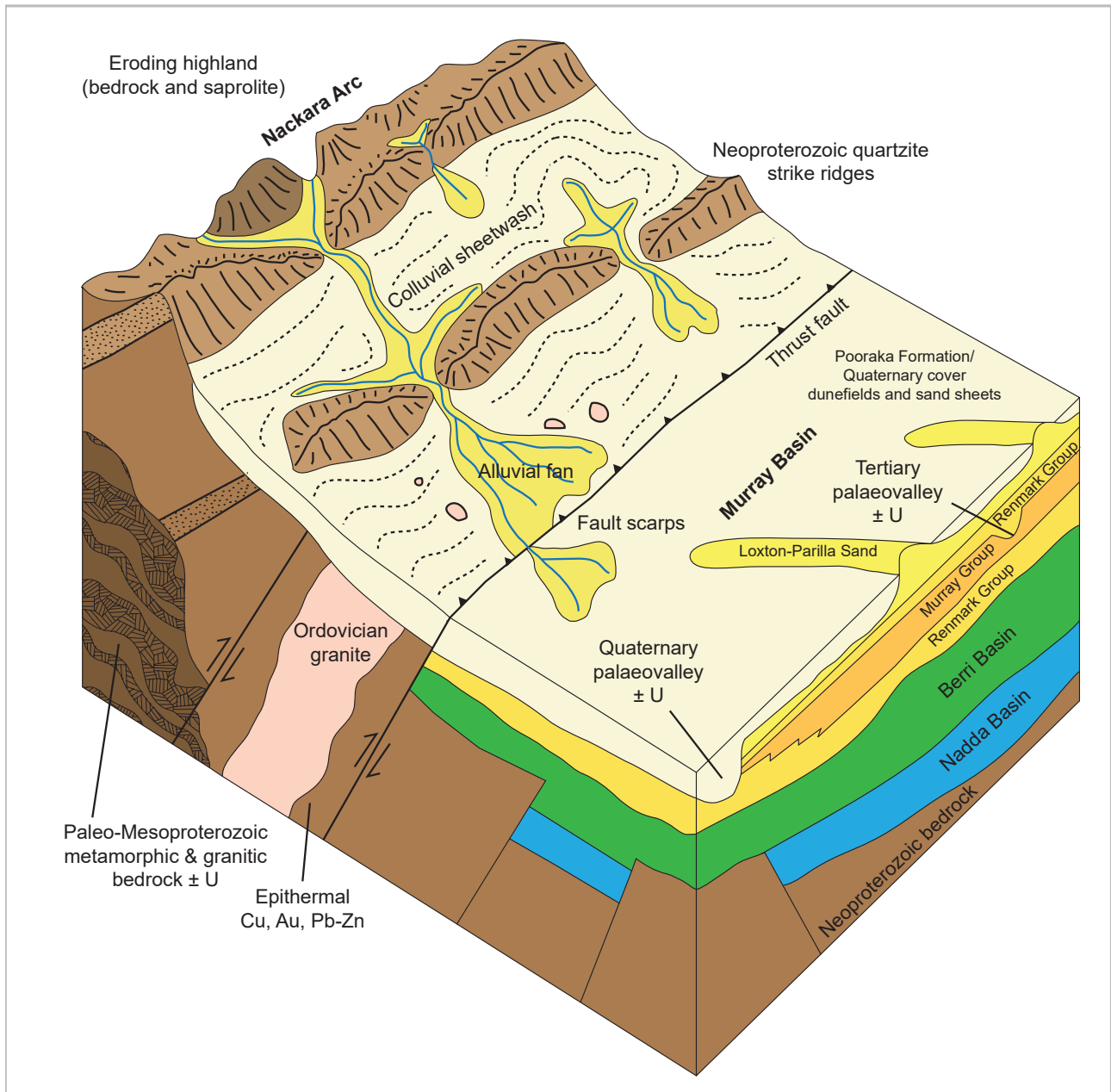


Figure 9 Block diagram summarising the geological components where the source of uranium is the Ordovician granites and Precambrian bedrock, eroding south into the Murray-Darling Basin. Sandstone-hosted uranium deposits are formed when oxidised uranium is precipitated from fluid flowing in permeable sandstones in the Southern Curnamona Province (after Roach, 2012).

Exploration

Orpheus' exploration objective is to target sedimentary-hosted roll-front and/or tabular-style uranium mineralisation located within paleochannel drainage features and along the buried escarpment of the northeast-southwest trending Anabama-Redan Fault.

- Orpheus will acquire passive seismic, ground gravity and electrical method surveys to constrain paleochannel margins, map structures, determine the effects of faulting, and basement topography.
- Drilling of high priority targets at the existing five uranium occurrences located within ELA 2023/00054 Radium Hill South project; Mulga Dam, Gairloch, Kinloch Dam, Jones Dam and Lamberts.

Orpheus has commenced compiling existing datasets of the five uranium prospects: Mulga Dam, Gairloch, Kinloch Dam, Jones Dam and Lamberts, in preparation toward drilling.

Tenure

Orpheus holds a 100% interest in ELA 2023/00054 Radium Hill South project that covers an area of 797 km².

In June 2023, Orpheus submitted an application for an Exploration Release Area (*ERA*) via a competitive application process for ERA 001240 to the Government of South Australia.

In September 2023, Orpheus received confirmation from the Government that it was successful in the competitive application and the ERA was converted into an Exploration Licence Application, ELA 2023/00054.

The region has been restricted for exploration since 2019 due to a Section 15 Gazettal in accordance with the *Mining Act 1971* SA, placed over the Murray-Darling Basin area for the purposes of an ongoing National Drilling Initiative (NDI) project being undertaken by the Geological Survey of South Australia (GSSA) in collaboration with MinEx Cooperative Research Centre (MinEx CRC), who reported that previous exploration focused on heavy mineral sands and uranium, with the majority of legacy drilling comprised of shallow RC/rotary drilling targeting uranium in the northern part of the area, largely undertaken at the five uranium prospects that are now covered by Orpheus' ELA 2023/00054 Radium Hill South project.

ELA 2023/00054 Radium Hill South project is located approximately 20 km south of the historic Radium Hill Uranium Field.

Importantly, ELA 2023/00054 Radium Hill South project contains the five (5) uranium occurrences that were identified by a previous explorer Mega Hindmarsh Pty Ltd during 2005 to 2014, who reported "palaeochannels interpreted to be at least 5 km in length, that offer an excellent target for future investigation".

ELA 2023/00054 is located directly north of tenure recently awarded to Boss Energy Ltd (ASX: BOE – announcement 3 October 2023).

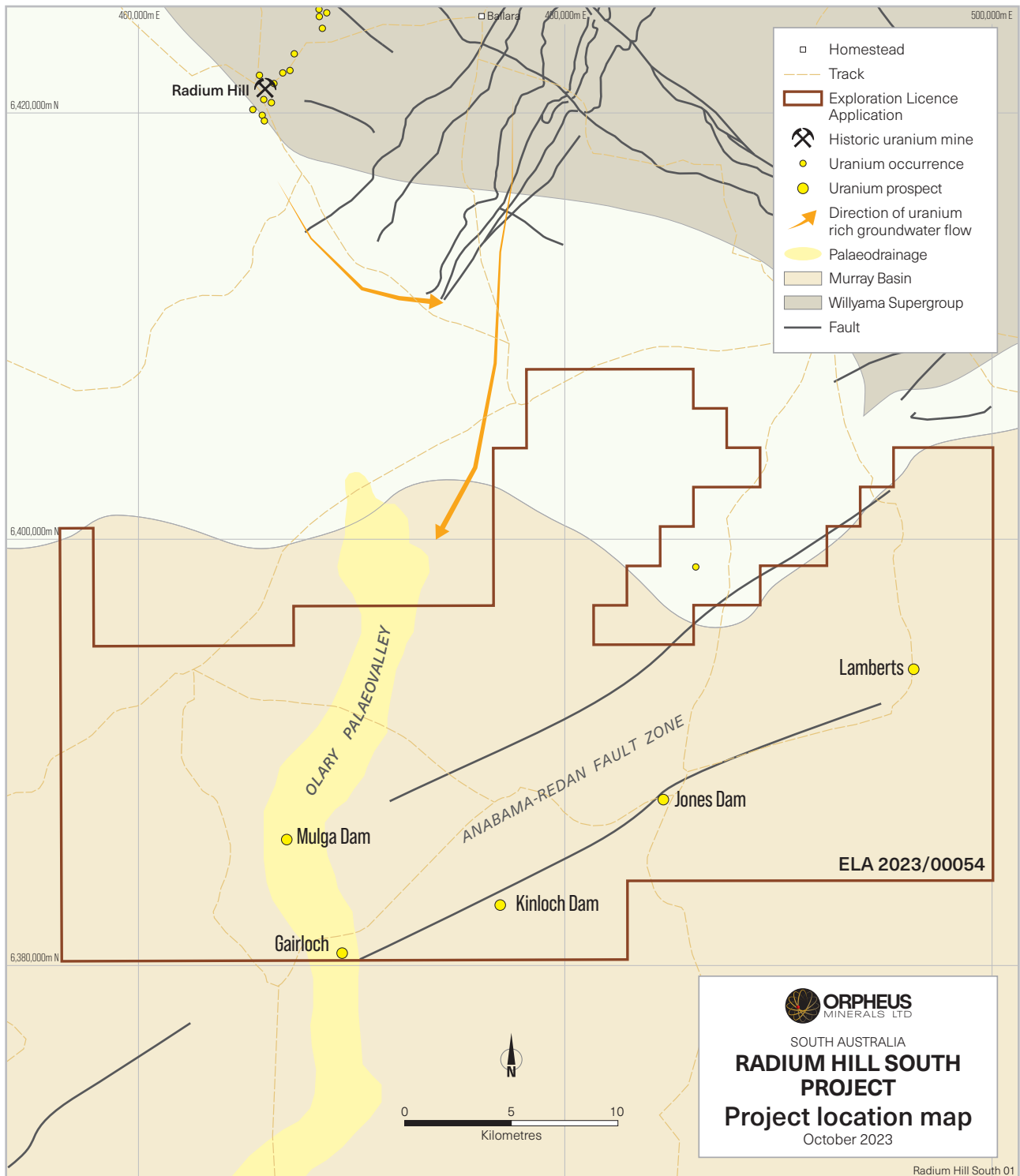


Figure 10 Radium Hill South project location and uranium occurrences, highlighting the five uranium occurrences located within the competitive licence application that was granted to Orpheus, located 20 km south of the Radium Hill Uranium Field.

South Australia – Cummins Project

The Cummins project comprises a single exploration licence (EL 6624), granted 23 July 2021 for a period of six years. The exploration target is sediment hosted uranium mineralisation developed within Tertiary sedimentary strata of the Cummins-Wanilla Basin on the southern Eyre Peninsula. The Basin is bounded to the east by the uplifted Lincoln Complex granitoids and gneisses that form the Koppio Hills and Marble Range.

Reviewed and interpreted drilling data was combined with the available geophysical datasets to produce a depth to basement model and a plan of interpreted structural features. The Cummins-Wanilla Basin is interpreted to occupy a south-southwest – north-northeast oriented palaeovalley in the south of EL 6624 that follows an arc to the west to form a broader northeast-southwest oriented basin in the northern portion of the EL.

A conceptual model of uranium bearing-fluid movement through the basin, from Proterozoic, uraniferous Dutton Suite granites to the north, through the Tertiary sequence of the Cummins-Wanilla Basin is presented (Figure 11).

Work completed during the year includes historical data compilation and review as well as preliminary arrangements for community engagement. Most of the project area is freehold title held by agricultural farmers and consents for entry will be sought after consultations. A presentation to the community (likely in the town of Cummins) is planned for early in the coming year.

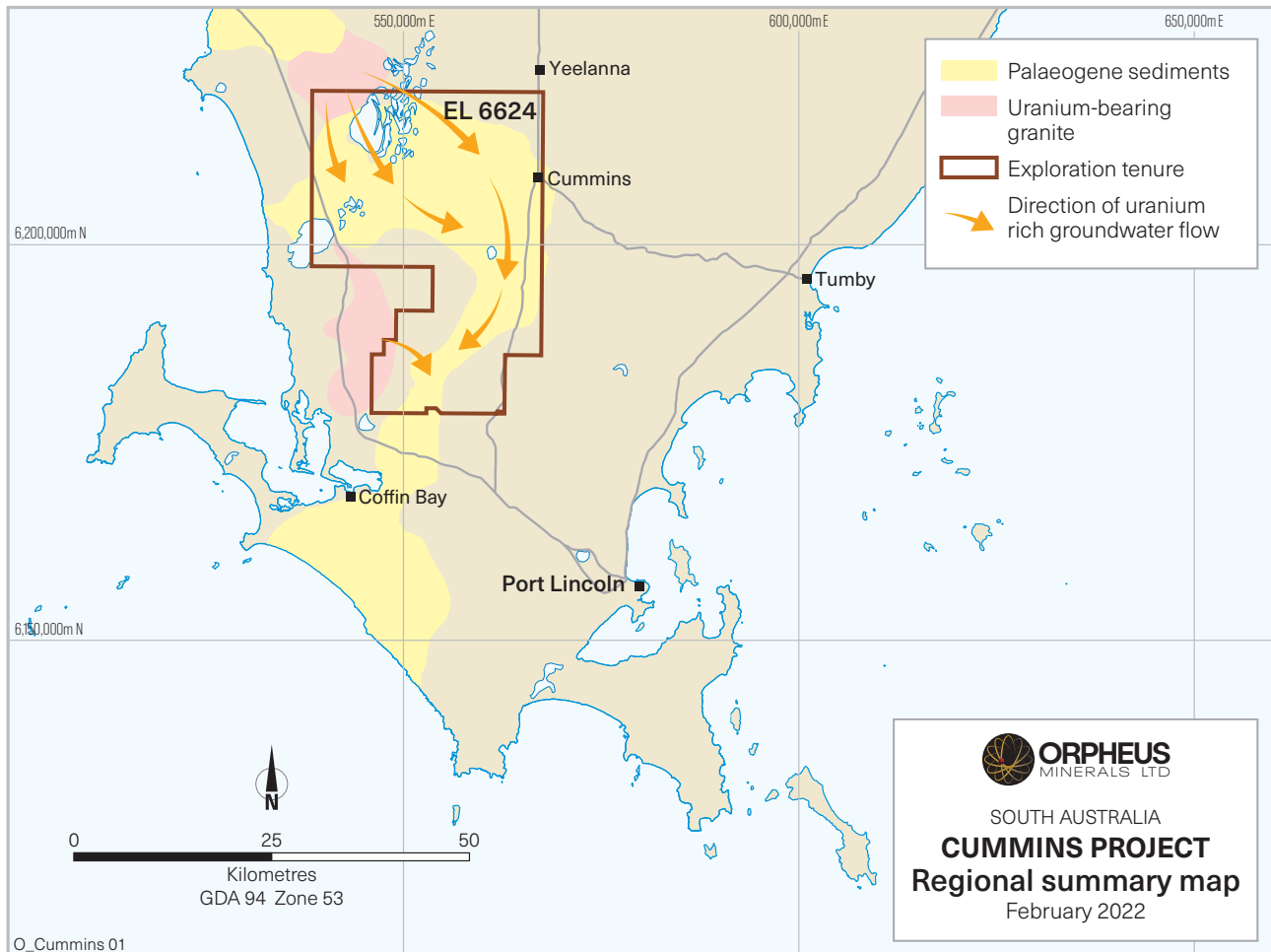


Figure 5 Cummins project conceptual model of uranium-bearing fluid movement from Proterozoic Dutton Suite granitoids in the north, southward through the Cummins-Wanilla Basin.

South Australia – Marree Project

The Marree project is considered highly prospective for roll-front, sedimentary-hosted uranium mineralisation associated with Tertiary and/or Permian palaeochannels. The region is situated approximately 70 kilometres northwest of the significantly radiogenic region of the Mount Painter Uranium Field host to the Mount Gee hard rock uranium deposits and Beverley sediment-hosted Tertiary palaeochannel uranium deposits (Figure 12).

The mineralisation model at the Marree project comprises both sediment-hosted and silcrete-hosted uranium mineralisation within Tertiary sediments including the Eocene Eyre Formation and Miocene Namba Formation, both of which are known to host uranium mineralisation at Honeymoon and Beverley deposits. Locally, at the nearby Jubilee prospect, uranium mineralisation is contained within silicified sandstone units of the Eyre Formation, at shallow depths of ~25 metres within a palaeochannel feature.

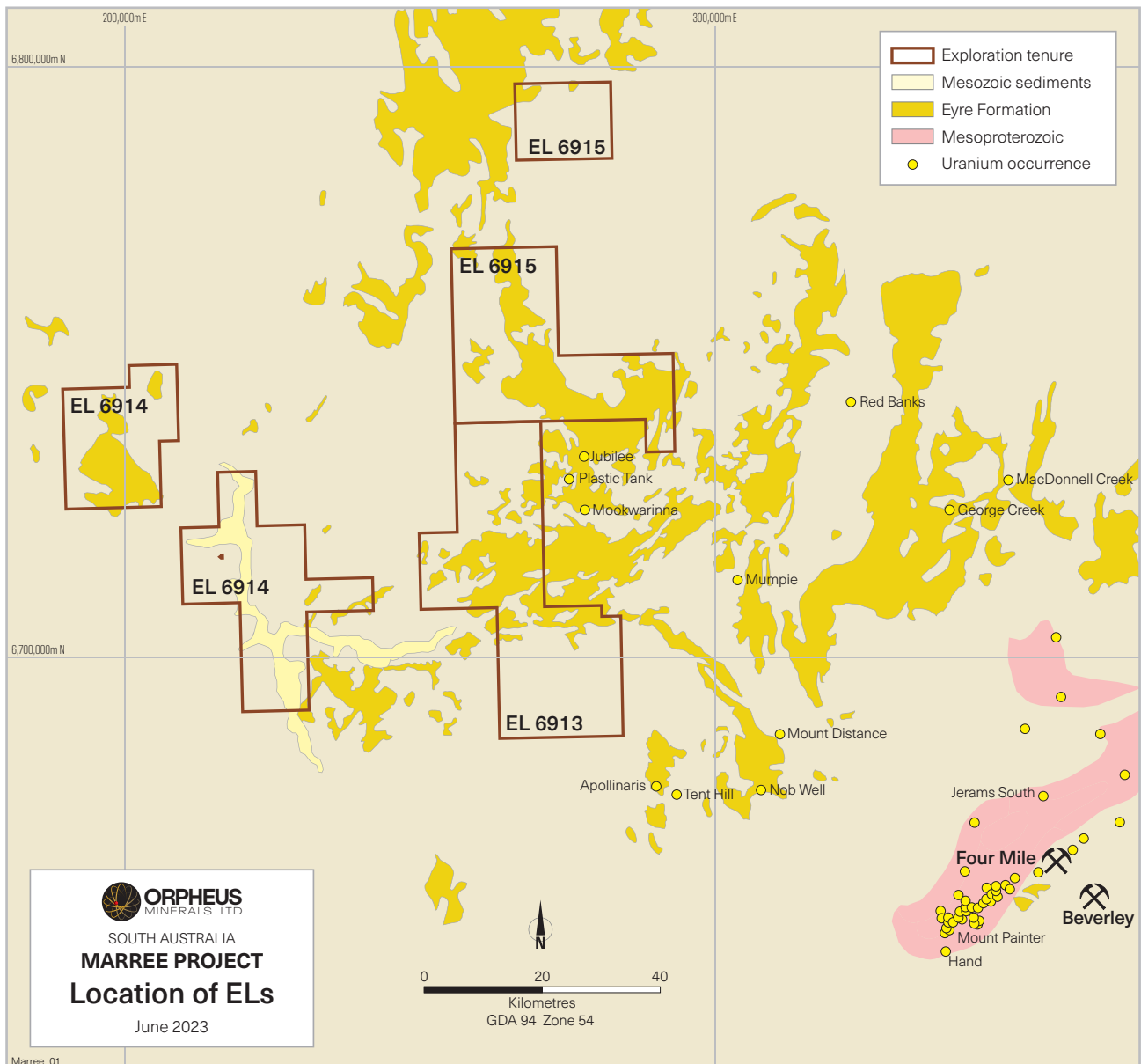


Figure 12 Marree project regional geology of the prospective Eyre Formation, with uranium deposits and occurrences.

Northern Territory – Mount Douglas Project

The Mount Douglas project is located in the eastern flank of the Rum Jungle Mineral Field (RJMF) which was the first major uranium mining and processing centre in Australia. There are several uranium mineral occurrences in the Mount Douglas region, most of which are interpreted to be unconformity-style mineralisation which is the principal target in the project area.

The project area is largely covered by Paleoproterozoic sediments of the Mount Partridge Group (2,050 to 2,000 Ma) in the east, overlain by the South Alligator Group (2,000 to 1,860 Ma), in turn overlain by sediments of the Finnis River Group (1,860 to 1,850 Ma) to the west. The sediments comprise granite intrusions of the Cullen Batholith (1,850 to 1,800 Ma) (Figure 13).

The Mount Douglas area contains a fault-bound outlier of Middle Proterozoic arenite, considered an equivalent of settings associated with unconformity-style uranium mineralisation elsewhere in the Pine Creek Orogen. The project area features a 20km strike length of favourable geology (unconformity at the base of the Kombolgie Basal Conglomerate), uranium anomalism in surface samples and several areas of elevated radiometric responses that require further investigation. Up to 1,089ppm U has been returned from surface sampling of a haematitic ironstone band in the area.

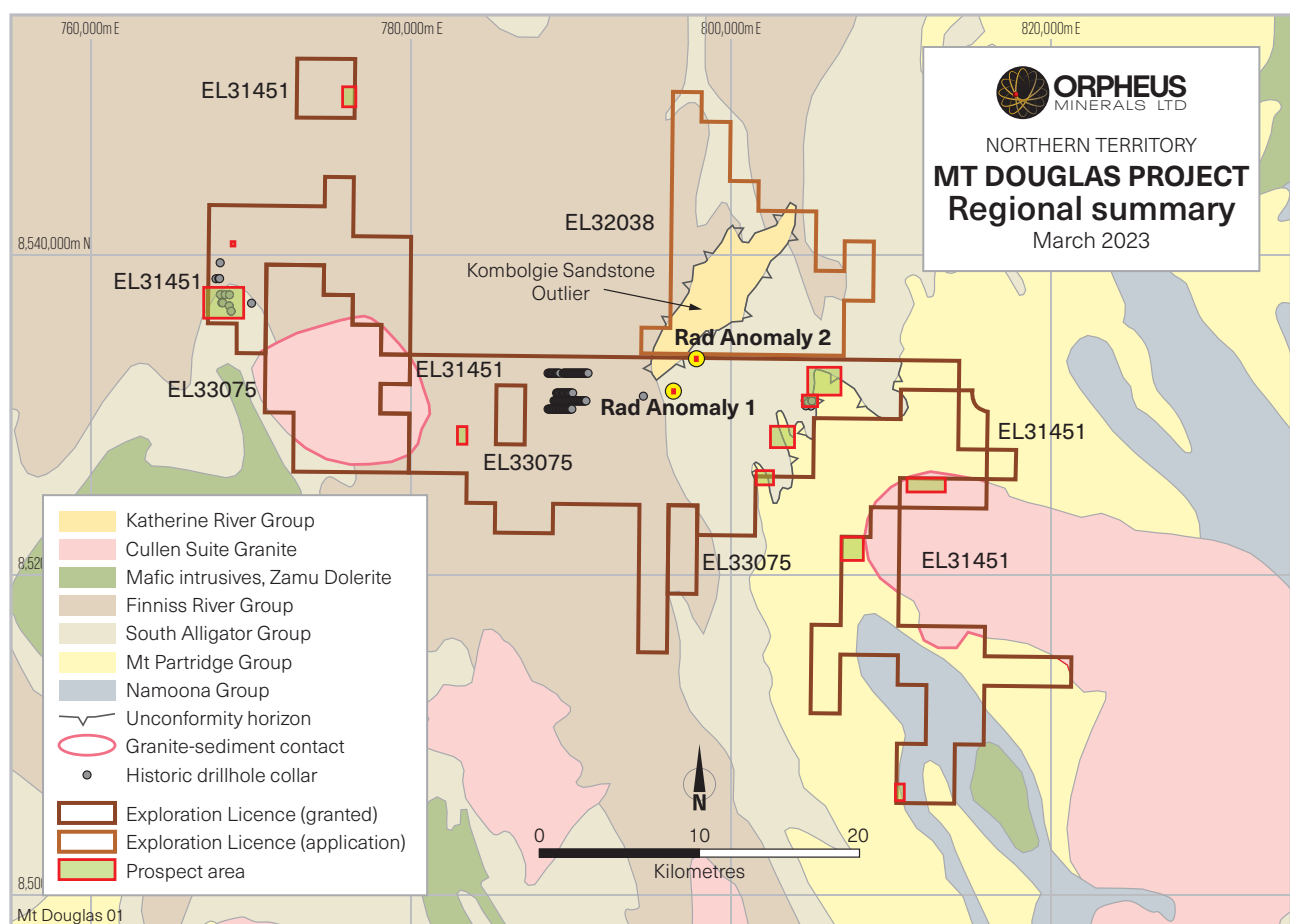


Figure 13 Mount Douglas project regional geology, with historic drill hole locations and identified prospect areas.

Murdie, South Australia

(Copper – Argonaut 100%)

The Murdie project is located in South Australia near the eastern margin of the Gawler Craton. The project area covers 1,015 square kilometres of highly prospective Olympic Domain geology and includes more than 50 discrete gravity anomalies that are located immediately south and east of the Torrens project and east of the Carrapateena mine (Figure 14). These anomalies represent locations with significant volumes of high-density rock that could contain economic Iron-Oxide Copper-Gold (IOCG) deposits.

Exploration authorisations

Aboriginal Heritage Act

The Company holds all permits necessary to undertake exploration works at Murdie.

Exploration planning

Argonaut's drilling authorisations for the Murdie project contain two main options for accessing drill sites on Lake Torrens – access via protective matting and via helicopter. Argonaut has held discussions with relevant contractors regarding the continuation of drilling using both techniques.

Torrens, South Australia

(Copper – Argonaut 100%)

Torrens Project – 100% ownership

During the Quarter, Argonaut's 100% held subsidiary, Kelayar Pty Ltd received Ministerial Consent from the Government of South Australia, for the transfer of 70% interest in the Torrens project exploration licence EL 6407, previously held by Straits Exploration (Australia) Pty Ltd, a subsidiary of Aeris Resources Ltd (ASX: AIS).

Kelayar now holds 100% interest in the Torrens project in South Australia, subject to the Tenement Sale and Purchase Agreement with Straits Exploration (Australia) Pty Ltd in return for a 2.5% net smelter royalty on future production.

This transfer sees Argonaut take a commanding land position in the highly prospective Olympic Domain near the eastern margin of the Gawler Craton. The Olympic Domain hosts several internationally significant Iron Oxide Copper-Gold+Uranium (IOCG-U) deposits including Olympic Dam, Carrapateena, Prominent Hill and Oak Dam West.

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.

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. Improved geophysical acquisition, processing and modelling technology has improved the odds of discovery in this environment compared with earlier exploration efforts.

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 copper exploration budgets into drilling well defined gravity targets in the Eastern Gawler Craton.

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

The Torrens project is located 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.

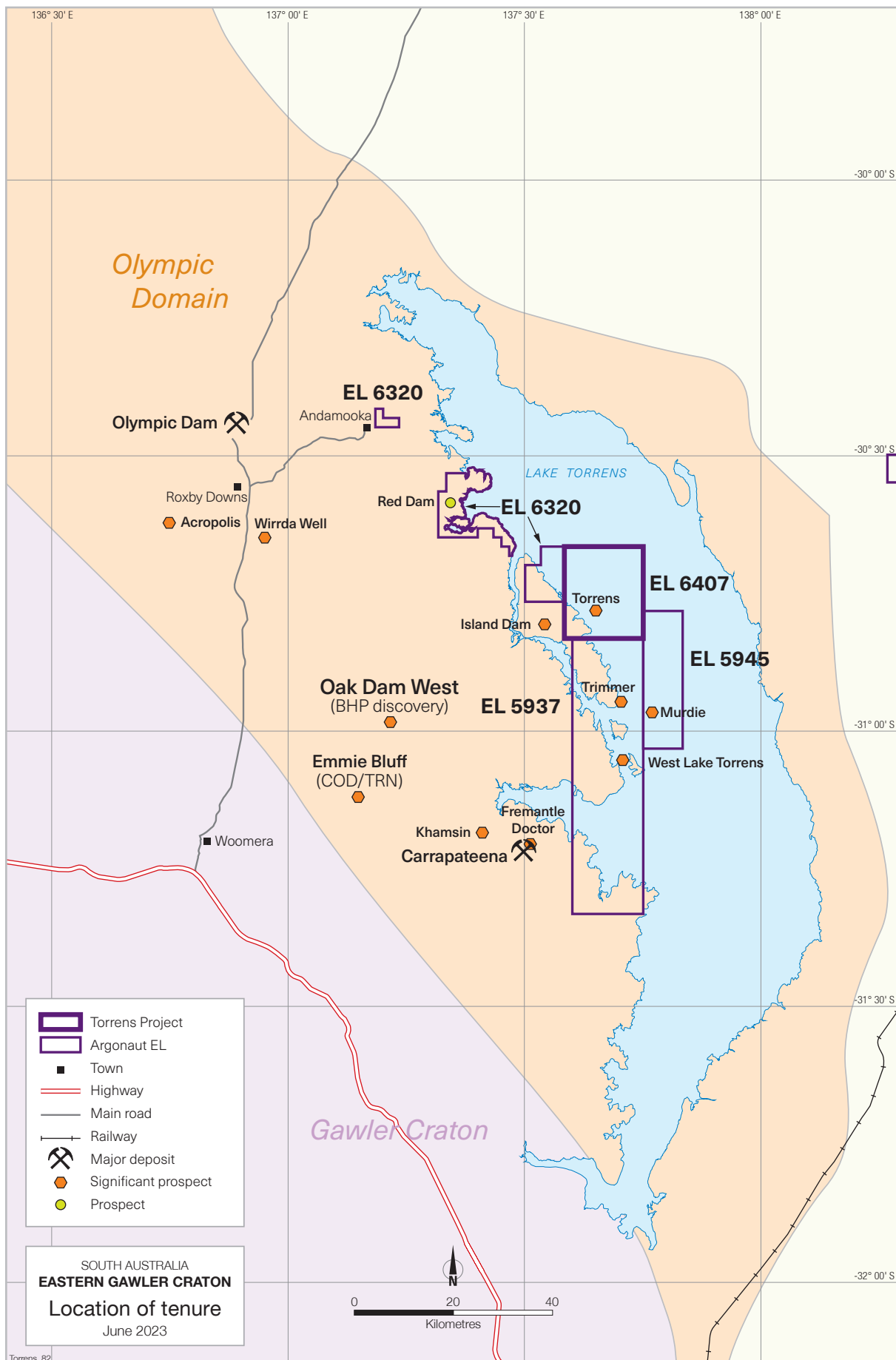


Figure 14 Lake Torrens exploration licences.

Red Dam, South Australia

(Copper – Argonaut 100%)

Argonaut holds exploration licence EL 6320 located adjacent to the Torrens Project (Figure 14). 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 conducted a ground gravity survey in 2020 to improve resolution for geophysical modelling and target generation.

Higginsville, Western Australia

(Lithium, gold and nickel – Argonaut 80%)

Argonaut holds an 80% interest in exploration licence E 15/1489 which hosts:

- the Darson pegmatite swarm;
- the Amorphous gold deposit; and
- the Footes Find gold prospect.

Lithium exploration – Darson pegmatite swarm

Drilling program

In April 2023, Argonaut completed a 30-hole, 3,246 m RC drilling program at the Darson prospect, near Higginsville, WA. The program targeted LCT Pegmatites on the basis of outcrop mapping and soil geochemistry.

Drilling succeeded in intersecting Pegmatitic rocks in all 30 drill holes. A total of 132 Pegmatitic intervals were logged across the 30 drill holes for a cumulative total of 431 metres of logged pegmatitic rock. The results were reported to the ASX on 17 April 2023¹⁰.

Lithium intercepts generated by the 30-hole drilling program are low to medium grade. Ancillary elements such as caesium, tantalum and rubidium occurred at or above levels typically in commercial, Western Australian lithium deposits.

Lumwana West, Zambia

(Copper-cobalt)

Purported cancellation of exploration licence 22399-HQ-LEL

During January 2022, Argonaut became aware that Large-scale Exploration Licence 22399-HQ-LEL, Lumwana West, was not renewed by the Zambian Government as expected. This licence area contains the Nyungu deposit.

At the time of the purported cancellation, the Company's 90% held subsidiary, Mwombeszhi Resources Ltd, was operating in full compliance with all licence conditions and other regulatory requirements.

On 20 June 2023, the Zambian High Court made an order staying the cancellation of the Lumwana West licence and grant of a new licence over the same area, thus protecting Argonaut's interest.

Legal action by Argonaut is aimed at the reinstatement of the Lumwana West exploration licence to Mwombeszhi Resources Ltd. The Company notes that the timeframe for legal processes currently underway in Zambia is uncertain and that an outcome is expected in two to 12 months.

¹⁰ See Argonaut ASX release titled "Thick Pegmatite Intercepts at Higginsville" dated 17 April 2023.

Kamapanda, Zambia

(Copper-cobalt – Argonaut 90%)

The Kamapanda project is located in the Central African Copperbelt, North-western Province, Zambia (Figure 15). The large-scale exploration licence covers an area of 225 square kilometres and extends to the Angolan border. The area is remote, with limited access and is largely underexplored.

A program of regional stream sediment sampling is planned to outline both gold and copper potential. Expenditure at Kamapanda is on hold pending the reinstatement of the Lumwana West licence.

Kalaba East, Zambia

(Copper-cobalt – Argonaut 90%)

The Kalaba East project is located in the Central African Copperbelt, North-western Province, Zambia (Figure 15). The area is prospective for large tonnage, low to medium grade copper-cobalt deposits.

Argonaut plans to conduct a regional geochemical sampling program at Kalaba East. Expenditure at Kalaba East is on hold pending the reinstatement of the Lumwana West licence.

Musangila, Zambia

(Copper-cobalt – Argonaut 90%)

The Musangila project is located in the Central African Copperbelt, North-western Province, Zambia (Figure 15). The area is prospective for large tonnage, low to medium grade copper-cobalt deposits and alluvial gold.

Argonaut plans to conduct a geochemical sampling program followed by RC drilling. Expenditure on field activities at Musangila is on hold pending the reinstatement of the Lumwana West licence.

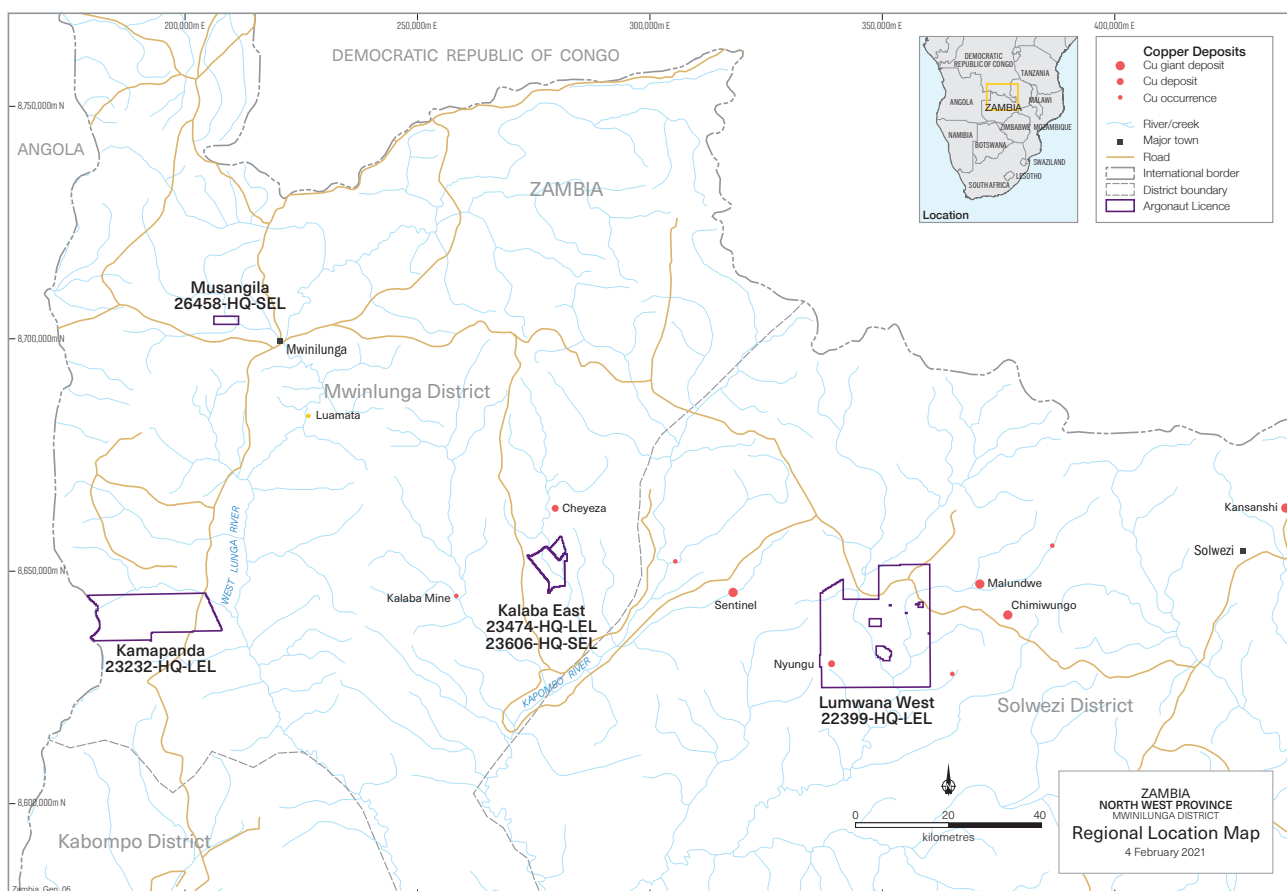


Figure 15 Exploration licences located within the Northwestern Province, Zambia.

Kroombit, Queensland

(Zinc-copper – 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.

MDL2002 was renewed by the Queensland Government Department of Resources for a further five years to 31 August 2026.

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

(Zinc – Argonaut 100%)

The Aroona project is prospective for zinc-silicate (willemite) mineralisation in the locally endowed carbonate units of the Wilkawillina Limestone, adjacent to the Aroona fault which hosts numerous willemite occurrences along trend, including the Aroona, Aroona II and Reliance deposits.

Field work to date has been regional in scope and includes mapping, airborne geophysics and minor rock chip sampling targeting the NW Aroona prospect. No drilling has been conducted.

Argonaut holds a 100% interest in EL 6199.

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

Corporate

Exploration and evaluation expenditure during the Quarter comprised:

	\$A'000
Drilling	67
Assaying	88
Field costs drilling program	65
Total at 2.2 in Appendix 5B	220

Related party payments for the September 2023 Quarter totalled \$92,000 comprising remuneration to a director of a subsidiary company.

The Company notes that the payment of Parent Company directors fees and salaries have been suspended since 1 April 2023.

There was no production or development expenditure during the September 2023 Quarter.

This report was authorised for release by the Board of Argonaut Resources NL

Mick Billing

Executive Director

Argonaut Resources NL

COMPETENT PERSON'S STATEMENT

Sections of information contained in this report that relate to Exploration Results were compiled or reviewed by Miss Bethany Lawrence BScAppGeol(Hons), MAIG, GIA(Aff), CG(Aff) who is a Member of the Australian Institute of Geoscientists and is a full-time employee of Argonaut Resources NL and Orpheus Minerals Limited. Miss Lawrence holds shares in Argonaut Resources NL. Miss Lawrence has sufficient experience which is relevant to the style of mineral deposits under consideration and to the activity which she 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". Miss Lawrence consents to the inclusion in this report of the matters based on this 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

Table 1 Summary of mining tenements.

SOUTH AUSTRALIAN MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
EL 6569	18/10/2020	17/10/2025	104	Sandstone	Coombedown Resources Pty Ltd	10% ¹
EL 5998	21/05/2017	20/05/2028	33	Campfire Bore	Coombedown Resources Pty Ltd	10% ¹
EL 6199 ²	04/06/2018	03/06/2023	27	Myrtle Springs	Kelaray Pty Ltd	100%
EL 6407	18/08/2019	17/08/2024	295	Lake Torrens	Kelaray Pty Ltd	100%
EL 5937	30/03/2017	29/03/2028	794	West Lake Torrens	Kelaray Pty Ltd	100%
EL 5945	20/04/2017	19/04/2028	221	Murdie	Kelaray Pty Ltd	100%
EL 6320	28/02/2019	27/02/2024	198	Andamooka Station	Kelaray Pty Ltd	100%
EL 6554	07/12/2020	06/12/2025	960	Frome Downs	Trachre Pty Ltd	100% ⁴
EL 6555	07/12/2020	06/12/2025	947	Curnamona	Trachre Pty Ltd	100% ⁴
EL 6624	23/07/2021	22/07/2027	952	Cummins	Trachre Pty Ltd	100% ⁴
EL 6703	3/02/2022	2/02/2028	987	Erudina	Trachre Pty Ltd	100% ⁴
EL 6900	19/01/2023	18/01/2029	143	Billeroo	Trachre Pty Ltd	100% ⁴
EL 6913	9/06/2023	8/06/2029	998	Mundowdna	Trachre Pty Ltd	100% ⁴
EL 6914	9/06/2023	8/06/2029	990	Muloorina	Trachre Pty Ltd	100% ⁴
EL 6915	9/06/2023	8/06/2029	978	Clayton	Trachre Pty Ltd	100% ⁴
EL 6923	30/08/2023	29/08/2029	977	Lake Frome	Kelaray Pty Ltd	100%

QUEENSLAND MINING LEASE						
Tenement	Granted	Expiry	Area (km ²)	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 ²)	Locality	Licensee	Interest
MDL 2002	03/08/2016	31/08/2026	0.64	Kroombit	Kelaray Pty Ltd	100%

ZAMBIAN LARGE SCALE EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
22399-HQ-LEL ³	29/12/2017	28/12/2021	521	North Western Province	Mwombezhi Resources Ltd	90%
23232-HQ-LEL ²	10/04/2019	09/04/2023	226	North Western Province	Sunrise Exploration and Mining Limited	90%
23474-HQ-LEL ²	18/12/2018	17/12/2022	41.58	North Western Province	Sunrise Exploration and Mining Limited	90%

ZAMBIAN SMALL SCALE EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
26458-HQ-SEL	10/06/2020	09/06/2024	9.72	North Western Province	Sunrise Exploration and Mining Limited	90%

WESTERN AUSTRALIAN MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
E15/1489	14/08/2017	13/08/2027	20.9 ⁵	Higginsville	Argonaut Resources NL	80%

NORTHERN TERRITORY MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
EL 31451	08/09/2017	07/09/2023	484.52	Mount Douglas	Trachre Pty Ltd	100% ⁴
EL 33075	3/01/2023	2/01/2029	103.63	Mount Douglas (Ban Ban)	Trachre Pty Ltd	100% ⁴
EL 33088	3/01/2023	2/01/2029	473.23	Woolner	Trachre Pty Ltd	100% ⁴
EL 33089	3/01/2023	2/01/2029	458.81	Marrakai	Trachre Pty Ltd	100% ⁴

NORTHERN TERRITORY MINERAL EXPLORATION LICENCE APPLICATIONS						
Tenement	Applied	Expiry	Area (km ²)	Locality	Licensee	Interest
ELA 32445	25/06/2020	-	230.24	T-Bone	Trachre Pty Ltd	100% ⁴
ELA 32446	25/06/2020	-	63.71	Ranger NE	Trachre Pty Ltd	100% ⁴
ELA 32038	22/11/2018	-	127.49	Mount Douglas (Mary River)	Trachre Pty Ltd	100% ⁴

Table 2 Summary of mining tenements acquired in Quarter.

There was one tenement acquired in the September 2023 Quarter.

SOUTH AUSTRALIAN MINERAL EXPLORATION LICENCE APPLICATIONS						
Tenement	Applied	Expiry	Area (km ²)	Locality	Licensee	Interest
2023/00044	11/09/2023	-	294	Mundaerno	Trachre Pty Ltd	100% ⁴

Table 3 Summary of mining tenements surrendered in Quarter

There were no tenements surrendered in the September 2023 Quarter.

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

² Undergoing renewal.

³ Licence subject to litigation.

⁴ Argonaut holds a 95.5% interest in Trachre Pty Ltd via Orpheus Minerals Ltd.

⁵ Subject to compulsory sixth-year partial surrender.

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

ARGONAUT RESOURCES NL

ABN

97 008 084 848

Quarter ended ("current quarter")

SEPTEMBER 2023

Consolidated statement of cash flows		Current quarter \$A'000	Year to date 3 months \$A'000
1.	Cash flows from operating activities		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation		
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(131)	(131)
	(e) administration and corporate costs	(310)	(310)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	-	-
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	-
1.8	Legal costs recovered	70	70
1.9	Net cash from / (used in) operating activities	(371)	(371)
2.	Cash flows from investing activities		
2.1	Payments to acquire or for:		
	(a) entities		
	(b) tenements	(92)	(92)
	(c) property, plant and equipment	-	-
	(d) exploration & evaluation	(220)	(220)
	(e) investments	-	-
	(f) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date 3 months \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities		
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other	-	-
2.6	Net cash from / (used in) investing activities	(312)	(312)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	477	477
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(34)	(34)
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	443	443

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	329	329
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(371)	(371)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(312)	(312)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	443	443

Consolidated statement of cash flows		Current quarter \$A'000	Year to date 3 months \$A'000
4.5	Effect of movement in exchange rates on cash held		-
4.6	Cash and cash equivalents at end of period	89	89

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	89	89
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	89	89

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	81
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

7.	Financing facilities <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	Total financing facilities		-
7.5	Unused financing facilities available at quarter end		-
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

8.	Estimated cash available for future operating activities	\$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(371)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(312)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(683)
8.4	Cash and cash equivalents at quarter end (item 4.6)	89
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	89
8.7	Estimated quarters of funding available (item 8.6 divided by item 8.3)	0.13
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>		
8.8	If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1	Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: Yes.		
8.8.2	Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: Further to the ASX announcement made on 3 July 2023, on 25 September 2023 the Company announced that it will be raising AUD3.66 million (before costs) through a fully underwritten non-renounceable pro-rata entitlement offer of new fully paid ordinary shares in the Company. The Entitlement Booklet was posted to all eligible shareholders on 5 October 2023. Settlement of the capital raise is anticipated to be 23 October 2023.		

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Yes. Refer to the information provided at 8.8.2.

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

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.

Date: 30 October 2023

Authorised by: The Board of Argonaut Resources NL
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow 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 cash flow 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.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.