

Quarterly Report

FOR PERIOD ENDING 30 SEPTEMBER 2024

ASX: ORP



QUARTERLY HIGHLIGHTS

Orpheus Uranium Limited (ASX: ORP) (*Orpheus* or *the Company*) is pleased to report on its activities and cash flow for the quarter ending 30 September 2024.

Mount Douglas

- Geological reconnaissance and sampling commenced during the reporting period. On ground activities are targeting unconformity-style uranium mineralisation similar to other uranium deposits in the Pine Creek Orogen (see ASX announcement, 3 October 2024).
- Approval received from the Northern Territory Government for a Mining Management Plan (MMP) allowing Orpheus to undertake advance-stage exploration activities at Mt Douglas (see ASX announcement, 3 October 2024).
- Localised gravity survey to be completed in collaboration with the NTGS/Geoscience Australia's regional gravity survey planned for commencement in October 2024 (see ASX announcement, 3 October 2024).

Frome Project

- Review of historical exploration drill hole data in conjunction with recently acquired geophysical surveys continues to generate targets increasing the regional prospectivity of the project. A greater comprehension of the regional project area has identified additional targets which will be subject to future follow up work.
- Frome Project drilling program delayed to at least a CY25 commencement due to unforeseen restrictions associated with regulatory approvals for the project (see ASX announcement, 14 August 2024).

Radium Hill South

- Continued engagement with Wilyakali Native Title Aboriginal Corporation to complete required processes to allow advanced stage exploration activities to commence.

Corporate

- The Company had cash and listed investments of \$3.57m at the end of the September 2024 quarter.

Commenting on the September Quarterly results, CEO Clinton Dubieniecki commented:

"At our Frome uranium project in South Australia, we have focused on continuing to interpret the comprehensive datasets within the tenure. This has allowed us to further refine the primary project area and define a selection of regional targets. The Company remains focused on the strategic development of a portfolio of prospective exploration projects, recognising that the Frome Project will remain a mid-term option, providing us with a comprehensive project pipeline."

ORPHEUS URANIUM LIMITED
(previously Argonaut Resources NL)

ASX: ORP (previously ARE)
orpheusuranium.com

CAPITAL STRUCTURE

Issued shares: 189.8m
Debt: nil
Unlisted options: 11m
Cash on hand: \$2.79m
Liquid investments: \$775k

DIRECTORS

Mick Billing - Non-Exec Chairman
Simon Mitchell - Non-Exec Director
Richard Willson - Non-Exec Director & Company Secretary
Todd Williams - Non-Exec Director

URANIUM PROJECTS (SA)

Frome, SA 100%
Radium Hill South, SA 100%
Mundaerno, SA 100%
Woolshed, SA 100%
Marree, SA 100%

URANIUM PROJECTS (NT)

Mount Douglas, NT 100%
Woolner, Marrakai, NT 100%
Ranger NE, NT 100%
T-Bone, NT 100%

Uranium Assets, South Australia and Northern Territory

Orpheus is an active explorer with uranium projects in proven uranium mining jurisdictions of South Australia and the Northern Territory (see Figure 1) prospective for large Tier-1 discoveries.



Figure 1: Location map of uranium assets owned by Orpheus located in South Australia and Northern Territory (not to scale)

Northern Territory – Unconformity-Style Uranium (General)

Orpheus holds strategic ground in Northern Territory (see Figure 2) prospective for unconformity-style uranium similar to the Tier-1 Ranger deposit (owned by Energy Resources of Australia (ASX: ERA)). The Company's current focus is advancing the Mount Douglas project from target definition to advanced-stage activities including drilling.

Orpheus is actively assessing opportunities to enhance the Northern Territory portfolio.

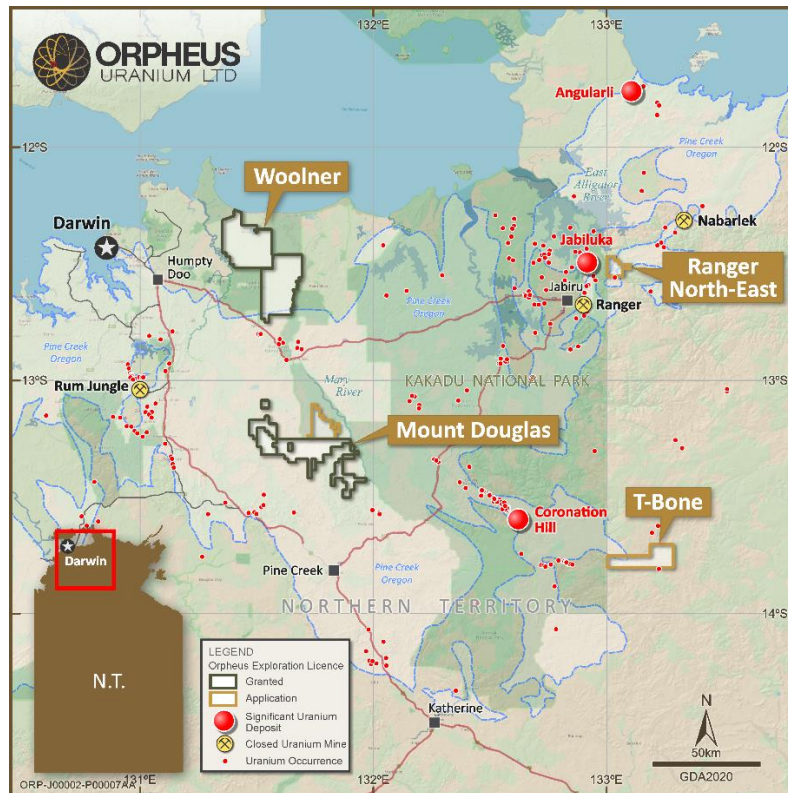


Figure 2: Location map of uranium assets owned by Orpheus located in Northern Territory

Mount Douglas - Overview

- The Mount Douglas project is comprised of two exploration licences and an adjoining application. Tenure is located on the eastern flank of the Rum Jungle Mineral Field (RJMF).
- This field was the first major uranium mining and processing centre in Australia, and is contained within the Pine Creek Orogen, within which the most recent production of Australian unconformity-style uranium mineralisation has occurred.

In detail

Achievements for the Mount Douglas project during the September 2024 quarter include:

- Completion of a geological reconnaissance and sampling program. The program was designed to follow up on previously identified surface radiometric anomalies coherent with target geological formations that are favourable for unconformity-style uranium mineralisation (see Figures 3 to 5).
- The opportunity was taken during the reconnaissance to establish relationships with local stakeholders, including landholders.
- Mining Management Plan (MMP) approvals were recently obtained by Orpheus from the Northern Territory government. This will enable advanced-stage exploration activities including trenching and drilling. The implementation of the program will be dictated by the results of the predecessor activities and land accessibility.

- In parallel, Orpheus has executed contracts with the Northern Territory Geological Survey (NTGS) to co-fund the acquisition of quasi-regional ground gravity geophysical data over the Mount Douglas tenure. The survey is expected to commence early in Q4 2024, with results expected by the end of the quarter. Results of the upcoming survey will be combined with open file data and included in future geophysical modelling and target generation.

Next Steps

- Commence advanced-stage activities over nominated areas subject to accessibility, including approaching wet season.
- Acquire and process gravity dataset in conjunction with reprocessing other available geophysical datasets to define masked unconformity-style targets.

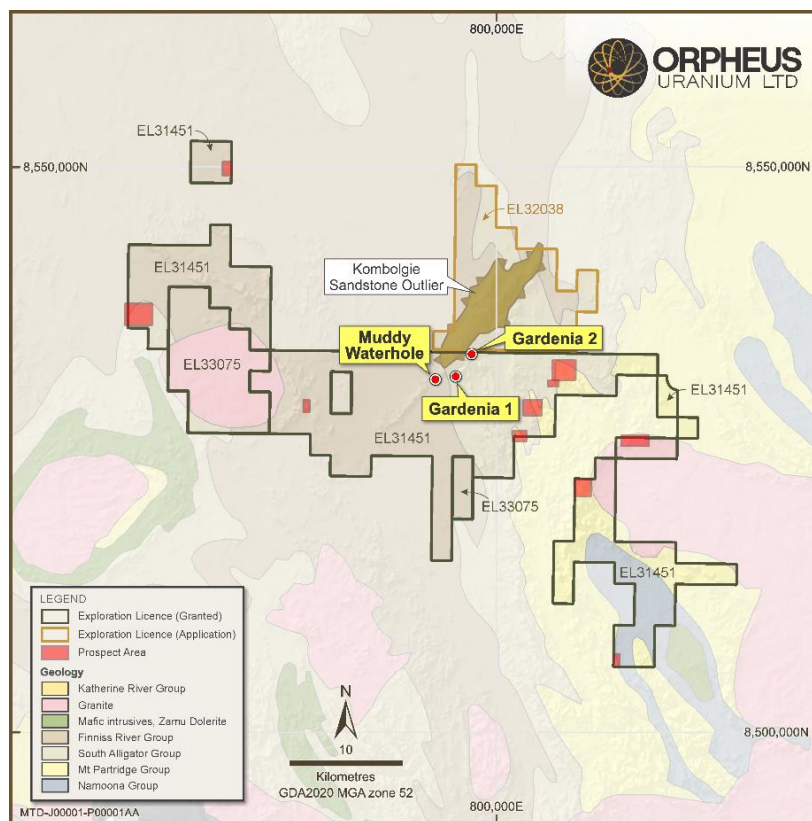


Figure 3: Mount Douglas Project (EL31451, EL 33075, & ELA 32038) Regional geological maps displaying sites of radiometric anomalies (red dots) and prospect areas (red squares).

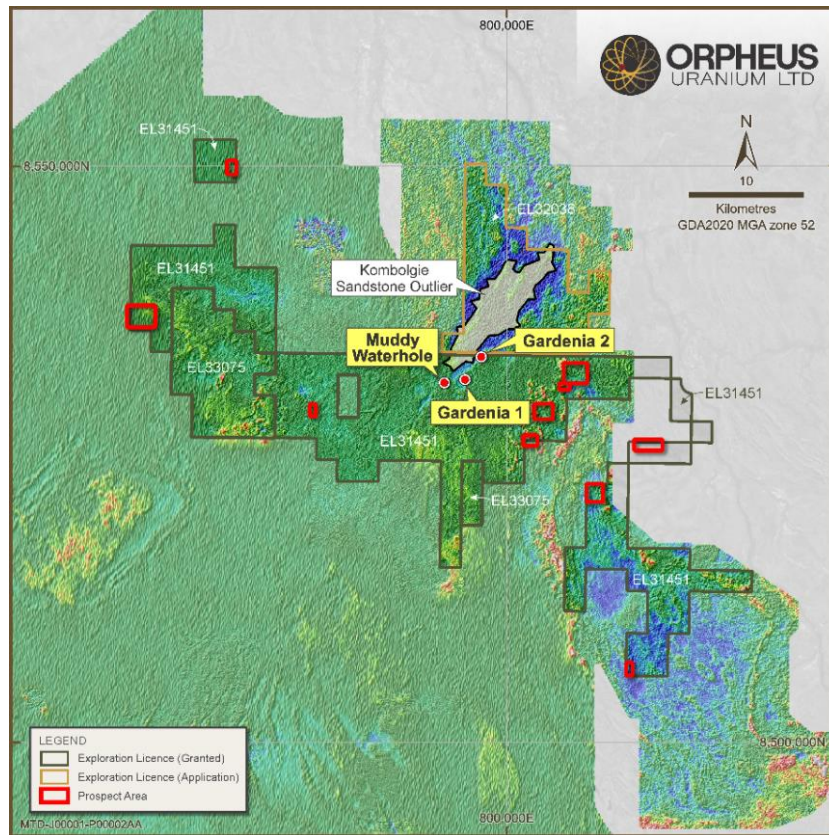


Figure 4: Mount Douglas Project (EL31451, EL 33075, & ELA 32038) Regional radiometric grid (Total Counts), noting that this is multiple historical surveys combined into the one map, therefore radiometric scale is relative.



Figure 5: Mount Douglas Project (EL31451) Gardenia 1 prospect with Kombolgie Sandstone escarpment in background and anomalous South Alligator Group metasediments in foreground.

South Australia – Sedimentary-Style Uranium (General)

Orpheus Uranium has established itself as a leading explorer in the Frome Embayment of South Australia with a large tenement holding covering Tertiary paleochannels adjacent to the world-class Beverley-Four Mile and Honeymoon uranium districts (see Figure 6). The South Australian portfolio comprises the advanced Frome and Radium Hill projects, which are unique for the province and represent two separate greenfield discoveries by Areva (Orano) and Mega Hindmarsh respectively that were never fully explored prior to the collapse in the uranium price following the Fukushima incident in 2011.

Orpheus optioned one of the three tenements comprising the Frome project in February 2021 prior to the recent increase in the uranium spot price and finalised the 100% acquisition in April 2024. Separately, Radium Hill South was awarded to Orpheus by the Government of South Australia via a competitive application process, an endorsement of the unique technical capacity of the Company (see ASX announcement, 7 December 2023).

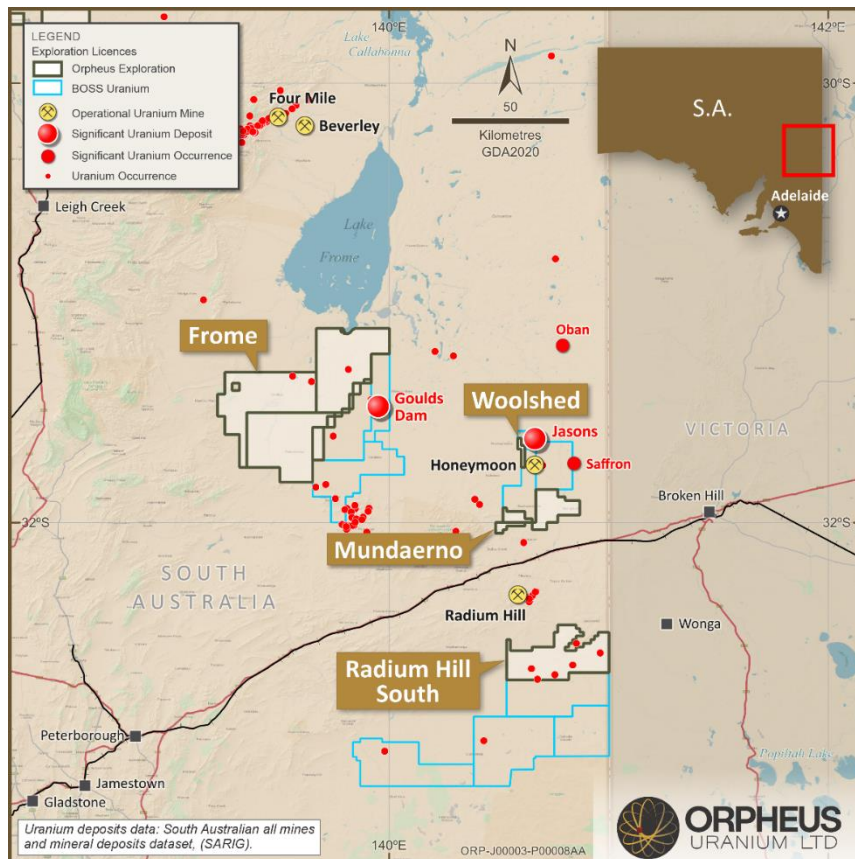


Figure 6: Project locations and uranium occurrences in the highly prospective region of the Frome Embayment, the Southern Curnamona Province and to the south, the northern margin of the Murray-Darling Basin (map not to scale).

Frome Project – Overview

- Advanced exploration project with 73,650m of historical regional and prospect drilling, mostly (~80%) completed by French nuclear company Areva (now Orano) between 2004 to 2014.
- Strategically located 12km west of Boss Energy's (ASX: BOE) Gould's Dam project containing a JORC-compliant resource of 25Mlbs indicated and inferred¹.
- Widespread uranium mineralisation defined within the Erudina paleochannel over an area of 12km by 7km, with 56 drill holes intersecting uranium mineralisation with values over 100ppm EqU in wide 1 km spaced drill traverses (see ASX announcement, 18 December 2023).
- Peak uranium grades in fertile Namba and Eyre Formation sediments of >1,500ppm EqU.

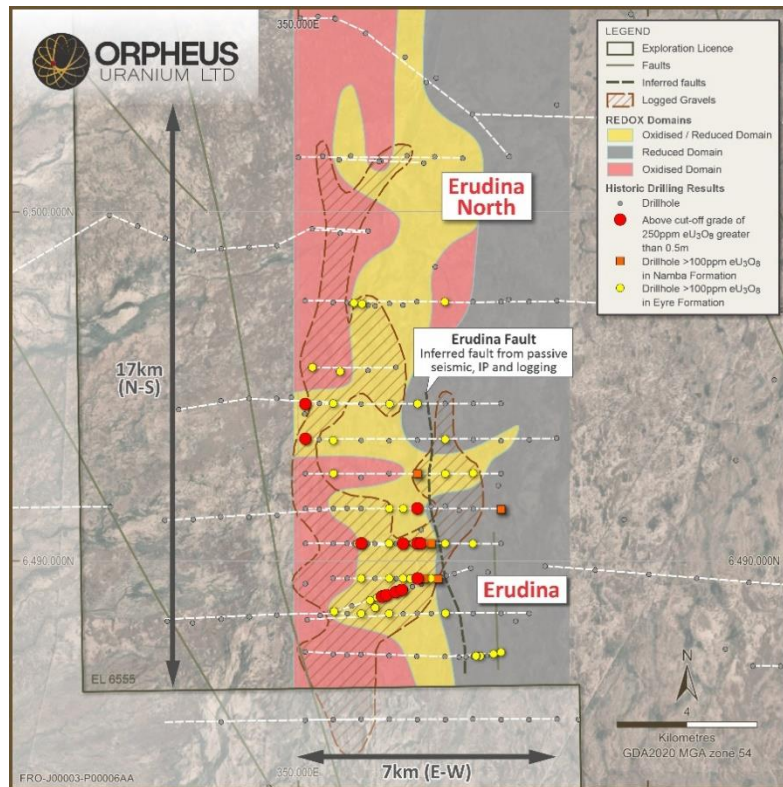
In detail

Achievements for the Frome project during the September 2024 quarter include:

- Completion of 100% acquisition of one of the three tenements comprising the Frome Project (see ASX announcement, 9 April 2024) from Groundwater Geoscience Pty Ltd (Groundwater). Total consideration of \$330,000 cash was paid to Groundwater in July.
- Frome Project drilling program delayed to at least a CY25 commencement due to unforeseen restrictions associated with regulatory approvals for the project (see ASX announcement, 14 August 2024).
- Ongoing review of historical exploration drill hole has extended the Frome project's reduced and oxidised sediments ("REDOX") model north of the Erudina prospect. "Erudina North" contains reduced and oxidised sediments ("REDOX") as a potential fluid-pathway which act as a vector to higher-grade "roll front" style uranium mineralisation (see Figure 7). Drill spacing is >1km, providing valuable infill opportunities proximal to an area that contains known uranium mineralisation.
- Continued interpretation of previously reported passive seismic data and imaging located to the north-east of the project area within EL Frome Downs has identified paleochannel type features in the 'Area of Interest' that deepens, coincident with the airborne electromagnetic (AEM) survey data (see Figure 8). The southern traverse was cleared during the recent Heritage Survey and will be drill tested to determine whether the highly prospective Eyre Formation is present in this region.
- Refined interpretation of previously reported passive seismic data and imaging located in the area to the southeast of the main Erudina prospect area has identified paleochannel (east traverse) and palaeovalley (west traverse) type features (see Figure 9). The region targets an area that is located back toward the inferred uranium source rocks of the Crocker Well Granite Suite that host hard-rock uranium occurrences, Victoria Hut and Spring Hill.

Next Steps

- The Company acknowledges delays in the planned drill program at Frome and is taking all necessary steps to resolve these delays. In the interim, continued interpretation to refine work areas and further generate regional targets within the project will be undertaken.



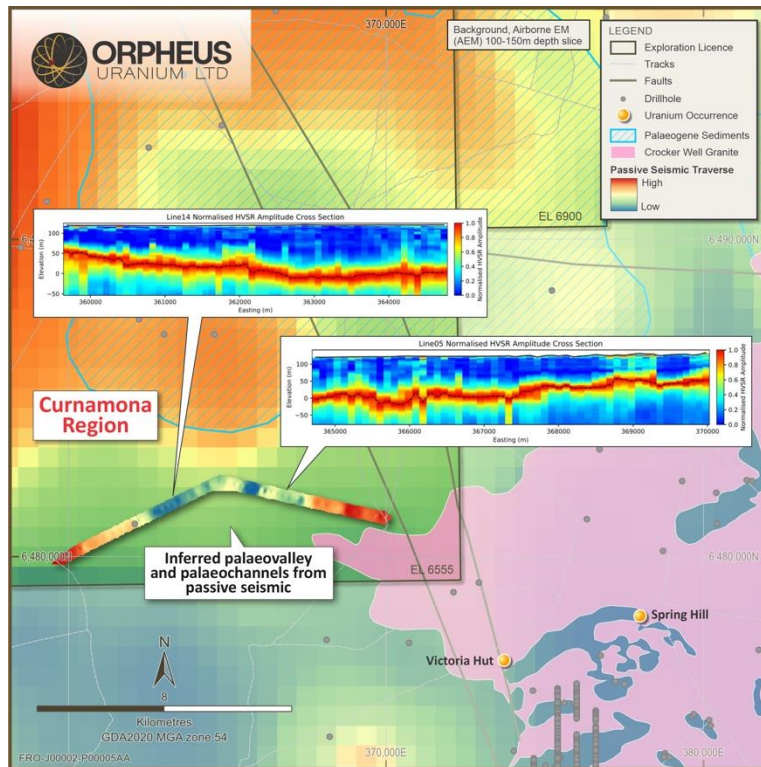


Figure 9: Curnamona (EL 6555) – Passive seismic generated data and imaging identified paleochannel (east traverse) and palaeovalley (west traverse) type features that occur located back toward the inferred uranium source rocks.

Radium Hill South Project – Overview

- Large 797km² exploration licence awarded to Orpheus Uranium by the Government of South Australia in December 2023 via a competitive tender process.
- Strategically located 20km south of the historic Radium Hill Uranium Mine (an important source of basement-hosted uranium mineralisation).
- Advanced greenfields project developed by Mega Hindmarsh in 2006.
- 5 advanced prospects with proven potential for shallow sediment-hosted uranium mineralisation; historical results include:
 - Kinloch Dam: 3m at 507ppm U₃O₈ from 105m
 - Jones Dam: 2m at 401ppm U₃O₈ from 86m
- Potential for new 'step change' discovery in emerging sedimentary Palaeochannel system.

In detail

Achievements for the Radium Hill project during the September 2024 quarter include:

- Ongoing review of 37,564m of historical exploration drill hole data in conjunction with open-file geophysical datasets (airborne electromagnetics, gravity, magnetics, IP) to refine target areas for an inaugural drill program.

Next Steps

- Continued engagement with Wilyakali Native Title Aboriginal Corporation along with a field visit and Heritage Survey to commence on-ground activities, including prospect drilling.

Business Growth – Uranium (General)

Orpheus maintains an active watch and engages with companies in South Australia and Northern Territory that hold tenure within desired geological settings conducive to uranium mineralisation and consistent with the business strategy of undertaking exploration within jurisdictions supportive of uranium exploration and mining, whilst generating material value for shareholders.

NON-URANIUM ASSETS

Nothing to report in the current quarter.

Corporate Activity

Investor Engagement

Following the end of the quarter, board and management presented an Orpheus historical technical and corporate presentation to investors at the Global Uranium Conference in Adelaide. The presentation is available in the Presentations section of the Company's website.

Cash and Investments

The total value of cash and investments in ASX listed companies on 30 September 2024 was approximately \$3.57 million, comprising:

- Cash at bank \$2.79 million
- Shares in listed companies (liquid investments) \$0.775 million

Other

ASX Listing Rule 5.3.1 - Exploration and evaluation expenditure incurred during the quarter was \$0.376m. Details of exploration activities during the quarter are set out in this report.

Expenditure	A '000
Tenement rents/rates	\$84
Land access	\$56
Tenement administration	\$25
Geological consultants	\$13
Geophysical surveys	\$64
Field expenses	\$9
Salaries & wages	\$125
Total	\$376

* Table does not include \$330k payment made during the period for the acquisition of Erudina

ASX Listing Rule 5.3.2 - There was no production or development expenditure incurred during the quarter.

ASX Listing Rule 5.3.5 – Payments to related parties of the Company and their associates during the quarter totalled \$0.121m. Related party payments represented salaries, superannuation and fees paid to directors and the CEO of the Company.

This announcement was approved for release by the Board of Orpheus Uranium Limited.

For further information, please contact:

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About Orpheus Uranium

Orpheus Uranium Limited is an Australian Securities Exchange listed exploration company exploring for uranium in South Australia and the Northern Territory, both jurisdictions which allow uranium mining and processing.

Competent Person Statement

Sections of information contained in this report that relate to Exploration Results were compiled or reviewed by Mr Clinton Dubieniecki BSc (Hons), who is a Member of the Australian Institute of Geoscientists and is a full-time employee of Orpheus Uranium Limited. Mr Dubieniecki 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 Dubieniecki consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

Forward Looking Statements

The written presentation may contain forward-looking statement regarding the outlook for the Company's interpretation, work programs, and financial results. These forward-looking statements generally can be identified by phrases such as "anticipates", "potential", "plans", "intends", "believes", "likely", "appears", "expects", "likely", "appears" or other words or phrases of similar impact. There is inherent risk and uncertainty in any forward-looking statements. Variance will occur and some could be materially different from management's opinion. Developments that could impact the Company's expectations include a variety of known and unknown risks, uncertainties and other factors that could cause actual events or results to differ from those expressed or implied, including, without limitation, business integration risks; uncertainty of development plans and cost estimates, commodity price fluctuations; political or economic instability and regulatory changes; currency fluctuations, the state of the capital markets, Orpheus' ability to attract and retain qualified personnel and management, potential labour unrest, unpredictable risks and hazards related to the development and operation of exploration programs that are beyond the Company's control, the availability of capital to fund all of the Company's projects. These forward-looking statements are made as of the date of this presentation and the Company assumes no obligation to update these forward-looking statements, or to update the reasons why actual results differed from those projected in the forward-looking statements, except in accordance with applicable securities laws.

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	04/06/2018	3/06/2029	27	Myrtle Springs	Kelaray Pty Ltd	100%
EL 6407 ²	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	27/02/2030	198	Andamooka Station	Kelaray Pty Ltd	100%
EL 6554	07/12/2020	6/12/2025	960	Frome Downs	Trachre Pty Ltd	100%
EL 6555	07/12/2020	6/12/2025	947	Curnamona	Trachre Pty Ltd	100%
EL 6703	3/02/2022	2/02/2028	987	Erudina	Trachre Pty Ltd	100%
EL 6900	19/01/2023	18/01/2029	143	Billeroo	Trachre Pty Ltd	100%
EL 6913	9/06/2023	8/06/2029	998	Mundowdna	Trachre Pty Ltd	100%
EL 6914	9/06/2023	8/06/2029	990	Muloorina	Trachre Pty Ltd	100%
EL 6915	9/06/2023	8/06/2029	978	Clayton	Trachre Pty Ltd	100%
EL 6958	18/12/2023	17/12/2029	294	Mundaerno	Trachre Pty Ltd	100%
EL 6960	18/12/2023	17/12/2029	797	Radium Hill South	Trachre Pty Ltd	100%
EL 6989	10/04/2024	9/04/2030	87	Woolshed	Trachre 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%

WESTERN AUSTRALIAN MINERAL EXPLORATION LICENCE						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
E15/1489	14/08/2017	13/08/2027	20.94	Higginsville	Orpheus Uranium Limited	80%

NORTHERN TERRITORY MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
EL 31451	8/09/2017	7/09/2025	484.52	Mount Douglas	Trachre Pty Ltd	100%
EL 33075	3/01/2023	2/01/2029	103.63	Mount Douglas (Ban Ban)	Trachre Pty Ltd	100%
EL 33088	3/01/2023	2/01/2029	473.23	Woolner	Trachre Pty Ltd	100%
EL 33089	3/01/2023	2/01/2029	458.81	Marrakai	Trachre Pty Ltd	100%

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%
ELA 32446	25/06/2020	-	63.71	Ranger NE	Trachre Pty Ltd	100%
ELA 32038	22/11/2018	-	127.49	Mount Douglas (Mary River)	Trachre Pty Ltd	100%

There was one tenement surrendered in the September 2024 Quarter.

Table 2: Summary of mining tenements surrendered in Quarter

SOUTH AUSTRALIAN MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
EL 6923	30/08/2023	29/08/2029	977	Lake Frome	Kelaray Pty Ltd	100%

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

² Undergoing renewal.