

ASX:AGE

# Advancing Samphire Uranium Project into Trial Production



**Alligator  
Energy**

Red Cloud Securities Pre-PDAC  
Greg Hall – CEO – February 2025

## Forward Looking Statements

This presentation contains projections and forward-looking information that involve various risks and uncertainties regarding future events. Such forward-looking information can include without limitation statements based on current expectations involving a number of risks and uncertainties and are not guarantees of future performance of the Company. These risks and uncertainties could cause actual results and the Company's plans and objectives to differ materially from those expressed in the forward-looking information. Actual results and future events could differ materially from anticipated in such information. These and all subsequent written and oral forward-looking information are based on estimates and opinions of management on the dates they are made and expressly qualified in their entirety by this notice. The Company assumes no obligation to update forward-looking information should circumstances or management's estimates or opinions change.

## Competent Person's Statement – Uranium and Previously Reported Information

Information in this report is based on current and historic Exploration and Resource Drilling Results compiled by Dr Andrea Marsland-Smith, who is a Member of the AusIMM. Dr Marsland-Smith is employed by Alligator Energy as Chief Operating Officer (COO) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity she is undertaking (including 15 years working with ISR uranium development and operations) to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Marsland-Smith consents to the inclusion in this release of the matters based on her information in the form and context in which it appears.

In relation to Exploration results and Mineral Resource estimates referred to in the announcements referred to on slides 4,7,8,10,11 and 17 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 that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. In relation to production target referred to on slides 7 and 9, the Company confirms that all material assumptions underpinning the production target, and the forecast financial information derived from the production target, in the initial announcement continue to apply and have not materially changed.

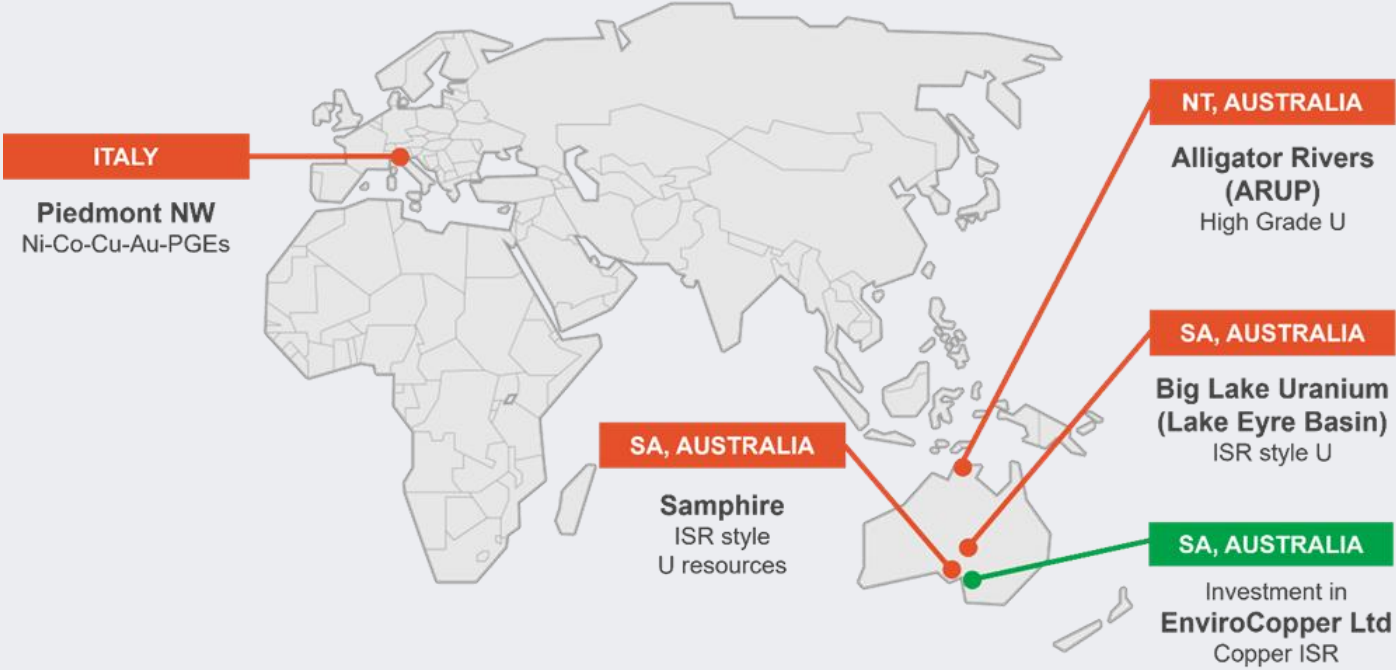
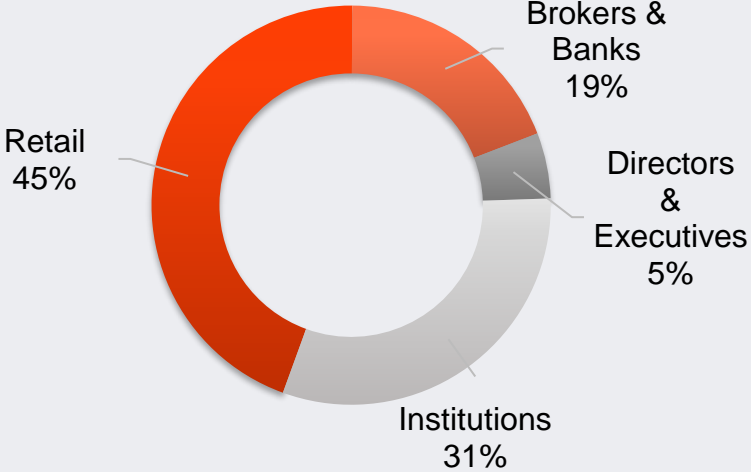
## Competent Person's Statement – Nickel Cobalt exploration

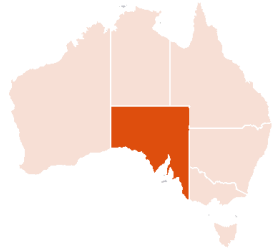
Information in this report is based on current and historic Exploration Results compiled by Mr Geoffrey Chapman who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Chapman is a Consultant Geologist with Alligator Energy Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Chapman consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

## Capital Structure (as at 29 Jan 2025)

Share Price	\$0.036
Ordinary Shares	3,873.6 M
Perf Shares, Listed & Unlisted Options	462.2 M
Cash as at 31 Dec 2024	\$ 20.2 M
Market Cap	\$140 M

## Top 50 Shareholders





## Tier One location

Samphire ISR Uranium Project in South Australia, tier one location with ~40 years of uranium mining and production



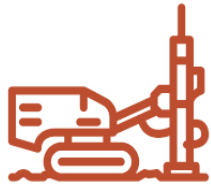
## Experienced Team

Exp ISR production team in place, uranium Executives, marketing expertise in place, future offtake from late this decade



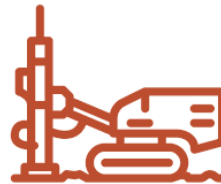
## Trial Production

ISR Field Recovery Trial planned for H2 2025 will derisk project, inform the feasibility study, and position Samphire to be SA's next uranium mine



## Significant resource with expansion potential

~18 million pounds of  $U_3O_8$ , satellite deposit, and addition exploration target of up to 75 million pounds  $U_3O_8$



## New discovery

Big Lake Project in Lake Eyre Basin represents a new ISR U discovery in a previously untested region



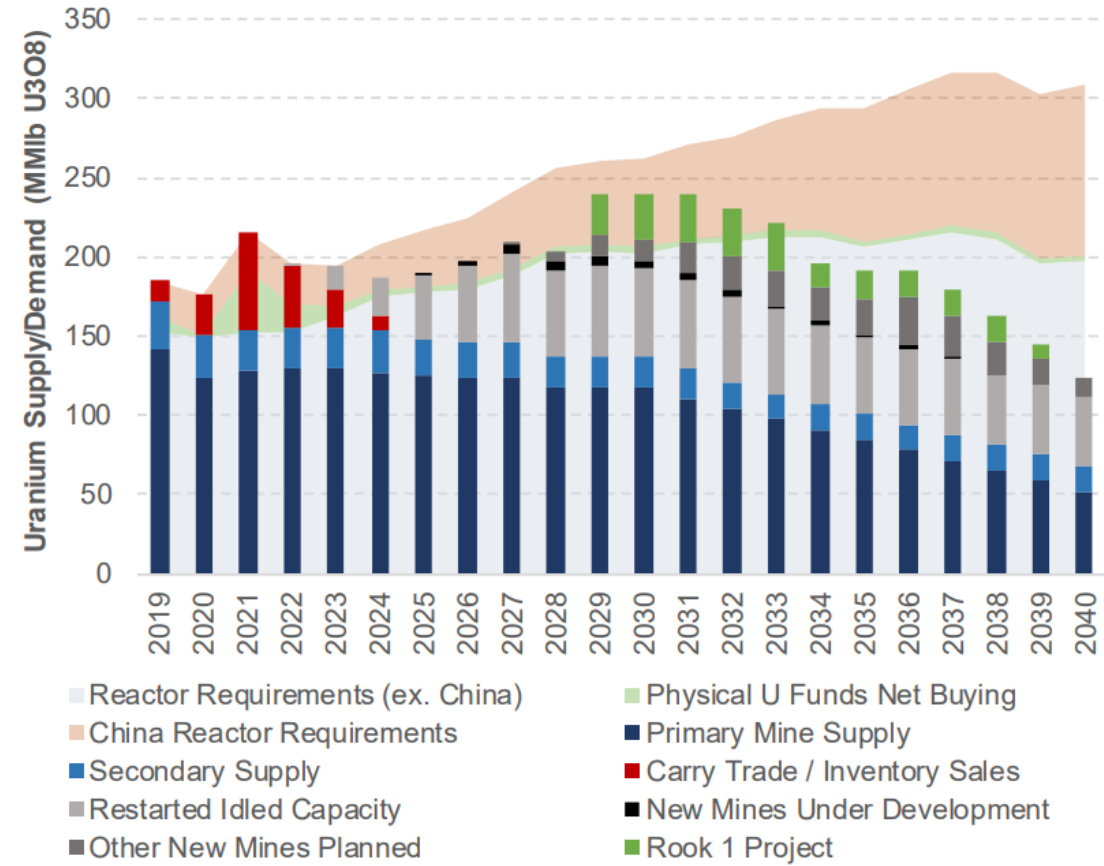
## Well capitalised

Strong Aust market support with Cash Balance of \$20.2 million (as of Dec 31 2024)



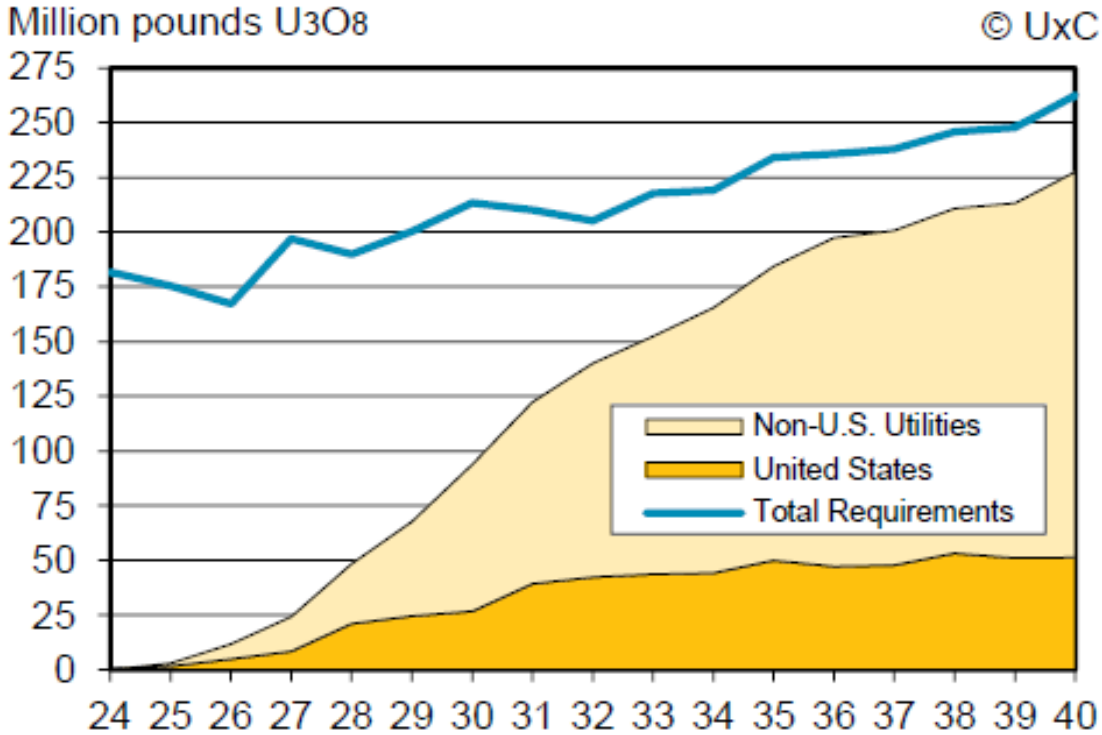
# Uranium and Nuclear Fuel market

Exhibit 1. Updated Supply/Demand Model



Source: Cantor Fitzgerald

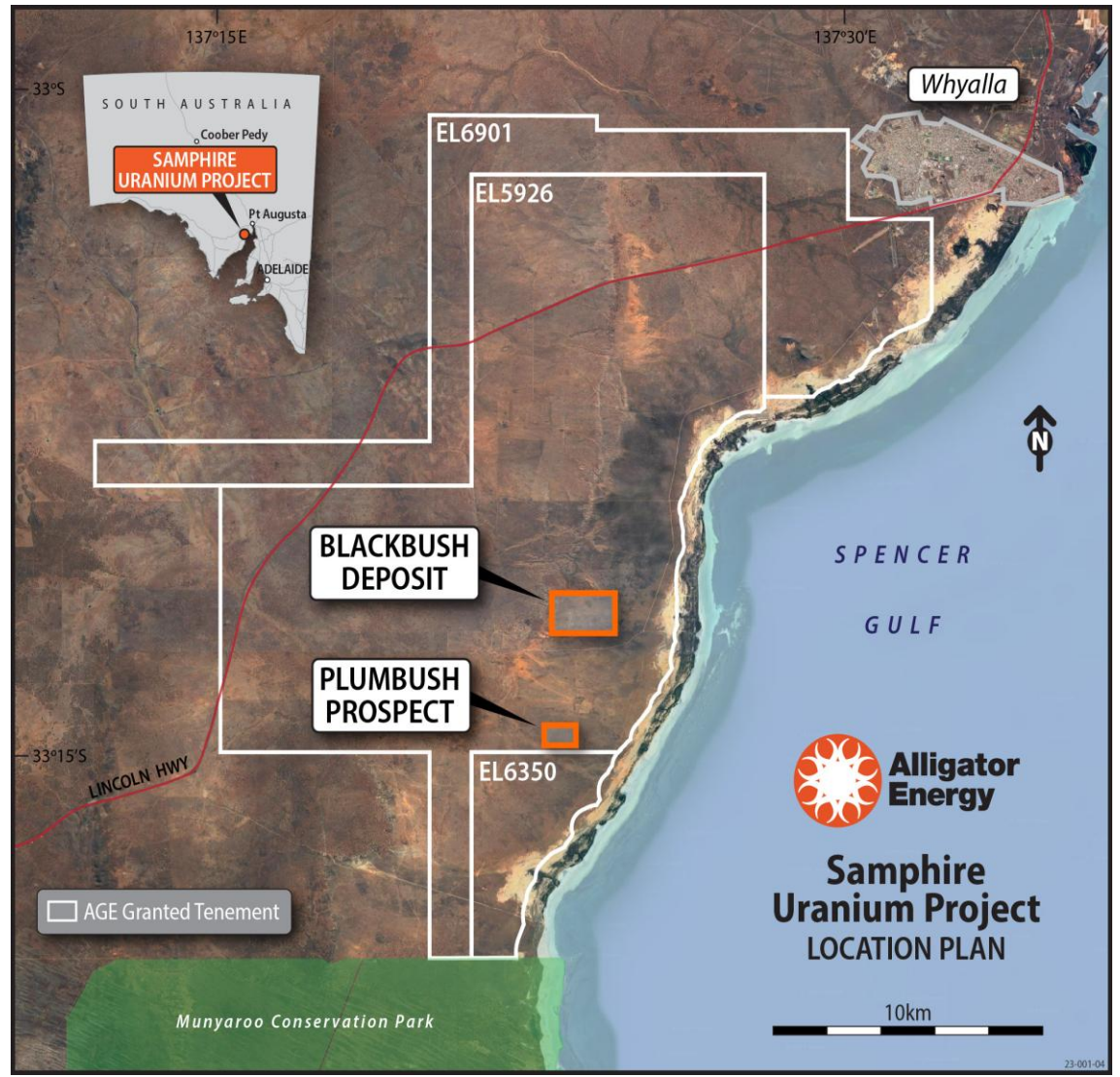
Figure E-4. Uncovered Requirements



© UxC



# Samphire Uranium project: South Australia – experience in uranium





### **20kms from Whyalla, SA**

**Excellent regional infrastructure and skilled labour-force**



### **Robust Scoping Study- 1.2 Mlb / annum prod.**

**A\$131m capex, 42% IRR, and 2.45 yr payback**

Refer ASX release 14 December 2023  
"Scoping Study Update"



### **JORC compliant resource**

**17.5 Mlbs uranium resource, satellite prospect to drill, with significant scope for growth**



### **Pilot ISR trial operations imminent**

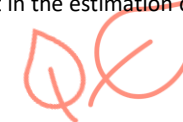
**Fabricated and delivered to site, lease approved, awaiting operating plan approval**



### **Regional exploration opportunities**

**Exploration Target estimates additional 14 - 75 Mlbs**

Note: the potential quantity and grade of the Exploration Target is conceptual in nature as there has been insufficient exploration to date to estimate a Mineral Resource and it remains uncertain whether further exploration will result in the estimation of a Mineral Resource



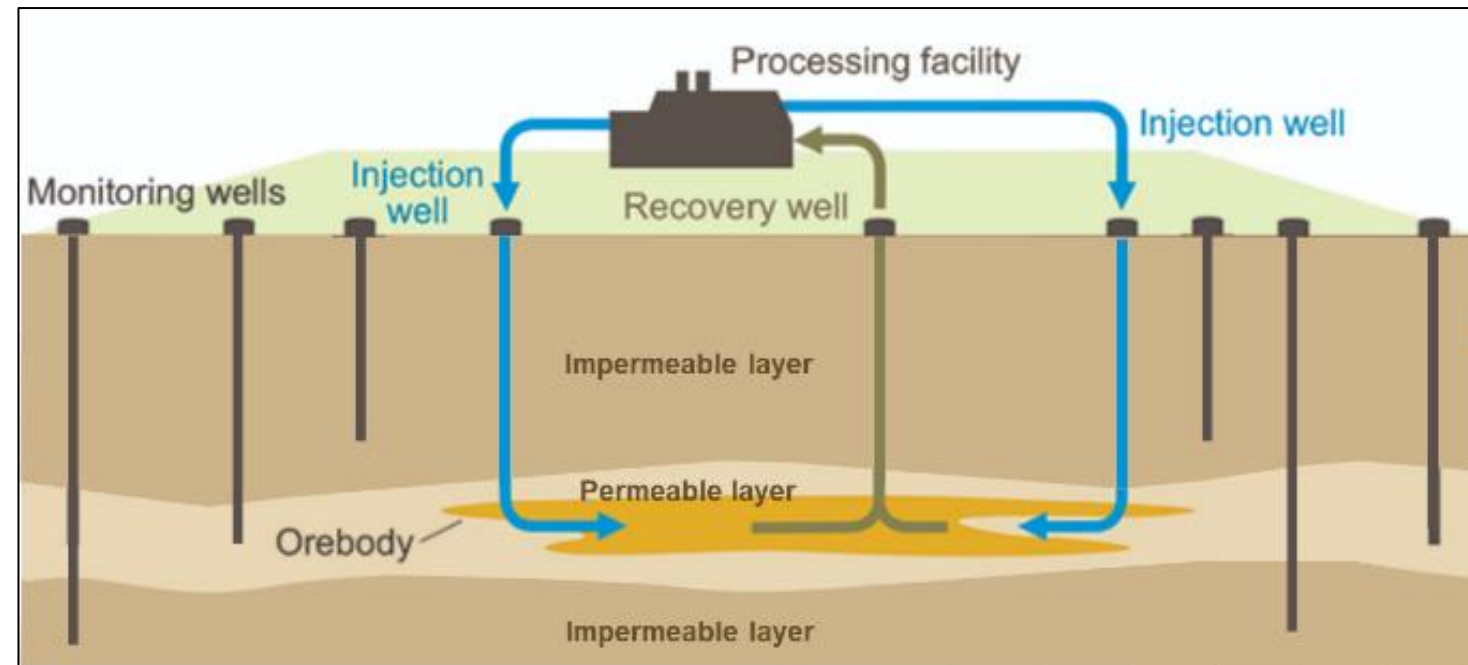
### **ESG**

**Strong ESG credentials, with environmental commendation awarded by SA government**

# Samphire Uranium project: A highly competitive In-Situ Recovery project

- **Initial low capital cost estimate of A\$131 million**, despite significant contingencies totalling 35%.
- **AISC at the lower end of cost curve**, due to:
  - In-situ Recovery (ISR) amenable,
  - nature of the deposit, shallow depth (200 to 260ft), excellent formation porosity, and
  - high leaching dynamics.
- **Location** near Whyalla affords lower cost of key infrastructure, locally based workforce (i.e. no FIFO or camp), experienced mining services and business support.
- **Expansion potential** - Exploration Target Range (Dec 23) estimating an additional 14 - 75 Mlbs on top of 17.5Mlbs resource. Multi-year resource extension and step-out drilling to increase mine life and production rate.
- Field Recovery Trial on receipt of final operating plan regulatory approval to **de-risk project** and confirm parameters to be used in feasibility study during 2H 2025

Conceptual Model of ISR





# Samphire Uranium Project – Dec 2023 Scoping Study† : 1.2 Mlbs pa project

## Study metrics\* at US\$75 / lb uranium price



**A\$131m**

**CAPEX**

(including contingency)



**2.45 years**

**Payback**



**42%**

**IRR\***

(post-tax, real,  
ungeared)



**A\$257m**

**NPV<sub>g</sub>\***

(post-tax, real,  
ungeared)



**US\$33.31/lb**

**AISC**

(A\$47.58/lb)



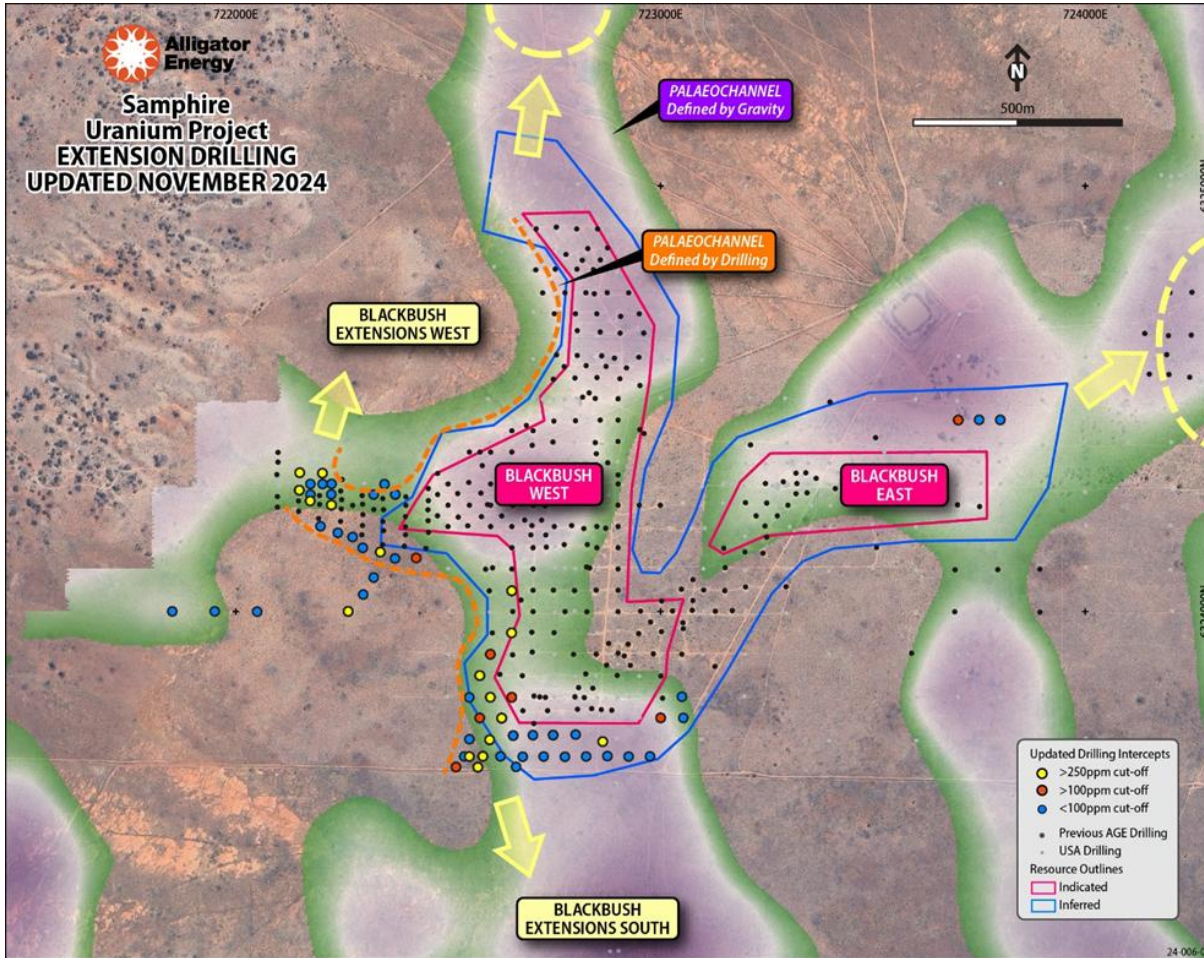
**US\$16.06/lb**

**Cash Costs**

(A\$22.94 /lb)

† Ref ASX release 14 December 2023 “Scoping Study Update”: Alligator confirms that all material assumptions underpinning the ‘production target’ or the forecast financial information derived from the ‘production target’ continue to apply and have not materially changed other than the outlook for the long-term uranium price as set out above; \*Calculated using 0.70 US/A\$ exchange rate inclusion of significant contingencies and inflation of 35%.

# Samphire Uranium Project – Blackbush 2024 Drilling and resource update



Significant uranium mineralisation intersections from Blackbush West uranium roll fronts has delivered further targets outside of the Inferred mineral resource. Announced in ASX release dated 21 Nov 2024:

- BBRM24-304: 1.3 meters at 1.94% (19,391ppm)  $pU_3O_8$  from 62.6m (GT 25,208)
- BBRM24-278: 1.1 meters at 0.44% (4,392ppm)  $pU_3O_8$  from 62.94m (GT 4,832)
- BBRM24-338: 2.4 meters at 0.20% (1,948ppm)  $pU_3O_8$  from 56.7m (GT 4,675)
- BBRM24-321: 1.1 meters at 0.36% (3,633ppm)  $pU_3O_8$  from 58.59m (GT 3,996)
- BBRM24-282: 1.7 meters at 0.23% (2,314ppm)  $pU_3O_8$  from 63.1m (GT 3,934)
- BBRM24-283: 0.8 meters at 0.45% (4,506ppm)  $pU_3O_8$  from 65.03m (GT 3,604)
- BBRM24-318: 0.7 meters at 0.36% (3,566ppm)  $pU_3O_8$  from 59.1m (GT 2,497)
- BBRM24-330: 0.8 meters at 0.18% (1,791ppm)  $pU_3O_8$  from 63.1m (GT 1,433)
- BBRM24-314: 0.6 meters at 0.17% (1,734ppm)  $pU_3O_8$  from 59.14m (GT 1,040)

An update of the JORC Resource Estimate inclusive of all 2024 drill results to be completed in Q1, 2025, targeting both resource expansion and category conversion from inferred to indicated

*Note:  $pU_3O_8$  denotes that the grade has been determined by Prompt Fission Neutron downhole logging*

*GT= grade(ppm) x thickness(m) – divide by 10,000 for m% GT*

*ASX release 1 May 2024 – Extension of Uranium Mineralisation at Samphire, and ASX release 21 Nov 2024 – Significant Drilling Results – Samphire Uranium Project Update*

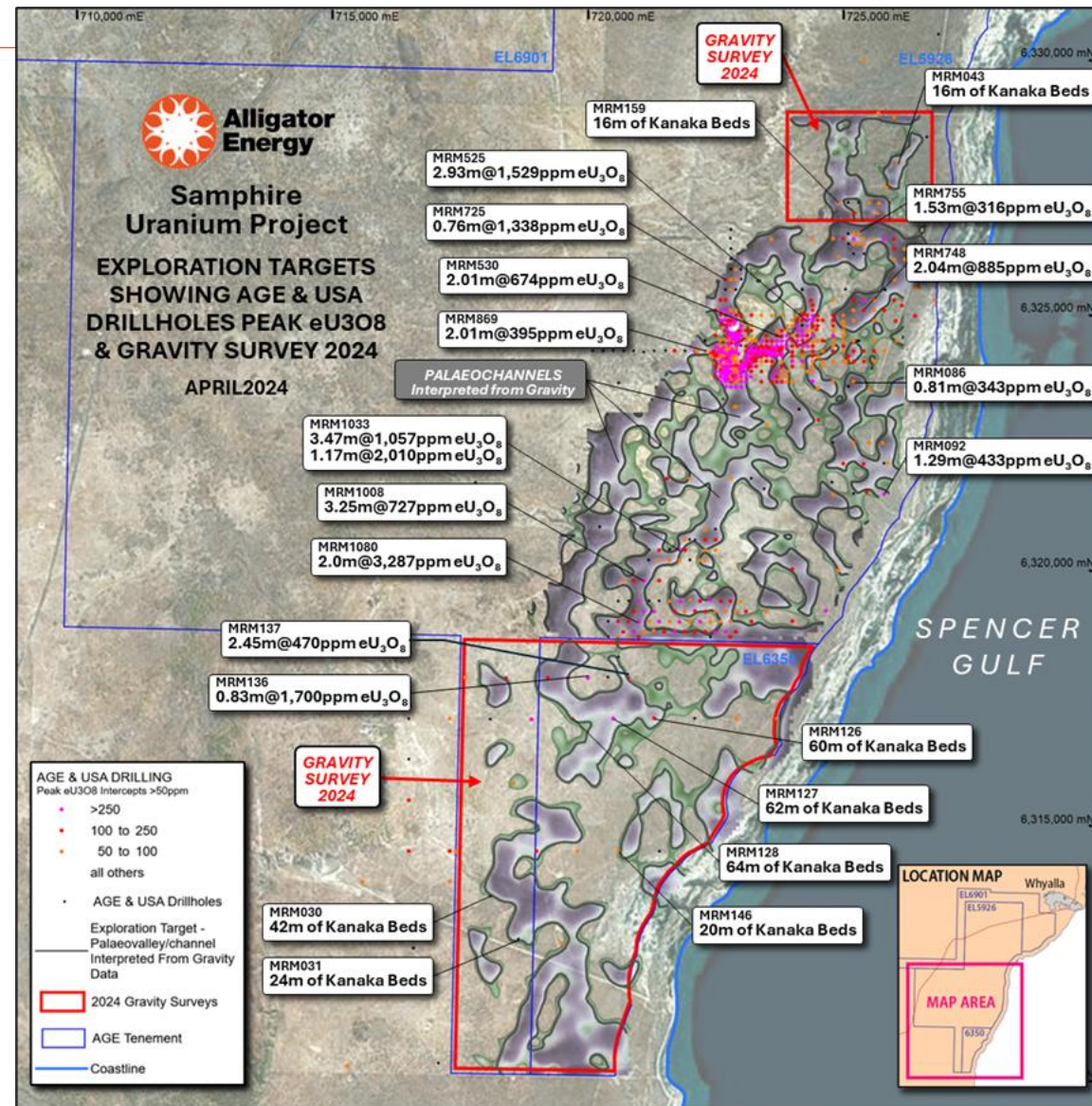


# Further Extensions outside the Exploration Target Range Envelope

## Ground Gravity Survey- April 2024

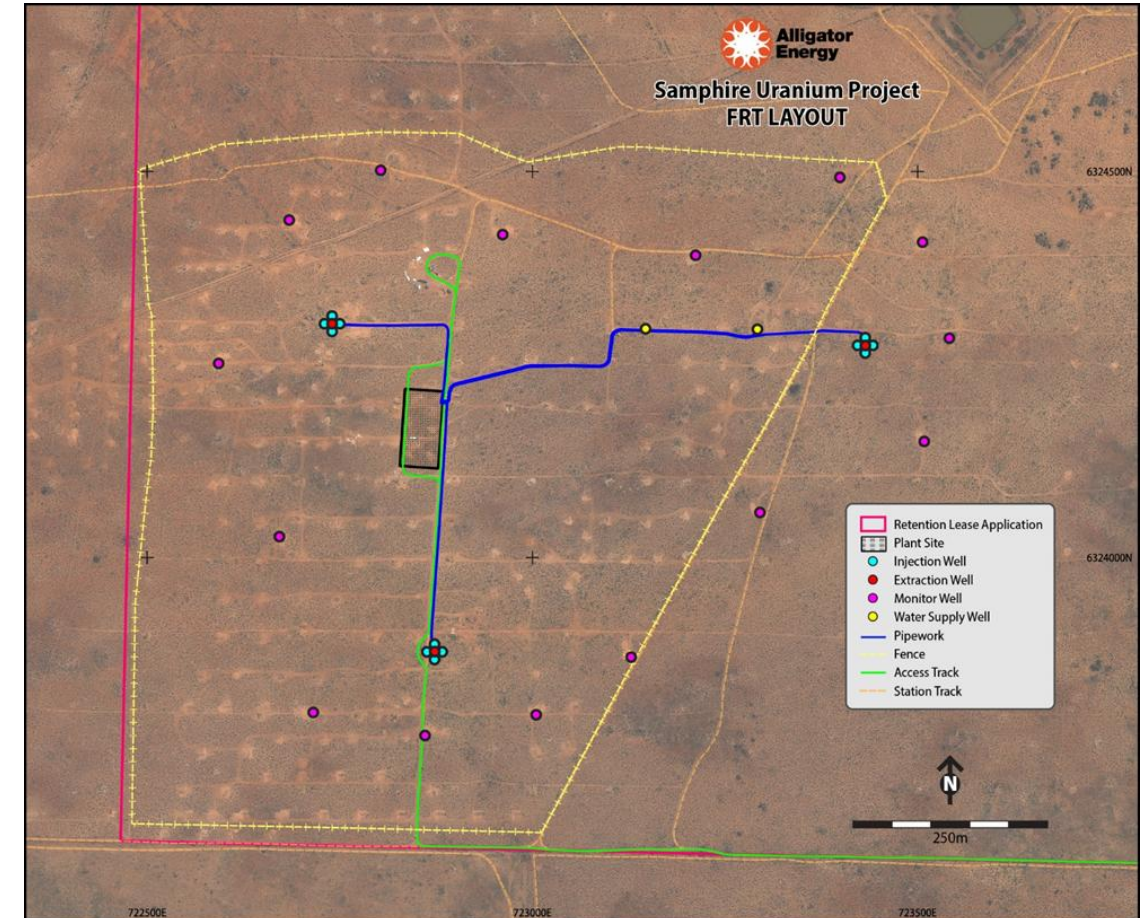
- Exploration target range – additional 14 to 75 Mlbs
- Ground gravity data shows outstanding continuity of the Samphire palaeochannel system by 34 lineal km's.
- 50% increase to the existing palaeochannel strike length to ~over 90kms.
- Historical drillholes confirm that extensions contain the same thick sequences of Kanaka Bed sands which host the Blackbush Mineral Resource .
- Multiple historical drillhole intersections (above 250ppm eU3O8 cutoff) confirm that uranium is ubiquitous throughout this system.
- 72% (over 70km) of the prospective areas of the entire Samphire palaeochannel system remain completely untested by drilling.
- Significant potential for new discoveries and resource growth in the Project area.

Refer ASX Announcements 7 December 2023 and 2 May 2024



# Samphire Uranium Project – Field Recovery Trial (FRT)

- Field Recovery Trial (FRT) construction targeted for mid year pending PEPR (operating plan) regulatory approval. Plant fully fabricated and delivered to AGE's Whyalla yard.
- FRT operation for 3-4 months and consists of three producing well patterns and a containerised pilot plant.
- FRT is designed to confirm key operating parameters and marks an important step toward development.
- Parameters to be assessed include in-situ chemistry, hydrogeology, uranium recovery, reagent usage, and other environmental and economic factors.
- Data and learnings further de-risk the Project and provides the necessary inputs to a full feasibility study and Mining Lease Application during H2 2025.
- EoI's to select engineering firms for feasibility study to commence



# Samphire Uranium Project – Field Recovery Trial Plant

- Fabrication of the containerised FRT processing plant completed - delivered to AGE's Whyalla yard in July 2024.
- Expressions of Interest to five Whyalla based companies for onsite civils and pilot plant construction evaluated. Preferred company to be announced in coming weeks.
- Plant control system set up and tested. Commissioning and operating plans being finalised for initiation.
- Post-FRT and subject to any further testing, well infrastructure and plant to be removed, and area rehabilitated – pilot plant available for future satellite field testing.
- Samples of final clean eluate solution containing extracted uranium oxide to be further processed into  $U_3O_8$  concentrate offsite for Converter quality samples.

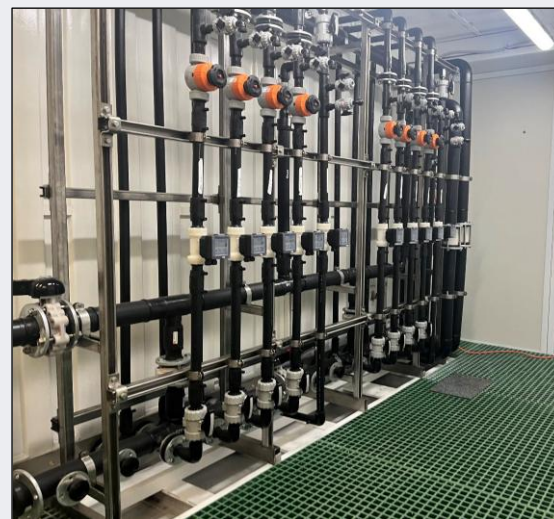
Pilot plant layout



Ion Exchange Module



Wellhouse Module (pipe room)



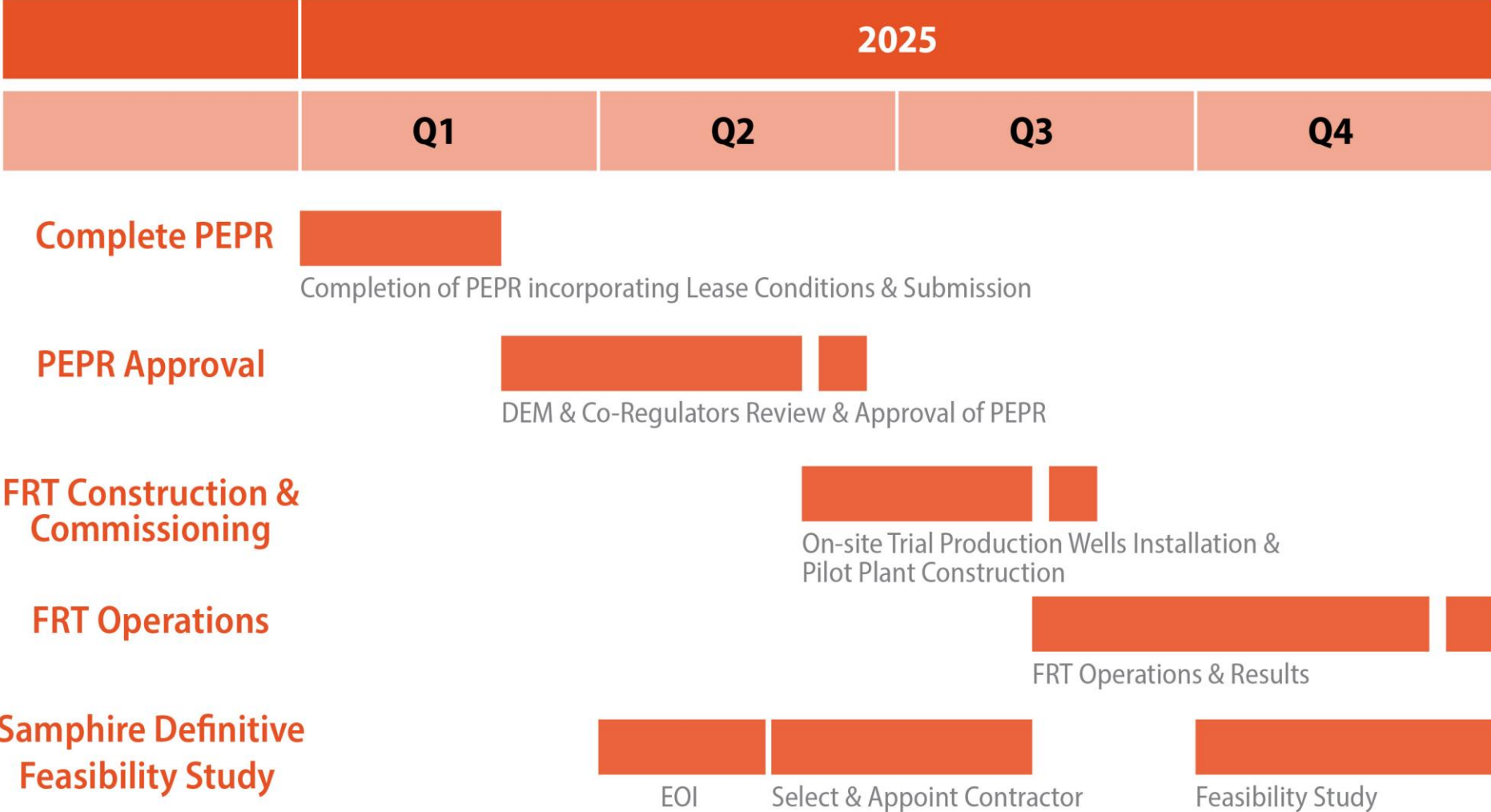
Delivered to site



# 2025 Plans and Targets

- **Jan – Retention Lease approval with assigned conditions for Field Recovery Trial (FRT)**
- **Feb – Submission of Program for Environment Performance and Rehabilitation (PEPR) – FRT operating plan**
- **Feb – Start of second exploration program on Big Lake Uranium discovery**
- **Feb – Alligator Rivers data review and workshop on next steps and targets**
- **Mar / Apr – Updated uranium resource for Blackbush Deposit, Samphire project**
- **May / Jun – Anticipated approval of PEPR – Commencement of trial production well drilling for FRT**
- **Jun / Jul – On-site construction of Samphire FRT pilot plant – civils, plant, infrastructure**
- **1H – Expression of Interest to engineering groups for Samphire Feasibility to commence Q3**
- **Aug to Nov – Operation of Field Recovery Trial – incl RO plant operation**
- **Q3 – Initial regulatory discussion around Scoping for future full mine approvals**
- **2H – Commence Plumbush satellite deposit resource drilling (subject to successful pastoral access agreement and cultural heritage survey)**
- **Q3 – potential next BLU drilling program subject to results**

# 2025 Plans and Targets



25-001-01

# Exploration projects



**NT, AUSTRALIA**

**Alligator Rivers  
(ARUP)**  
High Grade U

**SA, AUSTRALIA**

**Big Lake  
(Cooper Basin)**  
ISR style U

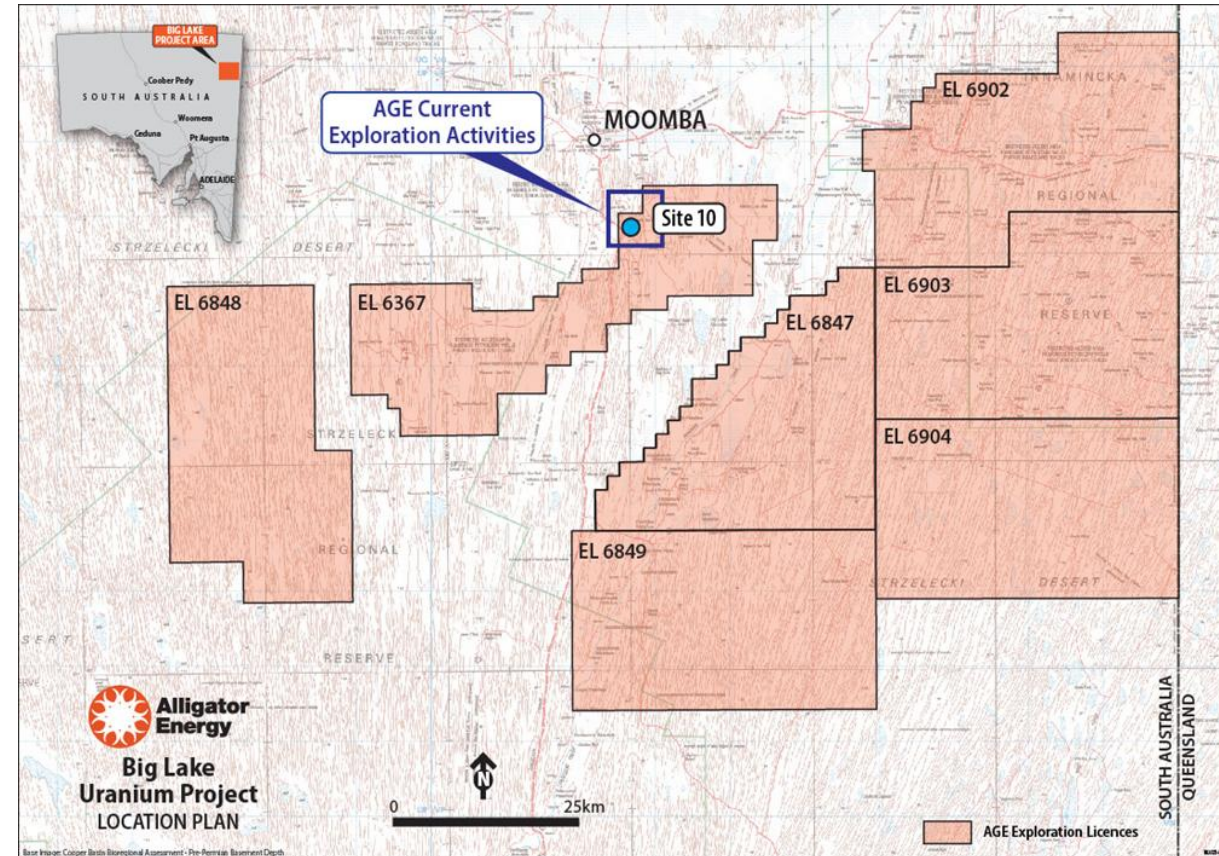
**SA, AUSTRALIA**

Investment in  
**EnviroCopper Ltd**  
Copper ISR



# Big Lake Uranium - Inaugural Drilling Program Discovery Success

- Inaugural drilling program intersected significant thicknesses of anomalous uranium mineralisation within interbedded palaeochannel sand units in the Namba Formation.
- Discovery is first proof of concept that significant uranium is present within Lake Eyre basin sediments above the hydrocarbon-rich Cooper Basin within potentially ISR amenable host and depths.
- Laboratory chemical assay results validate the in-field XRF measurements for contained uranium. These include:
  - AC24-021 20m @ 110 ppm U from 106 m
  - AC24-022 35 m @ 117 ppm U from 93 m
  - AC24-023 5 m @ 47 ppm U from 104 m
  - AC24-025 10 m @ 138 ppm U from 108 m
- The indicative grade-thickness of two intersections is at or near the economic cut off used at the Company's Samphire ISR uranium project near Whyalla, SA.
- Second drilling program now underway include rotary mud drilling for deeper drilling into both the Namba and Eyre formations.



Refer ASX releases 13 August 2024 and 23 October 2024

ASX:AGE



**Alligator  
Energy**

**Greg Hall *CEO***

**+61 (0) 7 3839 3904**

[gh@alligatorenergy.com.au](mailto:gh@alligatorenergy.com.au)

[www.alligatorenergy.com.au](http://www.alligatorenergy.com.au)