Alligator Energy

ASX Announcement

8 June 2023

Drilling results update, Samphire Uranium Project, South Australia

Alligator Energy Limited **ASX: AGE** (**Alligator** or the **Company**) is pleased to advise of further significant results from the 2023 drilling program underway at the Blackbush Deposit (**Blackbush**), and update progress on preparations for the Field Recovery Trial (FRT) at the Samphire Uranium Project south of Whyalla, South Australia.

Highlights

- ***Significant uranium mineralisation intersections encountered from recent drilling in the current Blackbush JORC Mineral Resource envelope.***
  - Results are expected to support an increased confidence level (inferred to indicated category) in a further Blackbush Mineral Resource Estimate update targeted for late 2023.
  - Significant uranium mineralisation intersections include (see *Figure 1* for full detail):

    Blackbush East:
    - **1.78 metres at 0.45% (4,569ppm) pU3O8[1] from 61.70 metres (GT[2] 8,132)**
    - **1.94 metres at 0.11% (1,106ppm) pU3O8 from 58.20 metres (GT 2,145)**
    - **1.26 metres at 0.19% (1,916ppm) pU3O8 from 58.76 metres (GT 2,414)**
    - **1.30 metres at 0.21% (2,149ppm) pU3O8 from 60.72 metres (GT 2,793)**

    Blackbush West:
    - **1.18 metres at 0.25% (2,557ppm) pU3O8 from 69.68 metres (GT 3,017)**
    - **1.12 metres at 0.26% (2,696ppm) pU3O8 from 73,95 metres (GT 3,019)**
    - **1.58 metres at 0.10% (1,097ppm) pU3O9 from 77.44 metres (GT 1,733)**
    - **1.92 metres at 0.15% (1,539ppm) pU3O8 from 74.51 metres (GT 2,964)**

- ***Proposed drilling for the next four months, with two drill rigs now on site, is focused on both further in-fill/step-out drilling and installation of monitor and extraction/injection wells for the FRT at Blackbush.***
  - A further 100-120 rotary mud holes are planned this year to:
    - In-fill drill to continue to lift the confidence level (inferred to indicated category) in Blackbush Mineral Resource Estimate, and
    - Continue step-out drilling targeting additional roll-front uranium mineralisation in the paleochannels to the north, west and south-west of the deposit.

- ***Preparations for the field recovery trial (FRT) at Samphire now well underway***
  - One rig solely focussed on installation of groundwater monitor and extraction/injection wells required for the FRT. Three monitor wells installed into the basement have been completed to date.
  - Long lead time capital items identified, and procurement processes commenced.
  - Experienced ISR Process Engineer set to join the FRT team in late June.
  - Department for Energy and Mining (DEM) currently assessing Retention Lease application.

[1] *Note: pU3O8 denotes that the grade has been determined by PFN downhole logging*
[2] *GT= grade(ppm) x thickness(m) – divide by 10,000 for m% GT*

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Alligator's CEO Greg Hall stated: *"The 2023 drilling program set to span 7 months has had a great start. After a three-week field break in late April / early May, to enable the pastoralist to manage their lambing season, we are now back on the ground operating with two drill rigs.*

Drilling this year within the Blackbush deposit is providing us with improved confidence in the quality and continuity of the uranium mineralisation and this creates a great platform for the field recovery trial and our plans for an updated JORC Mineral Resource Estimate towards the end of 2023.

Our recently announced Scoping Study production schedule was limited by the current indicated resource quantum, and our targeted increase in this will enable evaluation of an enhanced schedule and study.

Further to this, our experienced roll-front mapping capabilities auger well for identification of additional uranium mineralisation in the planned step-out drilling as part of this year's work.

Alligator is continuing its recruitment of experienced ISR management and technical expertise and is very pleased to have secured a full time experienced ISR process engineer to work with our EPCM contractor for the Field Recovery Trial as well as ongoing processing design work. Preparations for this trial continue with commitments being made for long-lead time items and DEM initiated public consultation for our Retention Lease application expected to occur in the coming weeks."

Samphire 2023 Drilling Program

Uranium resource drilling recommenced late February this year at Blackbush. The program commenced with installation of three basement groundwater monitoring wells over several weeks underneath the Blackbush FRT area required for Retention Lease approvals and monitoring requirements during FRT operation.

Post completion of the basement wells, delineation and extensional drilling commenced as part of a ~150-hole program drilling priority areas within the Blackbush mineralised system. So far this year, thirty-six (36) holes have been drilled for 3,116m, testing the target Kanaka Sands. The recent drilling, as well as planned drilling for the next four months, is focussed on:

- **Close-spaced in-fill drilling to 25m to finalise locations of the FRT test wellfields.** As part of this close spaced drilling program, multiple mineralised roll fronts have been intersected in both Blackbush East and Blackbush West. A further 6 delineation holes (to be drilled shortly) are planned in the southern portion of Blackbush West to finalise the location of FRT wellfield in that area of the deposit.

  Drilling produced some significant grade intercepts, including:

  <u>Blackbush East</u>

  - **1.78 metres at 0.45% (4,569ppm) pU3O8 from 61.70 metres (GT 8,132)**
  - **1.94 metres at 0.11% (1,106ppm) pU3O8 from 58.20 metres (GT 2,145)**
  - **1.26 metres at 0.19% (1,916ppm) pU3O8 from 58.76 metres (GT 2,414)**
  - **1.30 metres at 0.21% (2,149ppm) pU3O8 from 60.72 metres (GT 2,793)**

  <u>Blackbush West</u>

  - **1.08 meters at 0.13% (1,338ppm) pU3O8 from 75.02 metres (GT 1,445)**
  - **1.12 metres at 0.26% (2,696ppm) pU3O8 from 73,95 metres (GT 3,019)**
    - *Including 0.34 metres at 0.5% pU3O8 from 74.39 metres (GT 1,704)*
  - **1.58 metres at 0.10% (1,097ppm) pU3O9 from 77.44 metres (GT 1,733)**
  - **1.92 metres at 0.15% (1,539ppm) pU3O8 from 74.51 metres (GT 2,964)**
    - *Including 0.26 metres at 0.35% pU3O8 from 75.37 metres (GT 0,920)*

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- **In-fill drilling in the Inferred Resource envelope of both Blackbush East and Blackbush West.** The objective of this program of work is to continue to increase the confidence in Mineral Resource Estimate through conversion of the Inferred category to Indicated status. Holes planned target interpreted roll fronts within the mineralised system. Significant uranium intercepts have been intersected in this program to date (Figure 1) identifying mineralised areas not previously recognised and remain open for testing by extensional drilling (refer next dot point below). Significant grade intercepts in the in-fill program (additional to the above) include:

  <u>Blackbush East</u>

  - **1.48 metres at 0.13% (1,336ppm) pU3O8 from 61.70 metres (GT 1,977)**

  <u>Blackbush West</u>

  - **1.18 metres at 0.25% (2,557ppm) pU3O8 from 69.68 metres (GT 3,017)**

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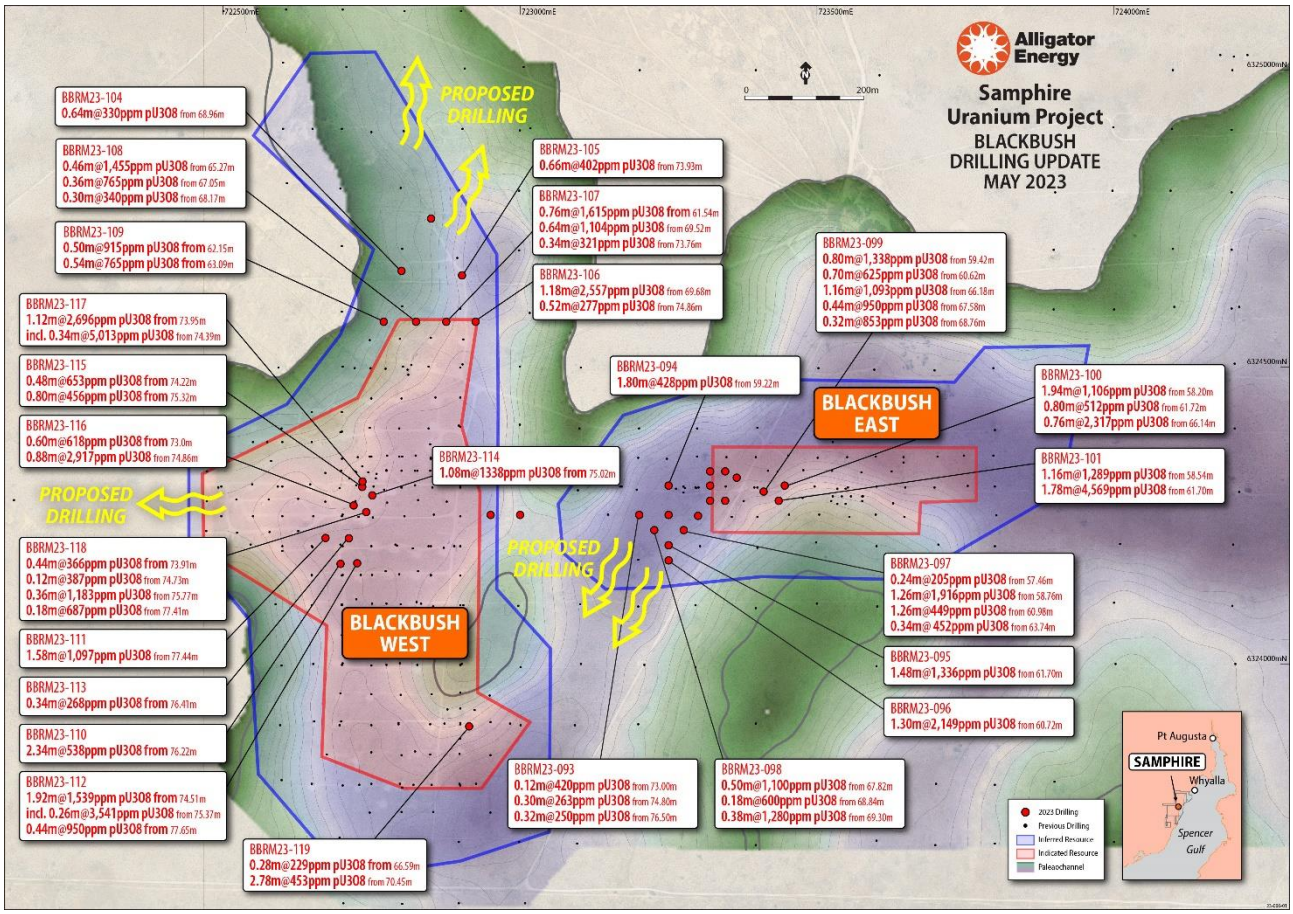

Figure 1: Previous drilling (black dots) and AGE 2023 drillholes (red dots). Uranium intercepts shown are those hosted within the Kanaka sands > 250ppm from the 2023 drilling program only. Open positions not adequately tested are shown as yellow arrows. These areas are earmarked for priority drill testing for the remainder of the year.

- **A step-out extensional drilling program is planned for the coming months.** The western and northern channel areas and the area between Blackbush East and Blackbush West (southwestern direction) is considered highly prospective for extension to the uranium mineralisation.

The recent in-fill drilling between Blackbush East and West has identified several uranium mineralised roll fronts extending in a south-westerly direction, outside the current Inferred Mineral Resource envelope (Figure 1). The area north of Blackbush West also shows potential for extension to the north as evidenced by AGE's recent infill drilling coupled with elevated uranium present in wide (100-200m) spaced historical drillholes. Engagement is currently underway to arrange a cultural heritage survey which is required over a portion of the northern and western channel areas in order extend drilling in this area.

Field Recovery Trial

Final design and costing for the FRT plant and related infrastructure is now complete with procurement for long capital lead items underway. The South Australian Department for Energy and Mining (DEM) recently advised that the Retention Lease application has been accepted and assessment will commence subject to some additional baseline descriptions and data on the groundwater characteristics and flow dynamics of aquifers in the application area. AGE has installed the three basement groundwater monitoring wells underneath the FRT area required for this analysis and the data is being finalised by the Company for an updated data submission by the end of June. One rig is now solely focussed on installation of remainder of the groundwater monitor and extraction/injection wells required for the operation of the FRT.

AGE has further added to its ISR team via the recruitment of an experienced full time ISR Process Engineer set to join the FRT team in late June, who will work with Alligator's existing consultants and EPCM contractor to ensure an effective and technically valuable field recovery trial will be undertaken.

The aim of the Field Recovery Trial is to confirm and prove up the existing positive bench scale testwork undertaken last year and provide the parameters for a planned Feasibility Study next year on an initial start-up project.

This announcement has been authorised for release by the Alligator Energy CEO.

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Forward Looking Statement

This announcement 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.

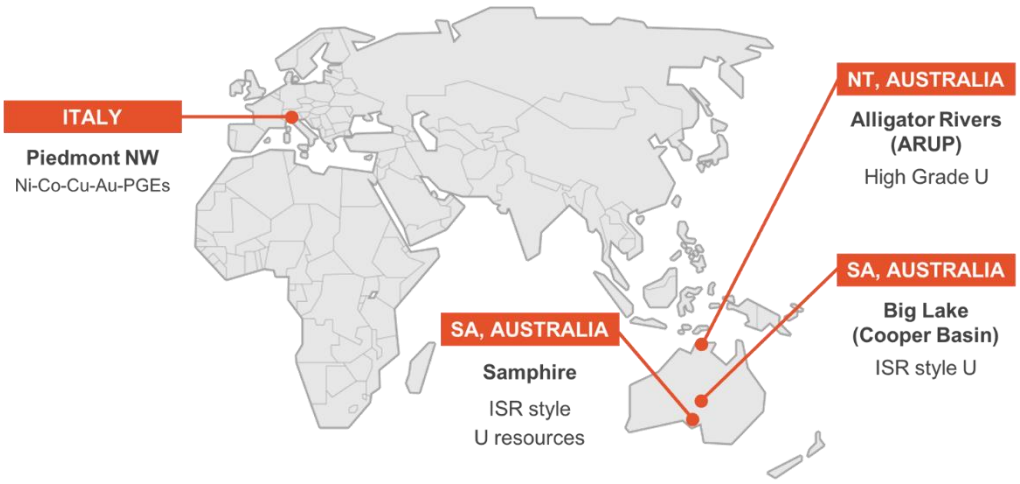
Competent Person's Statement

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 on a full-time basis with Alligator Energy as Chief Operating Officer, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration (including 21 years in ISR uranium mining operations and technical work) and to the activity she 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. 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.

About Alligator Energy

Alligator Energy Ltd is an Australian, ASX-listed, exploration company focused on uranium and energy related minerals, principally cobalt-nickel. Alligator's Directors have significant experience in the exploration, development and operations of both uranium and nickel projects (both laterites and sulphides).

Projects



APPENDIX 1 - In accordance with ASX Listing Rule 5.7.2 the Company provides the following information.

Table 1: All significant uranium intersections from PFN logging (pU_3O_8) of the rotary mud drilling program above 0.5m minimum thickness, >0.025% pU_3O_8 (250ppm pU3O8) with internal dilution 0.25m

Holeid	Easting (GDA94, Z53)	Northing (GDA94, Z53)	RL	Azimuth	Dip	Hole Depth (m)	Depth From (m)	Depth To (m)	Thickness (m)	pU3O8 (%)	pU3O8 (ppm)	Grade x Thickness (mppm)	Grade x Thickness m%
BBRM23-084	722850	6324750	23.1	000	-90	90	77.1	77.3	0.24	0.05	520	125	0.012
BBRM23-084	722850	6324750	23.1	000	-90	90	78.4	78.9	0.56	0.09	925	518	0.050
BBRM23-085	723319	6324277	17.7	000	-90	90	65.9	66.2	0.3	0.02	231	69	0.006
BBRM23-085	723319	6324277	17.7	000	-90	90	70.6	71.0	0.36	0.02	206	74	0.007
BBRM23-085	723319	6324277	17.7	000	-90	90	75.8	75.9	0.12	0.03	296	36	0.004
BBRM23-086	723345	6324279	17.3	000	-90	88	64.9	65.3	0.4	0.02	228	91	0.008
BBRM23-086	723345	6324279	17.3	000	-90	88	68.1	68.2	0.1	0.03	302	30	0.003
BBRM23-086	723345	6324279	17.3	000	-90	88	68.6	68.9	0.22	0.03	348	77	0.007
BBRM23-086	723345	6324279	17.3	000	-90	88	69.7	69.8	0.14	0.03	289	40	0.004
BBRM23-086	723345	6324279	17.3	000	-90	88	73.7	73.8	0.14	0.01	136	19	0.001
BBRM23-086	723345	6324279	17.3	000	-90	88	74.3	74.7	0.42	0.02	181	76	0.008
BBRM23-086	723345	6324279	17.3	000	-90	88	76.4	76.6	0.18	0.04	353	64	0.007
BBRM23-086	723345	6324279	17.3	000	-90	88	77.1	77.3	0.18	0.03	298	54	0.005
BBRM23-089	723342	6324326	17.6	000	-90	93	55.2	55.6	0.4	0.02	218	87	0.008
BBRM23-089	723342	6324326	17.6	000	-90	93	56.0	56.8	0.8	0.03	290	232	0.024
BBRM23-089	723342	6324326	17.6	000	-90	93	57.6	59.7	2.1	0.05	522	1096	0.105
BBRM23-089	723342	6324326	17.6	000	-90	93	78.7	78.9	0.22	0.03	289	64	0.007
BBRM23-090	723320	6324325	17.6	000	-90	89	52.3	52.7	0.44	0.04	359	158	0.018
BBRM23-090	723320	6324325	17.6	000	-90	89	58.4	59.7	1.3	0.03	327	425	0.039
BBRM23-090	723320	6324325	17.6	000	-90	89	62.3	62.5	0.26	0.02	231	60	0.005
BBRM23-091	723300	6324250	18.2	000	-90	90	64.5	64.9	0.4	0.02	227	91	0.008
BBRM23-091	723300	6324250	18.2	000	-90	90	65.4	65.8	0.4	0.03	328	131	0.012
BBRM23-091	723300	6324250	18.2	000	-90	90	66.7	67.0	0.34	0.02	234	80	0.007
BBRM23-091	723300	6324250	18.2	000	-90	90	67.5	67.8	0.22	0.03	334	73	0.007
BBRM23-091	723300	6324250	18.2	000	-90	90	73.4	73.9	0.54	0.02	204	110	0.011
BBRM23-091	723300	6324250	18.2	000	-90	90	81.0	81.1	0.08	0.04	373	30	0.003
BBRM23-091	723300	6324250	18.2	000	-90	90	81.3	81.5	0.2	0.02	213	43	0.004
BBRM23-092	723250	6324255	18.7	000	-90	92	66.6	67.3	0.72	0.02	203	146	0.014
BBRM23-092	723250	6324255	18.7	000	-90	92	77.9	78.1	0.2	0.02	247	49	0.004
BBRM23-092	723250	6324255	18.7	000	-90	92	78.3	78.5	0.2	0.02	171	34	0.004
BBRM23-092	723250	6324255	18.7	000	-90	92	78.9	79.1	0.16	0.03	332	53	0.005
BBRM23-092	723250	6324255	18.7	000	-90	92	80.7	80.8	0.12	0.03	316	38	0.004
BBRM23-092	723250	6324255	18.7	000	-90	92	82.7	82.9	0.22	0.03	281	62	0.007
BBRM23-093	723200	6324256	18.9	000	-90	91	73.0	73.1	0.12	0.04	420	50	0.005
BBRM23-093	723200	6324256	18.9	000	-90	91	74.8	75.1	0.3	0.03	263	79	0.009
BBRM23-093	723200	6324256	18.9	000	-90	91	76.5	76.8	0.32	0.03	250	80	0.010
BBRM23-094	723247	6324301	18.4	000	-90	93	59.22	61.02	1.8	0.04	428	770	0.072
BBRM23-095	723246	6324201	19.1	000	-90	84	61.7	63.18	1.48	0.13	1336	1977	0.192
BBRM23-096	723250	6324175	19.0	000	-90	88	60.72	62.02	1.3	0.21	2149	2794	0.273
BBRM23-097	723275	6324225	18.6	000	-90	86	57.46	57.7	0.24	0.02	205	49	0.005
BBRM23-097	723275	6324225	18.6	000	-90	86	58.76	60.02	1.26	0.19	1916	2414	0.239
BBRM23-097	723275	6324225	18.6	000	-90	86	60.98	62.24	1.26	0.04	449	566	0.050
BBRM23-097	723275	6324225	18.6	000	-90	86	63.74	64.08	0.34	0.05	452	154	0.017
BBRM23-098	723225	6324225	19.2	000	-90	92	67.82	68.32	0.5	0.11	1100	550	0.055
BBRM23-098	723225	6324225	19.2	000	-90	92	69.3	69.68	0.38	0.13	1280	486	0.049
BBRM23-099	723410	6324290	17.0	000	-90	87	59.42	60.22	0.8	0.13	1338	1070	0.104
BBRM23-099	723410	6324290	17.0	000	-90	87	60.62	61.32	0.7	0.06	625	438	0.042
BBRM23-099	723410	6324290	17.0	000	-90	87	66.18	67.34	1.16	0.11	1093	1268	0.128
BBRM23-099	723410	6324290	17.0	000	-90	87	67.58	68.02	0.44	0.1	950	418	0.044
BBRM23-099	723410	6324290	17.0	000	-90	87	68.76	69.08	0.32	0.09	853	273	0.029
BBRM23-100	723445	6324300	17.1	000	-90	82	58.2	60.14	1.94	0.11	1106	2146	0.213
BBRM23-100	723445	6324300	17.1	000	-90	82	61.72	62.52	0.8	0.05	512	410	0.040
BBRM23-100	723445	6324300	17.1	000	-90	82	66.14	66.9	0.76	0.23	2317	1761	0.175
BBRM23-101	723435	6324275	17.1	000	-90	80	58.54	59.7	1.16	0.13	1289	1495	0.151
BBRM23-101	723435	6324275	17.1	000	-90	80	61.7	63.48	1.78	0.46	4569	8133	0.819
BBRM23-102	722950.0	6324250.0	17.9	000	-90	66	No results due to hole drilled outside the palaeochannel						
BBRM23-103	723000.0	6324250.0	17.8	000	-90	63							
BBRM23-104	722804	6324660	22.8	000	-90	81	68.96	69.6	0.64	0.03	330	211	0.019
BBRM23-105	722905	6324654	21.9	000	-90	91	73.93	74.59	0.66	0.04	402	265	0.026
BBRM23-106	722920	6324573	21.2	000	-90	86	69.68	70.86	1.18	0.26	2557	3017	0.307
BBRM23-106	722920	6324573	21.2	000	-90	86	74.86	75.38	0.52	0.03	277	144	0.016
BBRM23-107	722872	6324576	21.1	000	-90	77	61.54	62.3	0.76	0.16	1615	1227	0.122
BBRM23-107	722872	6324576	21.1	000	-90	77	69.52	70.16	0.64	0.11	1104	707	0.070
BBRM23-107	722872	6324576	21.1	000	-90	77	73.76	74.1	0.34	0.03	321	109	0.010
BBRM23-108	722825	6324578	21.4	000	-90	79	65.27	65.73	0.46	0.15	1455	669	0.069
BBRM23-108	722825	6324578	21.4	000	-90	79	67.05	67.41	0.36	0.08	765	275	0.029
BBRM23-108	722825	6324578	21.4	000	-90	79	68.17	68.47	0.3	0.03	340	102	0.009
BBRM23-109	722773	6324576	22.5	000	-90	78	62.15	62.65	0.5	0.09	915	458	0.045
BBRM23-109	722773	6324576	22.5	000	-90	78	63.09	63.63	0.54	0.08	765	413	0.043
BBRM23-110	722700	6324180	23.2	000	-90	90	76.22	78.56	2.34	0.05	538	1259	0.117
BBRM23-111	722680	6324215	22.8	000	-90	96	77.44	79.02	1.58	0.11	1097	1733	0.174
BBRM23-112	722730	6324180	23.2	000	-90	88	75.37	75.63	0.26	0.35	3541	921	0.091
BBRM23-112	722730	6324180	23.2	000	-90	88	74.51	76.43	1.92	0.15	1539	2955	0.288
BBRM23-112	722730	6324180	23.2	000	-90	88	77.65	78.09	0.44	0.1	950	418	0.044
BBRM23-113	722720	6324215	23.3	000	-90	90	76.41	76.75	0.34	0.03	268	91	0.010
BBRM23-114	722755	6324288	21.7	000	-90	90	75.02	76.1	1.08	0.13	1338	1445	0.140
BBRM23-115	722740	6324300	21.6	000	-90	90	74.22	74.7	0.48	0.07	653	313	0.034
BBRM23-115	722740	6324300	21.6	000	-90	90	75.32	76.12	0.8	0.05	456	365	0.040
BBRM23-116	722728	6324265	22.5	000	-90	90	73	73.6	0.6	0.06	618	371	0.036
BBRM23-116	722728	6324265	22.5	000	-90	90	74.86	75.74	0.88	0.29	2917	2567	0.255
BBRM23-117	722740	6324301	21.0	000	-90	90	74.39	74.73	0.34	0.5	5013	1704	0.170
BBRM23-117	722740	6324301	21.0	000	-90	90	73.95	75.07	1.12	0.27	2696	3020	0.302
BBRM23-118	722743	6324260	22.5	000	-90	90	73.91	74.35	0.44	0.04	366	161	0.018
BBRM23-118	722743	6324260	22.5	000	-90	90	74.73	74.85	0.12	0.04	387	46	0.005
BBRM23-118	722743	6324260	22.5	000	-90	90	75.77	76.13	0.36	0.12	1183	426	0.043
BBRM23-118	722743	6324260	22.5	000	-90	90	77.41	77.59	0.18	0.07	687	124	0.013
BBRM23-119	722915	6323896	21.0	000	-90	84	66.59	66.87	0.28	0.02	229	64	0.006
BBRM23-119	722915	6323896	21.0	000	-90	84	70.45	73.23	2.78	0.05	453	1259	0.139

pU3O8 grades have been aquired by a Prompt Fission Neutron Tool (PFN22) which was calibrated at the Australian Mineral Development Laboratories (AMDEL) calibration facility (Adelaide) and then checked for repeatability by regularly logging a fibreglass-cased calibration hole onsite (MRC002,723703E, 6324350N (GDA94), depth 84.5m). All pU_3O_8 grades were claculated and corrected for borehole size from caliper data taken every 5cm downhole and using the equation *{2.737*({EPITHERM}/{THERMAL}-0.02)}*{-1*Power(10,-06)*Power({CAL},2)+0.0097*{CAL}-0.0313}*

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JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Rotary mud drilling was used to obtain 2m samples in the non-target area and 1m mud /chip samples within the target area. • Downhole wireline logging using a Prompt Fission Neutron (PFN) tool was used to calculate pU_3O_8 from the ratio of epithermal and thermal neutrons. • The PFN used in this program was calibrated using industry standard procedures at the Australian Mineral Development Laboratories (AMDEL) calibration facility (Adelaide).
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• All holes were drilled by Watson Drilling with typical hole diameter being 6" (152.4mm). • All holes were vertical.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Caliper data show that borehole size increases in zones of unconsolidated sands, hence all pU_3O_8 grades were calculated and corrected for borehole size from caliper data taken every 5cm downhole using the equation {2.737*({EPITHERM}/{THERMAL}-0.02)}*{-1*Power(10,-06)*Power({CAL},2)+0.0097*{CAL}-0.0313} • For sonic core holes PFN grade calculations this equation was 2.737*({EPITHERM}/{THERMAL}-0.02)}*0.94
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the*	• Chip/mud samples were collected 2m in non-target areas and then 1m in the zones of interest (i.e. the target Kanaka Beds). • All samples are geologically logged compliant with industry standards which included lithology, mineralogy, grain size/rounding/sorting, colour, redox. • All samples were photographed using a high-resolution camera.

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Criteria	JORC Code explanation	Commentary
	relevant intersections logged.	
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The depth of investigation of the PFN tool approximately 25-40 cm radius around the borehole to allow for accurate measurement of the ratio of epithermal/thermal neutrons for pU3O8 calculations. • QA/QC of pU_3O_8 data included repeatability checks by regularly logging a fibreglass-cased calibration hole onsite (MRC002,723703E, 6324350N (GDA94), depth 84.5m). MRC002 has sufficient assay data in the target zone to compare/calibrate PFN data. • Repeat runs in rotary mud holes that remained open after drilling for sufficient time to allow for PFN logging was also performed.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	Three geophysical tools were used: • Prompt Fission Neutron Tool (PFN) serial number 22 manufactured by Geoinstruments Inc, Nacogdoches, Texas. Neutron generator 78-80kV, logging at 0.5m/minute. • Multisurvey tool (MST) serial number 24 manufactured by Geoinstruments Inc, Nacogdoches, Texas. Measures 16Normal, 64Long borehole resistance, Point Resistance, and Self Potential and uncalibrated natural gamma for depth matching. • GeoVista 3-arm caliper, serial number 5589, measures the bore-hole size in millimetres for the length of the bore hole.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• ~10% of rotary mud holes twinned historical which were used as a calibration check on the pU_3O_8 grades being acquired in this program. • Natural gamma (on the caliper tool) was used for depth matching the PFN. • No wireline stretch was observed during the program.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drillholes are sited using a Garmin handheld GPS • Drilled holes are surveyed Leica iCON GPS 60 which uses the 4G network to obtain corrections from SmartNet base stations (Continuously Operating Reference Stations (CORS)) located around Whyalla. The SmartNet corrections result in RTK RMS accuracy of 10-20mm in XY and 20-30mm in Z. • Grid system GDA94 Projection 53H
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of*	• Drill spacing varies from 50x100m, 200x200m, 50 x 25m and 200 x 200m centres as program was designed to validate historical drilling and infill where there is

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Criteria	JORC Code explanation	Commentary
	geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	sparse historical information. • pU3O8 intercepts calculated above 0.5m minimum thickness, >0.025% pU_3O_8 (250ppm pU3O8) with internal dilution 0.25m • No compositing was applied.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The Samphire mineralisation is interpreted to be contained in horizontal to sub-horizontal sequence of sediments and underlying weathered granite. This interpretation is derived from the significant historic drilling and geological interpretation of the area. All drillholes are vertical which is appropriate for the orientation of the mineralisation
Sample security	• *The measures taken to ensure sample security.*	• Rotary mud/chip samples are stored in AGE's secured storage facility in Whyalla.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	No audits or reviews undertaken of sampling techniques to date.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The JORC2012 compliant Blackbush deposit, referenced historical drilling and geophysics covering the Samphire project are located on Exploration Licence EL5926 originally granted 20th November 2016 for a term expiring 2018. The licence was subsequently renewed for a further 3 years expiring in November 2021. A further renewal has been lodged with DEM and is pending. • EL5926 is 100% held by S Uranium Pty Ltd a wholly owned subsidiary of Alligator Energy Ltd. • The land covering the licence area is Crown Lease; consisting of several leases over 2 pastoral stations.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Samphire Uranium Limited (SUL), previously UraniumSA (ASX: USA) historically conducted almost all previous exploration within EL5926 defining the Plumbush (JORC2004) and Blackbush (JORC2012) resources and all relevant drilling, geophysics except ground magnetics conducted by AGE in 2021. • USA conducted preliminary Insitu Recovery (ISR) hydrogeological testwork on the Blackbush deposit with pump testing and hydrogeological modelling. • Third party drilling is confined to one rotary mud hole for lignite exploration located in the southeast of the licence area.
Geology	• *Deposit type, geological setting and style of*	• Mineralisation is dominantly sediment hosted

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Criteria	JORC Code explanation	Commentary
	mineralisation.	uranium within the Eocene Kanaka Beds. Minor amounts of mineralisation are present in the overlying Miocene Melton sands (informal name) and underlying Samphire granite (informal name)
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• Drillhole information relating to prior 2022 rotary mud drilling Table 1 Appendix 1 ASX release "Resource Drilling complete with highest grades found so far at Samphire Uranium Project" November 23, 2022 and Table 1 Appendix 1 of this release. • Drillhole information that relates to historic drilling was previously reported by Uranium SA (ASX: USA) in ASX release "Samphire Project Update" 27 September 2013.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	**Rotary Mud** pU3O8 intercepts for both rotary mud holes are calculated above 0.5m minimum thickness, >0.025% pU_3O_8 (250ppm pU3O8) with internal dilution 0.25m
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Mineralised widths are considered true widths or close to true widths due to the generally flat lying orientation of the mineralisation and use of perpendicular vertical drilling.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Results are reported in appropriate diagrams and tables within this release.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All mineralised intercepts using a cut-off >250ppm U_3O_8, minimum thickness of 0.5m with internal dilution of 0.25 metres measured by PFN have been reported. • All relevant PFN grade data presented in Table 1.

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Criteria	JORC Code explanation	Commentary
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Geological observations have been reported in context of reported intersections.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Program for 2023 includes: • Further Mineral Resource Estimate upgrade (conversion of Inferred to Indicated status) and extensional drilling to ~ end Sept 2023. • Installation of the production and monitor well network for the Field Recovery Trial.

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