ASX Announcement

2 May 2024

Substantial Extensions Identified to the Samphire uranium-hosting Palaeochannel System

Alligator Energy (ASX: AGE, 'Alligator' or 'the **Company')** is pleased to announce identification of substantial extensions to the known uraniferous Samphire palaeochannel system through the recent acquisition of ground gravity data at the Samphire Uranium Project, near Whyalla, South Australia.

Highlights

- **Recently acquired ground gravity data shows outstanding continuity of the Samphire palaeochannel system by 34 lineal km's: a 50% increase to the existing 64km of palaeochannel strike length.**
- **Historical drillholes confirm that the extensions to the palaeochannel system contain the same thick sequences of Kanaka Bed sands which host the 17.5Mlb Blackbush Uranium Mineral Resource[1] and Plumbush Uranium Prospect[2].**
- **Multiple historical drillhole intersections above 250ppm eU_3O_8[3] cutoff within the extensions confirm that uranium is ubiquitous throughout this regional palaeochannel system.**
- **With this extension, 72% (over 70km) of the prospective areas of the entire Samphire palaeochannel system now remain completely untested by drilling, indicating the significant potential for new discoveries and resource growth in the Project area.**

Alligator's CEO Greg Hall stated: *"The Samphire Project palaeochannel system is incised into the underlying dense granite (source of the uranium) and the density contrast between this and the overlying sediments provides the ability for ground gravity to detect margins of the palaeochannels in a very effective way. Alligator has used this to great effect, ensuring that drilling is dominantly within the palaeochannel margins, with very little wasted drilling during resource extension and exploration drilling. We have now extended identification of this channel system by 50%."*

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[1] *AGE ASX Release 7 December 2023 02751141.pdf (weblink.com.au)*

[2] *Refer UraniumSA ASX Release – 8 April 2011 "Maiden Resource Estimate", https://www.asx.com.au/asxpdf/20110408/pdf/41xy4brvxj3d3c.pdf*

[3] *Downhole gamma sondes measure the daughter isotopes in the radioactive decay series, thus is not a direct reading of uranium in the host formation if the gamma-emitting daughter isotopes are not in secular equilibrium with the parent U^{238}. If the parent U^{238}m is in secular equilibrium with the daughter isotopes the response of the natural gamma is directly proportional to the amount of uranium in the host formation.*

In early 2022, Alligator re-assessed the historical regional geophysics toolkit to select the optimal geophysical method for mapping the Samphire palaeochannel system (host to the uranium mineralisation at the Blackbush Deposit and Plumbush Prospect). The Samphire palaeochannel is incised into the Hiltaba Suite Samphire Granite (~80m depth) which provides a lithological density contrast at the contact which ground gravity successfully detects.

Historical ground gravity data collected at 100m x 200m grid spacing covers only the portion of EL5926 where the Samphire palaeochannel system is thought to occur (Figure 1). This data delineates ~ 64 kms of palaeochannel strike length with only 10% of the palaeochannel system (Blackbush Deposit and portion of Plumbush Prospect) well explored, and 32% only partly drill tested on wide drill spacings (Figure 1). Alligator is pleased to announce Daishsat Geodetic Surveyors have just completed acquiring ground gravity data south of the Plumbush Prosect (EL6350) and an area north of the Blackbush Deposit (Figure 1 – pink shading) to examine the extension potential of the uraniferous Samphire palaeochannel.

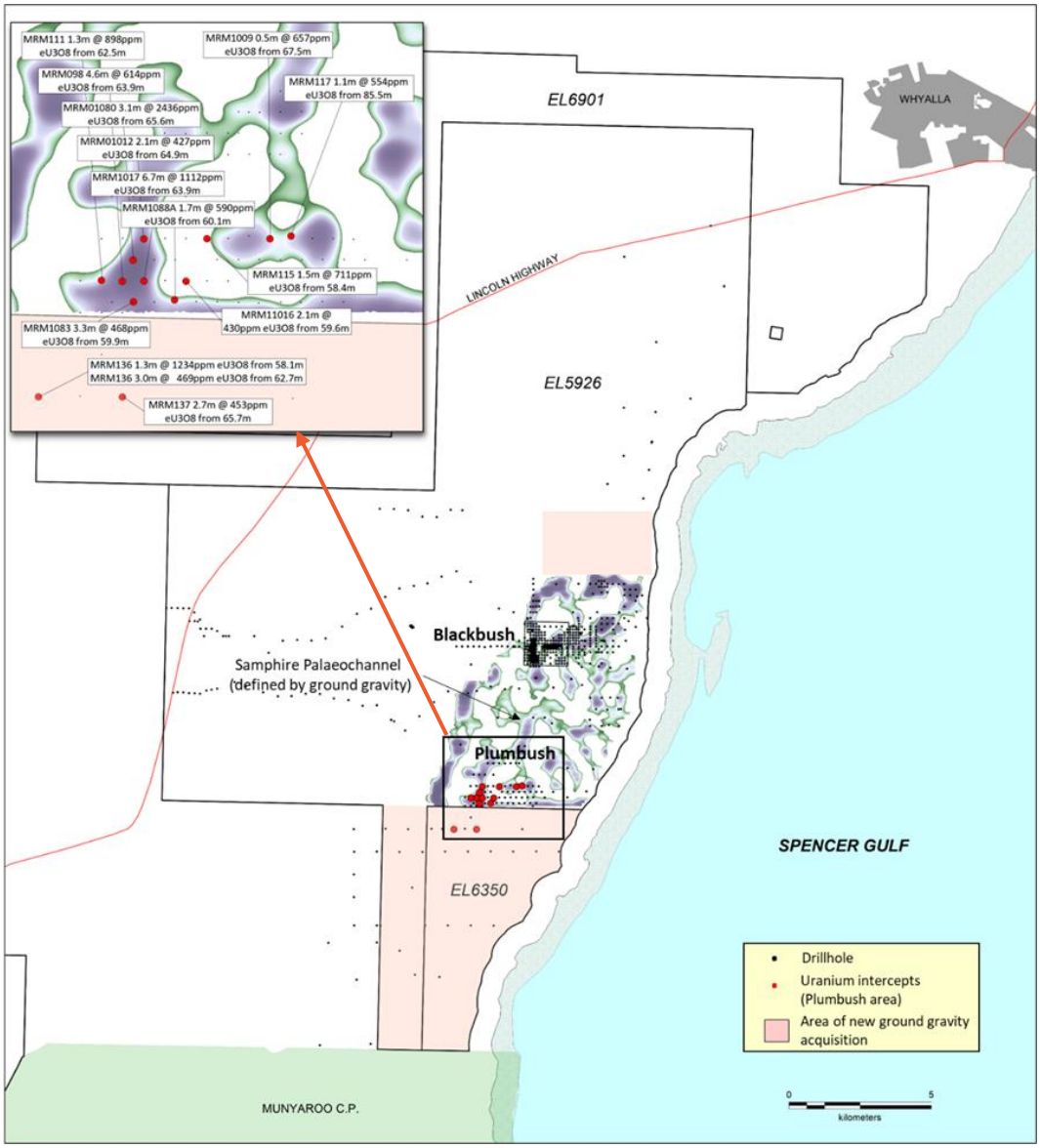

Figure 1: *AGE's Samphire project tenement holding showing location of historical and AGE drillholes, historical ground gravity, the extent of the Samphire palaeochannel system, historical uranium intersections near the Plumbush prospect[1] and location of area acquisition of new ground gravity data.*

Integration of the new gravity data with the historical shows outstanding continuity of the palaeochannel system (Figure 2). Whilst detailed interpretation of the new data is ongoing, a preliminary assessment of the geological logs of historic drillholes completed by Uranium SA Ltd in this region, confirm the presence of significant thicknesses (between 16 and 60 m) of palaeochannel sediments (Kanaka Beds) within the newly identified channel system mapped by gravity data (Figure 2). In particular, the recent survey adds an additional 34 lineal kilometres of palaeochannels (~5 km north of Blackbush and ~29 km south of Plumbush) at this stage of Alligator's interpretation.

With this new extension, 72% (over 70km) of the prospective areas of the entire Samphire palaeochannel system now remain completely untested by drilling, indicating the significant potential for new discoveries and resource growth in the Project area. Alligator will now integrate these new targets into the pipeline of its multi-year uranium exploration program.

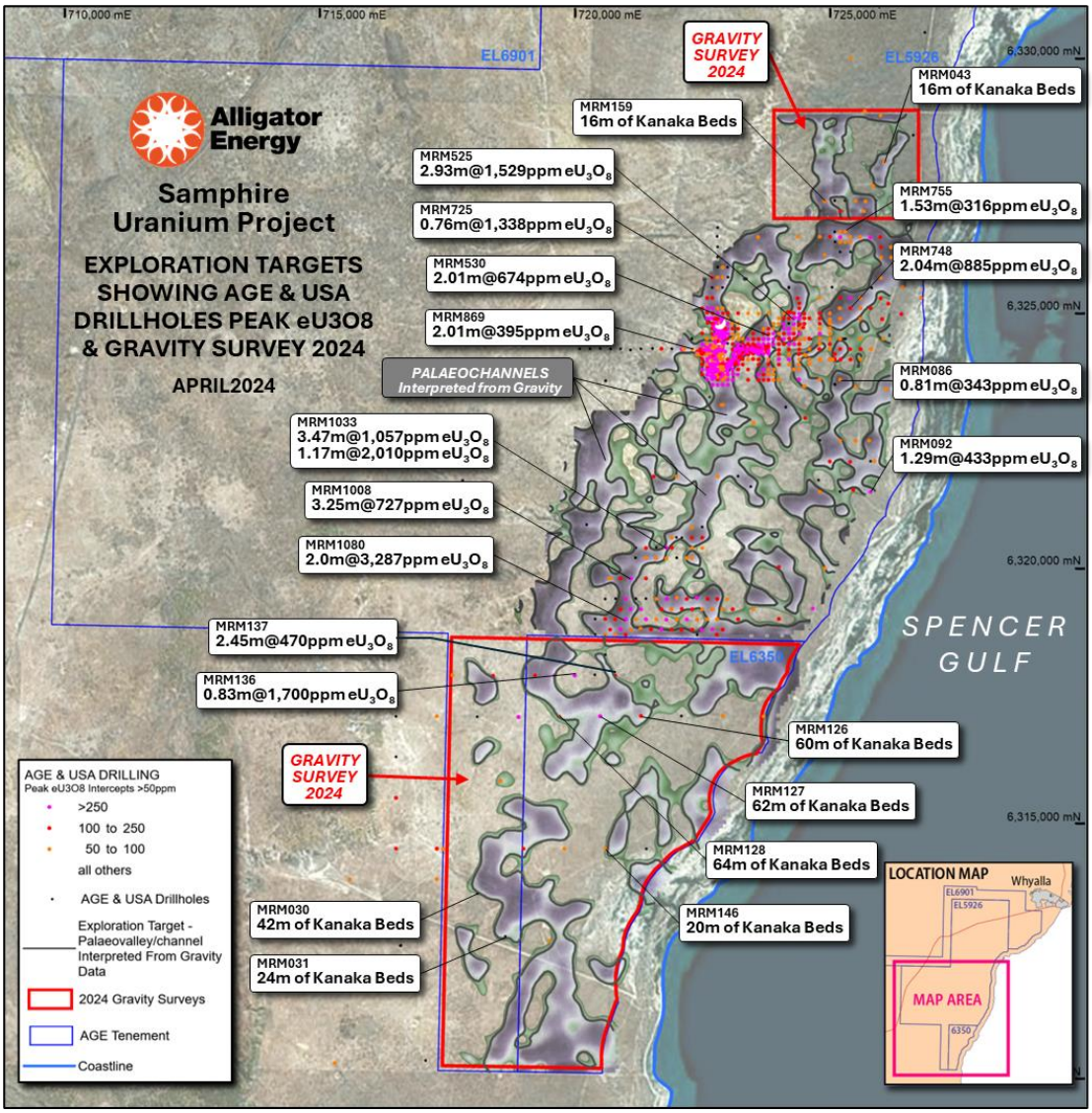

Figure 2: *AGE's Samphire project tenement holding showing extent of the Samphire palaeochannel as mapped by integrated ground gravity dataset and historical Uranium SA Ltd (USA) drillholes[4] showing thicknesses of palaeochannel sediments (Kanaka Beds) interpreted by Alligator from USA data.*

[4] *Drillhole location information published in Appendix 2 of AGE's ASX Release "Significant Exploration Target Range established, Samphire Uranium Project, South Australia" 02751150.pdf (weblink.com.au)*

This announcement was authorised for release by the CEO and Managing Director.

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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.

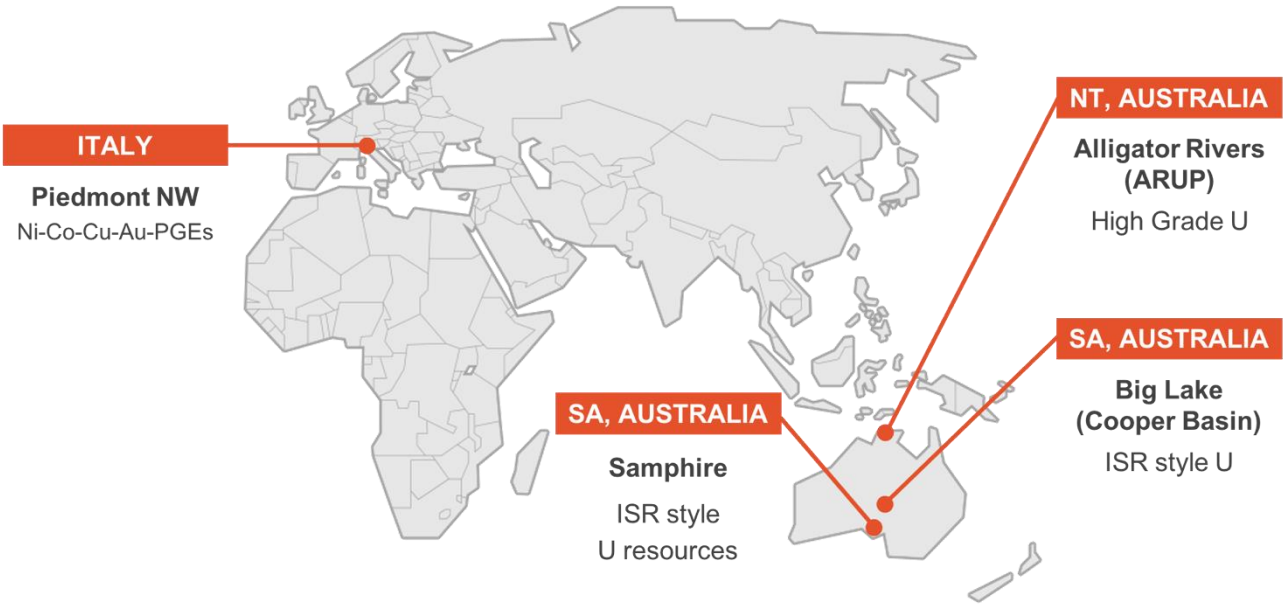
Competent Person's Statement

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



JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

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.*	***Ground Gravity:*** • *Sampling of Geophysical data referenced within this announcement was obtained by Daishsat Geodetic Surveyors using Scintrex CG-5 Gravity meters, Sino T20 GNSS receivers, and Garmin vehicle-mounted GNSS receivers for navigation.* • *One existing GNSS base station, numbered 1682, was utilised as primary GNSS control for the survey. This was located coincident with the gravity base station.* • *Raw kinematic GNSS data was logged by a Sino T20 GNSS receiver, set up on the GNSS base appropriate for the survey area. Raw static GNSS data was logged at 5 second intervals during acquisition at GNSS bases.* • *For each gravity observation the CG-5 gravity meter was placed on its tripod and levelled, restricting the vertical and horizontal levels to 5 arc seconds. Once the meter was level, two gravity observations of 20-second stacking time were read and recorded. The instrument was monitored for any seismic or instrumental noise and the X/Y tilts, temperature and tolerance between readings was monitored during the reading by the Surveyor. The tolerance between readings is set at 0.030 of a dial reading and any readings falling outside of this were re-read.* • *In total, 2,292 new gravity stations were acquired during the project on a nominal 200 x 100m station/line spacing. Of these, 86 (3.8%) were revisited for survey quality control. Additionally, 7 existing stations were reacquired for merging purposes.* • *All the Daishsat gravity meters undergo regular calibrations over the Kensington to Norton Summit calibration range in Adelaide. Meters are also calibrated upon return from repair by the manufacturer (Scintrex in Canada).*
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).*	• *N/A New geophysical data only*

Criteria	JORC Code explanation	Commentary
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.*	• *N/A New geophysical data only*
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 relevant intersections logged.*	• *N/A New geophysical data only*
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.*	• *N/A No sampling required. Ground based station gravity readings only.*
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.*	***Ground Gravity:*** • *The survey referenced within this announcing was conducted by Daishsat Geodetic Surveyors with extensive experience conducting ground-based gravity surveys Australia wide.* • *The survey type is deemed appropriate for mapping buried palaeochannels incised into crystalline basement.* • *Sampling of geophysical data was obtained utilising a EMIT SMARTem24 receiver system in conjunction with a SMART Fluxgate 3-component surface magnetometer system and a Geonics TEM67A transmitter system.* • *Survey data acquisition was obtained at pre planned survey stations sited by GPS and subsequently location corrected following survey completion.* • *Additional survey lines were added ad-hoc to*

Criteria	JORC Code explanation	Commentary
		further investigate anomalous readings and expand survey grids where possible on review of preliminary data to ensure optimum survey coverage and data integrity. • *Data was quality checked daily in the field before being uploaded to the Initial Exploration shared data site to be reviewed by independent geophysical consultants, GeoDiscovery group based in Brisbane.*
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.*	***Ground Gravity:*** *Following the reduction of the gravity data, quality control was carried out daily while the survey was in progress. A series of station plots and colour shaded grids were monitored for quality factors including:* • *Any stations accidentally missed by the field operators.* • *Single point anomalies due to noisy gravity or height readings* • *Interlocking repeat position, height, and gravity levels (within the same loop and previous loops)* • *Standard deviation of station readings* • *Tilt of station readings* • *Calibration constants of each CG5 gravity meter*
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.*	***Ground Gravity:*** • *One existing GNSS base station, numbered 1682, was utilised as primary GNSS control for the survey. This was located coincident with the gravity base station. Easting 725570.33E, 6323566.68N UTM Zone 53, 6.17m AHD.* • *Raw kinematic GNSS data was logged by a Sino T20 GNSS receiver, set up on the GNSS base appropriate for the survey area. Raw static GNSS data was logged at 5 second intervals during acquisition at GNSS bases. An additional T20 GNSS receiver is placed nearby using the same static logging rate as redundancy in case of primary GNSS receiver failure.* • *Coordinates for GNSS base stations were calculated using three days' worth of static GNSS data connected to Australian based IGS (International GNSS Service, formerly the International GPS Service) stations using Geoscience Australia's online GNSS processing system, AUSPOS. These resulting base positions usually show final accuracy standard deviations (SD) of better than 5mm obtained for x, y and z, and can be considered first order. The resulting coordinates from AUSPOS are described in*

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	***Ground Gravity:*** • *Survey data acquisition was recorded at pre-planned and ad-hoc station points planned at typically 200 x 100m station/line spacing.* • *Gravity lines were oriented E-W* • *Total of 2.292 station recordings acquired.* • *The spacing and density of ground gravity data forming the survey is deemed high resolution and forms the basis of a program to identify sedimentary palaeochannel features (~80m depth) that could host roll-front style uranium mineralisation.*
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.*	***Ground Gravity:*** • *Gravity lines were oriented E-W discordant to the known north-south orientation of existing palaeochannels in the area.* • *This resolution 200x100m station spacings mitigates any sampling orientation bias at the scale at which the known palaeochannel regional exists.*
Sample security	• *The measures taken to ensure sample security.*	• *Daily report on activities and production summary received with final data and daily updated from field crew.* • *No physical samples take. Digital data uploaded to secure shared site for sharing between geophysical contractors.* • *All field data uploaded daily for independent QAQC and full cleaned and corrected data provided at end of program via digital download from the Contractor.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *All data subject to internal review by Alligators Group Geophysicist.*

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 survey referenced within the announcement is conducted within EL6350 and EL5927 held by S Uranium Pty Ltd subsidiary of Alligator Energy Ltd. Alligator Energy being the operator of the tenements.* • *Both licences are in good standing.*
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*

Criteria	JORC Code explanation	Commentary
		in 2021. • *USA conducted preliminary In-situ Recovery (ISR) hydrogeological testwork on the Blackbush deposit with pump testing and hydrogeological modelling.*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *Mineralisation model is dominantly sediment hosted uranium within the Eocene Kanaka Beds, based on the geology of the existing Blackbush Mineral Resource. 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.*
		• *N/A New geophysical data only*

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.*	• *N/A New geophysical data only*
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').*	• *N/A New geophysical data only*
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.*	• *All diagrams within this release have respective appropriate scales.*

Criteria	JORC Code explanation	Commentary
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.*	• *This report provides all available information to date highlighting key interpretation at time of writing this announcement.* • *Continued refinement of the interpretation will remain ongoing.* • *No new exploration results are contained within this report. Geophysical data has been acquired for assisting geological interpretations, understanding and potential drill targeting.*
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.*	• *Alligators' re-interpretation of historical ground gravity results have been previously announced and discussed https://wcsecure.weblink.com.au/pdf/AGE/02520049.pdf* • *Historic geophysical surveys will continue to be used in conjunction with new data to further geological understanding and support future exploration.*
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.*	• *Next steps are discussed with in the body of the report.* • *Follow up drilling of key historical intercepts noted in the body of this report.* • *Further regional drill testing calibrating the gravity data with respect to mapping palaeochannels at depth.*