Alligator Energy

ASX Announcement

5 July 2023

IP Geophysics Survey Commences - Nabarlek North Project, Alligator Rivers

Alligator Energy (ASX: AGE, 'Alligator' or 'the **Company')** is pleased to provide an update on the 2023 field season activities at the Nabarlek North Project in the Alligator Rivers Uranium Province ("ARUP").

For personal use only

Highlights

- **The mobile camp to support the 2023 geophysics and drilling programs has been established.**
- **Target investigation, based on 2022 findings, to be progressed using a variety of techniques: regional aircore drilling, auger soil sampling and ground Induced Polarisation ("IP").**
- **The IP survey on the southern section of the tenement package (covering up to 15km^2) has commenced.**
- **Objective of the IP survey is to map chargeability and subtle conductive structures in the area north of DevEx Resources' (ASX: DEV) high-grade U40 Prospect.**
- **Geochemical sampling using RAB/Aircore and shallow Auger drilling to occur post the IP survey and will include multi-element analysis of the thick clayey saprolite that sits below the Nabarlek North cover.**
- **This geochemical work is both to determine / confirm the underlying geology, plus determine the presence of potentially economically interesting minerals which may be present in the overlying ionic clays, eg REE's.**

Greg Hall, Alligator CEO, said: *"After a well-co-ordinated planning phase it is pleasing to see the on-ground initiation of the 2023 work program on the Nabarlek North Project. Our aim is to refine and expand the geological model developed in 2022 / early 23 including a specific focus on a number of prospective target areas. In 2022 we were able to confirm that the Cahill Formation which hosts most of the economic orebodies in the ARUP is widely present across our Project area. A key aspect of work this year is to better identify and chart the structures capable of 'plumbing' a uranium mineralisation system, leading to solid targets for deeper drilling.*

For personal use only

Background

The Nabarlek North Project represents a highly prospective under-explored region within the ARUP (Fig 1), typified by the Proterozoic unconformity near surface but overlain by a sufficiently thick veneer of recent sediments to mask bedrock radiometric signatures and discourage exploration. Alligator undertook its inaugural work program in 2022 which confirmed that the fertile Cahill Formation is likely to be widely present across the Project and is segmented by regional scale structures capable of 'plumbing' a uranium mineralising system. The fertile Cahill Formation hosts most of the economic orebodies in the ARUP[1].

The Project is located less than 7km north of the historic Nabarlek uranium mine which produced 24Mlb of U_3O_8 at an average grade of 1.84%[2]. The U40 Prospect, located 200m south of Alligator's southern tenement boundary, has historically reported grades of up to 6.3m @ 7.23% U_3O_8[3] demonstrating high-grade occurrences proximal to the Nabarlek North Project.

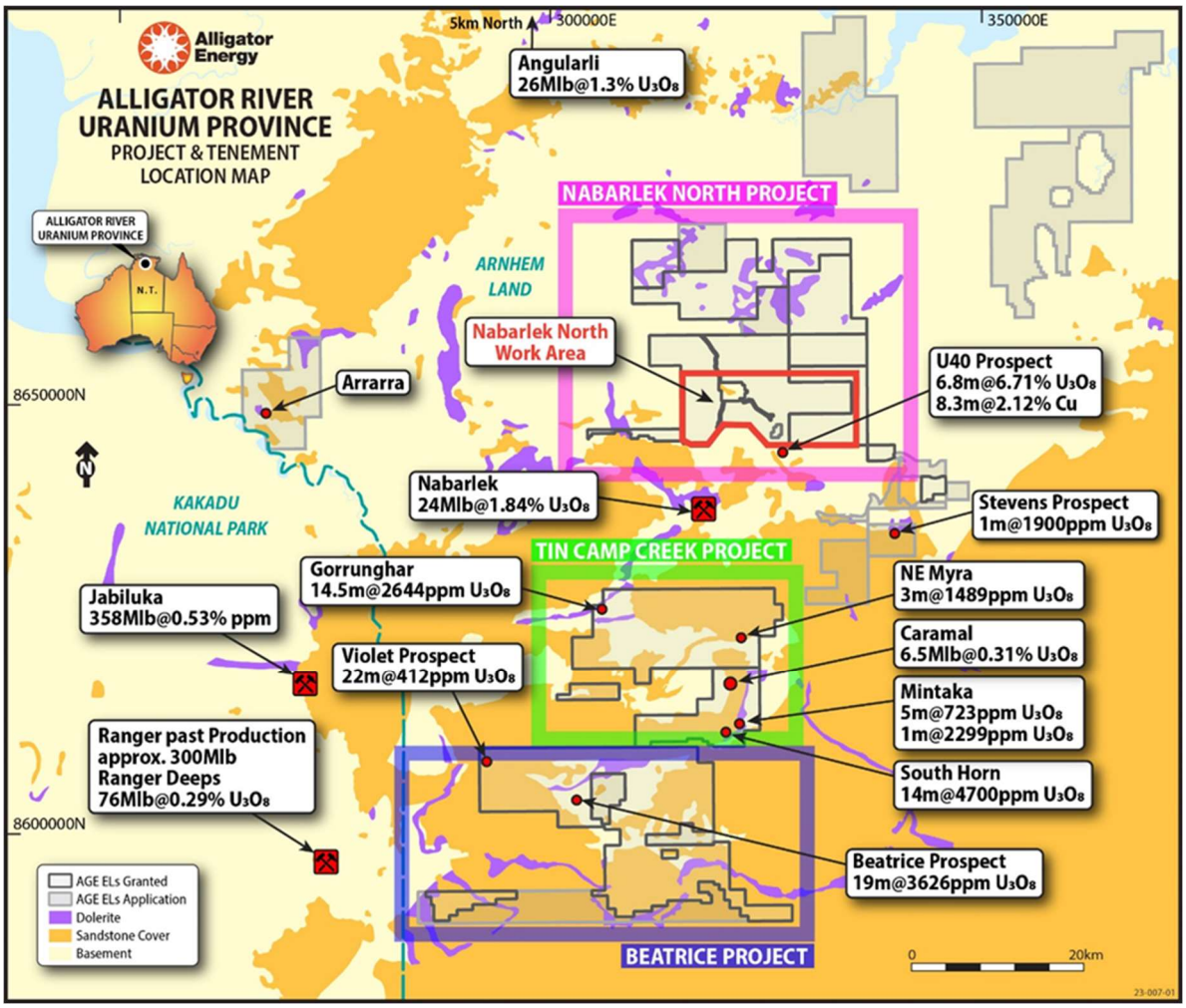


***Figure 1**: Location of the Nabarlek North work area and Alligators ARUP Project tenure in the NT*

---

[1] ASX Announcement 8 August 2022

[2] Uranium Equities Limited (now DevEx Resources Limited) ASX Announcement, 4 October 2017

[3] DevEx Resources Limited ASX Announcement, 12 September 2018

For personal use only

Exploration Strategy

To achieve exploration success at the Nabarlek North Project, namely the identification of a large high-grade uranium deposit, the Company is focussing its exploration targeting strategy around the following key criteria:

- Presence of Cahill Formation which hosts all known significant uranium deposits in the Alligator Rivers Uranium Province – **confirmed during the 2022 work program with an ongoing review in 2023**.
- Existence of major low-angle structures that would have promoted long-lived fluid flow from above and particularly from below the Kombolgie unconformity – **fundamental to many of the uranium deposits in the region.**
- Identification of trace elements associated with the presence of uranium including REE, PGEs and certain Pb isotope ratios – **geochemical assay analysis commenced in 2022 and ongoing in 2023.**
- Chlorite, haematite and pyrite alteration in fracture/fault controlled and brecciated zones intimately related to uranium mineralisation – **as identified in the nearby Angularli deposit and amenable to targeting with electrical geophysics.**

IP Survey

Unconformity-type uranium orebodies may be small, high-grade and have a narrow or subtle alteration halo[3]. They do not generally exhibit a distinct geophysical signature, beyond a radiometric anomaly for those historic discoveries exposed at surface. However, recent exploration in ARUP suggests basement-hosted mineralisation at Deep Yellow Limited's (ASX: DYL) Angularli deposit has a geophysical induced-polarisation (IP) signature[4] associated with pyritic alteration along fertile structures hosting uranium mineralisation. Similarly, DevEx Resources has widely used IP to map out geology and sulphide distribution to the south around the U40 Prospect.

Initially in reconnaissance mode (gradient IP) and then following up significant features with more detailed section profiling (dipole-dipole IP), AGE plans to acquire IP over an area of up to 15 km^2. This will help in delineating any extensions to the U40 Prospect chargeability and conductivity structure in the Nabarlek North Project. IP will also be utilised in other areas of the Project where there is conductivity or chargeability associated with interpreted Cahill Formation and adjacent structures like the Quarry Fault (*Figure 2*). Data acquisition (contracted) is expected to commence in early July and be completed by mid-August. Final results should be available by October 2023.

[4] Vimy Resources Limited ASX Announcement, 18 July 2022

Ongoing data analysis

AGE has recently completed reprocessing and inversion of Falcon airborne gravity and magnetic data captured in 2022 over the Project area (*Figure 2 - gravity and Fig 3 - magnetics*). While interpretation is at an early stage, the work has highlighted some contrasting structural features in the district, with further work needed to differentiate the more prospective low-angle contacts under cover sequences. Full data integration (Falcon + airborne EM + magnetics + IP + geology + geochemistry) will be undertaken over the next quarter.

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

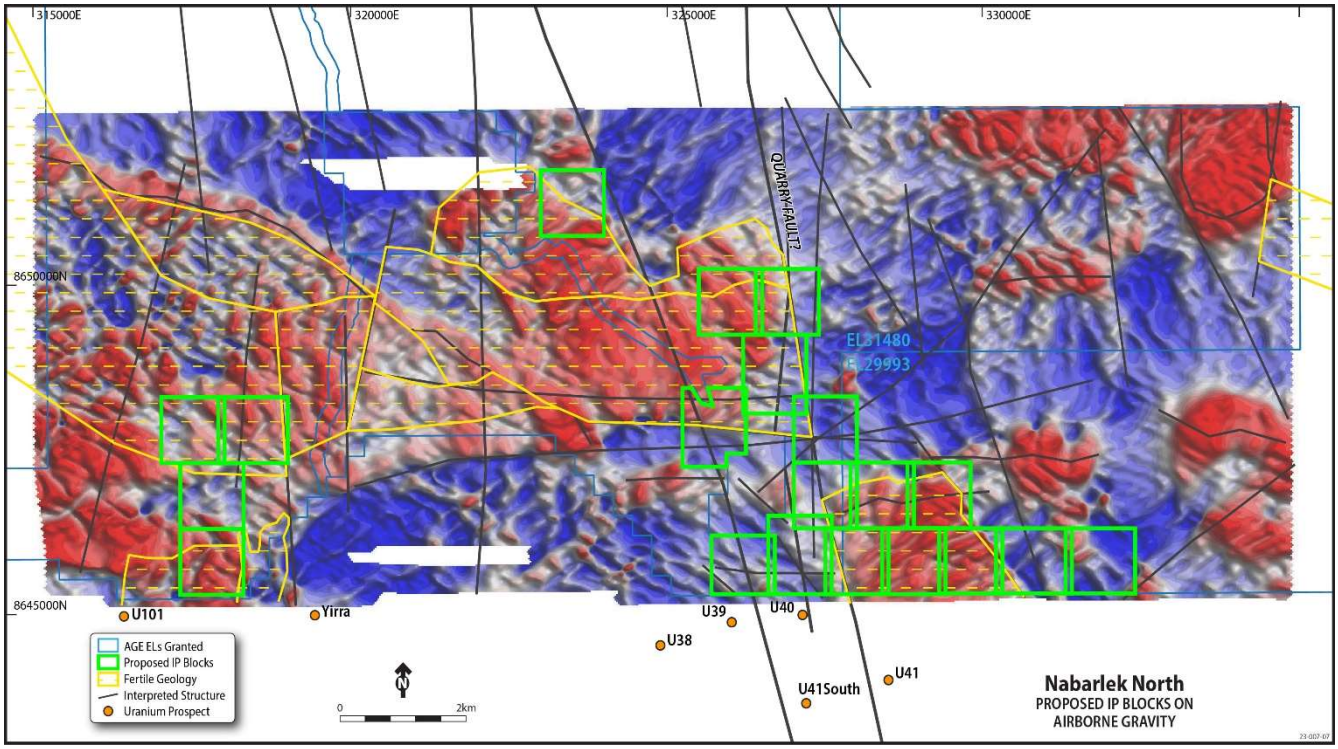


Figure 2: *Proposed IP survey grids to be acquired in Q2, on a Falcon gravity base (AGG shape index)*

For personal use only

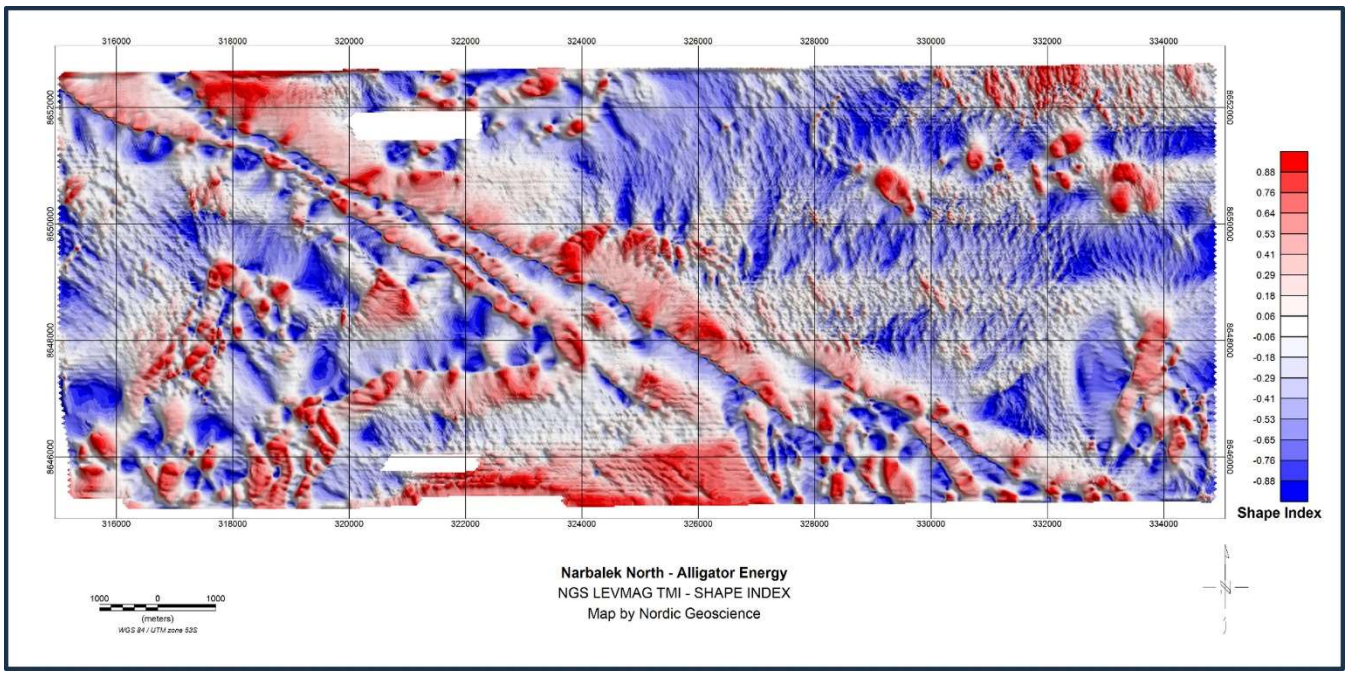


Figure 3. *Reprocessed Falcon magnetics with structural enhancement (Shape Index).*

Contacts

For more information, please contact:

Mr Greg Hall
CEO & Director
gh@alligatorenergy.com.au

Mr Mike Meintjes
CFO & Company Secretary
mm@alligatorenergy.com.au

For media enquiries, please contact:

Alex Cowie
Media & Investor Relations
alex@nwrcommunications.com.au

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.

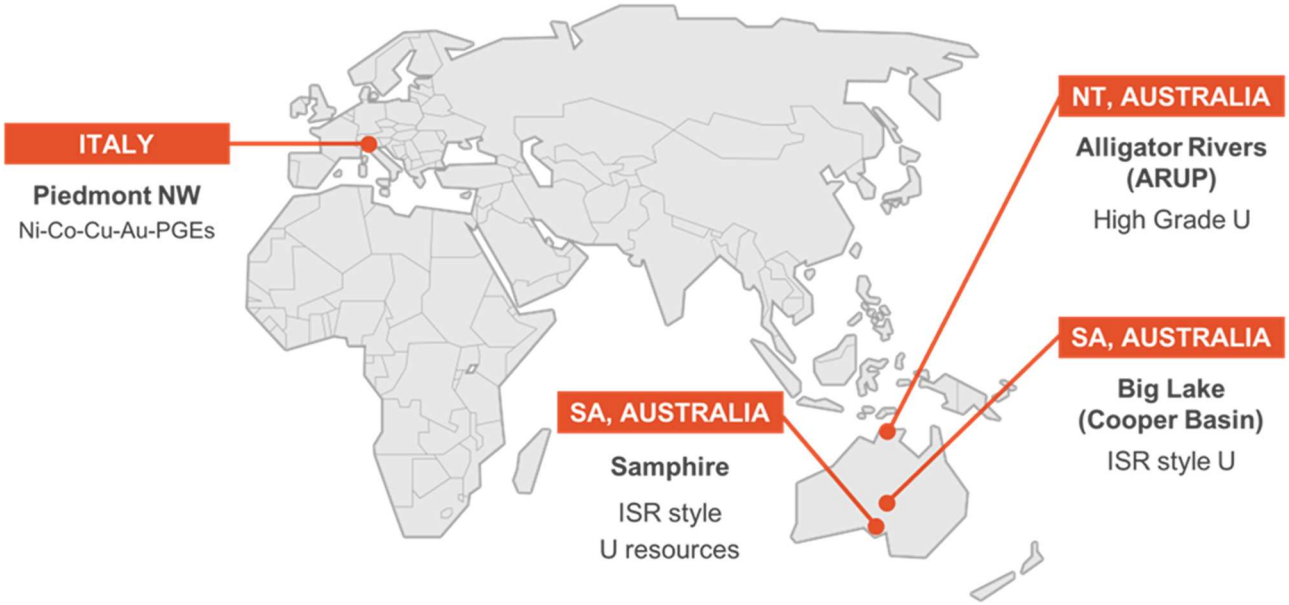
For personal use only

Competent Person's Statement

Information in this report is based on current and historic Exploration 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 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.

For personal use only

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