

Titleholder	Kurilpa Uranium Pty Ltd
Project Operator	Renaissance Uranium Ltd
Tenement Agent	Australian Mining & Exploration Title Services Pty Ltd
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## **EL 28261 LYNDAVALE EAST ANNUAL TECHNICAL REPORT**

**For the report period ending 23 March 2013**

### **ABSTRACT**

This report represents the second annual technical report for EL 28261 Lyndavale East 100 % owned by Kurilpa Uranium Pty Ltd a wholly owned subsidiary of Renaissance Uranium Limited. EL 28261 Lyndavale East covers approximately 1268 km<sup>2</sup> within the Amadeus Basin, 200 km south-south-west of Alice Springs, Northern Territory. The project is targeting major sandstone hosted uranium in areas not previously recognised or thoroughly evaluated for uranium mineralisation. Kurilpa also recognises particularly subjacent to the Pertinjara unconformity there is potential for other styles of sediment-hosted copper and zinc mineralisation.

The current reporting period on EL 28261, Lyndavale East has involved:

- Desktop based assessment of historic data, particularly seismic, looking for structural and stratigraphic traps for uranium associated with helium gas.

The upcoming reporting period on EL 28261, Lyndavale East is planned to involve:

- Land access negotiations with property owners,
- Program & site preparation for a single deep drill hole of 600 m to test the mineral potential of the Mt Kitty structure.
- Analysis of all results associated with the exploration drilling program.

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## 1. LOCATION, TITLE HISTORY, PHYSIOGRAPHY AND ACCESS

EL 28261 is located within Kurilpa Uranium's Amadeus Basin Project which comprises in total, seven (7) exploration licences (Figure 1). The properties cover the central and southern parts of the intracratonic Amadeus Basin, approximately 200 km south-south-west of Alice Springs. This project area is entirely greenfields with no record of any significant past mineral exploration. The Mount Kitty Structure however is presently being investigated by Central Petroleum.

Kurilpa Uranium Pty Ltd. (Kurilpa) was granted EL 28261 on 24<sup>th</sup> March 2011 for a tenure period of six (6) years. The area of the exploration licence covers approximately 1268 km<sup>2</sup> and expenditure commitment for the second year was \$112,750. EL 28261 is located within the Kulgera (SG53-05) 1:250 000 Map Sheet; the Victory (5446), Ebenezer (5447), Kulgera (5546) & Erldunda (5547) 1:100 000 map sheets and covers native title affected, freehold land.

The goal of the Amadeus Basin Project is to locate a major sandstone hosted uranium deposit by applying hydrocarbon concepts and cutting-edge basin analysis technologies. As part of a regional assessment of exploration opportunities in areas of uranium-enriched sources, Kurilpa has focussed on areas not previously recognised or thoroughly evaluated for uranium mineralisation. This has provided evidence in the Central Australian Basins of significant remobilisation of uranium from radiogenic basement into overlying Neoproterozoic, Palaeozoic and younger sedimentary cover units. Kurilpa believes that the uranium deposits at Angela (Amadeus Basin), Bigriyi and Napperby (Ngalia Basin) are examples of such a process.

However with the current lack of support for nuclear power and the stagnation of the uranium price, Kurilpa acknowledges obtaining funds for uranium only exploration has been difficult this year hence no on-ground exploration has been undertaken. Kurilpa also recognises in the project area, particularly subjacent to the Pertinjara unconformity there is potential for other styles of sediment hosted copper and zinc mineralisation. More desktop work is being done to review the copper and zinc mineralisation of the area.

Access to EL 28261 is good via the Stuart Highway which runs approximately 25 km to the east of the exploration licence and also serviced by several other maintained roads. The Adelaide-Darwin railway is also east of the tenement. The identifiable landmark in the area is the Erldunda Roadhouse and turnoff to Ayres Rock. The licence is covered by native title affected freehold land and the land is used primarily for cattle grazing.

Physiographical nature of the land consists of generally low lying to weakly undulating land with moderate dunes of less than 5 m height, surface cover of ferricrete and calcrete with compact clays and low-lying shrubs.

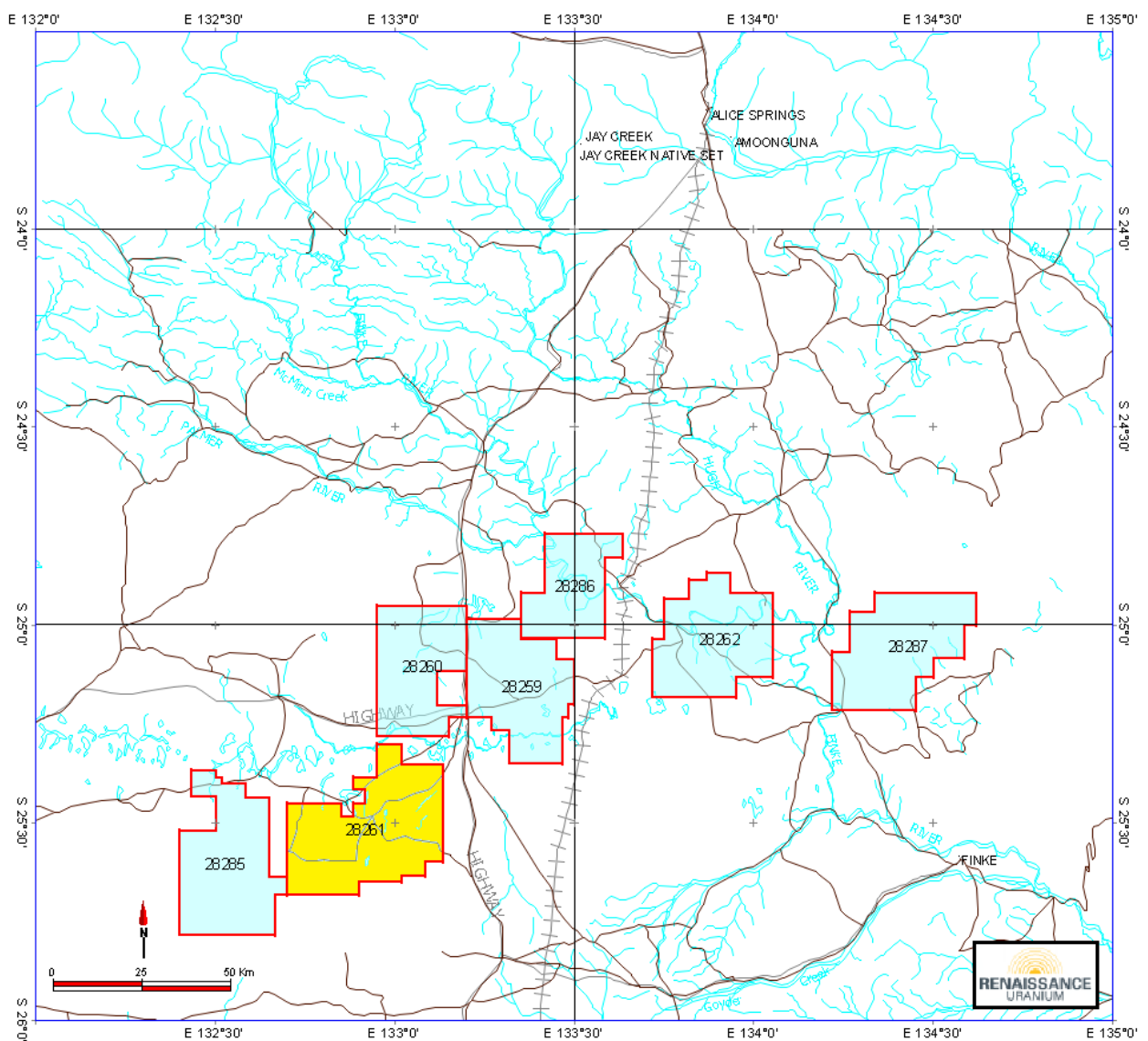


Figure 1: Kurilpa Uranium’s Northern Territory tenement locations with EL 28261 highlighted (yellow).

## 2. GEOLOGICAL SETTING, EXPLORATION/MINING HISTORY AND EXPLORATION RATIONALE

### 2.1. GEOLOGICAL SETTING

EL 28261 is located within the Amadeus Basin (Figure 2). The Amadeus Basin is a large intracratonic basin extending across the southern part of the Northern Territory and into Western Australia. It is approximately 800 km long in the east-west direction and up to 300 km wide in the north-south direction containing a thickness of up to 14 km of sedimentary rocks of Neoproterozoic to Palaeozoic age. These are partially covered by surficial Tertiary and Quaternary deposits. The basin has had a long-lived multi-event tectonic history.

Palaeoproterozoic and Mesoproterozoic metamorphic rocks of the Arunta Complex unconformably underlie the basin to the north. To the south the older rocks are the Mesoproterozoic crystalline rocks of the Musgrave Province. Both these basement blocks are dominated by felsic gneisses and granites which are potentially important uranium-enriched source rocks that have repeatedly been shed into the basin during major tectonic inversions (uplifts) of its margins.

In the Amadeus Basin, the basal sequence of Neoproterozoic strata comprises shelf, lagoonal and continental fluvio-glacial sediments, including thick evaporates and minor volcanics. Cambrian sediments of continental and shallow marine origin overlie disconformably and include carbonates and evaporates. Unconformable late Cambrian-Ordovician marine sediments or continental Devonian-Carboniferous sediments complete the sequence.

The present day shape of the Amadeus Basin effectively results from two major orogenic cycles. Extensive broad folding and thrusting deformed the southern margin of the basin during the Petermann Orogeny (late Proterozoic). The Alice Springs orogeny (Devonian-Carboniferous) similarly deformed the northern margin. These events are regarded as important to ore forming processes.

Uranium mineralisation in the Amadeus Basin is localised at redox interfaces in the Devonian-Carboniferous sequence, related to reduced sequences contained in oxidised red-

bed sequences. The reduced beds are grey or in places white, where oxidation of pyritic sulphides caused bleaching.

Small sandstone-hosted uranium deposits were discovered in the 1970's. These were the Pamela and Angela prospects, about 100 km north of the current project. Hosted within Late Devonian arkosic sandstones (Brewer Conglomerate) they are close to the hinge zone of the east-west missionary Plains Syncline. Additionally in sediments of similar age and geological setting in the Ngalia Basin (Bigryli), as well as a number of basement hosted uranium occurrences and the Tertiary hosted Napperby uranium deposit.

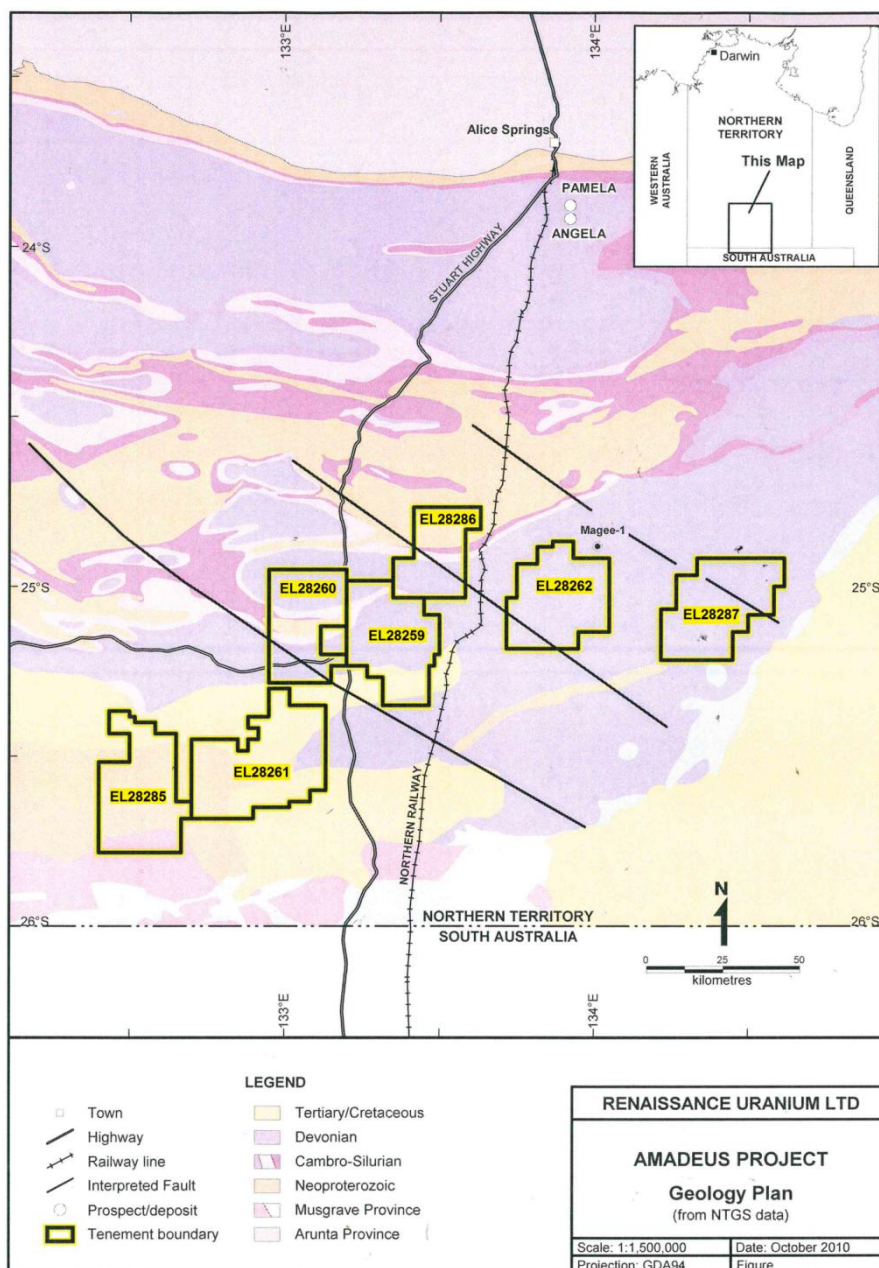


Figure 2: Amadeus Project – Regional Geology and Location including EL 28261.

## 2.2. EXPLORATION HISTORY

### 2.2.1. Previous Exploration by Other Company

Uranerz Australia Pty Ltd (UAL) initiated uranium exploration in the Amadeus Basin in 1972, targeting sandstone-hosted deposits similar to those known in the western United States. Reconnaissance airborne radiometric surveys identified several small anomalies south of Alice Springs, near the northern margin of the Amadeus Basin about 100 km north of the current project. Scout drilling during 1973-74 discovered uranium mineralisation at Angela and Pamela prospects, which were delineated by detailed drilling during 1975-79, operating under a joint venture between UAL and MIM Exploration.

The current project area lies in the southern Amadeus Basin, 100 km to the south of the Angela and Pamela uranium prospects. Here, minerals exploration has been active since 1988 and mainly involved evaluation of evaporate deposits. There was one uranium exploration and also a search for diamond and/or base metals.

Nova Energy Ltd. (Nova) explored for uranium in the northern and eastern parts of the current Project area between 2006 and 2009. Nova's focus was to identify redox related uranium mineralisation in sediments of the Upper Devonian Finke Group. These sediments are considered similar to those hosting the Pamela and Angela uranium deposits, which lie in the Amadeus Basin. Initial work included acquisition of available data and interpretation of Landsat satellite imagery. A helicopter assisted geological reconnaissance and scintillometer prospecting survey followed. Nova concluded that the margin of the Amadeus basin may contain more fluvial or deltaic facies, which they considered more prospective for sediment hosted uranium deposits associated with redox boundaries.

Toro Energy Ltd (Toro) acquired Nova in 2007. Toro proposed to carry out a drilling program aimed at testing the redox boundaries in the sequence. However, Toro surrendered the licences when Idracowie Station denied access. Other exploration included a program by CRA Exploration Pty Ltd in 1991, searching for diamonds and base metals.

### 2.2.2. Previous Exploration by Kurilpa Uranium

This represents the second Annual Technical Report for EL 28261 after Kurilpa Uranium acquired the exploration licence on 24<sup>th</sup> March 2011. Because of the downturn of the



commodity price of uranium as well as the negative sentiment that has developed for this market sector no on field exploration has been conducted by Kurilpa.

### **2.3. EXPLORATION RATIONALE**

The south-eastern Amadeus Basin is largely unexplored. Knowledge of subsurface geology is based on limited seismic data and the drilling results from only six wells. Magee-1, the last exploration well in the basin and drilled in 1992, intersected a thin helium rich gas pay zone and tested a petroleum system in the Neoproterozoic Heavitree Quartzite. Aeromagnetic data and SEEBASE TM depth to basement modelling provide an understanding of the basement structure, which is characterised by major faults and basement highs.

Amadeus Project has potential for structurally controlled, sediment hosted uranium deposits. Seismic data show potential for focusing deep basinal brines, derived from thick Neoproterozoic evaporates and known to be effective in remobilisation of uranium, into high-level reduced ore-forming traps, along structurally reactivated conduits such as faults and salt domes. Gamma logs from the gas exploration hole Magee-1 returned elevated radiogenic signatures from Heavitree and Stairway Sandstone units. This hole also profiles evidence of remobilisation of uranium from radiogenic basement into the overlying Neoproterozoic, Palaeozoic and younger sedimentary cover units.

A thin regolith profile and overlying transported materials tend to mask radiometric signatures and restrict geochemical dispersion halos, except close to bedrock mineralisation. Kurilpa Uranium will draw on experiences from exploration in other large basins to provide guideline for targeting structural traps beneath the masking cover.

### **3. EXPLORATION INDEX MAP**

As no on-ground work has yet been commenced no specific index map can be compiled other than shown in Figure 3.

#### 4. GEOLOGICAL ACTIVITIES AND OFFICE STUDIES

No on-ground exploration activities were completed in the current reporting period. In light of the fact no field work has been done during the past year, a 50% reduction for Year 3 will be applied. Internal desktop based assessment of historic geological, geophysical and seismic when available data, looking for structural and stratigraphic traps for uranium associated with helium gas was conducted. A summary of historic data for EL 28261 (Figure 3) includes:

The primary objective was to identify one or more drill targets on/about the Devonian unconformity (400-500 m) or at shallower levels. The principal focus is the major northwest-southeast basement penetrating fault; and a wider area of interest is a 'rim syncline' above the Gillen salt diaper and potential area of fluid focus. Outcrop in the area is poor with some Devonian out/subcrop to the northeast as picked out on radiometrics. This is however outside the main focus. Considering the potential target depth in relation to Quaternary cover including salt pans, multi-element geochemistry is perhaps unlikely to be of definitive value. Road access however would make it easy to put two to three exploratory lines or a reconnaissance grid in to test the technique especially over the major fault.

Two publically available lines of seismic data may benefit from the reprocessing of shallow data (<0.5 second) however on their own probably make little advance. The presence of surface salt and possibly salt solutions upwelling along the fault would appear to be problematic for the AEM system or any electrical methods in delineating potentially real targets. High resolution (airborne) magnetics may be worth considering noting that in the Grants District, the uranium ore bearing section of the Westwater Canyon host sandstones is accompanied by extreme dissolution of Fe-Ti oxides; fresh magnetite and titano-magnetite are common in the surrounding non-mineralised sandstones.

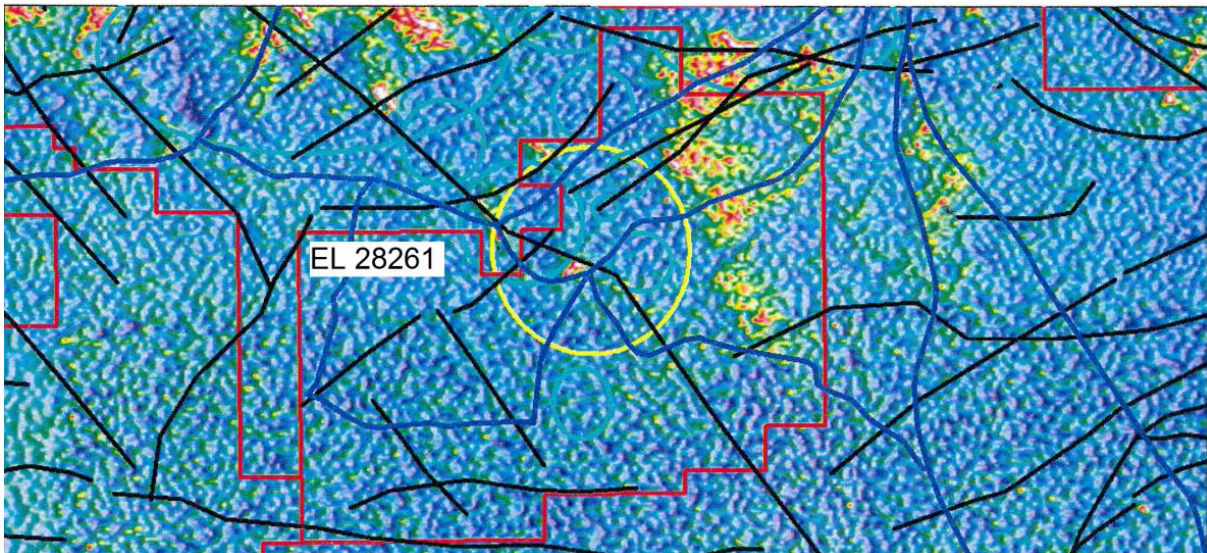
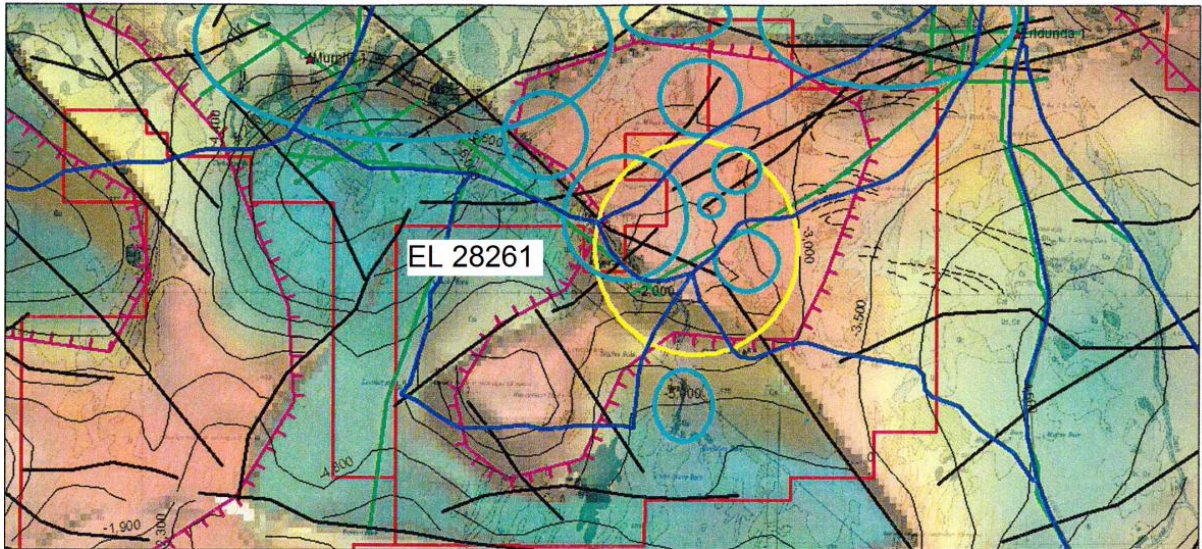


Figure 3: Lyndavale East (Mt Kitty) (EL 28261)

Top: Seebase depth to basement image and contours overlain with 1:250 K geology. Purple hachured line = fluid focus zone; black lines = faults as mapped Seebase study; turquoise circles = areas of playa deposits; green line = seismic; blue line = road; yellow circle = 'rim syncline' on Devonian unconformity (wider area of initial focus). Bottom: NTGS airborne radiometric (uranium) image, note small discrete anomaly at intersection of roads in main focus area.

From the historical research as summarised in the above diagram, an area within EL 28261 was determined of interest. The early stages of a drill program are being considered but following the final determination of exploration rationale.

## 5. CONCLUSIONS AND RECOMMENDATIONS

No on-ground exploration was conducted in the current reporting period. Desktop based assessment of historic data looking for structural and stratigraphic traps for uranium associated with helium gas was conducted. Data collaboration identifying features supporting exploration rationale included a major northwest-south east basement penetrating fault with wider interest a 'rim syncline' above the Gillen salt diaper and potential area of fluid focus thus defining an area that represents potential for on-ground investigations with either soil geochemistry, radon-cups and drill testing.

Our strategic focus on prospects with potential for near-term economic discoveries is especially relevant due to the volatility experienced in the uranium sector over the past two years. As a result of a tsunami-induced accident at Japan's Fukushima Daiichi nuclear power plant in March 2011, there has been understandable concern regarding the safety of nuclear power generation, and this has resulted in the exit from our sector of some short-term investors. Whilst near term supply and demand balance has inevitably been affected, we remain of the view that new uranium sources will be needed to meet global demand. Whilst we await the decisions of the Japanese Government on the future of a number of the temporarily shut down generators, there is still some uncertainty over the required timing for newly discovered uranium deposits, and we have factored this into our programs in prioritising our drill targets.

Consequently, our work over the past year has not been limited to pure-play uranium exploration with direction towards our tenement portfolio that includes opportunities for gold and IOCGU prospects, as well as uranium. While uranium prices have stagnated since Fukushima, the past year was strong for gold and copper, albeit with a recent sudden downturn. As we continue advancing our exploration projects into the important drilling phases in the current year, we will focus our efforts on those projects where near-term, targeted drill programs are most likely to rapidly deliver economic mineral deposits. Strong activity for uranium only exploration will be somewhat controlled by the increased price and enthusiasm for the uranium sector.