

## ASX Announcement

15 March 2024

This announcement has been authorised to be lodged with the ASX by the Board of Directors of PNX Metals Limited.



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# Significant Upside Potential at the Thunderball Uranium Deposit

- **Gap analysis completed on the Thunderball Uranium Deposit. Highlights include:**
  - **Potential extensions to high-grade zones identified with proposed new drilling to be guided by improved understanding of high-grade structural controls**
  - **Vein-style geological model recommended to domain and increase U<sub>3</sub>O<sub>8</sub> grade in future resource estimations**
  - **Confirmation downhole gamma logging (eU<sub>3</sub>O<sub>8</sub>) can be used in conjunction with assays to better increase dataset quality and quantity**
- **Exploration to target extensions to known mineralisation, discovery of additional mineralised shoots, and regional prospects exhibiting surface anomalism**
- **Fieldwork re-commenced, with drilling planned to commence in May subject to Govt. MMP approvals**

PNX Metals Limited (**ASX: PNX**) (“**PNX**” “the **Company**”) is pleased to report on a recently completed Gap Analysis by SRK Consulting (“**SRK**”) on the Thunderball Uranium deposit (“**Thunderball**”). The analysis highlights significant potential to extend the high-grade mineralisation and to make further uranium discoveries regionally.

Thunderball is located approximately 200 km southeast of Darwin in the Northern Territory, Australia (Figure 1), and was discovered by Thundelarra Exploration Ltd (“**Thundelarra**”) during concerted uranium exploration in the Pine Creek region between 2008 and 2011. Numerous uranium prospects were identified and a mineral resource was estimated at Thunderball (“**2011 MRE**”, refer THX ASX 7 February 2011). As the 2011 Mineral Resource Estimate (MRE) is pre-JORC 2012 it is not reported in this release.

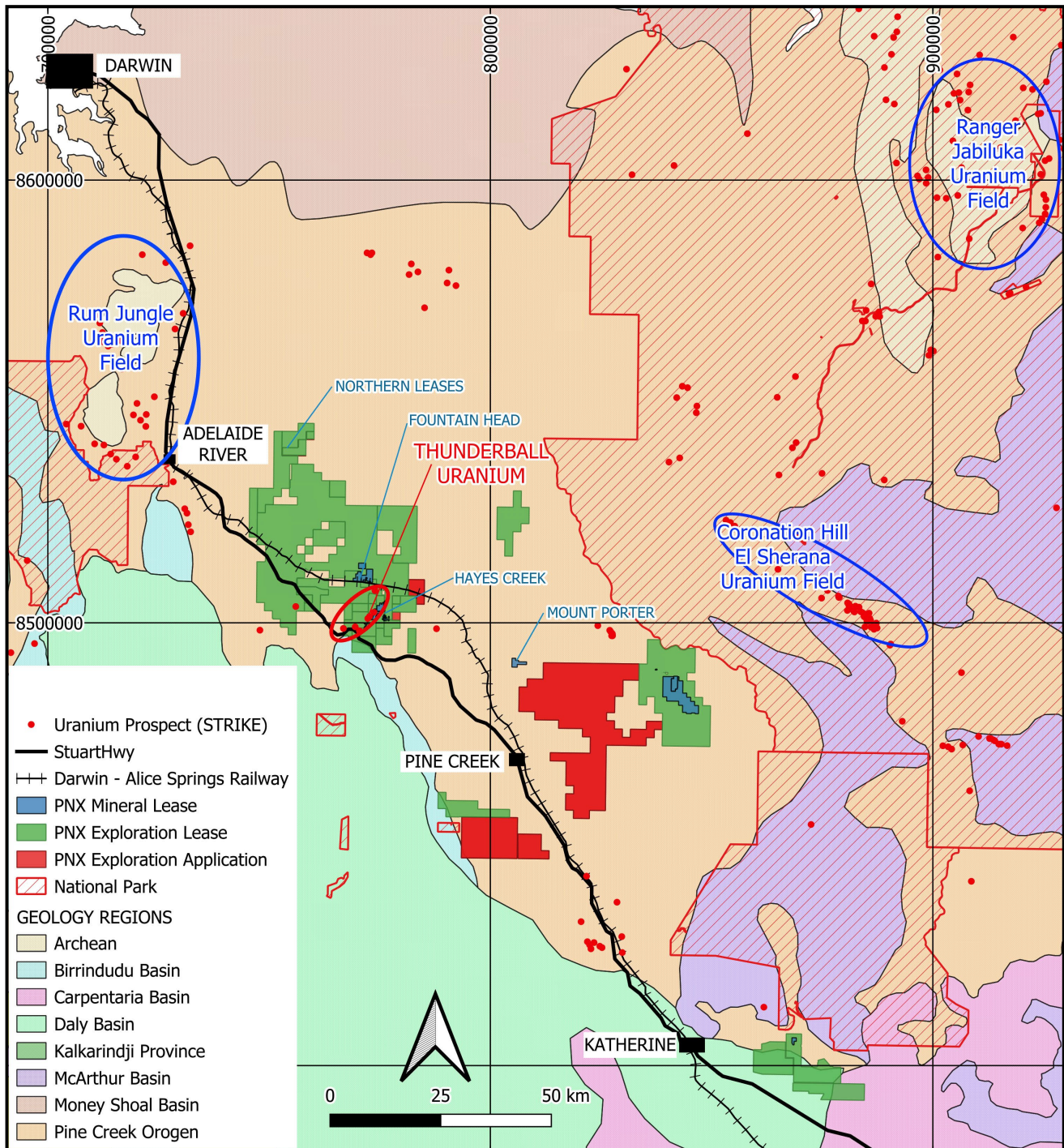
The Pine Creek region is noted as one of the world’s largest and richest uranium provinces, containing the Alligator River (Ranger, Jabiluka deposits), Rum Jungle and South Alligator Valley (Coronation Hill, El Sherana deposits) uranium fields (Figure 1).

PNX engaged SRK Consulting Ltd (“**SRK**”) to complete a gap analysis of the Thunderball datasets, including information available at the time of the 2011 MRE, and more recent data and studies. The main goals of the analysis were to provide recommendations to:

- Rectify any gaps limiting the extent to which Mineral Resources can be reported under the 2012 version of the JORC Code;
- Improve confidence in any future MRE; and
- Increase the size of the resource, particularly of high-grade domains.

### Executive Chairman’s Comment

PNX Executive Chairman Graham Ascough said “The gap analysis has improved our confidence in the Thunderball Uranium deposit and highlights significant grade and resource upside potential. Exploration fieldwork is underway and drilling is planned to target extensions to known mineralisation, discover additional mineralised shoots, and test regional prospects exhibiting surface anomalism. The use of downhole gamma logging is a breakthrough that will allow for a much more extensive and consistent dataset to be used. Plans for the upcoming exploration season, including drilling on several targets are progressing, and we look forward to providing further updates in due course.”



**Figure 1:** Location of PNX tenure and PNX’s main projects, plus uranium prospects and main uranium fields. Background: regional geology (STRIKE Northern Territory Geological Survey).

## Gap Analysis conclusion and recommendations

- Catalogue all core and samples, identify gaps in QAQC database, and resample where required
- Remodel mineralisation using vein-style, discrete high-grade domains which will most likely increase the appropriate capping grade
- Gamma logging and eU308 grades can be included in any future mineral resource to improve coverage
- Drilling recommended to test potential extensions to mineralisation and improve existing drill coverage
- The report also recommends demonstrating the reasonable prospects of eventual economic extraction required under the JORC 2012 code

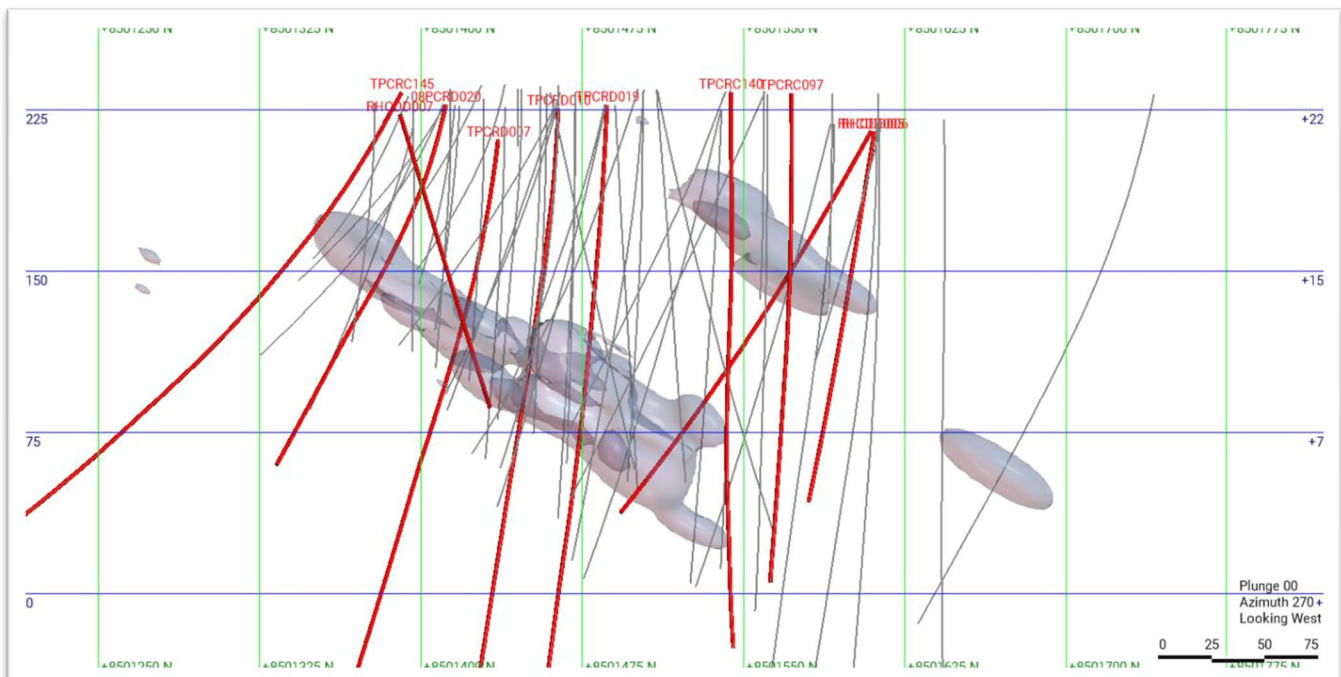
## Geological Model

The majority of mineralisation at Thunderball coincides with the hinge zone of the Thunderball Anticline, and is confined to a sub-unit of the Gerowie Tuff.

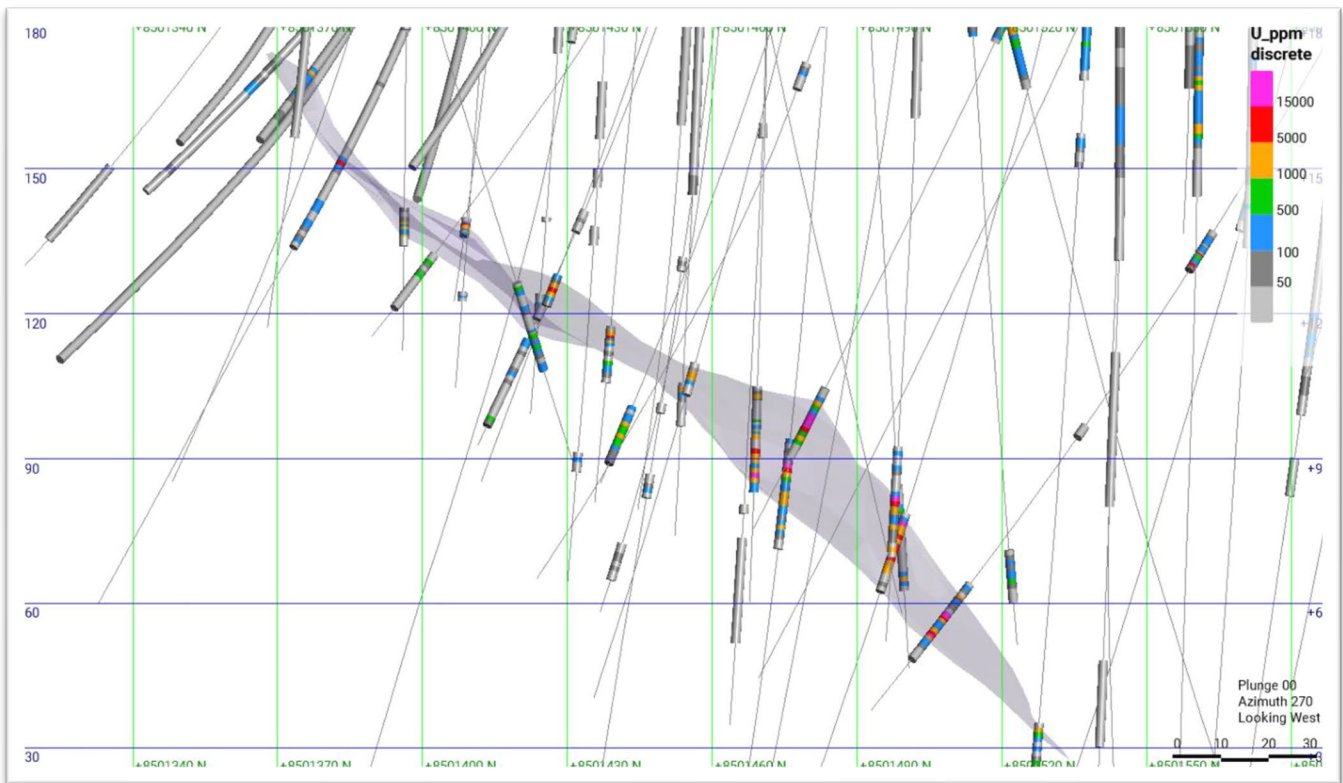
Grade estimation during the 2011 MRE was constrained by a 100 ppm U3O8 grade contour (Figure 2). At the time of this work, the continuity of higher grades was insufficient, relative to the drillhole spacing, to justify modelling at a higher threshold.

Revisiting the model in light of the additional drilling presented an opportunity to re-assess the higher grade zone in the lower lode using a vein-style approach and a significantly higher modelling cut off, in the order of 1000 ppm U3O8, resulting in a reasonably tabular zone continuous across at least 15 drill holes (~200m strike) with a true thickness ranging from 0.8m to 11.0m (Figure 3).

The tabular zone corresponds well with the interpreted structural controls for mineralisation in the region, and this improved understanding of the structural controls on the higher grade mineralisation will prove invaluable in designing the upcoming exploration programs.



**Figure 2:** View looking west. The 100 ppm U3O8 domain used for constraining the 2011 MRE is shown. Red traces are the holes that were added to the database since the 2011 MRE.



**Figure 3:** Section looking west, showing U grades, and rough high-grade model shape formed at 1000 ppm U threshold

### Use of Gamma Logging - Disequilibrium Studies

The historic MRE report concluded that, in the absence of a detailed study of the risks from disequilibrium, the eU3O8 results should not be used for Mineral Resource estimation. This gap appears to have been filled by an ANSTO (Australian Nuclear Science and Technology Organisation) disequilibrium study prepared in 2013. Ten samples from three drillholes were analysed. Eight samples were found to be within the tolerances set for defining secular equilibrium. The two samples that did not meet this definition had ratios in both cases not far out of tolerance and implied a tendency for eU3O8 to underestimate the actual U3O8 content.

ALS Metallurgy also analysed the same set of samples used for the ANSTO study. The dominant uranium mineral is uraninite, which is not typically associated with significant disequilibrium. Therefore, the ALS study provides another line of evidence to support the reliability of eU3O8 data from the gamma logging.

In summary, based on the above studies and the statistical comparison of eU3O8 and U3O8 grades, there is sufficient evidence to conclude that eU3O8 data can be used for future Mineral Resource estimation.

### Competent Person's Statement

The information in this report that relates to exploration data is based on information compiled by Dr Michael Green, who is a full-time employee and shareholder of PNX Metals Ltd. Dr Green is a Member of the Australian Institute of Geoscientists (AIG No: 4360) and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Dr Green consents to the inclusion of this information in the form and context in which it occurs.

For further information please visit the Company's website [www.pnxmetals.com.au](http://www.pnxmetals.com.au), or contact us directly:

**Graham Ascough**

Executive Chairman

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