

# Deep Yellow Limited

ABN 97 006 391 948

## **EL 25601 NANCY HILL ANNUAL REPORT**

**&\$ April 2012 to 1- April 2013**

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## SUMMARY

Exploration Licence (EL) 25601 is located approximately 190 kilometres north of Alice Springs in the Northern Territory.

EL 25601 was granted to Deep Yellow Limited (DYL) on 6 April 2011, consisting of 295 blocks covering a total area of ~ 900km<sup>2</sup>. This report covers the exploration activities conducted during the second year of tenure of EL 25601.

The Nancy Hill tenement is located within the Tea Tree Sub-Basin unconformably overlying the metamorphic and igneous basement rocks of the Aileron Province. A number of ranges within the Aileron Province to the southwest of the tenement consist of uranium enriched granitoids. DYL is targeting the drainage patterns within the basin originating from these ranges for palaeochannel and calcrete-hosted style uranium mineralisation.

During the second year of tenure DYL obtained a Sacred Site Clearance Certificate through the Central Land Council to conduct its proposed drilling programme. The drilling programme was delayed due to fundraising difficulties in an unfavourable market in mid-2012.

## 1. INTRODUCTION

Exploration Licence 25601, Nancy Hill, is being explored for palaeochannel (roll front) and calcrete-hosted styles of uranium mineralisation by DYL

This report covers exploration conducted on Exploration Licence 25601 for the period 20 April 2012 to 19 April 2013 (**Figure 1**).

### 1.1. Tenure

Exploration Licence 25601 was granted on 20 April 2011 over an area of 295 blocks.

Table 1: Napperby Tenement Details

Tenement No.	Name	Blocks	Grant Date	Expiry Date
EL 25601	Nancy Hill	295	20 April 2011	18 April 2017

A partial relinquishment was lodged in respect of 100 blocks at the end of the second year of term together with an application for a waiver of relinquishment in respect of 47 blocks.

### 1.2 Location and Access

EL 25601 is located approximately 190 km north of Alice Springs (**Figure 1**) in the Aileron Province. The tenement is covered by the Napperby (SF53-09) and Mount Peake (SF53-05) 1:250000 scale mapsheets. The project area is accessed north from Alice Springs via the Stuart Highway (**Figure 2**).



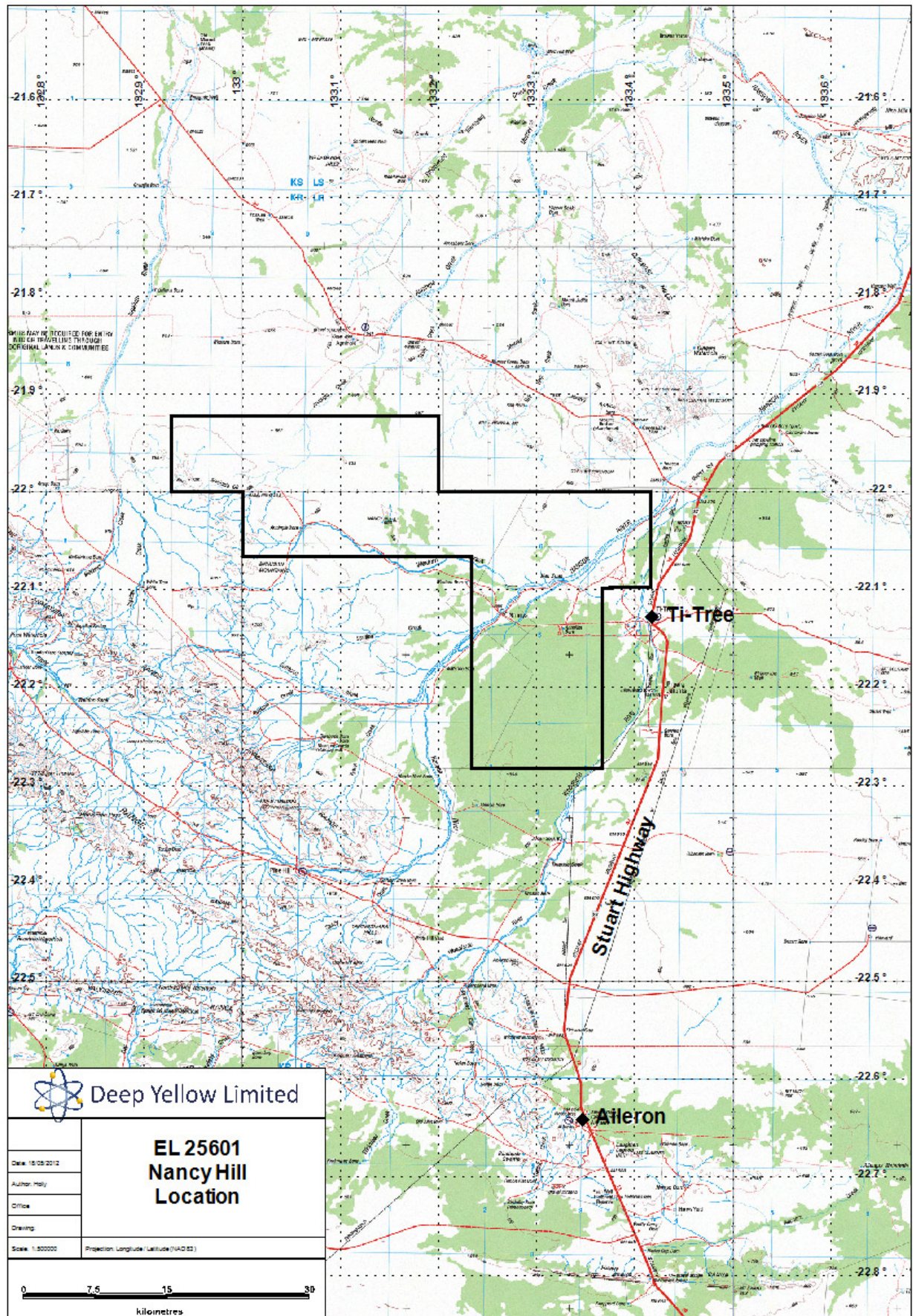


Figure 1 Tenement Location Plan

## 2. GEOLOGY

The Nancy Hill tenement lies within the Aileron Province of the Northern Territory.

The project is situated within the Tea Tree Sub-Basin which is outlined by a series of hills and ranges. To the west are the Reynolds Range and Ennugan Hills, dominated by uranium enriched granitoids, granulite facies metamorphics and minor lower grade schists, amphibolites and quartzites. The northeast of the basin is marked by lower relief acidic igneous rocks and metasediments.

The Tea Tree basin is a freshwater Tertiary sedimentary basin up to 300m thick. Faulting and block movements during the Tertiary led to the development of a composite low between the Reynolds Range and the Barrow Creek block within which the shallow basin developed. Basin topography is irregular with laterite development on low basement swells. Analysis of ground water within the drainage basin shows anomalous uranium and radon in solution. Downhole analysis of the basin geology, whilst not intersecting any defined channels, indicates favourable fluvial cyclicity for a channel regime, highlighting the potential for secondary uranium mineralisation.

Work by CRA exploration (CRA) in the 1970's identified six lithologies within the basin –

- Oxidised poorly sorted silts and sands with infrequent gravel horizons
- Green and grey siltstones and mudstones
- Lignite and carbonaceous clay
- White kaolinitic silts and clays
- Soft unconsolidated sands
- Laterite

A number of uranium mineralised shear zones are located within the ranges to the southwest of the basin. Whilst these contain considerable high grade uranium, they are generally limited in size and to-date have not been deemed economic. These occurrences, along with the uranium enriched intrusives are seen as potential sources for secondary mineralisation within the basin.



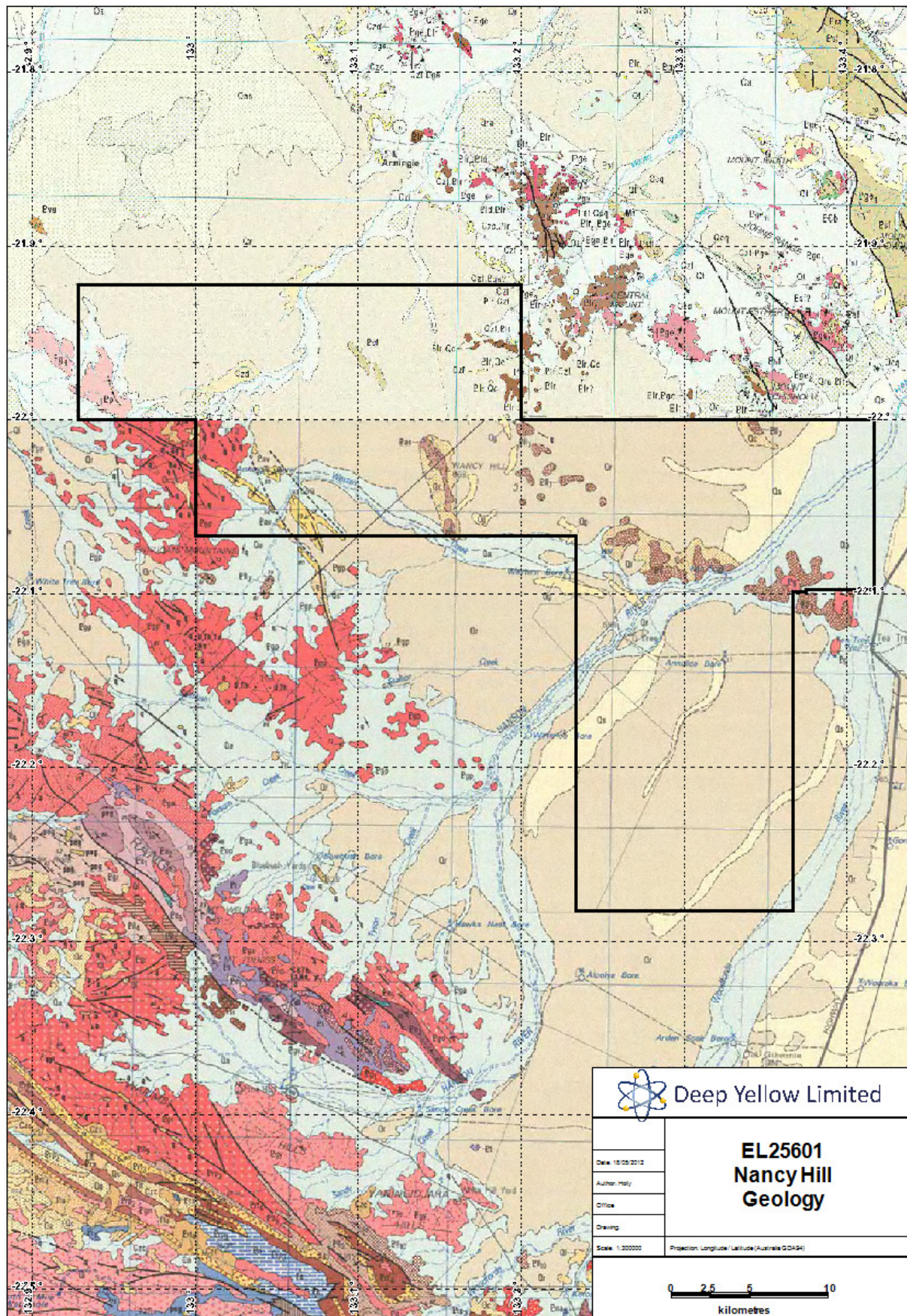


Figure 2 Nancy Hill Project Geology



### **3. PREVIOUS EXPLORATION**

During the 1970s the tenement area was explored for uranium in the central and eastern areas by CRA and the western area by Tanganyika Holdings and Otter Exploration NL (Otter).

CRA's exploration initially focussed on investigating groundwater bore hole data, retrieved by the NT Department, and identified anomalous radon and uranium values at various points in the basin. Open bore holes were also gamma logged and any available cuttings geologically logged. Following this work CRA undertook an extensive auger drilling programme and minor diamond drilling programme to test for subsurface secondary uranium mineralisation. No significant uranium mineralisation was intercepted however drilling suggested a favourable sedimentary regime for hosting secondary uranium, with the high likelihood for finding channels systems within the overall basin setting.

Minor uranium enrichment within the basin stratigraphy was considered to be controlled by; the amount of organic matter present, grain size, local unconformities, deep weathering profiles and proximity to the surface.

Tanganyika Holdings worked to the west of CRA in the western side of the basin and the hinterlands along the south-west margin. They also failed to identify any significant uranium mineralisation within the basin but again intersected favourable sedimentary regimes and palaeo-groundwater conditions. Drilling of fluvial basinal sediments indicated uranium concentrations in excess of typical sedimentary values however enrichment was only minor suggesting levels of uranium are dispersed across the basin. Highest values were associated with calcretised sediments. Based on these results it was therefore considered that concentrating processes needed to be identified within the basin to increase the chance of locating an economic deposit.

Uranium mineralisation was also identified in numerous isolated shear zones within the basement rocks to the south-west, however these were not considered significant enough for further investigation. A number of the acidic intrusives in the basement rocks are also enriched in uranium.

Otter also explored the western area of the basin and the surrounding ranges for uranium. Most of the identified anomalies were coincident with uranium and thorium enriched granites and were not deemed significant. Otter also carried out analysis of bore waters to the west of the current EL 25601 and identified anomalous uranium values in a number of bore holes within the ranges to the west.

### **4. EXPLORATION COMPLETED**

Following a survey undertaken by the Traditional Owners, the Central Land Council issued a Sacred Site Clearance Certificate in respect of DYL's reconnaissance and drilling programmes.

The drilling programme is designed to test the young, shallow sediments of the Tea-Tree basin for secondary uranium mineralisation hosted in calcretes and/or palaeochannels.

The drilling programme was not completed during the 2012 field season as DYL was unable to raise funds in an unfavourable market in mid-2012. DYL completed a fundraising later in the year however, it was too late in the field season to conduct the planned drilling programme.

## 5. BIBLIOGRAPHY

Bridgwater, H L. First Annual Report EL 25601 Nancy Hill, 19 April 2011 to 18 April 2012. Unpublished Report by Deep Yellow Ltd.

Davis, H., 1973. Report on Reconnaissance Exploration Programme, Arunta Northern Territory, Tanganyika Holdings. Report No. CR19730068

Davy, R. 1973. Sixth Progress Report MP 4976/73 Geochemical Survey, Arunta Area. Amdel to Tanganyika Holdings. Report No. CR19740019

Hughes, F.E., & O'Sullivan, K.N. 1973. Authority to Prospect No 3360 Mt Lucy NT Final Report. CRA Exploration Proprietary Limited. Report No. CR19730026

Kojan, C. 1979. Annual Report EL 1444 Otter Exploration N.L. Report No CR19790021/22

O'Sullivan, K.N. 1973. Final Report and Results of Stratigraphic Drilling, E.L. No. 752, Tea Tree Area, N.T. CRA Exploration Pty Limited. Report No CR19730183

Unknown, 1978. Annual Report EL 1447 Murray Creek. Otter Exploration N.L. Report No CR19780039