

**EL30837**  
**“Harts Ranges East” PROJECT**

Final Surrender Report 2020

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## Licence Details

**Licence No.** EL30837

**Project Name:** Harts Ranges East Project

**Licence Details:**

- **Date of grant:** 11/02/2016
- **Period of validity:** 11/02/2016 – 17/04/2020

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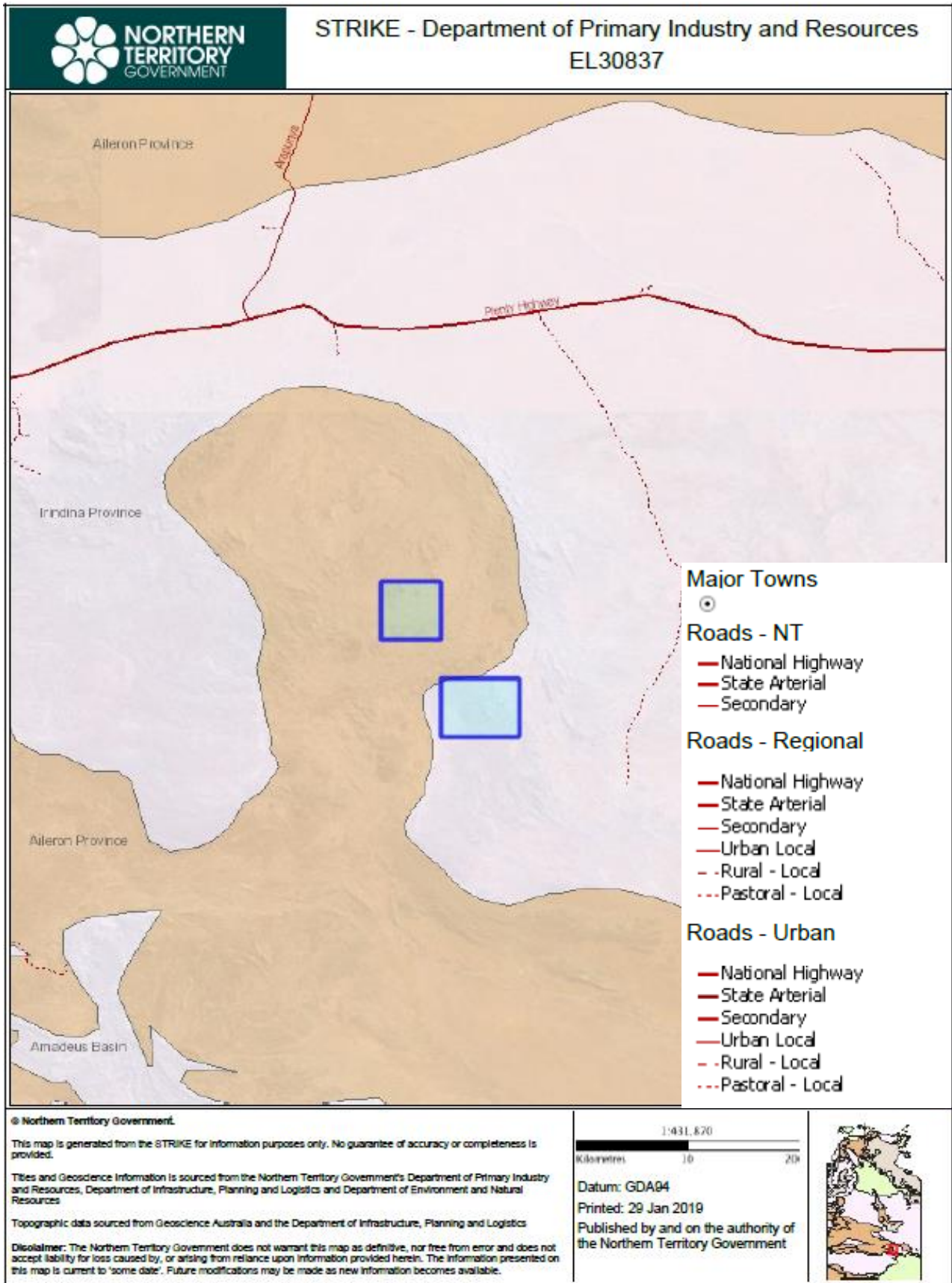


Figure 1. See Appendix 1

# 1. Technical Report

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### 1.1 Abstract

Pinnacle Exploration Pty Ltd was granted EL30837 on 11/02/16 for the purpose of exploration. The 'Harts Ranges East' is located at the eastern end of the Harts Range district within the Arunta Block, a region of intensely metamorphosed sedimentary beds and volcanics (up to granulite facies). More recent metamorphism during Alice Springs Orogeny approximately 300 million years ago resulted in pegmatites and highly siliceous fluids intruding the surrounding gneiss and amphibolites rocks. This reduced area covered 65 blocks.

Exploration during the life of the reduced tenement area included reconnaissance field trips, field mapping and sample analysis. No further works or expenses have been undertaken since the last Annual Report Submission.

*Keywords: harts ranges, kyanite, lolite, garnet, corundum, gemstones, amphibolite, granulite, Alice Springs Orogeny, Arunta Block*

## 1.2 Introduction, history and exploration rationale

EL30837 is located within the Harts Ranges region of the Northern Territory and is 66.281 Sq Kms (21 blocks) in area. The leases were granted to Pinnacle Exploration Pty Ltd on 11/02/16 for a period of 6 years for the purpose of exploration. The Area is comprised of highly metamorphosed and faulted Archean to Proterozoic lithologies. Amphibolite to granulite facies are present throughout both tenements. There are intermittent areas of Archean Mafic to ultramafic intrusions.

## 1.3 Location

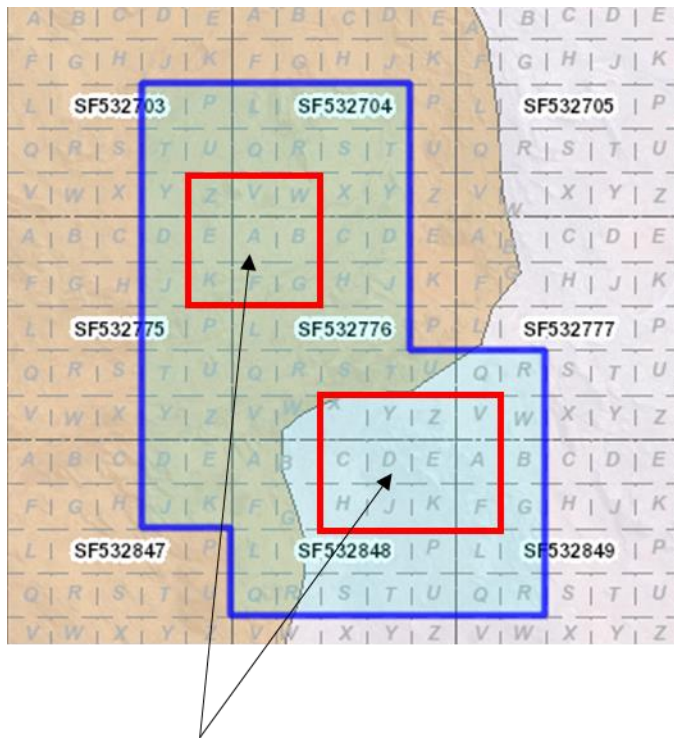
Near Quartz Hill, Hart Ranges, NT (Northeast of Alice Springs). The EL application area is located at the eastern end of the Harts Range district within the Arunta Block, a region of intensely metamorphosed sedimentary beds and volcanics (up to granulite facies). More recent metamorphism during Alice Springs Orogeny approximately 300 million years ago resulted in pegmatites and highly siliceous fluids intruding the surrounding gneiss and amphibolites rocks. The EL area contains a wide range of abundant gemstone and ornamental mineral deposits suitable for the lapidary and gemstone industry.

## 1.4 Target commodities

Kyanite, lolite, garnet, corundum, gemstones

## 1.5 Exploration rationale

More recent metamorphism during Alice Springs Orogeny approximately 300 million years ago resulted in in pegmatites and highly siliceous fluids intruding the surrounding gneiss and amphibolite rocks. The EL area (shown in red on Fig.2) contains a wide range of abundant gemstone and ornamental mineral deposits suitable for the lapidary and gemstone industry. Large deposits of industrial grade through the gem quality Kyanite occur within bands of biotite schist in the EL application area. Associated with the Kyanite are deposits of carving grade to gem grade lolite and rare blue Corundum crystals. The industrial grade Kyanite reserves are extensive and could be utilised in the refractory industry.



**Figure 2.** See Appendix 1

## 1.6 Exploration completed

Over the annual periods of 2016-2017 and 2017-2018, two-week exploration and prospecting trips were conducted over the lease area. No other site works occurred over these annual periods. This involved small scale surface exploration and surface sampling of pegmatite and amphiboles. Cutting and polishing of samples occurred at our Melbourne workshop to determine economic grade.

Large deposits of industrial grade through the gem quality Kyanite occur within bands of biotite schist in the lease area. Associated with the Kyanite are deposits of carving grade to gem grade Iolite and rare blue Corundum crystals. The industrial grade Kyanite reserves are extensive and could be utilized in the refractory industry.

Several pegmatites previously located during nearby fieldwork are likely hosted within the Irindina Gneiss and show industrial grade Beryl through to gem grade Aquamarine, Titanite and Epidote. These pegmatites are also abundant in high grade silica i.e. amethyst and smoky quartz with a wide range of industrial/ornamental uses.

The contact zones around the pegmatite outcrops contain large resources of garnet, ranging from gem quality through to industrial grade suitable for use in the abrasives industry.

### 1.6.1 Reporting Period 2019

During the reporting period, Pinnacle Exploration Pty Ltd conducted a two-week (14 day) field work trip to the tenement. The trip included three qualified geologists to conduct extensive surveying of the area. Samples were collected for examination and preparation in our Melbourne workshop. The cost of the exploration and prospecting trip was \$74,300 not including overheads.

### 1.6.2 Reporting Period 2018

During the reporting period, Pinnacle Exploration Pty Ltd conducted a two-week (14 day) field work trip to the two tenements. The trip included three qualified geologists to conduct extensive surveying of the area. Samples were collected for examination and preparation in our Melbourne workshop. The cost of the exploration and prospecting trip was \$162,500.16 not including overheads.

### 1.6.3 Reporting Period 2017

A 3-day preliminary fieldtrip to the site was undertaken by two qualified geologists in July 2016 for zone identifying, surveying, and sampling. Access from the main station road is a rudimentary two-wheel track passing through rough terrain and in many cases is barely visible due to lack of use. Figure 2 shows a section of track that is clearly visible, other sections pass through dry creek beds and are harder to navigate. The workings themselves are located on the edge of a low escarpment trending roughly south-east to North West. Visual inspection and previous local field experience show that the epidote deposits occur as elliptical "pods" in the Riddock Amphibolite and don't seem to continue at length or at depth. The area has been well worked by amateur fossickers for many years as shown by the numerous shallow workings scattered around the tenement. The area however is abundant with epidote mineralization and further deposits would exist beyond the surface exposures with potential for lapidary grade through to museum grade epidote, feldspar and titanite specimens.

## 1.7 Surrender rationale

Over the lifetime of the Exploration License, no significant resources were discovered or samples taken that were deemed to be profitable within the collector market. Therefore, the area was deemed to have no continued value for future exploration for the mineralogical commodities we require.

## 1.8 Conclusions and recommendations

In conclusion, with the current state of the collector's market it has been deemed that further workings upon this site are to be unprofitable. In the future if an upturn occurs future works may be able to occur but as it currently stands that is not the case.

## Appendix 1

**Figure 1:** Location map

**Figure 2:** Area of interest