



Cameco Australia Pty Ltd

**WELLINGTON RANGE PROJECT
NORTHERN TERRITORY
EL 5893
RELINQUISHMENT REPORT**

Date: August 2008

Report No.: WR08-02

Period: 4 May 2004 to 3 May 2008

Authors: Cath Ranford (Geologist)
Paul Melville (Senior Geologist)
Craig Bentley (Database Geologist)

Copies: Cameco Australia Pty Ltd (1)
DPIFM - Minerals and Energy (1)
Northern Land Council (1)

SUMMARY

The Wellington Range Project is located in north-western Arnhem Land, and is managed and operated by Cameco Australia Pty Ltd (Cameco). The tenement was granted on 4 May 2004 for a period of six years. This report describes exploration work undertaken on the relinquished portion of EL 5893 (Wellington Range Project) during the term of tenure.

A partial relinquishment of 68 blocks for 216.5 km² of EL 5893 was actioned on the anniversary date of 3 May 2008. 201 blocks for an area of 639.9 km² has been retained. No other relinquishments have been made from the original area of grant.

As all the relinquished blocks are on non-consent ground, Cameco did not conduct any exploration activities over the relinquished ground during tenure.

Due to access land restrictions, Cameco was unable to assess the mineralization potential of the relinquished area.

TABLE OF CONTENTS

| | |
|---------------------------------------|----------|
| SUMMARY | 1 |
| TABLE OF CONTENTS | 2 |
| FIGURES..... | 2 |
| INTRODUCTION | 3 |
| Location and Access | 3 |
| Tenure | 3 |
| Physiography..... | 3 |
| Tenement Geology..... | 3 |
| Structure and Geological History..... | 4 |
| CONCLUSIONS..... | 5 |
| REFERENCES..... | 5 |

FIGURES

| | |
|---|---|
| Figure 1 - EL5893 Location Map | 3 |
| Figure 2 - EL5893 Relinquished Blocks..... | 3 |
| Figure 3 - EL5893 Tenement Geology | 4 |
| Figure 4 - Regional Geology and Structures..... | 5 |

INTRODUCTION

Cameco Australia didn't conduct any exploration activities over the relinquished ground as the entire relinquished area lies on non-consent ground.

Location and Access

EL5893 is located in western Arnhem Land, and centred 100 km NNE of Jabiru.

Relevant map sheets are:

- 1:250K Cobourg Peninsula SC5313
- 1:100K Wellington Range 5574
- 1:50K Laterite Point

Figure 1 - EL5893 Location Map

The unsealed road to Gurig National Park on the Cobourg Peninsula provides good vehicular access to the eastern margins of the tenement. Several east-west trending roads and tracks provide additional access. Sandstone escarpment areas are accessible by helicopter.

Tenure

EL5893 was granted on 5 May 2004 for an initial period of six years. On granting, the total area under licence was 269 blocks for 856.4 square kilometres of which 378.8 square kilometres (44%) was excluded from exploration by the Northern Land Council. The current area available for exploration is 477.6 square kilometres.

Cameco applied for a Waiver of Reduction in March 2008. Cameco applied to relinquish only 68 blocks all within no-go zones in the tenement.

Figure 2 - EL5893 Relinquished Blocks

Physiography

The tenement contains some remnant areas of dissected sandstone plateau, which form the western extension of the Wellington Range. The remainder consists predominantly of gently undulating plains covered by savannah woodland. The principal drainage systems within the region are Angularli creek draining to the east and Murgarella Creek draining to the west.

Tenement Geology

Recent cover comprising sands and clay, gravel and cemented ferruginous deposits infill most valleys and also obscure any outcrop. A thick layer of up to 300m of more recent Cretaceous sediments, equated with the Bathurst Island Formation, obscures the basement geology in the northern part of the Wellington Range tenement.

Basement Proterozoic subcrops and outcrops of Oenpelli Dolerite and granitoids of the Nimbuwah Complex are common in the southern part of the tenement. A small thin band of Cahill Formation interpreted from magnetics runs along the western boundary in the northern part of the tenement. The Oenpelli Dolerite is variably magnetic and

occupies existing lithological and structural boundaries. The Nimbuwah Complex is quartzo-feldspathic, migmatitic to gneissic, non-magnetic and shows complex lithological relationships. The Cahill Formation is a thin zone of interlayered, strongly foliated, pelitic to semi pelitic schists and gneisses with thin amphibolitic and pegmatoidal bands. The division between Upper and Lower Cahill Formation is determined by the presence of a magnetite bearing pelitic schist in the lower part of the Upper Cahill Formation as seen around Ranger.

Sandstone and basal conglomerates of the Kombolgie Formation form the Wellington Range escarpment, which dominates the south-western quarter of the tenement. Several smaller isolated outcrops of the Kombolgie Formation occur in the south-eastern quarter of EL5893. The Kombolgie formation is described as quartz rich sandstones and basal quartz rich conglomerates.

In 2005 Southern Geoscience completed a tenement scale geological interpretation for EL5893. Drilling to date within the tenement has largely confirmed the interpretation.

Figure 3 - EL5893 Tenement Geology

Structure and Geological History

The early Proterozoic rocks of the region have been affected by the Top End Orogeny (1880 to 1780 Ma), which includes the initial Nimbuwah Event, or Barramundi Orogeny at about 1870 Ma. This produced a prograde metamorphic effect with associated tight folding and faulting. The various 'domains' exhibited a variability of deformation and metamorphic grade with the western and eastern margins of the Pine Creek Inlier (Litchfield Province and Nimbuwah domain respectively) exhibiting the most pronounced effects.

Major regional faults, which affect the early Proterozoic, have north-west (Bulman), north-north-west (Aurari) and northerly (Anuru, Goomadeer) strikes. Another significant set trends to the east and includes both the Ranger and Beatrice faults. The Bulman Fault Zone is the principle regional feature and is considered to represent a long-lived deep crustal structure, which has exerted a large lateral component in rocks of the Pine Creek Inlier.

A more intense concentration of structures traverse the mid-Proterozoic and younger rocks and include north-west, east, north-east and northerly trends. Both faulting and jointing with displacements ranging from a few metres up to 100 metres locally heavily dissect the Kombolgie.

The Wellington Range area occupies the north-western extension of the Arnhem Shelf in the northern McArthur Basin. Deposition of the Mamadawerre Sandstone took place in an environment of extension and local basin formation with probable fault-controlled sedimentation. Rapid thickening and thinning of the sequence imply this.

The widespread Oenpelli Dolerite intrusive event took place at about 1720 Ma. Localised effects in the sandstone include silicification, the introduction of magnesium-rich to intermediate chlorite and the formation of muscovite-illite. A characteristic

mineral assemblage of prehnite-pumpellyite-epidote has formed in quartzofeldspathic Nimbuwah gneiss and migmatite adjacent to the intrusions.

Figure 4 - Regional Geology and Structures

CONCLUSIONS

Due to access restrictions on the relinquished ground, Cameco was unable to assess the mineralization potential of the relinquished area.

REFERENCES

Otto G., Melville P. and Beckitt G., 2005. Exploration Licence EL5893, Wellington Range Project, Northern Territory. *Cameco Australia, 2004-2005 Annual Report*, WR05-02.

Carter M and Beckitt G., 2006. Exploration Licence EL5893, Wellington Range Project, Northern Territory. *Cameco Australia, 2005-2006 Annual Report*, WR06-02.

Melville P., 2007. Exploration Licence EL5893, Wellington Range Project, Northern Territory. *Cameco Australia, 2006-2007 Annual Report*, WR07-02.

Needham, R. S. 1988. Geology of the Alligator Rivers Uranium Field, Northern Territory. Bulletin 224, BMR, Canberra.