



Cameco Australia Pty Ltd

**ARNHEM LAND WEST JOINT VENTURE
LIVERPOOL PROJECT
EL 2855
ANNUAL REPORT FOR PERIOD 25 JULY 2002 TO 24 JULY 2003
CONFIDENTIAL**

Date: August 2003

Report No.: LP03-08

Period: 25 July 2002 to 24 July 2003

Authors: L Sawyer, Geologist

Copies: Cameco Corporation (1)
Cameco Australia Pty Ltd (1)
Northern Territory Dept. of Mines (1)
Northern Land Council (1)

SUMMARY

This report describes exploration work undertaken for the Arnhem Land West Joint Venture (AWJV) on the Liverpool project during the field season over the period 25 July 2002 to 24 July 2002. The tenement was formerly part of the Arnhem Land West Joint Venture, a joint venture between Cameco Australia Pty Ltd (Cameco), PNC Exploration Australia Pty Ltd (PNC) and the Ngalangak Aboriginal Corporation, this tenement is now held by Cameco Australia Pty Ltd in Joint Venture with the Ngalangak Aboriginal Corporation.

Cameco Australia Pty Ltd holds a letter of agreement with De Beers Australia Exploration for De Beers to undertake exploration activities on the tenement.

Cameco conducted a review of all data from previous years exploration activities for the tenement. The exploration activity for this year was conducted by De Beers, initial reconnaissance sampling being conducted in late 2002 and included stream sediment sampling, deflation loam sampling and the ground inspection of magnetic anomalies

Analysis and interpretation by De Beers failed to locate any significant anomalies and recommend no further work be conducted. De Beers submitted a report to Cameco Australia in accordance with the letter of agreement and is De Beers' final report on their activities on the tenement.

Final geochemical analyses failed to locate any significant anomalies; several areas of marginally elevated background geochemistry were noted.

TABLE OF CONTENTS

INTRODUCTION	1
Location and Access	1
Tenure	1
Physiography.....	1
Tenement Geology.....	1
Regional Structure and Geological History	2
Exploration Target	3
Previous Exploration.....	3
EXPLORATION PROGRAM.....	3
CONCLUSIONS/DISCUSSION.....	3
BIBLIOGRAPHY	4

TABLE OF FIGURES

Location Map	1
--------------------	---

TABLE OF TABLES

Summary of Expenditures.....	3
------------------------------	---

TABLE OF APPENDICES

De Beers, 2003, Final Report for West Arnhem Land Joint Venture (EL/2855)	4
---	---

INTRODUCTION

This report describes program activities carried out during the 2002 –2003 field season on behalf of the Arnhem Land West Joint Venture, (AWJV) a joint venture between Cameco Australia Pty Ltd (Cameco) and the Ngalangak Aboriginal Corporation. Since the Exploration Licence is located on Aboriginal Land the exploration program was carried out under the terms of consent documentation agreed with the Northern Land Council pursuant to the Aboriginal Land Rights (Northern Territory) Act 1976.

Cameco Australia Pty Ltd holds a letter of agreement with De Beers Australia Exploration (De Beers) for De Beers to undertake exploration activities on the tenement.

The program as described, represents the third year of exploration on the tenements by the Joint Venture.

The exploration activity for this year was conducted by De Beers, initial reconnaissance sampling being conducted in late 2002 and included stream sediment sampling, deflation loam sampling and the ground inspection of magnetic anomalies. Cameco conducted a review of all data from previous years exploration activities for the tenement.

Location and Access

Exploration Licence 2855 is located in central western Arnhem Land. The tenement is centred about 70 km southeast of Nabarlek and 100 km east of Jabiru. It is situated approximately 120 km southeast of the King River project.

The project area has extremely limited vehicular access. A four-wheel drive track is indicated as traversing the extreme south east of the tenement and another accesses the Marlgowa Outstation on the Mann River.

Location Map

Tenure

EL 2855 was granted on the 25th July 2000 for an initial period of six years. On granting, the total area covered by the licence is 1255 km² with 213 km² being excluded from exploration.

Physiography

The tenement consists predominantly of relatively flat-lying sandstone plateau covered by savannah woodland and scrubland. The plateau is dissected by numerous, mostly north flowing drainages including the Liverpool and Mann Rivers. Gorges and waterfalls have developed in places.

Tenement Geology

Based on the NTGS mapping of the Milingimbi 1:250000 geological series (Carson and others 1999), the tenement is dominated by the Kombolgie Subgroup (formerly Kombolgie Formation) of the Paleoproterozoic Katherine River Group. The latter forms

an extensive area of platform cover sediments in western Arnhem Land. The Marlgowa Sandstone, which is the stratigraphically highest unit of the Kombolgie, predominates with lesser exposures of the McKay Sandstone. The former consists of coarse to occasionally pebbly white-grey quartz arenite and was formed in a fluvial depositional environment. The McKay, which lies conformably on the Marlgowa, consists of interbedded fine to medium grained white-grey quartz arenite and red-brown to purple ferruginous sandstone, occasionally pebbly. The depositional environment varied from fluvial to shallow tidal marine.

The Gilruth Volcanic Member is present over a very limited area in the extreme south western corner of the tenement. This unit, represented by ferricrete and saprolite rubble, separates the Marlgowa from the underlying Gumarrinbang Sandstone. Isolated outcrops of Oenpelli dolerite have been mapped within the tenement. Stratigraphically, these sandstone formations are located at the top of the Kombolgie Subgroup. Depth to basement from the top of the Marlgowa Sandstone on the Milngimbi sheet area is estimated to be at least 700 metres, calculated from the measurement of sections through the various sandstone units by NTGS.

Regional 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 northwest (Bulman), north-north-west and northerly (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 northwest, east, northeast and north trends. Both faulting and jointing with displacements ranging from a few metres up to 100 metres, locally heavily dissect the Kombolgie.

In a regional context, the Liverpool project is located adjacent to the Arnhem Shelf at the northern extent of the McArthur Basin. The tectonic environments that existed during deposition of the Katherine River Group varied, ranging from extension and local basin formation with probable fault-controlled sedimentation (Mamadawerre Sandstone), to a basin-wide extensional setting. As noted above the exposed sandstone units illustrate spectacular eroded joint and fault patterns, however the near horizontal to shallow-dipping bedding would imply a tectonically inactive post depositional environment.

The widespread Oenpelli Dolerite intrusive event took place at about 1715 Ma. Localised effects in the sandstone include silicification, the introduction of magnesium-rich to intermediate chlorite and the formation of muscovite-illite.

Exploration Target

The focus of Cameco's exploration strategy is the discovery of unconformity-related uranium deposits. The nearby economic deposits at Ranger, Jabiluka, Koongarra and the now depleted Nabarlek Mine serve as models for this strategy. The presence of gold, palladium and platinum in these deposits plus the economic gold-platinum resource at Coronation Hill in the South Alligator Valley, indicates an additional potential for this deposit style.

Previous Exploration

Previous field activity that took place during the 2000-2001 field season was flying a fixed-wing magnetic, radiometric and DTM (digital terrain model) survey over the extent of the exploration licence (Melville P. 2001).

During the 2001-2002 field season data from the ARGUS survey flown over a strip of the project area to the west, was received along with a review report. Further review of this survey was conducted by Cameco personnel and two zones of interest noted. Data from a hyperspectral Hymap Mark I survey, flown in 2000, was processed and interpreted early in this lease year. Analysis of the interpreted data revealed several zones of high clay content. A helicopter assisted regional sandstone sampling program was conducted over 'anomalies' highlighted by all the flown surveys. This consisted of the collection of 100 'brick' sized samples for geochemical assay, clay estimation analysis (PIMA), and petrographical work (Melville P. 2002).

EXPLORATION PROGRAM

During the reported field year 2002-2003 Cameco conducted a review of all data for the tenement. All sample data from the sandstone sampling program in May – June 2003 was reported on in the annual report for that licence year (Melville P, 2002).

The exploration activity for this year was conducted by De Beers, initial reconnaissance sampling being conducted in late 2002 and included 198 stream sediment sampling, 6 deflation loam sampling and the ground inspection of magnetic anomalies, including 6 geochemical samples from these magnetic anomalies. This program is outlined in Appendix 1, Final Report for West Arnhem Land Joint Venture (EL/2855), De Beers, August 2003

Summary of Expenditures

CONCLUSIONS/DISCUSSION

Cameco concluded that although the current land surface tenement is on average 400 – 600 m above the unconformity there are several areas that require follow-up sampling and structural / clay zones in which mapping should be conducted to complete the tenement coverage. It is

estimated that \$40,000 will be spent on these exploration activities in the 2003 – 2004 field season.

Work undertaken by De Beers for the West Arnhem Land Joint Venture Project in late 2002 included heavy mineral stream sampling, deflation loam sampling and the ground investigation of two magnetic anomalies. Both magnetic anomalies were heavy mineral stream and soil (geochemical) sampled. Sample results were received; non-kimberlitic spinels and ilmenites were recovered. Samples taken over the two magnetic anomalies were also negative. No further work is recommended and DeBeers Australia Exploration Limited has withdrawn from the joint venture.

BIBLIOGRAPHY

Carson, L.J., Haines, P.W., Brakel, A., Pietsch, B.A., and Ferenczi, P.A. 1999. Milingimbi, Northern Territory. 1:25000 Geological Map Series. Northern Territory Geological Survey and Australian Geological Survey Organisation, Explanatory Notes SD 53-2.

Needham, R.S. 1988, Geology of the Alligator Rivers Uranium Field. Bureau of Mineral Resources Bulletin 224.

Sweet, I.P., Brakel, A.T., Carson, L., 1999, The Kombolgie Subgroup- a new look at an old 'formation'. AGSO Research Newsletter, 30; pages 26-28.

Melville, P., Beckitt G. 2001. Arnhem Land West Joint Venture Liverpool Project EL 2855 Annual Report For Period 25 July 20001 To 24 July 2001. Cameco Australia Pty Ltd

Melville, P., Sawyer L., Beckitt G. 2002. Arnhem Land West Joint Venture Liverpool Project EL 2855 Annual Report For Period 25 July 2001 To 24 July 2002. Cameco Australia Pty Ltd

APPENDIX 1

De Beers, 2003, Final Report for West Arnhem Land Joint Venture (EL/2855)