Cameco Australia Pty Ltd

Exploration Licence EL 5892

GOOMADEER PROJECT
PARTIAL SURRENDER REPORT

CONFIDENTIAL

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SUMMARY

This report describes exploration work undertaken within the 64 surrendered blocks of Exploration Licence 5892 over the three years of tenure between 2000 and 2003. The tenement is located in northwestern Arnhem Land and was granted in July 2000.

Cameco Australia Pty Ltd carried out exploration on behalf of the Arnhem Land West Joint Venture, a joint venture between Cameco Australia Pty Ltd (Cameco), PNC Exploration (Australia) Pty Ltd (PNC) and the Mangingburru Aboriginal Corporation. PNCs involvement in the JV ceased in early 2002.

The focus of the 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.

Exploration work undertaken during the period includes airborne surveys (fixed wing) and geological reconnaissance mapping. No samples were collected within the relinquished area.

Geological interpretation and reconnaissance has shown that most of the relinquished land is comprised of low prospectivity Nimbuwah Complex granitoids overlain by Cretaceous to Recent unconsolidated to semi-consolidated sands and sediments.

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INTRODUCTION

This report describes program activities carried out within the 64 relinquished blocks of Exploration Licence 5892 (EL 5892) during the three years of tenure from 25th July 2000 to 24th July 2003.

This work was conducted on behalf of the Arnhem Land West Joint Venture, a joint venture between Cameco Australia Pty Ltd (Cameco), PNC Exploration (Australia) Pty Ltd (PNC) and the Mangingburru Aboriginal Corporation. Since the Exploration Licenses are 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 ("Cameco") as operator carried out the Work Program for the Mangingburru Joint Venture, in conjunction with exploration of the adjoining EL 2858 under the 'Goomadeer Project'. PNC no longer has an interest in the tenement, having sold their assets and withdrawing from uranium exploration in Australia.

Location and Access

Exploration Licence 5892, which is part of the Goomadeer project, is located in northwestern Arnhem Land. The tenement is centred approximately 80 km northeast of the rehabilitated Nabarlek mine site and 130 km northeast of Jabiru. This tenement is situated immediately east of the Cameco operated King River Project.

The principal access is via the Oenpelli – Maningrida road that traverses the tenement west to east. Several subsidiary tracks service outstations in the region, for example Mamadawerre. Much of the country is flat lying with mostly woodland vegetation and can be accessed by four-wheel drive vehicle. Access to sandstone plateau country in the southeast corner of the tenement is by foot or helicopter. Due to time constraints, access for the entire tenement was achieved with the use of a helicopter.

Location Map

Tenure

EL5892 was granted on the 25th July 2000 for an initial period of six years. On granting, the total area covered by the licence was 806 km^2 with 109.5 km^2 excluded from exploration. On July 24 2002, 44 blocks of the original area were surrendered, representing 18% of the total blocks. 64 blocks were surrendered on July 24, 2003, representing 33% of the tenement, with Cameco retaining 132 blocks. A partial waiver of reduction was filed with the DME, as the tenement reduction does not fulfil the 50% requirement as stated in Section 26(1) of the Act.

EL5892 Relinquished Blocks 2003

Personnel

Two Cameco geologists and a traditional owner undertook the fieldwork.

Contractors and consultants used were:

- Airborne surveys by UTS, Perth.
- Helicopter assisted activities by Jayrow, Darwin.

Physiography

Much of the topography on the tenement is relatively flat lying and covered by savannah woodland. Several localised outliers of Kombolgie sandstone are present in the eastern half including a larger, heavily dissected mass in the southeastern corner, which marks the northern limit of the Arnhem Land plateau country in the region.

The principal drainages are the north flowing Goomadeer River, which originates in the Arnhem Plateau and Jungle Creek, which appears to be fed by springs in the Cretaceous along the western side of the tenement.

Regional Geology

The geology within the relinquished portions of the tenement is interpreted to consist principally of Palaeoproterozoic Nimbuwah Complex, all of which is obscured by Cretaceous sediments and Cainozoic deposits. There may also be Oenpelli dolerites intruding the basement rocks. Several outliers of Kombolgie sandstone, which were declared as no-go zones, have also been surrendered.

Regional Structure and Geological History

The early Proterozoic rocks of the region have been affected by the Top End orogeny (1880 to 1780 Ma) this 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 (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 principal 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, north, northeast and north trends. Both faulting and jointing, with local displacements ranging from a few metres up to 100 metres heavily dissect Kombolgie sandstone.

The Goomadeer project area occupies the northwestern 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 member units imply a volatile flow regime, as observed in extensional environments.

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. A characteristic mineral assemblage of prehnite – pumpellyite - epidote has formed in the quartzofeldspathic basement rocks adjacent to the intrusions.

Tenement Geology

Based on the most recent NTGS mapping (Milingimbi 1:250000 geological series), the oldest rocks within the tenements are Palaeoproterozoic Nimbuwah Complex. These basement rocks are overlain by remnants of the Kombolgie subgroup. With the exception of the Kombolgie sandstone, only isolated and very scattered outcrop is present within the project area.

The Nimbuwah Complex consists of gneiss, migmatite and various granitic intrusive phases. The most recent age determinations place the Nimbuwah within 1870-1850 Ma. The 'complex' has an I-type granite origin and is considered to be, in part, intrusive into Palaeoproterozoic metasediments. (Carson and others 1999).

Kombolgie Subgroup (formerly Kombolgie Formation), which comprises the lower units of the early Proterozoic Katherine River Group, overlies the basement rocks. The Mamadawerre Sandstone, the fluviatile basal unit of the Kombolgie, outcrops as several outliers, typically heavily dissected. The most southeasterly larger block is almost square in outline, being controlled by a series of linear NNE and WNW structures. The age of the Mamadawerre has been constrained between 1822 and 1720 Ma and is probably closer to 1800 Ma (Sweet and others 1999).

Cretaceous remnants outcrop in various parts of the tenement usually along the erosional fringes of lateritised tablelands. These remnants usually overlie Nimbuwah basement rocks.

Intrusive rocks, which occur in the region other than the Nimbuwah granitoids include extensive sills and lopoliths of Oenpelli dolerite and several generations of younger crosscutting dolerite. NTGS mapping has identified only one outcrop of Oenpelli dolerite within the tenements. This is located in the southeastern corner of EL5892, occupying an east west structure within Kombolgie sandstone.

A variety of quaternary surficial materials cover much of the region.

EL 5892 Geology Map

Exploration Target

The focus of the 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

EL 5892 was initially explored for uranium by Union Carbide Exploration Corporation in 1971 and 1972 as part of A to P 2543. Exploration consisted of airborne magnetic and radiometric surveys with follow-up sampling and geological mapping. Total Mining Australia Pty Ltd was the original applicant for EL 5892. Prior to that, a section of the tenement was included in EL 144, which was explored for uranium by the Ormac Aboriginal JV (Ocean Resources / McIntyre Mines) in the early 1970's.

EXPLORATION PROGRAM

Summary of Completed Work By Year

2000-2001 Field Season

The 2000-2001 field season work program consisted of flying a fixed-wing magnetic, radiometric and DTM (digital terrain model) survey over the tenement area.

2001-2002 Field Season

A helicopter assisted regional reconnaissance program was conducted in order to follow-up and ground truth the airborne survey results. No outcrop of Palaeoproterozoic rocks or anomalous readings from prospecting activities was noted. Cretaceous sediments and recent alluvium/colluvium are the dominant units noted in these areas. Estimations of sediment thickness trends indicate that there is a higher degree of overburden in the northern region where the majority of the released ground lies.

Other relinquished blocks fell within defined restricted zones, which were precluded from exploration.

No sampling was undertaken in the relinquished blocks.

2002-2003 Field Season

A helicopter assisted regional reconnaissance program was conducted during the 2003 field season. In the course of the program, systematic reconnaissance of the area relinquished did not identify any exposed outcrops of Nimbuwah Complex basement rocks through Cainozoic sands.

During early August 2002, a 341 km^2 hyperspectral survey was flown over the outcropping Kombolgie Sandstone within the Goomadeer project. The survey, consisting of five north-south flightlines, covers the portion of the exploration tenement containing exposed Kombolgie Sandstone.

Relinquished Exploration Data

All digital data covering the blocks relinquished has been submitted on CD and DVD with this report.

Airborne Geophysical and Hyperspectral Coverage

Airborne Geophysics

During July 2001, Universal Tracking Systems Pty Ltd (UTS) conducted an airborne magnetic, radiometric and DTM (digital terrain model) survey over the Goomadeer project (EL 2858 and EL 5892) totalling 5563 line kilometres. The survey was conducted at a flying height of 60m and at 200m spaced east-west flight lines. The primary aims of the survey were to locate any surface uranium enrichment worthy of ground truthing and to acquire data useful for future geological mapping.

Airborne Geophysics Logistics Report by UTS

Airborne Radiometrics – Total Counts
Airborne Radiometrics – Potassium (K)
Airborne Radiometrics – Uranium (U)
Airborne Radiometrics – Thorium (TH)
Airborne Radiometrics – RGB = U,TH,K
Airborne Magnetics – Reduced to Pole with 1st Vertical Derivative
Airborne Digital Terrain Model - DTM

Hyperspectral

During early August 2002, a hyperspectral survey was flown over the outcropping Kombolgie Sandstone within the Goomadeer project. The survey was conducted by De Beers utilising their HyMap MkI system, an airborne multi-spectral scanning instrument designed to map minerals and identify alteration. Cameco is utilising the instrument as an aid in locating alteration patterns associated with unconformity-style uranium deposits. It is hoped that the system will identify and map variations in clay types in the sandstone such as kaolinite, illite, dickite, halloysite and iron and magnesium chlorites as well as silicification.

The survey, consisting of five, north-south flightlines, covers the portion of the exploration tenement containing exposed Kombolgie Sandstone and totals 341 km^2.

Hyperspectral HyMap MkI Logistics Report

Hyperspectral Figure – RGB = Bands 72,78,87

Hymap Mk I airborne hyperspectral scanner data collected over the Goomadeer project of northwestern Arnhem Land has identified and mapped the distribution of clay minerals within the Mamadawerre Sandstone. The general clay distributions include an illite dominated zone in the basal sandstone overlying the Nimbuwah Complex basement rocks. This consists of two illite phases, distinguished by the wavelength position of the main AlOH absorption feature near 2200 nm. This illite zone is overlain by a dominantly dickitic sandstone which may contain some illite. Overlying the dickite zone is a clay-poor sandstone with minor amounts of both dickite and illite. This clay-poor sandstone constitutes the upper part of the Mamadawerre Sandstone. Limited exposures of Gumarrirnbang Sandstone in the southeastern part of the survey area contain similar low clay contents of both dickite and illite. The general stratigraphic distribution of clays noted at Goomadeer is similar to that observed in other surveyed areas of northwestern Arnhem Land.

Pyrophyllite has been identified locally in the sandstone in the eastern part of the survey area. This pyrophyllite is only very locally distributed within the dickite zone. As in other areas of Arnhem Land, it is found proximal to the Oenpelli Dolerite intrusions.

No chlorite has been identified in the Goomadeer hyperspectral scanner data. The major clay alteration-related exploration target is illite or muscovite alteration overprinting the regional, diagenetic dickite clays. Several of these prospective zones are spatially associated with regionally significant, NNW and ENE trending fracture or fault zones. The basal illitic sandstone signature appears to be a regional phenomenon, making the recognition of more local illite alteration associated with hydrothermal uranium mineralisation difficult. More detailed study of hydrothermal clay alteration related to

known uranium mineralization is necessary in order to properly identify and understand the target clay signature.

CONCLUSIONS AND RECOMMENDATIONS

The lack of outcrop within the relinquished portions of EL 5892, and the interpreted unfavourable Nimbuwah Complex granitoid basement rocks in the area do not encourage further exploration efforts. The U prospectivity within the relinquished portion of the tenement is considered to be low. Any further exploration would require regional RAB drilling, or the like, in order to test the lithologies lying beneath sand and Cretaceous cover.

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