



Cameco Australia Pty Ltd

**ARNHEM LAND WEST JOINT VENTURE
GOOMADEER PROJECT
EL 2858 & EL 5892
ANNUAL REPORT FOR PERIOD 25 JULY 2000 TO 24 JULY 2001**

CONFIDENTIAL

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SUMMARY

This report describes exploration work undertaken for the Arnhem Land West Joint Venture on the Goomadeer project during the 2001 field season. The tenements form part of the Arnhem Land West Joint Venture, (AWJV) a joint venture between Cameco Australia Pty Ltd (Cameco), PNC Exploration Australia Pty Ltd (PNC) and the Mangingburru Aboriginal Corporation.

The current year's exploration activities were confined to a fixed-wing airborne magnetic and radiometric survey. The survey, which was scheduled for October 2000, was postponed by the contractor due to aircraft problems.

INTRODUCTION

This report describes program activities carried out during the 2001 field season 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 Licences 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.

The program as described, represents the initial year of exploration on the tenements by the Joint Venture. To date there has been no ground-based exploration activities.

The only activity for this year was the flying of a fixed-wing airborne survey by UTS Geophysics of Perth. The survey, which was originally planned for October 2000, was postponed and eventually flown in June 2001.

Location and Access

Exploration Licences 2858 and 5892, which comprise the Goomadeer project are located in northwestern Arnhem Land. The tenements are centered approximately 50 km northeast of the rehabilitated Nabarlek mine site and 115 km northeast of Jabiru. They are situated immediately east of the three AWJV tenements, which make up the King River project.

The principal access is via the Oenpelli – Maningrida road which traverses EL5892 from west to east. Several subsidiary tracks service outstations in the region, for example Mamadawerre. There are no known tracks servicing EL2858. Much of the country is flat lying and can most likely be accessed by four-wheel drive vehicle.

Location Map

Tenure

ELs 2858 and 5892 were granted on the 25th July 2000 for an initial period of six years. On granting, the total area covered by the licences is 1014.3 km². Individually, EL5892 totals 806 km² (109.5 km² excluded from exploration) and EL2858 208.3 km² (79.1 km² excluded from exploration).

Physiography

Much of the topography in both tenements is relatively flat lying and covered by savanna woodland. Several localised outliers of Kombolgie sandstone are present in the eastern half of EL5892. The larger heavily dissected one located in the south eastern corner of the tenement marks the northern limit of the Arnhem Land plateau country in the region.

The principal drainage in 5892 is the north flowing Goomadeer River. Several major creeks traverse EL2858. All have swampy estuaries developed within the coastal plains.

Tenement Geology

Based on the most recent NTGS mapping (Milingimbi 1:250000 geological series), the oldest rocks within the tenements comprise the Paleoproterozoic Nimbuwah gneissic granitoids. These are overlain by remnants of the Kombolgie subgroup. Obscured Cambrian rocks are interpreted to occur in the northernmost part of 5892 and possibly within much of 2858. 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 intrusives. 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 paleoproterozoic metasediments, in this case the Myra Falls Metamorphics. (Carson and others 1999).

The basement rocks are overlain by the Kombolgie Subgroup (formerly Kombolgie Formation) which comprise the lower units of the early Proterozoic Katherine River Group. The Mamadawerre Sandstone, the fluvial basal unit of the Kombolgie, outcrops as several isolated outliers, typically heavily dissected. The most south-easterly 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 cross-cutting dolerite. NTGS mapping has identified only one outcrop of Oenpelli dolerite within the tenements. This is located in the south eastern corner of EL5892, occupying an east-west linear within an area of Kombolgie sandstone.

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

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 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 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 north-west, east, north-east and north trends. The Kombolgie is heavily dissected by both faulting and jointing with displacements ranging from a few metres up to 100 metres locally.

The Goomadeer project 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. This is implied by rapid thickening and thinning of the sequence.

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.

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

Part of the project area (EL5892) 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. EL2858 was originally applied for by Total Mining Australia Pty Ltd. Prior to that, a section of the tenement was included in EL144, which was explored for uranium by the Ormac Aboriginal JV (Ocean Resources / McIntyre Mines) in the early 1970s.

EXPLORATION PROGRAM

The only field activity to take place in the 2001 field season was the flying of a fixed-wing magnetic, radiometric and DTM (digital terrain model) survey over the entire project area.

Digital data for this survey has been submitted on CD with this report.

Location of Airborne Magnetic and Radiometric Survey

Airborne Geophysics

During July 2001, Universal Tracking Systems Pty Ltd (UTS) conducted a single detailed airborne magnetic, radiometric and DTM survey totaling 5563 line km. Survey specifications employed for this survey were 60m flight height, 200m lines flown in a west east direction.

The primary aims of the survey were to locate any surface uranium enrichment and to acquire data useful for future geological mapping. No anomaly identification or geology interpretation has been undertaken within the current reporting period.

Airborne Geophysics Logistics Report by UTS

Airborne Magnetics – Total Magnetic Intensity (TMI) with 1st Vertical Derivative (1VD)

Airborne Radiometrics – Total Counts (TC)

Airborne Radiometrics – Potassium (K)

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Airborne Radiometrics – Thorium (Th) Airborne Radiometrics – RGB=U,Th,K

Airborne DTM – Height with NE Sun Angle

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