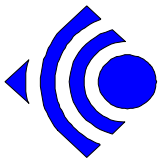

Cameco Australia Pty Ltd

MAJARI PROJECT

EL 3346

ANNUAL REPORT FOR THE YEAR ENDING 5TH SEPTEMBER 2005

YEAR 4 OF TENURE

CONFIDENTIAL

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SUMMARY

This report outlines exploration activity on the Majari Project (EL3346) for the year ending 5 September 2005. The tenement is located approximately 330 km east of Darwin, and is wholly within the Arnhem Land Aboriginal Reserve. Since acquiring the tenement in 2002, Cameco Australia Pty Ltd (Cameco) has undertaken exploration for unconformity-related uranium deposits, with work including airborne geophysical surveys, outcrop sampling, and diamond drilling.

Work during the reporting period consisted of a single diamond drill hole completed in the south-eastern corner of the tenement. At this location a prominent and chaotic breccia crops out in sandstone. Drill targeting was conceptual in nature, and aimed to test the zone of intersection between the projected continuation of the breccia and the sandstone-basement unconformity.

Drilling indicated the breccia was discontinuous, reaching a maximum depth of approximately 65 m. Gumarrirnbang Sandstone was intersected to a depth of 209 m, then Nungbalgarri Volcanics to 229 m, followed by Mamadawerre Sandstone to 599 m, and foliated quartzofeldspathic gneiss (Nimbuwah Complex) to a final depth of 605.8 m. No significant radioactivity was encountered throughout the hole.

Activity	Details	Location	Comments
Diamond Drilling	single hole, MJD002, final depth of 605.8 m	south-eastern corner of tenement: 8637954 mE, 391018 mN, 46.8 mASL (AGD66, Zone 53)	no significant uranium mineralisation intersected

Summary of work conducted on EL3346 for year ending 5 September 2005.

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INTRODUCTION

Exploration Licence 3346 was explored in joint venture by Afmeco Mining and Exploration Pty Ltd, SAE Australia Pty Ltd and UAL Pty Ltd. In 2001, Cameco entered into the joint venture and subsequently attained ownership of the licence. Cameco's exploration focus within the West Arnhem Land region has been for unconformity-related uranium deposits.

This report describes exploration activity on the Majari Project (EL3346) for the year ending 5 September 2005.

Location and Access

Exploration Licence 3346 is located in western Arnhem Land. The tenement is centred approximately 340 km east of Darwin and 35 km southwest of Maningrida.

Road access is via the Oenpelli – Maningrida road that traverses the tenement. Several subsidiary tracks branch off the main road, servicing outstations in the region. Helicopter provides the primary means of access for exploration purposes, although some of the flatter areas are accessible by road.

MJ_Location_Map.pdf
MJ_Orientation_Map.pdf

Tenure

EL3346, which is situated within Aboriginal freehold land in west Arnhem Land, was granted to Afmeco Mining and Exploration Pty Ltd (Afmex) on 6 September 2000 for a period of six years. Afmex were in joint venture with SAE Australia Pty Ltd and UAL Pty Ltd. Cameco, though acquisition of UAL assets became involved with the project in 2001. After the withdrawal of Afmex from Arnhem Land in late 2002, Cameco became sole owner and manager of the tenement.

The original area of EL3346 comprised 178 blocks covering an area of 597.7 square kilometres. Relinquishment, effective from 5 September 2004, of 94 blocks (315.7 square kilometres) reduced the retained portion of the tenement to 84 blocks covering 282 square kilometres. The relinquished area covered the north-eastern portion of the licence.

As of 6 September 2005, the tenement is in its 5th year of tenure.

Physiography

Much of the topography in the north of the tenement is relatively flat lying and covered by savannah woodland. The western and southern portions of the tenement are sandstone covered and mark the northern and eastern limits of the Arnhem Land plateau country in the region.

The principal drainage on EL3346 is the north flowing Liverpool River, located to south and east of the tenement. Several minor creeks traverse EL3346.

Tenement Geology

Based on the most recent NTGS mapping by Carson et al. (1999), the oldest rocks within the tenements comprise the basement Palaeoproterozoic Nimbuwah Complex. Sandstones of the Kombolgie Subgroup sediments overlie these basement rocks. Cambrian Buckingham Bay sandstone crops out as scattered remnants to the north and east of the tenement, which is largely overlain by Quaternary sands and black soil floodplains.

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 Palaeoproterozoic metasediments, in this case the Myra Falls Metamorphics. (Carson et al., 1999). Within EL3346, visible Nimbuwah is restricted to a series of scattered outcrops in the northwest corner of the tenement.

The basement Nimbuwah Complex rocks are overlain by the Kombolgie Subgroup, which comprise the lower subgroup of the early Proterozoic Katherine River Group, the oldest rocks of the McArthur Basin. The Kombolgie Subgroup comprises an alternating sequence of quartz arenite sandstones and lesser basaltic flow volcanics. The Mamadawerre Sandstone is the basal unit of the Kombolgie Subgroup, which is disconformably overlain by the Nungbalgarri Volcanic Member, a regionally distributed basaltic flow volcanic. Gumarrirnbang Sandstone overlies the volcanic member. The age of the Mamadawerre has been constrained between 1822 and 1720 Ma and is probably closer to 1800 Ma (Sweet et al., 1999). Mamadawerre Sandstone crops out in the central-western portion of the tenement and disappears under sand and ferricrete cover to the east. The ferricrete may be interpreted as being the residual debris from the now eroded Nungbalgarri Volcanic Member. Dissected sandstone plateaux and rugged hills of the Gumarrirnbang Sandstone overlie the southern portion of the tenement.

The basal unit of the Cambrian Wessel Group, the Buckingham Bay Sandstone, crops out in EL3346 as scattered outcrops in the eastern portions of the tenement. These Cambrian sediments, which comprise the oldest rocks of the Arafura Basin, obscure any northern and eastern extensions of the Palaeoproterozoic basement and sandstone.

Oenpelli dolerite has been observed at one location on EL3346, within a northwest trending lineament intruding the Gumarrirnbang Sandstone. The dolerite is exposed as small boulders and rounded outcrop in the bottom of the linear.

A variety of quaternary surficial materials cover much of the region, obscuring the basement rocks and Kombolgie Subgroup sediments.

MJ_Geology_Map

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 event produced a prograde metamorphic effect with associated tight folding and faulting. The various 'domains' exhibit 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-northwest (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, 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.

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 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 deposits at Ranger, Jabiluka and 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

Exploration 1970s

McIntyre Mines (Australia) in joint venture with Canadian Superior Oil (Australia) and Ocean Resources conducted exploration on EL144 from 1971 to 1973, an area which neighbours the current EL3346. An airborne radiometric survey was flown over the western portion of EL3346, and the eastern portion of Cameco operated EL5892. Two U anomalies were located but were associated with the Nungbalgarri

Volcanic Member to the northwest of Gudjekbinj outstation. Drilling was recommended for the prospect, but was not conducted before the EL was relinquished in 1973. The prospect lies outside of EL3346 and EL5892.

Recent Exploration

Afmex gained exploration access to EL3346 in September 2000 and carried out geophysical and remote sensing surveys, although ground work was limited. In September 2001, the Cameco/Afmex joint venture undertook a detailed (100m line spacing) airborne radiometric and magnetic survey over the entire licence area (Bisset 2002). Results from the radiometric survey identified 15 low order anomalies for follow up ground investigation.

In August 2002, an airborne electromagnetic survey (TEMPEST) was flown over a small area in the central portion of the tenement. The survey area was selected based on an interpreted shallow depth to basement rocks and a suggestion from magnetics that several large structures are present in an area of relatively sparse rock outcrop. During early September 2002, Cameco personnel conducted ground investigations of radiometric anomalies and performed broad regional outcrop sampling over sandstone outcropping areas.

During 2003, outcrop sampling continued; a total of 82 samples were collected for the 2002-2003 period. Geochemical analyses of these samples did not highlight any areas for follow-up work. Fault breccias in sandstone were noted in two locations on the licence area. These, however, do not exhibit hydrothermal quartz veining or other features that would indicate favourable conditions for U mineralisation.

A single diamond drill hole was completed in 2004, for a final depth of 419.2 m (Otto et al., 2004). This hole was located in the north-eastern section of the tenement, and targeted a conductive feature of unusual dome-like geometry. The hole intersected sandstone (interpreted as Gumarrirnbang and Mamadawerre Formations) to a depth of 401 m, then basement granitic gneisses (Nimbuwah Formation) to end-of-hole. No significant radioactivity was encountered.

The conductive feature was not adequately explained by the intersected lithologies although localised fracturing at the interface of the Gumarrirnbang and Mamadawerre Formations were thought too contribute to increased conductivity.

EXPLORATION ACTIVITY 2005

Exploration work during 2005 consisted of a single diamond drill hole, MJD002, collared in the south-eastern corner of the tenement. Final depth was 605.8 m. Drilling took place over a 10 day period in September 2005, and was undertaken by Ballarat-based contractors, Titeline Drilling Pty Ltd. Drilling operations were helicopter-supported, with personnel based at King River camp, some 95 km NW of MJD002.

MJD002_Drill_Hole_Location.pdf
MJD002_Location_Heli-Photo.pdf
MJD002_Breccia_Outcrop.pdf

MJD002 was collared adjacent to a prominent sandstone breccia, which crops out adjacent to the road to Gumarrirnban community. The hole aimed to test the zone of intersection between the projected continuity of the breccia at depth, and the sandstone-basement unconformity.

All core was sampled on a composite basis for geochemical analysis; one piece of approximately 6 cm of half core was selected from each row in each core tray. Sample intervals were typically around 10 m. Narrower sample intervals were selected for geologically discrete intervals, for example the contact zone above the Nungbalgarri volcanics, and brecciated zones. No grade samples were taken from MJD002, since no mineralisation or anomalous radioactivity was encountered.

Samples are analysed by NTEL for Cameco's standard suite of analytes:
Cameco_Standard_Analytical_Suite.pdf
NTEL_Description_of_Analytical_Procedures.pdf

At the time of writing, final geochemical analyses had not been received for MJD002. These will be forwarded to DPIFM-ME at a later stage.

PIMA measurements were also collected from each row of core. This methodology is described in the following appendix:
PIMA_Reflectance_Spectroscopy.pdf

RESULTS AND DISCUSSION

Hole MJD002

The following documents contains all observational and measured data for MJD002.

MJD002_Detailed_Log.pdf

The individual tables which contribute the detailed log, including lithology, alteration, gamma, and magnetic susceptibility are located in the Data Folder of this report. PIMA fos files and digital photos are also included in the Data Folder.

The strip plot below provides the best downhole graphical summary of available data.

MJD002_Strip_Plot.pdf
MJD002_Gamma_Chart.pdf
Logging_Codes.pdf

Lithology and Alteration

MJD002 intersected interpreted Gumarrirnbang sandstone to 206.1 m, Nungbalgarri volcanics to 228.8 m, and Mamadawerre sandstone to the unconformity at 599.1 m. The unconformity is sharp with negligible alteration. Intersected basement consists of medium to coarse grained foliated quartz-feldspar granitoid with some chlorite and hematite occurrences.

The target was an adjacent extensive breccia zone, thought initially to be fault-related. Coring into the breccia has shown it to be of non-tectonic origin with a chaotic mixture of clasts combined in muddy, silty and sandy matrix. Contorted and convoluted bedding is common throughout the interval, which extends to approximately 85 m.

Beneath the breccia the sandstone is predominantly a fine grained quartz arenite, white to pink in colour and with frequent silicified zones consisting of vuggy-drusy quartz. Diagenetic hematite and bleaching is pervasive. Thin silty-clayey horizons occur at various intervals in the hole. Near the contact with the Nungbalgarri volcanics, thin chloritised dikes invade the sandstone. Chloritic alteration affects the adjacent sandstone, more particularly where it has been brecciated. Contact with the underlying volcanics is gradational.

The Nungbalgarri in this hole is considerably thinner than in GGD001, approximately 20 m thick compared to 100 m in the latter. The stratigraphy of the volcanic package is highly variable with massive-equigranular, fragmental and amygdaloidal flows. Colouration is also variable: red, green, green grey to dark grey controlled by variable content of hematite, chlorite, sericite etc. Chalcedonic silica as bands, veins and infilling amygdales occur in some of the flows.

Red to orange red hematitic Mamadawerre sandstone directly underlies the volcanics. The basal sandstone unit is composed of alternating fine to coarse sandstone, granulestone and minor conglomerate. Pebbles are scattered through some beds. Diagenetic hematite and bleaching are the most common alteration features. These produce either a mottled or banded effect in the rock.

Radiometrics

Radiometrics reflect lithology for the most part. The upper breccia unit has high background, around 400 cps. Below this the Gumarrirnbang appears to have two distinct radiometric responses, an upper mostly flat section (average 100 cps) from around 80 to 160 m, then a higher background more spikey interval terminating against the Nungbalgarri. The Mamadawerre has a marginally higher background when compared to the Gumarrirnbang sandstone and is also more 'spikey'.

Within the lower 40 metres, approaching the unconformity, thin peaks range between 300 and 1650 cps. The latter is within metres of the unconformity. These have been correlated with both silty hematitic laminae and heavy mineral bands. The upper and lower contacts of the volcanics are represented by radiometric peaks of approximately 590 cps and 150 cps respectively.

PIMA-TSA Data

Clay mineralogies, as determined by processing of PIMA reflectance spectra by TSA software, outline several zones in the sandstone column:

1. Surface to ~70 m: Kaolinite (+ dickite + muscovite) zone, below which kaolinite is absent. This represents the extent of low temperature surficial weathering due to meteoric processes.

2. ~70 m - ~300 m: Illite/muscovite-rich and dickite-poor zone. Low-AlOH crystallinity. This may reflect relatively higher levels of molecular water within the clay structures.
3. Nungbalgarri volcanics 206 –229 m within the above interval are characterised by chloritic clays. Interestingly, the sandstone immediately overlying the volcanics is distinctly illite rich. The volcanic layer probably served as a physical barrier to diagenetic fluids; this may have resulted in precipitation of locally distinct clay minerals.
4. 300 m – basement unconformity at 599 m: dickite-rich and relatively illite-muscovite poor zone, with accompanying increase in AlOH crystallinity. This transition occurs within interpreted Mamadawerre formation, rather than correlating with a change from Gumarrirnbang formation to Mamadawerre formation.

Origin of Sandstone Breccias

The cause of the sandstone breccia remains enigmatic. It is unlikely to be fault-related, since no penetrative and consistently orientated fabric is present in outcrop. Moreover, the brecciated zones are shallow features, and are not present greater than 65 m depth. These breccias do not therefore assist 'conceptual' type targeting for unconformity-style mineralisation in the south-east part of the Majari tenement.

The chaotic nature of the breccia, as well as its limited depth extent, suggest it may be related a meteorite impact. While the prominent western edge of the outcrop has a fairly linear trend, the Landsat image indicates a vague subcircular feature with a maximum diameter of ~350 m centred at 391180 mE/ 8638020 mN (AGD66 Zone 53). This feature straddles the boundary between EL3346 and EL2857 and is approximately 10 km NW of the Liverpool Meteorite Crater. For further information on this occurrence, the reader is referred to the Earth Impact Database website (http://www.unb.ca/passc/ImpactDatabase/images/liverpool.htm).

In addition, the enveloping surface of the outcrop appears to shallow in dip towards the centre of the possible impact structure. West of the MJD002, the outcrop dip steeply; east of MJD002, flatter more platform-like subcrops are present.

Finally, the occurrence of thick silty layers is unusual in Gumarrirnbang Sandstone, and may represent the accumulation of lake sediments within a crater (D. Rawlings, pers. comm. 2005).

Geochemical Data from Previous Year

At the time of reporting for the previous year, geochemical analytical data had not been received for hole MJD001. These are included in this report:

MJD001_Geochemical_Data.pdf
MJD001_Strip_Plot.pdf

Resistivity Survey MJD001

MJD001 was probed with a resistivity tool by G. Beckitt, with the aim of better understanding the TEMPEST conductivity feature targeted with drill hole. The relevant data is contained in the Data Folder of this report. Preliminary interpretations, using the inverse of resistivity to measure apparent conductivity, do not readily explain the TEMPEST conductivity feature.

EXPENDITURE

Eligible exploration expenditure for the reporting period totalled $AUD 210, 084. This is tabulated in the following linked document.

EL 3346 Exploration Expenditure.pdf

CONCLUSIONS

A single drill hole, MJD002, completed during 2005 did not encounter any significant uranium mineralisation. Moreover, drilling indicates the sandstone breccias in the south-eastern corner of the tenement have very limited depth extent, and are not present below 65 m hole depth. This suggest the breccias have nil potential to act a conduits for uraniferous fluids circulating near the basement unconformity (occurring at a hole depth of 600m). The chaotic sandstone breccias may be related to a meteorite impact, although additional field work would required for this to be substantiated.

The drilling exercise of 2005 is testament to the difficulty of targeting in areas of several-hundred-metre thick sandstone cover, and the expense involve in drill testing targets. MJD002 provides good stratigraphic information of the lower Kombolgie subgroup, and confirms this area is underlain by quartzofeldspathic gneisses of the Nimbuwah complex. Beyond this, the hole has little generative value for ongoing exploration, and no further work is planned.

WORK PLAN 2006 – YEAR 5 OF TENURE

Work during 2006 will be limited to review of available exploration data, including pending geochemical analyses for MJD002, with a view to defining any remaining prospectivity on the tenement. Should no targets or target zones be identified, Cameco will move to relinquish EL3346 in entirety during 2006.

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