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AFmeco Mining and EXploration Pty Ltd

EXPLORATION LICENCES 2505, 2506, 2516, 2517, 7029 AND 9354

ARNHEM LAND, NORTHERN TERRITORY

TIN CAMP CREEK JOINT VENTURE

SEVENTH ANNUAL REPORT

12 SEP 2001 - 11 SEP 2002

PERTH WA

NOVEMBER 2002

Alligator River	**X. Moreau**
1:250,000	AFMEX Report 2002/20

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Summary

The Tin Camp Creek tenements are located in Arnhem Land about 250 kilometres east of Darwin. Exploration is being conducted by a joint venture that consists of AFmeco Mining and EXploration Pty Ltd (operator), Cameco Australia Pty Ltd, SAE Australia Pty Ltd and West Arnhem Corp Pty Ltd.

Two helicopter-supported drill holes were completed during the 2002 field season.

1. INTRODUCTION

The Tin Camp Creek tenements are being explored in joint venture by AFmeco Mining and EXploration Pty Ltd (operator), Cameco Australia Pty Ltd, SAE Australia Pty Ltd and West Arnhem Corp Pty Ltd.

The tenements included in the Tin Camp Creek joint venture are shown on Figure 1. All of the tenements are located within the Arnhem Land Aboriginal Reserve.

This report details the work carried out during 2001 and 2002, as required by the Northern Territory Department of Business, Industry and Resource Development (DBIRD).

2. LOCATION AND ACCESS

The tenements are located in West Arnhem Land about 250 km east of Darwin in the Northern Territory of Australia.

Access is either by air to the Nabarlek airstrip which is located about 20km to the north of the tenements, or by road via the Arnhem Highway to Jabiru and then via Cahill's Crossing and unsealed roads to Myra base camp.

The sandstone escarpment country is only accessible by helicopter or on foot. The rest of the area is served by 4-wheel drive tracks, which become impassable during the wet season from November to April.

3. TENURE

Exploration licences 2505, 2506, 2507, 2516, 2517, 7029 and 9354 were granted to Queensland Mines Pty Ltd on 12th September 1995 for a period of six years. The tenements are currently being explored in joint venture by AFmeco Mining and EXploration Pty Ltd – operator (24.5%), Cameco Australia Pty Ltd (49%), S.A.E Australia Pty Ltd (24.5%) and West Arnhem Land Corporation Pty Ltd (2%). The joint venture partners acquired the tenements from Queensland Mines Pty Ltd in February 1998.

Reductions were waived at the end of years 2 and 3 of tenure. Partial reduction of tenement was carried out at the end of the fourth and fifth years. For details of the partial relinquishment in years 4 and 5 refer to the relinquishment reports previously submitted to the Mines Department. A two - year extension of the exploration licence was filed with the DME in June 2001. It was approved on the 26 November 2001 for ELs 2516, 2517, 7029 and 9354 and on the 23rd November 2001 for ELs 2505 and 2506.

4. GEOLOGY

The regional geology of West Arnhem Land has been described in detail in many previous reports and only a brief overview will be given here. The

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regional geology is shown on Figure 2 and a stratigraphic chart is shown on Figure 3.

The oldest rocks exposed in the area are gneisses belonging to the Mount Howship Gneiss of the Kakadu Group of lower Palaeoproterozoic age. Further to the west in the Alligator Rivers uranium field, similar rocks overlie the Archaean Nanambu complex. The Mt. Howship Gneiss is overlain by the Kudjumarndi Quartzite, which is one of the main marker horizons in the region.

The psammitic rocks of the Kakadu Group are overlain by the Cahill Formation also of lower Palaeoproterozoic age, which is the host of the main uranium ore bodies in the area. The Lower Cahill Formation consists of a basal calcareous unit, which is overlain by a sequence of pelitic schists, meta-arkose and amphibolite. A well-defined amphibolitic unit at the top of the Lower Cahill Formation hosts the Nabarlek uranium deposit. The Upper Cahill Formation and Nourlangie Schist consist of a monotonous sequence of meta-arkose, schist and amphibolite.

East and south of the area of the Palaeoproterozoic sediments lie the granitoid rocks of the Nimbuwah Complex. These granitoids were extensively migmatised during the Top End Orogeny, which occurred between 1870 and 1800my. The relationship between the Cahill Formation and the Nimbuwah Complex is little known. Limited field observations show the contact to be gradational and migmatitic in nature.

Later post-orogenic Proterozoic granites, such as the Nabarlek and Tin Camp Granites have intruded the meta-sediments in the east of the area.

The upper Palaeoproterozoic Kombolgie Formation overlies the older rocks unconformably. This formation consists of sandstones with a prominent basaltic horizon (Nungbalgarri Volcanic Member). These flat-lying sandstones form the Arnhem Land escarpment.

The Oenpelli Dolerite (1720my) intrudes the early Palaeoproterozoic metasediments and the Kombolgie Formation, and forms large lopolithic bodies. It is the youngest Precambrian rock outcropping in the area.

5. PREVIOUS WORK

Queensland Mines Pty Ltd previously explored the area in the early 1970's. During this time the Caramal prospect was discovered by an airborne survey and was tested by drilling.

No exploration was carried out in the area from September 1973 until September 1995 when the current exploration licences were granted.

An airborne geophysical survey was flown over the tenements in 1996. The survey acquired EM, radiometric and magnetic data, and delineated a series of radiometric anomalies in the South Horn area, while some shallow conductors were discovered elsewhere in the region.

Regional stream sediment surveys have been conducted in 1996, 1997 and 1998 throughout much of the joint tenements. Soil surveys designed to test EM anomalies and stream sediment anomalies (Au) were conducted in 1999.

RAB drilling was conducted in the South Horn area and also in the western parts of EL 2516. Conventional dual-purpose (RC/Diamond) drilling and helicopter-supported diamond drilling have been conducted every year since 1996. Areas tested by either of these methods include Caramal (EL 2505), South Horn & South Horn West (EL 2506), Gurrigarry (EL 2516) and Algodo (EL's 2517, 9354).

In 2001, a detailed airborne magnetic and radiometric survey was flown above part of Els 2505 and 7029. It targeted a structural corridor considered prospective for hosting unconformity related uranium deposits. It also included a TEMPEST airborne electromagnetic survey flown over three different areas. Details of these surveys can be found in the 2001 annual report.
These surveys confirmed previously known basement-hosted conductors on EL 2516, and also proved effectively at mapping the unconformity beneath most of the EL 2506 sandstone plateau. Significant conductors were not identified at, or beneath the unconformity.

Details of the work completed in the past can be found in previous annual reports submitted to the Mines Department.

6. WORK COMPLETED DURING 2002

The work completed in the seventh year of tenure includes the drilling of two helicopter-supported diamond drillholes, one on EL 2516 and the other on EL 2505. The costs of the 2002 exploration activities are listed in Appendix 3, the data is included in Appendix 1.

Drilling on EL 2516 during the 2002 field season tested a known conductor above which two Tempest lines were flown in 2002. The EL 2505 drilling tested a reverse structure in the vicinity of radon anomalies coincident with low-level airborne radiometric anomalies. Two helicopter-supported diamond drillholes were completed for a total of 460.9m. The drilling locations are included in figure 4.

Details of the drillholes can be found in tables 1 and 2. Diamond drillhole logs are presented in appendix 1.

The hole was probed with a downhole natural gamma tool, manufactured by Auslog Pty Ltd.

PIMA mineralogical analyses were conducted on sandstone and basement core at regular intervals, and results are shown in table 3. A description of the PIMA method has been detailed in previous reports submitted to the DBIRD.

Composite geochemical samples were collected from the entire drillhole, in varying sampling intensities and testing for certain chemical suites. All samples were analysed by Ultra Trace Pty Ltd in Perth, and results are presented in table 4. A breakdown of elements analysed is presented below:

SANDSTONE	**Composite Sampling at 10m** *and* **2m (proximal to unconformity) intervals**	*Mixed Acid*	*ICP-OES*	*Majors* Al, Ca, Fe (total), K, Mg, Na, P, Ti
		Mixed Acid	*ICP-MS*	*Traces* As, B, Ni, Pb, Sr, Th, U, V, Zn
		Mixed Acid	*ICP-MS*	*REE's* Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Tm, Yb
		Sodium Peroxide Fusion	*ICP-OES*	B
		Aqua Regia	*ICP-MS*	U (if first U assay > 2ppm)
BASEMENT	**Composite Sampling at 10m** *and* **2m (proximal to unconformity)**	*Mixed Acid*	*ICP-OES*	*Majors* Al, Ca, Fe (total), K, Mg, Na, P, Ti

intervals			
	Mixed Acid	ICP-MS	*Traces* As, Ni, Pb, Sr, Th, U, V, Zn

Given the presence of a base metal anomaly, Co, Cu, Pd, Pt and Au were also analysed in EMA001, as well a s suite of REE, and according to a different sampling routine.

6.1. Helicopter-supported drilling

6.1.1. EL 2516

This drillhole targeted a combined Dighem/TEMPEST anomaly on EL2516. The hole was drilled at -60° towards 015°. The hole was completed to a depth of 159.8m.

The hole was collared within meta-sediments originally mapped as belonging to the Kakadu Group, specifically the Mount Howship Gneiss, a package consisting of interlayered biotite and sillimanite gneisses, foliated quartzites and narrow amphibolites. Intensely clay and hematite altered saprolite was intersected to a depth of 20m, followed by clay altered saprock (after foliated quartzite?) to a depth of approximately 30m. Foliated biotite-actinolite-garnet paragneiss occurs to a depth of 38m. Minor quartz veining and sulphide dissemination occurs within this zone. Between 38 and 67m, a complex mixture of paragneiss, narrow amphibolite and narrow lode vein systems were intersected. The lode veins comprise strongly silicified ‘host rock’ with intense sulphide dissemination. Sulphides observed include (in order of decreasing abundance): pyrrhotite, pyrite, arsenopyrite (?loellingite), chalcopyrite and sphalerite. The surrounding basement lithologies are intensely foliated, moderately silicified and chlorite altered. Tourmaline is scattered throughout the lithologies in varying proportions. An extremely narrow (6cm) hydrothermal graphite band occurs at 61.3m, and is concentrated within paragneiss foliation.

Weakly to strongly foliated quartz-biotite-muscovite-(chlorite)-(garnet) paragneiss dominates the remainder of the drillhole. Towards the end of the hole, a muscovite-chlorite-garnet-staurolite foliated gneiss and mica schist was intersected. These lithologies have undergone patchy alteration including silicification and illite alteration. Narrow calcite-quartz-pyrrhotite veinlets are also present, scattered throughout the basement, and disseminated pyrrhotite and pyrite occurs towards the end of hole. Despite the presence of narrow two to three times background measurements, anomalous down hole radioactivity was not detected.

The presence of sulphidic and locally graphitic facies similar to some drilled on the Two Rocks prospect (former EL 3418) favours a Lower Cahill Formation classification for these lithologies.

6.1.2. EL 2505

This drillhole tested a major E-W reverse structure, and is also proximal to a minor radiometric anomaly and known radon springs in the NE Myra area, EL 2505. The hole was drilled at -80° towards 340°. The hole was completed to a depth of 301.1m, and the unconformity was intersected at a downhole depth of 263.8m.

The hole was collared within the Mamadawerre Sandstone, approximately 100m to the north of the reverse structure. Fine grained, moderately to strongly silicified sandstone dominates the upper sequences of the hole. This sandstone is weakly to moderately bleached and is intensely broken in moderately wide sections. Limonite and kaolinite were logged both within the sandstone matrix and along fractures. Narrow drusy quartz veining and protobrecciation is common between 150 and 170m. From approximately 195m onwards, the sandstone is intensely fractured, and core loss is abundant. The sandstone is moderately bleached and has some narrow pebbly intervals. Drilling problems were encountered, and the drilling diameter was changed to BQ at a depth of 210.3m. From 220m down to the unconformity, the sandstone becomes coarse grained to pebbly, is moderately chlorite altered, and contains narrow solution/collapse brecciated intervals. The sandstone remains moderately to strongly fractured, and narrow carbonate veinlets were intersected. The sandstone immediately above the unconformity contains detrital muscovite. The unconformity is undisturbed.

The basement lithologies comprise micaceous meta-arkose, quartz mica schist, and narrow amphibolite. Narrow, foliation sub-parallel mobilisates were scattered throughout the basement. Sillimanite was rarely observed. The basement lithologies are moderately hematite, chlorite and illite altered throughout, with narrow intensely altered zones. Narrow microfolded and cataclased intervals were intersected. Anomalous radioactivity was not detected.

6.2. Petrology

Three core samples from drillhole EMA001 were sent to D. Mason of Mason Geoscience for petrological analysis. His report is presented in Appendix 2.

6.3. Petrophysics

Six samples were collected and sent to D. Emerson of Exploration Systems for petrophysical analysis. The results are listed in Table 5.

At the time of reporting, results were still pending, and will be included in later reports to the DBIRD.

7. Conclusions

Exploration on the TCC EL's during the seventh year of tenure tested geophysical and/or geochemical anomalies identified from previous years programmes.

The 2002 drilling on ELs 2516 and 2505 has proved disappointing. At this stage, further assessment of the tenements lithostratigraphic and structural setting is necessary to evaluate their prospectivity.