Cameco Australia Pty Ltd

WELLINGTON RANGE PROJECT

EL 5893

ANNUAL REPORT

CONFIDENTIAL

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SUMMARY

This report describes work undertaken on EL5893 for year ending 3 May, 2006. Work was largely geophysics-related, and included an airborne EM survey (TEMPEST), and interpretation of these data by Cameco staff. An external consultant, Southern Geoscience Limited, undertook an interpretation of airborne magnetic data collected in 2005.

Additional work included a single day of helicopter reconnaissance, mainly over the northern section of the tenement. A single outcrop sample was collected.

No significant results were obtained during the reporting field season, although the aeromagnetic interpretation was used as a foundation to plan a substantial drilling program for the 2006 field season.

Appendix 1: EL5893 Summary of Exploration Work Conducted to Date

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INTRODUCTION

This report outlines exploration activity on EL5893 (Wellington Range project) for the year ending 3 May 2006.

Location and Access

EL5893 is located in western Arnhem Land, and centred 100 km NNE of Jabiru.

Relevant map sheets are:

- 1:250K Cobourg Peninsula SC5313
- 1:100K Wellington Range 5574
- 1:50K Laterite Point

Figure 1: EL5893 Location Map

The unsealed road to Gurig National Park, Cobourg Peninsula provides good vehicular access to the eastern margins of the tenement. Several east-west trending roads and tracks provide additional access. Sandstone escarpment areas are accessible by helicopter.

Tenure

EL5893 was granted on 5 May 2004 for an initial period of six years. On granting, the total area under licence was 269 blocks for 856.4 square kilometres of which 378.8 square kilometres (44%) was excluded from exploration by the wishes of the Traditional Owners and the Sacred Site Authority. The current area available for exploration is 477.6 square kilometres.

Cameco applied for a Waiver of Reduction in April 2006. If granted, this will enable retention of all 269 blocks for the coming year.

Physiography

The tenement contains some remnant areas of dissected sandstone plateau, which form the eastern extension of the Wellington Range. The remainder consists predominantly of gently undulating plains covered by savannah woodland. The principal drainage systems within the region are the Angularli creek draining to the east, Murgenella Creek draining to the west, and Cooper Creek draining to the south of the project.

Tenement Geology

The geology of EL5893 is previously described (Otto et al., 2005).

Figure 2: EL5893 – Regional Geology

Figure 3: EL5893 – Tenement Geology

Previous Exploration

Historically, no known exploration has been undertaken within the tenement area. Immediately east and south of EL5893, substantial exploration programmes have been completed. For example, during 1970-1972, Union Carbide Exploration Corporation, explored for uranium in the King River area, now held by Cameco. This work included airborne magnetics and radiometrics with follow-up geochemical surveys, geological mapping, and auger drilling.

Exportation work conducted by Cameco in the first year of tenure included airborne radiometric, magnetic and hyperspectral surveys. A total of 89 outcrop samples were collected for geochemical analysis. Results were considered disappointing, with a maximum of 4.68 ppm U recorded. The majority of radiometric anomalies in sandstone were related to pebble-rich horizons.

WORK CONDUCTED FOR REPORTING PERIOD

Aeromagnetic Interpretation

Cover largely obscures the Wellington Range geology. This is especially the case in the northern part of the project, where the airborne magnetics indicates the presence of highly prospective Cahill Formation. Consequently, Southern Geoscience (S.G.C.) were contracted to undertake a detailed (1:50,000 scale) interpretation of the magnetics previously flown over the project to assist with the development of a sub-surface (inferred) geology map and also targets. The interpretation report and map is attached and the report summary is as follows:

“Processing and project scale interpretation of aeromagnetic data covering Cameco Australia's Wellington Range project have been completed by S.G.C. The magnetic data used was a combination of Cameco's 2004 Wellington Range survey (200m line spacing) and a 2000 AGSO/NTGS survey (400m line spacing).

The interpretation was based on images and contours generated by S.G.C. from these merged, low to moderate resolution data sets, mainly using enhancements of normal total magnetic intensity data rather than reduced to pole magnetics.

The effectiveness and reliability of the interpretation is restricted by the mediocre data quality (particularly resolution) and the limited geological control. Contrasts within the merged magnetic data set are low to moderate (amplitude range of 500-600nT) and are dominated by complex, normally and reversely magnetized responses related to the Oenpelli Dolerite. The complex magnetic patterns in the southern part of the area are thought to be predominantly mapping the distribution of the Oenpelli Dolerite. However, some relict stratigraphy, including possible equivalents of the Cahill Formation, could also be present.

The relatively narrow, elongate magnetic domain extending along the western side of the project area is thought to be mapping prospective Cahill Formation lithologies surrounded by non-magnetic Nimbuwah Complex granitoids. First pass quantitative modelling of selected magnetic profiles crossing this Cahill Formation trend indicates that basement is likely to be overlain by 200m to 400m of non-magnetic Kombolgie Subgroup and younger sediments.

A suite of broad target areas has been selected using the aeromagnetic interpretation. The majority of these are structural targets related to the inferred major, basement faults, assuming that these are part of a sinistral, strike slip regime. However, the character of the fault system has not been conclusively determined during the interpretation. A number of possible alteration zones ± late intrusives (not related to the Oenpelli Dolerite) have also been identified during the interpretation. Targets associated with possible Cahill Formation equivalents are considered high priority than those within normal, non-magnetic Nimbuwah Complex."

Appendix 2: Southern Geoscience – Aeromagnetic Interpretation - Report

Figure 4: Southern Geoscience – Aeromagnetic Interpretation – Summary Map

TEMPEST Survey and Interpretation

In May 2005, Fugro Airborne Surveys Pty Ltd (Fugro) undertook a TEMPEST airborne electromagnetic survey over the northern two-thirds of the project. The flight lines are oriented 066o with a flying height of 120 m, totalling 1516 line km. The survey was flown in the northern part of the project to provide information about the sub-surface geology, which is below cover. A line spacing of 400 m was adopted to provide broad coverage and since there were concerns that conductive cover or salinity incursions might dominate the response.

TEMPEST is a high-powered airborne time-domain system with a broad bandwidth, which enables good resolution of variations in resistivity whilst maintaining reasonable ground penetration. In addition, the airborne platform allows electromagnetic data to be acquired over broad areas where ground geophysics is impractical due to rugged topography. The survey was flown with the aim of providing 3-D electromagnetic data to assist with the identification of graphite, structural offsets, alteration and to infer the depth to the unconformity below sandstone.

Appendix 3: TEMPEST Logistics Report by Fugro

Figure 5: TEMPEST Location Map

Figure 6: TEMPEST X Time Constant Map

Figure 7: TEMPEST Z Time Constant Map

Figure 8: TEMPEST Z RGB=CH1,4,8 Map

Background

Conductivity Depth Images (CDIs) are an important product calculated by Fugro using EMFlow software (Encom Pty Ltd) and used to visualize the TEMPEST response, which is useful for comparison with geology. Cameco has also utilised Profile Analyst software (Encom Pty Ltd) to calculate a 3D voxel, which can be used to investigate 3D features. This allows conductivity depth slices to be calculated as well as the depth to the first conductive layer, referred to as the "conductive unconformity". The 3D voxel has also been filtered to highlight conductivities greater than 10 mS/m and exclude conductivities within 10 m of the surface (likely to relate to cover and weathering rather than features within the basement). A number of these 3D aspects have also been reprojected to plan view to facilitate comparison with ancillary datasets including geology. The z-component data has been used extensively since it is less prone to noise and couples best with sub-horizontal features such as the conductive unconformity.

The "conductive unconformity" is a term adopted to describe the first sub-horizontal conductive layer, commonly depicted in TEMPEST CDIs. In areas of Mamadawerre Sandstone this layer generally relates to the sandstone-basement unconformity contact and elsewhere it generally relates to cover. Abrupt changes in the elevation of the TEMPEST conductive unconformity can sometimes be utilised to infer faulting and structure.

Figure 9: Elevation of Conductive Unconformity from ZCDIs

Cover Depth and Sandstone

Normally in Arnhem Land, areas of cover relate to conductivities less than 50 mS/m and are less than 100 m thick. However, a conductive layer dominates the TEMPEST response in the northern half of the survey with conductivities in excess of 100 mS/m and up to 350 m thick (commencing approximately 27 m below the surface). It is interpreted that the response is due to thick carbonaceous siltstones and mudstones of the Cretaceous Bathurst Island Formation. Salt-water incursions are an alternative interpretation but seem less likely since the ocean is still several kilometres away.

As discussed, S.G.C. has modelled four airborne magnetic profiles and concluded that anomaly WR3 (magnetic model profile 2) produced the most reliable depth estimate of the basement, which was found to be approximately 370 m. At this location the base of the TEMPEST conductive layer, thought to demark the basement, is 386 m deep. These two separate estimates of basement depth are remarkably similar and should be considered during the planning of future drilling programs.

The TEMPEST conductive unconformity response can be used to subdivide the inferred cover as deep and very deep. The exception are a couple of localised zones where the conductive layer is much thinner, possibly representing basement highs and/or thinning of the carbonaceous cover sediments. The proposed 2006 drill program will likely be located in areas of inferred deep cover. In the event that excessive cover causes drilling problems, then consideration could be given to the areas where there is localised thinning of the conductive layer.

As expected, outcropping Kombolgie Subgroup sandstone occurs in the southern third of the survey and relates spatially to strongly resistive surface features in the TEMPEST dataset. This allows the inference of covered sandstone revealing it's true limits. It must be noted that the present interpretation has identified "undifferentiated" sandstone, since TEMPEST cannot necessarily discriminate Kombolgie Subgroup sandstone from Cretaceous cover (i.e. Bathurst Island Sandstone). Nevertheless, it is reasonable to attribute a majority to the Kombolgie Subgroup due to its proximity. Areas slightly further away from the outcrop are denoted in the interpretation as "sandstone or cover" to reflect the increased uncertainty.

At Wellington Range there is minor surface relief associated with the Kombolgie Subgroup Sandstone. However, the TEMPEST data implies significant local basement highs and basement lows up to 450 m in deep. In most instances, the remnant sandstone outliers are lozenge shaped in cross-section with the elevation of the "conductive unconformity" decreasing below the sandstone. This shape may be due to palaeotopography although experience favours post-sandstone faulting and/or dolerite discordance and irregularity. Certainly at some locations basement highs appear to relate to Oenpelli Dolerite indicated by the magnetics. Several faults can be inferred by relatively abrupt changes in the elevation of the conductive unconformity, which have been upended to the ongoing GIS geology interpretation. Care should be taken with their spatial accuracy since they are based on 400 m lines, which is considered relatively broad. Also those that are perpendicular to the flight path should be regarded as more reliable since there is greater coherence from line-to-line.

Figure 10: TEMPEST Interpretation and Targets

Targets

One of the primary objectives for the TEMPEST survey is to identify conductors, associated with structure, since these could relate to clays, porosity or graphite; indicative of alteration and/or fluid-rock interaction with potential to precipitate uranium. Unfortunately, conductors can be difficult to reliably identify with 1D inversions due to artefacts and tails related to edge effects. Also, the conductive unconformity response may mask underlying basement responses. Geometry, line-to-line consistency and x/z characteristics help to increase confidence that conductors are real, especially in the context of known geology. The coarse line spacing utilised at Wellington Range makes the identification of valid targets even more difficult unless they are quite large.

Reviewing individual CDIs, time constants, time channels and voxel thresholds has allowed the identification of six conductive targets. These warrant ground prospecting and are assigned a priority rating based on the TEMPEST data and geology. Drill testing may be justified if the prospectivity can be upgraded by ancillary datasets such as geochemistry.

One target is regarded as a high priority and almost certainly warrants drill testing. It has been named wr_atem_01 and is a dipping conductor located on the western edge of outcropping sandstone where government mapping has identified sub-cropping Myra Falls Lit-par-lit Gneiss. The target is 5 km south of the Sandy Creek Bay Telstra Tower, therefore drill testing could be achieved utilising a truck-mounted rig. By way of summary, the anomaly:

- Projects to the surface at: 295966mE / 8689775mN (TMAMG53, AGD66) with a dip direction of 95^o and true dip of 41^o;
- Is, according to the ZCDI, within the basement below approximately 30 m of sandstone;
- Is likely to be real since there is good CDI line-to-line and x/z correlation;
- Could be due to graphite since the nearby sub-cropping basement is pelitic;

- Is located on a northerly trending fault;
- Is coincident with an isolated airborne magnetic feature, which may indicate alteration;
- Is not associated directly with elevated airborne radiometrics, although the fault generally relates to elevated potassium and thorium;
- Is located 300 m north of station WR040255 where elevated radioactivity is attributed to stratigraphy (40cm pebble beds were anomalous to 1000cps and granule stone was up to 400cps with an Urtec spectrometer); and
- Is located at southwestern edge of illite-dickite hyperspectral anomaly.

Figure 11: Priority TEMPEST Target

Heli-Reconnaissance/Outcrop Sampling

A single day was spent conducting a helicopter survey, mainly over the northern section of the tenement. This was for the purpose of assessing ground and access conditions for possible drilling programme(s). Most of the area appeared flat, and openly vegetated, and suitable for the construction of a low impact track to facilitate access of a truck-mounted drill rig.

A single outcrop sample was collected, from an exposure of basement gneiss in the central section of the tenement. Multi-element geochemical analysis was conducted at NTEL in Darwin. PIMA reflectance spectroscopy was conducted by Cameco.

Appendix 4: Analytical Suite

Appendix 5: Analytical Method

Appendix 6: PIMA Methodology

All data relating to this sample, WR050002C1, is located in the Data Folder of this report.

Table 1: EL5893 Outcrop Sample Geochemical data

Table 2: EL5893 Outcrop Sample PIMA-TSA data

EXPENDITURE

Exploration expenditure for EL5893 for the reporting period totalled $200,342 (Table 1).

Table 3: EL5893 Exploration Expenditure

CONCLUSIONS AND RECOMMENDATIONS

S.G.C. has provided a comprehensive magnetic interpretation, which will be relied upon heavily for inferring geology below cover and drill targeting. The magnetics has been used to identify Cahill Formation, which occurs in the northern half of the survey. This rock unit hosts the major uranium deposits in north-west Arnhem Land and will be an important guide to drill planning for 2006.

An airborne electromagnetic TEMPEST survey has been flown over the northern part of the project, which has provided some insights into the subsurface geology. However, the northern two-thirds is swamped by a strongly conductive surface response attributed to relatively thick cover. To the south, TEMPEST identifies the sandstone extents (even below cover), unconformity geometry and some new structures. Several conductive targets have been identified and one located 5 km south of the Sandy Creek Bay Telstra Tower (wr_atem_01) is highly recommended for follow-up.

Fugro has calculated CDIs using EMFlow software, which is an imaging algorithm. LEI (Layered Earth Inversion) type algorithms are an alternative method of producing CDIs, which may provide better estimates of cover thickness in the north where there is a simple layered situation. Consideration should be given to using an LEI algorithm for selected areas, especially if the planned 2006 drilling provides constraints on the down-hole resistivity values. Target wr_atem_01 has a relatively simple plate-like conductive response that could be modelled in conjunction with field prospecting to refine an optimal drill site.

PROPOSED WORK FOR COMING YEAR

Work in 2006 will focus on a drilling campaign in the north western section of the tenement. Drilling aim to intersect prospective Cahill Formation rocks beneath Cretaceous sediments. The depth of these sediments is unknown, but estimated to be less than 200-300 m.

A total of up to 14 holes are proposed, for a maximum of around 5000 m. Proposed drilling technique is rotary mud to Proterozoic basement, then diamond tails of approximately 50-100 m. The proposed drilling will take place from mid-July 2006 for a period of 4 to 6 weeks.

Additional work may include an airborne gravity survey.

Total exploration expenditure is estimated to be $500,000.

REFERENCES

Otto G., Melville P. and Beckitt G., 2005. Exploration Licence EL5893, Wellington Range Project, Northern Territory. *Cameco Australia, 2004-2005 Annual Report*, WR05-02.