Cameco Australia Pty Ltd

Exploration Licence EL 3419

BIRRADUK PROJECT – NORTHERN TERRITORY

2000 - 2001 ANNUAL REPORT

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SUMMARY

The Birraduk project comprises EL 3419 and is managed by Cameco Australia Pty Ltd (Cameco) under authority from Black Range Minerals NL (Black Range).

During July 2000, five diamond drill holes from the Birraduk project. The drill holes were geologically logged, sampled and processed for physical property parameters. All drilling on the Birraduk project has now been evaluated. Although no mineralisation was encountered in the drilling thus far, more work is required to understand the uranium potential of the area.

A helicopter assisted regional outcrop sampling program was completed during November 2000. A total of 69 samples were collected from 67 recorded stations.

The objectives of the work completed by Cameco were to characterise the stratigraphy, structure, alteration and uranium mineralisation potential within the region tested by the drilling, and understand and document any lithological, geochemical or alteration patterns that may be present within the available area of exploration.

The work completed by Cameco was done under the terms of a letter agreement with Black Range dated May 21 1999. The agreement provides authorisation for Cameco to act as an agent for exploration activities on this project.

Whole rock and trace element geochemistry, magnetic susceptibility and reflectance spectroscopy complement each other when defining and characterising the various alteration features identified in the drill core.

A general paragenetic sequence has been determined: The formation of dickite relating to early diagenesis; silicification (quartz overgrowths) concentrating in the coarser more permeable horizons; illite (affecting the later aquifers); silicification? and late kaolinite (structurally related).

The basement portion was sampled and physical properties were measured, however, the basement was not geologically logged in detail. Work completed on the basement portion of the drill holes by the previous operator, suggests a favourable geological environment similar to Jabiluka.

Due to its proximity to Jabiluka, alteration identified in the sandstone, favourable basement lithologies and a cursory exploration program to date, indications are that additional work on the Birraduk project is highly recommended.

Selected samples have been sent away for thin section preparation. These samples may be subjected to future study with emphasis on defining alteration zonations and/or cells that may be indicative of uranium mineralisation processes.

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1. INTRODUCTION

The Birraduk project is a uranium project now managed by Cameco Australia Pty Ltd (Cameco) working under the authority of an agreement to act as an agent for Black Range Minerals NL (Black Range). Cameco is currently finalising negotiations to acquire a number of Black Range assets, including EL 3419.

The prime objective of the project is to discover economic U mineralisation within a geological environment similar to deposits in the Athabasca basin of Canada and associated with the McArthur basin (Kombolgie sandstone) of the Northern Territory.

The objectives of the work completed by Cameco were to characterise the stratigraphy, structure, alteration and uranium mineralisation potential within the region sampled by the drill core, and from regionally collected outcrop samples. This was to be achieved by evaluating features identified megascopically and by using physical properties, reflectance spectroscopy (PIMA) and geochemistry.

1.1 Location and Access

The project area is located 40 km north-east of Jabiru and 15 km west-south-west of Nabarlek. Current access to the project area is by helicopter only. A seasonal track from Nabarlek to the Afmeco Mining and Exploration Pty Ltd (Afmex) Myra Falls camp continues through the Mikinj Valley and passes within 3 km of the south-east corner of the Birraduk project area.

Location Map

1.2 Tenure

The Birraduk Project is now managed by Cameco, working under the authority of an agreement to act as an agent for Black Range dated May 21 1999. Cameco is currently finalising negotiations to acquire a number of Black Range assets, including EL 3419. The project consists of one exploration licence (EL3419) for a total of 53.5 km^2 (16 blocks). The project began as a joint venture with Afmex as the operator. In February 1999, Afmex withdrew as a joint venture partner. An exemption from reduction was submitted to the Northern Territory Department of Mines and Energy (NTDME) at the end of year 4 of the exploration licence.

Current Land Status

1.3 Terms of Exploration by Cameco

The work completed by Cameco was carried out under the terms of a letter agreement between Cameco and Black Range dated May 21 1999. The agreement provided authorisation for Cameco to act as an agent for exploration activities.

1.4 Geological Setting

The entire project area lies within the Kombolgie Sandstone. Drilling to date indicates a thickness of sandstone varying from less than 100 m to approximately 500 m throughout the project area. Basement geology consists of an amphibolitic unit, Upper Cahill Formation and Nourlangie Schist. Oenpelli dolerite, although not intersected in drilling, is interpreted to occur at depth.

Geological Compilation: Black Range Minerals NL

1.5 Previous Exploration

Formal exploration began in 1997 with the drilling of five diamond drill holes by the previous operator, Afmex. A helicopter magnetic and radiometric survey was flown over the entire tenement area. Results were not encouraging for the operator. Significant structural zones, alteration patterns and mineralisation were not identified. An additional four holes were drilled in 1998 with similar results. A decision was made by the operator to withdraw their participation in the joint venture. The compilation map shows the drill hole locations and interpreted geology.

Drill Hole Collar Locations

Drill Hole Down Hole Surveys

1.5.1 Cameco Exploration

In 1999 four drill holes, KUN-03, KUN-04, KUN-06 and KUN-07 were evaluated by Cameco personnel. These drill holes were geologically logged, sampled and processed for physical property parameters. Samples were geochemically analysed for trace elements and PIMA analysed for clay mineralogy. Results from this evaluation indicated that further work is necessary to understand the uranium potential of the area. All results are detailed in the 2000 NTDME Annual Report.

Remote Sensing Image with Drill Hole Collar Locations

2. EXPLORATION BY CAMECO IN 2000-2001 (4TH YEAR)

During July 2000, Cameco personnel evaluated the five remaining diamond drill holes, KUN-01, KUN-02, KUN-05, KUN-08 and KUN-09. The drill holes were geologically logged, sampled and processed for physical property parameters. The Work Expenditure Table describes the exploration completed. The locations of all drill holes, drilled by Afmex and evaluated by Cameco are shown on the following figure.

Remote Sensing Image with Drill Hole Collar Locations

Work Expenditure

In November 2000, a helicopter supported, regional outcrop sampling program was completed over the entire exploration license accessible to exploration. A total of 69 samples were collected from 67 sites, achieving a sample density of approximately two samples per square kilometre coverage of the Kombolgie Sandstone. Sample sites were designed on a staggered pattern on lines 500 metres apart. In reality, however, an area open for helicopter access within the vicinity of the planned site dictated the sample site location.

Project scale geophysics undertaken during the reporting period consisted of an Airborne Multispectral Scanner (AMS) survey conducted by DeBeers for a total of 123 km^2. The survey was designed to map minerals and identify alteration associated with unconformity U mineralisation. Data has been received, but processing has yet to be completed.

AMS Geophysical Survey Specifications

Company	Amount	Parameter	Specifications
DeBeers	123 km2	Reflectance	5 metre pixel resolution

2.1 Drill Core Procedures

The drill holes were geologically logged and sampled at the Afmex Myra Falls camp site during July 2000. Physical property measurements were completed at the Cameco office in Darwin. The drill core was geologically logged using Cameco's in-house UNILOG database program. The core was systematically logged describing lithological, structural and alteration features. Results are displayed graphically using the GDM for Windows software program. A series of strip plots are used to display the various features logged and measured. The Work Summary Table lists the work completed on each drill hole.

Work Summary

Unilog Codes

Unilog Reports

2.1.1 Sampling Technique

Routine sampling was completed in every row of core. A representative 5 cm core sample was collected and halved using a core saw. One half was described (grain-size, Munsell colour, and magnetic susceptibility). The same sample was measured for spectral parameters using the PIMA II spectrometer. These samples are retained within the Cameco storage facility in Darwin. The other half of the representative sample was used for litho-geochemical analysis (lithology based composites).

Physical Properties and Detailed Lithology

Codes for Competency Friability & Grain Size

Codes for Munsell Colours

Petrographic samples have been sent for thin section preparation by Petrographics International in Saskatchewan, Canada. Samples have yet to be received. A listing is included.

Petrographic Samples

2.1.2 Reflectance Spectroscopy (PIMA)

Reflectance spectroscopy (PIMA) analysis was completed using the PIMA II short-wave infrared spectrometer on all samples collected. This instrument measures the reflected energy from a sample in the short wave infrared (SWIR) region of the energy spectrum. The sampling area on the rock specimen that is measured is permanently marked. Multiple measurements are occasionally taken, particularly if variations in spectral features are noted. The spectra are converted to an ASCII format and processed using "The Spectral Geologist" (TSG) developed by AusSpec International, and a Cameco in-house software program called Minspec.

TSG is routinely used to process all spectral data. The SWIR spectra, once processed, provide a mineral identification utilising internal software pattern matching algorithms called "The Spectral Assistant" (TSA). The experienced user can collect information on the degree of mineral crystallinity, and chemical composition variations within mineral groups from the spectra. The program also allows the user to create scalars based on spectral features and parameters. This allows for quantifying crystallinity parameters; classifying chlorite species based on Mg and Fe absorption features and a multitude of other features.

Drill CoreTSA Analysis (Major Mineral Species)

Drill Core TSA Analysis (Exotic Mineral Species)

The in-house software "Minspec" utilises the PIMA spectra to classify the data into proportions of six clay mineral species (illite, kaolinite, dickite, halloysite, chlorite and dravite). A signal to noise ratio is calculated. Careful, visual attention to detail along with the signal to noise value within each spectra, is required to determine the validity of the classification.

Drill Core Minspec Analysis

2.1.3 Geochemical Processing

All samples were sent to Northern Territory Environmental Laboratory (NTEL) (formally ChemNorth) in Darwin and Pine Creek, Northern Territory, for multi-element analysis. In total, four separate methods were used to analyse 53 elements. The Analytical Procedures Table lists the methods used by NTEL.

Geochemical processing of drill core samples is incomplete, with only partial results available to date. Au, B, LOI, Pt and Pd results are outstanding for all samples. All KUN001 and KUN009 and a limited number from KUN002 geochemical samples have been made available. Pending geochemical samples include all of KUN005, 008, and most of KUN002. All results will be included in next years report.

Analytical Procedures

Geochemistry for Drill Core Samples

2.2 Outcrop Sample Procedures

Regional outcrop samples were carefully selected to represent regional background signatures for lithological, spectral and geochemical parameters at each location. Geomorphological, geological and radiometric parameters were recorded, and a digital photograph at each site was taken. The samples were systematically processed in the Darwin office. Lithological textures, alteration colours (Munsell), grain-size variations, petrophysical parameters (magnetic susceptibility) were routinely recorded.

Outcrop Locations and Description

Outcrop Location Map

2.2.1 Sampling Technique

Samples are routinely halved using a core saw. One half is described (grain-size, Munsell colour, and magnetic susceptibility). The same sample is measured for spectral parameters using the PIMA II spectrometer. These samples are retained within the Cameco storage facility in Darwin. The other half of the sample is used for litho-geochemical analysis. A segment of each sample is also sent to Petrographics International in Saskatchewan Canada for petrographic thin section processing.

Lithology and Physical Properties

Codes for Competency Friability & Grain Size

Codes for Munsell Colours

2.2.2 Reflectance Spectroscopy (PIMA)

Reflectance spectroscopy (PIMA) analysis was completed using the PIMA II short-wave infrared spectrometer on all samples collected. This instrument measures the reflected energy from a sample in the short wave infrared (SWIR) region of the energy spectrum. The sampling area on the rock specimen that is measured is permanently marked. Multiple measurements are occasionally taken, particularly if variations in spectral features are noted. The spectra are converted to an ASCII format and processed using "The Spectral Geologist" (TSG) developed by AusSpec International, and a Cameco in-house software program called Minspec.

TSG is routinely used to process all spectral data. The SWIR spectra, once processed, provide a mineral identification utilising internal software pattern matching algorithms called "The Spectral Assistant" (TSA). The experienced user can collect information on the degree of mineral crystallinity, and chemical composition variations within mineral groups from the spectra. The program also allows the user to create scalars based on spectral features and parameters. This allows for quantifying crystallinity parameters; classifying chlorite species based on Mg and Fe absorption features and a multitude of other features.

Outcrop Samples TSA Analysis (Identified Mineral Species)

The in-house software "Minspec" utilises the PIMA spectra to classify the data into proportions of six clay mineral species (illite, kaolinite, dickite, halloysite, chlorite and dravite). A signal to noise ratio is calculated. Careful, visual attention to detail along with the signal to noise value within each spectra, is required to determine the validity of the classification.

Outcrop Samples Minspec Analysis

2.2.3 Geochemical Processing

All samples were sent to NTEL in Darwin and Pine Creek, Northern Territory, for multi-element analysis. In total, four separate methods were used to analyse 53 elements. Results for Au, B, LOI, Pt and Pd are still outstanding, and will be included in next years report.

Analytical Procedures

Geochemistry for Outcrop Samples

2.3 Drill Core Relogging Results

The results of the geological logging , sampling and physical property measurements are displayed on a series of strip plots for each drill hole. Three drill sections interpreted by Black Range are included. These sections illustrate the relative position of the drill holes and the basic geometry of the Kombolgie Sandstone basin within the project area. Explanatory notes for the various codes and colours used in the strip plots are shown in the following figure.

Geochemistry for the re-logged holes is incomplete, with unavailable results for most of KUN002, and all of KUN005 and 008. Au, B, LOI, Pt and Pd results are outstanding for all re-logged holes. The complete geochemical dataset will be included in next years report.

Black Range Geological Section: Northern region

Black Range Geological Section: Eastern region

Black Range Geological Section: Southern region

Explanatory Notes for GDM Strip Plots

Unilog Codes

Unilog Reports

2.3.1 KUN001

KUN001: Lithology Strip Plot

KUN001: Structure Strip Plot

KUN001: Alteration Strip Plot

KUN001: Geochemistry Strip Plot

KUN001: PIMA Strip Plot

KUN001 is dominated by sandstone and granulestone horizons the Mamadawerre Sandstone (the lowest member of the Kombolgie Sandstone) and a thin (few metres) basal conglomerate unit unconformably overlying semi-pelitic, pegmatitic and meta-arkosic rocks interpreted as the Nourlangie Schist.

The PIMA plot shows several distinct spectral domains down the hole. Dickite clays, identified in both Minspec and TSG, dominate an approximately 40m horizon of granule-stone from 28m. A small interval (69–87m) of sericite clays dominated by illite separates the former interval from a larger dickite interval (87–170m) with minor decreasing amounts of illite, paragonite and muscovite. This dickite interval contains minor pebble bands and coarser grain size than the intervening illitic horizon. A small horizon of finer grained sandstone dominated by sericitic clays extends to 182m.

A broad correlation can be derived between the clay species identified from PIMA and the grain size; the coarser sedimentary horizons are dominated by

dickite clays and the finer grained horizons with sericitic clays such as illite, paragonite and muscovite.

A structurally disrupted zone (182-265m) of breccia, fault gouge and broken core is dominated by kaolinite and lesser illite and muscovite. A small granule-stone interval within this zone has also been altered to kaolinite (possibly from dickite). This would suggest that the kaolinite clays represents a late stage alteration associated with the structural disruption.

The sandstone, granule-stone stratigraphic column has been weakly silicified from near the top of the hole through to the unconformity with semi-pelititic and pegmatitic basement rocks comprising the Nourlangie Schist.

Magnetic susceptibility measurements down the hole show a more subdued profile in the sericitic and kaolinitic horizons as compared to the dickite dominant horizons.

Geochemistry results are complete with the exception of Au, B, LOI, Pd and Pt. A zone from 228 to 259m shows a general depletion in the major oxides and correlates to a zone of structural disturbance and broken core immediately overlying the unconformity. No significant U mineralisation was observed within the hole.

2.3.2 KUN002

KUN002: Lithology Strip Plot

KUN002: Structure Strip Plot

KUN002: Alteration Strip Plot

KUN002: Geochemistry Strip Plot

KUN002: PIMA Strip Plot

KUN002 is dominated by sandy and granule grain sized horizons and conglomeratic intervals of the Mamadawerre Sandstone (the lowest member of the Kombolgie Sandstone) unconformably overlying pelitic schists interpreted as the Nourlangie Schist. A very thin (30cm) basal Mamadewerre conglomerate is present immediately above the unconformity.

The detailed lithology was not completed on this hole; therefore a comparison between grain size and the presence of dickite clays is not possible for this hole. The sandstone/granule-stone portion of the hole is dominated by dickite clay and minor nacrite, with small intervals of sericitic clays within the upper portion and above the unconformity. The small sercitic clay interval from 59 to 67m occurs immediately below a granule-stone. The sericitic clay interval above the unconformity occurs from 225m to the unconformity at 243.1m.

Very little structural disruption has occurred within the hole, with only minor drusy quartz veins recorded. Weak to moderate silicification is recorded in portions throughout the hole.

15 of 64 samples have been received from NTEL. All other composite geochemical samples are outstanding.

2.3.3 KUN005

KUN005: Lithology Strip Plot

KUN005: Structure Strip Plot

KUN005: Alteration Strip Plot

KUN005: PIMA Strip Plot

KUN005 intersected predominantly sandstone and minor granulestone of the Mamadawerre Sandstone (the lowest member of the Kombolgie Sandstone) with a four metre conglomerate resting unconformably on semi-pelitic and felsic-segregated rocks interpreted as the upper arkosic unit of the Cahill Formation.

The entire sandstone column is dominated by dickite and minor nacrite with the exception of a 9m interval from 9 to 18m and the basal 26m (above the unconformity) of sandstone and basal conglomerate; both dominated by illite and paragonite. The detailed lithology was not completed on this hole, however, from the lithology logging, the average grain size is greater than 1mm, throughout most of the Kombolgie intersection.

A small interval of broken core from 23 to 25m corresponds to depletion in the magnetic susceptibility profile. Apart from this small disruption zone, there is limited structural activity recorded within this hole.

All geochemical results are outstanding.

2.3.4 KUN008

KUN008: Lithology Strip Plot

KUN008: Structure Strip Plot

KUN008: Alteration Strip Plot

KUN008: PIMA Strip Plot

As with previous drill summaries, KUN008 intersected dominantly coarse-grained and fine to medium grained sands and minor conglomerate of the Mamadawerre Sandstone, resting unconformably on pelitic and felsic segregated pegmatitic rocks interpreted to be part of the upper arkosic unit of the Cahill Formation.

The detailed lithology was not completed on this hole. Dickite clay dominates the sandstone portion of the hole, from 10 to 110m. A two metre interval from 41m is defined by illite clays within the dominant dickite horizon. This small interval in particular and the portion of lower dickite clay amounts above this interval in general, corresponds to a zone of minor structural disruption recorded as broken and unconsolidated core. The dickite clay in this zone appears to give way to a subtle increase in the sericite clays of illite and muscovite. Magnetic susceptibility throughout this small, disrupted zone gives variable responses.

From 110m to the unconformity at 164.6m, PIMA results display dominant sericitic clays with minor kaolinite and a small dickite interval. This zone has been structurally disrupted reflected by broken core and rotated bedding. Kaolinite appears to be related to alteration and fluid flow along late stage

structures. The dickite interval above and encompassing the thin (3m) conglomerate at 145m most likely represents a more coarser interval within the coarse grained sandstone with granule-stone interbeds.

The magnetic susceptibility profile for the basal 25m of sandstone shows subdued responses throughout the structurally disrupted and broken interval.

All geochemical results are pending.

2.3.5 KUN009

KUN009: Lithology Strip Plot

KUN009: Structure Strip Plot

KUN009: Alteration Strip Plot

KUN009: Geochemistry Strip Plot

KUN009: PIMA Strip Plot

As with previous drilling, KUN009 intersected sedimentary rocks of the Mamadawerre Sandstone. The sandstone is coarser than previous holes and is recorded as predominantly coarse-grained sandstone or granule-stone with conglomeratic intervals and floating pebbles. A four metre conglomerate rests unconformably on chlorite muscovite pelitic schists and quartz felsic segregated pegmatitic rocks interpreted as the upper arkosic unit of the Cahill Formation.

PIMA results show that the entire sandstone column is predominantly comprised of dickite clays, with minor sericitic clays and nacrite throughout dickite interval. A horizon from 109m to 126m displays variable amounts of dickite / illite clay mixes. This interval encompasses a 12m wide conglomeratic horizon, and ends at the boundary with a three metre thick fine grained sandstone containing mudstone rip-up clasts. PIMA readings within the basal conglomerate are suspect with very low signal to noise ratios, however Minspec reports illite, minor dravite and chlorite.

This hole is relatively structurally undisturbed, with only a thin interval of broken core reported in the basal sandstone.

Geochemical results of the sandstone are complete, with the exception of Au, B, LOI, Pt and Pd. The basement rocks were not geochemically sampled. An unexplained elevation in light and heavy REE, P2O5 and a slight increase in Al2O3 is shown from 49.8 to 54.5m. This occurs coincident with minor dravite values reported by Minspec.

2.4 Outcrop Sampling Results

The sampling program achieved a sample density of two samples per square kilometre, for a total of 69 samples from 67 locations over the available area open to exploration.

Sample Outcrop Location Map

Sample Outcrop PIMA TSA Distribution Map

Sample Outcrop PIMA Minspec Distribution Map

Outcrop Locations and Description

Lithology and Physical Properties

Minspec PIMA results show illite to be the dominant clay type over the project area. Dickite clays occupy a general northeast to southwest trend across the middle of the project, however correlation between stratigraphic location, grain size, silicification and alteration is inconclusive. The location of the kaolinite shows some correlation with faulting and is most likely due to alteration and fluid flow along such structures.

TSA PIMA results reflect the results derived from the Minspec software with some variations. The sericite group is divided into illite, paragonite and muscovite; with illite and paragonite mixes being dominant. TSA reports halloysite in most cases over the Minspec kaolinite. NH4 Alunite is reported by TSA, however there is some doubt over the validity of these results, as the signal to noise ratios are quite low.

The sample geochemistry results do not show any strong U mineralisation, the highest value being 3.3 ppm from sample BR00B10052. Examination of the results displays a general correlation between U and rare earth elements (RRE) and metal (As, Co, Mo, Ni, PbTot, V, Y, Zn) concentrations. Sample BR00B10002, displays increased values in the RRE (391.2ppm) mainly due to high levels in Ce; and metals, however the U content is 0.65ppm. It is interesting that Cu remained below detection levels in all samples.

Two main areas show anomalous geochemistry, which warrant follow up sampling are the fault structure along which KUN-007 was drilled shows anomalous geochemistry with elevated U, REE, and metals and the main NNE lineament expressed as valley running through the middle of the property is also an area of anomalous geochemistry with elevated U, RRE, and metals.

There does not appear to be any correlation between PMA and geochemistry.

2.5 Geophysics – Airborne Multispectral Scanner Survey

During July 2000, a total of 123 km^2 of hyperspectral data at five metre pixel resolution was flown over the Birraduk Project area. The De Beers Airborne Multispectral Scanner (AMS) survey was designed to map minerals and identify alteration associated with unconformity U mineralisation. In particular, it was hoped that this system would identify and map variations in kaolinite, illite, dickite, halloysite, iron and magnesium chlorites and silicification, which may possibly be attributed to alteration.

The De Beers AMS instrument was built by Integrated Spectronics Pty. Ltd (ISPL) in 1996 and is a similar system to the Probe-1 and is an earlier version of the ISPL HYMAP scanner. It is a 96 channel, 3 spectrometer, whiskbroom scanner with a signal to noise ratio greater than 800:1. The scanner measures reflectance from the ground surface, with each spectrometer consisting of 32 channels with an approximate 15 nm spectral resolution; VNIR from 500 to 1000 nm, SWIR1 from 1400 to 1900 nm, and SWIR2 from 2000 to 2450 nm. While most of the geological information is detected by SWIR2 (clays, carbonates, sulphates, etc), the VNIR range can map Fe-

oxides and hydroxides, vegetation, and general land cover. Although the most diagnostic spectral features are contained within specific windows or wavelength regions, full VNIR to SWIR spectral sampling is advantageous for properly correcting the data for atmospheric effects.

The survey data has not yet been processed or interpreted. Data from this survey and the logistics report will be submitted in next year's annual report.

3. CONCLUSIONS

Several conclusions can be drawn from drilling evaluation results obtained to date. Dickite is preserved in the upper sandstone portion of all holes within coarse grained to granule-pebble-rich units of the Mamadawerre Sandstone with the exception of KUN007. It is hypothesised that the dickite was widespread throughout and is a result of early diagenesis due to depth of burial. Initial permeability and porosity was most likely high, particularly in the coarser units, resulting in early silicification (quartz overgrowths) trapping the dickite within the quartz overgrowths. The coarse units, due to early silicification, became impervious, resulting in basinal fluid flow channelling into the finer to medium grained, better-sorted sandstone horizons. In general, the later widespread illite alteration event, affecting much of the Kombolgie Sandstone, has only affected the finer grained units and the basal portions, proximal to the unconformity, of the drill core. The illite alteration in the basal sandstone was more intense overprinting the silicification and original dickite.

Initial observations suggest that the kaolinite zones in KUN001, KUN007 and KUN008 are related to alteration and fluid flow along late structures.

Additional work is required, however, based on available data a general paragenetic sequence is suggested:

1. Lithification and early diagenesis of sandstone
2. Development of dickite due to depth of burial
3. Quartz overgrowth (silicification) initially in coarse, less sorted units
4. Illite alteration initially affecting less silicified well sorted units
5. Silicification?
6. Development of kaolinite related to structures

Whole rock and trace element geochemistry, magnetic susceptibility and reflectance spectroscopy complement each other when defining and characterising the various alteration features identified in the drill core.

The surface outcrop sampling program has highlighted areas of interest which warrant further investigation. A strong correlation exists between U and RRE, while the correlation between metals and U is not as defined.

Although no mineralisation was encountered in the drilling thus far, more work is required to understand the uranium potential of the area. The basement portion was sampled and physical properties were measured. Work completed on the basement portion of the drill holes, suggests a favourable geological environment similar to Jabiluka.

4. RECOMMENDATIONS

Due to its proximity to Jabiluka, alteration identified in the sandstone, favourable basement lithologies and exploration to date, additional work on the Birraduk project is recommended.

Further surface outcrop sampling should be completed and compiled with drilling results to define future drill targets.

5. WORK PROGRAM FOR 2001 - 2002 (5TH YEAR)

The work plan for the 5th year of the tenement will include a comprehensive review of the remote sensing data (airborne hyperspectral, radiometric and magnetic survey data and satellite imagery). This is routinely undertaken and incorporated into the regional compilation that is ongoing by Cameco.

Faults and lineaments within the project area will be geologically mapped, prospected and sampled. Due to time constraints, this could not be completed in 2000.

Further surface outcrop sampling will be completed over the areas identified as possessing anomalous alteration and trace element distributions from the 2000 sampling.

Physical property parameters, PIMA and multi-element analysis will be completed on all samples. Selective petrographic samples will be studied with emphasis on defining alteration zonations and/or cells that may be indicative of uranium mineralisation processes.

The estimated budget for the Birraduk project during the 5th year is estimated to be $40,000 to complete the program as planned.

6. BIBLIOGRAPHY

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