

Airborne Hyperspectral Survey

In 2000 a total of 488 km² of hyperspectral data (1/3 is within the 2001 partial surrender area) was flown over Kombolgie Sandstone in the Wellington Top area, east of Marligur Pass. The survey was flown by De Beers using their AMS (Airborne Multi-spectral Scanner) which has recently been renamed Hymap Mk1. The survey was designed to map minerals and identify alteration associated with unconformity uranium 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 could be attributed to alteration.

Whilst the survey was flown in July 2000, no data had been processed or interpreted prior to the 2001 partial surrender report and was consequently not reported. On the CD with this note is the hyperspectral data and logistics report, which should be read and used in conjunction with the previously submitted EL5891 Partial Surrender Report¹. As described in the logistics report the data has been submitted in ENVI BIL (Band Interleaved by Line) format since ENVI is the usual processing package for hyperspectral data and allows the survey parameters to be stored. This data can be imported into ERMapper if required.

[Logistics Report for Hyperspectral Survey Hyperspectral Data](#)

The hyperspectral data exhibits good correlation with surface PIMA samples with many features far more apparent due to the superior spatial resolution (1 km samples vs 5 m pixels). The data indicates that the dominant clay layers within the Kombolgie are illite and kaolinite, dickite, illite (in order from bottom to top) with pyrophyllite appearing to having a spatial association with the Oenpelli dolerite. Alteration is indicated by kaolinite and illite in a broad zone to the east of the Aurari Fault. The processing has not identified chlorite alteration. Silicification was also identified at Black Rock and Ron's Fault.

¹ Melville, P., Sawyer, L., Rosewall, D., Beckitt G., 2001. Arnhem Land West Joint Venture: Exploration Licence EL5891 PARTIAL SURRENDER REPORT. Cameco Australia Pty Ltd