

APPENDIX 1

NT EL-25406 “Fog Bay” AIRBORNE GEOPHYSICAL REPORT

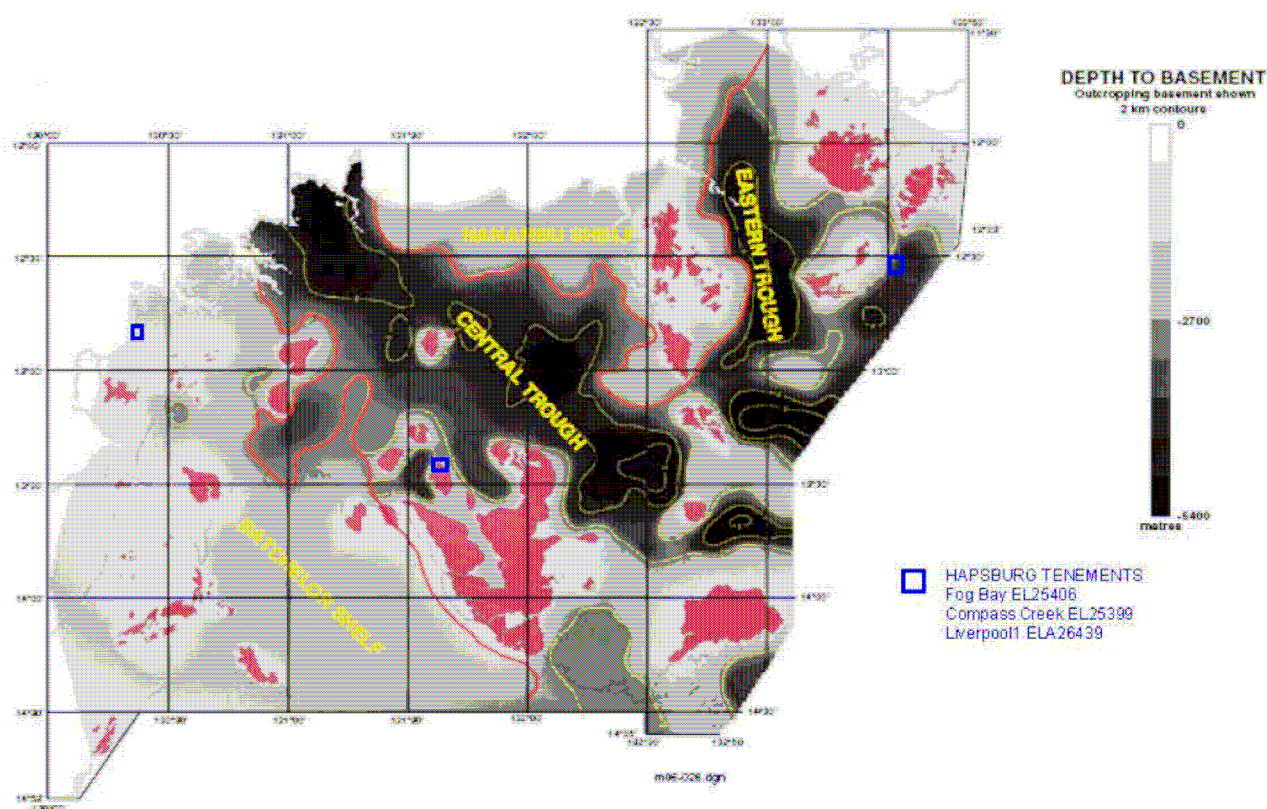
(Mohan Varkey March 2008)

NT EL-25406 “Fog Bay” AIRBORNE GEOPHYSICAL SURVEY REPORT

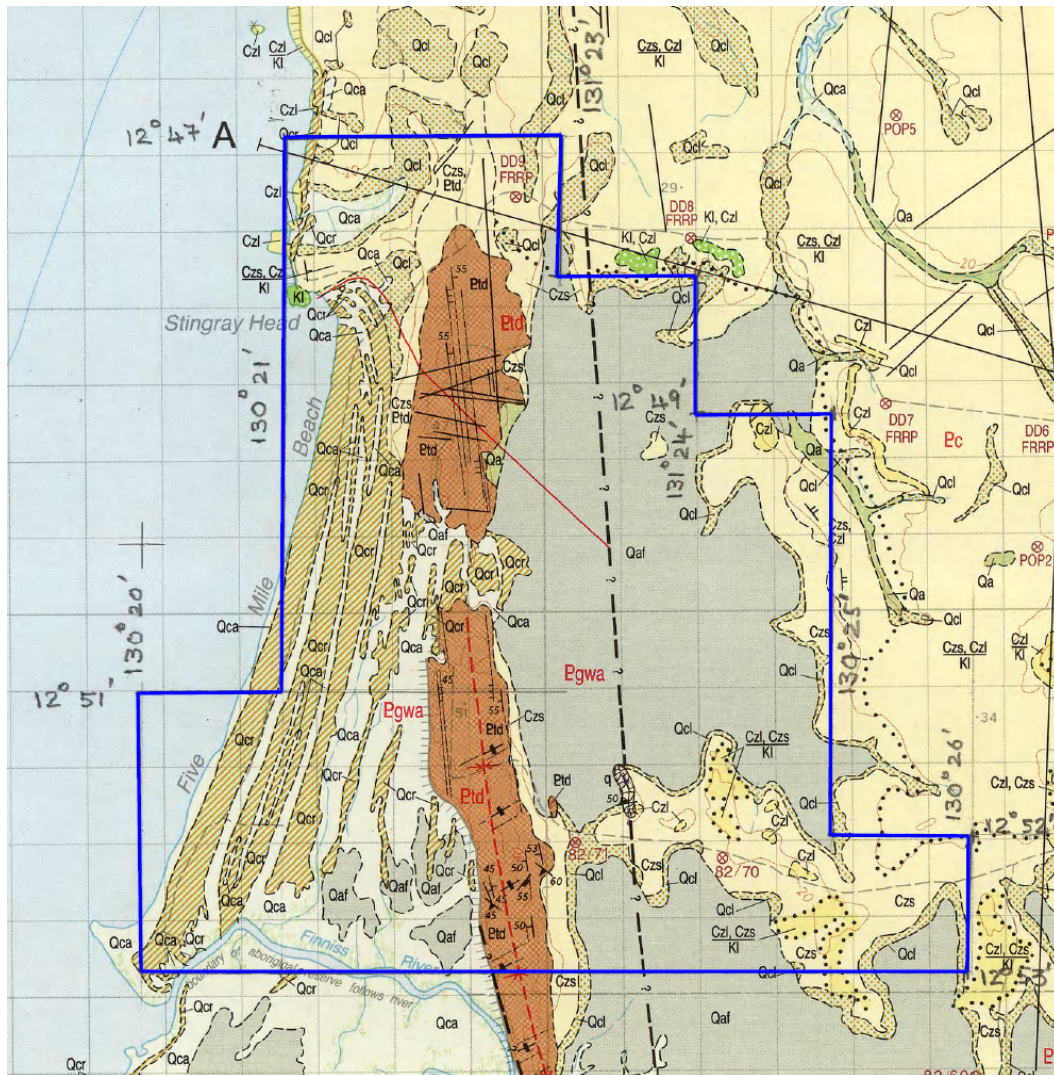
1. INTRODUCTION

UTS Geophysics were contracted to carry out a Fixed Wing survey of EL25406 (Fog Bay Area) in August-September 2008. However due to various reasons including an accident with the survey aircraft, the survey finally commenced on 28th December, 2007 and was completed on 01st January, 2008. Survey Specifications, details of data acquisition and levelling are detailed in (PDF format) APPENDIX 2 UTS A931 Logistics Report.

Litchfield Province has long been regarded as the western margin of the Pine Creek Geosyncline and contains metasediments of Early Proterozoic age. Depth to granitic basement interpreted (Geoscience Australia) from magnetic and gravity data is shown in the map below.



These sediments were folded, metamorphosed and intruded by Carpentarian granitoids.



Geological mapping of the Fog Bay area was carried out by NTGS in 1980 and 1981 (Geology Map).

The area within EL25406 is one of relatively low relief; the dominant physical feature being the N-S trending ridge of Middle Proterozoic Depot Creek Sandstone. This unit is considered to unconformably overlie the undifferentiated schists, amphibolites and gneisses of the Lower Proterozoic Well-Tree Metamorphics. The Sweets Member of this metamorphic succession consists of a sequence of biotite gneiss, amphibolite, graphitic microgneiss and marbles that closely resemble the Cahill Formation of the East Alligator River Uranium Field.

2. MAGNETIC FEATURES

Approximately 20kms to the north of Fog Bay Exploration Licence, in the Bynoe Harbour area, curvilinear magnetic anomaly is associated with isoclinally folded amphibolites within the Well-Tree Metamorphics. This sequence is consistent and drilled systematically in an area of 10 sq. kms. This folded sequence is:

biotite gneiss (thickness 20-100m)

amphibolite (thickness 20-80m) ***Magnetic Anomaly***

graphitic microgneiss with dolomite lenses (thickness >200m)

A combination of ground gravity and magnetic surveys was successful in mapping the subsurface lithologies. Subsequent drilling has confirmed the presence of this sequence. Similar to the Bynoe Harbour area, there is little outcrop of Well-Tree Metamorphics within the Fog Bay EL. Geophysical interpretation is the only means of mapping.

Amphibolites within the Sweets Member contain varying amounts of pyrrhotite and magnetite. Weak magnetic anomalies in areas marked Anomaly 'A' and Anomaly 'B' magnetic contours (TMI) possibly reflect this sequence. Both areas are located close to the unconformity with the Depot Creek Sandstone. A ground magnetic survey followed by fence drilling to identify this metamorphic succession is proposed. Structural modelling based on magnetic measurements should then reveal depths to target (graphitic microgneiss) horizon that underlies the amphibolite unit.

2.1 Total Magnetic Intensity

Anomaly 'C' lies immediately to the east of and parallels a major N-S (unnamed, interpreted) fault. This fault possibly reflects the eastern margins of the down faulted outcrop of Depot Creek Sandstone. This magnetic anomaly is linear and does not appear to be related to the folded metasediments of the Pine Creek orogen. NTGS DDH 82/71 located 1km to the west of this fault and more or less an equal distance from the mapped quartz breccia, intersected altered porphyritic microgranite that is classified as (Carpentarian) Wagait Granite. Deuteric alteration; sericitised feldspar and chloritised biotite was observed by NTGS in core samples. It is possible that this magnetic feature is related to alteration within the granite caused by late stage low temperature magmatic fluids. A ground magnetic survey followed by scout drilling and subsequent modelling is proposed.

3. RADIOMETRIC FEATURES

Previous exploration by Urangesellschaft and Idemitsu in areas to the north (Lookin and Port Patterson Projects) and east (Welltree Project) of the current Hapsburg tenement EL25406 included detailed ground radiometric gridding and carborne surveys. Costeaning and subsequent drilling have demonstrated that localised radiometric anomalies can be related to scavenging by iron and clay within the laterite.

Radiometric Anomalies A, B, C and D are marked on the Th contour map as the anomalous areas are better defined than on the Total Count and U contour maps. Re-contouring of the Total Count and Uranium is on hand. As was expected prior to the survey, the more significant anomalies appear to be related to Th. In the southern parts of the surveyed area K contribution related to near surface expression of Wagait Granite is the major contributor to the radiometric count rates.

Linear trends of the radiometric anomalies A & B are parallel to the magnetic anomalies A & B. These radiometric anomalies are off-set to the west of the magnetic anomalies. This trend could indicate the basal conglomerate unit of the Depot Creek Sandstone. The isolated Anomaly C coincides with the eastern most outcrop of the Depot Creek Sandstone. Anomaly D may be related to the Wagait Granite.

This geological map displays the EL23916 area, characterized by a grid of magnetic anomalies and structural features. The map includes a coordinate grid with latitude and longitude markings. Key features include:

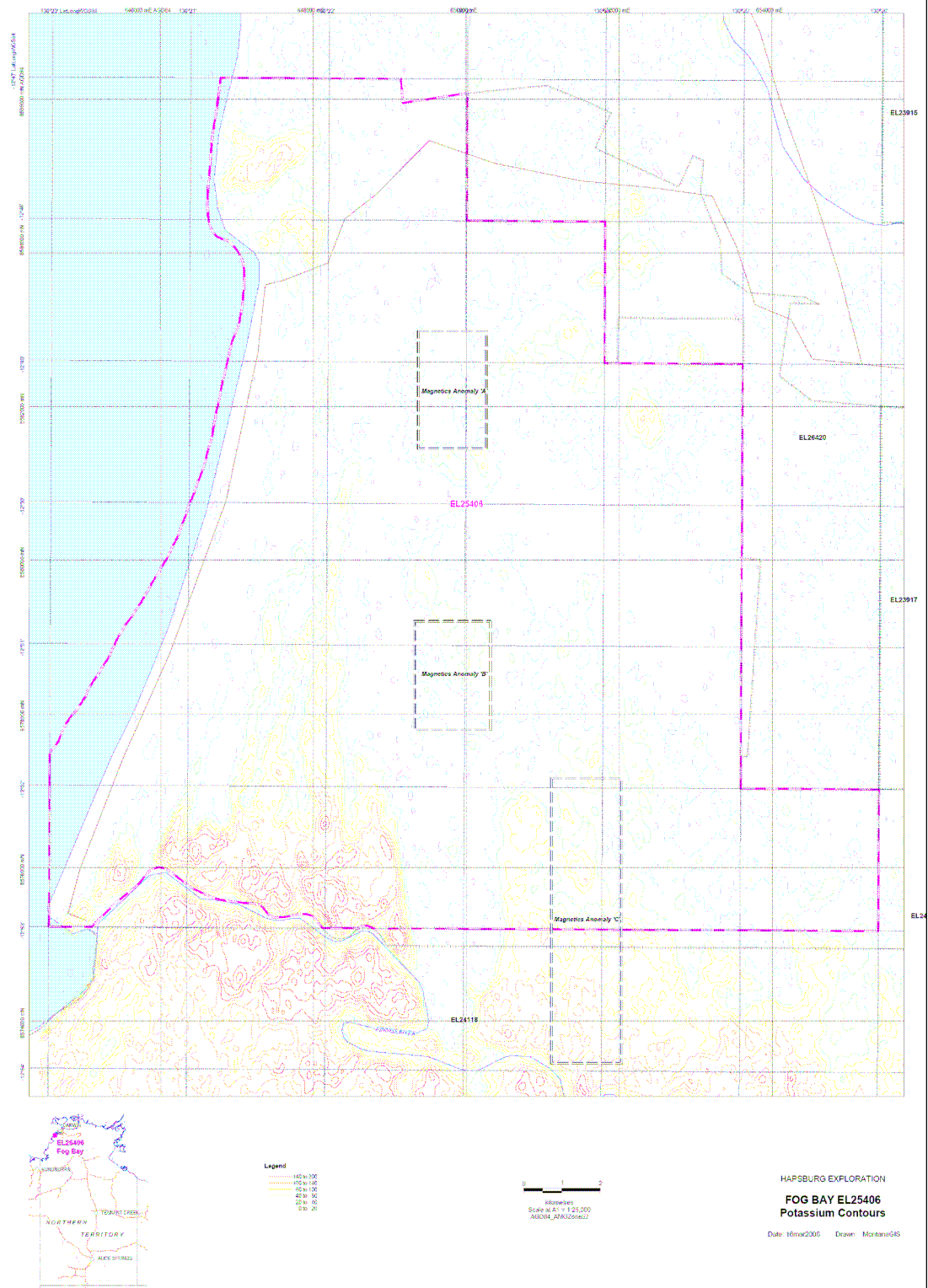
- Magnetic Anomaly A:** A dashed rectangular area in the upper central part of the map.
- Magnetic Anomaly B:** A dashed rectangular area in the lower central part of the map.
- Magnetic Anomaly C:** A dashed rectangular area in the lower right part of the map.
- Structural Features:** Several areas are labeled as "Structural Features" and "Magnetic Anomaly B".
- Topographic Features:** The map shows topographic contours and a network of roads.
- Geological Features:** The map includes a legend for "Geological Features" and "Magnetic Anomaly B".

The map is overlaid with a grid of magnetic anomalies, with labels such as EL23916, EL24029, EL23917, and EL24118. The map also includes a scale bar and a north arrow.



HAPSBURG EXPLORATION
FOG BAY EL25406
Th Contours

K Contour Map



4. CONCLUSIONS

- Fog Bay EL25406 is located on the western margins of the Pine Creek Orogen and is within 2km (vertical) of the interpreted granitic basement.
- Magnetic anomalies A & B may be related to amphibolites within the Sweets Member (regarded as equivalents to the Cahill Formation in the East Alligator River Uranium Field) of the Welltree Metamorphics.
- These anomalous areas are located close to the Middle Proterozoic unconformity with the Depot Creek Sandstone.
- Metasediments are intruded by Carpentarian Granites.
- Both Pre- and Post Carpentarian folding and faulting could provide favourable structural setting for the concentration of unconformity related mineral deposits.

5. RECOMMENDATIONS

- Ground magnetic and radiometric survey of Anomalous Areas A, B and C.
- Fence drilling along selected magnetic and radiometric anomalies.
- Magnetic susceptibility measurements on core/cuttings.
- Detailed geophysical modelling and estimation of depths to magnetic anomalies.