

NUPOWER RESOURCES LTD

ABN: 91 120 787 859

AILERON PROJECT

EL25325 YAMBAH

ANNUAL REPORT for PERIOD ENDING 16 January, 2009

Author: John Higgins

Date: 20 July 2012

Submitted to: _____

Submitted by: _____

Accepted by: _____

1:250,000 Alcoota SF5310
1:250,000 Hermannsburg SF5313
1:250,000 Alice Springs SF5314

Distribution:
Department of Regional Development, Primary Industry, Fisheries & Resources
NuPower Resources Ltd Darwin office
NuPower Resources Ltd Sydney office

Table of Contents

INTRODUCTION	5
BACKGROUND.....	5
LOCATION AND ACCESS.....	5
CLIMATE AND VEGETATION	5
TOPOGRAPHY AND DRAINAGE	5
LOGISTICS.....	7
SUMMARY.....	8
TENURE	9
NATIVE TITLE.....	11
GEOLOGY	12
REGIONAL SETTING	12
LOCAL GEOLOGY.....	13
Pre-Cambrian-Proterozoic.....	13
Cainozoic	14
Regional Geology.....	14
Deposition and Weathering	17
PREVIOUS EXPLORATION.....	19
Kewanee Australia Pty Ltd EL805, 1970.....	19
Planet Mining Co. Pty Ltd AP 2826 and EL58, 1970.....	19
CRA Exploration Pty Ltd A-P 2710, 1971, 1972.....	19
C.R.A. Exploration Pty. Ltd. AP3382 and EL441, 1971.....	19
Dampier Mining Company Limited EL1341, 1976.....	19
Triako Mines NL EL1889, 1979	20
C.R.A. Exploration Pty. Ltd. EL3541, 1982	20
C.R.A. Exploration Pty. Ltd. EL3502, 1982	20
Negri River Corp. EL3496 1982.....	20
Metwell Pty. Ltd. EL4420, 1983	20
McMahon Construction Pty Ltd EL5267 and EL5258, 1987.....	20
White Range Gold NL EL6832, 1990.....	20
Stockdale Prospecting Limited EL7570, 1991.....	20
Aberfoyle Resources Limited EL7858, 1992.....	21
Roebuck Resources NL EL8125, 1994.....	21
Pasminco Exploration EL9208, 1995	21
NTDME Geophysical Surveys, 1997	21
Tanami Exploration NL EL22761, 2002	21
NUPOWER EXPLORATION ACTIVITIES COMPLETED, YEAR 2, 2008	22
AIRBORNE ELECTROMAGNETIC (AEM) SURVEY.....	22
Introduction	22
Results of the Survey	23
AIRBORNE REGIONAL GRAVITY SURVEY	27
Introduction	27
Results of the Survey	27
STATION BORE WATER SAMPLING.....	30
Introduction	30
Results	30
EXPLORATION DRILLING	32
Introduction	32
Geology.....	32
Downhole Geophysical Logging	35
Geochemistry	35
Drilling & Sample Methods	35
EXPENDITURE STATEMENT, YEAR 2, 2008.....	37
GROUND RELINQUISHMENT	37
REFERENCES	38
Appendices.....	40

Appendix 1 – Fugro Final AEM and Magnetic Survey Data and Logistics Report.....	41
Appendix 2 – Standard Operating Procedures – Water Sampling	114
Appendix 3 – Compiled Bore Data and Water Assay Results	137
Appendix 4 – Water Sample Laboratory Assay Results	140
Appendix 5a – Drillhole Summary	146
Appendix 5b – Geological and Geophysical Logs (See Enclosed Disc)	148
Appendix 5c – Drill Assay Results, (See Enclosed Disc for Original Laboratory Sheets).....	149
Appendix 5d – NTGS Sample Submissions and Summary	150
Appendix 6 – Expenditure Report	155
Appendix 7 – NTGS Gravity Survey Logistics Report.....	160
Appendix 8 – Borehole Wireline Calibration, Verification Report	251

List of Figures

Figure 1 - Yambah EL25325 Location.....	6
Figure 2 - EL24956 Yambah	10
Figure 3 - Geological Regions of the Northern Territory and EL25325	12
Figure 4 - Geology of the Aileron Region	14
Figure 5 - Tertiary Basins in the Yambah – Alice Springs area.....	16
Figure 6 - Hale Basin composite stratigraphic column (Senior <i>et al.</i> , 1994).....	16
Figure 7 - Yambah Tenements: Extent and vintage of AEM Surveys showing flight line directions.	24
Figure 8 - Yambah AEM palaeochannel interpretation.	25
Figure 9 - Preliminary partial basement model showing the outline of the Burt and Sixteen Mile Basins and locations of NUP drillholes.	26
Figure 10 - Preliminary CAGS image showing NUP tenements and infill survey areas.	28
Figure 11 - Regional Bouger gravity for the southern NT composited with 2008 CAGS survey data and showing NUP tenements.....	29
Figure 12 - Location of water samples on Yambah.	31
Figure 13 - Yambah AEM data palaeochannel interpretation showing NUP drillhole locations and geophysical logging status.	33
Figure 14 – Area 3, 4, 5 EM X Component Time Window 1 superimposed over regional DTM image.....	104
Figure 15 – Area 3, 4, 5 EM X Component Time Window 5 superimposed over regional DTM image.....	105
Figure 16 – Area 3, 4, 5 EM X Component Time Window 10 superimposed over regional DTM image.....	106
Figure 17 – Area 3, 4, 5 EM X Component Time Window 15 superimposed over regional DTM image.....	107
Figure 18 – Area 3, 4, 5 EM Z Component Time Window 1 superimposed over regional DTM image.....	108
Figure 19 – Area 3, 4, 5 EM Z Component Time Window 5 superimposed over regional DTM image.....	109
Figure 20 – Area 3, 4, 5 EM Z Component Time Window 10 superimposed over regional DTM image.....	110
Figure 21 – Area 3, 4, 5 EM Z Component Time Window 15 superimposed over regional DTM image.....	111
Figure 22 – Area 4 Magnetics F Map superimposed over regional DTM image.	112
Figure 23 – Area 3, 4, 5 Magnetics 1VD Map superimposed over regional DTM image.....	113

List of Tables

Table 1 - Drillhole details, Yambah Tenement.....	32
Table 2 - Drillhole intersections on Yambah (EL25325).....	35
Table 3 - Selected geochemical assay results for basement samples taken on Yambah (EL25325).	35

INTRODUCTION

BACKGROUND

Basement rocks of the Reynolds, Yalyirimbi and Strangways Ranges contain elevated background levels of uranium and thorium and have been explored for gold, base metals, rare earth elements and uranium. Success came with the discovery of elevated levels of rare earth elements hosted by massive fluorapatite in the Nolan's Bore area by PNC Exploration (Australia) Pty Ltd in 1995 (Thevissen, 1995). This occurred during follow-up of an airborne radiometric anomaly as part of that company's uranium exploration program along the Reynolds Range.

As far back as 1972 it was recognised that while these rocks may host primary deposits of uranium, they also provided a potential source of uranium for secondary uranium deposits. The products of the weathering and erosion of these rocks throughout the Cainozoic have accumulated in flanking basins as thick sequences of unconsolidated material and provided a potential host for the precipitation of uranium from solution in meteoric groundwaters sourced from the upstanding ranges and percolating through these basinal sediments.

Arafura Resources, with this target model, also recognised the potential of the Cainozoic basins in the Aileron region on the flanks of the uraniferous basement rocks for secondary sandstone-hosted uranium deposits and applied for and was granted a number of exploration licenses here, including EL25325, Yambah that covers part of the Burt Basin.

LOCATION AND ACCESS

The Yambah Exploration Licence is located 70 kilometres north-northwest of Alice Springs and 1200 kilometres south-southeast of Darwin by the Stuart Highway in the southern part of the Northern Territory of Australia (Figure 2). The centre of the area coincides with the junction of Plenty Highway with the Stuart Highway. It is bisected by the Sandover Highway and Alice Springs-Darwin Railway. Access to areas of interest in 2008 was from the Stuart Highway via the network of station roads and tracks linking the water bores.

CLIMATE AND VEGETATION

The region has a semi-arid continental climate. This following description is drawn from Stewart (1982):

"The climate is characterised by long hot summers when temperatures regularly exceed 40°C, and short mild winters. The average rainfall is about 280mm, most of which falls between October and March, but both frequency and amount are erratic." (Stewart, 1982)

Vegetation throughout most of the area consists of tall mulga open shrubland with a woollybutt open grassland understorey. This gives way in the northwest to hummocky grassland with a tall acacia sparse shrubland overstorey". (Wilson et. al. 1991)

TOPOGRAPHY AND DRAINAGE

The western part of the license comprises a flat sandy plain rising gently eastwards from around 630m ASL to around 700m ASL east of the Stuart Highway, at the base of the Strangways Ranges. Elevations in the ranges exceed 1000m ASL. Creeks that rise in the Strangways Ranges and discharge westwards into the area include Burt and Ironwood Creeks.

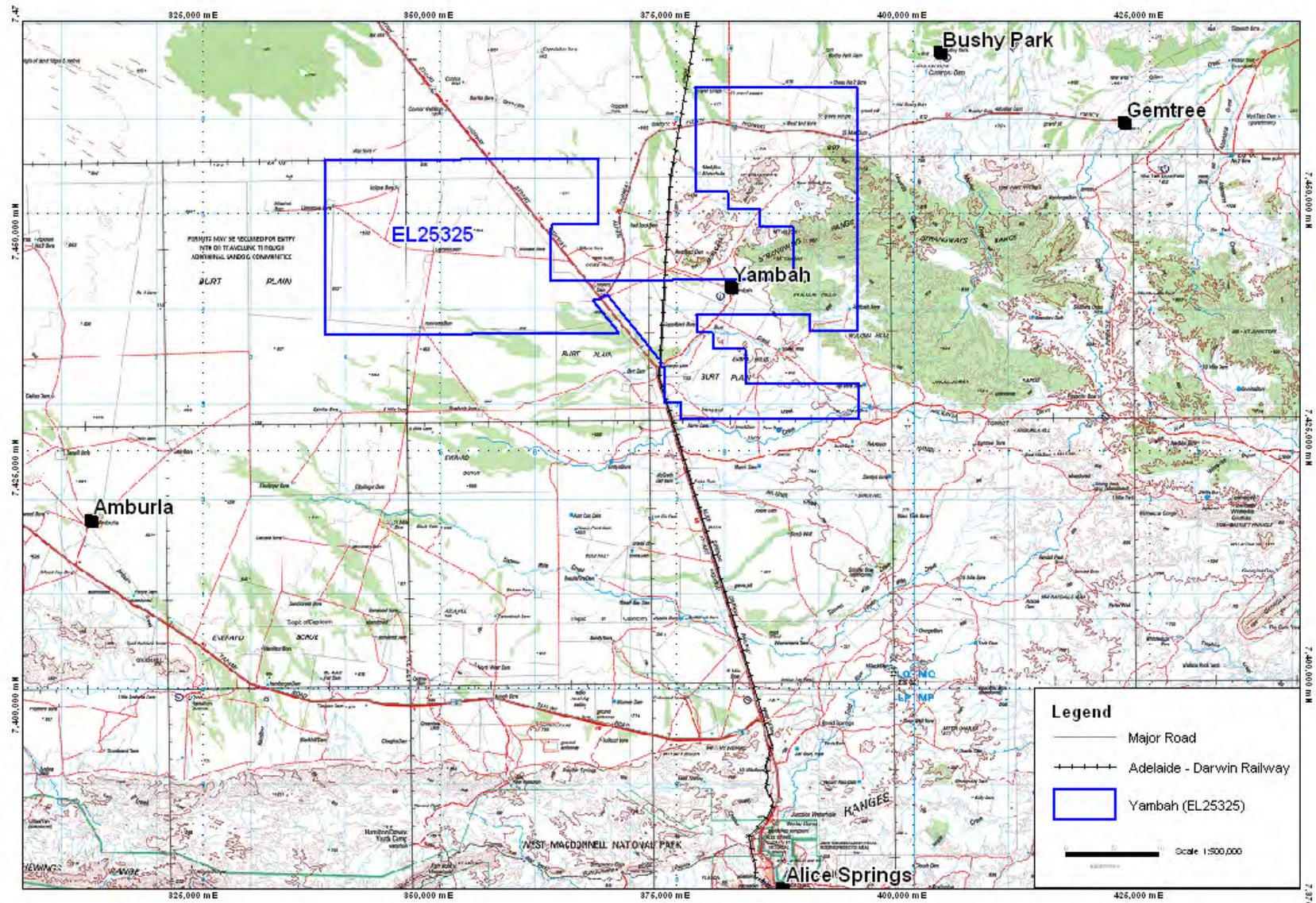


Figure 1 - Yambah EL25325 Location.

LOGISTICS

Alice Springs (pop. 27,000) is serviced daily by jet aircraft from several Australian capital cities (Sydney, Adelaide, Perth and Darwin) and less regularly from Brisbane, Cairns and Broome. Because of its location mid-way between Adelaide and Darwin the town is also well serviced by road transport and interstate bus services.

The Stuart Highway and Adelaide-Darwin transcontinental railway corridor, passing through Alice Springs, bisect the area.

The natural gas pipeline from the Amadeus Basin (west of Alice Springs) to Darwin passes within 60 kilometres to the west of the area.

Alice Springs is the closest services centre, 70km by road via the Stuart Highway. The Aileron Roadhouse, located on the Stuart Highway with fuel and accommodation, lies 80km by road north of the license area.

The nearest station homesteads are Yambah in the eastern part of the area on the Stuart Highway, Bushy Park on the Plenty Highway and Aileron near the Aileron Roadhouse.

SUMMARY

Yambah (EL25325) was selected by Arafura Resources NL because of the potential for secondary sandstone hosted type uranium mineralisation in unconsolidated Cainozoic basin sediments of the Burt Basin, derived by erosion of adjacent uraniferous basement granites and gneisses.

The license was granted on 17 January 2007 and transferred to NuPower Resources Ltd in 14 March 2007 as a result of the demerger of Arafura's uranium assets into the newly formed company focussed on uranium.

NuPower carried out an airborne electromagnetic (AEM) survey in June-July 2007 over the western two-thirds of the area as part of a larger survey of Nupower's tenements in the Aileron region, designed to explore for buried palaeochannels at the base of and within the Cainozoic sedimentary package as potential hosts for secondary uranium. Concurrently water from station stock water bores was sampled and assayed for a suite of major and trace elements the results of which are expected to assist with targeting potential sites of uranium accumulation within the palaeochannel systems.

Final results from the AEM survey show that the technique has successfully identified sections of several major palaeochannels in the license area. Interpretation and modelling of the results is in progress.

AEM survey results indicated that the technique was very successful, revealing that the Tertiary palaeodrainage is far more extensive and better developed than previously thought. Several palaeochannels have been identified within the tenement; shallow palaeochannels draining northwards off the MacDonnell Ranges occur in the eastern part of the tenement, whilst more substantial palaeochannels occur in the west of the tenement and form part of the eastern half of the Burt Basin.

Results of the NTGS collaboration regional gravity survey over the Central Arunta region were received. Preliminary images are included in this report.

Twelve water samples were taken from station bores and a further six samples from three of NUP's drillholes during this period. Assay results are currently available for five samples from the station bores. Interpretation of the water geochemistry is in progress.

NuPower completed four rotary mud drillholes for a total of 504m on Yambah using the 2007 AEM data to assist in siting the holes. Tertiary sediments were intersected in all holes, thereby validating the airborne EM data. No significant reduced horizons were intersected in the 'Canteen' palaeochannel developed on Yambah. Re-logging of Mistake Bore indicated anomalous gamma. Whilst situated outside the margins of the Canteen Palaeochannel, one hole was drilled to investigate this anomaly and intersected anomalous gamma within sediments. This drillhole was later logged using a Prompt Fission Neutron (PFN) tool which indicated that no significant amounts of anomalous uranium was present.

The program for Year 3 is:

- Compilation of the NuPower drill results with existing open file data and interpretation of the overall structure and stratigraphy of the Burt Basin and its tributaries.
- Interpretation of the borehole and drillhole water chemistry.
- Definition and scout drilling of further palaeochannel targets based on the interpretation of the basin architecture and water geochemistry.
- Limited reconnaissance geological mapping and sampling of basement radiometric anomalies in the eastern portions of the license area.

TENURE

Exploration Licence 25325 Yambah which currently comprises 327 graticular blocks covering 1,019 km² (Figure 2) was granted to Arafura Resources NL (ABN 22 080 933 455) on 17 January 2007 for a period of 6 years. It was transferred to NuPower Resources Ltd (ABN 91 120 787 859) on 14 March 2007 as a result of the demerger of the uranium assets from Arafura to NuPower.

Since the license was not subject to reduction at the end of Year 1 no blocks were relinquished and all 327 blocks were renewed for the second year of the license.

Scout drilling by NuPower has identified an extensive palaeochannel system prospective for uranium on Yambah which contains a thick Tertiary sedimentary fill. Drilling is incomplete, the entire area remains prospective and it has not been possible to select any areas for relinquishment at the end of Year 2. A Waiver of Reduction was applied for and granted on 22/01/09.

The Expenditure Covenant for the second year of the licence was \$80,000. The actual expenditure was \$171,456.62 and therefore the covenant was satisfied.

The license occupies the following perpetual pastoral leases:

- NT Portion 703 Aileron Station.
- NT Portion 641 Yambah Station
- NT Portion 687 Bushy Park

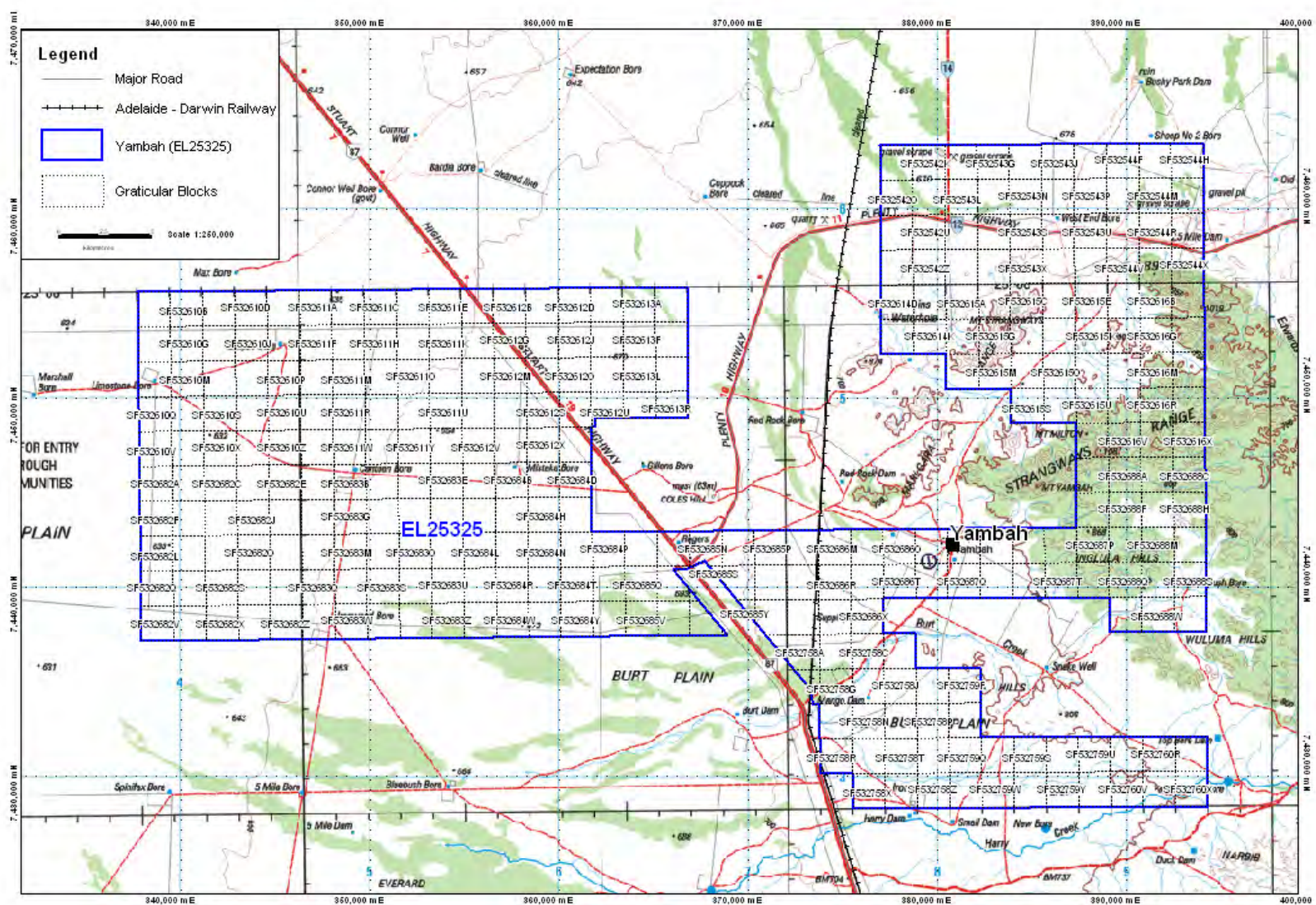


Figure 2 - EL24956 Yambah

NATIVE TITLE

NuPower has conducted an inspection of the AAPA register of sacred sites. Several recorded sites of cultural significance occurs in the Strangways Ranges on the eastern half of the Yambah tenement. No recorded sites occur over the Burt Plain on the western half of the tenement.

There are no registered Native Title Applications or Determinations over the land. Registered Indigenous Land Use Agreement D12002/009 to Teck Cominco Australia Pty Ltd/Flinders Diamonds covers the extreme southeast part of the license.

An Exploration Agreement that includes the Yambah license has been negotiated between the Central Land Council (CLC) and NuPower Resources

Prior to NuPower commencing fieldwork, representatives of the CLC conducted a survey of the proposed drill sites. No significant cultural sites were found and the proposed sites were approved.

GEOLOGY

REGIONAL SETTING

The Yambah license (EL25325) is situated in the Aileron Province of the Arunta Region in the southern part of the Northern Territory (Figure 3).



Figure 3 - Geological Regions of the Northern Territory and EL25325

Deformed and metamorphosed Palaeoproterozoic orogenic rocks older than 1800 million years crop out as major tectonic units surrounded by younger rocks and essentially form the recognisable and inferred basement to the North Australian Craton. These Palaeoproterozoic rocks

form the Pine Creek Orogen, Tanami Region, northern Arunta Province, and Tennant, Murphy and Arnhem Inliers. They include remnants of Archaean rocks, which have been dated at 2500 million years.

To the south, the rocks of the North Australian Craton pass into the Central Australian Mobile Belts of the Proterozoic Orogens of the Arunta Region and Musgrave Block, consisting of granulite and amphibolite facies, metamorphosed sediments and mafic volcanics intruded by granitoids. In the southern Arunta Province, episodic igneous activity took place between 1880-1050 million years and deformation included a series of major tectonic events, including retrogressive metamorphism in the Proterozoic and Palaeozoic. These basement rocks are exposed in the Strangways Ranges in the easternmost part of the license and expected to lie at depth beneath unconsolidated Cainozoic sediments in the eastern part of the area.

Proterozoic-Palaeozoic basins form part of the North Australian Platform Cover and comprise mildly deformed, largely unmetamorphosed predominantly sedimentary successions unconformably overlying the Proterozoic Orogens. This includes the Ngalia and Georgina Basins in the Aileron region. These rocks are absent here.

A system of major west-northwest, east northeast and north-northeast trending dipping thrust faults and shear zones affects the Arunta Region. The associated shear zones can be up to hundreds of metres in width and extend for several kilometres, and are thought to have formed during the 400-300 Ma Alice Springs Orogeny (Cartwright et al., 1999). East-northeast structures underlie the Yambah region.

LOCAL GEOLOGY

Pre-Cambrian-Proterozoic

According to the web-site of the NTGS (December, 2004) basement rocks in the Aileron region comprise part of:

"... The Arunta Region, a complex basement inlier in central Australia that has undergone a prolonged history of sedimentation, magmatism and tectonism extending from the Palaeoproterozoic to the Palaeozoic. The Arunta Region can be subdivided into the three, largely fault bounded terranes with distinct geological histories: the Aileron, Warumpi and Irindina Provinces.

The Aileron Province comprises greenschist to granulite facies metamorphic rocks with protolith ages in the range 1865-1710 Ma. It forms part of the North Australian Craton and is geologically continuous with the gold-bearing Tanami and Tennant Regions to the north.

In contrast, the Warumpi Province comprises amphibolite to granulite facies rocks with protolith ages in the range 1690-1600 Ma, and is interpreted to be an exotic terrane that accreted to the southern margin of the North Australian Craton at 1640 Ma.

The Irindina Province in the Harts Range region comprises Neoproterozoic to Cambrian metasediments that formed in a major depocentre within the Centralian Superbasin. It underwent high-grade metamorphism and deformation during Ordovician (480 - 450 Ma)."

The Yambah tenement is underlain by basement rocks of the Aileron Province (Figure 4).

The Arunta Basement in this region is further subdivided into the Central and Southern Provinces by the Redbank Thrust Zone, a major north dipping crustal-scale northwest trending structure. Yambah lies north of the Redbank Thrust Zone in the Central Zone where it is underlain by metamorphic rocks of Division 1 of the Arunta Block comprising mafic to felsic granulites of the Strangways Metamorphic Complex that were deformed, metamorphosed and intruded locally by megacrystic syntectonic granites during the Strangways Orogeny around 1760-1750Ma. Rocks of the Strangways Metamorphic Complex include:

- Yambah Granulite: felsic and mafic granulites, cordierite granulite, quartzo-feldspathic gneiss and amphibolite.

- Ingula Migmatite Suite and Erontonga Metamorphics: quartzo-feldspathic gneiss, some mafic rocks, cordierite-garnet gneiss, intruded by granites of the Wuluma Granitoid.
- Enbra Granulite: mafic-intermediate granulites.
- Cadney Metamorphics: calc-silicate rocks and schistose biotite and sillimanite gneiss.

The Harry Creek Deformed Zone along the southern boundary of the license separates these rocks from interlayered mafic granulites and garnet gneisses of the Adla Granulite and layered granitic rocks, garnet biotite gneiss, feldspar augen gneiss, amphibolite and quartzose gneiss of Division 2 of the Arunta Block. Minor outcrops of retrogressed greenschist facies rocks in shear zones are also present.

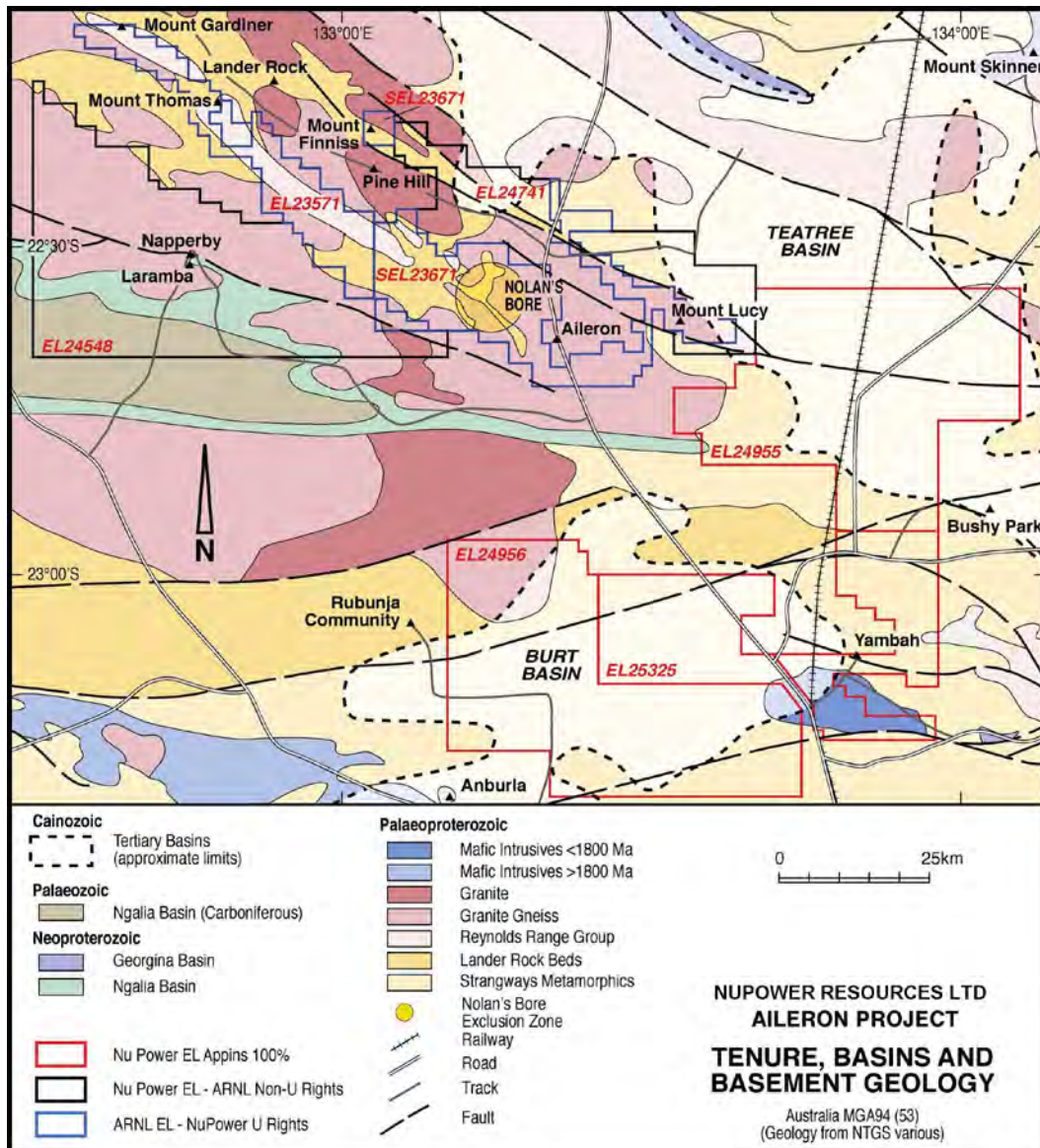


Figure 4 - Geology of the Aileron Region

Cainozoic

Regional Geology

The southern NT forms a 'basin and range' province with Proterozoic and Palaeozoic rocks forming prominent ranges separated by broad valleys. Cainozoic sedimentary basins are widespread and well-developed within these intervening topographic depressions with at least twenty major basins known (Senior *et al.*, 1995). The Yambah tenement covers portions of the eastern half of the Burt Plain (Figure 5).

The Burt Plain is an extensive flat feature roughly 50km by 25km in size that is the modern day expression of the Late Tertiary land surface developed on Tertiary lacustrine sediments of the Burt Basin.

Neoproterozoic-Palaeozoic Ngalia Basin sediments are thought to be absent beneath Yambah, and the basin is thought to rest directly on crystalline basement of the Arunta Complex.

The stratigraphy of the intermontane Cainozoic basins of the southern NT region is generally poorly known. This is attributed to a lack of outcrop and strong weathering overprints, the paucity of drillholes and a lack of attention paid to the 'cover' overlying crystalline basement. Knowledge of the distribution and extent of the Cainozoic has been largely gained through accidental intersections in water bores or in drillholes seeking mineralisation under cover.

Early (1933) drilling of Sixteen Mile Bore in what became known as the Sixteen Mile Basin (Figure 5) to the southeast of the tenement indicated considerable thicknesses of probable Tertiary sediments including carbonaceous shales (Hossfeld, 1954). Subsequent drilling around Sixteen Mile Bore in 1950, 1966 identified approximately 17m of clay with thin lignite seams from 145m (Edworthy, 1967). The presence of analcite suggests a shallow lacustrine environment, possibly a playa lake.

Limited stratigraphic drilling was undertaken in the southern NT region by both the BMR (now Geoscience Australia) and the NTGS during the late 1970's and early 1980's and these drilling programs have provided the majority of the information on the Cainozoic succession. The NTGS drilled 3 cored holes in the region around Sixteen Mile Bore in 1978, and 1981 that encountered carbonaceous material with one hole intersecting 51m of carbonaceous clay and thin lignite seams from 126m. Occurrences of lignite and carbonaceous Tertiary sediments were discussed by Wyche (1983).

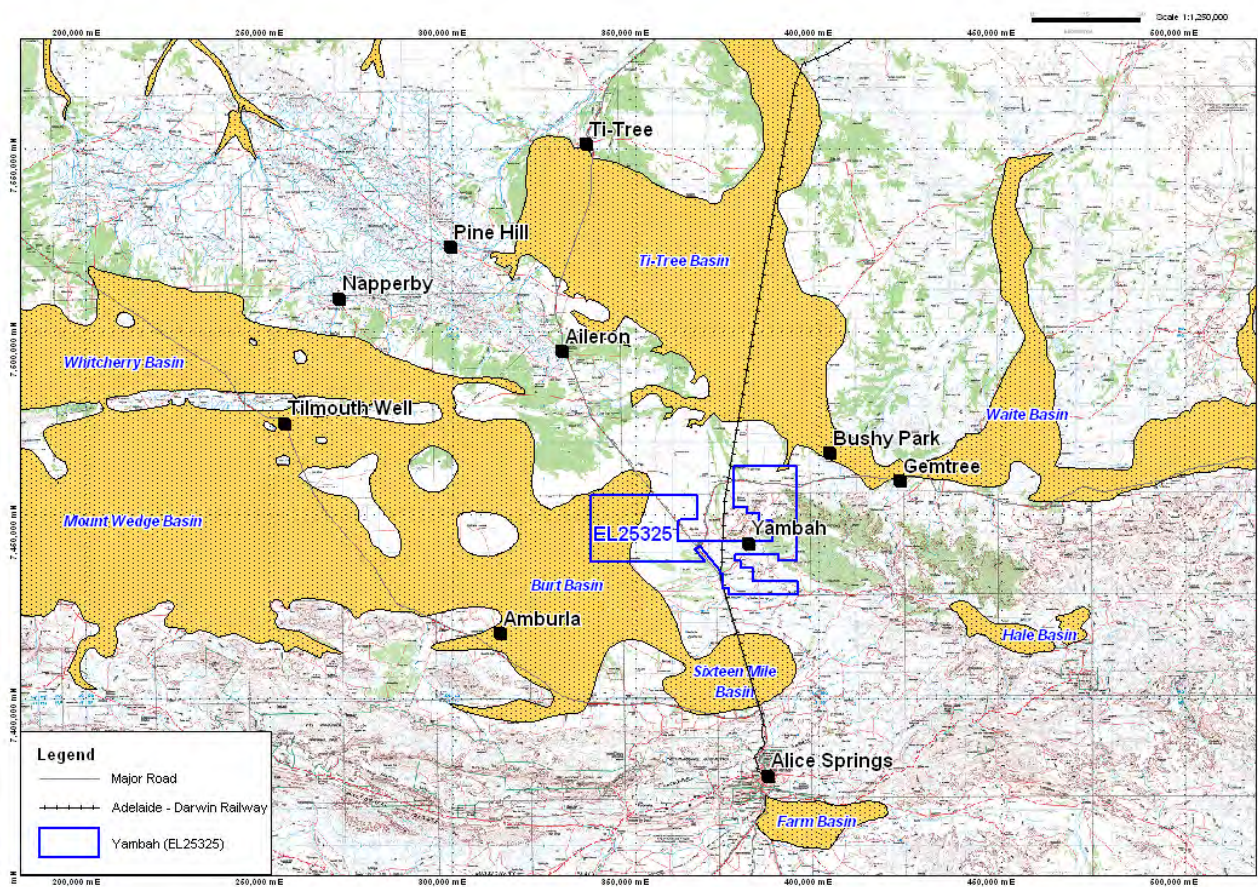


Figure 5 - Tertiary Basins in the Yambah – Alice Springs area.

The relatively small Hale Basin (Figure 5) was explored extensively for coal (lignite) and sedimentary uranium during the late 1970's and early 1980's and is considered to be the best known Cainozoic basin in the NT.

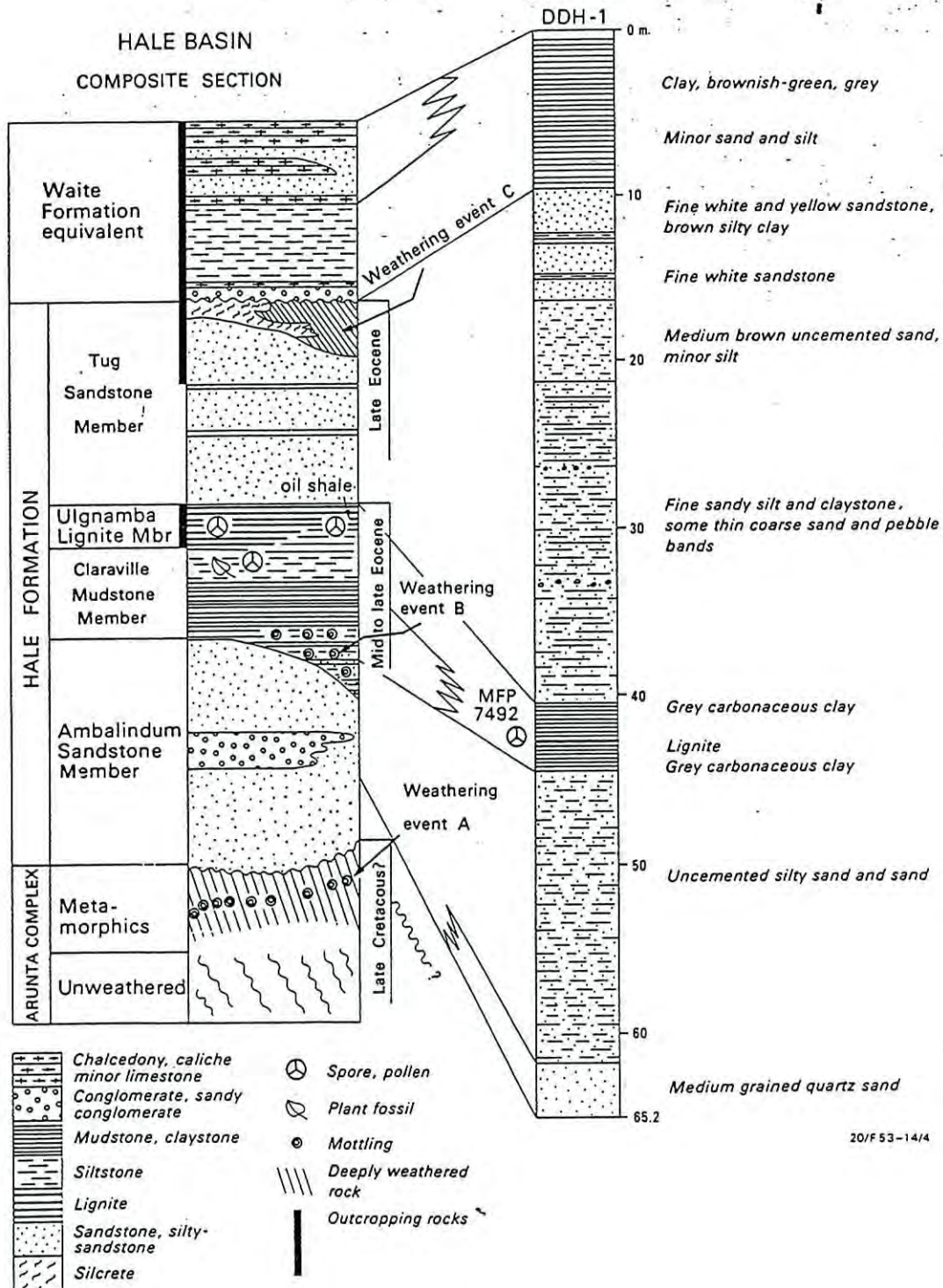


Figure 6 - Hale Basin composite stratigraphic column (Senior et al., 1994).

Senior et al. (1995) compiled a summary of the available information and defined a two-fold stratigraphic subdivision that broadly corresponds with the observed pattern of Cainozoic sedimentation elsewhere in southern Australia, and comprises a restricted, fluvial palaeochannel

dominated Palaeogene succession (Hale Formation) overlain by a more widespread, dominantly lacustrine Neogene succession (Waite Formation). Figure 6.

Whilst the succession in the Hale Basin is relatively thin (<100m), it can be considered to represent a generalised Tertiary stratigraphy for the southern NT, and despite being initially defined in separate, small and isolated Tertiary Basins, these formations are components of a much larger Tertiary palaeodrainage system, the extent and size of which has until now been vastly underappreciated.

Deposition and Weathering

Deposition of Cainozoic sediments was episodic and punctuated by hiatuses during which prolonged periods of weathering resulted in the formation of well-developed weathered profiles (palaeosols and duricrusts). Senior *et al.* (1995), defined three weathering events which affected Arunta igneous and metamorphic basement rocks and the overlying Tertiary succession.

Weathering Event A (Senior *et al.*'s 1994, 1995) occurred during the Late Cretaceous to Early Tertiary (Palaeocene). A trizonal profile was developed in basement rocks over a widespread area of the Arunta Region and at the base of surrounding Tertiary basins. The trizonal profile consists of a basal kaolinitic zone up to 10 meters thick that grades into a multicoloured mottled zone up to 10 meters thick. The mottled zone is overlain by a ferruginous (ferricrete) zone up to 8 meters thick.

Following uplift and partial truncation of the deeply weathered basement rocks, sedimentation in the surrounding Tertiary basins began in the Palaeocene with deposition of thick colluvium including fanglomerates flanking the ranges. This was followed by deposition of alluvial and lacustrine sand, silt and clay (locally carbonaceous) and lignite of the Lower Hale Formation in the Ti-Tree and Burt Basins during the Early to Middle Eocene. Locally this includes a basal lacustrine green and grey pyritic mudstone, white mudstone and siltstone, and red iron oxide stained siltstone and siltstone.

Weathering Event B, recorded in the Hale Basin, occurred prior to the Middle Eocene, although there is little evidence elsewhere for this weathering event (Senior *et al.*, 1995). This resulted in lithification and formation of a second ferricrete profile.

Deposition of sandstones of the Upper Hale Formation took place during the Late Eocene and these sediments were subsequently overprinted by Weathering Event C marking widespread exposure and surficial weathering in response to a prolonged period of non-deposition during the Oligocene.

Climatic amelioration during the Early Miocene rejuvenated the palaeodrainage systems and led to the deposition of fluvial sands at the base of the Waite Formation. A change from fluvial to lacustrine sedimentation then followed during the Middle to Late Miocene and resulted in the accumulation of over 300 meters of fluvial and lacustrine limestone, sands, muds, and sandy conglomerate in localised depocentres.

The upper portions of the Waite Formation are regionally extensive, consisting largely of clay and dolomitic clays that reflect the widespread development of broad, shallow evaporitic lakes throughout southern Australia as the continent drifted further northwards and became progressively more arid and seasonal. These sediments are frequently capped by calcretised limestones and distinctive chalcedonic silcretes that form regionally widespread stratigraphic markers.

Towards the ranges, the Waite Formation interfingers with, and is conformably overlain by a moderately thick (<60m) succession of oxidised colluvial material shed from the ranges in response to neotectonism during the (?Late) Pliocene. A broadly coarsening upwards alluvial fan succession can be recognised throughout the region. This unit is informally referred to as the Napperby Formation and comprises a succession of oxidised and haematitic, clayey sands, sandy clays and minor conglomerates.

Overlying these sediments are unconsolidated Quaternary sediments including quartz sands, silts, red earths and clayey and sandy soils that record a complex history of deposition, erosion and redeposition due to climate changes and gentle tilting. Large outwash fans from the northern side of the MacDonnell Ranges have formed alluvial plains and overbank deposits alongside sandy drainage channels. The Formation of calcretes, particularly within drainage channels and atop the Waite Formation, was widespread during the Quaternary.

PREVIOUS EXPLORATION

Previous exploration in the Yambah region has focussed on the potential of the basement rocks to host layered mafic-ultramafic intrusions containing Ni-Cu-Co and platinumoid (Pt-Pd) mineralisation. Several companies have also recognised the potential of the Cainozoic sedimentary sequences for secondary uranium deposits derived by the erosion of the surrounding uraniumiferous basement rocks.

Kewanee Australia Pty Ltd EL805, 1970

Kewanee explored this area that partly overlapped the southern part of Yambah for Cu, Pb, Zn and any other economic mineralisation. They carried out a program of stream sediment sampling, undertook close-spaced geological traverse mapping and scintillometry and drilled a series of auger holes. Forty three geochemical samples were collected but results were not encouraging and the tenement was relinquished.

Planet Mining Co. Pty Ltd AP 2826 and EL58, 1970

This area, explored for base metals, was located east of the Stuart Highway between the eastern and western section of Yambah and overlapped slightly with the eastern section. It was originally covered by AP2826 in 1970 and later converted to EL58. It contains the Red Rock Bore Prospect which is a sub-economic copper prospect. Planet carried out extensive exploration including geological mapping, aerial photography, soil and rock chip sampling, Airtrace and IP geophysical surveys, trench sampling and diamond core drilling and generated an abundance of data. The tenement was relinquished in 1974.

CRA Exploration Pty Ltd A-P 2710, 1971, 1972

AP2710 straddled the Stuart Highway and covered part of the west and south central parts of the Yambah tenement was acquired to explore for Ni in ultramafic rocks on the basis of a BMR magnetic anomaly. Reconnaissance mapping and stream sediment sampling in the exposed eastern part of the area showed that magnetic anomalies here were derived from magnetic granulites and quartzites and there was no anomalous geochemistry.

At the end of 1971, CRA's exploration focus moved to sedimentary uranium and 26 water bores in the area were sampled and three were gamma logged. No significant water analyses were noted. One low level uranium anomaly was noted in the Canteen Bore but was not followed up. Stream sediment and soil samples were collected and analysed, but no anomalous values were found.

Ground magnetometer traverses were completed and 6 auger holes were drilled to depths ranging from <14ft to 72ft. Only silt, sand and gravel were encountered. Due to the lack of encouraging results, the tenement was relinquished in 1973.

C.R.A. Exploration Pty. Ltd. AP3382 and EL441, 1971

Originally granted as AP3382 for six months in 1971 and then applied for and granted as the slightly smaller area of EL441 in 1972, these tenements were located just west of the Stuart Highway and overlapped the western part of Yambah. CRA carried out a similar uranium exploration program over these tenements for secondary Tertiary basin sandstone hosted uranium. The area was relinquished in 1973.

Dampier Mining Company Limited EL1341, 1976

EL1341 overlapped the southeast part of Yambah. Dampier Mining explored the area for stratiform copper-lead-zinc mineralisation and carried out geologic traversing and rock chip samples. They

considered that the mineralisation was low grade and small in size and relinquished the tenement in 1977.

Triako Mines NL EL1889, 1979

These two tenements overlapped the eastern part of Yambah and part of the western section. Triako carried out geological mapping, soil and rock chip sampling, an IP survey and drilled 5 diamond drill holes at the Red Rock and Harry's Bore base metal prospects but considered the results uneconomic and relinquished the ground.

C.R.A. Exploration Pty. Ltd. EL3541, 1982

This tenement overlapped the southeast part of the Yambah license. CRA conducted an airborne magnetometer survey, geochemical sampling for base metals and gravel sampling for micro-diamonds. The results were unsatisfactory and the tenement was subsequently dropped in 1983.

C.R.A. Exploration Pty. Ltd. EL3502, 1982

EL3502 overlapped the western part of Yambah. CRA explored the area for carbonatite bodies, however their investigations (an airborne magnetometer survey) revealed 100m of Tertiary sediments overlying basement and they concluded that further investigations were not warranted as carbonatite mineralisation is typically low grade and normally mined as an open pit.

Negri River Corp. EL3496 1982

This tenement overlapped the eastern part of Yambah. Exploration was focussed on diamond exploration although base metals were of secondary interest. They carried out air photo and Landsat image interpretation and stream sediment and gravel sampling. The results were not sufficiently encouraging to retain the tenement and it was relinquished in 1985.

Metwell Pty. Ltd. EL4420, 1983

EL4420 overlapped the southeast corner of Yambah and was explored for gold and base metals. A program of rock chip, soil sampling, backhoe trench channel sampling and magnetic and scintillometer traversing was conducted followed by five diamond core drill holes and several shallow auger holes in areas of basement geology. There was no drilling of the Tertiary sediments. The tenement was relinquished in 1989.

McMahon Construction Pty Ltd EL5267 and EL5258, 1987

These EL's overlapped the south central and eastern parts of Yambah. McMahon carried out an E.M. 37 (Induced Polarization) survey to explore for large concealed sulphide bodies, the results of which showed only weak anomalies and the tenements were surrendered in 1989.

White Range Gold NL EL6832, 1990

EL6832 overlapped part of the north-eastern section of the tenement. Exploring for base metals White Range Gold completed a review of earlier work and carried out some geologic reconnaissance. The tenement was surrendered in 1991.

Stockdale Prospecting Limited EL7570, 1991

This tenement overlapped a minor part of the south eastern border of Yambah where Stockdale completed stream sediment, soil, rock chip and BLEG sampling for gold. The results were not encouraging and the tenement was relinquished 1992.

Aberfoyle Resources Limited EL7858, 1992

This tenement overlapped a small area of the southeast part of Yambah. Exploration was for base metals and Aberfoyle conducted a ground TEM survey over the Edwards Creek gossan. The tenement was relinquished in 1994.

Roebuck Resources NL EL8125, 1994

EL8125 overlapped parts of the western section and northeast sections of Yambah. The area was considered to be prospective for gold and base metals and following the interpretation of images of aeromagnetic data obtained from NT Dept of Mines and Energy Roebuck carried out a program of stream sediment sampling, ground magnetic traverses followed by RC, RAB and diamond core drilling. Results were disappointing and the tenement was relinquished in 1997.

Pasminco Exploration EL9208, 1995

EL9208 partly overlapped the central eastern part of the Yambah tenement. Pasminco considered the area prospective for lead-zinc mineralisation and conducted a program of geological mapping, stream sediment sampling and rock chip sampling. Results were disappointing and the tenement was relinquished in 1997.

NTDME Geophysical Surveys, 1997

Detailed aeromagnetic and radiometric surveys were completed in 1997 that included all of the Napperby 1:250,000 Sheet area as well as the northern half of the adjacent Hermannsburg 1:250,000 Sheet to the south. The survey was flown at a line spacing of 400 metres and a mean terrain clearance of 60 metres. All primary data and gridded data as well as some plotted products from this survey are available freely from the Department.

Tanami Exploration NL EL22761, 2002

This tenement overlapped the southeast corner of Yambah. Tanami explored the area for gold and base metals carrying out rock chip, soil and lag sampling. Results were disappointing and the tenement was relinquished in 2005.

NUPOWER EXPLORATION ACTIVITIES COMPLETED, YEAR 2, 2008

AIRBORNE ELECTROMAGNETIC (AEM) SURVEY

Introduction

Recent exploration in South Australia has shown that airborne electromagnetic survey (AEM) systems have been successful in identifying palaeochannel systems as potential host rocks for secondary uranium deposits.

Fugro Airborne Surveys offers a number of AEM time-domain survey systems and aircraft configurations, suitable for a range of mineralisation types. All AEM systems have in common an AEM transmitter, attached or suspended from the aircraft that transmits pulses of electromagnetic energy as it flies regularly spaced lines of a grid system. The primary electromagnetic field induces an electric eddy current in the ground beneath the aircraft and provided that the ground is sufficiently conductive this current generates a secondary electromagnetic field that is measured by an AEM receiver usually suspended below and behind the aircraft in a small bird.

The Fugro Tempest system maps the palaeo-topography of the crystalline basement due to the significant electrical contrast between the younger overlying unconsolidated sediments (conductors) and the crystalline basement units (resistors). Undertaking 1D layered earth inversions of the observed data along a traverse enables an electrical cross section of the earth to be constructed. From this, the thickness of the overlying sediments and conversely the palaeo-topography of the basement are interpreted. Additionally the stratigraphy of the overlying sediments is inferable from its variable conductive nature.

A magnetometer is usually bundled with the EM equipment and run concurrently.

The aircraft records the following data:

- Navigation data including GPS time and heights,
- Streamed EM data (X,Y, Z and I)
- Total field magnetometer data
- Fluxgate magnetometer data
- Gyroscope data
- Radar altimeter data
- Fiducial marks
- Downward looking PAL VHS video

A base station is also set up to record separate GPS and magnetic data for survey correction purposes.

Initial system calibration involves data acquisition at high altitude (nominally 2000ft) that eliminates ground response to determine if the system noise level is acceptable, that the response has not varied significantly from previous sorties and that the sferics level is acceptable. This includes aircraft manoeuvres to ensure that the system is functioning correctly when the position of the towed sensor is varied with respect to the aircraft.

The aircraft also performs a series of manoeuvres to determine compensation coefficients for the magnetometer for each survey and tie line heading.

Positioning is determined using a Real Time Differential GPS and a base station GPS to provide for post-survey differential correction of the flight path that gives accuracy to within 5m horizontally and 9m vertically.

Data processing includes routines to suppress spheric noise, powerline noise, VLF noise, and coil motion noise. The effects of current in the transmitter loop and airframe are also removed. Magnetic data are compensated for aircraft manoeuvre noise and corrected for diurnal variations.

Fugro provide the following standard gridded, located and digital deliverables:

Gridded Products;

- EM Time Constant X and Z component
- EM channels X and Z component (15 channels)
- Total Magnetic Intensity (TMI)
- 1VD of TMI
- Digital Elevation Model

Located and Digital Products;

- Digital flight plan
- Conductivity Depth Image Multiplots and Stacked Sections (X or Z)
- Located ASCII and Oasis GDB of TMI, EM, and DEM data)
- Acquisition and Processing Report MS Word digital and hard copy).

The optional Depth to Resistive Basement derivative was also requested.

Results of the Survey

The logistics report and final data together with survey time window interpreted and processed images for the 2007 survey are included in Appendix 1.

Survey areas and flight line directions are shown in Figure 7. Data acquired in 2007 have been inverted and processed and are shown in Figure 8 which shows two well-defined palaeochannels on Yambah that appear to be isolated from the Burt Basin to the west. These two palaeochannels are hereby named the 'Canteen' and 'Mistake' Palaeochannels (after Canteen and Mistake Bores). Using preliminary data acquired from additional regional AEM surveying in 2008, this 2007 AEM data has been integrated into a preliminary composite image showing interpreted depth to basement (Figure 9) in which areas of outcropping or shallow basement are shown as white or red whilst deeper areas of thick sediment accumulations are shown in blue.

From the extent and size of the Burt Basin (and its tributaries) in relation to the AEM data in Figure 9 it is clear that the palaeochannels under Yambah form part of a much more extensive regional palaeodrainage system. The Hann Range forms a prominent basement high to the north of the tenement whilst the Strangways Ranges form a similar high to the east. Minor to moderate sized palaeochannels drain the Hann Range to the south and southeast, and north off the MacDonnell Ranges into the Burt Basin. Palaeochannels are poorly developed in the southeast and eastern portions of the tenement and the Sixteen Mile Basin may be entirely separate from the Burt Basin.

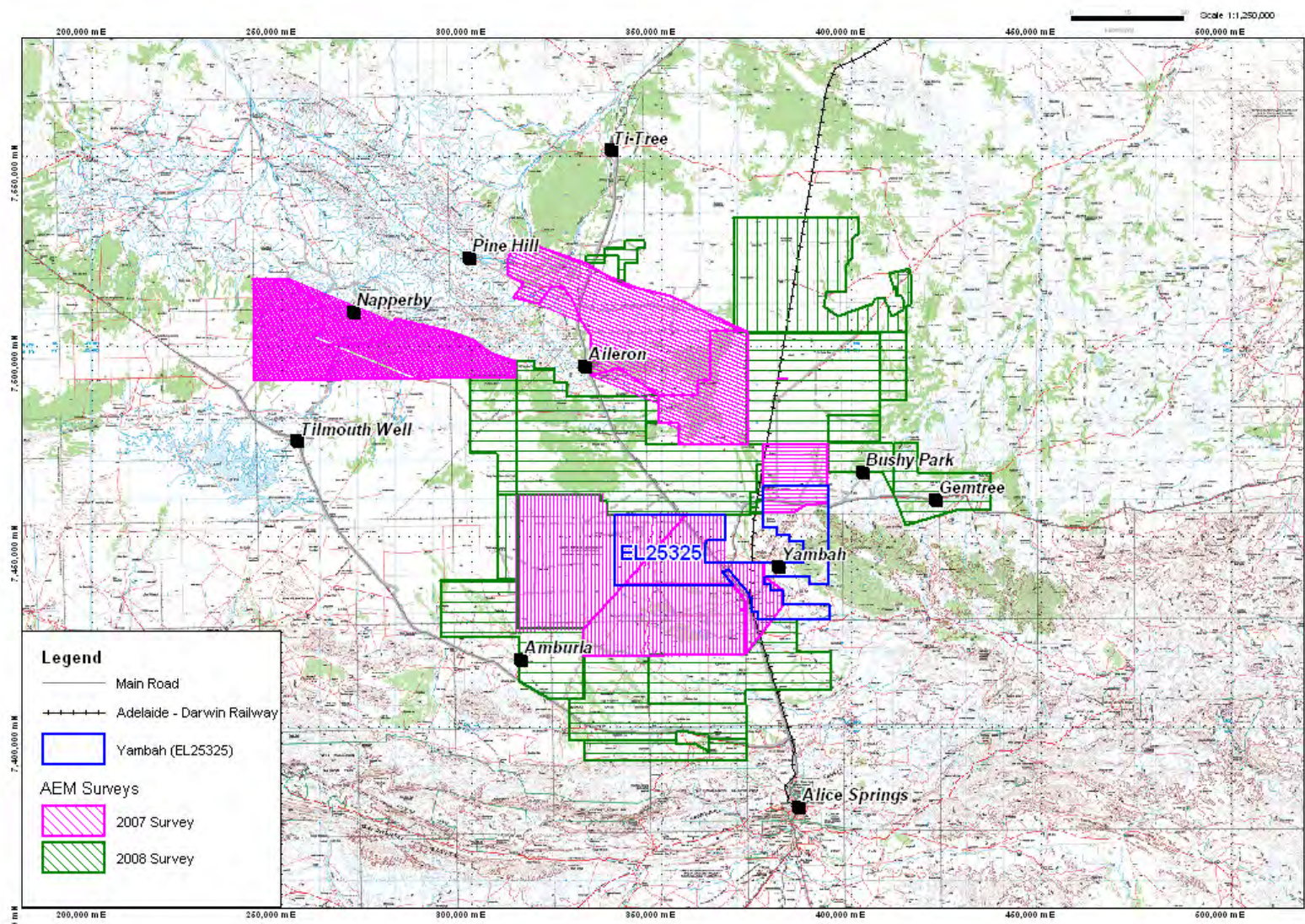


Figure 7 - Yambah Tenements: Extent and vintage of AEM Surveys showing flight line directions.

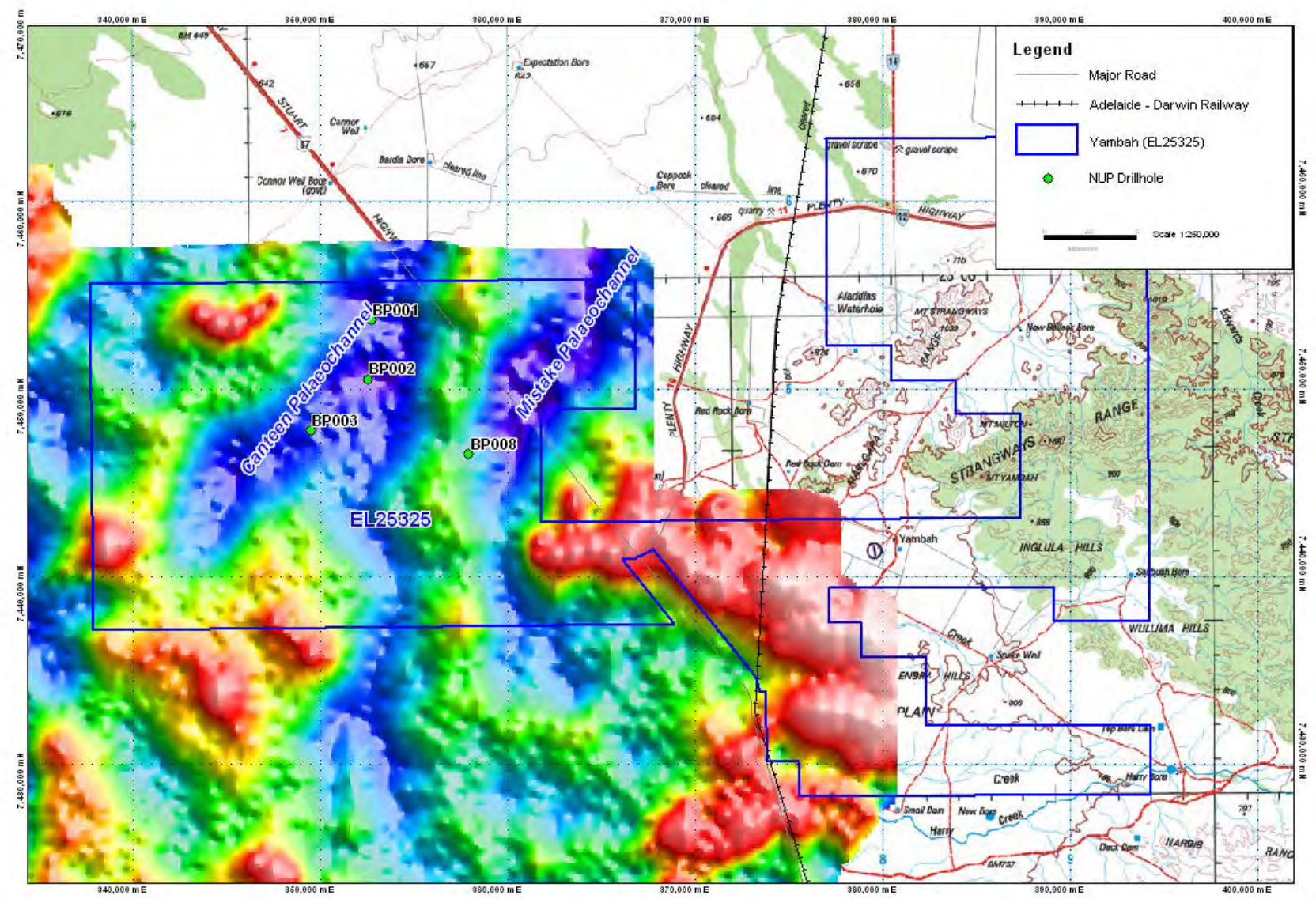


Figure 8 - Yambah AEM palaeochannel interpretation.

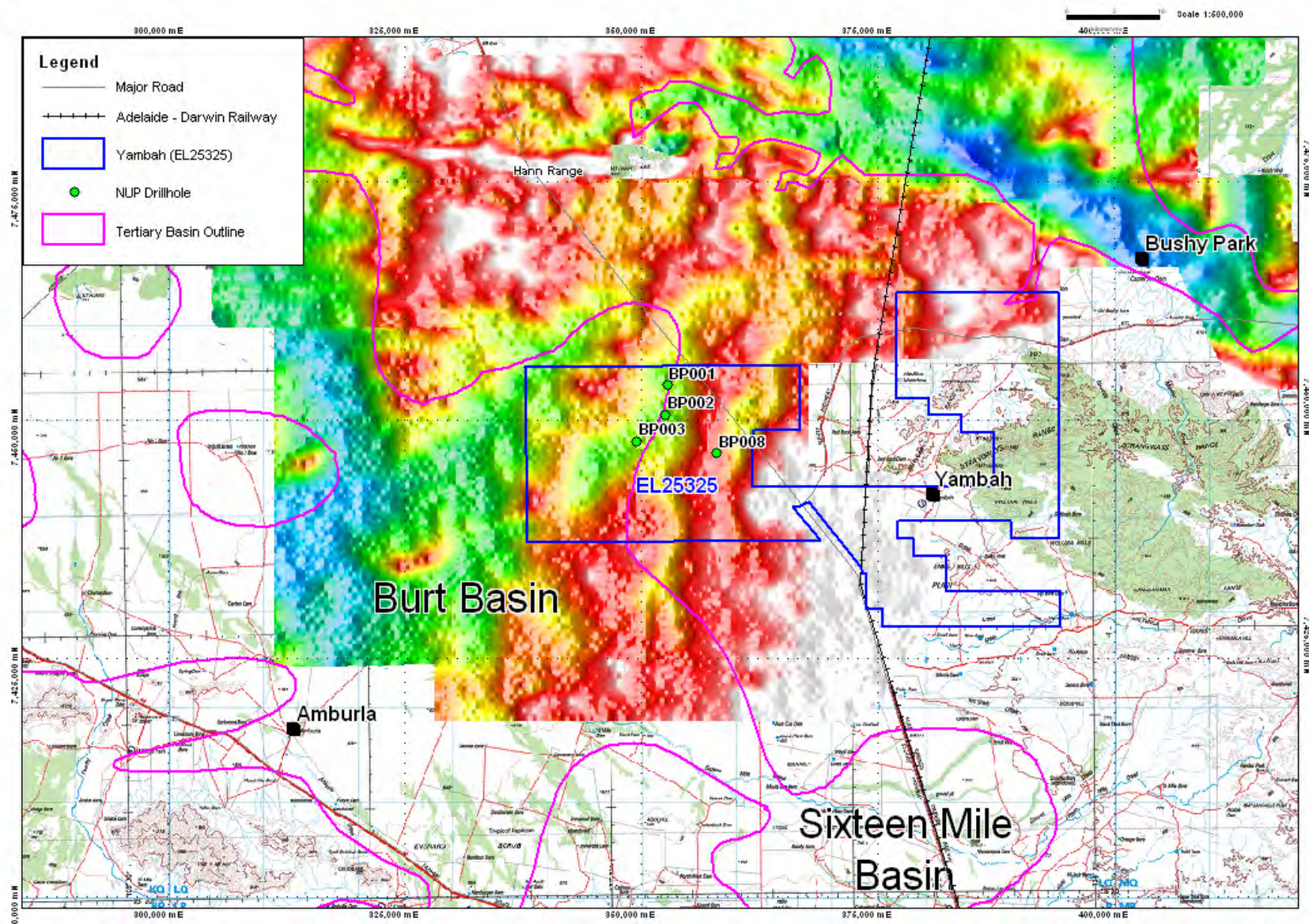


Figure 9 - Preliminary partial basement model showing the outline of the Burt and Sixteen Mile Basins and locations of NUP drillholes.

AIRBORNE REGIONAL GRAVITY SURVEY

Introduction

During 2008 the NTGS conducted a helicopter-borne regional gravity survey over the central Arunta Region with survey points spaced 4km apart. NuPower contributed to the program in order to obtain more detailed, 2km spaced data, over its Aileron Project tenements. The logistics report outlining survey details is enclosed in Appendix 8.

Results of the Survey

A preliminary image from the Central Arunta Gravity Survey (CAGS). A preliminary plot of the existing regional data, merged with the newly acquired CAGS data is shown in Figure 11.

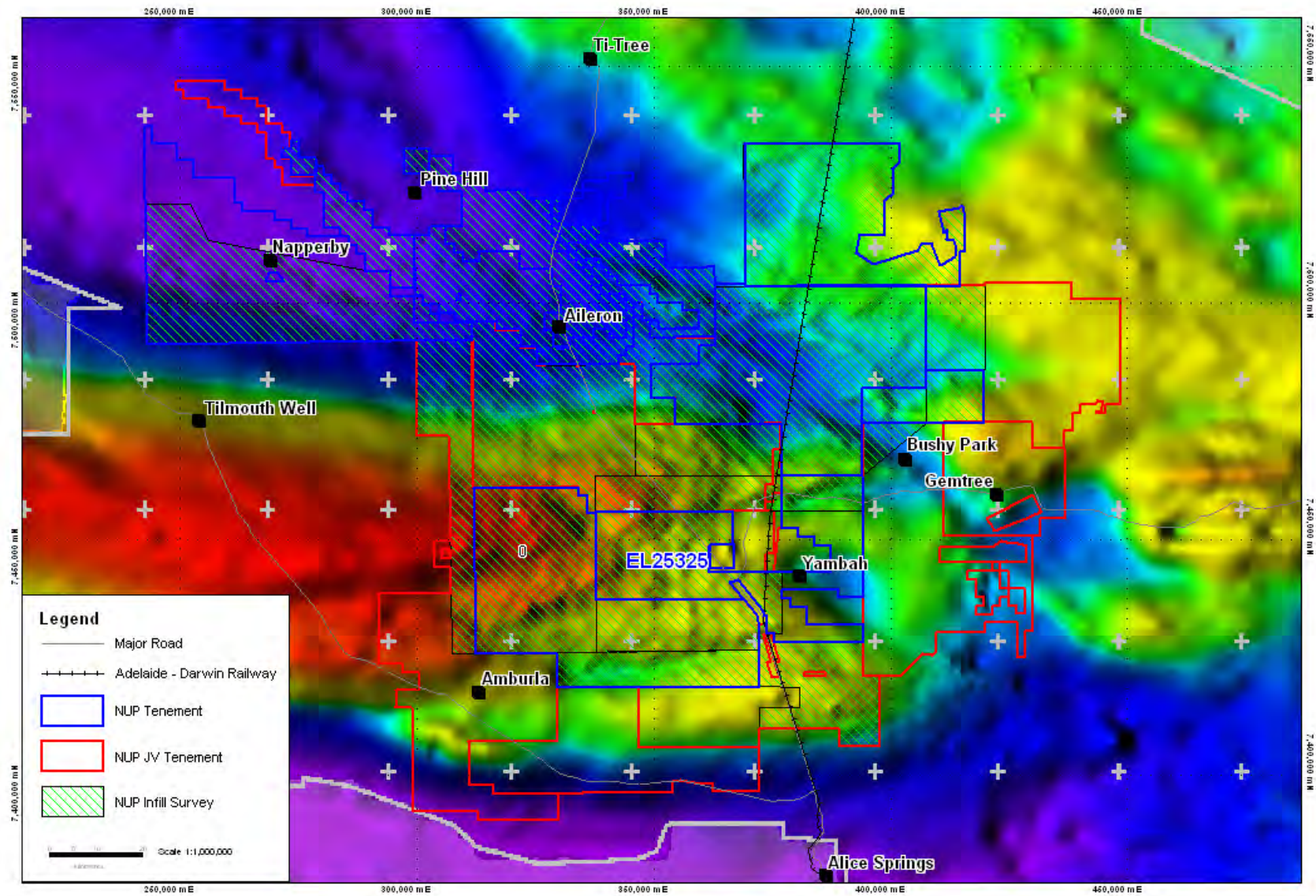


Figure 10 - Preliminary CAGS image showing NUP tenements and infill survey areas.

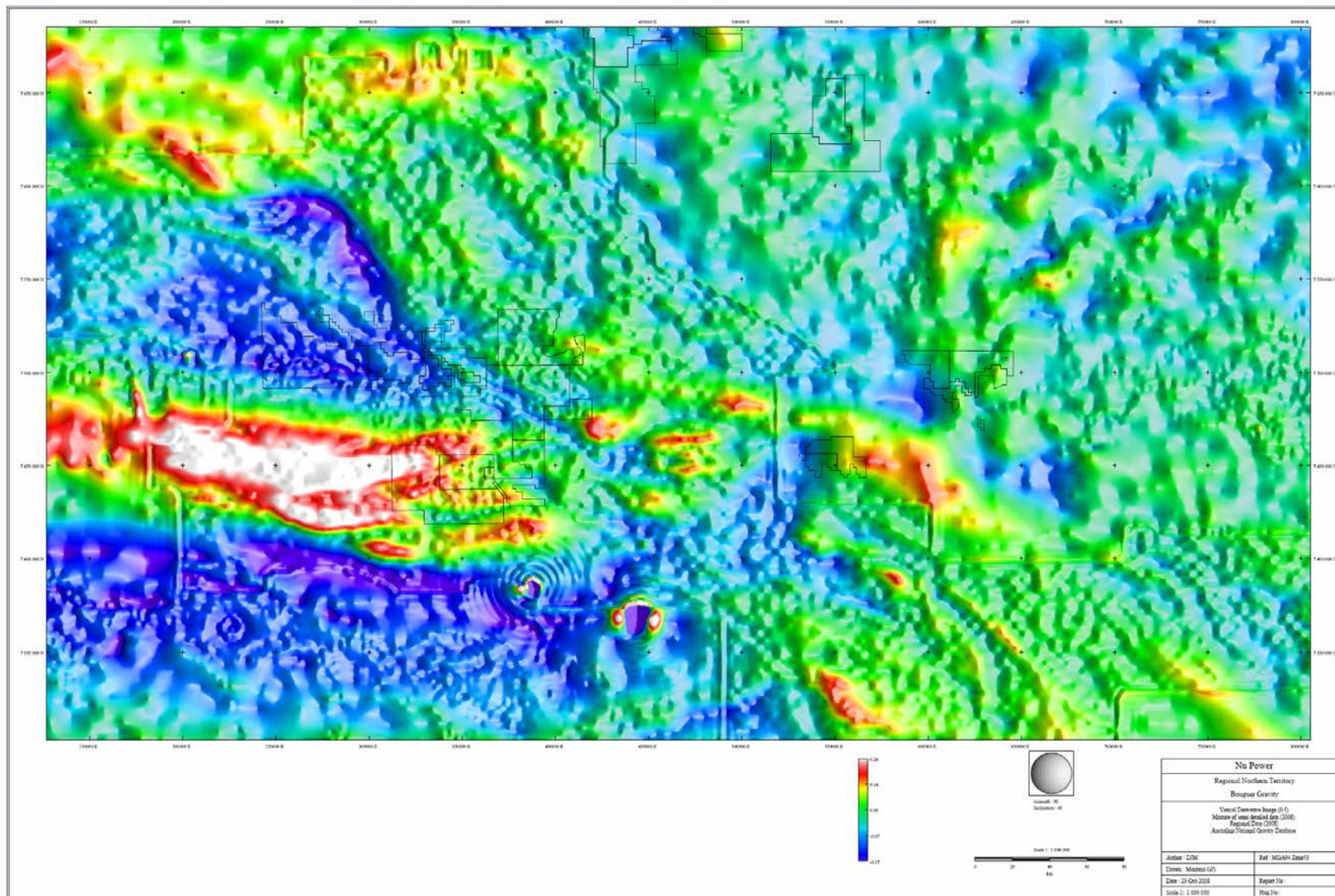


Figure 11 - Regional Bouguer gravity for the southern NT composited with 2008 CAGS survey data and showing NUP tenements.

STATION BORE WATER SAMPLING

Introduction

“Groundwaters are appropriate as geochemical exploration sample media in regions where the products of deep weathering or post-ore successions cover exploration targets to depths such that they are invisible to traditional geochemical and geophysical exploration technologies. An exploration role for groundwaters results from their chemical reactivity with these concealed exploration targets and their physical mobility. Outcomes from these interactions with relevance to exploration include changes to groundwater compositions due to additions or removal of dissolved substances (solutes).

Since groundwater-rock contact times in groundwaters are greater than in streams or other surface waters groundwaters have a better chance of accumulating solutes up to analytically detectable levels than do most surface waters. In particular, slowly seeping groundwaters are optimal for characterising large volumes of rocks that surround and underlie a sample collection site. Groundwaters also penetrate further into the crust than surface waters, an attribute that is uniquely useful for the geochemical detention of mineral deposits which lack a surface or near-surface expression.....

They are interpreted from comprehensive field and laboratory chemical analyses of samples collected, using standardised procedures, from groundwater sources. Field measurements include pH, Eh, salinity, temperature and reduced Fe. Exploration indicators in groundwaters are not restricted to the ore elements. Strategic analytes include major constituents (Ca, Mg, Na, K, Cl, S, and carbonate species), and trace elements that occur at low and sub ppb concentrations.” (Giblin, 2001).

Results

NuPower conducted extensive water bore sampling throughout the region of its Aileron Project during 2007 and 2008. Six station bores were visited on Yambah during the period, from which twelve water samples were collected (Figure 12). Another six water samples were taken from three of NUP’s exploration drillholes.

Standard Operating Procedures were developed for bore water sampling and are outlined in Appendix 2. Bore details and water assay results are given in Appendix 3 and the original assay sheets from Actlabs Pty Ltd and Careena Holdings Pty Ltd are given in Appendix 4.

Interpretation of the results is in progress in conjunction with results from the surrounding NuPower Aileron Project tenements and was not available at the time of writing.

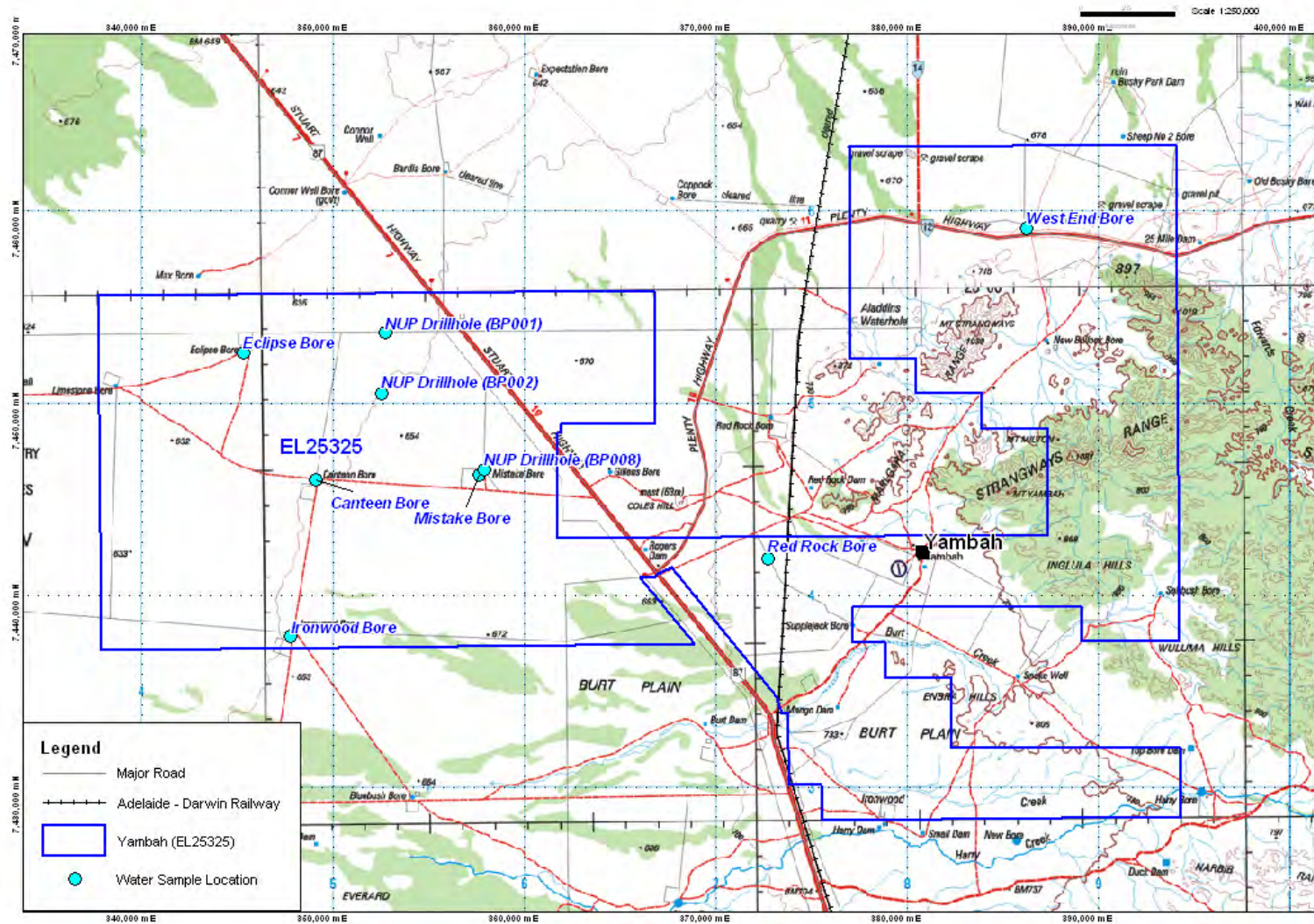


Figure 12 - Location of water samples on Yambah.

EXPLORATION DRILLING

Introduction

NuPower completed four rotary mud drillholes for a total of 504m on Yambah. Drillhole details are outlined in Table 1 and locations shown in Figure 13. Drilling was based on 3D modelling of the 2007 AEM data and was designed to confirm the presence of a buried palaeodrainage system and determine the characteristics of its sedimentary fill (Figure 13). Three holes were successfully drilled through the Tertiary succession to basement, whilst a fourth (BP003) had to be abandoned as the hole collared off whilst drilling through heavy Tertiary clays.

All holes were geophysically logged and lithological and geophysical logs are included in Appendix 5B. The downhole tool calibration report is enclosed in Appendix 7.

Five samples of crystalline basement from BP001 were submitted to ALS Chemex in Alice Springs for assay and their results are detailed in Appendix 5C.

A total of 252 cuttings samples from NUP's four drillholes (from start to EOH) were submitted to the NTGS core library in Alice Springs, and are listed in Appendix 5D.

Downhole gamma logging of an open water bore (Mistake Bore) on Yambah indicated the presence of minor anomalous gamma (Figure 13). Check logging of Mistake Bore later confirmed the anomaly which was then investigated by one drillhole (BP008). Zones of minor anomalous gamma were intersected within both weathered basement and the overlying thick blanket of colluvial sediments.

A Prompt Fission Neutron (PFN) tool became available in early September and was used to log the anomalous zones encountered by BP008. The PFN tool confirmed the presence of anomalous gamma but indicated that no significant amounts of anomalous uranium were present.

Hole ID	GDA94_E	GDA94_N	TD	Dip	Azi	Date Started	Date Completed	Anomalous Gamma	PFN Log
BP001	352709	7453680	170.0	-90.0	0.0	13-Aug-08	15-Aug-08	N	N
BP002	352510	7450495	138.0	-90.0	0.0	16-Aug-08	17-Aug-08	N	N
BP003	349464	7447767	76.0	-90.0	0.0	18-Aug-08	19-Aug-08	N	N
BP008	357906	7446538	120.0	-90.0	0.0	2-Sep-08	2-Sep-08	Y	Y

Table 1 - Drillhole details, Yambah Tenement.

Geology

Preliminary observations from drilling are recorded below and the interpreted stratigraphy is shown in Appendix 5A.

Due to the paucity of drillholes in the region and the lack of interest in the Cainozoic, no stratigraphic model was available for the Burt Basin. NuPower's exploration drilling program allowed a stratigraphic model to be developed for the Napperby region which was successfully applied to the Burt Basin where it was further refined and expanded. More detailed information describing the Tertiary geology of the region can be found in Higgins (2009).

Tertiary palaeochannels are well developed on Yambah and form part of a tributary system feeding into the Burt Basin. The buried palaeochannels present on Yambah (and Burt Plain) appear to be part of a much larger palaeodrainage system that has since been disrupted and modified by relatively recent uplift of the Reynolds, Strangways and MacDonnell Ranges.

Beneath the Tertiary cover, the drilling encountered mostly schistose metamorphic rocks. Basement rocks are typically strongly weathered and capped by variably developed trizonal weathering profiles that characteristically comprise a pisolitic ferruginous zone (or 'ironstone' cap) underlain successively by mottled and pallid zones. Weakly anomalous gamma was associated with the ironstone cap in BP008. (Similar occurrences of weakly anomalous gamma associated with 'laterite' profiles were reported by CRA Exploration (1979) in the Ti-Tree Basin to the north).

Tertiary palaeochannels are incised directly into the metamorphic basement in a setting similar to the Honeymoon and Gould's Dam uranium deposits in the Lake Frome Basin, South Australia. Depth to basement on Yambah varies from 64m (BP008) to 114m (BP002). Carbonaceous sediments or coarse, kaolinitic sands of the Hale Formation were not intersected by drilling on Yambah. Instead, an unusually thick succession of well-developed, plastic, lacustrine clays (frequently dolomitic) interpreted as the Miocene Waite Formation, rests directly on strongly weathered crystalline basement. These lacustrine clays are characteristically oxidised and exhibit strong limonite staining, frequently making it difficult to differentiate between strongly oxidised Waite Formation and heavily weathered clayey saprolite. Distinctive chalcidonic silcretes were developed at the top of the Waite Formation in BP003.

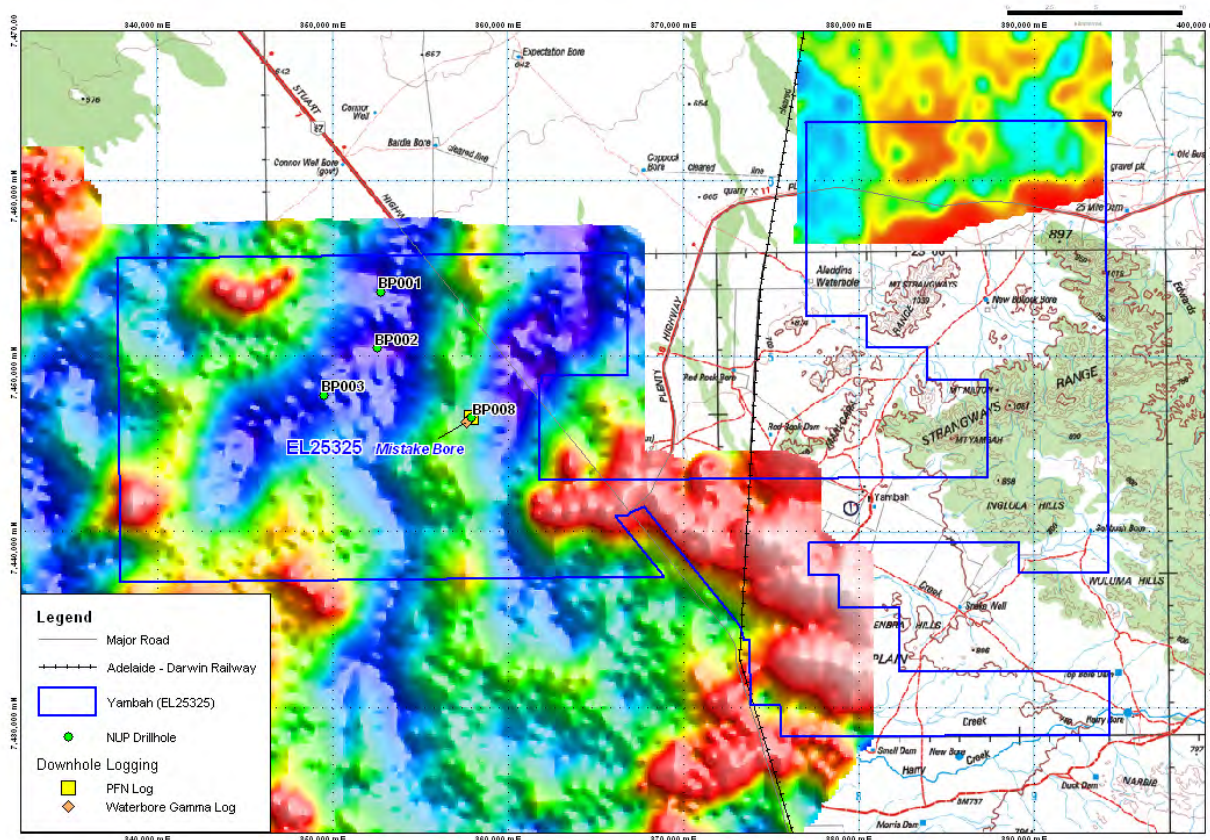


Figure 13 - Yambah AEM data palaeochannel interpretation showing NUP drillhole locations and geophysical logging status.

Tertiary sediments on Yambah are unconformably overlain by a thick (>50m) blanket of oxidised, gravelly and pisolitic colluvial sediments. Strongly oxidised and lacking any discernable internal stratigraphy, this material is thought to have been shed off the Strangways Ranges to the east and the MacDonnell Ranges to the south in response to a phase of uplift in the Late Tertiary. Whilst the exact stratigraphic relationship remains unclear, it is thought to be a more oxidised equivalent of the Napperby Formation (informal name) developed within the Whitcherry and Ti-Tree Basins.

A thin veneer (<10m) of Quaternary aeolian sands and colluvial material caps the sedimentary succession. Minor calcrete development is associated with this unit on Yambah.

NuPower's exploration efforts indicate that reduced and carbonaceous sands within the Eocene Hale Formation form the primary exploration target throughout the Aileron region. Reduced clays and sands of the Hale Formation were intersected on Burt Plain (EL24956) in the deeper portions of the Burt Basin to the west. Drilling on Yambah however did not intersect the Hale Formation and this is attributed to the shallower nature of the palaeochannels.

Exploration efforts in NuPower's tenements throughout the Aileron Region have provided evidence of significant neotectonic activity that dramatically affected the development of the Tertiary palaeodrainage systems. Evidence of entrenchment of meandering palaeochannel systems is widespread throughout the southern NT (e.g. the Finke River) and whilst the prevailing geological wisdom interprets this to have occurred during the Alice Springs Orogeny, regional evidence suggests that these incised drainage patterns may, at least in part, have developed in response to reactivation of older structures during the Tertiary.

The processed AEM data (Figure 13) suggest a dendritic drainage pattern for the Canteen and Mistake palaeochannels draining northwards off the MacDonnell Ranges and away from the Burt Basin. However, the preliminary basement image (Figure 9) indicates that the Reynolds, Hann and Strangways Ranges form a NW-SE trending regional basement high blocking this route. Close examination of Figure 9 suggests a narrow gorge may be incised through the Hann Range allowing the Canteen and Mistake palaeochannels to link up with the Hann Palaeochannel before flowing into the Ti-Tree Basin.

Episodic uplift along the Reynolds-Hann-Strangways Ranges axis (as indicated from evidence gathered during regional exploration) appears to have begun during the Early Eocene and accelerated during the Late Eocene, significantly disrupting the palaeodrainage pattern. Whilst the early stages would have facilitated palaeochannel entrenchment and incision of a gorge into the Hann Range, continued uplift would have reduced stream gradients by tilting the Tertiary landscape back towards the south, acting to produce elongated lacustrine basins within palaeochannels that no longer had an outlet. The unusually thick succession of lacustrine clays intersected by drilling in the Canteen and Mistake palaeochannels, together with the absence of Eocene sediments tends to support this notion. Similarly, the predominance of lacustrine clays within the Burt Basin to the west lends weight to this idea, with the Burt Basin developing into a broad, shallow Miocene lacustrine basin (now represented by the modern Burt Plain).

In summary, exploration drilling encountered significant thicknesses of Tertiary sediments on Yambah, thus confirming the presence of the buried palaeodrainage system indicated by the 2007 AEM survey. Drilling indicates that a thick succession of oxidised clays, interpreted Waite Formation, rests directly on weathered crystalline basement. Kaolinitic and/or carbonaceous sands of the Hale Formation were not intersected by drilling on Yambah due to the shallower nature of the palaeochannel system.

Whilst the palaeodrainage system appears to be well-developed, the prospectivity of the Canteen and Mistake palaeochannels on Yambah is reduced by the absence of sands and the oxidised nature of the Waite Formation. Future efforts should focus on the northern regions of the tenement (particularly the Mistake Palaeochannel) where the palaeochannels may be more deeply incised and may contain reduced sands of the Hale Formation.

Downhole Geophysical Logging

All holes were geophysically logged for natural gamma (GAMMA), self potential (SP) and resistivity (LLS- Laterolog Shallow & LLD - Laterolog Deep). Drillhole and geophysical logs are included in Appendix 5B.

No indications of anomalous gamma were encountered in the three drillholes (BP001-BP003) targeting the Canteen Palaeochannel. Drillhole BP008, located on the margins of the Mistake Palaeochannel, was designed to investigate anomalous gamma encountered at 55m in Mistake Bore. BP008 encountered several intervals of weakly anomalous gamma within weathered basement rocks and also within transported, oxidised Tertiary sediments (Table 2). The broadest anomalous zone (68.5-71.5m) was associated with the ironstone cap developed at the top of the weathered basement profile.

BP008 was later logged using a Prompt Fission Neutron (PFN) tool which indicated that no significant amounts of anomalous uranium were associated with these intervals.

Hole ID	GDA94_E	GDA94_N	TD	Depth (m)		Thickness (m)	Grade (%eU ₃ O ₈)	Comments
				From	To			
BP001	352709	7453680	170.0	-	-	-	-	
BP002	352510	7450495	138.0	-	-	-	-	
BP003	349464	7447767	76.0	-	-	-	-	Hole abandoned
BP008	357906	7446538	120.0	25.0	26.0	1.0	N/A	Anomalous gamma
				68.5	71.5	3.0	N/A	Anomalous gamma in basement
				83.5	84.5	1.0	N/A	
				119.5	120.5	1.0	N/A	

Table 2 - Drillhole intersections on Yambah (EL25325)

Geochemistry

Drilling & Sample Methods

NuPower Resources conducted its 2008 reconnaissance drilling using a rotary mud drill rig supplied by Watson Drilling. This drilling method utilises a recirculating stream of liquid mud to facilitate drill penetration and to carry the drill cuttings to the surface for sampling. Mud is pumped from the sump, down the inside of drill stem to the drill bit, from where it returns outside the drill stem to the surface and back into the sump via a run in channel. Cuttings are considered to be representative of a broader zone due to the delay in sample return and the potential for mixing in the mud column.

Drillhole	Depth		Sample #	P	S	Zn
	From	To		ppm	%	ppm
BP001	160.0	162.0	11072	430	0.04	40
BP001	162.0	164.0	11073	310	0.03	130
BP001	164.0	166.0	11074	380	0.02	48
BP001	166.0	168.0	11075	320	0.02	1000
BP001	168.0	170.0	11076	260	0.01	145

Table 3 - Selected geochemical assay results for basement samples taken on Yambah (EL25325).

Representative cuttings samples were collected at 2m intervals from a sump in the run in channel and then laid out in 30m rows on the ground in a suitable area adjacent to the drilling rig. Cuttings photographs of each drillhole are included in Appendix 5B.

Results of the gamma logs were so low that no material from the zones of anomaly (Table 2) were submitted for chemical analysis.

Samples of each 2m cuttings pile were taken for geochemical assay from the bottom of one hole in order to ascertain if any anomalous geochemistry was present in the underlying basement. A total of five drill cuttings samples were submitted to ALS Chemex in Alice Springs. Assay results are detailed in Appendix 5C and selected results are shown in Table 3 that indicate the presence of locally anomalous zinc and phosphorous. Interpretation of these results is in progress.

EXPENDITURE STATEMENT, YEAR 2, 2008

Expenditure details for Year 2, 2008 and the covenant and proposed exploration activities for Year 3, 2009 are given as an attachment in Appendix 6.

The Expenditure Covenant for Year 2 was \$80,000. Expenditure on the tenement during the reporting period was \$171,456.62 and therefore the covenant was satisfied.

GROUND RELINQUISHMENT

EL25325 comprises 327 graticular blocks covering 1,019 square kilometres. NuPower was required to relinquish up to 50% of the tenement at the end of Year 2. This has not been feasible and the company has applied for a Waiver of Reduction which was granted on 22/01/09.

JOHN HIGGINS
BSc (Hons), GCPGG
20 July 2012

REFERENCES

- BUICK, I. S., Hand, M., Vry, J., Cartwright, I., and Read, C., 1999. Poly-metamorphism and reactivation of the Reynolds Range area, Northern Arunta Inlier, central Australia: petrological, geochronological, geochemical and structural constraint. Specialist Group in Geochemistry, Mineralogy and Petrology Field Guide No. 2, Geol. Soc. of Aus.
- CARTWRIGHT, I, BUICK, I S, FOSTER, D A and LAMBERT, D, 1999, Alice Springs age shear zones from the south-eastern Reynolds Range, central Australia. Aust J of Earth Sci., 46, 355-363.
- EDWORTHY, K.J. 1966, Preliminary Appraisal of the Tea Tree Groundwater Basin. Department of Mines and Energy Library, Alice Springs (unpublished).
- EDWORTHY, K.J. 1967, Stratigraphic Drilling in Central Australia, 1966. Department of Mines and Energy Library, Alice Springs (unpublished).
- FREEMAN, M.J, SHERGOLD, J.H., MORRIS, D.G. and WALTER, M.R, 1990, Late Proterozoic and Palaeozoic Basins of Central and Northern Australia. Geology of the Mineral Deposits of Australia and Papua New Guinea (Ed F.E. Hughes). AusIMM, pp 1125-1134.
- GIBLIN A. 2001 Groundwaters. Geochemical Pathfinders to Concealed Ore Deposits. CSIRO Exploration and Mining.
- HIGGINS, J.W. 2009. EL24548 Yalyirimbi, Annual Report for Period Ending 30 December, 2008. NuPower Resources Ltd, Unpublished. Copy held by NTGS.
- HOSSFELD P.S 1954. Stratigraphy and Structure of the Northern Territory of Australia. Trans. Roy. Soc South Australia, 77.
- LINDSAY-PARK, K, 1998, Annual report for Year 2, Exploration Licence 9672, Dragons Lair, Northern Territory, Australia. Exploremin Pty Ltd unpublished report EPL-98/100.
- SENIOR, B. R., Truswell, E. M., Idnurm, M., Shaw, R. D., and Warren, R. G., 1994. Cainozoic sedimentary basins in the Alice Springs Region: Records of Drilling and Reconnaissance Geology. Australian Geological Survey Organisation - AGSO Record 1994/66.
- SENIOR, B. R., Truswell, E. M., Idnurm, M., Shaw, R. D., and Warren, R. G., 1995. Cainozoic sedimentary basins in the eastern Arunta Block, Alice Springs Region, central Australia. Australian Geological Survey Organisation - Journal of Australian Geology & Geophysics, 15(4), pp. 421-444.
- SHAW R.D, WELLS A.T. 1983, ALICE SPRINGS- Sheet SF53-14 BMR 1:250,000 Geological Map Series.
- SHAW R.D, WELLS A.T. 1983, ALICE SPRINGS- Sheet SF53-14 BMR 1:250,000 Geological Map Series-Explanatory Notes.
- STEWART, A. J., 1981. Reynolds Range Region, Northern Territory. BMR 1:100,000 Geological Map Series Commentary. Bur. Min. Res. Geol. & Geophys., Canberra, Australia.
- STEWART, A. J., 1981. Reynolds Range Region, Northern Territory. BMR 1:100,000 Geological Map Series. Bur. Min. Res. Geol. & Geophys., Canberra, Australia.
- STEWART, A. J., 1982. NAPPERBY – Sheet SF/53-9. BMR 1:250,000 Geological Map Series Commentary. Bur. Min. Res. Geol. & Geophys.
- STEWART, A. J., 1982. NAPPERBY – Sheet SF/53-9. BMR 1:250,000 Geological Map Series. Bur. Min. Res. Geol. & Geophys.

STEWART, J I, 1997, Annual report Exploration Licence 9672, Dragons Lair, Northern Territory, for the period 25/11/96 to 25/11/97. Homestake Gold of Australia Limited unpublished report, 1997/45.

THEVISSSEN, J, 1995. Napperby Annual Report EL8411 1995 field season. PNC Exploration (Australia) Pty Ltd unpublished report NTDME CR96/187.

WARREN R.G, SHAW R.D. 1995 HERMANNsburg-Sheet SF/53-13. BMR 1:250,000 Geological Map Series. Dept Mines and Energy, NTGS. AGSO

WARREN R.G, SHAW R.D. 1995 HERMANNsburg-Sheet SF/53-13. BMR 1:250,000 Geological Map Series- Explanatory Notes. Dept Mines and Energy, NTGS. AGSO.

WILSON, B.A, Brocklehurst P.S, Clark M.J, Dickinson KJM, 1991. Vegetation Survey of the Northern Territory, Southern Sheet. Conservation Commission of the Northern Territory.

WYCHE S. 1983 Coal and Lignite Occurrences in the Southern part of the Northern Territory. NTGS Tech Report GS83/1.