Strangways Project

FINAL SURRENDER REPORT

For the period
13 June 2006 to 16 July 2013
FOR
EL 29904

Author: G. Mcdonald, Project Geologist
: F.M. Parker, Tenement Manager
: Date: August 2013
Report No: FMS_1308

Distribution:
NTDME
Flinders Mines Limited (1 Digital Copy)

This document and its content are the copyright of ERO Mining Ltd. The document has been written by Fran Parker for submission to the Northern Territory Department of Mines and Energy as part of the tenement reporting requirements as per Regulation 126 of the Minerals Titles Act. Any information included in the report that originates from historical reports or other sources is listed in the “References” section at the end of the document. All relevant authorisations and consents have been obtained. Authorisation is hereby given for the department to copy and distribute the report and associated data.
# TABLE OF CONTENTS

SUMMARY ........................................................................................................................................ 3

INTRODUCTION ................................................................................................................................ 4

LOCATION AND ACCESS ................................................................................................................ 5

TOPOGRAPHY AND DRAINAGE ..................................................................................................... 6

CLIMATE AND VEGETATION .......................................................................................................... 6

TENURE ............................................................................................................................................ 6

NATIVE TITLE ................................................................................................................................... 7

ABORIGINAL SACRED SITES ......................................................................................................... 7

REGIONAL BASEMENT GEOLOGY ............................................................................................. 7

CAINOZOIC REGIONAL GEOLOGY .......................................................................................... 8

DEPOSITION AND WEATHERING ........................................................................................... 9

MINERALISATION AND PROSPECTS .......................................................................................... 10

PREVIOUS WORK .......................................................................................................................... 11

WORK CONDUCTED DURING CURRENT TENURE ................................................................. 11

REFERENCES ................................................................................................................................ 12

# TABLE OF FIGURES

Figure 1 - Strangways Project, Location of EL 29904 ................................................................. 5
SUMMARY

EL 29904 was originally part of SEL 25055 but in amendments to the Mining Act in 2012 limited the size of exploration licences to 250 blocks and so the tenement was subdivided. All work done on EL 29904 has been previously reported in reports submitted on EL 25505. Thus, no results are submitted with this report.
INTRODUCTION

The Strangways Project comprises 3 tenements,

- EL25055 Strangways (100% Flinders Mines Limited)
- EL25056 Mud Tank-Alcoota (100% Flinders Mines Limited)
- EL 29904 (100% Flinders Mines Limited)

This report is concerned with EL 29904 which was created by the subdivision of EL 25055.

NuPower Resources Ltd (now Central Australian Phosphate), through the joint venture had the right to explore for the energy minerals uranium, thorium and coal and was therefore targeting secondary uranium mineralisation and coal in Tertiary palaeochannels and primary uranium-thorium mineralisation in the Proterozoic metamorphic basement rocks of the Arunta Block/Strangways Metamorphic Complex.

In 2013 NuPower (then Central Australian Phosphate) and Maximus Resources Ltd formally withdrew from the joint venture.

BACKGROUND

Flinders Mines Ltd (FMS) initially (as Flinders Diamonds Ltd) applied for exploration licenses in the Strangways Ranges region to explore discrete regional dipolar magnetic anomalies that were thought to be indicative of diamondiferous kimberlitic or lamproitic pipes. Four licenses were granted in December 2001 for four years.

Exploration for diamonds included regional interpretation, regolith map compilation, ground magnetic surveys, RAB drilling and heavy mineral sampling. Although the results were generally disappointing follow up of the source for indicator minerals from at least 2 samples and sampling of the catchments draining the Woolanga Lineament were recommended.

Exploration of the Bleechmore dykes highlighted the potential for vermiculite and FMS carried out a program of ground magnetic and gravity traverses, hyperspectral TM traverses, excavation of trenches, vacuum bedrock drilling, RAB/aircore drilling and core drilling. A significant vermiculite resource was defined over an area of 400mx50m to a depth of 42m and processing testwork was carried out. Further testwork and marketing studies were recommended.

Teck Comminco-BHP Billiton entered into a JV with FMS to explore for base metals, targeting Broken Hill style massive sulphides associated with the contact of major bimodal volcanic sequences and overlying sediments. The work comprised reviews of historical data, ground magnetic traverses and geological traversing with rock chip sampling. With the exception of the known base metal occurrences the work did not identify any base metal anomalies worth follow up.

In 2005 FMS sold the non-diamond rights to Maximus Resources Ltd (MXR). The original four licenses were surrendered for 2 substitution licenses and MXR intended to explore the base metal potential of the two areas.

NuPower became interested in the area following successful early results of an airborne electromagnetic survey (AEM) in 2007 over its own tenements in the Aileron region that identified palaeochannel and basinal structures that were believed to contain considerable thicknesses of unconsolidated Cainozoic sediments that could act as suitable hosts for secondary uranium deposits. NuPower had adapted as its exploration model one from South Australia where uraniferous basement rocks in the Flinders Ranges are the primary source areas for uranium. During the weathering process this uranium is dissolved in oxidized groundwaters and remobilised into the surrounding Cainozoic basins where it reprecipitates on encountering reducing conditions and has been responsible for the formation of the sandstone hosted Beverley and Four Mile deposits.
In central Australia uraniferous basement rocks are widespread in the Arunta Block of the Reynolds and Strangways Ranges. Limited previous exploration for Cainozoic sediments to host secondary deposits had identified locally thick sequences beneath the Burt and Ti Tree Plains that encouraged NuPower to undertake regional AEM surveys to explore for them as potential hosts for secondary mineralisation. This successfully located extensive and deep sequences of prospective sediments that accumulated in part as a result of substantial neotectonics that has been largely underestimated.

In exploring for prospective Cainozoic sediments in the vicinity of the Strangways Ranges the plains in the northern parts of the MXR tenements were targeted for potential southeast extensions of the structures controlling the southern margin of the Ti Tree Basin where the Cainozoic succession is over 300m thick in the Woodforde area of NuPower’s ground.

**LOCATION AND ACCESS**

The Strangways area is located approximately 90 kilometres northeast of Alice Springs, in the Strangways Ranges region, (Figure 1) covering parts of Bushy Park, Yambah, The Gardens, and Mt Riddock stations and the Alcoota Aboriginal Corporation Station.

The Plenty Highway, that branches east from the Stuart Highway, runs east-west through the northern part of the area and is sealed for the most part. The Arltunga Tourist Drive Road runs east-west across the south and the Pinnacles Road (Binns Track) links the Arltunga Road and Plenty Highway through the eastern side of the area. A good graded road, the Delmore Downs road, provides access to the northeast of the area.

Local vehicle access is provided by a network of pastoral station bore tracks and fence line tracks. These are locally overgrown or eroded and while many tracks are shown on available topographic maps some are no longer accessible and there are some new tracks not shown.

Unsealed airstrips are located at Bushy Park and Mud Tank in the northern part of the area.
TOPOGRAPHY AND DRAINAGE

The southern part of the region, south of the Plenty Highway, is dominated by rugged mountainous terrain of the Strangways and Utnalanama Ranges rising to in excess of 900m ASL and the less mountainous Narbib Range in the southernmost part, (Figure 1). The highest point is Mt Pfitzner at 1066m ASL. North of the Highway the area is mostly flat at around 650mASL and incised by streams and tributaries of the Edwards, Mueller, Gillen and Anamarra Creeks draining northwards from the ranges. Weathering is more intense here and much of the area is covered by colluvium, sheetwash, silcrete, calcrete and laterite. This is punctuated in the northeast by Mt Bleechmore that rises to over 750m ASL.

In the south the ranges are drained by Harry, Hale and 17 Mile Creeks draining west south and east respectively, and the headwaters of Gillen Creek that drains to the north.

CLIMATE AND VEGETATION

The climate is mainly dry all year round with hot summers and cool to cold winters. Average annual rainfall, based on records from the nearest Bureau of Meteorology stations at Alice Springs and the Territory Grape Farm ranges from 280-305 mm, most of which falls in the October-March period. Average minimum and maximum temperatures in summer range from 21.4-37.6 degrees and from 4-19.7 degrees in winter.

Vegetation is highly variable from the plains to the mountain ranges. On the plains to the west and north tall open Mulga shrubland with open Woolybutt grassland understorey is dominant, giving way eastwards to tall open Mulga shrubland with open Fuchsia shrubland understorey on the high country with low open Ironwood and Whitewood, River Red Gum and Tea Tree woodland with open grassland understorey in the valleys. To the east this is replaced with Witchetty Bush Acacia shrubland with open Cassia (Fuchsia) shrubland understorey and tall sparse Mulga Shrubland with grassland understorey on the ranges.

TENURE

EL 29904 originally formed part of SEL 25055 which consisted of 375 blocks and covered approximately 1,118 square kilometres. SEL25055 was granted to Flinders Mines Ltd (then Flinders Diamonds Ltd) on 13th June 2006 for a period of four years.

Flinders Diamonds Ltd then joint ventured the non-diamond rights for the two licenses to Maximus Resources Ltd, (MXR).

In January 2008 NuPower Resources Ltd entered into an agreement with Maximus Resources to explore the licenses for energy minerals; uranium, thorium and coal.

In 2013 NuPower (then Central Australian Phosphate) and Maximus Resources Ltd withdrew from the joint venture.

In 2013 EL 25055 was subdivided following a change in the Mining Act which restricts the size of any licence to 250 blocks. The new licence, comprising the southern portion of EL25055 is EL 29904. No new work has been carried out on this tenement.

The license covers parts of the following perpetual pastoral leases:

EL29904,

NT Portion 4029, PPL 1032, Alcoota Aboriginal Corporation Station
NT Portion 687 PPL 1132, Bushy Park Station
NT Portion 3676 PPL 989, Mt Riddock Station
NT Portion 662 PPL 662, The Garden Station
NT Portion 641 PPL 904, Yambah Station.
NATIVE TITLE
A joint ILUA and Exploration Agreement for both tenements between the Central Land Council (CLC) and Flinders Diamonds Ltd (FMS), satisfying all Native Title requirements, was executed on 13th November, 2002. Subsequently a Deed of Assumption between CLC, FMS and MXR was executed on 10th October 2006. A Letter of Agency between MXR and NuPower was executed on 19th August 2008.

ABORIGINAL SACRED SITES
Prior to undertaking reconnaissance exploration in the area NuPower NuPower applied to the Aboriginal Areas Protection Authority (AAPA) on 09/09/08 for an Inspection of the Register of Sacred Sites that was issued on 01/10/08.

This shows numerous Sacred Sites and Restricted Works Areas throughout the tenement.

REGIONAL GEOLOGY AND MINERALISATION

REGIONAL BASEMENT GEOLOGY
The licenses are underlain predominantly by Palaeoproterozoic sedimentary, volcanic and intrusive rocks of the Strangways Metamorphic Complex (SMC), forming part of the eastern Arunta Block (Error! Reference source not found.), that has a long accumulation and deformatinal history, the basal unit of which has been dated at 1810Ma (Claoue–Long et. al., 2005).

Deformation and metamorphism were multi-phase (Maidment et. al., 2005). The initial metamorphism and deformation took place around 1780Ma under amphibolite to granulite facies conditions of the Strangways Orogeny referred to as the Early Strangways Event. These rocks were then exhumed and eroded to form the basement on which the Ledan Package (Mendip Metamorphics, Leadene Schist and Utopia Quartzite) was deposited. The rocks of the Ledan Package and the underlying basement were then metamorphosed at amphibolite facies during the Late Strangways Event, at around 1720Ma.

According to Clerk et. al., (2007) the rocks of the SMC were reworked at around 1645Ma during the Liebig Orogeny, the structural character of which dominates the area. Further deformation then took place during the Chewings Orogeny, 1590-1560Ma.

Carbonatites were intruded along the NW-trending Woolanga Lineament around 730Ma. At Mud Tank the carbonatite complex comprises a series of lenses emplaced along a ductile shear zone. Each lens consists of a carbonate core surrounded by mica-rich zones, emplaced into granitoid cataclasites, mafic granulites and rare lenses of aluminous rocks (Currie et. al., 1992).

Further significant reworking took place from the Cambrian through to the Carboniferous, commencing with extensional deformation, mafic magmatism and high-grade metamorphism of the Harts Range Metamorphic Complex in the interval 510–460Ma. Compressional deformation continued, probably intermittently, until 300Ma, during the long-lived Alice Springs Orogeny (Scrimgeour, 2006). North over south ductile thrusting of the SMC granulites occurred around 430-390Ma when the Wallaby Knob Schist Zone, exposed south of Bushy Park homestead, was reactivated, (Goscombe, 1991).

LOCAL BASEMENT GEOLOGY
The Strangways Ranges in the southern part of the area consist mostly of units of the Cadney Metamorphics (pEsc) comprising calc-silicate rocks, marbles, sillimanite-biotite, garnet-biotite and quartzofeldspathic gneisses, felsic and mafic granulites, quartzites and amphibolites. This group also hosts the Southern Cross Schist Zone (Pzr/Prs) of retrogressed greenschist facies muscovite-biotite and kyanite schist with relict bodies of sillimanite quartzofeldspathic gneiss and amphibolite.

Separated from the Cadney Metamorphics by a major fault zone in the northeast are rocks of the Hillsoak Bore Metamorphics (pEU) that include quartzofeldspathic, biotite and sillimanite gneisses, migmatites,
amphibolites, mafic and felsic granulites and calc-silicate rocks. These rocks host the West Bore Schist Zone (Pzr/Prw) that consists of retrogressed greenschist facies biotite, muscovite-biotite and quartzo-feldspathic schist, quartzite, amphibolite, and calc-silicates.

The northwestern part of the Strangways Ranges here is composed of various quartzo-feldspathic, felsic and mafic granulites and biotite and biotite-garnet gneisses, (pEsp). Here the Yambah Granulite (pEsy) also contains migmatites, cordierite granulate, quartzite and magnesian-rich rocks.

In the southwest part of the Strangways Ranges units of the Erotonga Metamorphics (pEsr1,2) include cordierite gneiss, mafic granulate, and a layered sequence of felsic granulate and cordierite felsic granulate with rare calc-silicates.

Further south in the Wuluma Hills and Utnalanama Range the Erotonga Metamorphics are intruded by two separate felsic bodies. In the Wuluma Hills the Wuluma Granitoid (pEsw) contains rafts of sillimanite gneiss and in the Utnalanama Range tonalitic-dioritic hypersthene granofels of the Utnalanama Granulite (pEsu) is interlayered with mafic granulate of the Johanssen Metagabbro (pEsj) and meta-anorthositic gabbro of the Harry Anorthositic Gabbro (pEsh).

In the southwestern corner the Nabib Range is underlain by rocks of the Ankala (pEa) and Sliding Rock Metamorphics (pEi) comprising hornblende, sillimanite, garnet-biotite, and quartzo-feldspathic gneisses, amphibolites, migmatites, calc-silicates and meta-ultramafics. These metamorphics also host retrogressive greenschist facies schist zones (Pzr). A small body of Late Proterozoic Gum Tree Granite (Pgg) is also present here consisting of porphyritic granite with numerous acidic dykes.

North of the Plenty Highway the Mt Bleechmore massif is underlain by Mt Bleechmore Granulite (pEe) consisting of sillimanite-garnet-biotite quartzo-feldspathic gneisses, garnet-K feldspar migmatites, mafic granulites, plutonic migmatites and rare calc-silicates. The massif also contains small bodies of mafic granulate and amphibolite (pEea) and garnet plutonic migmatite, (pEeg).

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 Strangways Project covers a small area of the most eastern part of the Ti-Tree Basin (Error! Reference source not found.), and its join with the Waite Basin.

The stratigraphy of the intermontane Cainozoic basins of the southern NT region is generally poorly known. This is attributed to a lack of outcrop, 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.

Water bores throughout the Alice Springs region provide only limited stratigraphic information on the upper parts of the Cainozoic as they rarely exceed 100m in depth and are typically <50m deep. Limited stratigraphic drilling was undertaken in the southern NT region by both the BMR (now Geoscience Australia) and the NTGS during the 1960’s and 1970’s. These programs have been summarised (Senior et al., 1994) from which a single paper (Senior et al., 1995) was published. These sources provide almost all of the stratigraphic information on the Cainozoic Basins.

Historical exploration in the Ti Tree Basin include a traverse of six drillholes in the western part of the Basin by CRA Exploration that indicated that, in places, the unconsolidated sediments are in excess of 300m deep. During the late 1970’s and early 1980’s the relatively small Hale Basin (Error! Reference source not found.) was explored extensively for coal (lignite) and sedimentary uranium and is considered to be the best known Cainozoic basin in the NT. The stratigraphy of the Hale Basin is summarised (Error! Reference source not found.)
Based upon drilling in the Hale Basin, a broad two-fold stratigraphic subdivision was defined (Senior et al. 1994) that corresponds well with the observed pattern of Cainozoic sedimentation elsewhere in southern Australia. It comprises a restricted, fluvial palaeochannel dominated Palaeogene succession (Hale Formation) overlain by a more widespread, dominantly lacustrine Neogene succession (Waite Formation). An additional stratigraphic unit, the Napperby Formation has since been recognised by NuPower as overlying the Waite Formation and represents the development of prograding alluvial fans shed from the ranges flanking the Cainozoic Basins.

Strong affinities with Eocene palaeochannel sediments in southern Australia suggest that the Hale Formation should be further subdivided into a Upper subdivision (Late Eocene), comprising the Tug Sandstone Member and representing development of a widespread ‘sand sheet’; and a Lower subdivision (Early-Middle Eocene) recording a fining upwards trend from the fluvial Ambalindum Sandstone Member to the paludal Claraville Mudstone and Ulnamba Lignite Members.

Whilst Cainozoic stratigraphic units were initially defined in separate, small and isolated Tertiary Basins (Senior et al. 1994), these units are now recognised as components of a much larger Tertiary palaeodrainage system, the extent and size of which has until now been vastly underappreciated.

Both historic and recent drilling results indicate that the apparently isolated Tertiary Basins contain very thick sedimentary packages. The Cainozoic fill of the Burt Basin exceeds 200m and the Sixteen-Mile Basin contains at least 180m of sediment. Similarly, the Whitcherry Basin and Waite Basins are known to exceed 250m in thickness in some locations, whilst minor tributaries feeding the Ti-Tree Basin contain up to 140m of sediments. The maximum thickness of the Cainozoic sediments in the Ti-Tree Basin is not currently known but thicknesses of 400-500m of sediments are considered to be likely in the deeper portions of the basin.

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). Deep weathering was an ongoing process during the Tertiary but was enhanced at particular times by the combination of periods of warm, humid climates, non-deposition and surface exposure. Three Palaeogene weathering events have been defined (Senior et al. 1995) which affected Arunta igneous and metamorphic basement rocks and the overlying Tertiary succession. An additional two weathering events have been recognised from the overlying Neogene succession and appear to correlate with similar periods of weathering and exposure evident in southern Australia.

Weathering Event A (Senior et al. 1994, 1995) occurred during the Late Cretaceous to Early Tertiary (Palaeocene). Trizonal weathering profiles were 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) and is then capped by a ferruginous or (laterite/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 fluvo-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. Fluvial sands of the Ambalindum Sandstone Member fine upwards into the paludal Claraville Mudstone and Ulnamba Lignite Members.
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 fluvialite and lacustrine limestone, sands, muds, and sandy conglomerate in localised depocentres.

The upper portions of the Waite Formation are regionally extensive and consist 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. Two gradational upwards cycles from clays to dolomitic clays to dolomitic limestones (often capped by chalcedonic limestones and silcretes) are commonly observed, suggesting that deposition of the Waite Formation occurred in at least two phases. Weathering Event D was responsible for the formation of the inter-Waite Formation silcrete (possibly in the Middle Miocene).

Outcrops of the Waite Formation are frequently capped by calcretised limestones and distinctive chalcedonic silcretes that form regionally widespread stratigraphic markers. Development of these more variable duricrusts occurred in response to Weathering Event E.

In proximal locations, the Waite Formation interfingers with, and is conformably overlain by a moderately thick (<60m) succession of oxidised colluvial material shed off the Woodforde and Reynolds Ranges in response to neotectonism during the (? Late) Pliocene. This material can be recognised throughout the region and represents a broadly coarsening upwards alluvial fan which can be subdivided into an Upper, Middle and Lower Members. 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. Ferruginised, haematitic alluvial palaeosols (bearing a strong resemblance to modern soils) are a characteristic feature of the Middle Member with palaeosol development potentially corresponding to Weathering Event E (or recording another period of enhanced weathering). The unit is probably also present in the Strangways area.

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 Strangways Ranges have formed alluvial plains and overbank deposits alongside sandy drainage channels. In more distal locations, the development of aeolian sand plains was widespread. The formation of calcrites, particularly within drainage channels and atop the Waite Formation, was widespread during the Quaternary (Weathering Event E).

MINERALISATION AND PROSPECTS
The Strangways region hosts a broad range of mineralizing styles and base metal deposits that include, (Error! Reference source not found.);

- Cu-Pb-Zn deposits at Gecko, Rankins Gumtree, Utnalanama (Johanssen’s Phlogopite Mine), Edwards Creek and Glancroil.
- Cu-Au deposits at Johnnies Reward, Pinnacles and Turners.
- Vermiculite-REEs at Bleechmore Dykes and Mud Tank.
- Au in the Arltunga-Winnecke Goldfields.
Base metal and gold mineralisation deposits in the SMC deposits discovered to date are currently uneconomic with the maximum combined Zn+Cu+Pb content at around 4%, (Hussey et al., 2006). The base metal deposits are interpreted as syngenetic massive sulphide stratabound deposits of Broken Hill type of Palaeoproterozoic age.

The Cu-Au deposits are interpreted to be of epigenetic fault-related origin, or possibly metamorphosed iron oxide-Cu-Au deposits, but still of Palaeoproterozoic age.

A vermiculite prospect at Mt Bleechmore located in EL25056 13km NNW of Gemtree was explored extensively and drilled by FMS in 2002-2003.

The Arltunga-Winnecke Goldfields mineralisation is controlled by Palaeozoic structures as either retrograde shear zones or faults and breccias.

Other mineralisation is considered to be related to deformation and fluid flow during the Alice Springs Orogeny. According to Scrimgeour (2006) during the latter stages of the Alice Springs Orogeny, in the Carboniferous, significant amounts of fluid were mobilised along shear zones in a belt that trends southeast from the Napperby region through to Arltunga, resulting in significant mobilisation and deposition of gold.

This includes the Winnecke-Arltunga goldfield that straddles the boundary between the SMC and the Neoproterozoic Amadeus Basin, where mineralisation is hosted by retrograde greenschist zones (Swarnecki, 2004).

The Bruce’s Cu-Au prospect (in the Harts Range Metamorphic Complex) and much of the uranium and rare-earth mineralisation in the eastern Arunta can also be attributed to large-scale Paleozoic fluid-flow events including Arafura Resources’ Nolan’s Bore REE-phosphate-uranium deposit. This deposit, hosted by the Boothby Gneiss is located approximately 100 kilometres WNW of the Strangways licenses.

In addition to base metals and gold prospects there are several mica occurrences. A small quantity of phlogopite was mined during the 1940s from Johanssen’s phlogopite mine, in SEL25055 north of the Arltunga Road. Vermiculite is currently being mined from the Mud Tank carbonatite by Australian Vermiculite Industries and there is a vermiculite/phlogopite prospect about 15km NNW of Gemtree.

**PREVIOUS WORK**

There has been considerable exploration for gold and base metals in the region. This has been summarized in previously submitted reports for EL 25055

**WORK DURING CURRENT TENURE**

No work has been conducted on EL 29904 since it was created by the subdivision of EL 25055 and all work is described in reports for that tenement submitted previously.
REFERENCES


