Annual Report for

MCC968

for the year ended 26 June 2012

Kurundi Project
Northern Territory

Held by: Cairns Territory Pty Limited
Operated by: Northern Minerals Limited

Author: K. Warburton
Date: 12 September 2012
NTU Report No: 2012-23

SUMMARY:

Location: MCC968 is located approximately 400kms NNE of Alice Springs and 100km SE of Tennant Creek. The eastern part lies on the western edge of Kurundi Station, and the western part lies on Aboriginal freehold land of the Warumungu Aboriginal Land Trust.

Geology: The mineral claim is a small area of approximately15 Ha that covers the contact between Warramunga Group volcanics and sediments to the west of the ridge, and sheared and silicified felsic porphyry, which forms the ridge.

Work Done: No on-ground exploration was completed during the reporting period.

Results: Lack of exploration access for the purposes of completing diamond drilling have hampered exploration progress. The CLC on behalf of the Aboriginal Traditional Owners of the area have requested that no exploration be carried out on MCC968.

Conclusions: More work is required in the immediate area of the historical Munadgee uranium mine workings to ascertain the nature and extent of the mineralisation. Deeper diamond drilling under the workings is recommended to test for depth extensions of the mineralisation. This work will only be implemented once negotiations with Aboriginal Traditional Owners over exploration access have been successfully concluded.

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1.0 Introduction

This report details exploration activities conducted on MCC968 between 27 June 2011 and 26 June 2012.

2.0 Location

MCC968 lies approximately 400kms NNE of Alice Springs and 100kms SE of Tennant Creek (see Plate 1). It is located on the western boundary of Kurundi Station.

3.0 Geomorphology

Topographically, MCC968 covers part of a low ridge that lies several kilometers north and east of the Murchison Range in an area of low hills. A partial Landsat image of bands 731 in which the varying geomorphological units are relatively easily identified is shown in Figure 1 below. Relatively open grasslands are indicated in fluoro green and bound the major drainage channels which form deeply incised ghost gum lined streams. Darker green/brown colours in drainage areas are fairly thick regions of wattle and mulga and are to be avoided. More open wattle and spinifex covered plains are shown in brown tones. Outcrops of silica rich lithologies such as quartz veins, granites, cherts and sandstones have blue/purple hues. Saprolitic or clay rich areas are shown in white.

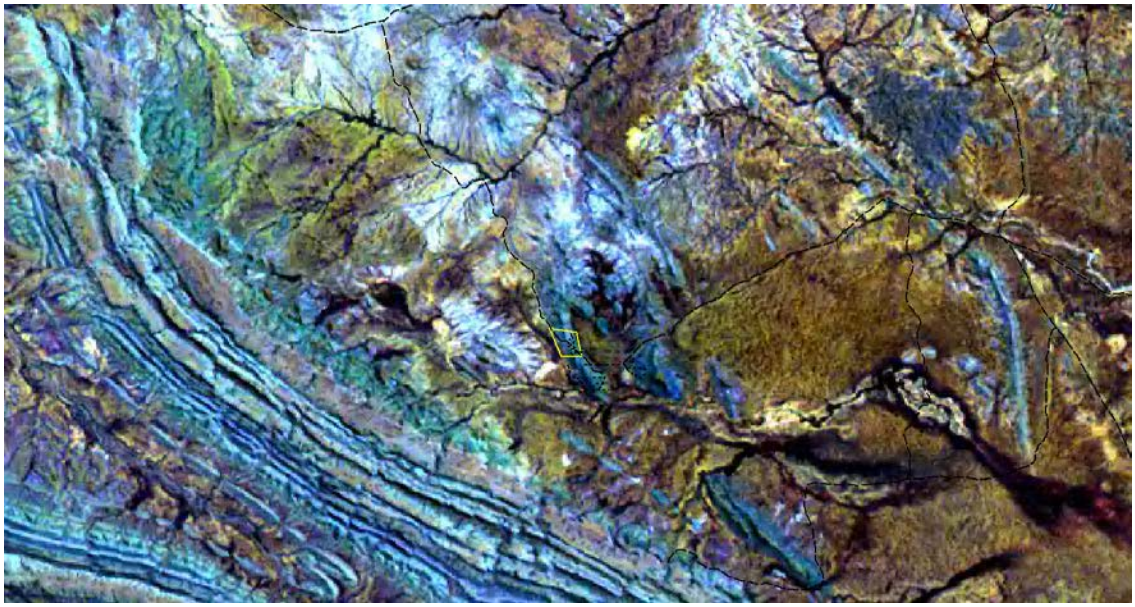


Figure 1. Landsat TM, false colour image of bands 731showing MCC968 in yellow (centre).

Skeletal soils and scree form the dominant regolith type over many of the more elevated ridges and ridge slopes. Ridge caps are often outcrop exposures while hill sides generally consist of uphill sourced colluvial material.

All streams flow intermittently during the ‘wet’ season which ranges from October to March. Numerous waterholes are located along the individual streams although only few are permanent. Annual rainfall is in the region of 300mm.

4.0 Access

Access can be gained via the unsealed Wauchope-Epenarra road past the Kurundi Homestead and then by station tracks east of Kurundi Creek going northwest to the mineral claim.

5.0 Tenure

MCC968 is held by Cairns Territory Pty Limited. Northern Minerals Limited (formerly known as Northern Uranium) is the current operator pursuant to an option agreement entered into with Cairns Territory on 20th June 2007. Prior to July, 2008, MCC968 was incorrectly mapped to the east of the Munadgee mine, and wholly contained within tenement EL23937. This has been corrected by the NT DRDPIFM and is now correctly plotted lying along the western edge of EL23937 and EL24995, tenements both held by Ferrum Crescent (formerly known as Washington Resources), from whom Northern Minerals acquired the uranium rights to these tenements in 2006.

Table 1 – Tenement Summary

Tenement ID	Tenement type	Holder	Operator	Status	Grant Date	Expiry Date	Area (km^2)
MCC968	Mineral Claim	Cairns Territory Pty Ltd	Northern Minerals Ltd	Granted	27/06/1989	26/06/2019	2.77

6.0 Regional Geology

MCC968 lies within the Davenport Province at the southern part of the Tennant Creek Inlier. The regional basement rocks are Proterozoic (1870Ma) deepwater marine interbedded greywacke, siltstone and minor porphyritic felsic volcanics of the Warramunga Group which were moderately to tightly-folded about 1810Ma. The Warramunga Group is intruded by members of the Tennant Creek Supersuite. This includes the Hill of Leaders Granite (Pgb) which outcrops extensively to the northwest of mineral claim. It is a multi-phase, fractionated granite and characterized by large orthoclase phenocrysts up to +5cm in diameter. A coarse-grained biotite granite has also been recorded but may simply represent another phase of the Hill of Leaders Granite. The easterly flowing Munadgee Creek and the NW flowing Kurundi Creek mark the southern boundary of the granite which is otherwise enclosed within Warramunga Group.

The Kurundi Anticline lies to the south west of the mineral claim and the nose of the McLaren Syncline which wraps around its northern side marks the northern boundary of the Wauchope Fold Belt. This area is composed of the Hatches Creek Group which is shallow water sedimentary rocks (arenites, felsic and mafic volcanic, siltstone, mudstone, shale, carbonates and possible evaporates) deposited sometime between 1810Ma and 1640Ma. Quartz arenites usually occur as ridges and lithic or feldspathic arenites often have a clay or micaceous matrix and are recessive. The three subgroups of the Hatches Creek Group (Hanlon Subgroup, Wauchope Subgroup and Orradidgee Subgroup) are present in the surrounding areas.

The Orradidgee Block contains MCC968 (Plate 2) and is fault bounded against the Wauchope Fold Belt, Pingelly Block and Edmirringee Block. It is composed of sediments deposited in a shallow marine to fluvial environment, including deltaic sequences. Bimodal volcanism is recorded in formations of the Epenarra Volcanics and Edmirringee Volcanics belonging to this subgroup. This includes felsic volcanic, volcanic breccias, agglomerates and minor sediments in the former while the latter is characterized by basalts, mafic schists and minor felsic volcanism. Plate 2 displays a stratigraphic column for the region. Within it the

Warramunga group units have been intruded by a series of granites, all of which may predate the Hatches Creek Group.

Middle Cambrian shallow marine and sub-aerial sediments including siltstones, micaceous arenites and minor grit and conglomerate phases overlie the earlier lithologies in the northeast.

The region has undergone poly-phase deformation (NTGS) and been moderately- tightly folded (especially obvious in the ranges to the south). Regional northwest – southeast trending shear zones inferred by the NTGS transect to the south west of the mineral claim. The more intense deformation appears to have affected the Ooradigee group with several intense zones of shearing evident on the ground and backed by linear features on the aeromagnetics. Some of the contacts with the Hatches Creek Group may in fact be structural.

A large structure is evident on the recently flown aeromagnetics with a southeast – northwest trend crossing the Hill of Leaders granite in the vicinity of the old tungsten mines. It is expressed as a linear magnetic low trending over several kilometres.

Warping of lithologies associated with late granite intrusions may have occurred locally and affected orientations of the regional structures. The strength of these signatures is relative to the size and distance from the intrusive bodies. Late brittle faults with a roughly north-northwest to north orientation offset lithologies by tens of meters. This is particularly evident in the HCG sediments where drainage channels often exploit these fault zones.

7.0 Local Geology

The mineral claim covers 15.69 Ha over part of a low ridge. The ridge is a sheared felsic porphyry with silicic and potassic alteration zones. The western side of the ridge is interpreted to be a sheared contact with Warramunga Group volcanic and sediment.

7.1 Lithology

Four distinct rock packages have been recognized in the surrounding area of the mineral claim, the Warramunga Group, volcanics of unspecified origin, the Hill of Leaders granite suite and the overlying Hatches Creek Group.

The Hill of Leaders granite forms an elongate body trending sub parallel to the regional NW –SE strike. It appears to be of relative uniform composition and is traversed by several late dykes and structures.

Warramunga Group sediments are situated in an anastomosing belt, wedged between the Hill of Leaders granite to the NE and the younger Hatches Creek Group sediments to the southwest. HCG sediments dominate the southwestern corner of the area investigated. Several conglomerate outliers have been mapped although the main contact between the former and Warramunga sediments appears to be faulted. Volcaniclastics with an unspecified grouping dominate the southeastern extension of the Warramunga sedimentary package. The NTGS has placed the volcanics into a suite younger than the Hill of Leaders granite however aeromagnetic and structural data indicates that they are heavily deformed and folded and precede the granitoid. Minor volcanic units are present elsewhere in the Warramunga Group and it is likely that the lithologies belong to this rock suite.

In the immediate area of MCC968, volcanic and sedimentary lithologies dominate. A northwest – north-northwest trending quartzite or silicified zone delineates the southwestern contact of volcanic units with sedimentary rocks. The volcanics have been identified as feldspar porphyry intrusives, however locally there is some evidence to suggest that the rocks may be of volcaniclastic origin, mainly in the form of textural evidence near the Munadgee mine.

Hatches Creek Group conglomerate and sandstone overlie the older lithologies 400m southeast of the mineral claim area. These sediments form part of an unconformity surface in this area.

On second vertical derivative aeromagnetic imagery a circular zone of diffuse magnetic anomalism is apparent, centered approximately 1km east of the Munadgee historical mine workings within MCC968. This has been inferred to be an unexposed granitoid with dimensions of approximately 3 x 2km with a NW- SE long axis. The depth of the intrusion below the current surface is unknown. A relatively shallow depth of emplacement (3-4km depth) is suggested by the large amount of cataclastic brecciation found in peripheral quartz veining.

To the east of the mineral claim large quartz veins and breccias have intruded major inferred structures which form the eastern contact of the volcanic units. Quartz veins fall into three main categories in the immediate Munadgee mine workings area:

(i) sheeted vein systems, generally discontinuous but strike extensive and in zones up to 10m wide;
(ii) tension veins, not as extensive, millimetre– to decimetre-scale, cross-cutting the rock package and often containing peripheral breccia clasts;
(iii) large (metre-scale) quartz veins, possibly very early and following original lithological contacts. In the quartzite these veins take on the shape of centimetre- to metre-scale sheeted vein system almost exclusively hosted in the latter.

A late hematite (or potassic) altered quartz porphyry has intruded one of the early large metrescale quartz veins ~700m SSE of the Munadgee mine workings. This rock has a cherty appearance with weakly developed quartz (or altered feldspar) porphyroblasts. It contains a millimetre-scale, grey–clear quartz vein stockwork that is the main host of the known uranium mineralization on the prospect. The dyke has been mapped discontinuously over approximately 200m and forms the main target-style for uranium mineralization in the project area at this stage.

7.2 Structures

Three major structures transect the surrounding area of MCC968 (Figure 2 overleaf). A sinistral strike – slip fault forms the contact between the Hatches Creek Group and Warramunga Group sediments south of the mineral claim area. Due to the presence of an unconformity between these two units the attitude of the fault is unknown. In the project area the unconformity surface does not appear faulted with the main structural contact referenced above possibly forming part of an original extensional fault system.

A second major structure is located along the contact of the Hill of Leaders granite and the Warramunga Group. This is marked by an extensive quartz breccia ridge and appears to have offset the volcanic units dextrally by approximately 2km. The structure also bounds the northern contact of the inferred small intrusive east of Munadgee.

The third and most important feature is an anatomising fault network that links the structures in a NW – SE direction. The network forms an approximately 500m wide corridor and transects the southern half and contact of the inferred intrusive as well as the overlying volcano-sedimentary package. Major movement on these structures appears to have been dextral as evidenced by tension vein arrays and folding. All significant uranium mineralization found to date lies within this fault system. All units are steeply (southwest?) dipping in the immediate Munadgee vicinity. The pre – HCG volcano-sedimentary rock package is tightly folded with a steep northerly plunge displayed in some areas. A dominant sinistral movement can be inferred from mapped evidence as well as magnetic lineaments.

A large scale synformal fold closure has been mapped 1km east of Munadgee, where sandstone and volcanic are folded about a NW trending fold axial surface. North of Munadgee the western limb of the synform displays dextral (S-shaped) symmetry. A number of parasitic fold closures have been mapped in this region.

In many cases lithologies and early structures are heavily overprinted by a late, steeply-dipping northwest striking regional penetrative foliation. This hinders recognition of early contacts, structures and bedding planes on the ground especially in the volcanic units. Note that the tension veins in particular often display some degree of folding as well as the late penetrative foliation overprint. At least a 10% compression of the rock-package is inferred from the evidence related to the formation of the penetrative foliation event.

Late faults displaying offsets over several metres are evident in the quartzite and larger quartz veins. These appear to be of little economic importance although they should be kept in mind due to their offsetting characteristics in any drilling operations. A flat fabric is also often locally developed in the volcaniclastic unit. This may be an effect of top loading of the now eroded younger Hatches Creek Group.

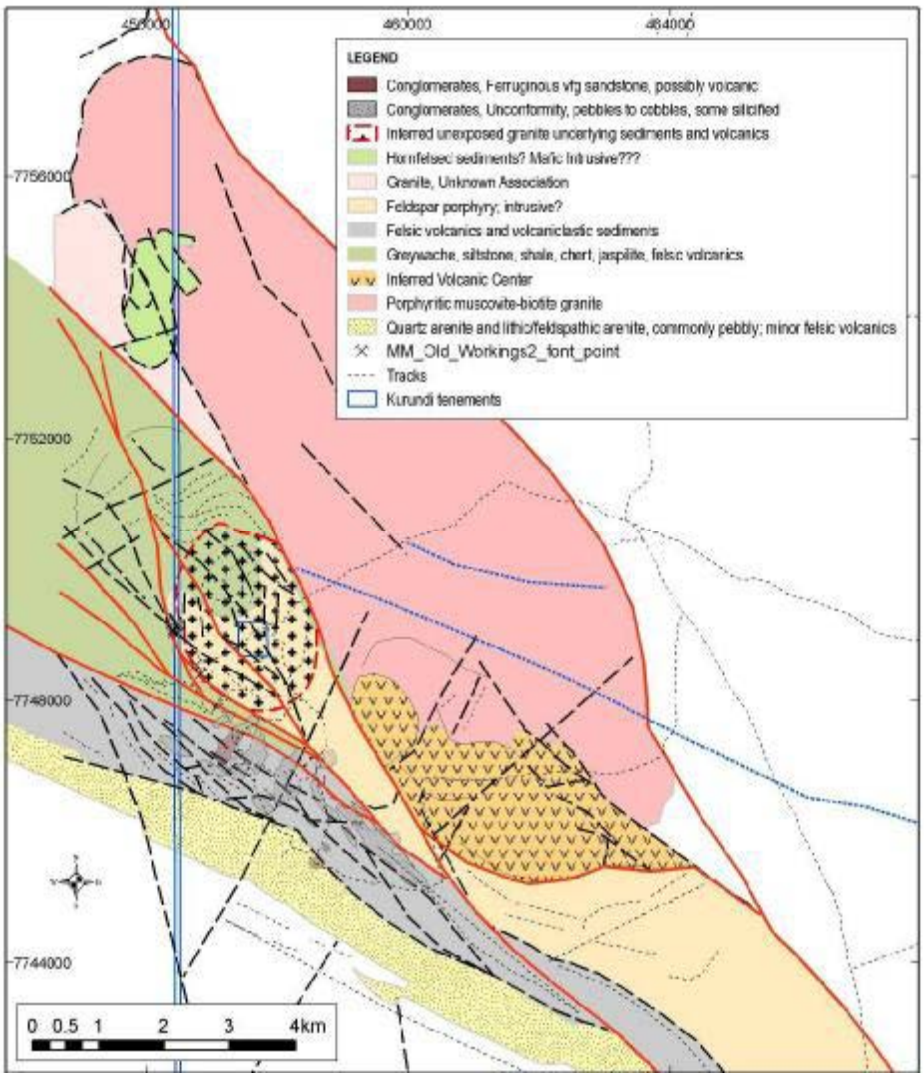


Figure 2 - Solid geology with major structures highlighted

8.0 Work Completed

No on-ground exploration was completed during the reporting period. A meeting was held on 30th October 2008 in Tennant Creek, between the Company, the Central Land Council (CLC) and Traditional Owners, regarding the proposed exploration program at the Kurundi Project and particularly on MCC968. The Company was informed by the CLC that Traditional Owners have significant sacred site protection concerns with respect to exploration activities on MCC968. Traditional Owners requested that Northern Minerals (formerly Northern Uranium) not carry out any further exploration on MCC968, and permission is not given for the Company to work on the Aboriginal land portion of the Mineral Claim. As a result of this request, Northern Minerals has not conducted any further on-ground exploration on MCC968 in the intervening years from 2009 to 2012.

9.0 Proposed Work

Further work is proposed on the Mineral Claim in the form of diamond drilling underneath the historical Munadgee mine workings to test for depth extensions of the known uranium mineralization. The intended program is likely to comprise 2-4 holes drilled to depths of 200-250m. Prior to commencing drilling a new authority certificate will be applied for from the Aboriginal Areas Protection Authority (AAPA) with respect to Aboriginal Heritage sites. The existing 50m exclusion zone around the Munadgee mine workings means that testing immediately below the Munadgee workings will not be possible and the drill holes will most likely need to be located along strike to the south.

The Company intends to consult again with the CLC in 2011 to determine whether an agreement can be reached with Traditional Owners allowing Northern Minerals to complete its proposed diamond drilling program on MCC968. The drilling program on MCC968 will not be implemented until an agreement is reached.

References

Wyche, S. And Simons, B., 1987. 1:250 000 Geological Maps Series Explanatory Notes, Bonney Well SF 53-2.

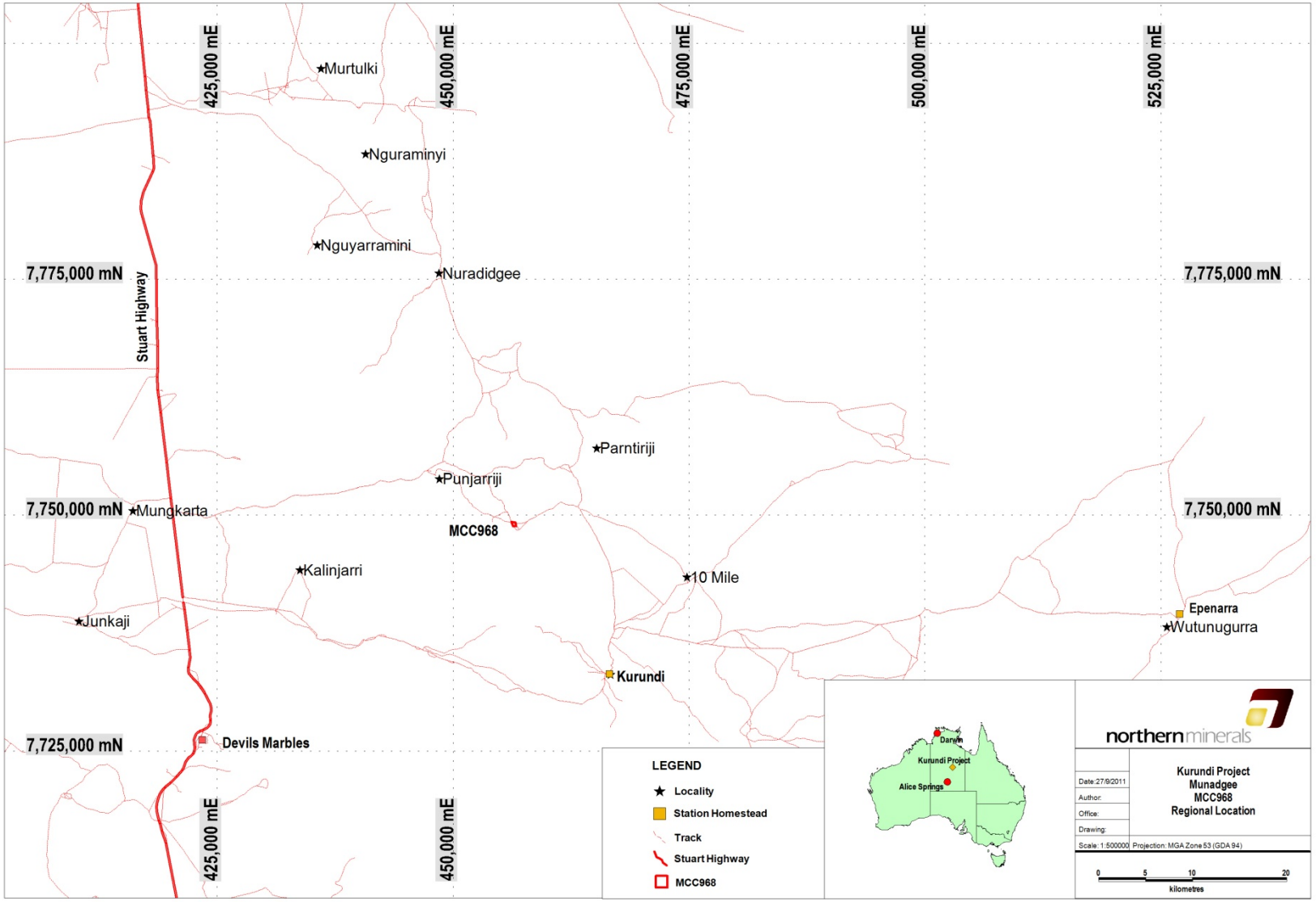
Walley, A.M., 1987., 1:250 000 Geological Maps Series Explanatory Notes, Frew River SF 53-3.

Stewart, A.J. and Blake, D.H., 1986, 1:100 000 Geological Maps Commentary, Kurundi Region, Northern Territory

Morewa, M., 2007, Northern Uranium limited, Report on Prospecting Activities, Kurundi Region, Warranunga and Davenport Provinces.

PLATE 1

Regional Location Map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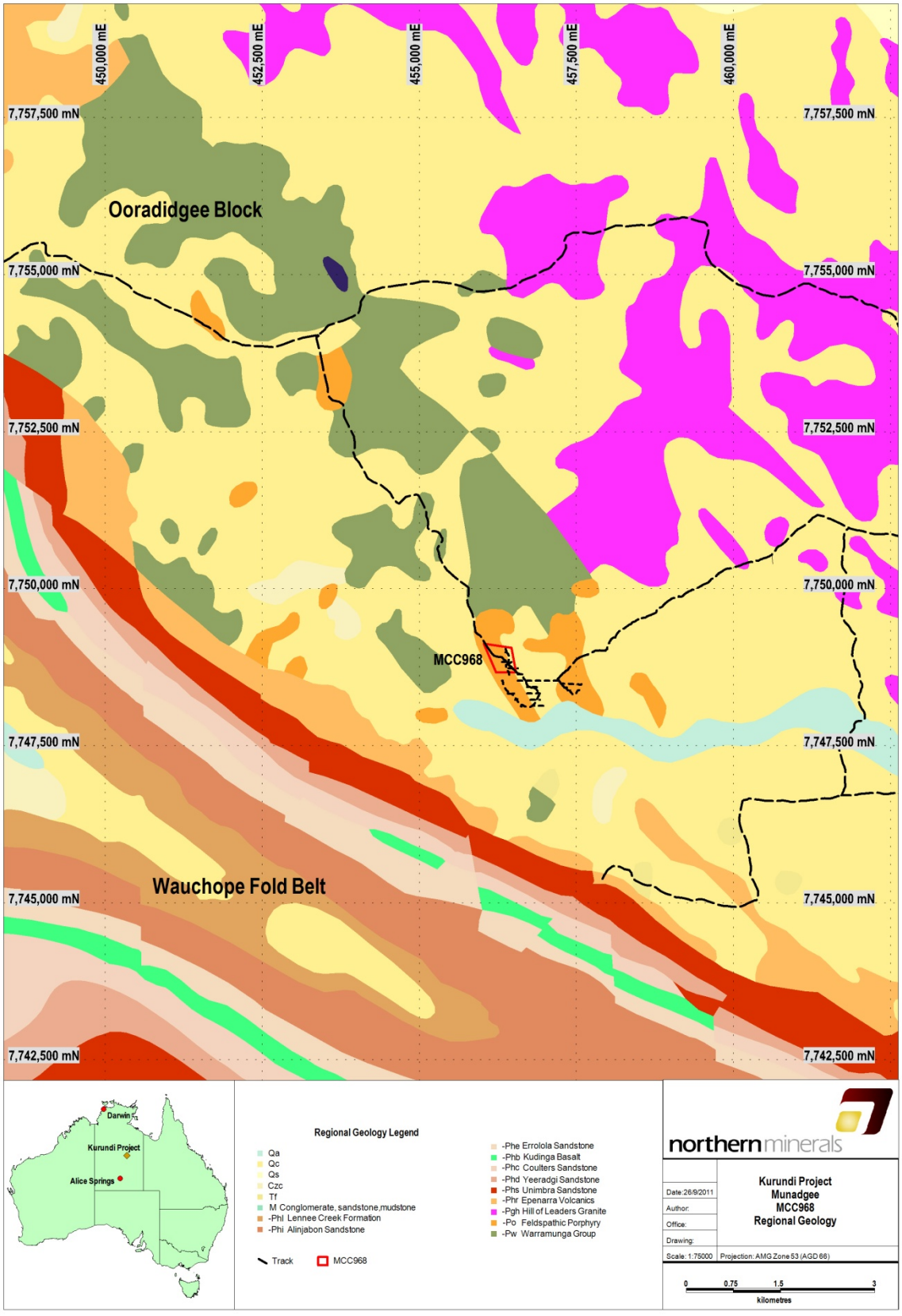
Stuart Highway
Murtulki
Nguraminyi
Nguyarramini
Nuradidgee
Parntiriji
Punjarriji
Mungkarta
MCC968
Kalinjarri
10 Mile
Junkaji
Epenarra
Wutunugurra
Kurundi
Devils Marbles
LEGEND
Locality
Station Homestead
Track
Stuart Highway
MCC968
Darwin
Kurundi Project
Alice Springs
northern minerals
Kurundi Project
Munadgee
MCC968
Regional Location
Date: 27/9/2011
Author:
Office:
Drawing:
Scale: 1:500000 Projection: MGA Zone 53 (GDA 94)
0 5 10 20
kilometres

PLATE 2

Regional Geology Map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7,745,000 mN
7,742,500 mN
Ooradidgee Block
MCC968
Wauchope Fold Belt
Darwin
Kurundi Project
Alice Springs
Regional Geology Legend
Qa
Qc
Qs
Czc
Tf
M Conglomerate, sandstone,mudstone
-Phl Lennee Creek Formation
-Phi Alinjabon Sandstone
-Phe Errolola Sandstone
-Phb Kudinga Basalt
-Phc Coulters Sandstone
-Phd Yeeradgi Sandstone
-Phs Unimbra Sandstone
-Phr Epenarra Volcanics
-Pgh Hill of Leaders Granite
-Po Feldspathic Porphyry
-Pw Warramunga Group
Track
MCC968
northern minerals
Kurundi Project
Munadgee
MCC968
Regional Geology
Date:26/9/2011
Author:
Office:
Drawing:
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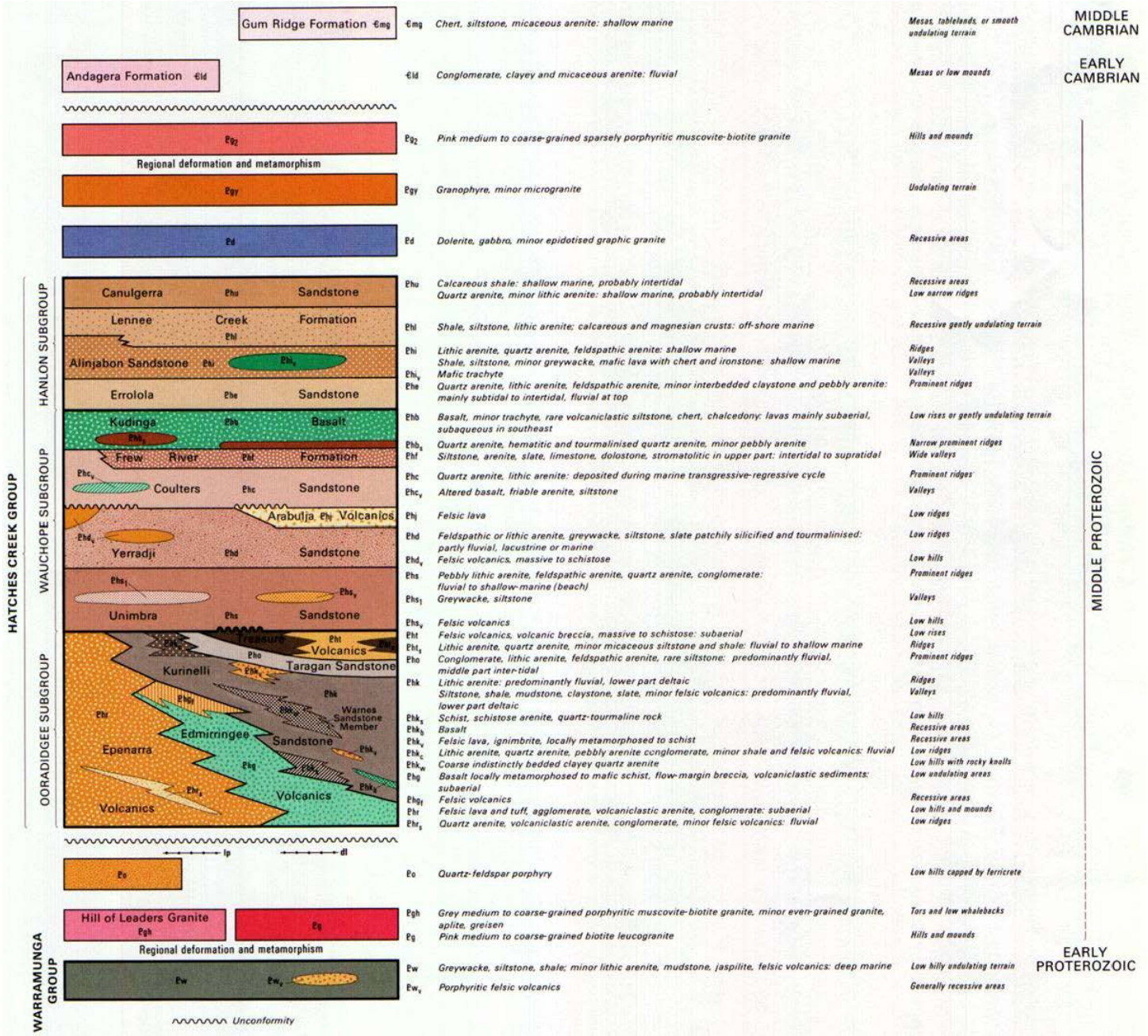
Projection: AMG Zone 53 (AGD 66)
0
0.75
1.5
3
kilometres

PLATE 2 – REGIONAL GEOLOGY LEGEND



Stratigraphic column displaying the various units (Stewart, A.J. and Blake, D.H., 1986, 1:100,000 Geological Maps Commentary, Kurundi Region, Northern Territory)