

**CAMFIELD AMETHYST EXPLORATION – YEAR 2**

**Annual Report**

**EXPLORATION LICENCE 10416**

**For the period: 13 June 2007 to 12 June 2008**

**Tenement Holder: Barry Kayes**

**Prepared by: Barry Kayes  
July 2008**

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## **INTRODUCTION**

This report documents the exploration programme completed on Exploration Licence 10416 during the period 13 June 2007 to 12 June 2008.

### **1.1 Location and Access**

The Exploration Licence is located almost wholly on Camfield Station, approximately 380 km south west of Katherine. Part of the western edge of the tenement is located on Victoria River Downs Station. The tenement is accessed along the Buntine Highway, which diagonally bisects the tenement.

### **1.2 Tenure**

Exploration Licence 10416 was granted on 13 June 2006 for a period of 6 years. The tenement covers an area of approximately 246 sq.km or 75 graticular blocks. The tenement is held by Barry Kayes and operated by Aradon Pty Ltd, of which Barry Kayes is a Director.

## **2.0 GEOLOGY**

### **2.1 Regional Setting**

The tenement lies within the Wave Hill 1:250 000 Map Sheet in the Victoria River District. The area of the tenement lies on the Victoria River Plateau and Benches and is overlain by the Lower Cambrian aged Antrim Plateau Volcanics, which consist of a series of flood basalt lava flows with thin interbeds of sandstone, chert, silicified carbonate rocks, limestone and pyroclastic rocks.

### **2.2 Local Geology**

There has been limited detailed mapping undertaken in the tenement area. The topography is mostly undulating plains with rounded hills and mesas. The Antrim Plateau Volcanics are dominant across the tenement and consist of massive and amygdaloidal basalts. The amygdaloids are frequently filled with Quartz, Amethyst and to a lesser extent Agate, all of which can be in geode form. In many areas, the geodes and nodules have been weathered from the basalt and can be found lying exposed on the surface. Less common is the evidence of vents or veins of Quartz and Amethyst which were the main focus of our exploration.

In the north eastern parts of the tenement, outcroppings of Red Chert are prominent and were examined during this reporting period.

### **3.0 PREVIOUS MINING AND EXPLORATION**

Amethyst and Quartz was mined previously within the tenement from Mineral Claims 4490 and 4491, by Kajar Pty Ltd.

The main focus was on MC4490, where Amethyst of good colour and quality was extracted. The material was best suited for lapidary purposes, but was found in large, solid pieces suitable for fashioning into ornaments and beads. Good tonnages were found, but the extraction became difficult as the vein dipped deeper under a small hill (personal communication with previous tenement holder).

Kajar Pty Ltd and others have performed other exploration in the general area previously, but little is known of the results. Further research of old Exploration Reports and personal contact with previous tenement holders will be undertaken to expand our knowledge of the area, and help target our exploration more effectively.

It is interesting to note that in the years since my initial prospecting immediately prior to applying for the tenement in 1999, numerous pits and costeans have been machine dug by unknown parties, within or near our tenement boundaries.

### **4.0 EXPLORATION**

Most of the work undertaken on EL10416 during the current reporting period was aimed at identifying blocks which were not considered prospective, in preparation for “dropping off” in subsequent years.

A Waiver was applied for in May 2008 to retain all 75 blocks for a further year. This was granted in July 2008.

Ground not explored previously was looked at in more detail, and using lessons learnt in the previous year, large areas of the tenement were more quickly identified for further work or relinquishment. While we cannot assume to have found everything of possible interest, we are confident that the blocks identified for future relinquishment have the least chance of providing commercial gemstone deposits.

In addition to our ground work, several new costeans were dug near the finish of our previous year’s exploration. These have provided further important information, as we continue to focus on a few smaller areas of the tenement

#### **4.1 General Prospecting**

General prospecting on the tenement was done over 2 separate periods. During June/July 2007, 4 people were involved in costeaning, general prospecting and exploration. The general prospecting involved traversing by foot and vehicle, large parts of the tenement to further evaluate locations identified in the first year’s program.

Evaluation included inspection and collection of surface samples and investigation of possible new sources of Quartz or Amethyst not already exposed. New veins or vents

of quartz were very difficult to identify due to the high level of erosion to the basalts. Several small pits were dug by hand to follow potential leads.

In early June 2008, a second program was undertaken, mainly to identify blocks to be relinquished in subsequent years. This program again involved groundwork by foot and vehicle. Good progress was made in this area, and several new areas of interest were identified, with a small quantity of samples collected for evaluation.

On the north eastern edge of the tenement, numerous outcrops of red chert can be found dotted across the low, undulating hills. At first glance this material looks dull and unattractive, but when broken reveals numerous small vughs of clear crystal, smoky quartz and occasionally amethyst. The chert itself can have an interesting swirling pattern, ranging in colour from red to orange to pink and grey/brown tones.

Cutting and polishing of samples collected has shown the material to take a very high polish with an unusual pattern. Most of the rock is relatively crack free.

Evaluation to date has been reasonably positive and encouraging. Further test work will be undertaken to determine if the stone could be suitable for commercial supply.

## **4.2 Costeaning**

As with our previous program, this year's focus was on areas within Area 4 of our Clearance Certificate. This again included the area of former MC4490, which has consistently provided some of the best surface indicators, samples and geological features.

A total of 4 costeans (numbered 8 – 11) and a small pit were dug during the course of this year's exploration programme. A Caterpillar 311 excavator was used in the earlier program. The machine used for a small prospecting and exploration operation in June 2008 was a Case 580 4WD backhoe.

Costean 8, following on from the 7 costeans dug in our first year's program, was chosen primarily because of the unusual crystal formations and abundance of samples scattered across the area. Ironically, this area had recently been hand dug by fossickers who had followed our exploration tracks from last year. Their work left behind some interesting samples.

Costean 8 is approximately 300 metres south of Costean 7 dug in last year's program around the former MC4490, and runs roughly north/south to our previous costeans in that area.

Costean 8 was approximately 35 metres long, 1.2 metres wide and averaged around 1.5 metres deep.

The area around Costean 8 appeared to be the remains of a small basalt hill and possible "fault". This "fault" appeared to be the most likely source of the amethyst in this area, rather than the deposition of broken geode material from the weathering of amygdaloidal basalts, as appears to be the case in most areas.

As the Costean was extended, a definite north/south trend was obvious, with the vein dipping between 30 and 60 degrees to the west. It is possible the vein extends all the way to the previous MC4990, and may be an offshoot of that claims source material.

It is intended to test that theory in future programs, using a larger and faster machine.

Small quantities of good to average coloured Amethyst specimens were recovered for evaluation. The unusual crystal formations make this area a possible commercial source of specimen material, provided sufficient volume and consistent quality and colour were obtainable.

Due to the delicate nature of some of the material, progress was very slow, with most of the samples being hand dug after initial exposure with the machine.

Costean 9 was dug at 90 degrees to Costean 8, to see if the material extended further out to the east. After a short while it was obvious that there was no material in that direction, and that the material had reached the surface at costean 8.

Costean 9 measured approximately 5 metres long by 1.2 metres wide and 1.5 metres deep.

Due to the degree of dip in costean 8 it was decided it was not worthwhile costeaning to the west with the small machine, as it would be beyond its capabilities.

Costeans 10 & 11 were dug further east of Costeans 8 & 9, in an area showing similar surface samples to Costean 8. The costeans provided little in the way of quality or quantity of material. The veins or pods disappeared quite quickly and were not worth pursuing.

Costean 10 was around 8 metres long, 1.2 metres wide and 1 metre deep. Costean 11 was of a similar size.

At the conclusion of the costeaning program, all costeans were backfilled and the topsoil was respread over the disturbed areas.

### **4.3 Future Exploration**

Future exploration programmes will be centred on areas around former MC4490 and areas 1 and 3 of our clearance certificate near Renny Bore. These areas contain almost all the known deposits on the tenement and require further costeaning to determine their viability.

More work also needs to be done on the Red Chert outcrops and some areas of interest for other Jasper type stones.

The suitability of these stones could influence decisions on the number and placement of possible future Mining Claims or Leases and determine the ongoing viability of the tenement as a whole.

## **5.0 SUMMARY**

Exploration to date has been slower and tougher than anticipated. The massive amount of erosion that has taken place on the Antrim Plateau means that many geological indicators are covered by soil. This hampers the ability to identify faults and veining that are critical to gemstone exploration.

Even so, much progress has been made in our understanding of the area. We now have a better understanding of surface features, rock types etc. that allow a degree of accuracy when predicting where a source of supply may be located.

Importantly, we are also developing a good relationship with the local Pastoral Stations, which has led to savings in accessing fuel, water and machinery.

Communications was a big issue in the previous year, which has been addressed by the use of better satellite communications equipment, allowing voice and data transfer.

More effective ways of travel have been trialled to determine if costs can be reduced and the results appear positive. This is crucial in a time of record fuel, wage and transport costs.

The perusal of previous exploration reports from the Department has also proved useful. Recently, it helped in our decision to withdraw our application for Mineral Claim 5243, applied for in 1999, and situated centrally in our Exploration Licence.

We are now focussed on reducing our target areas dramatically to allow better utilisation of time and resources. In the following year we hope to reduce our focus to 3 or 4 small areas. Hopefully from there we can determine the viability or otherwise of applying for Mineral Claims or Leases.




Signed:

Date:




Legend

Exploration Licence

- Application 
- Granted 
- Ceased - Moratorium 




Tenements

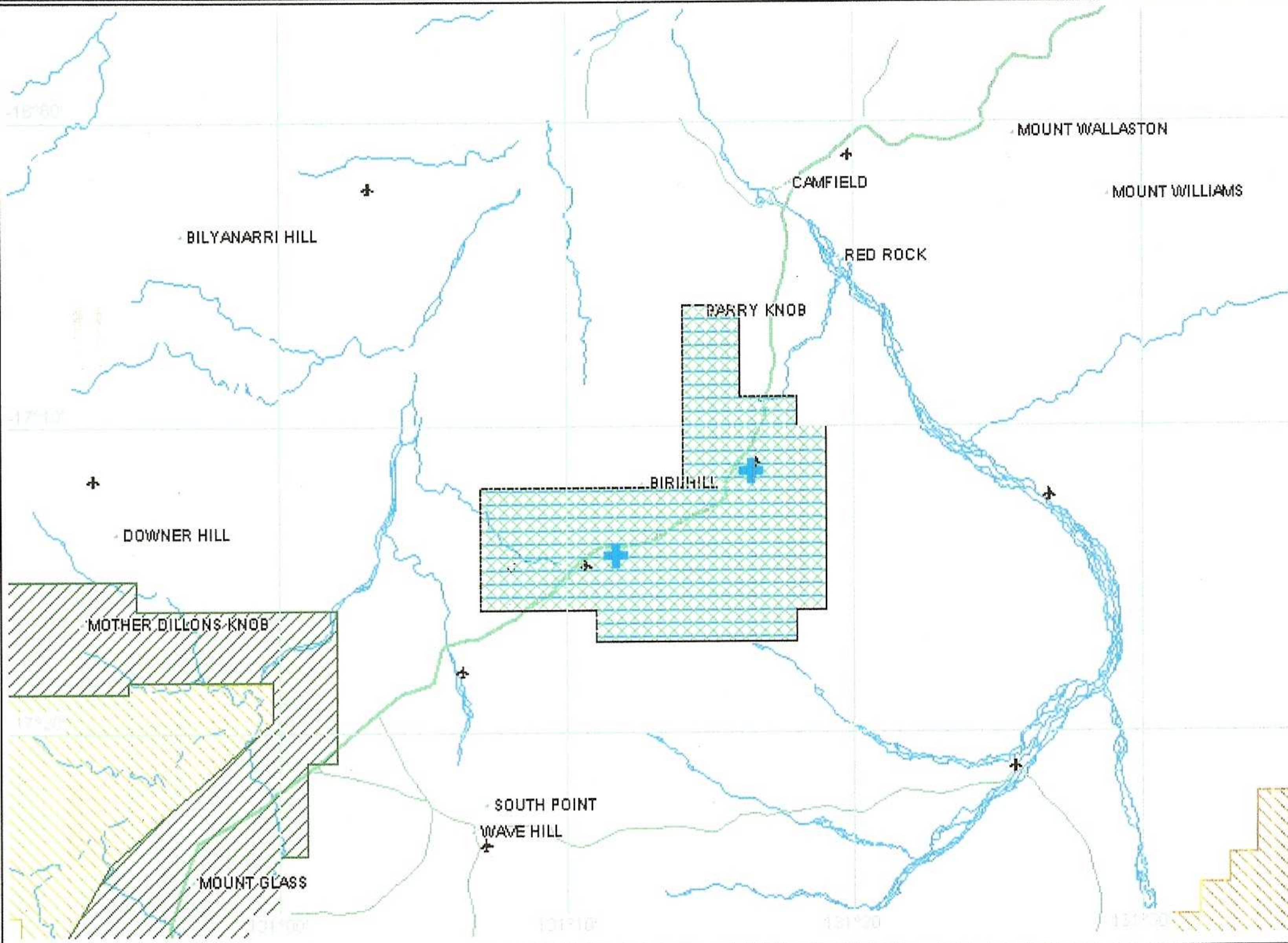
- Application 
- Granted 

Petroleum

- Application 
- Granted 

Other

- Offshore Minerals 
- Reserves 
- ALRA - Moratorium 



Printed for : ara on : 28-Jul-2008

Datum : Lat/Long GDA94

not to scale

NOTE TO MAP USERS : Mining and Exploration Tenure depicted here are plotted from descriptions supplied by the holders and the Northern Territory takes no responsibility as to their accuracy. User should be aware that inconsistencies may occur between some information.

FIGURE 1



131°15'

Buchanan Highway

131°16'

-17°13'

-17°14'

# G COST 10

# G COST 7

# OLD CAMP

# G COST 6

# G COST 4 COST 2  
# G COST 5 COST 3

FIGURE 2



EL10416

ANNEXURE "A" MAP FORMING PART OF

AUTHORITY CERTIFICATE C2006/121

ISSUED TO: Bill Kayes

AUTHORISED COPY: NUMBER 1 OF 5

CHECKED BY: SD DATE 14/11/2006

D DWYER - LAND INFORMATION OFFICER

SCALE 1 : 75 000



Projection: MGA Zone 52  
Horizontal Datum: GDA94

KEY





-  Subject Land
-  Exploration License
-  Restricted Works Area
-  Recorded Site Centroid

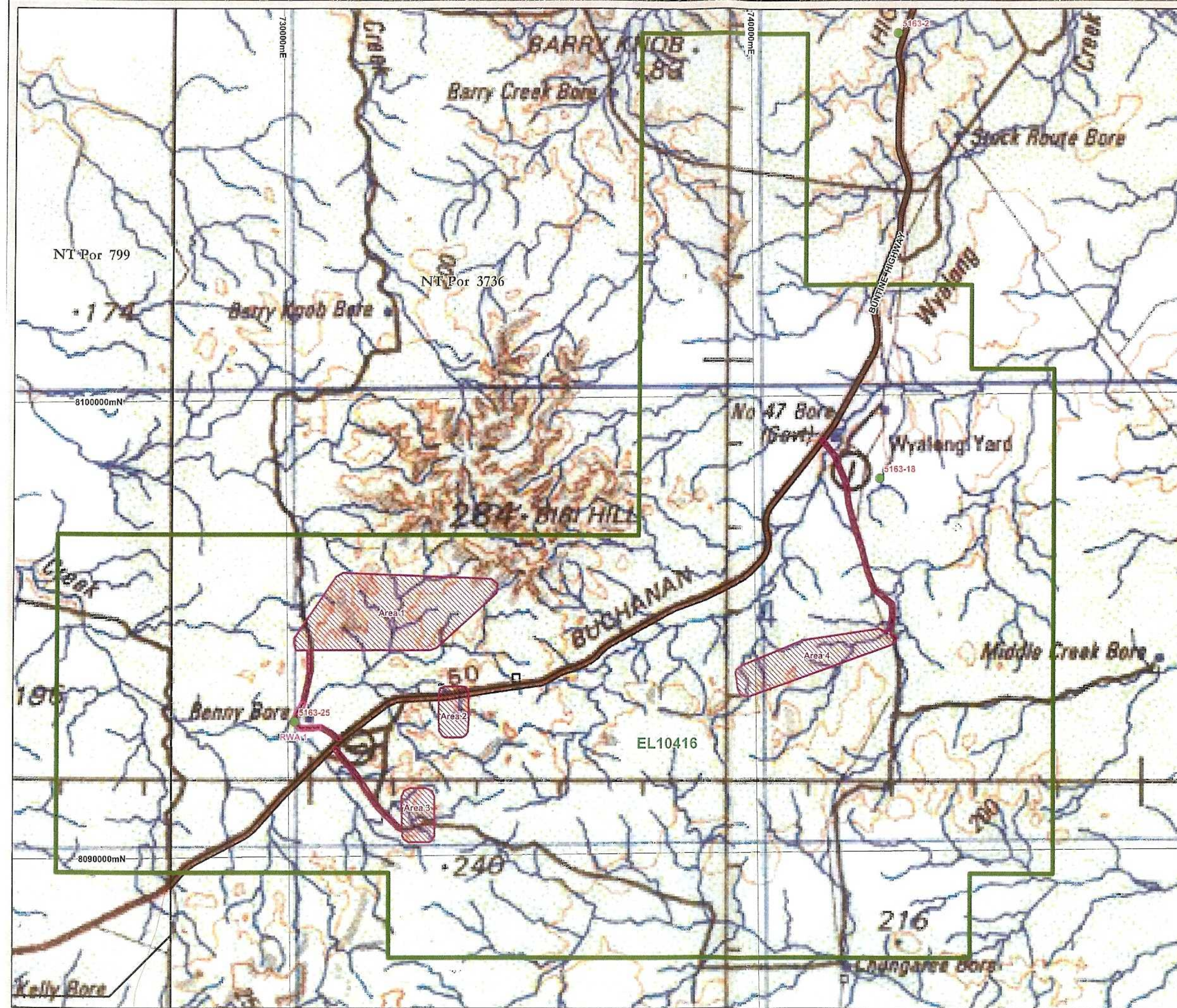
FIGURE 3



Prepared and produced by  
Aboriginal Areas Protection Authority,  
Darwin, Northern Territory of Australia  
12/08/2006  
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Topographic Base Mapping  
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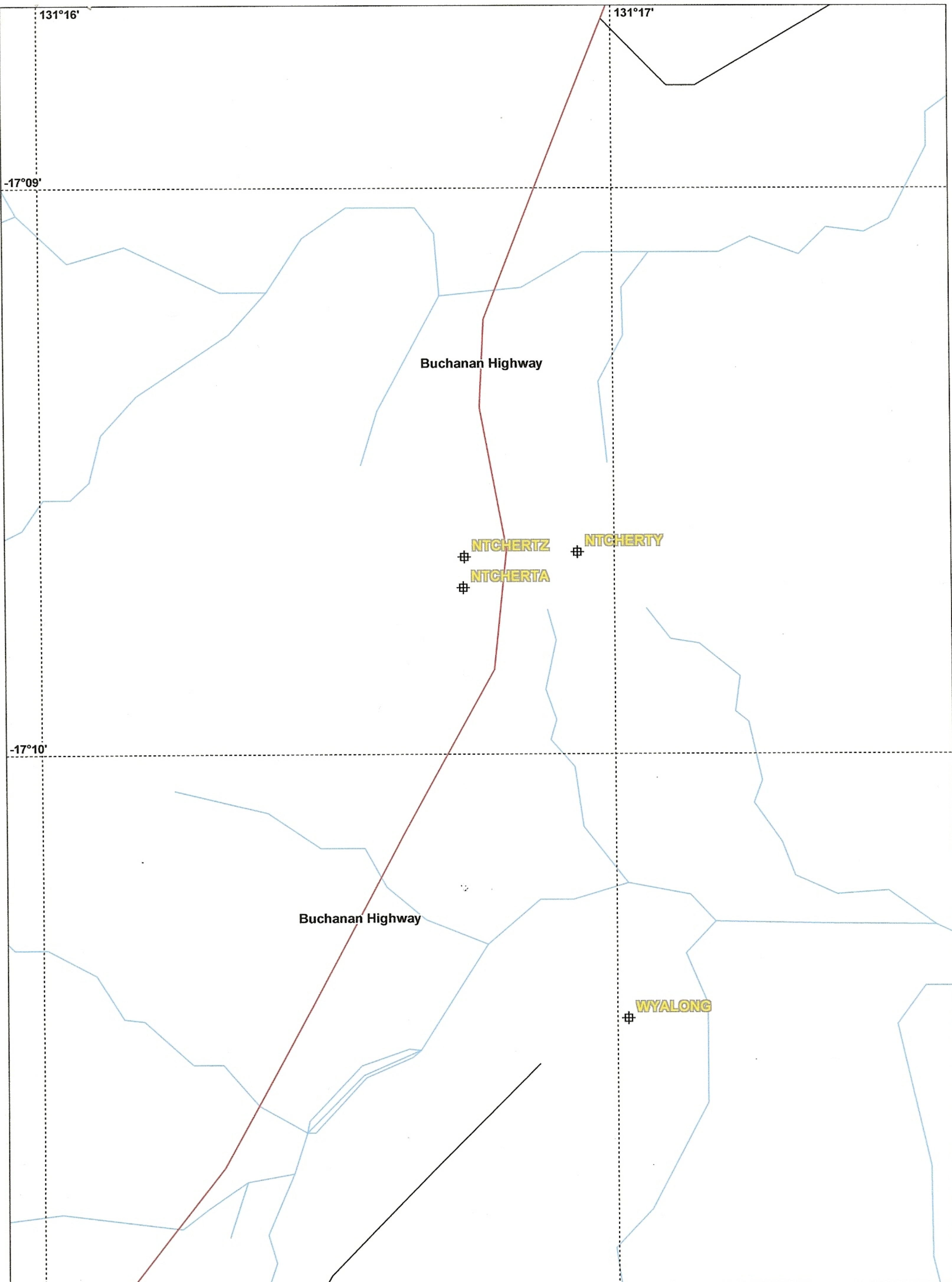


FIGURE 4