

**AUSMET RESOURCES LIMITED**  
**BATCHELOR PROJECT**  
**EXPLORATION STATUS REPORT**

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## **BACHELOR PROJECT EXPLORATION STATUS REPORT**

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## **1. EXECUTIVE SUMMARY**

Ausmet Resources Ltd has entered into a joint venture with Savanna Mineral Resources Pty Ltd, a wholly owned subsidiary of New World Alloys Ltd covering a group of mineral exploration tenements near Batchelor, Northern Territory. Ausmet considers that these tenements are under-explored for gold and base metals as a result of Savanna's primary focus having been on the magnesite potential of the area.

This review has assessed the data on the area with a view to identifying targets deserving further testing for gold and base metals. Some six general target areas have been identified and an outline of a recommended testing programme has been developed. The programme is expected to involve mapping, rock chip sampling, sampling of existing drill holes, RAB drilling and RC drilling. It is expected that this work will be undertaken during the current field season.

## **2. INTRODUCTION**

In February 2004 Ausmet Resources Ltd entered into a joint venture agreement with Savanna Mineral Resources Pty Ltd, a wholly owned subsidiary of New World Alloys Ltd. Under the terms of this agreement Ausmet has the right to earn a 60% interest in all mineral tenements held in the name of Savanna in the Batchelor area of the Northern Territory. These tenements include EL's 9253 and 9501, ERL 134, MLN's 512, 513, 514, 515, 542 and 543, applications for AN's 495 and 515 and application for MLN 1984. A copy of this agreement has been lodged with the NT DBIRD.

Following execution of this agreement Ausmet finalized and lodged a Prospectus with ASX and completed a capital raising of \$3 million. Ausmet was listed on the ASX in April 2004. Following its successful listing Ausmet proceeded to undertake a detailed review of the technical data on all of its properties. The writer was requested to complete the review on the Batchelor project because of his familiarity with the project and the area. The review has been completed in consultation with the Managing Director of Ausmet. This report summarises the outcomes of that review.

Ausmet had entered into the joint venture because it was perceived that the focus of New World Alloys/Mt Grace Resources on the magnesite potential of the area over the preceding six years had meant that the potential for gold and base metal mineralisation was under-evaluated. This review has focused on that gold and base metal potential. This is not to imply that the magnesite resource is not considered a valuable asset, it is simply a reflection of the view that a further examination of the possibility for development of the magnesite must await changes to the availability and pricing of energy in the region.

### **3. PHYSICAL GEOGRAPHY AND INFRASTRUCTURE**

The project is centred just to the east of the township of Batchelor located about 90 kilometres by road to the south-southeast of Darwin. The bulk of the tenement area borders along the main access road into Batchelor from the Stuart Highway and stretches south of that road up to about 7 kilometres and from the eastern outskirts of Batchelor townsite most of the distance to the Stuart Highway. Both the Stuart Highway and the Batchelor road are sealed and provide good all weather access. The recently completed Australasian railway from Alice Springs to Darwin passes through the eastern portion of the tenement area. A 132 KV electricity transmission line traverses the tenements and the natural gas pipeline from central Australia to Darwin is located about 10 kilometres to the east.

The area has a tropical climate with distinct wet and dry seasons. The monsoonal wet season is from November to April and the vast majority of the annual rainfall of 1250 mm falls during this period. The temperatures vary relatively little, rarely falling below 15<sup>0</sup>C or rising above 35<sup>0</sup>C.

The topography is dominated by ridges of sandstones which are interbedded with siltstones. Immediately south of the Batchelor road is a wide flat black soil flood plain around Coomalie Creek. This floodplain is known to be underlain by carbonate rocks of the Coomalie Dolomite and black shales of the Whites Formation. Batchelor township sits on a drainage divide with the area east of the town draining east to the Adelaide River which then runs north to the Arafura Sea. The drainage west of Batchelor goes into the Finniss River system which enters the sea west of Darwin.

During work on the project to date aboriginal heritage surveys have been carried out. Within the project area 5 sites of significance to aboriginal people have been identified. Four of these are outcrops of Coomalie Dolomite. These have been surveyed in and are clearly marked on the ground. The fifth site relates to the bed and banks of Coomalie Creek. These sites will be avoided during the exploration to be conducted by Ausmet.

#### **4. TENEMENTS**

EL 9253 was granted on 12 September 1995 covering parts of 9 graticular blocks. Applications for waiver of the requirement to partially surrender the EL have been granted and the EL still retains its original size. The EL was originally granted to Giant's Reef Mining NL and was subsequently wholly acquired by Savanna. The location is shown in Figures 1 and 2. An application for MLN 1984 has been lodged. This application covers a portion of EL 9253.

EL 9501 was granted on 13 September 1996 covering parts of 2 graticular blocks. Applications for waiver of the requirement to partially surrender the EL have been granted and the EL still retains its original size. The EL was originally granted to Giant's Reef Mining NL and was subsequently wholly acquired by Savanna. The location is shown in Figures 1 and 2. An application for MLN 1984 has been lodged. This application covers a portion of EL 9501.

ERL 134 was granted on 11 October 1994 for a period of 6 years. Two applications to extend the life of this tenement each for a period of two years have been granted and a further application for extension has been lodged. The ERL was granted over an irregular shaped area of 971.3 hectares and still retains its original size. The ERL was originally granted to Giant's Reef Exploration Pty Ltd and was subsequently wholly acquired by Savanna. The location is shown in Figures 1 and 2.

MLN's 512, 513, 514, 515, 542 and 543 were renewed in the name of Savanna from 1 January 2003 for a period of 21 years. They were originally granted to Giants Reef Exploration Pty Ltd but were subsequently wholly acquired by Savanna. They each cover about 15 hectares. The location is shown on Figure 2.

Applications for Authorities (North) 495 and 515 were applied for by Savanna. Neither has yet been granted, some correspondence from DBIRD has indicated that AN 495 may be granted in the reasonably near future. Application for MLN 1984 was made by Savanna in 2000. This application covers the Winchester magnesite deposit and peripheral ground for ancillaries such as process plant. It is believed that this application will be held by DBIRD at least until a formal request for grant is received from the applicant.

## **5. GEOLOGY AND MINERALISATION**

The area is located in the western portion of the Lower Proterozoic Pine Creek Geosyncline which is comprised of mainly of metasediments. The age of these metasediments is constrained between 2470 and 1870 Ma (Page et al 1980). The main units known to occur within the tenement area are (from basal to upper) Crater Formation, Coomalie Dolomite, Whites Formation, Mt Deane Volcanics, Wildman Formation, Koolpin Formation, Gerowie Tuff, Mt Bonnie Formation and Burrell Creek Formation. In general these units tend to young towards the south and east in the project area and dip south and east at between 50° and 80°. There is little evidence of over-turning. The sequence has been intruded by Zamu Dolerite. Regionally the area is located on the south flank of the Rum Jungle dome which has an Archaean core. A good regional geology map at 1:100,000 scale is published by the BMR entitled "Geology of the Rum Jungle Uranium Field" (Crick 1987).

The area has been economically productive. The four Rum Jungle uranium deposits, Whites, Dysons, Intermediate and Rum Jungle South were worked in the 1960's and 1970's producing 4,543 tonnes of U<sub>3</sub>O<sub>8</sub> (Ahmad 1998). Immediately along strike to the west of Dysons, Whites and Intermediate is the Browns Cu-Co-Ni-Pb deposit which has been extensively examined and explored in recent years by Compass Resources NL and its joint venture partners. Resources at Browns have been quoted at 38.9 million tonnes averaging 3.61% Pb, 0.11% Co, 0.44% Cu, 0.09% Ni and 10 g/t Ag (Compass Resources NL 2004). Inferred resources of 30.5 million tonnes of 1.28% Pb, 0.13% Co, 1.29% Cu, 0.13% Ni and 11 g/t Ag are quoted for Browns East. Further west and northwest significant quantities of similar mineralisation are also being explored by Compass at Mt Fitch, Area 55 (Indicated resources 12.4 Million tonnes of 0.56% Pb, 0.14% Co, 0.49% Cu and 0.14% Ni), Mt Fitch North and other prospects under evaluation (Compass Resources NL 2001). Immediately to the west of Browns the sulphides become zinc rich but no resource has yet been quantified. It is considered that the Dysons to Browns area is a zoned mineralized system with the

zonation varying from uranium in the east, through copper/cobalt in the centre to lead/zinc at the western end.

Similar massive sulphide mineralisation was mined at Woodcutters deposit about 4 kilometres north of the Ausmet tenements. This mine produced approximately 6 million tonnes of ore at a grade of 12% Zn and 6% Pb. The several base metal sulphide bodies appear to occur as structurally remobilized massive lenses and sheet veins. The mine ceased operations in 1998.

Gold mineralisation has been mined from two small pits at the Sundance mine. This operation was active in 1987 and 1993 and was operated by Giants Reef Mining NL. Approximately 17,800 tonnes averaging 10.7 g/t Au was mined and trucked for processing (Simpson 1994). About half was processed at Mt Bonnie and the remainder at the Cosmo Howley plant. The Sundance mine is located on MLN's 542 and 543 which are included in the joint venture. It is believed that a modest (but not quantified) amount of ore remains in the pits. Elsewhere in the tenements gold mineralisation of potentially economic tenor has been drilled at Sundance East prospect and on the southern margin of the Winchester magnesite deposit. The potential for economic ore in these areas is discussed later in this report.

It is considered to be of great significance that all of the base metal and gold mineralisation outlined above occur at or near the same stratigraphic level on the contact between the Coomalie Dolomite and Whites Formation. It is recommended that the Ausmet exploration programme have this stratigraphic level as its primary focus.

Elsewhere in the district gold mineralisation occurs in quartz veins and stockworks in the Burrell Creek Formation and to a lesser extent in some other units. The mineralisation at the Maureen prospect on AN 495 is considered to be of this type. Some potential for other mineralisation of a similar type is located on the main Batchelor tenement group and is discussed later in this report.

Application for AN 515 is located a few kilometres west of Batchelor. It covers a small phosphate resource known as Castlemaine.

Lead-zinc mineralisation has been intersected at the White Bomb prospect about 3.5 kilometres southeast of Sundance in graphitic siltstones of the Wildman Formation,

considerably higher in the sequence than the larger base metal deposits at the Coomalie Dolomite- Whites Formation contact. The best intersection was 6 metres of 11.7% Zn. However some 14 holes have been drilled here and the mineralisation is limited in extent and discontinuous.

Some weakly to moderately base metal anomalous gossanous horizons were identified at Occidental prospect about 3 kilometres southeast of Sundance. Four RC percussion holes totalling 308 metres were drilled to test the Occidental prospect. The drilling intersected weakly to moderately anomalous levels of lead and zinc (best results over 1 metre were 4250 ppm Pb and 7650 ppm Zn, not the same sample). Sulphide levels were low.

During the period 1998 to 2001 Mt Grace Resources as it was then named carried out a considerable amount of exploration for magnesite. The Winchester magnesite deposit was drilled out in fair detail and a resource of 16.6 million tonnes of 43.2% MgO was estimated. The majority of this resource was assigned to the indicated category (Uren 2000). A small pit was dug and a trial parcel of about 1,000 tonnes of magnesite mined (Uren 2001). Several tests were conducted to determine some of the metallurgical characteristics of the magnesite. It is not Ausmet's present intention to carry out further work on the magnesite resource at this time.

## **6. AVAILABLE DATA**

Written reports on at least two data reviews have been completed looking at the base and precious metal potential of the Batchelor project. The project area has been reduced in the period since these reviews were completed and so any under-evaluated areas outside the present area were noted but are not discussed herein. The first review was carried out by Giants Reef (Earthrowl 1989) and a second review was done by Mt Grace in 1997 (Whittle 1997a). Later in the same year this review was updated in the light of the results of work completed during that field season (Whittle 1997b). During the 1998 field season the focus of the Mt Grace programme shifted to magnesite exploration and only a limited amount of follow-up to the 1997 review has been completed. Subsequent data reviews have generally been limited to a single tenement and were usually not fully written up.



The early Mt Grace work included mapping at 1:10,000 scale. The mapping has been checked by both B. J. Uren and the writer and appears to be of a high quality. Some grab rock chip sampling was also carried out both with this mapping and subsequently. Uren periodically added a few interpretations to this map and it is used as the main base map for the area. Mark Whittle also carried out detailed mapping of a small area around the Cuco prospect and at Sundance East.

The early Mt Grace work included detailed soil sampling over all areas of significant outcrop (i.e. mainly on ERL 134) and shallow auger sampling over covered areas as far east as E 725200. Northeast of that line coverage extends only as far as N 8556800 until east of E 727800 there is no coverage. There is some considerable doubt on the efficacy of some of the auger drilling. The writer holds the view that much of it failed to penetrate below the alluvial gravels below the black soils on the flood plain. There are relatively few areas of anomalism in these data that have not been followed up with drilling, although some of that drilling was ineffective.

Mt Grace carried out RC drilling on traverses spaced about 800 metres or more apart. These traverses were across the Coomalie/Whites contact but were intended for magnesite and were rarely sampled for gold or base metals. Some follow-up sampling of these holes was subsequently done for gold and base metals but more should be done where the samples are still available. The BMR completed about 5 holes in the project area for stratigraphic purposes in 1973/74 (Johnson et al 1979). This report has been accessed but is of limited value for base and precious metal exploration, although Fitzsimmons (1997) records one elevated Pb analysis in each of holes RJ-4 (345 ppm) and RJ -6 (170 ppm) near Crater Lake.

Detailed infill RC drilling was undertaken at Johnny's Zoo and Sundance East prospects. A few mineralised gold intercepts were recorded at Sundance East (BRC-1 9-18m 9m 2.06 g/t Au; BRC-5 41-55m 14m 1.88 g/t Au and 55-66m 11m 1.13 g/t Au 1.1% Cu; BRC-6 96-108m 12m 2.98 g/t Au) but most holes were barren or near so and it is considered unlikely that there is a coherent tonnage of potentially economic grade mineralisation here. The Johnny's

Zoo prospect was drilled for magnesite and not sampled for gold or base metals. Some further sampling for this purpose is recommended. This area showed significant cavern development in the magnesite and any drilling should be carefully positioned with this issue in mind.

Detailed infill drilling was done over the Winchester magnesite deposit. Drill spacing here varies between a 40 m x 40 m grid and a 50 m x 100 m grid. Very few of these holes were analysed for gold or basemetals. Portions of a few where gossanous material or sulphides were noted in the logging were selected for analysis. Some very encouraging gold intercepts were recorded as shown in the table below.

TABLE - WINCHESTER GOLD INTERSECTIONS

<b>Hole #</b>	<b>Depth Interval</b>	<b>Width</b>	<b>Grade (g/t Au)</b>
MRC – 053	0 – 8 m	8 m	3.0
MRC – 054	69 – 76 m	7 m	2.56
MRC – 214	34 –41 m	7 m	9.3

Unfortunately several holes nearby such as MRC – 124, 125, 126, 132 and 213 do not appear to have been sampled for gold. For example MRC – 126 cut both Whites Formation and Coomalie Dolomite with pyrite zones down to 93 metres and does not appear to have been sampled for gold. It is not presently known if the samples from these holes are still available.

Several RC holes have been drilled beneath the Sundance Pits but although it is understood that there are small quantities of oxide ore in the base of the pits, the deeper drill holes underneath the pits below the oxidation level were essentially barren. MRC – 57 at 722600E, 8555760N returned 10-22 m 12m 2.73 g/t Au. However MRC – 226 drilled about 25 metres

behind it was barren and it is considered likely that the mineralisation in MRC -57 is an enrichment in the alluvial profile. It is considered that any primary ore that may be present beneath those pits is of limited tonnage.

A few RC holes and 25 or so RAB holes have been drilled within the area of MLA 1984. These have tested known minor soil/auger geochemical anomalies or were drilled as part of a condemnation drilling programme for areas that were being seriously considered as potential treatment plant sites. None of them returned results of significance. However two RC holes were drilled into the Cuco prospect. Although it is very clear on the ground and in the geological mapping at both 1:10,000 and 1:1000 scales that the strike at this location is north-south, the two holes drilled were angled 60<sup>0</sup> to grid north and were thus drilled parallel to strike and are not an effective test of this prospect.

TABLE – CUCO DRILLING

Hole #	Easting	Northing	Direction	Depth	Comments
BRC-19	723600	8555528	55 to 360	83m	Cu to 340ppm, Co 960, Tr Au
BRC-20	723600	8555410	55 to 360	83m	Cu 615, Co 830, Pb 3850, Zn 1220, Au 63 ppb

A few trenches have been dug at various locations. They are not well recorded but appear to have been of limited value.

## 7. TARGET AREAS FOR FOLLOW-UP

These target areas are not quoted in order of priority but are more or less quoted in order from northeast to southwest in the tenement area.

1. Near 729300 E; 8559000 N a rock chip taken some years ago returned a value of 0.21 g/t Au. There is no record of any follow-up which could be more rock chipping and/or limited RAB drilling.
2. It is recommended that all holes along the Whites-Coomalie contact east of Crater Lake Road be sampled for gold and base metals. This is largely in hand. It is noted that this contact is plotted in an incorrect position north of Johnny's Zoo prospect. A re-

interpretation of the drill logs has it positioned a couple of hundred metres east of that on the NWA map.

3. It is recommended that intense gossan searching and sampling be undertaken over all outcrops of Whites Formation. This should be followed up by a few selectively placed RAB holes. It is noted that rock chip sample 7856 near 728000 E; 8558360 N returned 438 ppm Pb.
4. There is a wide area of soil anomalism stretching between 726400 and 727800 E; 8555800 and 8556600 N. Au values are up to 20 ppb, Pb to 335 ppm, Zn to 585 ppm, Co to 201 ppm and Ni to 1015 ppm. Shallow costeaning has been the only follow-up and a best result of 3 metres of 1.05 g/t Au was returned. This area has been named the Siltstone prospect. RAB drilling is recommended.
5. At the Winchester prospect the existing drillholes have been poorly sampled for gold and base metals. There has been some follow-up sampling but the results of that are not presently available. It is intended to locate them. Unfortunately many of the samples from these drillholes are no longer available for sampling. Further re-sampling is recommended where possible. It is noted that high Fe zones in holes MRC – 104, 110 and 119 do not appear to have been sampled for gold. Further drilling around MRC – 214 is recommended.
6. The Cuco prospect has been very poorly tested and deserves further work. In particular it is noted that the area along the Whites/Coomalie contact to the west of it is structurally complex and it is recommended that the detailed mapping be extended to the west. It is further noted that several auger holes in this area have returned anomalous values with gold to 62 ppb, Pb to 415 ppm and Co to 355 ppm. Drill testing of the Cuco prospect with west dipping holes is recommended as is a few selected RAB drill traverses across the Whites/Coomalie contact in the vicinity of the geochemical responses and in any areas of interest defined during the mapping.

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