

# **EQUITY-1 RESOURCES NL**

**MLN 726 and MLN 727  
Bulman**

**Annual Report for the Period  
27 August 2002  
to  
26 August 2003.**

Mineral Lease Holder: Equity-1 Resources NL  
Date: January, 2004.

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1. Sample Locations
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## Digital Files.

1. MLN726-727\_200312\_01\_report.pdf
2. MLN726-727\_200312\_02\_appendix1.txt
3. MLN726-727\_200312\_03\_appendix2.txt
4. MLN726-727\_200312\_04\_appendix3.txt

## 1 Summary

Mineral Leases 726 and 727 are on Aboriginal Freehold Land held by the Arnhem Land Aboriginal Land Trust. The area is located in the Bulman region, south central Arnhem Land and falls on the Marumba 1:100 000 map. Bulman is located (by road distance) 280km ENE of Katherine.

Geologically the licence areas fall within the Mt Rigg Group and Roper Group lithologies that gently dip to the south-east, and are intruded by late Proterozoic dolerite sills and dykes. The Bulman mineral occurrences are hosted by flat lying or gently dipping laminated stromatolitic dolomite, chert, fine-grained sandstone, and cherty breccia of the Dook Creek Formation. The dolomite is intruded by Mesoproterozoic sills of Derim Derim Dolerite. Contact metamorphic affects are pronounced in the carbonates of the Dook Creek Formation.

Three types of mineralisation are present: small rich pods of high grade galena and sphalerite which follow fractures and/or possibly karst related cavities along bedding planes. These taper and terminate at shallow depths, possibly at the base level of palaeokarst corrosion; surface crusts some 0.3m to 0.6m thick of high-grade zinc and lead. The crust ore is light brown, calcareous and highly porous. The ore minerals comprise cerrusite, galena, hydrozincite, smithsonite and willemite; subsurface stratiform minerals at several levels. This type of occurrence is the most common.

Exploration work for the reporting period consisted of large scale mapping and reconnaissance of the prospect; a 182 soil sampling program and a 49 sample rock chip sampling program. Both programs returned encouraging results.

## 2 Location and Tenure.

The entire area falls on Aboriginal Freehold Land held by the Arnhem Land Aboriginal Land Trust. The area is located in the Bulman region, south central Arnhem Land and falls on the Marumba 1:100 000 map sheet and a small part of the Nymbilli 1:100 000 map sheet. Bulman is located (by road distance) 280km ENE of Katherine.

Two adjacent Mineral Leases comprise the Bullman Prospect; Mineral Lease 726 and Mineral Lease 727. The location of these leases is displayed in Figure 1.

## 3 Geology

### **3.1 Regional Geology**

The licence areas fall within the Mt Rigg Group and Roper Group lithologies that gently dip to the south-east, and are intruded by late Proterozoic dolerite sills and dykes.

#### ***3.1.1 Mt Rigg Group***

The Mt Rigg Group of Palaeoproterozoic to Mesoproterozoic age is a sequence of dolomitic and siliclastic rocks which unconformably overlies the Katherine River Group, and is overlain with regional unconformity by the Roper Group. The Mt Rigg Group is represented by one formation in the application area, The Dook Creek Formation.

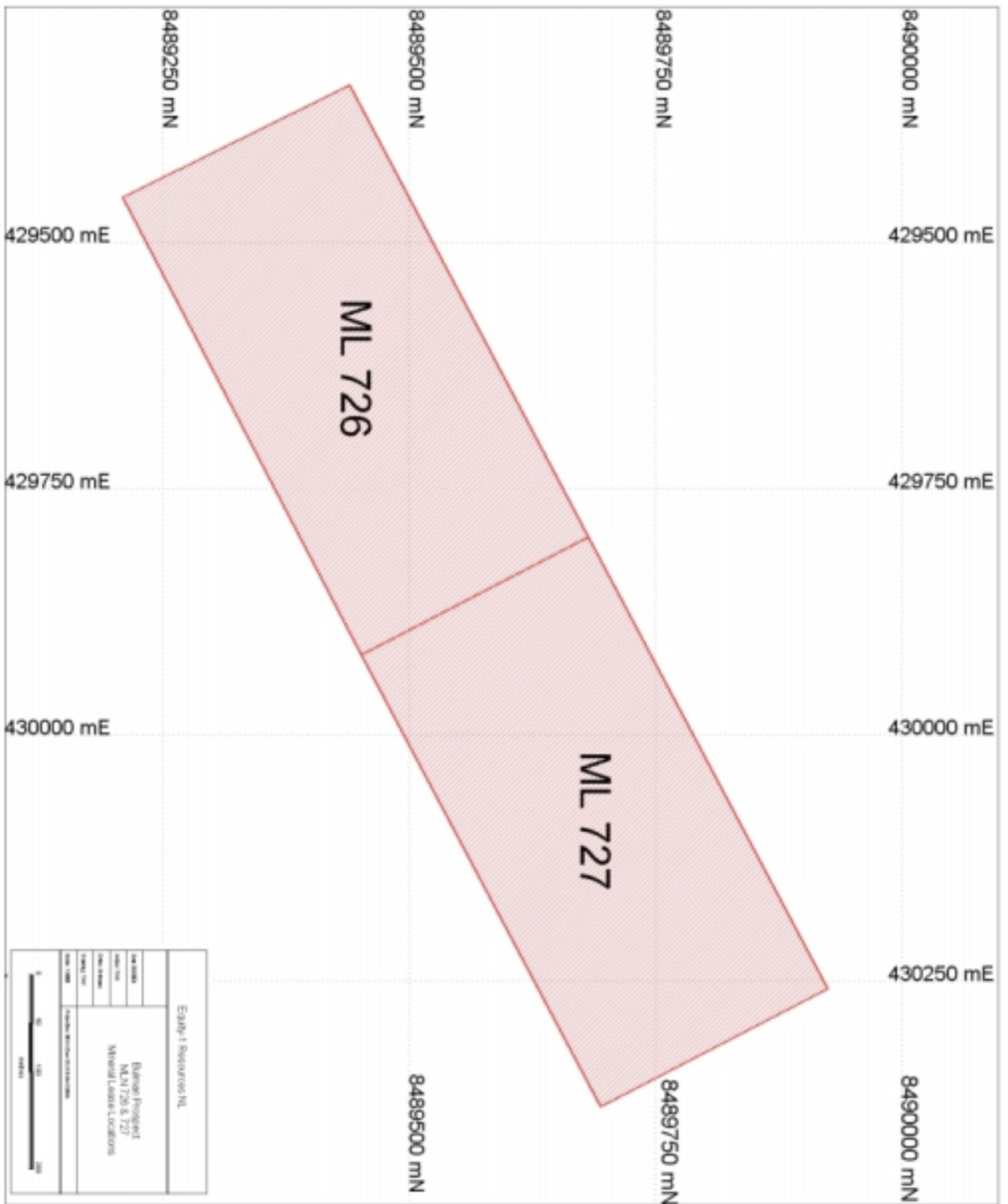


Figure 1 MLN 726 & 727 Bulman, Location Map

The Dook Creek Formation includes a range of dololitic and dolomitic lithologies, stromatolitic and oolitic dolostones, quartz sandstone and chert breccia. It extends in a 30km wide northeast trending belt across the application area. This formation hosts the Bulman mineral occurrences.

### **3.1.2 Roper Group**

The Roper Group of Mesoproterozoic age, a sequence of mudstone, sandstone and subordinate limestone, ironstone, and conglomerate unconformably overlies the Mt Rigg Group. The two lowermost units of the Mt Rigg Group occur within the application area and include:

Limmen Sandstone - consisting of a conglomeratic base overlain by fine to medium quartz sandstones.

Mainoru Formation - conformable on the Limmen Sandstone, includes cherty and dolomitic siltstone, micaceous shale and glauconitic sandstone.

### **3.3 Intrusive Rocks and Structural Framework**

Numerous late Proterozoic dolerite sills and dykes intrude the Mount Rigg and Roper Group lithologies. The sills, locally mapped as Derim Derim Dolerite are generally bedding parallel with dykes commonly intruded along faults.

The Bulman and Mt Marumba Faults transect the area trending northwest. While the displacement within the McArthur Basin rocks is small the faults appear to be deep-seated features and are related to Pine Creek age mineralisation to the northwest of the project area.

Other fault trends include north, north-northeast and northeast but show little displacement. A series of domes northwest of the tenement application are interpreted to be caused by porphyry emplacement of Jimbu Microgranite.

Considerable areas are covered by Cainozoic and Quaternary laterite, sand and soil.

### **3.4 Local geology**

The Bulman mineral occurrences are hosted by flat lying or gently dipping laminated stromatolitic dolomite, chert, fine-grained sandstone, and cherty breccia of the Dook Creek Formation. The dolomite is intruded by Mesoproterozoic sills of Derim Derim Dolerite. Contact metamorphic affects are pronounced in the carbonates of the Dook Creek Formation.

Folding in the area is negligible, and the most prominent feature is the northwest trending Bulman Fault. It is a basement feature that was reactivated on several occasions during the Proterozoic. Geological evidence from past drilling and mapping suggested that the faulting was associated with primary base metal mineralisation.

Three types of mineral occurrences can be distinguished:

1. small but rich pods of high grade galena and sphalerite which follow fractures and/or possibly karst related cavities along bedding planes. These taper and terminate at shallow depths, possibly at the base level of palaeokarst corrosion;
2. surface crusts some 0.3m to 0.6m thick of high-grade zinc and lead. The crust ore is light brown, calcareous and highly porous. The ore minerals comprise cerrusite, galena, hydrozincite, smithsonite and willemite;
3. subsurface stratiform minerals at several levels. This type of occurrence is the most common. Zinc tends to dominate over lead, although in one occurrence NE of Bulman a drill intersection of over 25m of 15% lead from 30m below surface was outlined.

Government geologists in 1999 estimated a total indicated mineral resource at the combined Bulman area mineral occurrences of 103 000 tonnes of contained zinc metal and 93 000 tonnes of contained lead metal.

A previous explorer proposed that silica rich fluids (with a base metal component) generated from dolerite sill emplacement into carbonates carried base metals to their deposition sites. Later workers speculate that the ore source was a low grade syngenetic deposit that had later dolerite intrusion remobilise its base metals for ultimate deposition into favourable lithological (some stratified) and structural trap sites such as carbonates, available conduits, joint intersections and karst generated passages. Later oxidation of primary sulphides resulted in the secondary mineralisation (crusts) being formed.

#### 4 Exploration conducted during the Reporting Period

##### **4.1 Geological Mapping and Reconnaissance**

A two-week program of reconnaissance and geological mapping was conducted during the reporting period. The new mapping (figure 2) redefined earlier mapping and accurately positioned previous areas of surface mineralisation.

##### **4.2 Soil Sampling**

A program consisting of 182, 2kg. -2mm mesh samples was conducted on a 50 meter grid. Samples were analyzed at ALS Chemex in Brisbane using Aqua Regia Digestion. Sample location and assay results are detailed in digital files: MLN726MLN727\_200312\_012\_Appendix1.txt and MLN726MLN727\_200312\_012\_Appendix2.txt respectively. Table 1 presents the best results from the survey. Locations of samples are also presented and Figure 3.

<b>Sample No.</b>	<b>Zinc</b>	<b>Lead</b>
328	18700	4390
284	16500	21200
286	15700	9250
273	11600	2260
287	9440	10700
268	8440	2670
329	7810	8760
274	7170	1820
285	6980	3830
272	6880	3470
288	6680	5260
296	5940	6140

Table 1 Significant results from the Bulman Prospect soil-sampling program

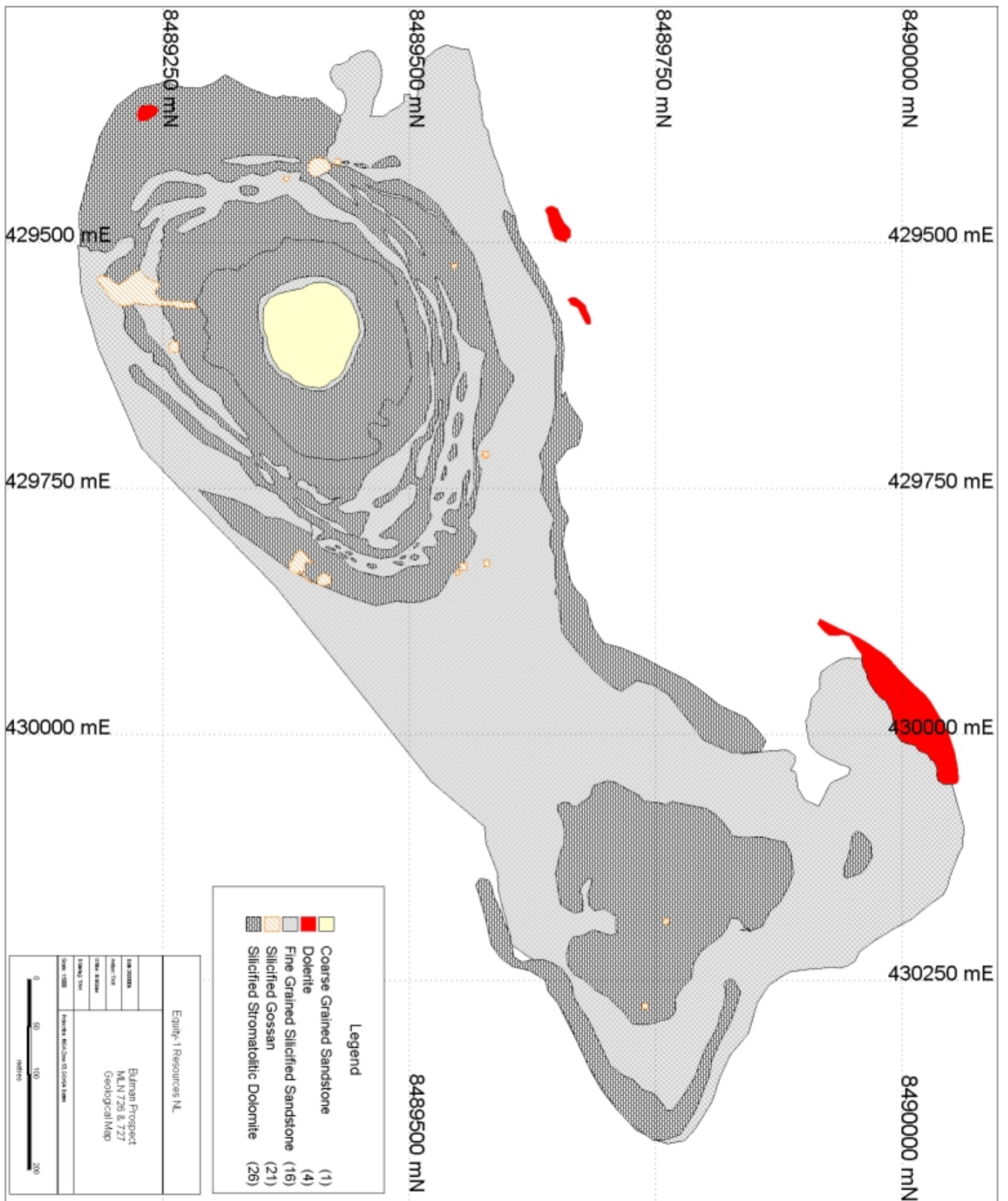


Figure 2 Geological Interpretation Map

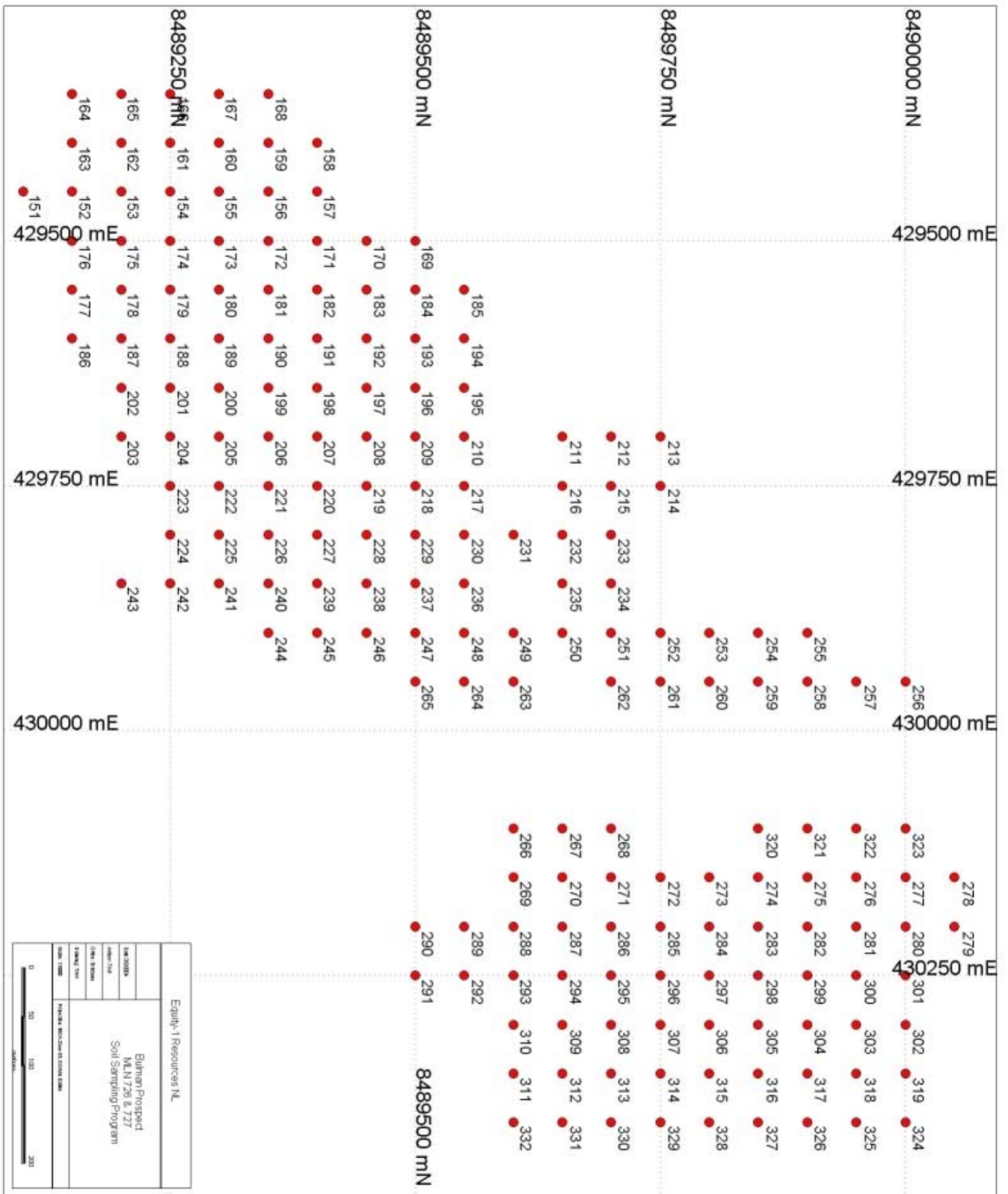


Figure 3 Soil Sample locations



### 4.3 Rock Chip Sampling

49 Rock chip samples were collected and analyzed at ALS Chemex in Brisbane using Aqua Regia Digestion. The best results are presented in Table 2. Full results and sample location and assay results are detailed in digital files MLN726MLN727\_200312\_012\_Appendix3.txt and MLN726MLN727\_200312\_012\_Appendix1.txt respectively. Sample locations are also presented in Figure 4.

Sample No.	Zinc(%)	Lead(%)
149	35.6	5.9
173	30.6	8.4
143	29.8	1.4
144	29.8	1.4
174	28.9	4.5
148	27.9	4.4
170	26.9	22.0
171	26.7	2.2
141	26.5	0.4
168	25.7	11.3
145	23.2	5.0
142	23.2	10.4
172	22.3	18.0
169	16.7	31.8
158	13.7	0.2
157	11.3	0.1

Table 2 Significant rock chip assay results

### 5 Proposed Exploration.

In the next reporting period it is planned to complete gridding of results with an aim to delineate drill targets. As any field based exploration first required approval by the traditional owners, negotiations will be entered into seeking approval for a drilling program.

### 6 Map Sheet Names and Key Words.

Marumba 1:100 000 map

Bulman Lead, Zinc, Mt Rigg Group, Palaeoproterozoic, Mesoproterozoic, Dook Creek Formation, Roper Group, Limmen Sandstone, Mainoru Formation, Derim Derim Dolerite, Bulman Fault, Mt Marumba Fault, McArthur Basin, cerrusite, galena, hydrozincite, smithsonite, willemite, Jimbu Microgranite.

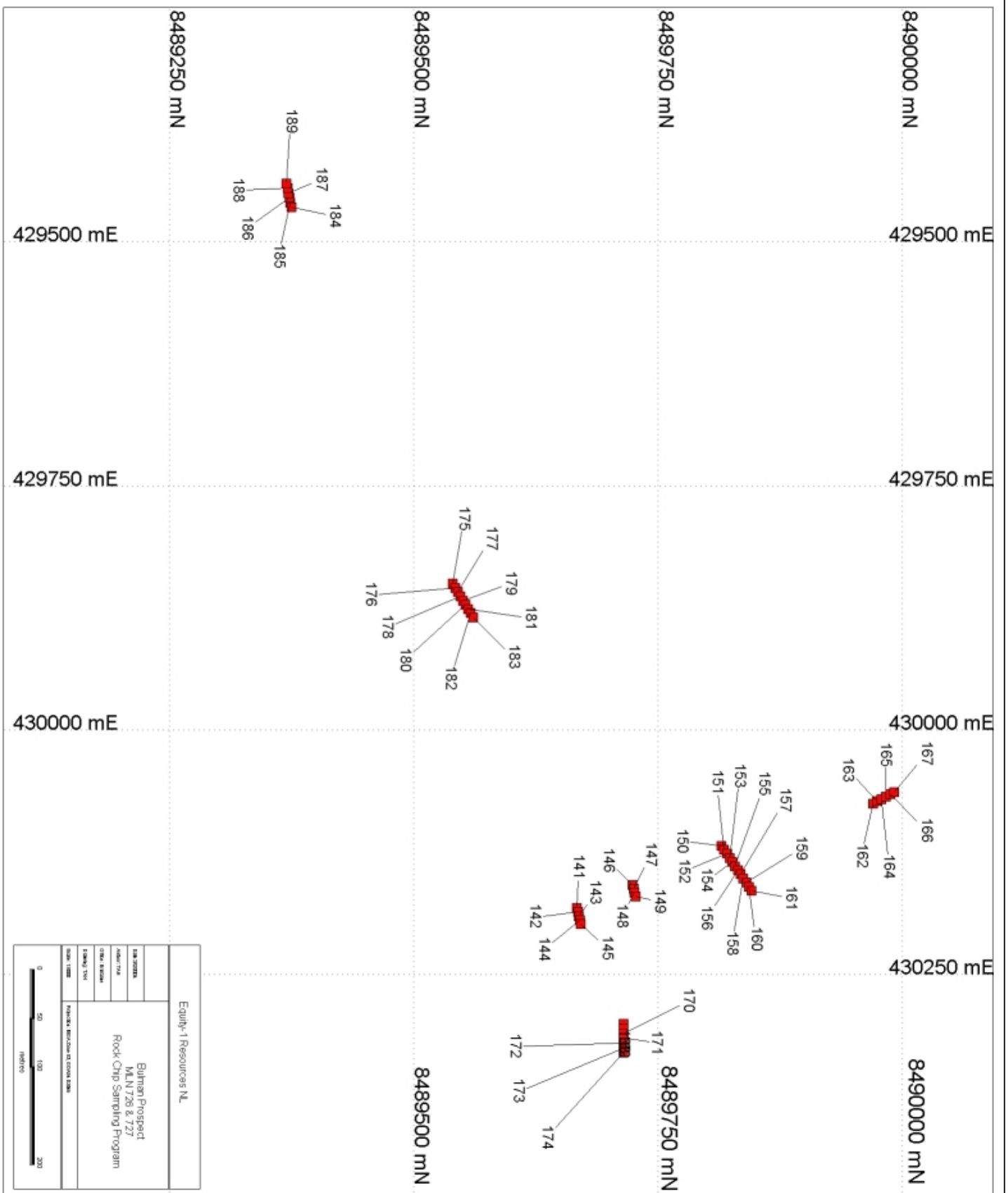


Figure 4 Rock Chip Sample Locations