EASTERN COPPER MINES N.L.

E.L. 3241 BALDWIN, N.T.

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BRISBANE

June, 1983.
INTRODUCTION

E.L. 3241 (Baldwin) is 250 km north-east of Alice Springs and is located more particularly in the Jinka-Jervois Range area. The area is remote having few facilities and being poorly serviced by roads etc.

HISTORY

The area of the Exploration Licence has been held by various exploration groups including Central Pacific Minerals N.L., Petrocarb N.L. and Otter Exploration N.L. Intensive efforts in the late sixties and early seventies located most of the small scheelite occurrences and some fluorite occurrences. Base metal and molybdenum exploration has continued but with limited success.

Eastern Copper Mines commissioned Dr. David Ransom to review the data pertaining to the E.L. and to assess the merits of the E.L. (Ranson 1982). His report is attached.

The general recommendation of this work was that any exploration would be of a 'grass roots' nature and hence would be more applicable to a larger group. Eastern Copper has attempted to farm-out the E.L. but with the overall downturn in Australia's economy over the last twelve (12) months, few exploration groups are prepared to commit funds to a project such as this.

REGIONAL GEOLOGY

Igneous and metamorphic rocks of the Precambrian Arunta Block crop out in the Molyhil region. To the north of the region is an extensive cover of Late Proterozoic to Palaeozoic sediments of the Georgina Basin. To the south, along the Plenty and Marsha River systems is a cover of sand and alluvium which stretches south eastwards into the Simpson Desert. Near Molyhil the Arunta Block is cut by a major fault, the Delny-Mount Sainthill Fault System, which stretches north-westwards from the Simpson Desert, through Molyhil, for the least 100 kilometres.
The fault separates granite and metamorphic rocks of the Bonya Sequence, north of the fault, from metamorphic rocks of the Harts Range Group to the south.

The Harts Range Group comprises three metamorphic units:
1. garnet-biotite gneiss, minor mafic rocks and a calcareous member consisting of calc-silicate gneiss and marble,
2. porphyroblastic felspar gneiss,
3. fine-grained leucocratic felsic gneiss.

The calc-silicate assemblages of the Bonya Sequence are widespread and are quite different from the (minor) calc-silicate assemblages of the Harts Range Group. The Bonya Sequence probably extends westwards from Jervois to Molyhil. West of the Molyhil area, Delmore Metamorphics probably correlate with the calc-silicate rocks of the Bonya Sequence, and the Delny Gneiss probably correlates with the felspathic rocks of the Bonya Sequence. The regional metamorphic grade of these rocks is generally lower amphibolite.

Granite is much more extensive north of the Fault System, making up about half of the exposures. It crops out discontinuously from Jervois to as far west as the Lander River, some 400 kilometres. The textures of the separate intrusions range from gneissic to porphyritic. The ages of the separate intrusions are all about 1450 m.y. years. (Hurley and others, 1961).

In the Molyhil region Jinka Granite intrudes and is faulted against metamorphic rocks of the Bonya Sequence. To the north the granite is in fault contact with Late Proterozoic Georgina Basin sediments and to the south is bound by the Delny-Mount Sainthill Fault System. West of Molyhil the granite is covered by a thin layer of sand which obscures its relationship with the adjacent Marshall Granite.

Jinka Granite is medium to coarse-grained and consists of orthoclase, quartz with minor biotite and muscovite. Some of the orthoclase is hydrothermally altered to kaolinite and sericite. Chloritic alteration of biotite shows the effects of weak, retrograde metamorphism which may have re-set the K-Ar isotopic age dates of the mica from (?) 1700 m.y. to 1450 m.y.
Throughout the Jinka Plain the granite seems to be homogeneous but porphyritic and plagioclase-bearing varieties have been noted by Bowen, Henstridge and Paine (1972). The granite contains numerous roof-pendant skarns which host small scheelite prospects in the Bonya area and the scheelite-molybdenite mine at Molyhil.

PRESENT INVESTIGATION

Eastern Copper Mines N.L. acquired E.L. 3241 seeking repetitions of the Molyhil mineralisation currently being mined by Petrocarb N.L. Despite the intense prospecting of the Molyhil area over the last ten (10) years since the discovery of scheelite and molybdenite, no new ore body has been located. It was not expected that calc-silicate rocks would be located by ground traverses since most of the area around Molyhil has been thoroughly prospected. It was considered that magnetic methods of exploration were the most likely to be successful.

BONYA MINERALIZATION

Scheelite is generally restricted to calc-silicate rocks but occurs in quartz veins and shears. Sparse, finely disseminated scheelite is found in pegmatitic granite and tourmaline granite. Mineralization is strongest in skarns developed at the intersection of pegmatite and pegmatitic granite with calc-silicate rocks. Skarn alteration of calc-silicates is reported to occur up to 400 metres from the intersection (Bowen and others, 1972).

MOLYHIL GEOLOGY AND MINERALIZATION

Outcrops of calc-silicate gneiss, hornfels and skarn are restricted to around the "Hill" and to an area around the open-cut mine 800 metres east of the Hill. They occur as roof pendants in hydrothermally altered Jinka Granite.

The calc-silicate rocks comprise 8 mappable units:
1. unaltered rocks - marble, diopsidic quartzite, pyroxene-garnet gneiss,
2. pyroxene hornfels - pyroxene with subsidiary garnet, quartz, magnetite, sulphide and scheelite,
3. andradite hornfels - andradite with subsidiary pyroxene, quartz, magnetite, sulphide and scheelite,
4. calcareous skarn - epidote, scapolite, some coarse scheelite,
5. amphibole skarn - ferro hastingsite with magnetite, scheelite, molybdenite, chalcopyrite and pyrite,
6. magnetite-quartzite - minor scheelite and sulphide,
7. banded hornfels - regular alternating bands of garnet-pyroxene and pyroxene-garnet hornfels; rare scheelite and molybdenite,
8. mixed hornfels - a melange containing garnet, pyroxene, epidote and calcite. No scheelite or molybdenite. Both andradite and grossular garnet are present in the hornfels. Where only grossular garnet occurs or where andradite is a minor component, magnetite, sulphide and scheelite are rare or absent. In the mineralized units andradite garnet is more common than grossular garnet.

The steep dip of the sediments in the Molyhil block shows that granite and the enclosed calc-silicate rocks must also dip steeply. Rotation into a horizontal position at the time of sedimentation, would give the calc-silicate rocks a near-vertical dip. The original roof of the pendant therefore is now to the north of the outcrop where calc-silicate hornfels and skarn are strongly oxidized - hematite replaces magnetite. The oxidation decreases southwards and almost certainly has no connection with Tertiary lateritization. This northern part is considered to be a palaeo-gossan.

The southern part of the outcrop which is much more strongly mineralized, represents the root of the pendant. Here magnetite and magnetite-ferro hastingsite skarns are well developed. The original lateral extent of these and other skarns is unknown but a ground magnetic survey places a constraint on the extent of the magnetic skarns.

GEOPHYSICS

The Bureau of Mineral Resources (BMR) completed a gravity survey in 1963 and an aeromagnetic survey in 1967 over the Huckitta 1:250,000 sheet area. The NTGS conducted a detailed ground magnetic survey in 1977 over Molyhil, and has recently flown a low level aeromagnetic survey over part of the Huckitta Sheet area to include the Molyhil and Bonya regions.
Anaconda Australia Inc., conducted a magnetic survey over an area to the west of Molyhil in 1977.

The BMR aeromagnetic survey showed that the Jinka Granite underlying the Jinka Plains has a low, even magnetic intensity, in contrast to the adjacent Bonya Sequence which has an uneven, high magnetic intensity. The general low magnetic intensity of the main body of Jinka Granite also contrasts to the higher intensity of the southern and south-western margins of the intrusive. The granite underlying the Jinka Plains is indistinguishable in hand specimen from granite associated with airborne and ground magnetic anomalies.

Soil geochemistry shows a good correlation between % iron in the soil and magnetic intensity and present analyses of soil and rock show a strong correlation between % calcium in the soil and magnetic intensity. Because Jinka Granite is uniformly low in magnetic minerals and no superficial cause of the magnetization is apparent, it is suggested that magnetic rocks occur at shallow depth around the margin of the Jinka Granite. Inclusions or remnants of Bonya Sequence metamorphic rocks could account for the anomalous magnetization.

The strong correlation between magnetic intensity and % iron is probably due to the amount of biotite in the granite. The correlation between magnetic intensity and % calcium may be due to sub-surface inclusion of calcareous rock. Calcium manifests itself at the surface by high amounts of caliche in the soil and by carbonate veining in granite. Biotite, caliche and carbonate veining are all common around Molyhil, especially in the granite close to the contact with hornfels and skarn.
The Molyhil ore body occurs in an aeromagnetic ridge over Jinka Granite. The small but intense ground magnetic anomaly at Molyhil shows itself as a small blip in the aeromagnetic contours.

RECOMMENDATIONS.

It is recommended that E.L. 3241 be relinquished.
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E.L.3241 was granted to Eastern Copper Mines N.L. in June 1981 for a period of twelve months. It is 490 square kilometres in area and located in the Jinka-Jervois Range area, 250 km north-east of Alice Springs. The E.L. area has been previously explored by Central Pacific Minerals N.L. for base metals and Otter Exploration N.L. for uranium without significant results.

The Jinka-Jervois region is underlain by metasediments of Division II of the Arunta Block and also by areas of basal Georgina Basin sediments. The metasediments are represented by the Bonya Schist, Mascotte Gneiss, Harts Range Group and an unnamed quartzofeldspathic gneiss. They are intruded by the Jinka and Jervois Granites. The Delny-Mt. Sainthill Fault System passes through the region separating the Ambalindum and the Jervois Blocks. The major mineralization types of the region are the Jervois Range stratabound silver-lead-copper deposits, stratabound scheelite and scheelite-molybdenite deposits of the Bonya Hills and Molyhil areas and barite-fluorite deposits in quartz-breccia reefs. The mineralization and rock types at Jervois superficially resemble the Willyama Complex in western New South Wales.

E.L.3241 is underlain by the Jinka Granite, Bonya Schist, the Harts Range Group, the unnamed quartzofeldspathic gneiss and outliers of Georgina Basin sediments. Known mineralization is insignificant. The exploration potential of the area is for scheelite deposits of the Bonya Creek type, base metal deposits of the Jervois Range type and scheelite-molybdenite deposits of the Molyhil type. The major potential is for Molyhil type scheelite-molybdenite deposits in the unnamed quartzofeldspathic gneiss which extends as a recognizable magnetic unit from the Molyhil mine area to Mt. Thring in E.L.3241. Base metal and gold potential may also be present associated with tourmaline-bearing gneisses in the Harts Range Group similar to those below the mineralization at Jervois.

The magnetic character of the Molyhil mineralization and the probability of its host rocks extending into E.L.3241 suggest a programme of airborne magnetic anomaly assessment is warranted. A recommendation for
ground follow-up of selected magnetic anomalies within E.L.3241 and for investigation of the geological relationships and geochemistry of the tourmaline-bearing gneisses is made.
INTRODUCTION

E.L.3241 (Baldwin) was granted to Eastern Copper Mines N.L. on June 25, 1982 for an initial period of twelve months. It is 490 square km in area. The following report outlines the rationale for selection of the area and describes the previous exploration, geology, mineralization and exploration potential.

LOCATION, ACCESS

E.L.3241 is located approximately 250 km north-east of Alice Springs, 350 km by road (Plate 1).

Access is by the Plenty Highway to Red Tank, then by graded track via Molyhil Mine. Most of the area is accessible to four wheel drive vehicle in dry weather.

AREA SELECTION

The E.L. area was recommended for selection by Barraclough (1981) on the basis of the 1967 BMR aeromagnetic survey of the Huckitta 1:250000 Sheet. Barraclough (1981) noted that the Jinka Granite exhibited two magnetic patterns, one represented by the relatively flat magnetic effects of the Jinka Plain area, the other by the disturbed effects of the Molyhil area. Since granite underlying the Jinka Plain is indistinguishable in hand specimen from granite in the vicinity of Molyhil, it was argued that inclusions or remnants of "Bonya Sequence" metamorphic rocks could account for the anomalous magnetization. Since the Molyhil scheelite-molybdenite deposit occurs within one such remnant, those areas of disturbed magnetics, underlain by granite were considered to have scheelite/molybdenite potential. E.L.3241 is underlain by the Jinka Granite in the Thring Creek area and metasediments to the north and south, both containing areas of disturbed magnetics.

PREVIOUS EXPLORATION

Parts of E.L.3241 have been held under previous title by Central Pacific Minerals N.L. (A.P.2283, E.L.603) and Otter Exploration N.L. (E.L.1583).
Central Pacific Minerals N.L. held the area of the Jinka Granite, Elyuah Range and Bonya Hills between 1969 and 1975. Their programme was initially a search for base metal deposits, specifically copper, associated with the quartz breccia reefs within the Jinka Granite. A programme of low level airborne magnetics and stream geochemistry was undertaken over the whole area during 1969 and 1970 but subsequently became a search for outcropping scheelite deposits in the calc-silicates of the Bonya Hills (Ransom, 1970a; Bowen et al., 1972; Henstridge, 1972; Pietsch, 1973). Prospecting at this time led to the discovery of all of the significant scheelite deposits of the region, including Molyhil. Central Pacific also drilled a number of narrow fluoride deposits associated with the Oorabra Arkose (Ivanac & Pietsch, 1977). A resource of 360000 tonnes of 40% fluoride was defined. The northern part of E.L. 3241 lies within the original A.P.2283. Stream geochemical results in this area exhibited no significant values.

The southern part of E.L.3241 was covered by E.L.1583 held between 1978 and 1980 by Otter Exploration N.L. This was one of five E.L.'s which extended from west of Molyhil Mine to the Jervois Mine in the east. In E.L.1583, although applied for originally as an area with potential for base metals and scheelite, emphasis changed to one of search for uranium, based on follow-up of BMR radiometric anomalies. Apart from some airborne reconnaissance, sampling and rudimentary mapping, no significant exploration was carried out (Kojan 1979, 1980; Turner, 1978).

**REGIONAL GEOLOGY, MINERALIZATION**

The Jinka-Jervois area is underlain by rocks of the Arunta Block and Adelaidean to mid-Palaeozoic sediments of the south-western Georgina Basin. The Huckitta 1:250000 Sheet has recently been remapped by the Northern Territory Geological Survey (NTGS), and 1:25000 scale compilation maps have been recently released.

The Arunta Block has been subdivided into three depositional units, Divisions I, II and III (Shaw & Warren, 1975; Shaw & Stewart, 1976; Stewart & Warren, 1977; Shaw et al., 1979). Division I, probably oldest, consists of immature sediments and volcanics, metamorphosed to granulite facies. Division II contains a larger proportion of derived...
sediments and Division III a mature pelite and quartzite. In the Jinka-Jervois Range area, Division I is represented by rocks which occur to the south-west of Molyhil Mine. Division II is represented by the Bonya Schist, the Mascotte Gneiss, Harts Range Group and unnamed quartzofeldspathic gneisses. Warren (1980) considers Division III rocks occur in the vicinity of Jervois Station homestead. Division II rocks are intruded by the Jinka and Jervois Granites, dated by Black (1980) at about 1750 Ma. The date of regional metamorphism is estimated at 1770-1810 Ma (Black, 1980). A large north-westerly striking structure, the Delny-Mt. Sainthill Fault System (Warren, 1977) traverses the Jinka-Jervois Range region separating two major structural blocks, the Ambalindum Block to the south and the Jervois Block to the north and east.

The Harts Range Group consists of three metamorphic units (Barraclough, 1981):

* garnet-biotite gneiss, minor mafics and a calcareous unit of calc-silicate gneiss and marble;
* porphyroblastic feldspar gneiss;
* fine grained leucocratic gneiss.

The Mascotte Gneiss is composed of quartzofeldspathic gneiss and amphibolite, while the unnamed gneiss is a quartzofeldspathic gneiss with more common inclusions of metasediments and calc-silicate.

The Bonya Schist is composed of mica schist, amphibolite, calc-silicate gneiss, magnetite-quartzite and quartzofeldspathic gneiss. Calc-silicate rocks are considerably more widespread than in the older metasedimentary rocks. Granitic intrusions occur in both rock units but are more prominent in the Bonya Schist. The stratigraphy and rock types of the Bonya Schist superficially resemble the Willyama Complex in Western New South Wales.

Unconformably overlying the Arunta Complex is the Proterozoic and Cambrian section of the Georgina Basin, best developed in the Elyuah Range. The distribution of Georgina Basin sediments is controlled by faulting over long lived east-west and west-north-west trending growth
faults manifested as the large quartz-breccia reefs within the Jinka Granite.

Mineralization in the Jinka-Jervois Range area consists of three main types:

* **Stratabound silver-lead-copper deposits of the Jervois Mine area.** These deposits are silver-lead and copper mineralized calc-silicates and quartz-magnetite-garnet rocks within a mica-andalusite schist sequence equivalent to the Bonya Schist. The silver-lead deposits occur at the top of the sequence within diopside-quartz-calcite-garnet-rhodonite rocks. Exploration by Petrocarb Exploration N.L. and Union Corporation in the early 1970's defined a resource of about 2 million tonnes 3.07% copper and 55.0 gm/tonne silver. A smaller, separate resource of approximately 40000 tonnes 11.2% lead, 210 gm/tonne silver, with minor bismuth and copper is also present. The silver-lead deposit is currently being prepared for production by Plenty River Mines. Pty. Ltd. The base metal and scheelite mineralization is similar to that in Suites 3 and 4 of the Willyama Complex.

* **Stratabound scheelite deposits occurring within calc-silicate units.** Three mineralogical variants have been described in detail by Ransom (1978, 1981) and are characteristic of the Jervois Range, Bonya Creek and Molyhil districts. Scheelite occurs as veins and disseminations, in calc-silicate rocks characteristically rich in vesuvianite at Jervois, garnet and amphibole at Bonya Creek and magnetite at Molyhil (Barraclough, 1979). The most significant deposit is Molyhil wherein a resource of about 1 million tonnes of 3% MoS₂ and 0.5%WO₃ has been defined by Petrocarb Exploration N.L.. Molybdenite, while an ore constituent at Molyhil, is rare elsewhere in the region. The Jervois Range and Bonya Creek scheelite mineralization occur within the Bonya Schist, but at Molyhil, while the mineralization lies within a calc-silicate roof pendant in the Jinka Granite, the host rocks may be the Mascotte Gneiss, the unnamed quartzfeldspathic gneisses described above, the Harts Range Group or the Division I rocks which have been tentatively identified south-east of Molyhil. All except the Mascotte Gneiss contain minor calc-silicate.

* **Barite-fluorite deposits in quartz-breccia reefs.** These deposits
occur in basement rocks associated with the basal section of the Georgina Basin, specifically the Oorabra Arkose. Fluorite is generally absent from the cover rocks, but probably post-dates the onset of sedimentation in the Georgina Basin (Ransom, 1970b).

* minor copper deposits such as the Bonya Mine (Warren, 1980) are common in the Bonya Hills and elsewhere but usually of a vein-like character. They are of little significance. Warren (1980) notes the presence of copper-vanadium mineralization in gabbros east of Jervois Mine.

**GEOLOGY, MINERALIZATION OF E.L.3241**

The northern half of E.L.3241 is underlain mainly by the Jinka granite, Mascotte Gneiss and an area of Bonya Schists (Plate 2). The southern half is underlain mainly by a suite of quartzofeldspathic gneisses, mica schists and granite assigned to the Harts Range Group by the NTGS and by a further minor area of Bonya Schist. The two halves are separated by a belt of Proterozoic and Palaeozoic cover rocks which is the eastern extension of the Elyuah Range. A further zone of cover rocks occurs in the far north of the E.L. area (Plate 2).

The Delny-Mt. Sainthill Fault System passes south of Mt. Baldwin and Mt. Thring, along a clear magnetic boundary which separates a belt of magnetic rocks to the north from variably magnetic rocks to the south. This magnetic line, in accordance with the geological observation of Warren (1980), cannot be traced to the east of Mt. Thring but may (on the evidence of the magnetics, Plate 3) be traced to the south-east (Plate 2), east of, but parallel to the Mt. Baldwin Linear (Warren, 1980). A further fault, partly supported by magnetics, may split from the Delny-Mt. Sainthill Fault in the vicinity of Mt. Thring striking east-north-east. To the south of this fault and to the east of the Delny-Mt. Sainthill Fault lie rocks of the Harts Range Group, mainly mica schist, quartz-mica schist, quartzite, quartzofeldspathic gneiss, minor calc-silicate and tourmaline-bearing gneiss. To the north of these faults, the metasedimentary rock units are as follows (Plate 2):

* Bonya Schist (pEo): biotite-muscovite schist, quartz-magnetite rock, calc-silicate and amphibolite;
**Mascotte Gneiss (pOM):** quartzofeldspathic gneiss and amphibolite;

**the unnamed gneiss (pEC):** quartzofeldspathic gneiss, mica schist and calc-silicate.

The Bonya Schist and the unnamed gneiss are magnetic, while the Mascotte Gneiss is non-magnetic. The Bonya Schist and Mascotte Gneiss have a concordant (if not conformable) relationship. The relationship of these rocks to the unnamed gneiss is unknown since the latter is largely covered by Tertiary and Quaternary deposits.

The Jinka Granite apparently has an intrusive relationship with the Mascotte Gneiss but is in fault contact with the Bonya Schists. Smaller bodies of granite intrude each of the other rock units.

Known mineralization in E.L.3241 is restricted to minor copper showings in Bonya Schist, and a minor barium occurrence north-east of Mt. Baldwin in quartz breccia (Plate 2). The most significant copper deposit is the Green Hoard (or Yarraman Mine; Warren, 1980) which occurs within a calc-silicate rock in the north of the E.L. area (Plate 2).

**EXPLORATION POTENTIAL**

The major exploration potential of E.L.3241 is as follows:

* scheelite deposits of the Bonya Creek type;
* base metal deposits of the Jervois Range type;
* scheelite-molybdenite deposits of the Molyhil type.

The extensive exposure of the Bonya Schists where they underlie E.L.3241 and the careful prospecting of these areas in the early 1970's suggest that potential for scheelite deposits similar to those found in the Bonya Schist is low. Since these deposits have no known geophysical expression, they represent a difficult exploration target in covered areas.

Base metal deposits of the type occurring at the Jervois Mine are
unknown outside the Jervois area. Whether this is a function of outcrop or a genuinely restricted geological environment is not known at present. However, the tourmaline-bearing gneiss outcrops in rocks designated Harts Range Group in Plate 2 may be significant. Similar rocks form a recognizable stratigraphic unit below the mineralization at Jervois and occur close to the Jericho scheelite deposit * (north of Bonya Bore). The significance of these tourmaline-bearing gneisses and their relationship to the Jervois occurrences is unknown but indicates stratigraphy equivalent to the Jervois area and potential for base metal deposits of the Jervois type may be present. Tourmaline-bearing rocks are presently of considerable exploration interest in their relationship to base metal and gold mineralization (Slack, 1982).

The major exploration potential in E.L.3241 is for scheelite-molybdenite deposits of the Molyhil type. The Molyhil Mine occurs within the same belt of magnetically disturbed rocks which extends into and underlies the E.L. from the vicinity of Mt. Baldwin to the west of Mt. Thring (Plate 3). In Plate 2 these rocks are designated pCc, the unnamed quartzofeldspathic gneisses. It seems likely that these rocks are the host rocks of the Molyhil mineralization.

EXPLORATION PROGRAMME

The Molyhil scheelite-molybdenite deposit is magnetic and gives rise to a high amplitude spatially restricted ground magnetic anomaly directly related to the scheelite mineralization (Woyzbun, 1980). Although at Molyhil this anomaly is too small in area to produce a recognizable airborne magnetic anomaly and lies within an area of disturbed magnetics, slightly longer strike length deposits of the Molyhil type should have a geophysical expression. Hence any exploration programme should aim to establish the source of the magnetic anomalies. Within the prospective rocks of E.L.3241, there are ten or more magnetic anomalies which should be examined to establish their source. To this end, geological reconnaissance of the outcropping rocks of the E.L and ground magnetic traverses to define the prominent airborne anomalies for interpretation is warranted. Initially, however, the airborne survey should be assessed by a geophysicist to order the priority with which each anomaly is assessed on the ground.

* Neither has been mapped by the NTGS
Geological reconnaissance of outcropping areas to check the NTGS mapping and to measure magnetic susceptibilities to assist with the magnetic interpretation should be undertaken. The geological relationships and geochemistry of the tourmaline-bearing rocks near Baikal also warrant investigation to assess their base metal and gold potential.

CONCLUSIONS

1. E.L.3241 is underlain mainly by the Jinka Granite and rocks of Division II of the Arunta block specifically the Harts Range Group, Mascotte Gneiss, Bonya Schist and an unnamed quartzofeldspathic gneiss.

2. Potential for magnetite-associated scheelite-molybdenite-bearing gneiss outcrops is present in the E.L. area. Rocks of similar magnetic pattern and continuity to those hosting the Molyhil deposit are present in the area south of Mt. Baldwin to the east of Mt. Thring. Potential for other scheelite and base metal deposits is low but the base metal potential of tourmaline-bearing gneisses near Baikal is worthy of further investigation.

3. A programme of ground magnetics and geological reconnaissance to assess magnetic anomalies in the E.L. area is warranted, after more detailed interpretation of the airborne magnetic survey by a geophysicist.

RECOMMENDATIONS

It is recommended that:

1. the recently released airborne magnetic survey of the Huckitta 1:250000 Sheet area should be interpreted by a geophysicist to order priority for magnetic anomaly follow-up within E.L.3242;

2. a programme of ground magnetic traverses and geological reconnaissance be undertaken subsequently to identify the source of the magnetic anomalies;

3. the geological relationships and geochemistry of the tourmaline-
bearing gneisses be investigated.

D. M. RANSOM
Consultant Geologist.
REFERENCES


--- (1980b) "Report on E.L.1583" ibid CR 80/174


--- (1978) "Annual report on E.L.1583" ibid CR 78/116


NORTHERN TERRITORY

E.L. 3241 (BALDWIN)
LOCATION PLAN

PLATE 1