Australian Manganese Resources Pty Ltd

Group Report: GR271 covering

ELs 28588, 28586, 28589, 28607, 28608, 28609 and 28894

1st Annual Report

For the period

06-09-2012 to 14-09-2013

By

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BSc (Hons) MAusIMM

GDA94 - Zone 53

Target Commodities: Manganese, Heavy Minerals, Iron Ore, Uranium and Base Metal

1:250,000 Mount Young

1:100,000 Mount Young, Tawallah Range, Bing Bong, Rosie Creek October 2013

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SUMMARY

This report covers exploration activities on GR271/13 which includes tenements ELs 28588, 28586, EL28608, EL28609, EL28607, EL28589 and EL28894. The majority of these tenements were granted on 15/09/2011, except for EL28894 (20/02/2012) and EL28589 (05/09/2011).

No significant work was carried out on these tenements during the current reporting period because the parent company that provides the funding has focused its attention on its ilmenite plant. Although AMR as for its parent company AIR is well funded by Chinese investors release of exploration funds is dependent on success of the mining operation on the AIR Roper Heavy Minerals Project, which is still in commissioning stage. Consequently work on these AMR tenements as GR271 has had to be limited to data review and planning.

A summary of the project is attached – tenement by tenement.

EL28586 – This EL is underlain by the Yiyintyi Sandstone of Palaeoproterozoic age which forms a prominent range of hills. Cretaceous rocks occur on the margin of the elevated ground and are prospective for manganese mineralization. However there is limited room within the EL boundary for the development of a large zone of mineralization. The northern part of the EL is located within the proposed Limmen National Park.

EL28588 – This EL extends along the southern bank of the Limmen Bight River and is within the proposed Limmen National Park. The area is underlain by recent alluvium which probably covers Cretaceous sediments. Exploration will be difficult within this EL due to the extensive mangroves and swampy ground adjacent to the Limmen Bight River.

EL28589 – This EL is underlain by Proterozoic sandstones. Minor Cretaceous sediments may occur along the boundary of the tenement but are not considered to be sufficiently extensive for further work. The EL should be dropped.

EL28607 – This EL is located adjacent to EL28586 and is underlain by Yiyintyi Sandstone. The EL has been recommended for relinquishment.

EL28608 – The tenement is located on the coast and the recent sand and alluvium may cover Cretaceous rocks. Exploration will be difficult due to the mangroves, swampy ground and lack of access.

EL28609 – The EL extends from the coast inland for 20km. Most of the tenement is within the proposed Limmen National Park. There are occasional outcrops of Proterozoic rocks however most of the EL is underlain by recent alluvium and sand. It is likely that Cretaceous sediments are present beneath the sand cover. Exploration will be difficult close to the coast due to swampy ground and mangroves.

EL28894 – This EL is located on the coast to the west of Bing Bong. The bedrock in this area is covered by recent sands and alluvium. It is likely that Cretaceous sediments underlie the area. Exploration will be difficult due to swampy ground and mangroves.

The Project lies in the Batten Fault Zone within the Bauhinia Shelf of the Proterozoic McArthur Basin. The area has been historically subject to very limited exploration for manganese and other commodities by airborne geophysical methods at wide spacing that provides only basic information for an initial understanding.

The tenements are along the coast and close to the Gulf of Carpentaria. The tenements are situated within the Carpentaria Basin, a major Mesozoic-aged sedimentary basin. In Cretaceous times a major marine transgression laid down a sequence of sandstone, siltstone and conglomerate unconformably over older rocks. Much of this sequence has been eroded with flat top mesas remnant in inland areas and cover (up to 100m thick) on coastal plains.

Those portions of the tenements which are underlain by Cretaceous age sediments are considered to be prospective for manganese similar to that mineralization style found on Groote Eylandt.

No exploration was carried out during the year due to lack of funds. AMR is funded by Australian Ilmenite Resources (AIR) who had been committed to starting and commissioning of its ilmenite plant at nearby Roper River Heavy Metals Project.

INTRODUCTION

Background

Australian Manganese Resources Pty Ltd (AMR) holds eighteen granted exploration licences and one exploration licence application in the Gulf Country of the Northern Territory within the Bauhinia Shelf of the McArthur Basin area. The west group of AMR tenements include: tenements ELs 28588, 28586, EL28608, EL28609, EL28607, EL28589 and E L28894 which are considered highly prospective for a s ignificant manganese discovery. The locations of these tenements in relation to the regional structural setting are shown in Figure 2. Tenements were selected on t he basis of geological similarity to that at Groote Eylandt where economic manganese deposits are preserved under Cretaceous cover.

Climate

The project area has an av erage annual rainfall between 600-800 millimeters with most falls between November and April. It presents a humid monsoonal climate, with mild dry winters and hot humid summers often with heavy monsoonal rains associated with tropical cyclones. During the wet season, portions of the area can be inaccessible for exploration activities.

Location and Access

Most of the exploration licences are located along the coast line within the Carpentaria Basin (*Fig.2*). The north boundary of EL28588 (EL totally on Li mmen National Park) is situated 20 km from the Carpentaria Highway. The tenement follow pretty much the Limmen Bight River direction till the mouth of the river where the other tenements follow the coast line direction (EL28609; EL 28608; EL28894). There are then EL28607, EL28589 and EL28586 which is partially on the National Park.

With limited access to the tenement by unsealed station tracks helicopter access may be required initially for any reconnaissance exploration. Proximity to the Carpentaria Highway means that additional access may be facilitated through associated tracks.

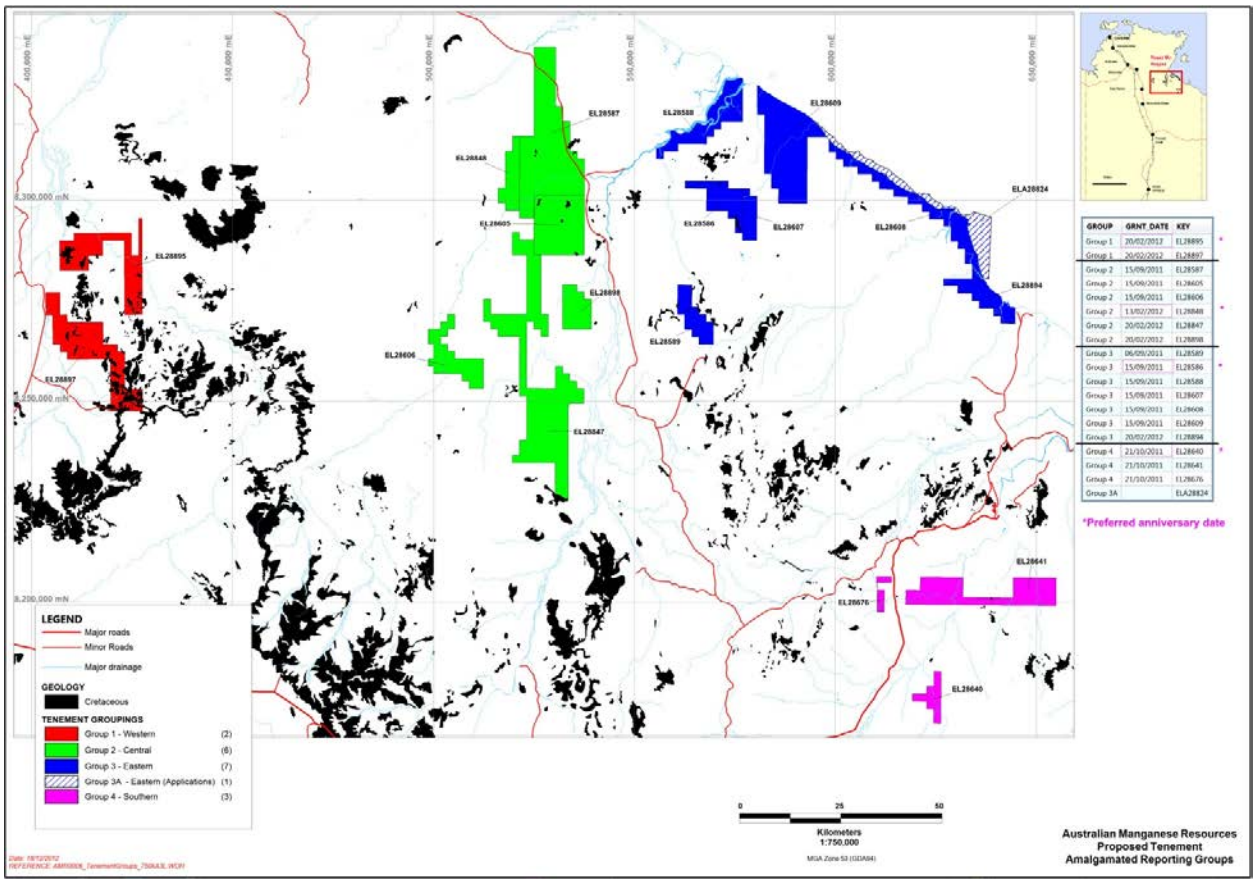

Fig.1 *AMR Group Tenements location (GR 271 in blue color)*

TENURE

Mining/Mineral Rights

Exploration Licence for the Group Tenements GR 271/13 was granted to AMR Pty Ltd (Australian Manganese Resources Pty Limited) covering 286 sub blocks (Table 1).

Title Type_No.	Land Tenure	Grant date	Expiry date	Area Sq Km	Current Sub Blocks	Annual Report
EL28586	Pastoral	15/09/2011	14/09/2017	82.79	25	14/11/2013
EL28588	Pastoral	15/09/2011	14/09/2017	124.19	46	14/11/2013
EL28589	Pastoral	06/09/2011	05/09/2017	69.45	21	14/11/2013
EL28607	Pastoral	15/09/2011	05/09/2017	43.04	13	14/11/2013
EL28608	Pastoral	15/09/2011	14/09/2017	142.80	62	14/11/2013
EL28609	Pastoral	15/09/2011	14/09/2017	275.00	91	14/11/2013
EL28894	Pastoral/CLP	20/02/2012	14/09/2017	78.94	28	14/11/2013

Tab. 1 *Exploration Licences: Details of Group tenements GR 271 (286 sub blocks).*

GEOLOGY

Regional Geology

The tenements are situated within the Carpentaria Basin, a major Mesozoic-aged sedimentary basin. The Carpentaria Basin is a broad, north-trending intracratonic basin covering an area of about 600 000 km2, about 20% of which is in Northern Territory waters. Most of the basin lies offshore within the Gulf of Carpentaria. The geology is shown on the Mt Young 1:250,000 geological sheet.The basin was formed as a gentle intracratonic downwarp in the Jurassic and Cretaceous and contains up to 1760 m of mainly Mesozoic clastic sediments (Burgess 1984). McConachie et al (1990) subdivided the basin into four sub-basins that are recognised by the characteristics of the basal Mesozoic sandstone or the basement they overlie.

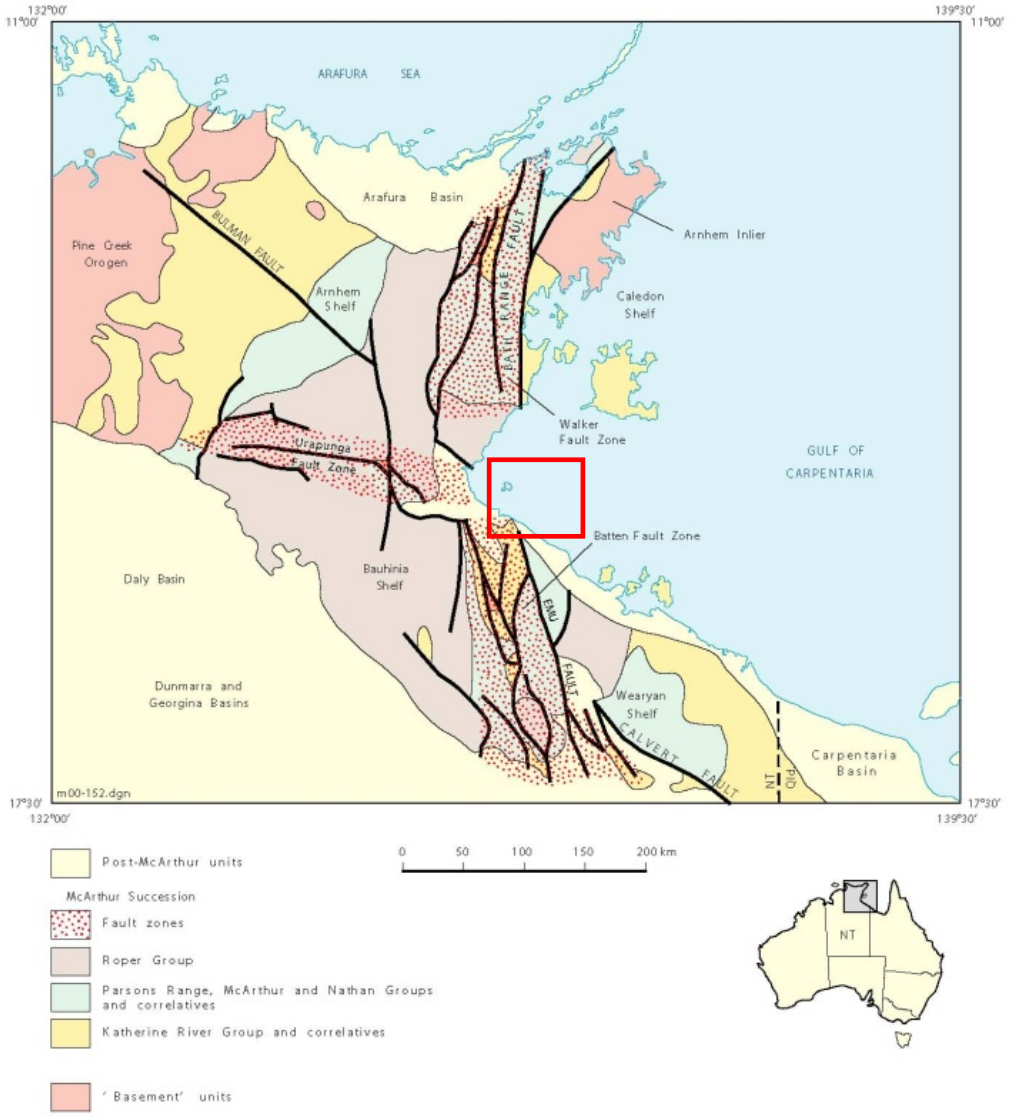

Fig.2 *Location of project within Carpentaria Basin long the coast line.*

Onshore in the west, the basin is flanked by Proterozoic rocks of the Arnhem and Mount Isa Inliers and the McArthur Basin, which the shelf succession overlies with angular unconformity. Basement highs separate the Carpentaria Basin from the Papuan Basin in the north and Eromanga Basin in the south.

Local Geology

The tenements lies within the Carpentaria Basin at the edge with McArthur river Basin which is characterized on the east side to the Batten Fault Zone that hosts a large number of base metal prospects including the McArthur River lead-zinc mine. To the west of the Batten Fault Zone is the Bauhinia Shelf where the Roper Group contains the oolitic ironstones of the Sherwin Formation. The area to the east of the Batten Fault Zone is underlain by formations of the Wearyan Shelf.

In the Carpentaria Basin deposition commenced in the Jurassic with fluvial sandstone, minor siltstone and conglomerate in a series of basement depressions. Fluvial sandstone deposition was widespread during the Early Cretaceous. A Middle Cretaceous marine transgression brought paralic and then widespread shallow marine conditions to the basin, resulting in the deposition of a thick mudstone sequence. Pisolitic manganese was precipitated in protected coastal areas along the west coast of Groote Eylandt at this time. A late Middle Cretaceous regression resulted in the return of paralic conditions and deposition of the Normanton Formation. The Western Gulf Sub-basin is characterised by rugose basement palaeotopography and thin to absent basal Mesozoic sandstone. Fine marine sediments of the Rolling Downs Group constitute the bulk of the stratigraphic section in this sub-basin, which suggests that this part of the basin consisted of highlands with contemporaneous isolated valleys, infilled during the Jurassic-Early Cretaceous (McConachie et al 1990). Cretaceous strata of the onshore Western Gulf Subbasin consist of a thin sequence (max 100 m) of sandstone, siltstone and conglomerate, which is preserved as mesas and plateaux in a 150 km wide belt along the western margin of the Gulf of Carpentaria (Krassay 1994a). This belt represents the western epeiric shelf of the Carpentaria Basin and the extent of the Late Albian western shoreline.

During the Early to Middle Cretaceous, storm- and wavedominated siliciclastic sediments accumulated on this gently sloping shelf. The sequence has been studied by Krassay (1994b) who subdivided the previously named Mullaman Beds into the shallow marine,

manganese-bearing Walker Creek Formation and the mainly fluvial Yirrkala Formation. Extensive bauxite deposits have developed over the latter on the Gove Peninsula.

Remote sensing methods such as satellite imagery, airborne geophysics and hyperspectral mapping can be used at a regional level for base metals exploration.

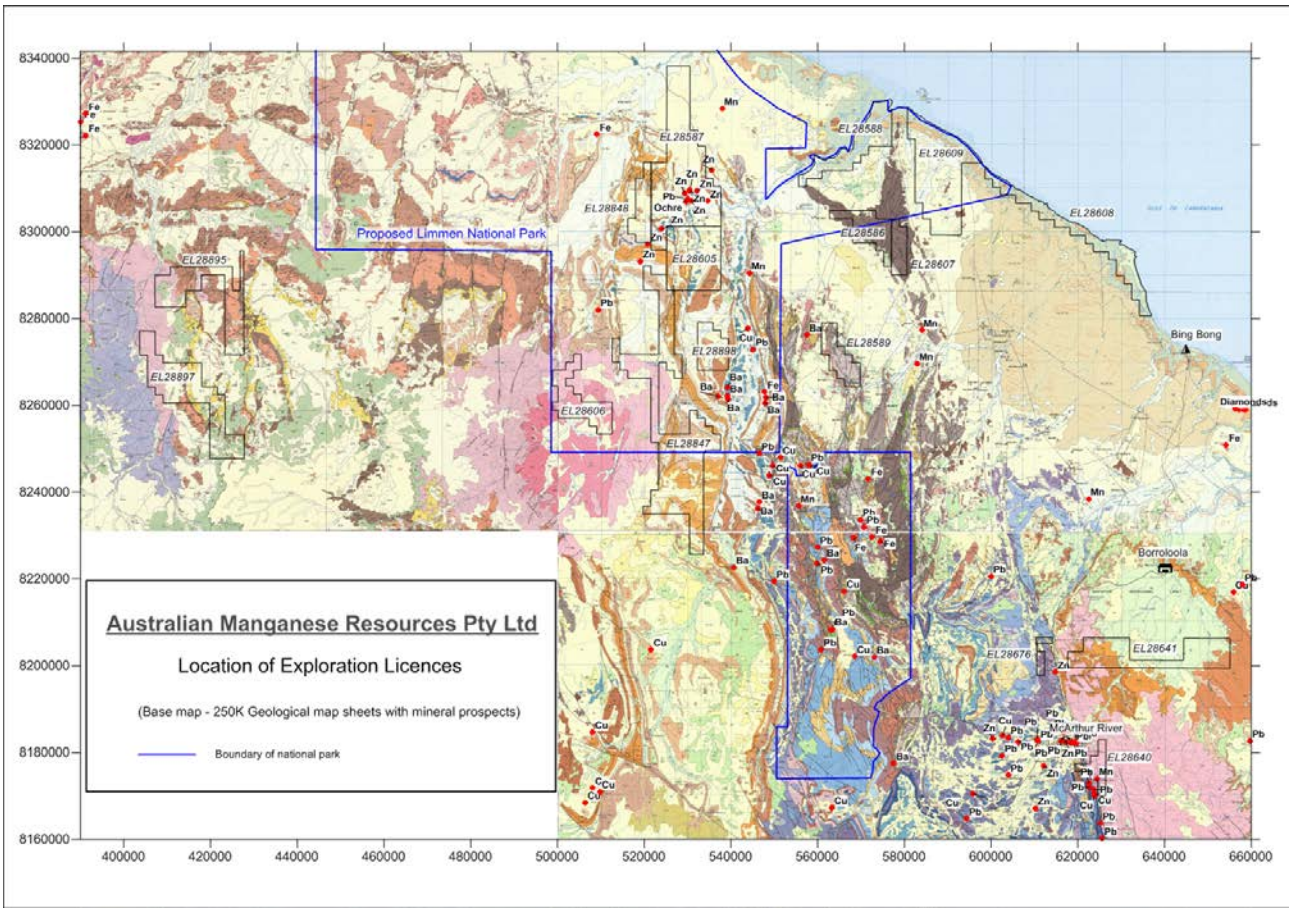

Fig.3 *Geology map of the area.*

PREVIOUS EXPLORATION

Mining History

No mining has been conducted on the Group tenements.

Exploration by Previous Companies

Sporadic exploration over the western and southern margins of the Carpentaria Basin on the mainland has been conducted by various companies since 1964 (eg BHP 1964a, Chesnut et al 1967, Still 1971, Lockhardt 1977, Paterson 1997). A number of significant

prospects (eg South Rosie Creek and Batten Creek) have been discovered in this region using the Groote Eylandt manganese model. Total production of manganese ore from the Northern Territory is about 50 Mt and is dominated by the Groote Eylandt operation. BHP Minerals undertook exploration for manganese in the area covered by the AMR tenements during the early 1990's. The main techniques used were airborne and ground electromagnetic surveys (TEM) plus some drilling done. Many spurious TEM anomalies were generated by saline water incursions in the coastal sediments. Minor intersections of manganese were found at the Brumby, Rosie Creek South and Yiyintyi prospects. Rosie Creek South is located close to a prominent hill of Yiyintyi Sandstone. The manganese mineralization is hosted by Cretaceous claystone at the unconformity with the underlying Yiyintyi sandstone (Ferenczi 2001). The mineralization is represented as a stratiform pisolitic manganese horizon within a glauconitic clay-stone which overlies a basal quartz sandstone. The Cretaceous sequence is up to 100m thick. The ore zone forms a sheet-like body up to 3m thick which occurs within a mineralized zone some 22km long and up to 6km wide. Current reserves are about 120Mt at 48% Mn.

CURRENT EXPLORATION

No significant work was carried out on these tenements during the current reporting period because the parent company that provides the funding has focused its attention on its ilmenite plant. Consequently work on these AMR tenements as GR271 has had to be limited to data review and planning.

PROPOSED EXPLORATION

Remote sensing methods such as satellite imagery, airborne geophysics and hyperspectral mapping can be used at a regional level for manganese exploration.
However the need for helicopter reconnaissance, rock chip sampling / mapping and potentially heritage and fauna and flora surveys would need to be considered prior to drilling.

Satellite imagery

Satellite imagery covers large areas and can be used to map outcropping or subcropping manganiferous zones and related vegetation types.

Airborne geophysics

Airborne geophysics is cost effective in locating flat-lying Mn oxide sheets at shallow depths in relatively resistant host rocks (Irvine and B erents 2001). Airborne electromagnetic (AEM) methods are able to detect manganese oxides when present in moderate amounts due to their conductive properties. Results from a Geotem AEM survey flown at 600-1000 m line spacing over the Groote Eylandt deposits outlined conductive areas that correlated well with defined manganese ore zones (Fig. 4). This GeotemAEMmethod has also been s uccessfully used to locate subsurface manganese mineralisation on the mainland south of Groote Eylandt (Berents et al 1994) and in the Bootu Creek area to the north of Tennant Creek (Nunn 1997).

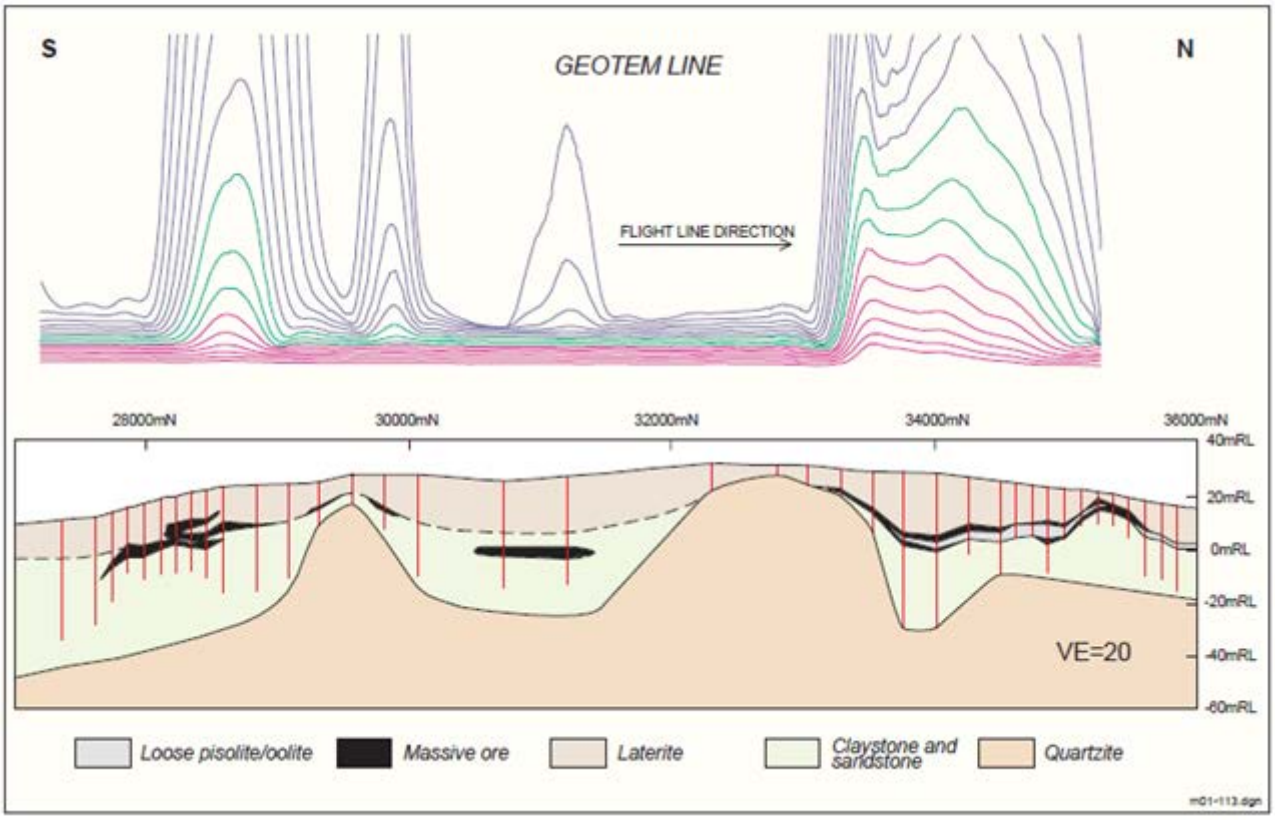

Fig. 4 *Geotem airborne electromagnetic response over Groote Eylandt Mn deposits (modified from Irvine and Berents 2001)*

Hyperspectral mapping

Hyperspectral ground reflectance data can be c ollected from a conventional airborne geophysical platform (Hausknecht et al 2000) or satellite (eg JERS and A STER). Commercial airborne sensors include OARS (Operational Airborne Research Spectrometer), HYMAP, GEOSCAN and AMS (Airborne Multispectral Scanner).

Hyperspectral mapping allows the identification of most species of phyllosilicates, clays, carbonates and metal oxides that occur in regolith and parent rocks. Manganese oxides have a distinctive low reflectance signature (Fig. 5) relative to clay and iron oxide minerals. Ground-based electromagnetic (Nunn 1997) and gravity (Dentith et al 1994, p 70, Consolidated Minerals 2000) geophysical surveys can be used to gain a better understanding of the shape, size, depth and orientation of subsurface deposits.

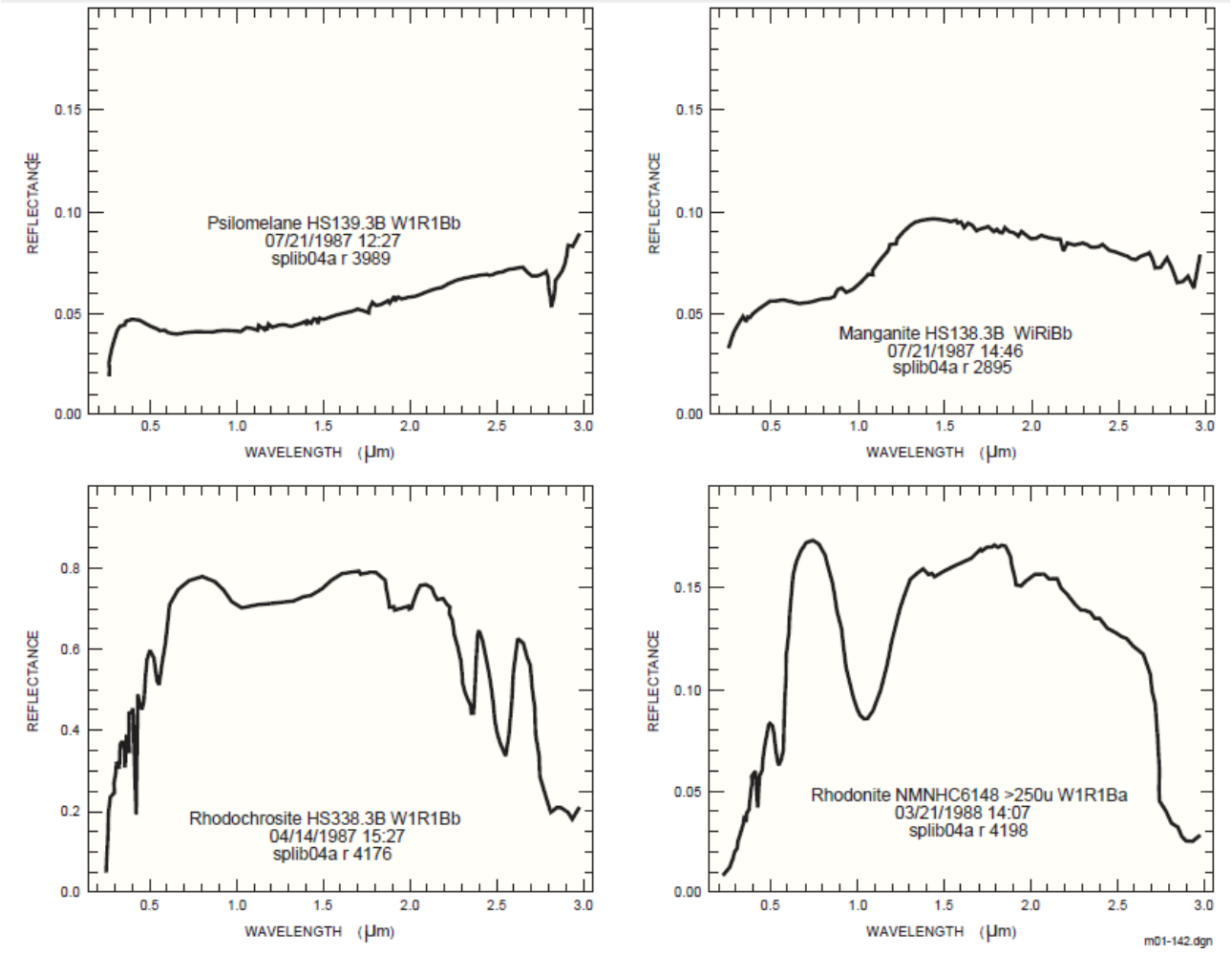

Fig. 5 *Spectra of some manganese ore minerals, from USGS digital spectral library (after Clarke et al 1993)*

CONCLUSIONS AND RECOMMENDATIONS

Tenements within the GR271 are potentially prospective for both base metals and manganese based on proximity to Macarthur River Pb/ Zn Mine and geological comparison with Groote Eylandt manganese.

The following exploration work plan is recommended:

- A detailed review of historic exploration data including exploration and discovery of both the Macarthur River Pb/ Zn deposits and Groote Eylandt Manganese.
- Helicopter reconnaissance and rock chip sampling.
- In combination with the rest of the tenements consider an airborne EM or equivalent survey to assess potential for each commodity under shallow cover.
- Any exploration work should be done in collaboration with the other AMR tenements, because of the proximity and similar geological association.

It is anticipated that covenant expenditure will be met on these tenements by the above programmes being activated , providing a sufficient budgeted is agreed by Directors.

Anthony Ryall

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