

# EL24524 "EAST ARNHEM" **GEMCO Project**

## ANNUAL EXPLORATION REPORT **For the Period Ended 19 April 2018**

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GEMCO

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## EXECUTIVE SUMMARY

East Arnhem Land is Aboriginal-owned land, as granted under the *Aboriginal Land Rights (NT) Act 1976 (ALRA)*. The Groote Eylandt Mining Company Pty Ltd (GEMCO) has its obligations defined in various lease documents. Exploration by GEMCO within the tenement targeted Manganese (Mn) mineralization and is based on historically reported Mn occurrences and previous exploration campaigns. During the reporting period, work completed consisted of desktop reviews in light of results achieved on adjacent tenure. Future work planned will involve a site rehabilitation survey and subsequent tenement technical review.

## INTRODUCTION

Exploration Licence (EL) 24524 was applied for by BHP Billiton Minerals Pty Ltd (BHPB) on 17 December 2004. This application is located within Aboriginal Freehold Land and consequently were lodged under the Aboriginal Land Rights (NT) Act 1976 (ALRA). Although the original application covered a much larger area, the Traditional Owners gave consent only to parts of the application. As a result, four new ELs were established to cover the non- contiguous consent areas.

Since this time, a partial surrender of EL 24524 has occurred. This report summarised the activities for the retained portion of EL24524 during the reported period.

## TENURE

### LAND STATUS

Aboriginal Freehold Land – Northern Land Council

### TITLES

EL24524 was granted to the Groote Eylandt Mining Company (GEMCO) on the 20th April 2009. The lease was renewed in April 2015 at which time 15 of the original 48 blocks were retained. Details are given below in Table 1. A renewal application was submitted in April 2017 for a further two years. The tenement expires on the 19 April 2019.

**Table 1: Tenement details**

Tenement	Owner	Grant Date	Expiry Date	Number of blocks
EL 24524	Groote Eylandt Mining Company	20 April 2009	19 April 2019	15

## PREVIOUS EXPLORATION ACTIVITIES

Historical exploration over this area is described in Report 13 of the Northern Territory Geological Survey (Ferenczi, 2001). In the mid 1960's, BHPB (then BHP Ltd) explored parts of the eastern Arnhem Land area for sedimentary-diagenetic Mn after the discovery of the Groote Eylandt deposit. A variety of exploration campaigns were completed by BHPB in the 1960's, including helicopter reconnaissance work, regional mapping, pitting and regional drilling at some prospects (e.g. Caledon Bay, Peter John River, Lake Evella).

The Peter John River prospect extends over an area of about 10 sq km straddling EL24524 (S32 100%) and EL4171, a Rio Tinto Exploration (RTX) joint venture. In 1965, a total of 33 exploration pits were dug. Subsequently 11 holes were drilled to various depths to test the manganese potential. However, no significant manganese mineralisation occurrences were identified at this prospect.

Between July and September 2009, BHPB Minerals Exploration (MinEx) completed a drilling program in EL24524. The programme involved the drilling of 27 shallow Reverse Circulation (RC) holes and establishment of access tracks (~ 27 km) to reach the drill sites. The drilling concluded in August 2009 and all the drill sites and access tracks were rehabilitated in the following month prior to closure of the field camp and withdrawal from the project site.

Due to a shift in exploration focus by BHP Billiton, MinEx did not conduct any exploration on the East Arnhem Project during the 2011 dry season.

During 2012 BHPB Manganese Australia (Mn Australia) completed three diamond drillholes in EL24524, again to establish stratigraphic control in the area. The holes were planned along the existing Mata Mata Road requiring only drill pad construction.

A follow up infill drill program was conducted in 2013. A total of 39 aircore holes for 1,803m were drilled from which 461 samples were collected for analysis. Results indicated that a deep chemical weathering profile where iron oxides are prevalent affects most of the target horizon. Some grades at very low yields were found to be preserved in areas of deeper cover. An additional two diamond holes were drilled to support the stratigraphic model.

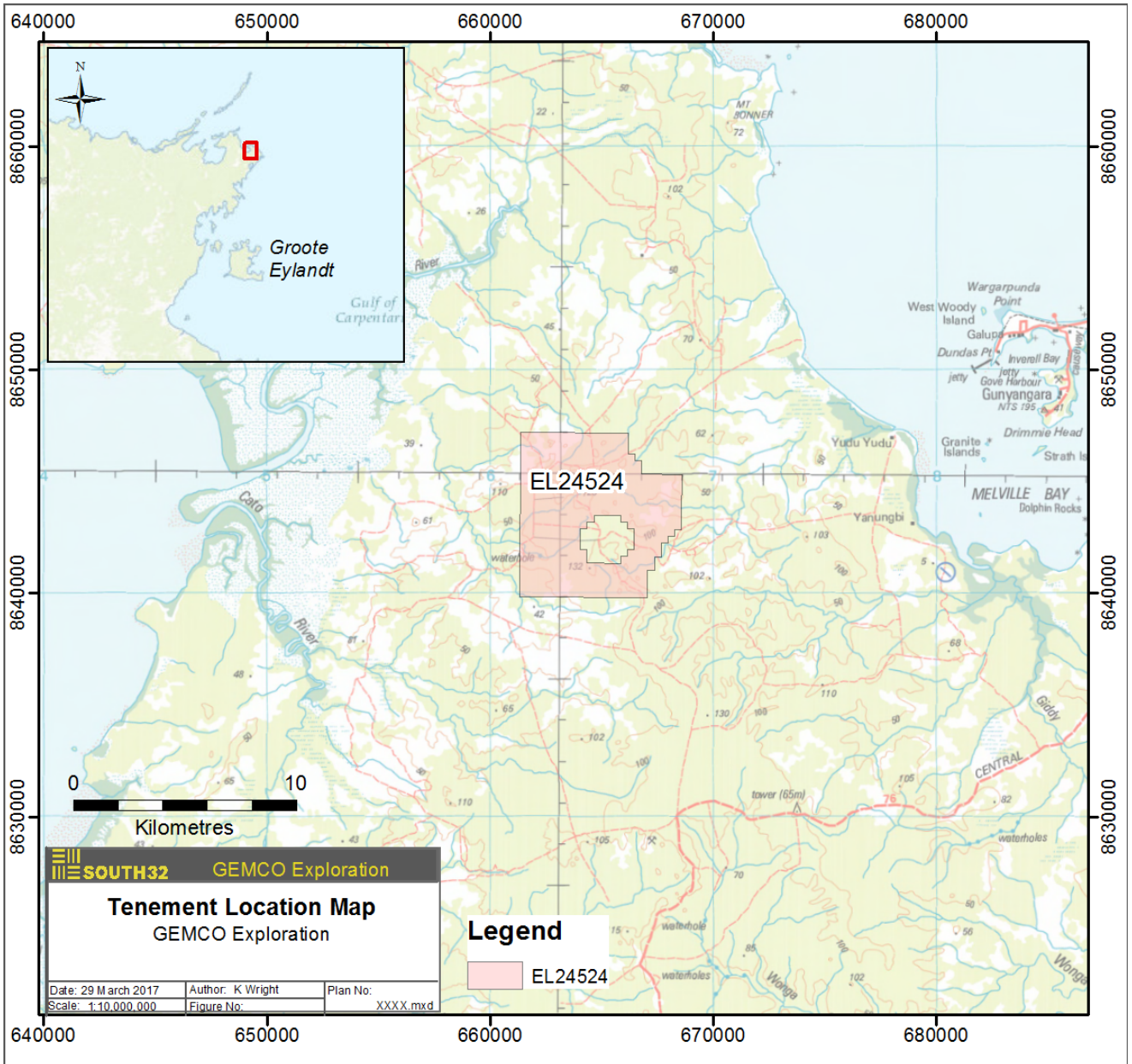


Figure 1: EL24524 Tenement Location Map



## EXPLORATION ACTIVITIES

Work completed during the 2017-2018 reporting period consisted of:

- Desktop and technical reviews,
- Tenure reporting including previous period annual reports.

### Desktop studies & Technical review

In April 2017, a peer review technical workshop was held involving internal South32 geoscientists, business planners and management. The tenement's remaining potential was discussed and reviewed in the context of the whole East Arnhem project (includes adjacent tenure). As a result of this revision the proposed geophysical surveying planned for the reporting was postponed due to impending exploration activities on adjacent tenure. Total cost of the proposed survey was also reviewed to better align with South32 GEMCO Exploration strategy and priorities.

A renewal document was prepared in April 2017 on the basis of identified potential mineral prospectivity on adjacent tenure with planned exploration occurring in 2017. The mineralised horizon identified in historical drilling on the lease was found to be best preserved where thick overburden has masked the effect of the chemical weathering surface (Figure 2).

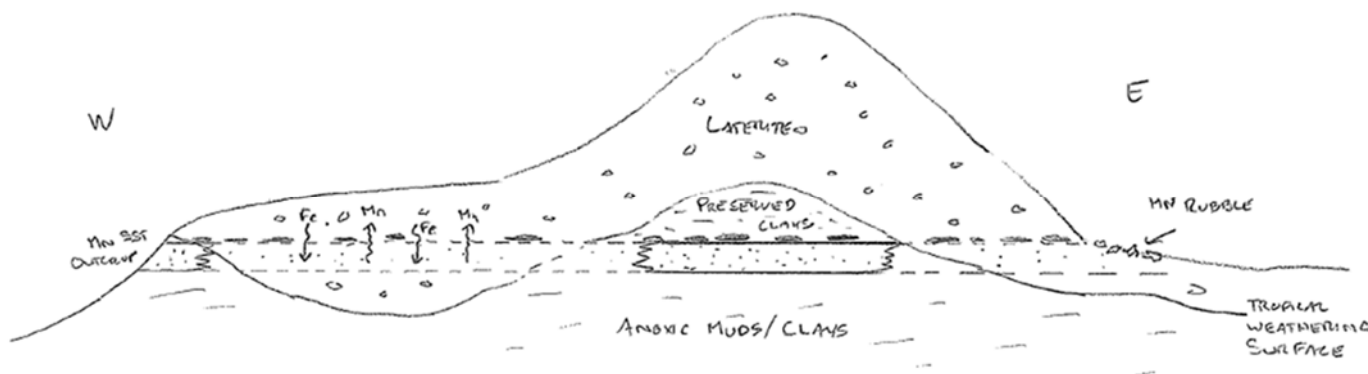


Figure 2: Mineralised sandstone model

During August 2017, a drilling campaign on adjacent tenure (EL24389) was completed. The continuity of mineralisation intersected in the adjacent tenure is currently the subject of review and the remaining potential to upgrade manganese potential of the EL24524 mineralised area will be presented to a technical committee for review. Based on early results, the proposed geophysical survey is not actively being pursued.

## FUTURE WORK PROGRAM

Future work planned across EL24524 will involve a rehabilitation survey and technical review of the tenement. Pending a complete technical review, no further exploration work is currently planned for the lease. Final planning and exploration review of technical results achieved within the tenure and in adjacent tenure of the East Arnhem project area will be reviewed by a technical committee in mid-2018. A post rehabilitation environmental survey is planned to follow up the environmental impact of historical exploration activities.



## CONCLUSIONS AND RECOMMENDATIONS

The previously proposed multi-discipline geophysics program is not a current priority based on preliminary results of work programs in adjacent tenure. The upside manganese potential is to be reviewed and presented to a technical committee review for future direction of exploration.

Current exploration plans include a post rehabilitation survey aimed at assessing the environmental impact of the completed exploration activities. Any subsequent workflow will be addressed as required. A technical and peer review workshop is planned for mid-2018. Future direction for the tenement and East Arnhem project will be evaluated against with South32 brownfields exploration priorities.

Expenditure across the tenement is expected to be \$30,000 over the next year. The planned program will be revised based on access conditions and seasonal weather conditions.

Year	Proposed activity	Expected expenditure	Timing
1	Conduct rehabilitation survey	\$20,000	August – October 2018
	Review tenement results and remaining potential at technical review	\$10,000	October – December 2018
	Conduction post exploration community engagement meetings		May 2018