

# Rio Tinto Exploration Pty Ltd

ABN 76 000 057 125 / ACN 000 057 125

A member of the Rio Tinto Group

## Annual Report

for the period 15 October 2015 to 14 October 2016

EL 4170 Cato Plateau & EL 4171 Cato River

Combined Reporting Number GR077/09 – Cato Project

**Tenement Holder:** Rio Tinto Exploration Pty Ltd

**Tenement Operator:** Rio Tinto Exploration Pty Ltd

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[EL 4170 & EL 4171]

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[EL 4170 &amp; EL 4171]

## 1 Summary

EL 4170 Cato Plateau and EL 4171 Cato River were applied for by BHP Minerals Pty. Ltd. (BHP) on 3<sup>rd</sup> December 1982. EL 4170 was granted on 14<sup>th</sup> October 2004 and EL 4171 was granted on 12<sup>th</sup> September 2005. EL 4170 has been renewed until 13<sup>th</sup> October 2016 (with a further two year renewal pending) and EL 4171 until 11 September 2017. Rio Tinto Exploration Pty Limited (RTX) signed an agreement with BHP on 27<sup>th</sup> March 2000 whereby RTX took over management of EL 4170 and EL 4171 (the tenements). This agreement was amended in 2007 to allow for BHP to conduct simultaneous activities for manganese within the licence package. GEMCO (a subsidiary of South32) now are the responsible party for the agreement.

The original tenement application, ELA 4170 covered an area of 593.5 km<sup>2</sup> of which only 57.0 km<sup>2</sup> (28 blocks) was granted. The remainder of the area was split off into a new application, EL 24389 and put into moratorium. The original ELA 4171 tenement application covered an area of 846 km<sup>2</sup> of which 598.2 km<sup>2</sup> (208 blocks) was granted. Both tenements have undergone relinquishments, with the retained areas being 16 blocks (EL 4170) and 14 blocks (EL 4171). The tenements are located 30 km west of Nhulunbuy, east Arnhem Land and consequently are administered under the Aboriginal Land Rights Act 1975 (ALRA).

Combined reporting of EL 4171 and EL 4170 was granted and the project called 'Cato Project' with reporting number GR077/09. The Cato Project forms part of the larger contiguous tenement package in east Arnhem Land, which is prospective for bauxite and manganese.

These two licences (Cato project) cover part of the Cato plateau, which is a known occurrence of bauxite within the east Arnhem area. The Cato plateau bauxite target has the potential to contain resources similar in style to the nearby Gove deposit. BHP (now GEMCO), under the agreement with RTX, retains the right to explore for manganese (Mn) on EL4170 and EL4171.

In 2015 a review of the licenses, in conjunction with GEMCO, resulted in EL 4171 undergoing a significant relinquishment with only 14 out of the 96 blocks retained.

No field work was completed on EL 4170 during the reporting period.

Focus during the year continued on the effort to gain access to the adjoining application (EL 24389) that was originally split out of EL 4170 upon grant. This included anthropological surveys by the NLC to determine the potential consent area, and subsequently a data review was carried out to assess the exploration potential of the broader Cato plateau, which included the ground covered by exploration licences EL 4170, EL 4171, and EL(A) 24389.

When EL 24389 was granted on 23 June 2016 (for a period of 6 years), the bauxite targets identified from the data review were prioritised. A program of work was developed to initially drill test the priority bauxite targets on the newly granted EL 24389 with subsequent phases of drilling extending to ground peripheral to the main plateau on EL 4170.

A mine management plan (MMP) for exploration for the broader Cato Plateau Project (EL 24389, EL 4170, & EL 4171) was prepared and submitted to Government. The MMP was assessed on 21 September 2016 and authorised by the Northern Territory Mines Directorate i.e., Authorisation 0882-01. Further work on the broader Cato Plateau Project included desktop and ground based environment and cultural surveys, as well as field preparations for earthworks and drilling.

The initial program of work which is being executed during Q3/Q4 2016 (at the time of annual reporting of GR 077) is focused on drill testing priority areas on EL 24389 and if the results of this initial phase warrant further work, there are up to 8 drillholes planned on EL 4170.

[EL 4170 & EL 4171]

## 2 Copyright

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## 3 Introduction

### 3.1 Location

The Cato Project licences (EL 4170 & 4171) are located in East Arnhem Land approximately 50km west of Nhulunbuy. The main community located close to the licences is Dhalinbuy. Access is easily gained via the Central Arnhem HWY. An entry permit is required from the NLC to access the land

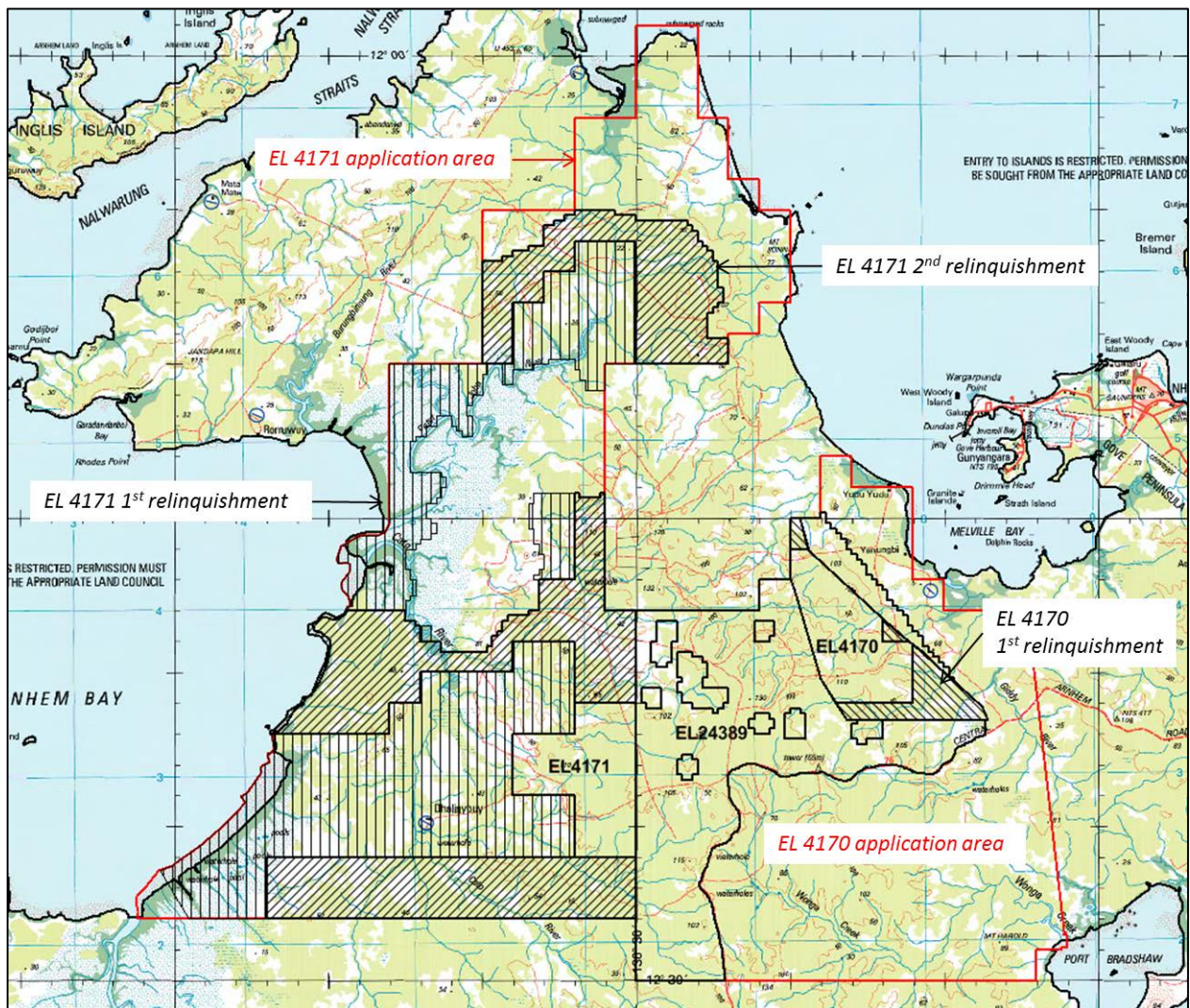


Figure 1: Location Map



[EL 4170 &amp; EL 4171]

### 3.2 Title History

EL 4170 Cato Plateau and EL 4171 Cato River were applied for by BHP Minerals on 3 December 1982. EL 4170 was granted on 14 October 2004, EL 4171 was granted on 12 September 2005.

EL 4170 underwent a relinquishment of 12 blocks in October 2007 with the retained area being 16 blocks.

In 2010, 53% (112 blocks) of EL 4171 was relinquished. A second relinquishment of another 82 blocks was completed in September 2015. The area remaining of EL 4171 is approximately 8% of the granted licence. Tenement details are listed in Table 1 below.

Combined reporting of EL4171 and EL4170 was granted with number GR077/09.

Application for renewal of EL 4170 was lodged on 31 August 2016 over an area of 16 blocks.

The two titles EL 4170 and EL 4171 form part of the broader Cato Plateau Project, which also includes the recently granted EL 24389. EL 24389 was the non-consent area of the original ELA 4170 application.

The tenements fall wholly within Arnhem Land and is subject to the provisions of the Aboriginal Land Rights Act which is administered by the Northern Land Council.

*Table 1: tenement details*

Name	Owner	Application Date	Grant Date	Renewel	Area applied km <sup>2</sup> , sub-blocks	Are granted km <sup>2</sup> , sub-blocks	Area retained km <sup>2</sup> , sub-blocks
AL 4170 Cato Plateau	RTX	3/12/1982	14/10/2004	13/10/2016*	593.5, 183	57.0, 28	38.8, 16
EL 4171	Cato River	3/12/1982	12/09/2005	11/10/2017	846.0, 264	598.2, 208	49.96, 14

\* Application for renewal of EL 4170 was lodged on 31 August 2016 over an area of 16 blocks

### 3.3 Physiography

The Cato Project lies within the Arafura Fall physiographic sub division between the western shore of Melville Bay, and the eastern shore of Arnhem Bay (Rawlings et al., 1997). Most of the granted tenement is low lying (<50m elevation) and includes the Cato River, and tributaries of the Cato and Giddy Rivers. A spur of the Cato Plateau extends four kilometers across the centre of EL 4170, and another spur extends 3 kilometers into EL 4171 from the east. The plateau has steep breakaways and a flat top at an elevation of approximately 100m.

[EL 4170 &amp; EL 4171]

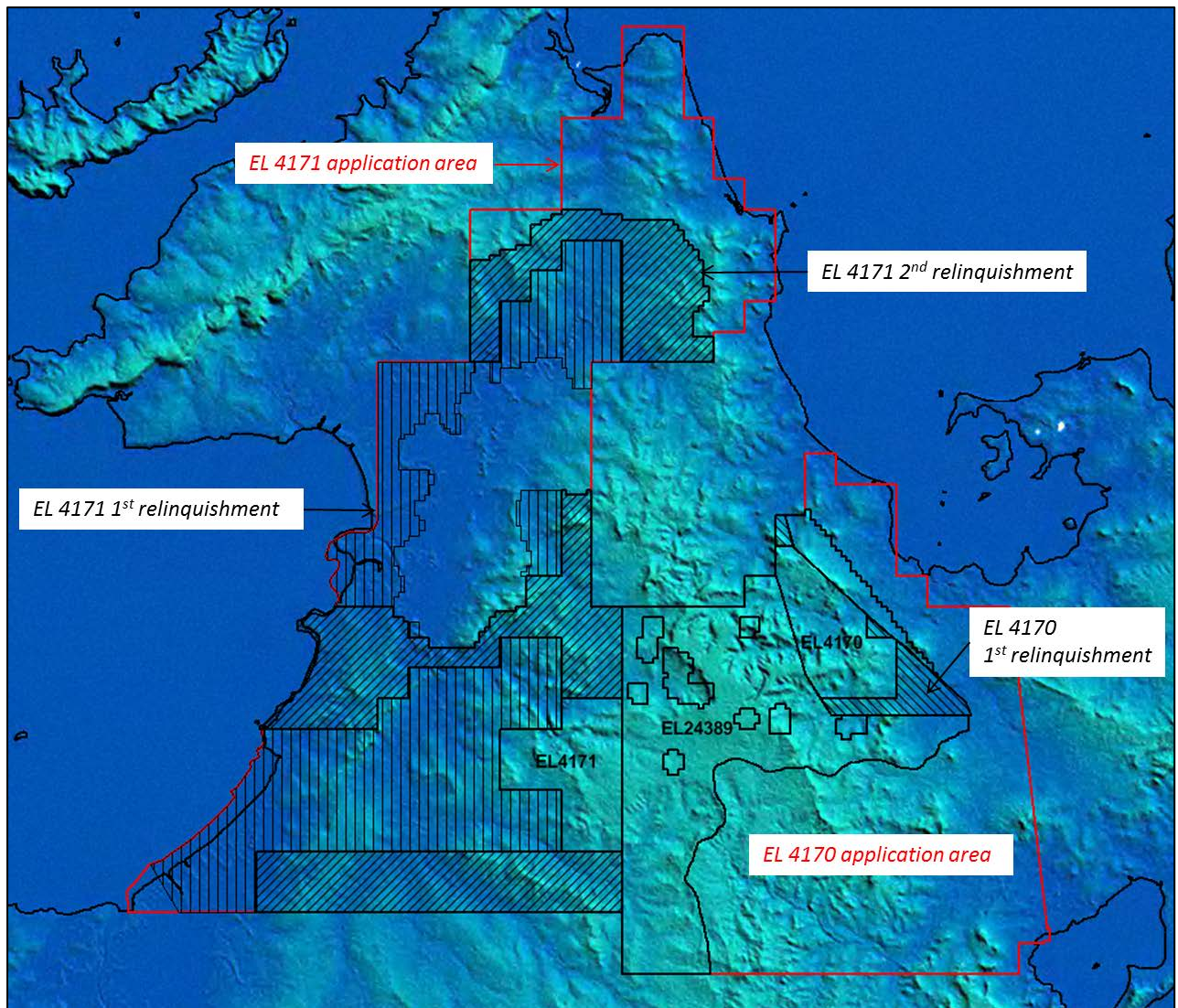


Figure 2. Cato Project showing the geomorphology on the digital terrain model

#### 4 Geological Data

Geology of the Cato area comprises of a sequence of sedimentary sandstones and claystones belonging to the Walker River Formation (Middle Cretaceous) and the younger Yirrkala Formation (Upper Cretaceous) which unconformably overly Proterozoic basement. (Refer to SD5304 – Gove Special GSNT Geology Map).

During the Tertiary period, the Yirrkala Formation has undergone extensive lateritisation in the east Arnhem area. This has resulted in the formation of bauxite in areas where the protore was sufficiently clay rich, the landform allowed adequate drainage and the land surface has been preserved. The Cato Plateau which lies mostly to the east of EL4171 has known bauxite occurrences. While several occurrences of bauxite have been recorded in the east Arnhem area, large, economic deposits outside the Gove mine site have not been delineated.

The Cretaceous sediments are prospective for manganese and this has been the focus of the GEMCO (BHPB) work. The transition between the Walker River formation and the Yirrkala Fm is considered the time equivalent to the Groote Eylandt mineralisation.



[EL 4170 &amp; EL 4171]

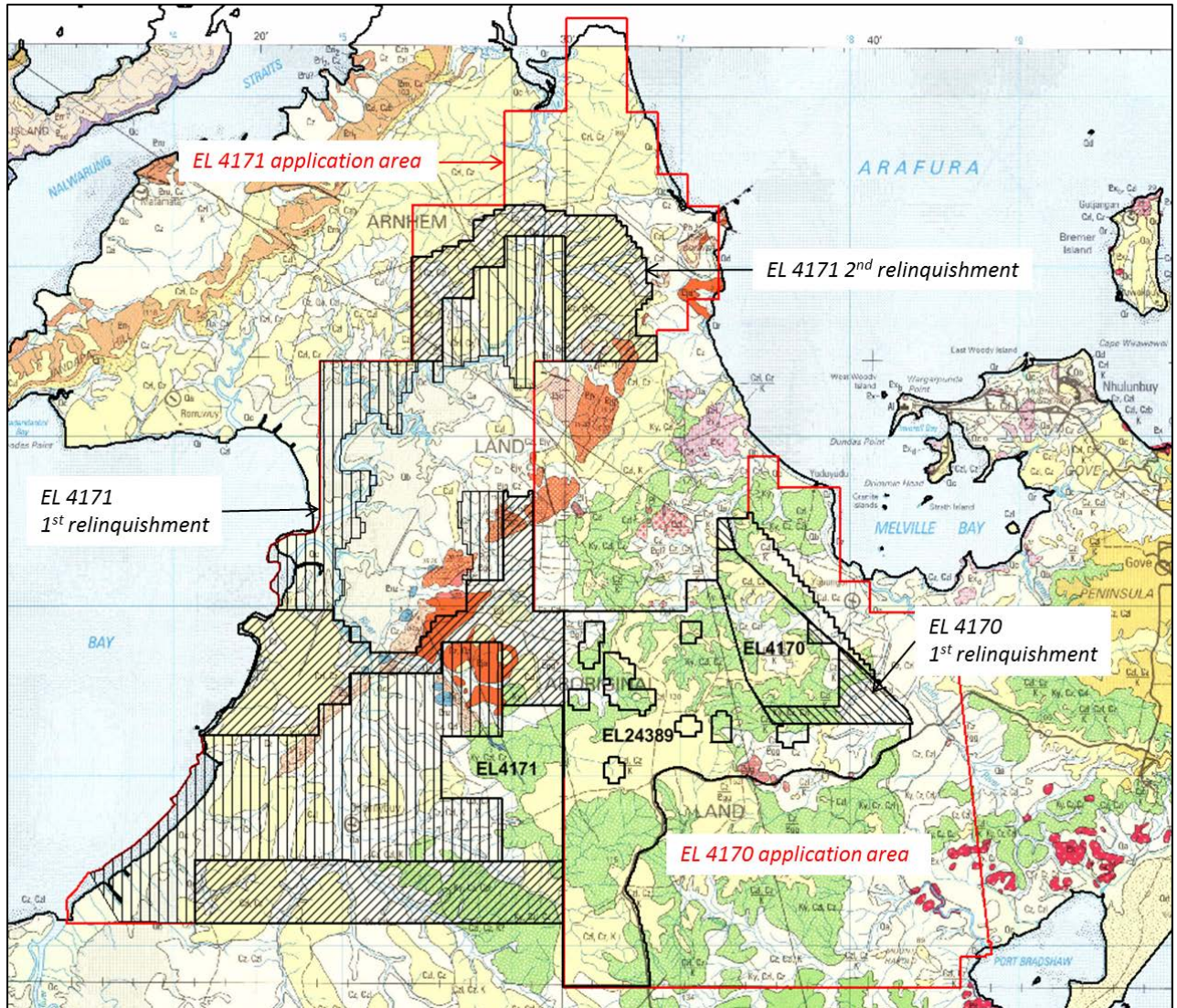


Figure 3: Cato Plateau Project showing the 1:250,000 geology (SD5303-04 Arnhem Bay-Gove special sheet)

## 5 Geophysical Data

The project area is covered by a regional scale aeromagnetic survey flown for the NTGS in 1990-92 (Rawlings et al., 1997). The radiometric data can be used to help distinguish the laterite-covered areas from those of both basement and Quaternary sand cover. This method does not distinguish between bauxitic and non-bauxitic laterite.

In 2009, as part of the joint venture, BHPB flew an airborne EM survey over part of the licences. Digital terrain data has been acquired and processed to assess areas that may be prospective for bauxite and or areas that are not eroded. The Cato Plateau is clearly defined as a gently south-westerly dipping flat surface of approximately 100 km<sup>2</sup> in area. Less than 10 km<sup>2</sup> of the Cato Plateau lies within the granted ELs.

## 6 Previous Exploration

Previous exploration over this area is described in Report 13 of the Northern Territory Geological Survey (Ferenczi, 2001). New Guinea Resources drilled 19 auger holes in the northern end of the



[EL 4170 &amp; EL 4171]

Cato Plateau and concluded that most of the bauxite had been eroded off. In 1966 BHP drilled 89 auger holes for a total of 778m into the Cato Plateau to test the area for bauxite. Of these, only six holes are located within EL 4170. The BHP data (Chestnut et al., 1966) shows that there is patchy bauxite within the plateau however the silica values are generally high and the recoverable (ABEA) alumina is low. No further work has been conducted in the area since the late 1960's.

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 (BHPB 100%) and EL4171 (RTX). In 1965, a total of 33 exploration pits were dug. Subsequently 11 holes were drilled to various depths to test the Mn potential. However no significant Mn mineralisation was found at this prospect and was not pursued further.

In 2015, due to the spin-off and listing of South32 from BHPB, the operation of the farm-in agreement was transferred to GEMCO. Following this, a review of the licenses within the Cato project resulted in a reduction of EL 4171 from 96 sub blocks to 14 sub-blocks. The retained area of EL 4171 is approximately 8% of the original granted area.

*Table 2: previous exploration summary*

Year	Company	Tenement	Exploration Completed
1955	New Guinea Resources Prospecting Ltd	?	19 auger holes for bauxite
1966	BHP Ltd	PA 1138	Bauxite exploration including the Cato Plateau area. 89 auger holes of which 6 are within the granted EL 4170 area.
2004	RTX	EL 4171	Auger drilling of small part of the Cato Plateau.
2007	RTX	EL 4171	Aircore drilling – 62 holes.
2008	RTX	EL 4170	Vacuum drilling – 52 holes.
2009	BHPB	EL 4171	RC Drilling for Mn – 21 holes.
2010	RTX	EL4171	Rock sampling
2012	RTX	EL 4171	Rock sampling (7 samples) and Auger sampling (10 samples) exploring for bauxite
2013	BHPB	EL4171	Drilling of 4 RC holes for Mn exploration
2014	GEMCO	EL4171	Assay of the 2013 drilling by BHP
2015	RTX	EL 4170 & 4171	No field work completed. Work focused on progressing ELA 24389 (the non-consent area of the original ELA 4170 application). Data review and drill planning

## 7 Exploration completed during the reporting period

Further work with the NLC has been conducted to progress ELA 24389 (the non-consent area of the original ELA 4170 application). This work resulted in the grant of EL 24389 and subsequently a data review was carried out to assess the exploration potential of the broader Cato plateau, which included the ground covered by EL 4170, EL 4171, and EL 24389. A number of bauxite targets were identified and prioritised. A program of work was developed to initially drill test the priority bauxite targets on the newly granted EL 24389 with subsequent phases of drilling extending to ground peripheral to the main plateau, if results warranted further work on EL 4170 and EL 4171.

[EL 4170 & EL 4171]

A mine management plan (MMP) for exploration covering the broader Cato Plateau was prepared and submitted to Government. The MMP was assessed on 21 September 2016 and authorised by the Northern Territory Mines Directorate as Authorisation 0882-01. Work on the broader Cato Plateau Project further included desktop and ground based environment and cultural surveys and field preparation for earthworks and drilling.

The initial program of work which is being executed during Q3/Q4 2016 (at the time of reporting) is focused on testing priority areas on EL 24389 and if the results of this initial phase warrant further work, there are up to 8 drillholes planned on EL 4170.

[EL 4170 &amp; EL 4171]

## 8 References

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### LOCALITY

Gove Special SD 5304 1:250 000