



**Titleholder: Rio Tinto Exploration Pty Ltd**

**Operator: DPG Resources Australia Pty Ltd**

**Tenement: EL 24305**

**Partial Relinquishment Report**

**Corporate Author: DPG Resources Australia Pty Ltd**

**Date of Report: December 2017**

**Target Commodities: Zinc**

**250,000 Map sheet: SD5307 Blue Mud Bay, NT**

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World View 2 Satellite Imagery:

EL24305\_2017\_P\_01\_FeOx.tif  
 EL24305\_2017\_P\_02\_FeOxGrey.tif  
 EL24305\_2017\_P\_03\_NDVI.tif  
 EL24305\_2017\_P\_04\_NDVIGrey.tif  
 EL24305\_2017\_P\_05\_Geoimagereport

NI-43-101 Geological Report

EL24305\_2017\_P\_06\_DJonesreport

Airborne Survey:

EL24305\_2017\_P\_07\_AeroDTM.ers  
 EL24305\_2017\_P\_08\_Aeromag.ers  
 EL24305\_2017\_P\_09\_AeroradTC.ers  
 EL24305\_2017\_P\_10\_AeroradK.ers  
 EL24305\_2017\_P\_11\_AeroradTh.ers  
 EL24305\_2017\_P\_12\_AeroradU.ers  
 EL24305\_2017\_P\_13\_Thomsonreport

IP Survey

EL24305\_2017\_P\_14\_IPCond0m.tif  
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 EL24305\_2017\_P\_17\_IP.dat  
 EL24305\_2017\_P\_18\_IP.dfn



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## **ABSTRACT**

Exploration Licence (EL) 24305 is a part of the original EL385 application made in 1972 by CRA Exploration Pty Limited (CRAE), the precursor to Rio Tinto Exploration (RTX) who is the current holder. EL 24305, an application in moratorium resulting from EL 385, was granted on 5 November 2015.

The tenement is located approximately 180km south-west of Nhulunbuy, and 80km north of Numbulwar in south east Arnhem Land and on Aboriginal Land Rights Act 1975 (ALRA) land managed by the Northern Land Council (NLC).

The tenement is considered prospective for base metal mineralisation, similar to that at McArthur River (HYC) in the McArthur Basin. In January 2014 Rio Tinto Exploration and DPG Resources Australia Pty Ltd entered into an Earn In and Joint Venture Agreement with DPG managing the tenements.

The exploration undertaken by DPG for the sub-blocks to be relinquished has included purchase of World View 2 satellite imagery; a geological review and report was undertaken by David Jones for compliance with the TSX 43-101 reporting requirements; a detailed airborne magnetics and radiometrics survey; and an IP dipole-dipole survey.

It was decided to relinquish these sub-blocks so that DPG can concentrate exploration on the more prospective areas of the tenement, and to enable a more effective and efficient approach for on-ground work.

## **INTRODUCTION**

### **Location and Access**

The tenement area is located approximately 180km south-west of Nhulunbuy, and 80km north of Numbulwar in south east Arnhem Land on Aboriginal Land Rights Act 1975 (ALRA) land managed by the Northern Land Council (NLC).

EL 24305 can be accessed by 4WD bush tracks on the southern side of the Central Arnhem Road, south of Gapuwiyak, or tracks from Numbulwar.

### **Physiography Climate and Vegetation**

The tenement area comprises portions of two major physiographic subdivisions, the Gulf Fall and the Walker River Flood Plain. The Gulf Fall comprises dissected hilly country draining towards the Gulf of Carpentaria and the Walker Flood Plain comprises low relief areas to the west of the Coast Range. The Coast Range divides the tenement area. This is a NNE trending line of hills with a maximum elevation of approximately 100 metres (after Haines et al 1999).

The Walker and Marura Rivers and Laurie Creek form major perennial water courses within the general vicinity of the tenements.

## **TENURE**

EL 24305 consists of 53 sub-blocks and was originally applied for by CRAE in 1972. In January 2014 Rio Tinto Exploration and DPG Resources Australia Pty Ltd (DPG) entered into an Earn In and Joint Venture Agreement with DPG managing the tenement. EL 24305 was subsequently granted to Rio Tinto in November 2015. The EL covers approximately 81km<sup>2</sup>.

In 2017, the decision was made to reduce EL 24305 by 23 sub-blocks, leaving EL 24305 with 30 sub-blocks. The area relinquished represents approximately 38km<sup>2</sup>. It was decided to relinquish these sub-blocks so that DPG can concentrate exploration on the more prospective areas of the tenement and to enable a more effective and efficient approach for on-ground work.

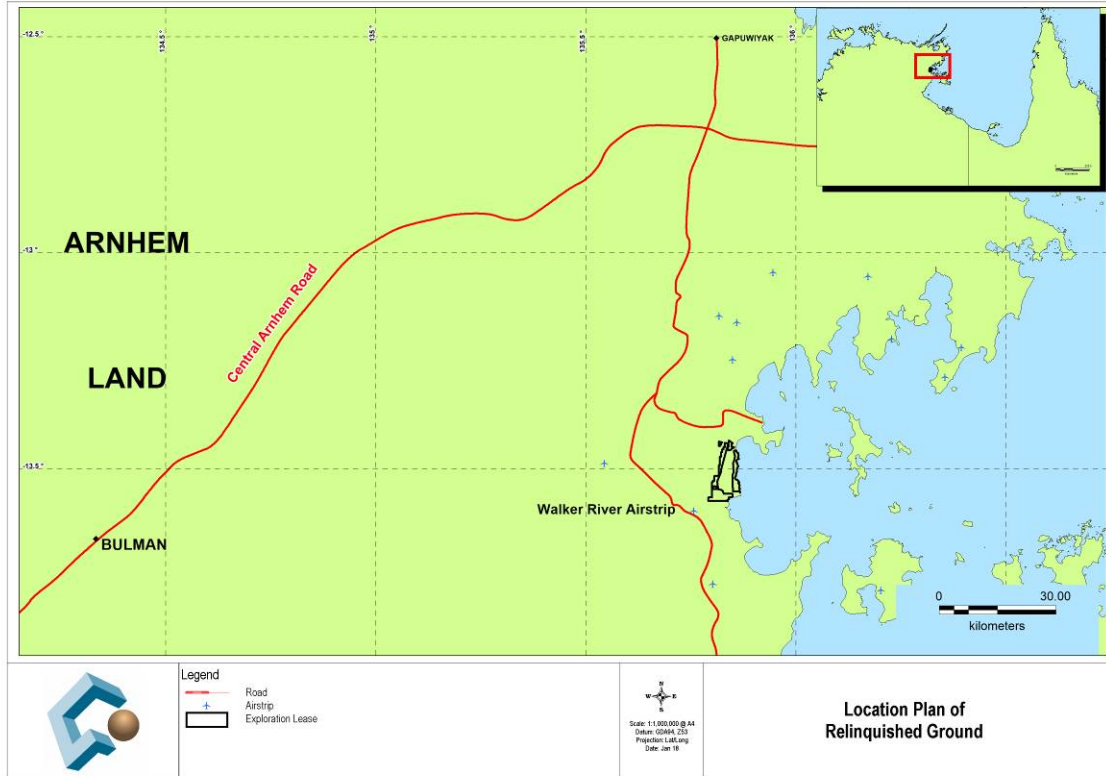


Figure 1: Locality Plan of Relinquished Ground

## Tenement Relinquishment

### Tenement area before relinquishment

State: Northern Territory  
 Exploration Licence Area: EL 24305  
 Number of Sub-Blocks: 53

Block	Sub-Block																									
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
SD531270	A	B	C			F	G	H	J	K	L	M	N	O	P		R	S	T	U		W	X	Y	Z	
SD531271						F					L	M					R					W				
SD531342		B	C	D	E			H	J	K			N	O	P			S	T	U			X	Y	Z	
SD531343	A	B				F	G				L	M	N			Q	R	S			V					
Total	53 sub-blocks																									

**Tenement area to be retained**

Block	Sub-Block																									
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
SD531270										K					P					U					Z	
SD531271						F					L	M					R					W				
SD531342					E				J	K					O	P				T	U			X	Y	Z
SD531343	A	B				F	G					L	M	N			Q	R	S			V				
Total	30 sub-blocks (retain)																									

Number of sub-blocks to be retained: **30**

**Tenement area to be relinquished**

Block	Sub-Block																									
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
SD531270	A	B	C			F	G	H	J		L	M	N	O			R	S	T			W	X	Y		
SD531271																										
SD531342		B	C	D				H					N					S								
SD531343																										
Total	23 sub-blocks (relinquish)																									

Number of sub-blocks to be relinquished: **23**



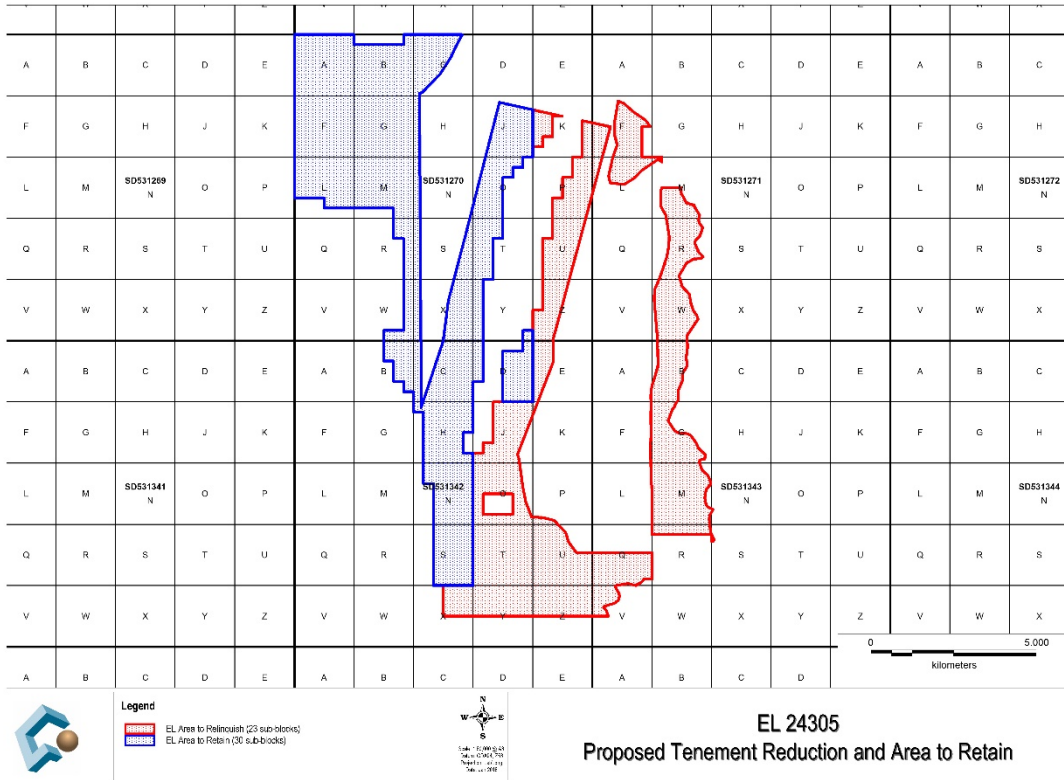


Figure 2: Reduction of EL 24305

## **GEOLOGICAL SETTING**

The tenement area covers a small part of the Paleo – Mesoproterozoic McArthur Basin, one of the principal tectonostratigraphic components of the Northern Australian Craton. The geological description below is dominantly taken from Haines et al 1999.

Mapped units represented within the granted tenement area include the Paleoproterozoic Grindall Formation, Coast Range Sandstone and Jalma Formation, the Mesoproterozoic Balbirini Dolomite (Nathan Group) and unnamed Cainozoic units.

The Grindall Formation is reported to consist of red-brown to grey-green, fine to medium-grained, thin to thick-bedded, graded sandstone interbedded with red-brown to grey-green mudstone.

The Coast Range Sandstone consists of white, medium to coarse-grained, thick-bedded, commonly pebbly quartz sandstone with lenticular basal pebble or cobble conglomerate. The unit unconformably overlies the Grindall Formation.

The Jalma Formation consists of brown to purple, medium-grained, thin to medium-bedded, ferruginous; fine-grained, thin-bedded sandstone near the base with local basal conglomerate and an upper recessive unit of laminated claystone. The Jalma Formation unconformably overlies the Coast Range sandstone and locally on Grindall Formation.

The Balbirini Dolomite is described as being up to 100 metres thick and consisting of chert, altered carbonate containing stromatolites, carbonaceous siltstones, evaporates and; lesser interbedded sandstone, chert clast rich and cross bedded. A basal sandstone and polymict, open framework conglomerate are present locally. This unit is presumed to unconformably overlie the underlying units, though the field contacts are obscured by alluvium.

## **HISTORIC EXPLORATION**

Two exploration licences have been held over the tenement area. Both of these licences existed prior to the grant of the ALRA in 1975. Authority to Prospect (AP) 1138 was granted to BHP Minerals in 1964 and was relinquished in 1972, however it only covered the tenement area between 1964 and 1967. No exploration from the tenement area was reported by BHP.

AP 1967 was held over the tenement area between 1969 and 1970 by Noranda Australia. Again no exploration was reported. Limited exploration comprised an airborne spectrometer survey and ground follow up of five anomalies. No economic uranium mineralisation was intersected. Anomalous radioactivity is due to thorium concentrations with minor associated uranium.

The project area is also covered by regional gravity and by airborne magnetic and radiometric data. The aeromagnetic data are from the Mitchell Ranges 1990 and Marumba 1988 Surveys. These surveys had east west oriented flight lines with a line spacing of 500 metres and a mean survey elevation of 100 metres.

## **EXPLORATION BY DPG RESOURCES AUSTRALIA**

The following is exploration that has been undertaken on the relinquished sub-blocks by DPG.

### **World View 2 Imagery**

DPG purchased World View 2 imagery over the area and processing was undertaken by Geoimage.

The imagery assists with geological mapping and was processed in an endeavour to discriminate clays and minerals associated with mineralisation, including alteration. In general the laterite profiles, subdued relief and Cainozoic – Quaternary cover limited the utility of this approach. The imagery, together with the Geoimage report, can be found in the appendices.

### **NI-43-101 report by David Jones**

A comprehensive geological review and report was undertaken by David Jones. The document is compliant with the TSX 43-101 reporting requirements and can be found in the appendices.

### **Airborne Geophysics**

An airborne magnetics and radiometrics survey was undertaken by Thompson Aviation following approval by the traditional owners at a meeting convened by the NLC.

The survey was undertaken using a Cessna 210 VH-THS between 26 and 29 October 2014 and comprised approximately 4,000 line kilometres. The traverse line direction was 090 with a traverse line spacing of 50m and a tie line direction of 180 with a tie line spacing of 500m. Flight height was 50m. The data files can be found in the appendices.

## **IP Survey**

In 2015, DPG Resources commissioned Fender Geophysics Pty Ltd to undertake an IP Survey over selected target areas on EL 24305. The survey comprised 2 survey lines of 100m dipole – dipole IP which extend over to the area being relinquished. The survey showed chargeable bodies co-incident with the Balbirini Dolostone and units in the Jalma Fm. The data files can be found in the appendices.

## **CONCLUSION AND RECOMMENDATIONS**

Exploration undertaken by DPG has focussed on the potential for economic base metal mineralisation in the Blue Mud Bay area. The presence of carbonaceous siltstone in the Balbirini and Jalma Fm and the elevated Pb and Zn values are considered positive indicators of a metal bearing basinal brine being focussed by fault structures into local sites. Despite undertaking the above work, DPG has not identified any targets which it considers worthwhile following up, and as such has decided to relinquish these areas.

## REFERENCES

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- Haines, P W et al., 1:250 000 Geological Map Series Explanatory Notes. Blue Mud Bay 1999 SD53-7 Northern Territory Geological Survey.
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