

# **Open File Envelope**

## **No. 12,922**

**EL 5631**

**MOUNT SOWARD**

**FIRST ANNUAL REPORT PLUS FINAL REPORT  
TO LICENCE EXPIRY/FULL SURRENDER,  
FOR THE PERIOD 9/6/2015 TO 13/4/2017**

Submitted by  
Panda Mining Pty Ltd  
2017

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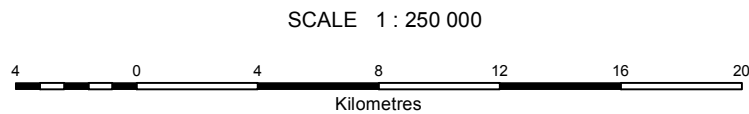
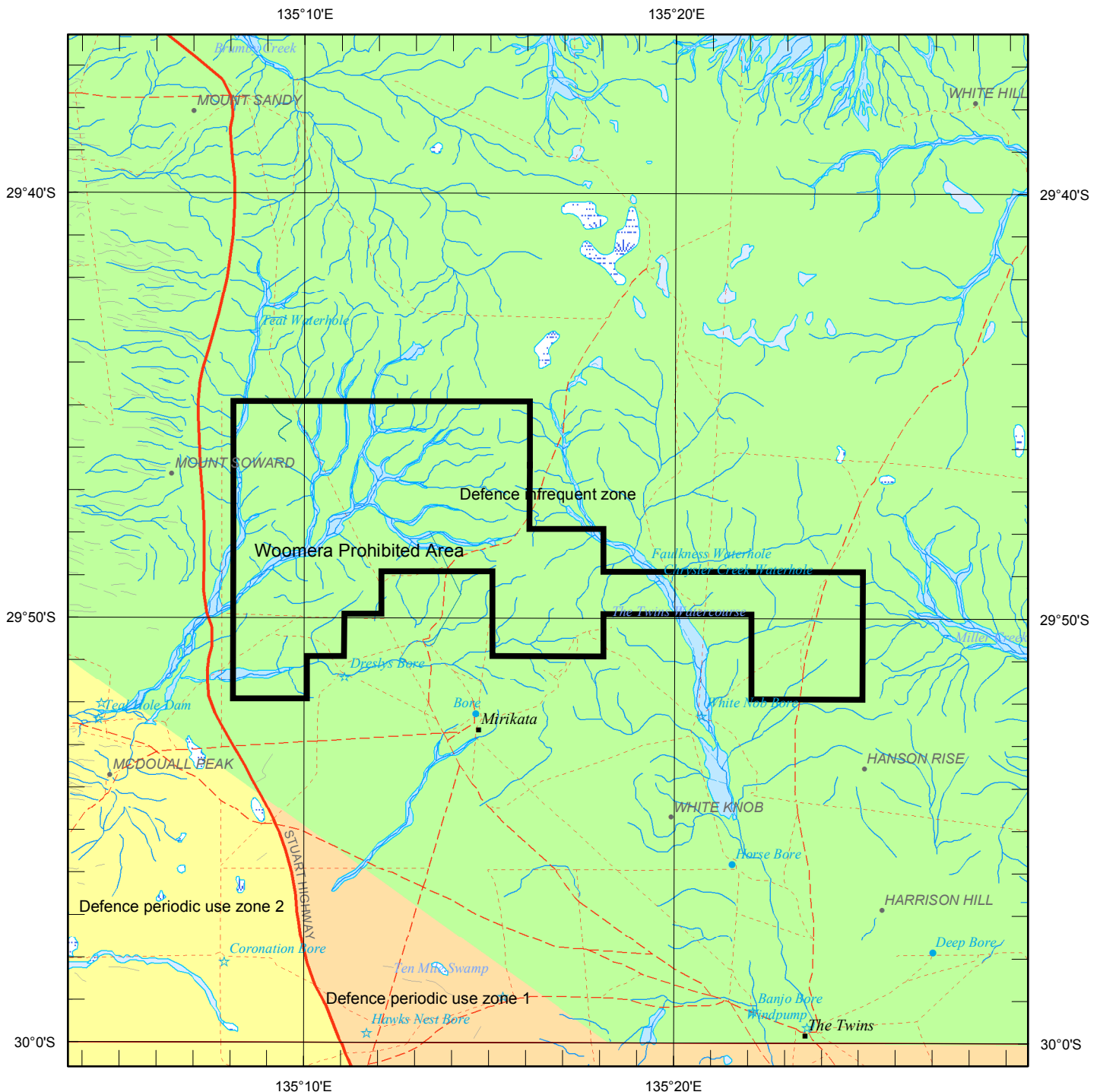
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**Government of South Australia**  
Department of State Development

# SCHEDULE A



LICENCE BOUNDARIES IN : DATUM AGD66

APPLICANT : **PANDA MINING PTY LTD**

FILE REF : **2015/00006** TYPE : **MINERAL ONLY**

AREA : **184** sq km (approx)

1 : 250 000 MAPSHEETS : **BILLA KALINA**

LOCALITY : **MOUNT SOWARD AREA -**  
**Approximately 120 km northeast of Tarcoola**



DATE GRANTED: **09-Jun-2015** DATE EXPIRED: **08-Jun-2017** EL NO: **5631**

# **PANDA MINING Pty Ltd**

## **Annual Technical Report EL5631 Stuart Shelf Project**

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**For the Period Ending 08/06/2016**

Author:

**Panda Mining Pty Ltd**

Date Issued: 30/08/2016

Revision History			
Date	Version	Summary of Change	Author
27/07/2016	0.0	Initial draft version	Panda Mining
30/08/2016	1.0	Submission version	Panda Mining

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# 1 Summary

This is the first annual technical report for EL5631 'Mt Soward' which was granted to Panda Mining Pty Ltd (PM) on 9th June 2015 for a two year period. PM holds 100% equity in the 124km<sup>2</sup> exploration licence (EL). The Exploration licence falls within PM's 'Stuart Shelf' project area North East of Tarcoola, South Australia.

Exploration activities conducted in the first year of EL5631 ending 8th June 2016 include:

- Desktop review/establishing GIS database and review of historical exploration and available datasets. This work has been completed to provide a first pass study of the tenement in order to plan more detailed exploration in the following reporting period.

## 2 General Information

<b><u>Report ID:</u></b>	EL5631_2016_A_01_AnnualTechnicalReport
<b><u>EL Number:</u></b>	Exploration Lease (EL) 5631
<b><u>Licensee/operator:</u></b>	Panda Mining Pty Ltd
<b><u>Contact:</u></b>	<p>Jon Crowe, Director PO Box 1204, Fremantle, W.A. 6959 Ph: Tel: 9430 9988 E: <a href="mailto:jon@diao.com.au">jon@diao.com.au</a></p> <p>Katherine Kingma B.Sc., Project Geologist P: (08) 8339 6191 M: 0411 021010 E: <a href="mailto:kit_kingma@hotmail.com">kit_kingma@hotmail.com</a></p>
<b><u>Location:</u></b>	<p>1:250,000 mapsheet - Billakalina (SH 53-7)</p> <p>1:100,000 mapsheet - Peak (5938)</p>



## 3 Tenement Status

### 3.1 Location

The Stuart Shelf Project Area is located ~700km NW of Adelaide. The exploration license covers an area of 184km<sup>2</sup> (Figure 1). The nearest main town is Tarcoola, which is ~120km to the South West. The nearest homestead to the project area is McDouall Peak (~4km) from the southern tenement boundary of EL5631.

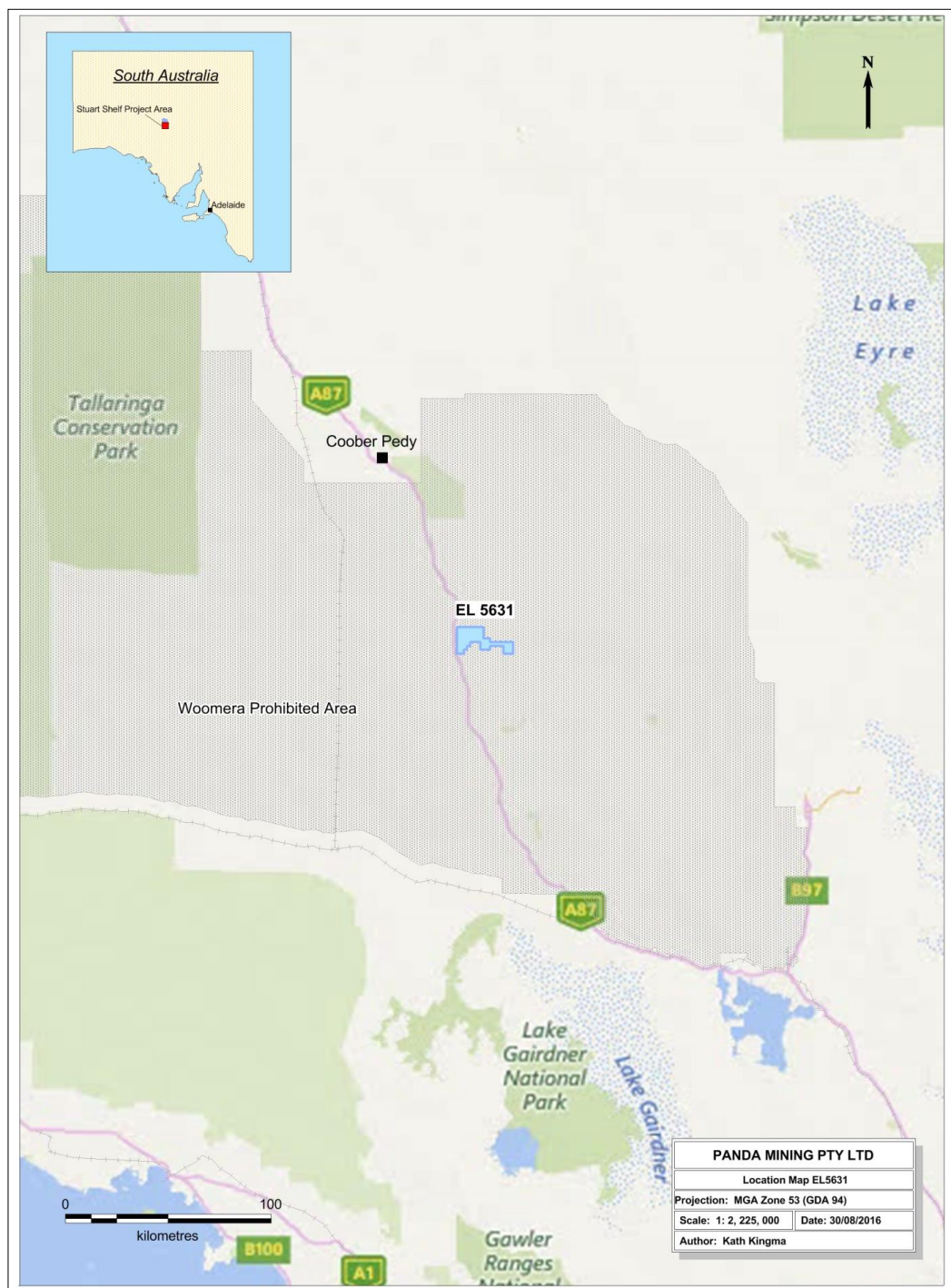


Figure 1: Location Map of EL5631

### 3.2 Land use & tenure

The land covered by EL5631 lies entirely within McDouall Peak Pastoral Lease. McDouall Peak Pastoral Lease is a working station and the land is used for sheep and cattle grazing which is supported by dams, bores, mills and numerous tracks, grids and. The owner/manager (Table 1) of the pastoral lease is kept well informed of the activities of Panda Mining in the area.

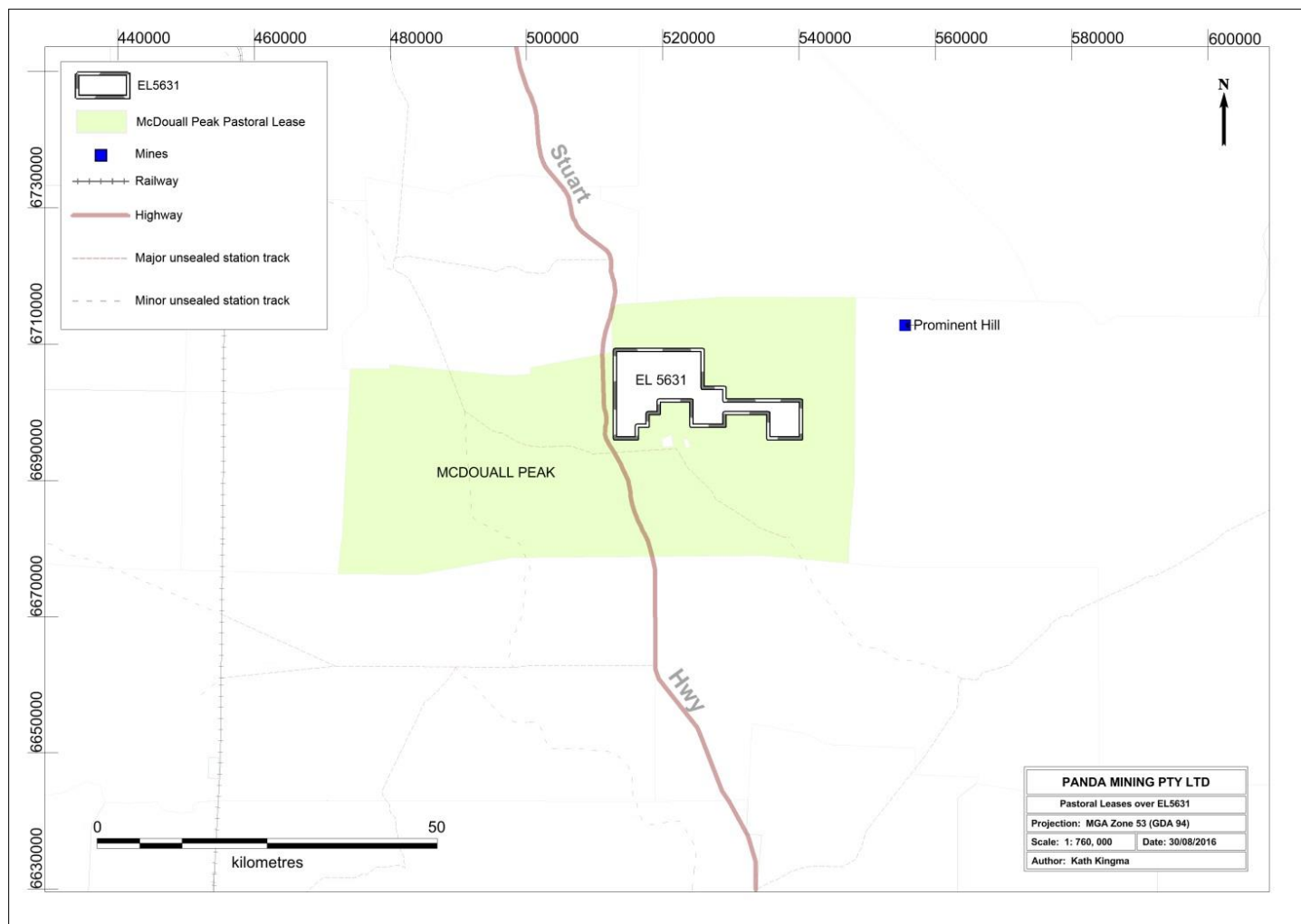


Figure 2: Pastoral Leases within EL5631

Pastoral Lease	Lessee	Land Manager
McDouall Peak	McDouall Peak Pty Ltd	Garry McDouall

Table 1 Relevant Pastoral Lease Information

### 3.3 Landform & topography

The Stuart Shelf project area is characterised by typical desert climate, with mild to hot sunny days year round and cold nights from April to October and warmer nights from November to March. Summer temperatures range from 35°C to 48°C in the shade with annual rainfall in the area being minimal at around 150 mm per annum.

The project area occurs in the Stony Plains Bioregion, specifically within the Breakaway environmental association as described by Laut et al. (1977). This association is characterised by a dissected silcrete tableland and mesas and extensive gibber-covered foot slopes on deeply weathered shales. Soils of the Breakaway Environmental Association consist of dominant moderately deep (0.3–1.0 m) crusty red duplex soils with minor silcrete outcrops and Gilgai soils.

The project area lies at an elevation approximately 150 m above sea level, sloping to the Engenina Creek, which runs through the project area and eventually drains into Lake Cadibarrowirracana approximately 100 km to the north-east.

The tenement is underlain mostly by Tertiary and Quaternary sediments of variable thickness overlying Cretaceous Bulldog Shale with minor Mount Anna Sandstone outcrop. The Bulldog Shale comprises marine shales and silty shales with minor sandstone lenses, with an upper oxidised zone forming a white clay unit (including opal-bearing areas) grading below to dark grey to black fresh shales. The weathering of the Bulldog Shale forms the 'Breakaways' landforms dominant in the general area.

### 3.4 Native Title

The Oodnadatta Project Area EL5631, falls within the Antakarinja Matu-Yanbkunytjatjara People Native Title Claim (Federal Court # SAD6007/98 ()).



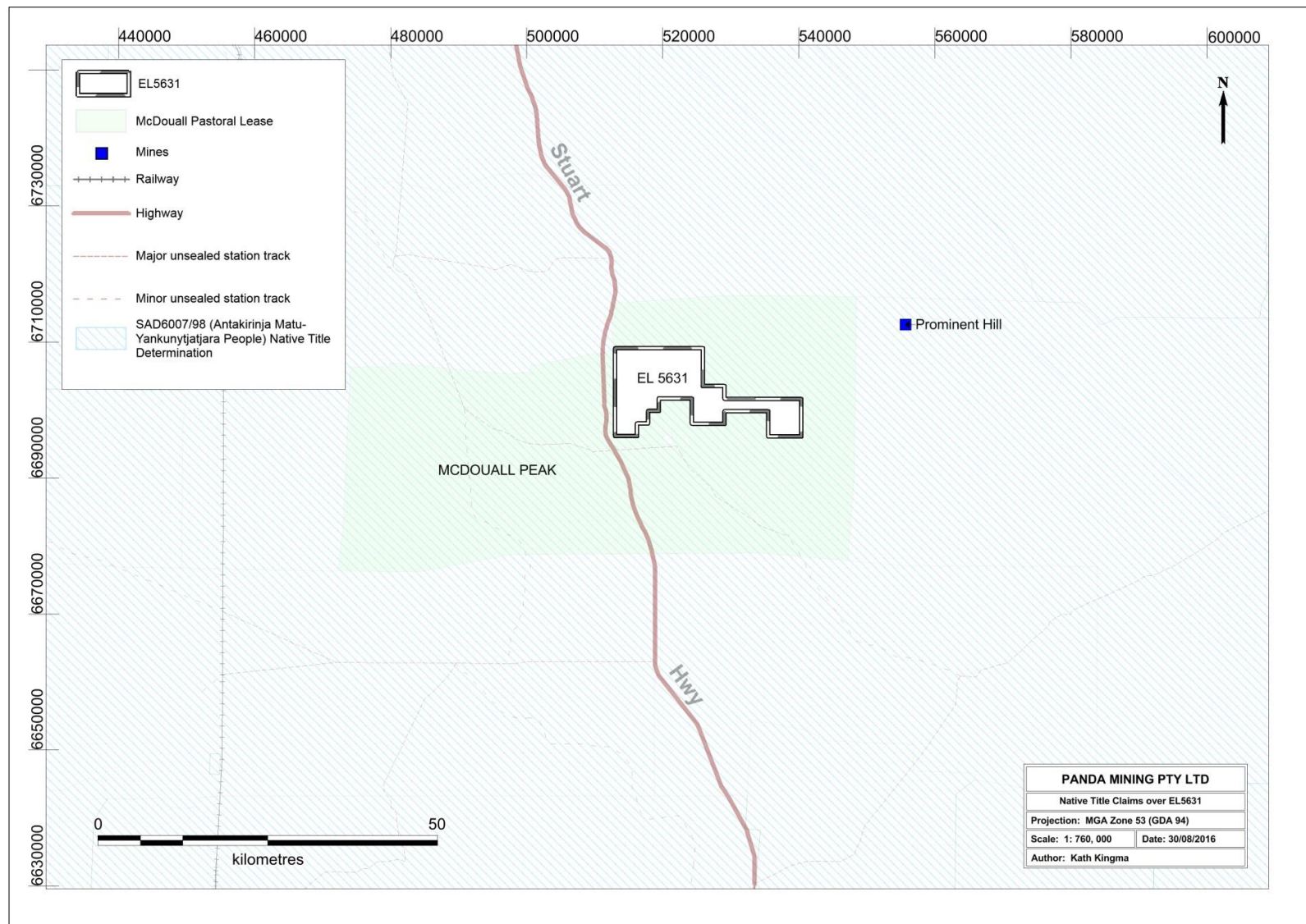


Figure 3 Native Title Claims over EL5631

## 4 Geology

### 4.1 Regional Geology

Crystalline basement rocks of the Gawler Craton are interpreted as Archaean gneisses of the Mulgathing Complex, traversed by NE-trending linear bodies of Palaeoproterozoic metasediments, including banded iron formation (BIF). The Archaean rocks are characterised by widespread areas of low magnetic relief. The BIF is apparently reflected by three large, discrete magnetic highs (Figure 2), which have been the target for most past exploration, particularly for iron ore and IOCG deposits.

The ELA lies on the SW margin of a WNW-trending ridge of shallower basement more or less coinciding with the Mt Woods Inlier (Figure 1). Depth to basement is in the range 80 to 420 m (Table 2). A major NE-trending fault crosses the SE corner of the ELA and continues north-east close to Prominent Hill Mine.

Overlying cover includes Permo-Carboniferous sediments of the Arckaringa Basin and Mesozoic sediments of the Eromanga Basin. Elsewhere the Arckaringa Basin hosts Permian coal measures of the Mt Toondina Formation, best developed in the Lake Phillipson Trough, to the west of Mt Soward. Mesozoic sediments of the Eromanga Basin are represented by the Cadna-owie Formation and the Bulldog Shale. Tertiary and Quaternary units form a surficial veneer.

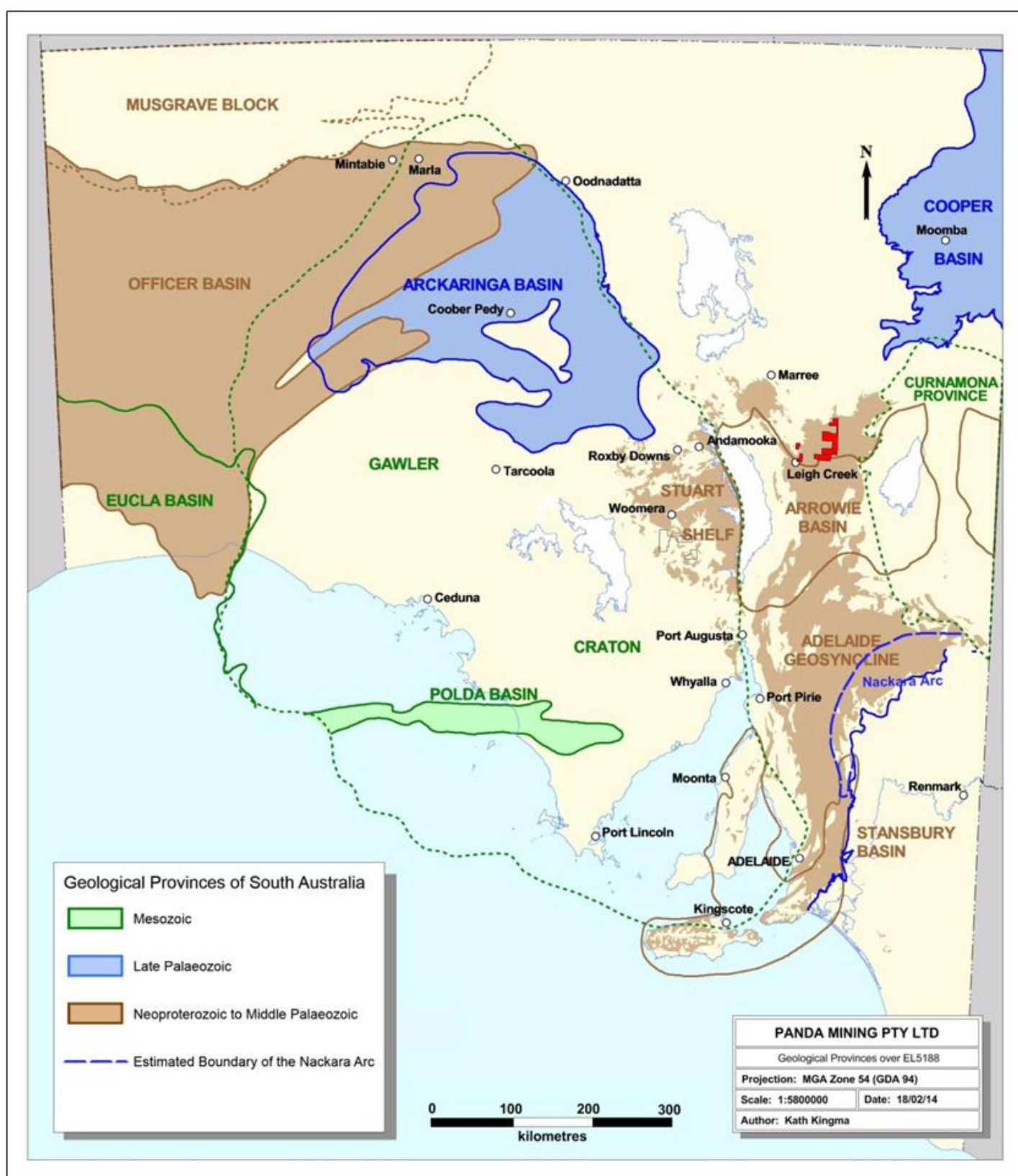


Figure 4: Geological Provinces of South Australia



## 5 Review of Previous Work

### 5.1 Summary of recent exploration

**Platsearch's ELA from 1996 to 2011** - Platsearch targeted 3 discrete high intensity magnetic anomalies, primarily for IOCG deposits, but also for Menninnie Dam style base metals, gold deposits of epithermal, vein and shear hosted style, and for nickel and associated elements related to mafic/ultramafic intrusions. Platsearch entered a series of joint ventures to fund exploration.

Goldstream made ground magnetic and gravity traverses across each of the 3 magnetic anomalies and began lengthy Native Title access negotiations.

JV partner Inco drilled 2 holes, MRK 1 and MRK 2:

- MRK 1 tested the strongest of the 3 sub-peaks in Anomaly A (sub-peak A2). The hole was inclined at 60° and hole reached basement at 336m down-hole depth, intersecting highly magnetic BIF from there to total depth at 417m. The cored rocks adequately explained the targeted magnetic anomaly, but yielded no anomalous metal values.
- MRK 2 and MRK 2A Following a detailed gravity survey, Inco drilled MRK 2 (abandoned) and MRK 2A (both inclined at 60°), to test the strongest of two gravity anomalies, partly coincident with magnetic anomaly A3. This hole reached basement at 303m down-hole depth and intersected foliated granite to 312m down-hole. From there to 372m the hole intersected metasediments and altered mafic intrusives, then finally BIFs to total depth at 455m. Core densities and magnetic susceptibilities fully explained the geophysical anomaly. Assays yielded sporadic but significant gold and base metal anomalies in calc-silicate metasediments (up to 1.6 g/t Au and 3135 ppm Zn). Within the BIFs there are minor vughs and thin veins containing carbonate, quartz and pyrite ± chalcopyrite.

Minotaur infilled gravity data around A3 anomaly and identified an untested non-magnetic portion of the A3 target, but did not proceed with a JV.

Newcrest targeted 4 untested magnetic/gravity anomalies within the A and B magnetic complexes and generated a successful PACE proposal to drill 4 more holes:

- MRK 3 tested and explained the 2.5mGal A1 anomaly, intersecting basement at only 84m.
- MRK 4 and MRK 5 tested anomalous geochemistry and the non-magnetic portion of anomaly A3.
- MRK 6 tested the magnetic/gravity target at Anomaly B.

The best results were found in MRK 5, at A3 anomaly. Sulphide-bearing veinlets in an altered fault zone between 436 m and 548 m average 112 m @ 0.19% Zn, 0.07% Pb and 1.5 g/t Au. The best 2 m single assays are 0.54% Zn, 0.21% Pb, 3.8ppm Ag and 0.33 g/t Au. MRK 6 intersected BIF and metasediments beneath 430m of cover sediments and yielded no significant metal assays. Newcrest concluded that the

discrete geophysical anomalies (A, B and C) represent faulted remnants of the nearby Hawks Nest ironstone stratigraphy, modified by irregularities in the basement topography, rather than evidence of IOCG deposits.

TABLE 2: Drillhole Depth Data, Mt Soward ELA						
HOLE	Angle	Sine	Basement Depth		Total Depth	
			Cored	Vertical	Cored	Vertical
MRK 1	-60	0.866	336	291	417	361
MRK 2A	-60	0.866	303	262	455	394
MRK 3	-90	1	84	84	214	214
MRK 4	-70	0.9397	389	366	607	570
MRK 5	-70	0.9397	210	197	619	582
MRK 6	-70	0.9397	450	423	603	567
SH 34	-90	1	NR	NR	108	108

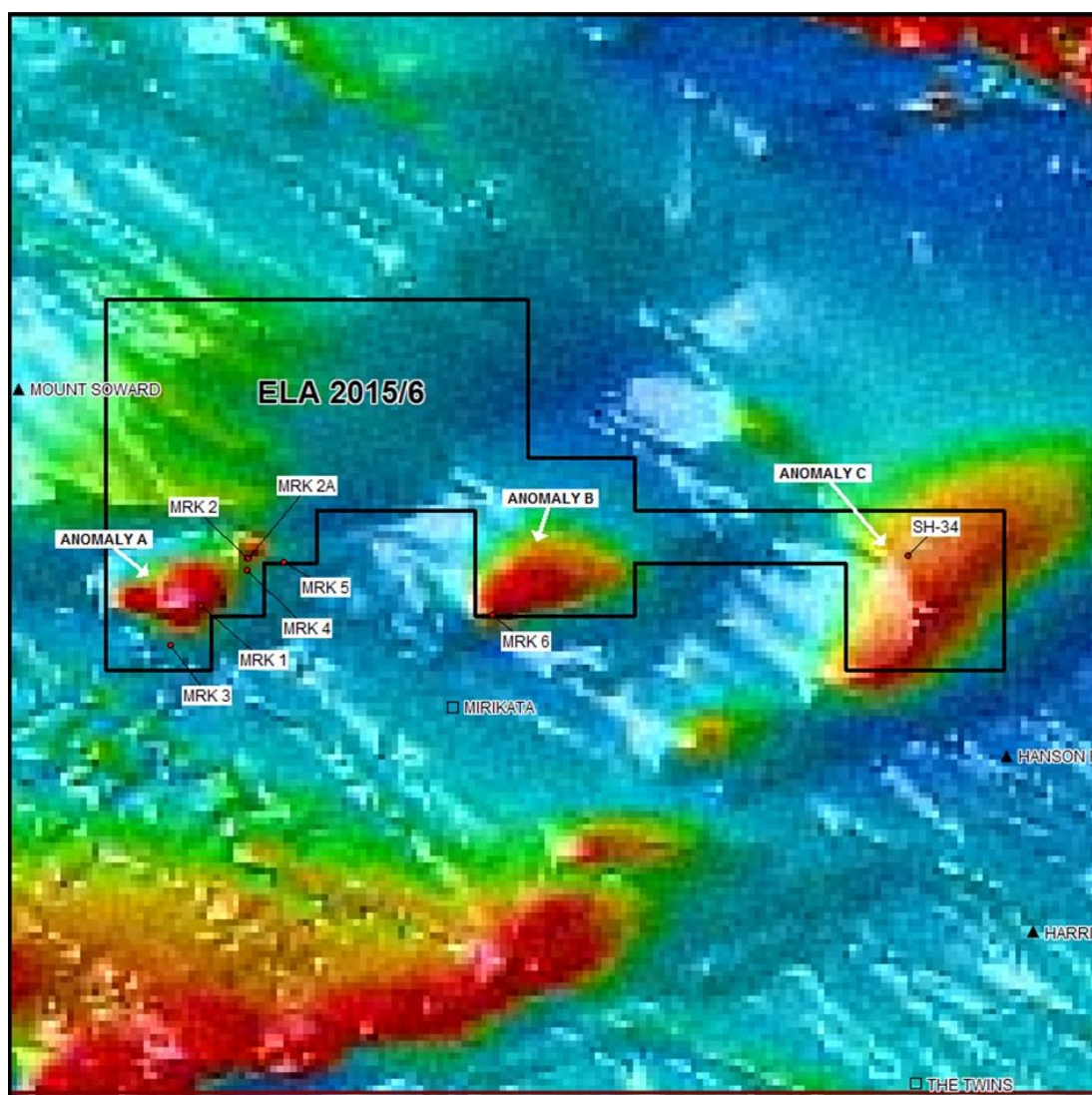


Figure 5 Historic Drill Hole Locations EL5631



## 5.2 Previous exploration undertaken by Panda Mining Pty Ltd

Work completed during the first year of tenure of EL5631 focussed on 3 main areas; Site reconnaissance trip, Desktop review/establishing GIS database and review of historical exploration and available datasets. This work has been completed to provide a first pass study of the tenement in order to plan more detailed exploration in the following reporting period. The long history of exploration for multiple commodities in the area has provided useful geological interpretations of the tenement. The desktop review focussed on two main areas of exploration, geology and geophysics, with work being completed to tie the two together and compare to previous exploration completed by other companies prior to Panda's tenure of EL5631.

## 6 Proposed Future Exploration Activities

- Further desktop analysis integrating all historic geological, geochemical, geophysical and petrological data.
- Investigation into future exploration confining gravity+/-magnetic features within areas of outcropping-to-shallow covered metamorphic basement that may be amenable to IP surveying.

## 7 References

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13<sup>th</sup> July, 2017

## **Exploration Licence 5631 Final Technical Report 09/06/2017 to surrender 13/04/2017**

No field work was carried out during the reporting period to surrender of the licence on 13/04/2017.