

Ebony Energy Limited

THIRD ANNUAL REPORT

GROUP REPORTING: **GR366**

PEDIRKA BASIN PROJECT

Exploration for Coal

Map Sheets

1:250000 McDills SG 53-07

1:100000 Nuckua 6047

FOR THE YEAR 4/1/2015 to 3/1/2016

Prepared by

Ebony Energy Limited

Date: 9th February 2016.

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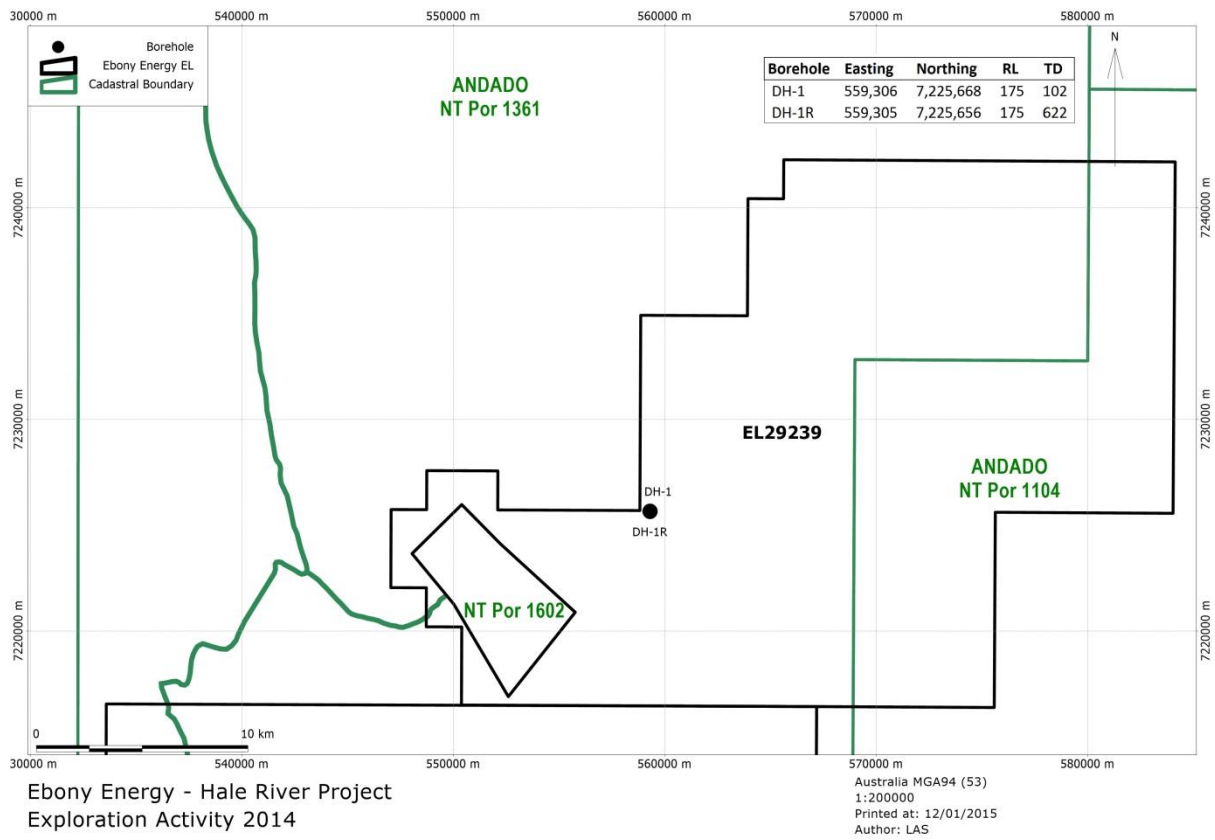
ATTACHMENT

Coal Exploration Report. Tamplin Resources, August 2016.

1.0 ABSTRACT

Mineral Exploration Licences (EL) 29239 and 29237 were granted to Ebony Coal Ltd (Ebony) on January 4, 2013 for a term of 6 years. Ebony Coal Ltd changed name to Ebony Energy Limited (Ebony) on 11 December 2014. During the Y-3 reporting period the work programme was restricted to desktop studies. Following on from the success of DH-1R the plan for the Y-3 reporting period included further desktop studies, planning and execution of a Stage-2 drilling programme. However, Y-3 reporting period was very challenging with respect to raising new monies to fund exploration programmes. In order to preserve capital, Ebony restricted Y-3 work activities to desktop studies. The key activities for Y-3 of the license period were target generation, project modelling and work on a concept study that is nearing completion.

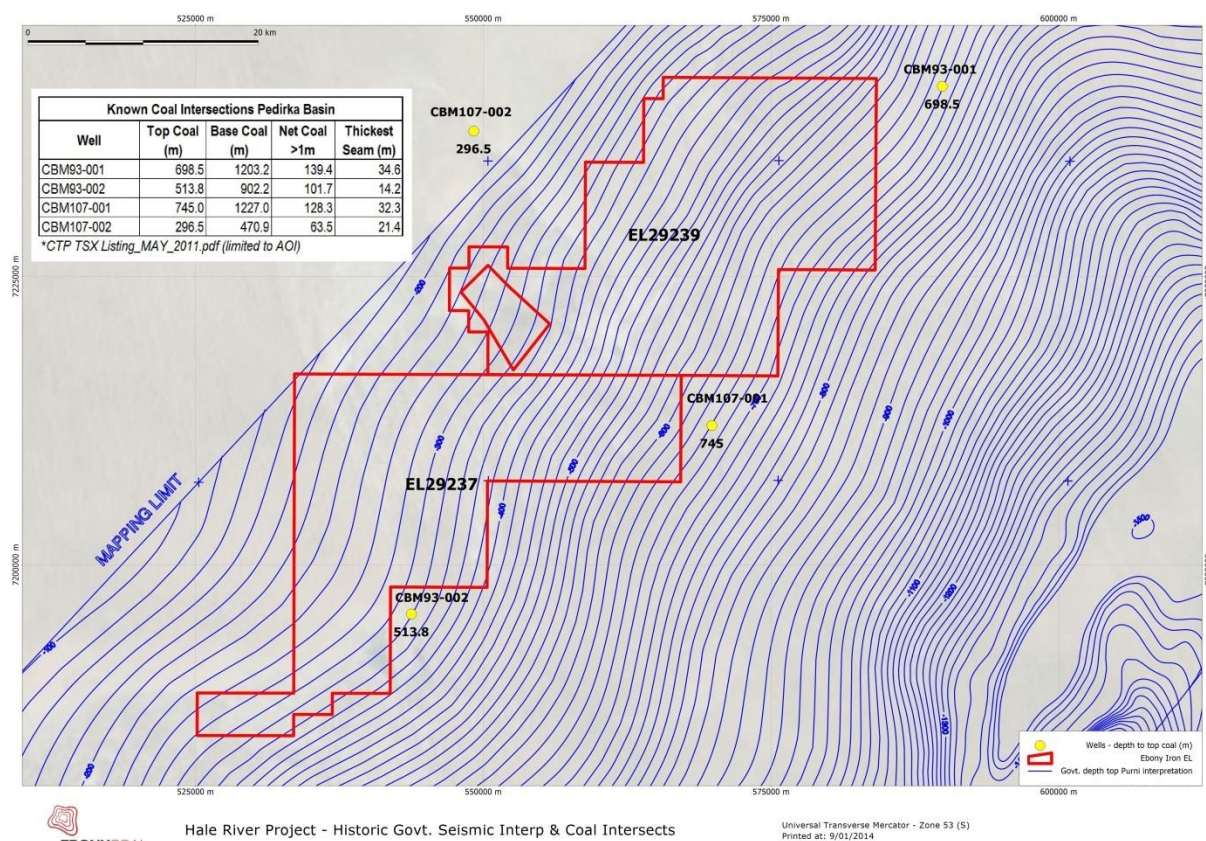
Figure 1: EL 29239 Location of Boreholes DH-1 and DH-1R.



Source: Ebony Energy Limited.

Figure 2: Map of EL29237 and EL29239.

Showing Depth to Purni Contours, Central Petroleum Historical Boreholes and Coal Intercepts.



Source: Ebony Energy Limited.

GR366:

EL29237

187 Sub-blocks
 580.61 square kilometres
 Granted on 4/01/13
 Expires on 3/01/19

EL29239

202 Sub-blocks
 604.22 square kilometres
 Granted on 4/01/13
 Expires on 3/01/19

2.0 INTRODUCTION

2.1 Tenure Information

EL29237 and EL29239 were offered for grant to Ebony Iron Ltd on December 7, 2012. The tenements in question were granted on January 4, 2013 for a period of six years. Both tenements were subsequently transferred to Ebony Coal Ltd on March 26, 2013. Ebony Coal Ltd changed name to Ebony Energy Limited (Ebony) on 11 December 2014.

EL29237 and EL29239 are within Andado Property being private pastoral leased acreage.

2.2 Tenement Location and Access

In terms of its regional setting, EL29239 and EL29237 are located towards the western edge of the Pedirka Basin, which is Permo-Carboniferous in age. The tenements are located in the southern portion of the Pedirka Basin Project cluster of tenements. Geographically, the two tenements are around 240km southeast of Alice Springs.

This part of the country is devoid of any infrastructure. There are no roads and few if any unmapped dirt tracks. The Andado homestead and airstrip is around 25km southwest of the southern tenement boundary. The northern and eastern tenement area is covered with northwest-southeast trending sand dunes averaging around 5 metres high. Vegetation is very sparse and mainly restricted to the southwest portion of the tenement that is characterised by clay pans and sediment related to drainage north of the Finke River.

2.3 Exploration Rationale and History

Most of the Hale River Project has a various history of exploration for petroleum or base metals and/or uranium, precious metals, diamonds and mineral sands. Mineral explorers include BHP Billiton, Rio Tinto, CRA Exploration, Pan Continental Mining and Roebuck Resources. Recent and current explorers for energy include Amerada Petroleum, Central Petroleum (CTP), Merlin Coal and Tri Star Energy and others. Historical CTP boreholes are shown in Figure 2. The only historical work over EL29239 and EL29237 was the Simpson Desert “A” Seismic Survey carried out by Amerada Petroleum in 1966 – analogue data tapes are held by the Northern Territory Government, Department of Mines and Energy but are not made available for access and copy. Historic tenure is shown in Figure 3.

The first subsurface information was probably observed from the first water bore completed in 1960. Some 43 water bores occur within the project area. Two bores sunk in 2008; RN018519 and RN018518 intersected clay, lignite and silcrete bands over broad widths. The holes were not logged for geological information and are of little use other than to confirm that both holes intercepted coal.

Flamingo Petroleum undertook detailed exploration of the Pedirka Basin in 1964. This company completed two seismic lines that were shot along a structural high. One line was east-west and the other north-south along Hale River. The seismic sections revealed a regional dip to the southeast. The data also indicated that the Mesozoic sediments also thicken in the same direction.

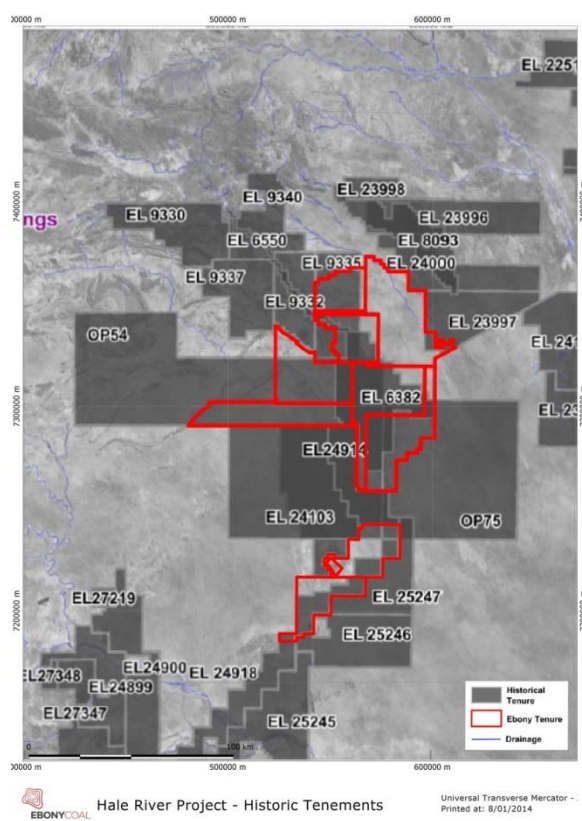
CTP concluded that the company’s Pedirka Basin tenements hosted an exploration target of 300 billion tonnes of coal.

CTP held EPs covering most of Ebony’s tenements. No named petroleum wells were spudded within EL29239. Two water bores were completed but coal was not reported. CTP has reported thick intersections of sub-bituminous coal in many drill holes. An example is Blamore-1 completed in 2008, drilled to a depth of 2,128 metres, intercepted net coal of 160 metres in seams greater than 0.2 metres. Elsewhere, CBM93-001 intersected net coal of 141.8 metres with seam thickness greater than one metre. The thickest coal seam intersected was 34 metres between 976 and 1,010 metres depth. Reported net coal of 150.2 metres from CBM 93-004 is located 8

kilometres northeast of EL29239, see Figure 2. This measure of coal was calculated from seams over one-metre-thick and inferred from wire line logs and core. The maximum seam thickness was 17.7 metres.

In summary, the drilling results obtained by CTP and the conclusions drawn, were compelling rationale for Ebony to explore the western margin of the Pedirka Basin for coal. A proof-of-concept borehole, DH-1R was completed by Ebony during November 2014, confirming existence of thick seams of coal seams within EL29239.

Figure 3: Historical Tenure – The Hale River Project tenements are shown in red outline.



Source: Global Ore Discovery, Hale River Technical Report, 18th May 2012.

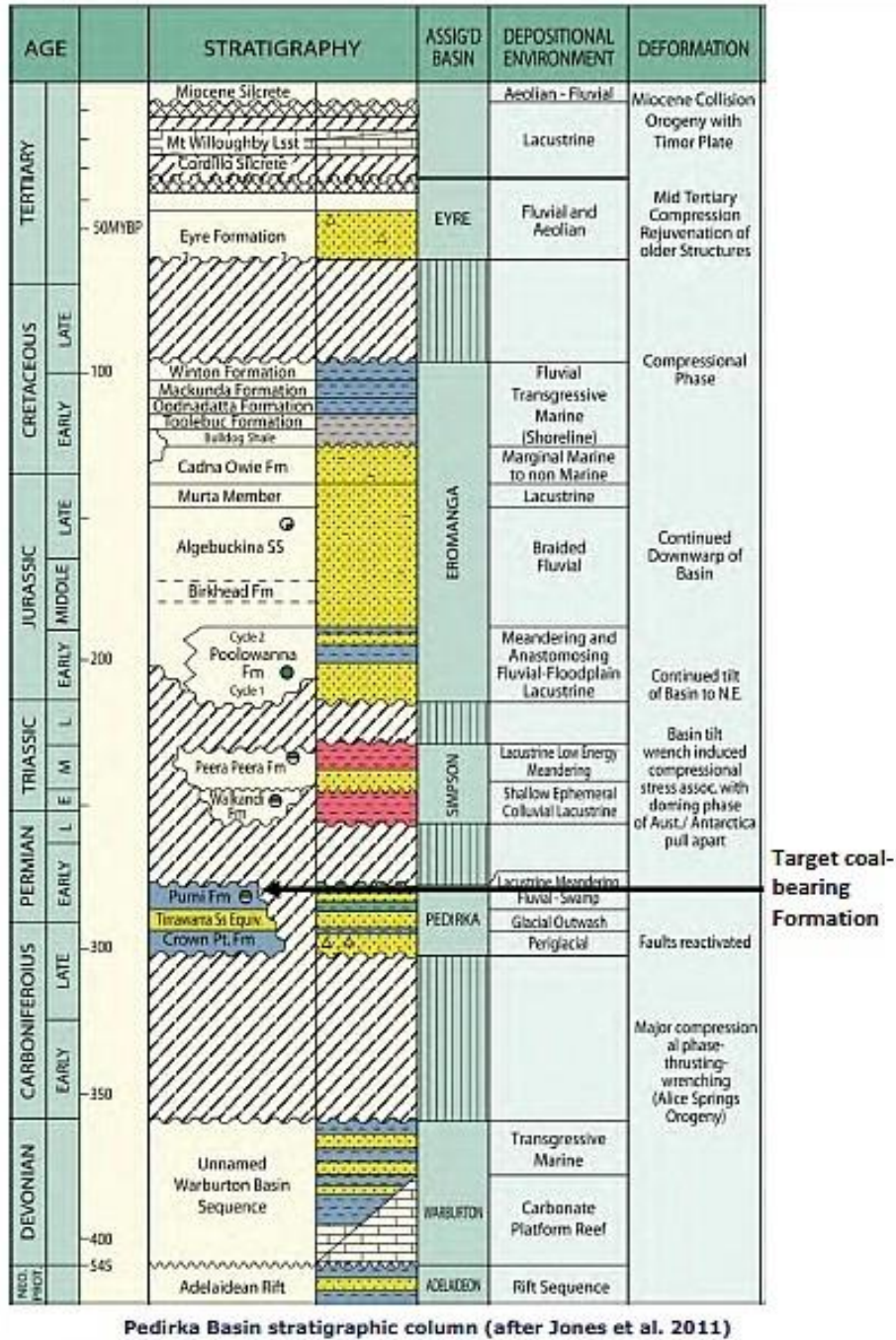
1.0 GEOLOGICAL DATA

1.1 Regional Geology of the Hale River Project Area

The Pedirka Basin straddles the Northern Territory and South Australian border in Central Australia. Most of the basin lies in the Northern Territory. The area of the basin is around 62,500 square kilometres. This part of Australia exhibits a complex geological history that consists of a sequence of sedimentary basins superimposed one on top of another. The Pedirka Basin formed when tensional forces between thrust faults reactivated during the Mesozoic resulting in the formation of grabens and tilted horst blocks. Figure 4 shows a regional stratigraphic column.

The eastern portion of the Pedirka Basin is overlain by Triassic Simpson Basin which in turn is covered by the Mesozoic Eromanga Basin. Within EL29239 and EL29237 Jurassic to Cretaceous sequences and recent sands overlie the Pedirka Basin. The principal target for coal exploration is the Purni Formation, which is Lower Permian in age. Global Ore Discovery considers the Purni Formation as the most perspective geological unit to test for thick and laterally continuous coal seams. The Purni Formation exhibits a shallow dip of 1-5 degrees in a south easterly direction. The dip increases from less than one degree at the basin margin to as high as five degrees towards the centre of the basin.

Figure 4: Regional Pedirka Basin Stratigraphic Column.



Source: Global Ore Discovery, Hale River Technical Report, 21st May 2012.

3.2 Tenement Geology

The underlying geology is hidden by sand dunes, clay pans and alluvial deposits. However, historical drilling, seismic and mapping elsewhere in the Pedirka Basin has provided profiles through the stratigraphy. Local and Regional Stratigraphy is shown in Table 1. CTP recorded significant intercepts of coal in CMB107-002, CBM93-004, SHEL27109-1 and SHEL27109-2. The average thickness of net coal in these holes is 79 metres. CTP summarised coal quality data to the ASX and this is shown below in Table 2.

TABLE 1: Local and Regional Stratigraphy

Local and Regional Stratigraphy of the southern most Ebony tenements; Pedirka Basin (outlined in blue) and overlying stratigraphy (PIRSA)

AGE	Ebony Tenures	Pedirka Basin (North)	Poolowanna Trough	Eringa Trough
Cretaceous	Rumbalara Shale	Winton Fm		Winton Fm
		MacKunda Fm		MacKunda Fm
		Oonadatta Fm		Oonadatta Fm
		Bulldog Shale	Bulldog Shale	
		Cadna Owie Fm	Cadna Owie Fm	Cadna Owie Fm
Jurassic	De Souza Sandstone	Murta Mbr		
		Algebuckina Sandstone	Algebuckina Sandstone	Algebuckina Sandstone
			Poolowanna Fm	Poolowanna Fm
Triassic			Peera Peera Fm	Peera Peera Fm
			Walkandi Fm	Walkandi Fm
Permian	Purni Fm	Purni Fm	Purni Fm	Purni Fm
				Mt Toondina Fm Equiv.
				Stuart Range Fm Equiv.
Carboniferous	Crown Point Fm	Crown Point Fm	Crown Point Fm	Crown Point Fm

Source: Global Ore Discovery, Hale River Technical Report, 18th May 2012.

Coal quality data for samples taken from DH-1 is shown in Table 3.

As far as is known, the Purni Formation is the only package with potential economic significance. This formation is known to have a thickness of over 500 metres and consists of white sandstone, conglomerate, thinly bedded grey shale, carbonaceous shale, siltstone and coal. The thickest measures of coal occur in the upper 250 metres of the Purni Formation where coal seams are interbedded with fine grain carbonaceous sandstone, siltstone and shale. The Purni thins towards the basin margins.

TABLE 2: CTP Coal Quality Data

	Specific Energy (MJ/kg)	Ash (%)	Moisture (%)	Hardgrove Indices	Volatiles (%)	Sulphur (%)	Ash Fusion Temperature	Rank
<i>Range</i>	20-26	8-19	8-19	80-115	22-30%	0.4-0.8	Low-med	Sub-bituminous
<i>Av.</i>	25	11	14		Medium to high volatile			B

Central Petroleum coal quality (air-dried basis) (ASX, November 2011), no location, sample type or number available

Source: Global Ore Discovery, Pedirka Basin Technical Review.

In summary, boreholes in the Pedirka Basin have intersected very thick sequences of net coal with the Ebony Energy model suggesting accessible coal at +350m.

TABLE 3: Coal Quality Data from Borehole DH-1R

Sample No.	Seam ID	Depth Corrected (metres)	Inherent Moisture (%)	Ash (%)	Volatile Matter (%)	Fixed Carbon (%)	Total Sulfur (%)	GCV MJ/kg	GCV kcal/kg	Relative Density
2	D	504.1 to 506.4	19.1	4.9	30.7	45.2	0.98	23.42	5,593	1.34
3	D	506.4 to 508.1	17.0	6.5	30.6	45.9	1.34	23.71	5,663	1.38
4*	D	508.1 to 508.1	1.3	62.0	40.6	-3.9	0.02	2.7	644	3.23
5	D	508.1 to 510.2	18.1	6.8	29.7	45.4	0.64	23.14	5,528	1.37
6	E	518.3 to 520.8	19.2	9.8	27.6	43.4	0.23	21.73	5,191	1.39
7	F	522.9 to 524.9	19.7	9.7	25.9	44.7	0.79	21.67	5,176	1.42
8	F	524.9 to 526.2	18.4	7.5	27.9	46.2	0.39	22.93	5,477	1.37
10	F	527.0 to 528.5	19.9	5.2	30.0	44.9	0.23	23.01	5,495	1.35
11	F	528.5 to 530.6	20.8	6.1	28.6	44.4	0.24	22.49	5,372	1.35
12	F	530.6 to 533.4	19.1	8.3	28.9	43.8	1.37	22.40	5,349	1.37
13	G	541.8 to 542.4	14.8	9.3	28.6	47.3	0.63	23.59	5,634	1.40
15	G	544.2 to 546.7	15.2	5.9	31.1	47.8	0.27	24.51	5,855	1.36
16	G	546.7 to 548.7	17.4	13.3	30.3	39.0	0.70	21.64	5,169	1.39

Source: Ebony Energy

4.0 EXPLORATION WORKS CONDUCTED

4.1 Overview of Work Performed

The work programme completed during the Y-3 reporting period consisted of desktop studies and planning for a follow-up drill programme within EL29237 and implementation of the programme.

Coal Exploration Report

Consulting geologists Tamplin Resources Pty Limited were engaged to compile a Coal Exploration Report concerning EL29237 and EL29239. A copy of this report forms an attachment to this document.

In summary this report identified three target seams based primarily on data acquired from DH-1R (see Second Annual Report for Group Reporting GR366, Hale River Project). The coal bearing sequences of the Purni Formation are interpreted to occur across the extent of both tenements with the first coal occurring at depths of 200m to 400m in the west and depths of up to 900m in the east. The sub-crop of the Purni sequence is interpreted to occur some 2km to 5km to the west of the Ebony Permits. The majority of the historic Pedirka Project boreholes included in the model occur outside the Ebony tenements. Accordingly, the exploration data in these areas was only reviewed at a preliminary level and only limited validation checks were performed on these parts of the model. No resources or exploration targets are declared in any of these areas, including the Ebony tenements.

Potential tonnages are detailed in Table 4 and were calculated based on the following:

1. Only one coal seam is taken to account.
2. An assumed relative density of 1.35gm/cc.
3. An uncertainty factor of 40% was applied within EL29239 to account for geological uncertainty and possible areas constrained by hydrology or other factors.
4. The uncertainty factor applied to EL29237 was increased to 30% to account for the distance from DH-1R.

TABLE 4: EL29239 and EL29237Insitu Tonnage Estimate (**Not JORC Compliant**).

Depth (m)	Tonnage (Bt) (Not JORC Compliant)	
	EL29239	EL29237
To top of Purni		
200-300m	-	0.1
300-400m	-	0.7
400-500m	0.8	0.9
500-600m	1.2	0.7
Total	2.0	2.4
<i>Reported Seams are nominally D, F and L seams</i>		
<i>Uncertainty Factor accounts for geological losses.</i>		
<i>Bt = Billion Tonnes; Density of 1.35gm/cc utilized.</i>		

Production, Economic and Financial Modelling.

At this point in time, the capital required to develop an underground coal mine in the Simpson Desert is not known within a high degree of confidence. The financial risk for a large project in a remote part of Australia is deemed high and a significant amount of time and effort has been allocated to building a production, economic and financial model being part of a prefeasibility study.

Financial modelling is continuing. The debt and equity markets are in a state of flux making it challenging to determine the best funding structure that will maximise financial return. To what extent a project in the Simpson Desert might be debt funded is yet to be tested. As more data becomes available in terms of financial structure and potential capital and operating costs, so the project risk is reduced.

5.0 Conclusions and Recommendations

Thick intersections of thermal coal intercepted in DH-1R show continuation of thick coal seams encountered by CTP but in shallower ground. Ebony is planning a Stage-2 drilling programme to be implemented in the fourth year of tenure. This work would complete a geological model to assist in planning the required number bore holes required to define a JORC reserve.

Stage-2 is recommended to include 6-7 boreholes to be completed in the fourth year of tenure, subject to the availability of finance. The aim from this work is to define a JORC compliant resource.

6.0 Compliance Statement

The expenditure commitment for GR366 was \$230,000 for the year ending 31/1/16, being the third license year. Actual expenditure for Y-3 was \$178,357, but this amount fell short of the commitment because activities were restricted to desktop studies. It was necessary to preserve funds because of the difficulty in raising new equity.

The expenditure commitment for GR366 was \$254,200 for the year ending 31/1/15, being the second license year. Actual expenditure for that year exceeded the commitment by 76%. It is expected that shortfalls in actual versus commitment expenditure will be more than offset by future activities.

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