realm resources

ASX Announcement
Media Release

Company Announcements
ASX Limited
By Electronic Lodgement

13 September 2017

Initial JORC Statement of Coal Resources for Roper Creek Coal Project, Queensland

Highlights

- Geological assessments and studies at the Roper Creek Coal Project ("**RCCP**"), covering EPC 855 and EPC 1669 adjacent to the Foxleigh Mine have been completed. Realm holds a 100% interest in each of these EPCs.
- Coal Resources for RCCP, estimated as at 30 June 2017 and reported in accordance with the JORC Code 2012, are 48Mt (42Mt Indicated and 6Mt Inferred) to 200m vertical depth.
- Coal seams in RCCP are the northerly extensions of seams in the Foxleigh Mine. With beneficiation, these seams can produce a Low Volatile PCI product.
- RCCP Coal Resources are separate, and in addition to, the Foxleigh Mine Coal Resources (which includes Reserves) of 82.3Mt (33.3Mt Measured, 29Mt Indicated and 20Mt Inferred) and Reserves 52.7Mt (29.2Mt Proved and 23.5Mt Probable). Realm holds a 70% interest in the Foxleigh Mine Coal Resources.

1. Introduction

1.1 Background

Realm Resources Limited (ASX: RRP) ("**Realm**" or the "**Company**") is pleased to announce that its subsidiary, Middlemount South Pty Ltd ("**Middlemount**" or "**MMS**"), has undertaken the necessary geological assessments and studies required to estimate the Coal Resources for RCCP in Queensland. RCCP Coal Resources are located in EPC 855 and EPC1669, in Central Queensland, Australia. Realm holds a 100% interest in each of these EPC's.

The information contained in this release provides the Statement of Coal Resources for the RCCP as at 30 June 2017, as independently estimated by McElroy Bryan Geological Services Pty Ltd ("**MBGS**") on behalf of Middlemount. The information is reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves, 2012 ("**JORC Code 2012**") and the Australian Securities Exchange ("**ASX**") Listing Rules.

1.2 Roper Creek Coal Resources

Total Coal Resources for the RCCP have been estimated at 48Mt (42Mt Indicated and 6Mt Inferred) to 200m vertical depth.

The following information prescribed by the JORC Code 2012 is included in this announcement and its Appendices:

- detail of the Coal Resources for RCCP (see Table 1 in Section 2);
- Additional information – Coal Resources RCCP (see Appendix 1);
- Coal Resources Declaration and Competent Person's Statement (see Appendix 2); and
- JORC Code 2012 Table 1 for RCCP Coal Resources (see Appendix 3).

All Coal Resources are quoted on a 100% basis.

1.3 Foxleigh Mine JORC statement of Coal Resources and Reserves

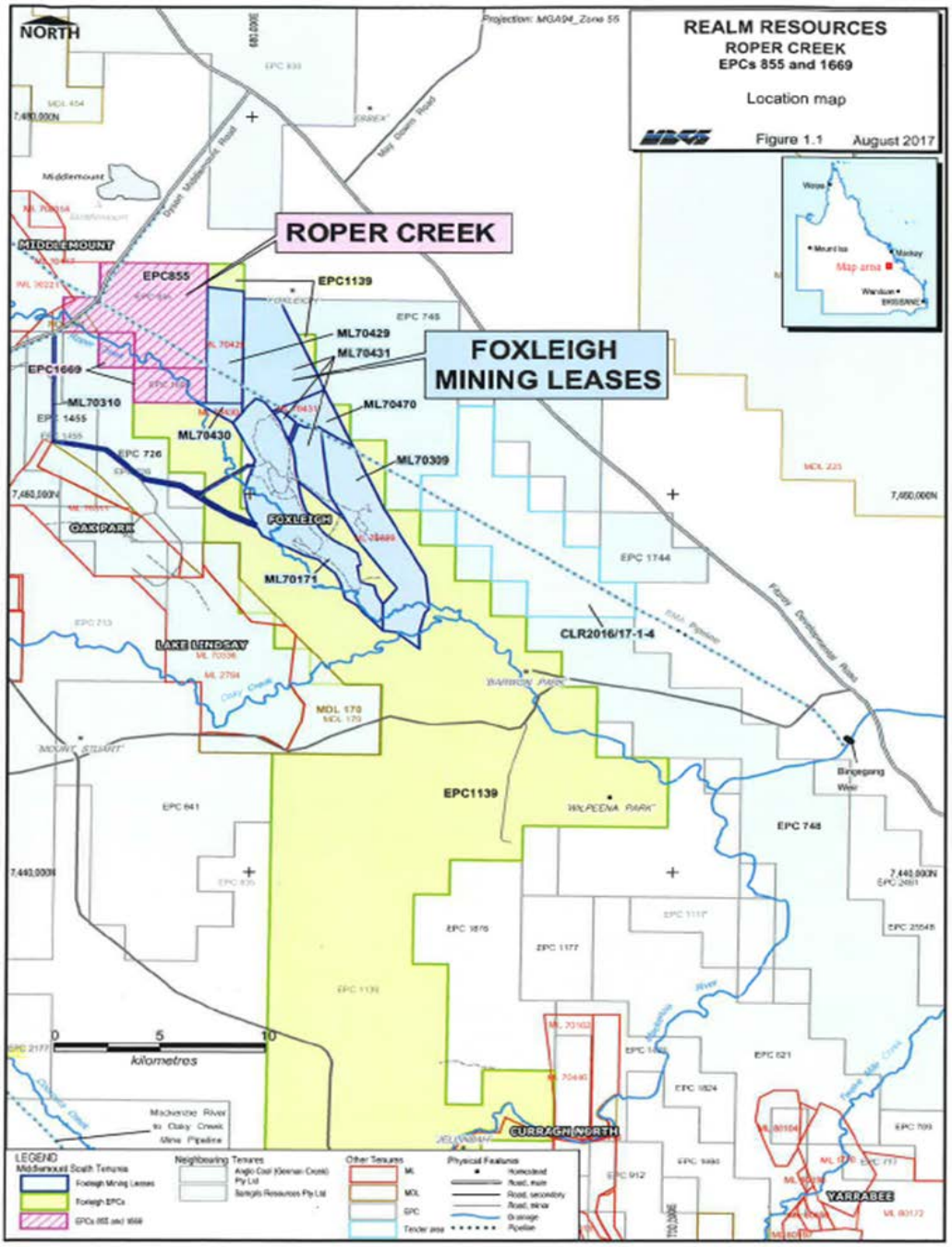
The RCCP Coal Resources are separate, and in addition to, the Foxleigh Mine Coal Resources and Reserves. The Foxleigh Mine's JORC coal resources and reserves are as follows: (100% basis – Realm's holding is 70%):

- Coal Resources (which includes Reserves) – 82.3Mt (33.3Mt Measured, 29Mt Indicated and 20Mt Inferred);
- Coal Reserves – 52.7Mt (29.2Mt Proved and 23.5Mt Probable); and
- Marketable Coal Reserves – 39.2Mt (22.4Mt Proved and 16.8Mt Probable).

The information contained in the Foxleigh Initial JORC Statement (dated 20 December 2016) (**Foxleigh Initial JORC Statement**) and updated Foxleigh JORC Statement (included in the Independent Geologist's Report which was incorporated into Realm's Notice of Extraordinary General Meeting dated 14 June 2017 (**Foxleigh Updated JORC Statement**) was estimated by Encompass Mining Services on behalf of Realm. The information was reported in accordance with the JORC Code 2012.

Readers should refer to the Foxleigh Initial JORC Statement for details of the Competent Persons Statement and to the Foxleigh Updated JORC Statement for details of the basis of the predicted yield to achieve Marketable Coal Reserves for the Foxleigh Mine. Realm confirms that it is not aware of any new information or data that materially affects the information in the Foxleigh JORC Announcement and, in the case of the Coal Resources and Coal Reserves, confirms that all material assumptions and technical parameters underpinning the estimates in the Foxleigh JORC Announcement continue to apply and have not materially changed.

Figure 1: Location of RCCP, Foxleigh Coal Mine and related tenements



2. Statement of Coal Resources– Roper Creek Coal Project

Table 1 - Coal Resources

6: COAL RESOURCES											
6A: Coal Resources within EPC855 **(**30 June 2017)											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			IRD (g/cc)	Ash (%)		IRD (g/cc)	Ash (%)			IRD (g/cc)	Ash (%)
OC	0 – 50	-			0.8			0.8	-		
OC	50 - 100	-			12.1			12.1	0.3		
OC	100 - 150	-			14.3			14.3	0.5		
OC	150 – 200	-			15.0			15.0	1.0		
Total		-	-	-	42.2	1.47	17.3	42.2	1.9	1.45	16.2

6B: Coal Resources within EPC1669 **(**30 June 2017)											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			IRD (g/cc)	Ash (%)		IRD (g/cc)	Ash (%)			IRD (g/cc)	Ash (%)
OC	0 – 50	-			-			-	-		
OC	50 - 100	-			0.1			0.1	2.2		
OC	100 – 150	-			0.0			0.0	1.6		
OC	150 - 200	-			-			-	0.6		
Total		-	-	-	0.1	1.43	13.7	0.1	4.4	1.43	14.6

6C: Total Coal Resources** 6A +6B **(Inclusive of Resources modified to produce Reserves) (30 June 2017)											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			IRD (g/cc)	Ash (%)		IRD (g/cc)	Ash (%)			IRD (g/cc)	Ash (%)
OC	0 – 50	-			0.8			0.8	-		
OC	50 - 100	-			12.2			12.2	2.5		
OC	100 – 150	-			14.3			14.3	2.1		
OC	150 - 200	-			15.0			15.0	1.7		
Total		-	-	-	42.3	1.47	17.3	42.3	6.3	1.44	15.1
Total Resources (Rounded)		**-**	**-**	**-**	**42**	1.5	17	**42**	**6**	1.4	15

3. General

3.1 JORC Code 2012 compliance

The statement of Coal Resources presented in this report has been prepared by Competent Persons in accordance with the JORC Code 2012. Additional materials in relation to the detailed reporting for RCCP are included below.

3.2 Competent Persons

The information in this Announcement relating to the Coal Resources is based on, and fairly represents, information compiled by a Competent Person (as defined in the JORC Code 2012 and identified below). The Competent Person has at the time of reporting, sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity they are undertaking, to qualify as a Competent Person as defined by the JORC Code 2012. The Competent Person consents to the inclusion in this report of the matters based on their information in the form and context in which it appears.

Roper Creek Coal Resources: Mr Charles Parbury, McElroy Bryan Geological Services Pty Ltd (Member AusIMM).

See Appendix 2 for the relevant Competent Person's Statement.

3.3 About Realm

Information on Realm Resources Limited is available on the Company's website at www.realmresources.com.au.

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This Announcement may include various forward looking statements which are identified by the use of forward looking words such as "may", "could", "will", "expect", "believes", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs. Statements other than statements of historical fact may be forward looking statements. Realm believe that it has reasonable grounds for making all statements relating to future matters attributed to it in this Announcement.

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Appendix 1 Additional Information - Coal Resources Roper Creek Coal Project

1. Background

The Coal Resource estimate for RCCP is supported by the JORC Code 2012 Table 1 (Sections 1 to 3) documents provided in Appendix 3.

The following summary of information for the Coal Resource estimate is provided in accordance with Listing Rule 5.8 of the ASX Listing Rules.

2. Geology and geological interpretation

2.1 Regional Geology

Roper Creek is located on the eastern flank of the Comet Ridge, a major structural feature of the southern Bowen Basin, and west of the complex Dawson Tectonic Zone. Roper Creek lies between two major structural features, the Jellinbah Fault Zone to the west and Foxleigh Fault Zone to the east (Figure 3.1). These fault zones comprise numerous east over west thrust structures trending north-northwest with considerable cumulative vertical displacements, often greater than 400 m. A schematic section across the RCCP deposit (Figure 3.2) illustrates the major structures. Associated with these major structures are smaller scale (20m – 100m) thrust faults, which have up-thrown coal-bearing strata on the eastern side of the structures. At least three such faults occur within Roper Creek (Figure 3.8) and, as a consequence of the up-thrusting, considerable coal occurs within the area at depths less than 200m.

2.2 Local Geology

Within Roper Creek, two Permian coal-bearing formations, the Rangal Coal Measures and Burngrove Formation, have been uplifted. Conformably overlying the Rangal Coal Measures are the Triassic age Rewan Group sediments (Figures 3.2, 3.3 & 3.8), which do not contain any coal occurrences and consist predominantly of siltstones and sandstones. Sequences of Tertiary clays and sands, from 20m thick in the southwest to 70m in the northeast, cover the area.

The northeast dipping Rangal Coal Measures contain the primary coal targets in RCCP. In descending stratigraphic order, the four main coal seams are the Roper, Middlemount, Tralee, and Pisces. Down hole geophysical density logs confirm the consistency and continuity of the main coal plies within these coal seams; Roper 3, Middlemount, Tralee 1, Tralee 2 and Pisces 1. The Tralee 2 Seam is often intruded, particularly in the northern half of the Roper Creek deposit, so the Roper 3, Middlemount and Tralee 1 plies make up the majority of the Coal Resources.

2.2.1 Stratigraphy

(a) Quaternary

Unconsolidated Quaternary sediments comprise sand, clay, and basal gravel and pebbles, the thickness of Quaternary is commonly 8m - 12m, thickening to greater than 20m adjacent to Roper Creek.

(b) Tertiary

Tertiary strata of the Duaringa Formation, overlie the northern portion of the Roper Creek whilst unconsolidated sediments of the Quaternary cover the remainder overlying the Permian to Triassic aged strata. The thickness of the Tertiary sediments is variable, ranging from 5m - 80m and averaging approximately 38m thick. These sediments consist of variable proportions of clay and poorly indurated, fine to coarse quartzose sand and gravel. Due to similar colour and texture Tertiary clay and highly weathered Permian sediments can be difficult to distinguish. Although the contact between Tertiary and weathered Permian is not always sharp the boundary is often picked from density logs.

(c) Triassic

The Triassic Rewan Formation, which overlies the Rangal Coal Measures, is devoid of coal seams and is comprised of two major units, i.e. an upper unit, the Arcadia Formation, which typically comprises red brown claystone with lesser greyish green siltstone and sandstone, and a lower unit, the Sagittarius Sandstone, which comprises distinctively grey green coloured quartz lithic sandstone and sandy claystone with chert bands. The Rewan Formation is only present in the eastern part of the Roper Creek deposit (Figure 3.1).

(d) Permian

Rangal Coal Measures are the uppermost formation of the Late Permian Blackwater Group, consisting of grey lithic sandstone, siltstone, claystone, carbonaceous mudstone and coal. Within the Roper Creek area, the formation is approximately 100m thick and contains five main coal seams (Figure 3.3), Roper 3, Middlemount, Tralee 1, Tralee 2 and the upper ply of Pisces 1 (P1A), of which the Roper 3, Middlemount and Tralee 1 seams are economically significant. The Rangal Coal Measures conformably overlie the Burngrove Formation.

The Burngrove Formation is the oldest unit encountered at Roper Creek and consists of siltstone, claystone, sandstone and typically thick banded coal seams, containing abundant stone and tuffaceous bands. The upper Burngrove Formation is characterised by hard, grey, sandstone and minor siltstone with several banded coal seams, including the Barwon Seam, Girrah Seam, and basal plies of the Pisces 1 Seam. The top of the Burngrove Formation is conformable with the pinkish brown Yarrabee Tuff which has a characteristic high natural gamma geophysical log response and immediately overlies the thin stony coal of the Pisces 1B Ply (Figure 3.3). A minor claystone band occurring within the Pisces 1B Ply is often described as a secondary tuff band.

The base of weathering (BOW) has been recorded in the lithology log of most drill holes. At Roper Creek, the depth to BOW ranges 35m - 55m in the south, increasing to in excess of 75 m in the northern part of EPC855. The BOW in Permian strata is overlain by poorly consolidated Tertiary sediments and the increase in the depth of the BOW is related to an increase in the thickness of the Tertiary strata. The BOW averages approximately 12m deeper than the base of the superficial (Tertiary) sediments.

(e) Structure

The Roper Creek coal deposit in the Rangal Coal Measures lies between the Jellinbah and Foxleigh Faults and the strata dip at between 5° and 15° towards the east-northeast. The two major faults strike northwest to southeast, and within Roper Creek there are several thrust faults of similar orientation, which result in the Rangal Coal Measures being thrust from the north east and over underlying strata to the southwest. The up-thrusting of the coal sequence brings the potentially mineable coal seams closer to the surface and presents an opportunity for extraction by open cut mining methods.

High quality 2D seismic data have been used to confirm seam continuity and define structure for construction of the 3D geological model.

(f) Igneous Intrusions

The Tralee 2 Seam is intruded by an igneous sill in some areas, which separates the seam into TR2A and TR2B plies. There is evidence of occasional heat affecting of all the other main seams in the deposit. In the centre of EPC855 a single drill hole, M682, contains a 30m intersection of an igneous dyke. The only evidence of coal in this drill hole is a small section of

heat affected Tralee 2 Seam, all other seams have been completely altered.

2.3 Coal Seams

Figure 3.3 presents the typical stratigraphy and sequence of coal seams at Roper Creek. The uppermost seams in the Rangal Coal Measures are the Roper 1, Roper 2 and Roper 3 seams. The Roper 1 and Roper 2 seams only exist in a few drill holes and they vary in thickness from 0.7m - 1.5m. Roper 3 is much more widespread and exists in 31 drill holes where the thickness generally ranges from 0.7m - 1.7m, (Figure 3.5).

Middlemount Seam is the most consistent of the coal seams, providing a recognisable geophysical signature in all holes where it is intersected. Thin (<0.5m) plies gradually split from the roof and floor of the main ply, Middlemount 1 (Figure 3.4). Thickness of Middlemount 1 Ply varies from 1.8m - 4.5m and is mostly about 3.5m thick, (Figure 3.6). The upper split, Middlemount Upper Ply, is present in a few drill holes and reaches a maximum thickness of 0.8m, but is generally less than 0.3m, or coalesced with Middlemount 1 Ply. The lower split, Middlemount Lower Ply, exists in only a few holes and is up to 1.4 m thick, but is generally less than 0.4m or coalesced with Middlemount 1 Ply.

The Tralee seams are separated by approximately 20m of interburden and both consist of an upper ply (Tralee 1A and Tralee 2A) and a lower ply (Tralee 1B and Tralee 2B). Tralee 1 Seam's Tralee 1B Ply represents the bulk of the seam with its thickness ranging from 0.8m - 1.8m, (Figure 3.7). Because of the igneous sill separating Tralee 2A and Tralee 2B they are less consistent in thickness. However, generally the sill occurs in the upper portion of the seam leaving a thicker (1.2m - 3.5m) Tralee 2B Ply underneath.

Pisces 1 Seam has been separated into four plies, including the Yarrabee Tuff, which in descending stratigraphic order are Pisces 1A, Yarrabee Tuff, Pisces 1B and Pisces 1C. This package ranges in thickness from 1.9m - 4.2m thick and is present in holes that were drilled deep enough to intersect it. Pisces 1 Seam is generally 35m - 40m below the Tralee 2 Seam, and as a result, holes were often not drilled deep enough to intersect it however, due to the Yarrabee Tuff's high gamma response, it provides a distinctive stratigraphic marker when intersected.

The Yarrabee Tuff is located midway through the Pisces 1 Seam; however, it marks the separation of the Rangal Coal Measures from the underlying Burngrove Formation. After the Pisces Seam the uppermost coal seam in the Burngrove Formation is the highly banded Girrah 1 Seam, some 30m below Pisces 1. This seam has not been correlated at Roper Creek and as such is not included in the geological model.

Figure 3.1 Geology of the Roper Creek Deposit

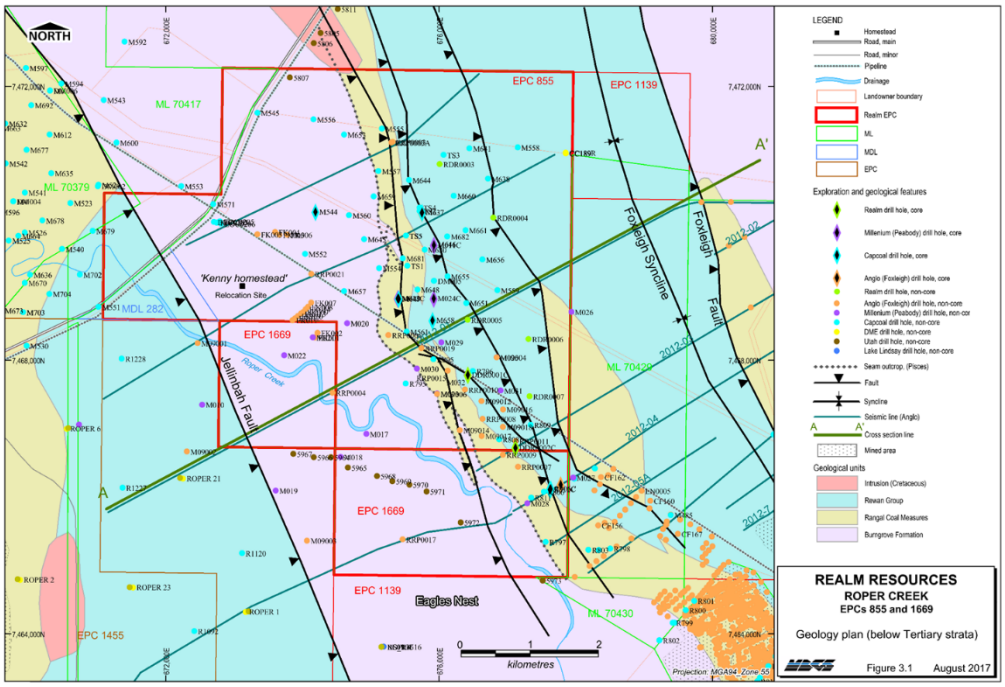


Figure 3.2 Typical Cross Section through Roper Creek Deposit

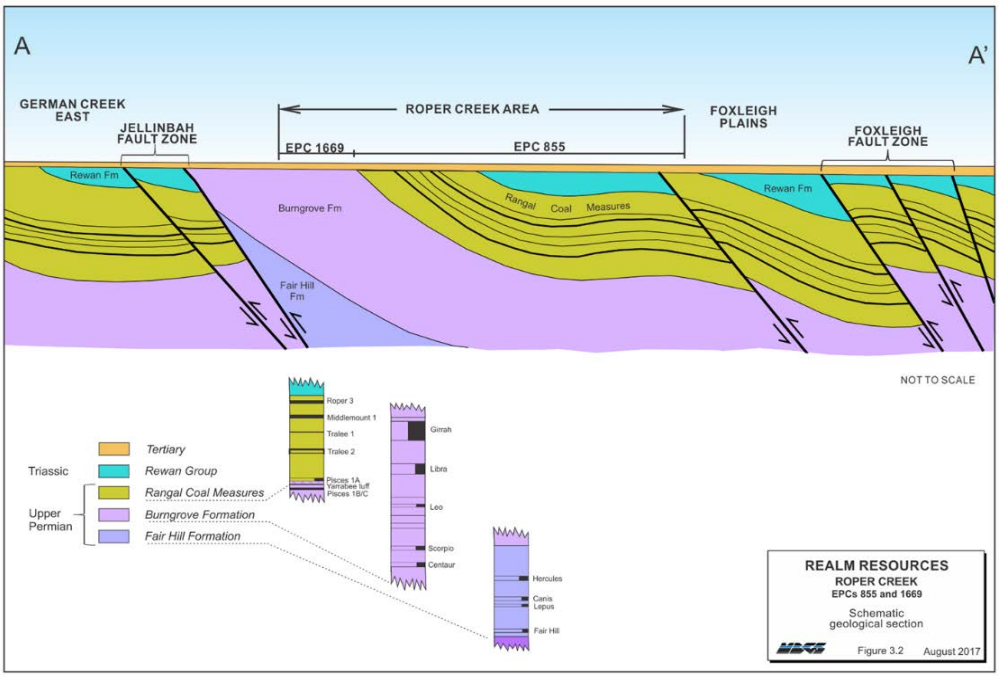


Figure 3.3 Typical Stratigraphic Column

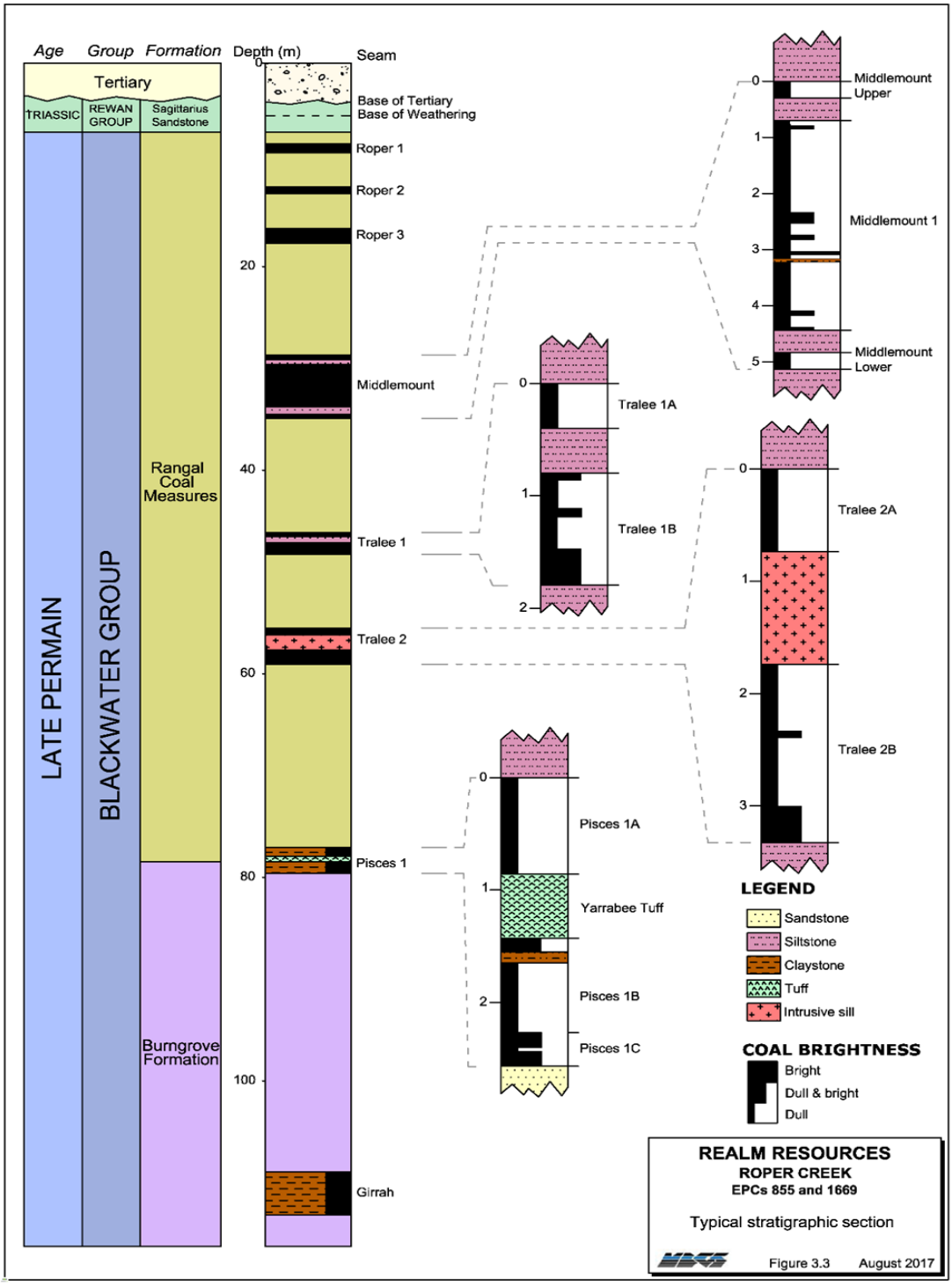
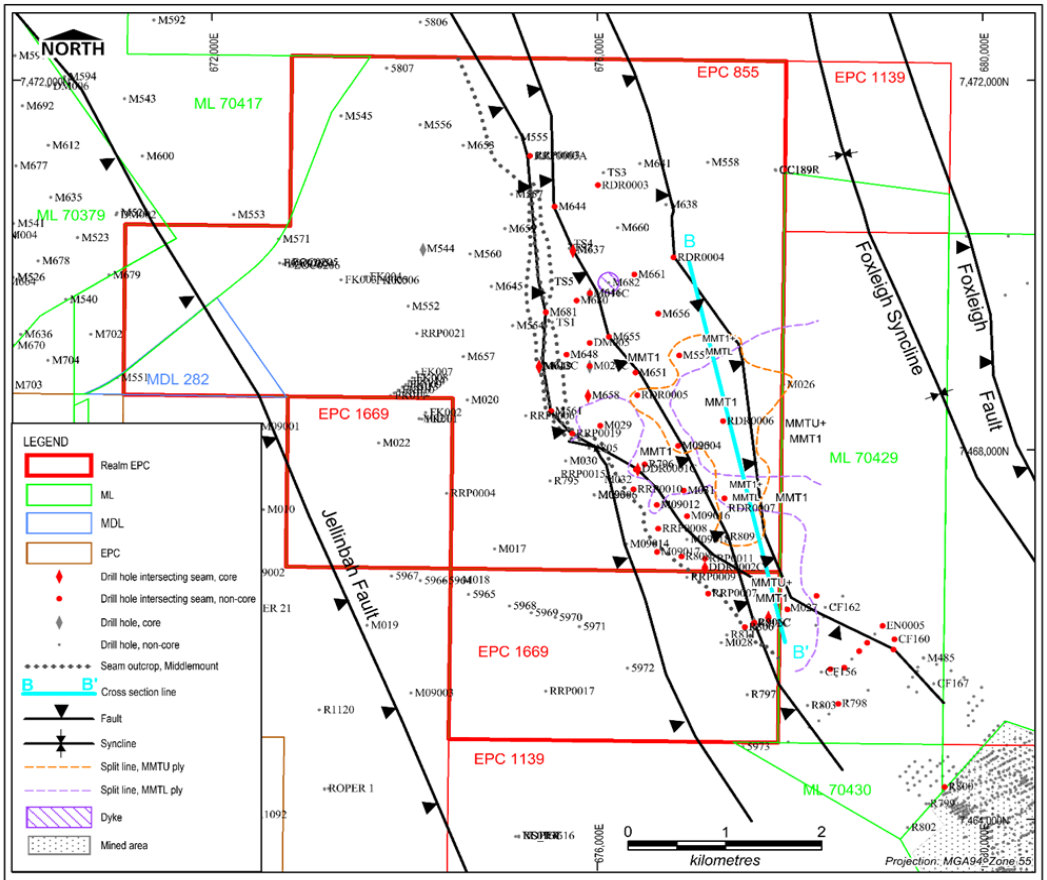
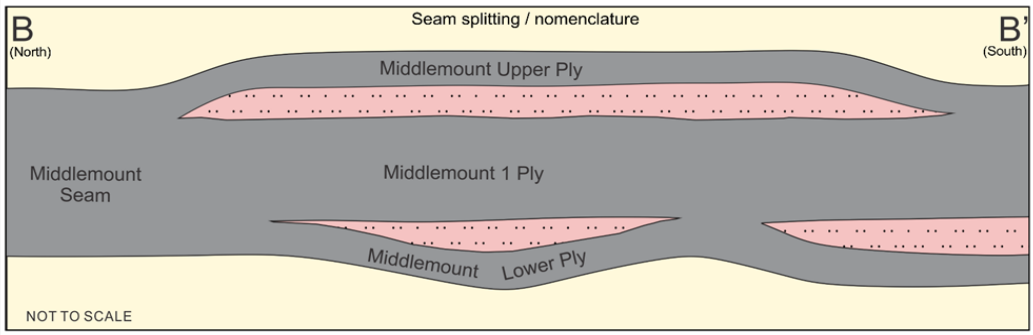


Figure 3.4 Seam Splitting





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Middlemount Seam splitting

Figure 3.4 August 2017

Figure 3.5 Roper 3 Seam Thickness

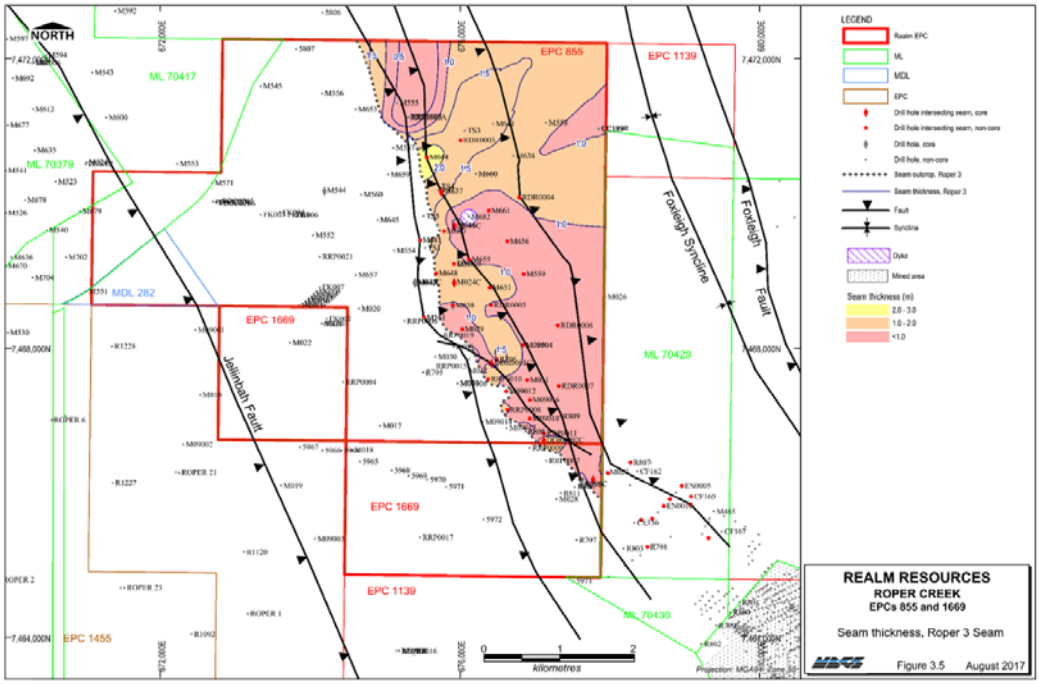


Figure 3.6 Middlemount Seam Thickness

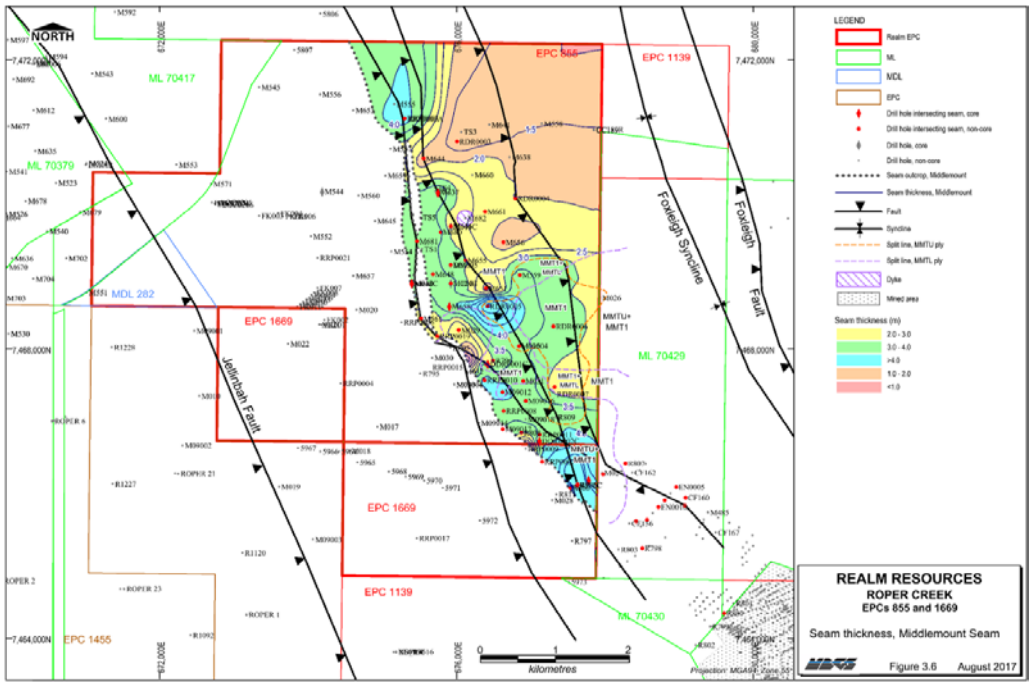


Figure 3.7 Tralee 1B Ply thickness

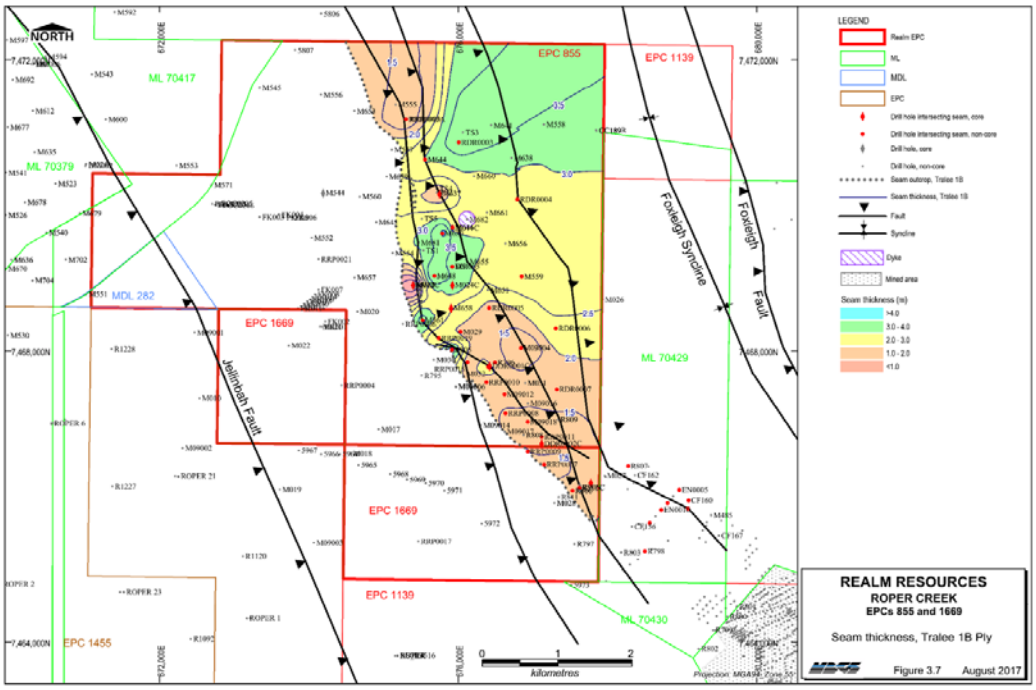
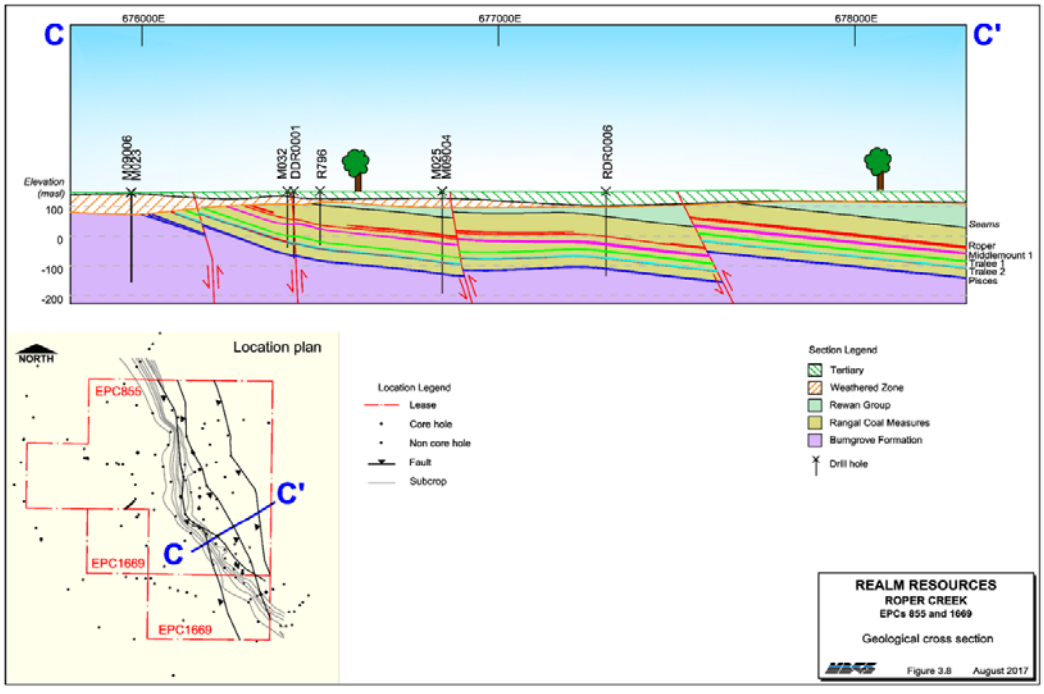


Figure 3.8 Typical Cross Section



2.4 Coal Quality

Coal seams in the RCCP are high rank, with vitrinite reflectance values of around 1.85 and typically low volatile matter, that when beneficiated to a marketable target ash can produce a PCI product. Raw coal ash of the seams varies from 15% - 35% (Figures 3.9, 3.10 & 3.11) with volatile matter contents of less than 15% (See Table 3.1). The rank is too high for the coal to retain caking properties.

Table 3.1 Typical raw coal quality, Roper Creek

Seam / Ply	Air dried basis						Typical seam thickness (m)
	RD (g/cc)	Moisture (%)	Raw ash (%)	Volatile matter (%)	Fixed carbon (%)	Total sulphur (%)	
Roper 3	1.50	2	20	14	64	1.2	1.4
Middlemount	1.45	2	18	13	67	0.4	3.8
Tralee 1B	1.50	2	19	12	67	0.5	1.5
Pisces 1	1.40	2	41	10	48	0.3	5.5

Float/sink testing of coal cores indicates that the product yield varies between 65% - 85%. Product ash in Table 3.2 ranges from 9% - 12% while the calorific value varies from 7500 kcal/kg - 7750 kcal/kg. Phosphorus is highly variable ranging from 0.010% in the Roper 3 seam up to 0.140% in the Tralee 1 B Ply.

Table 3.2 Typical clean coal quality, Roper Creek

Seam / Ply	Air dried basis					
	Moisture (%)	Ash (%)	Volatile matter (%)	Fixed carbon (%)	Calorific value (kcal/kg)	Phosphorous (%)
Roper 3	2	12	11	75	7480	0.01
Middlemount	2	9	13	76	7680	0.10
Tralee 1B	2	10	13	75	7650	0.14
Pisces 1	-	-	-	-	-	-

Figure 3.9 Raw Ash, Roper 3 Seam

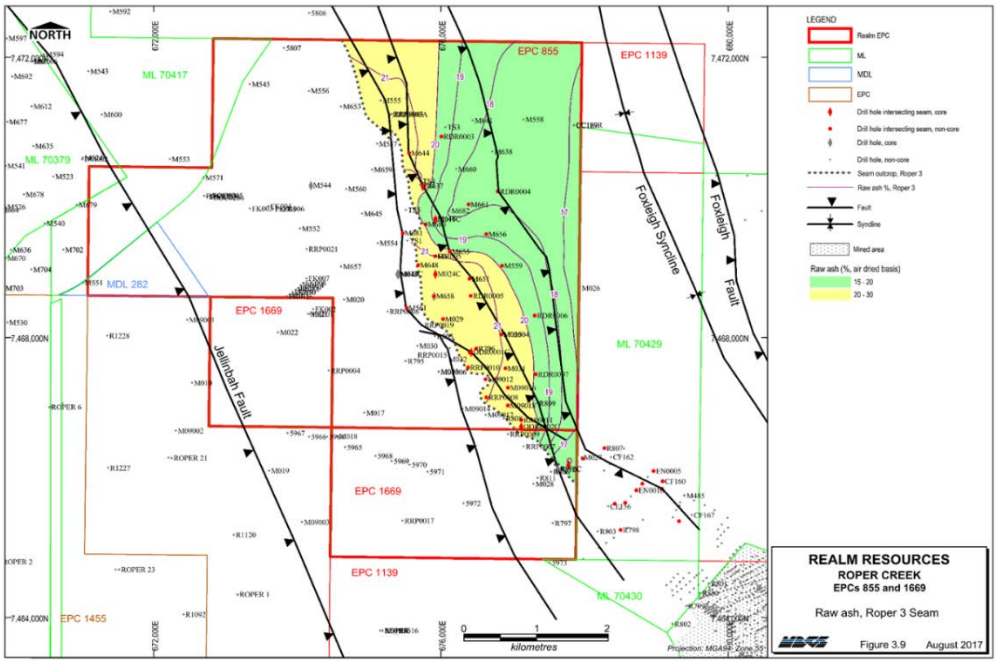


Figure 3.10 Raw Ash, Middlemount Seam

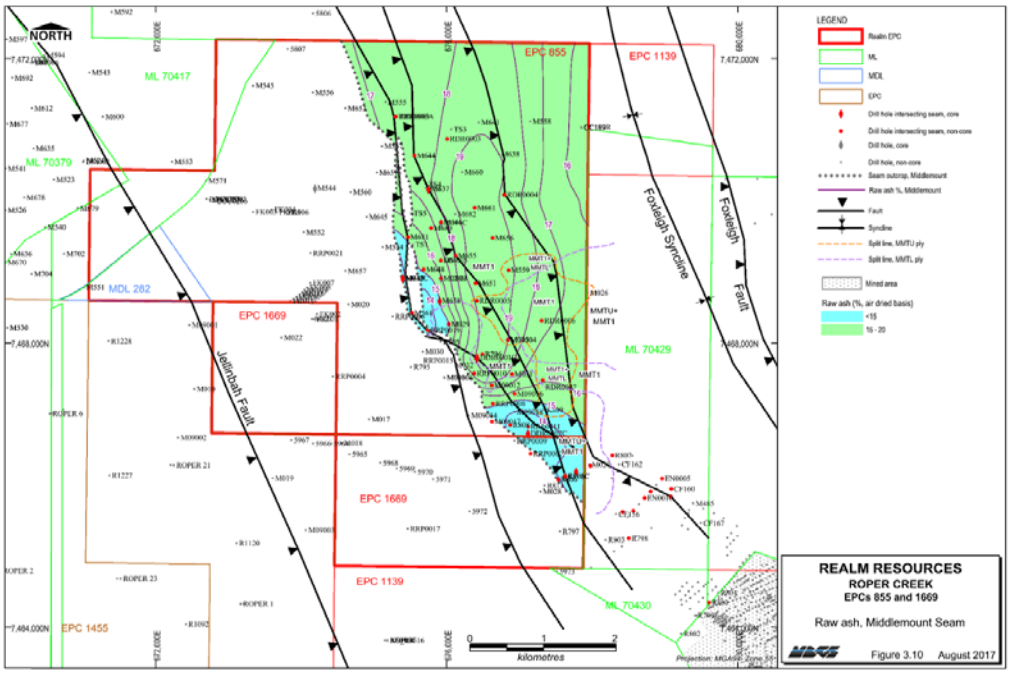
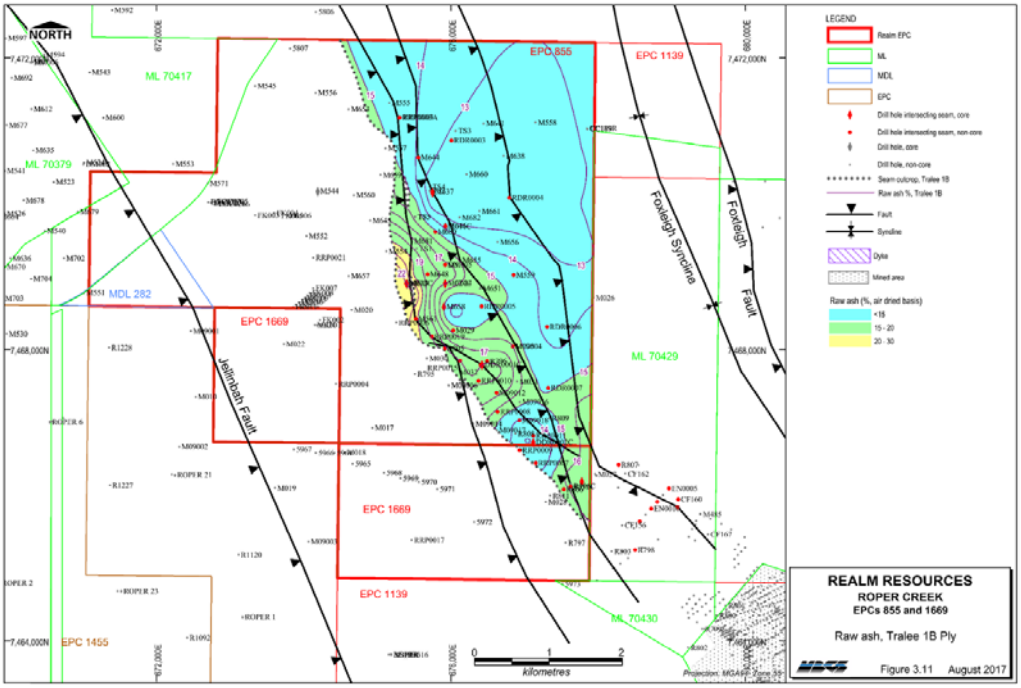


Figure 3.11 Raw Ash, Tralee 1B Ply



3. Sampling and sub-sampling techniques

Industry standard drill holes of variable diameter have been drilled to recover whole cores of coal ranging in size ranging from HQ (61mm), HMLC (63mm) to PQ (83mm) diameter. Historically, core samples were sampled in sections of nominally 0.4m - 0.5m with significant stone bands sampled separately. The core was sampled at the rig. Working sections were determined based on the raw coal results of the plies and combined based on the correlation of the seams at that time. From May 2017, coal sampling was changed by MMS to a down hole geophysical log ply sampling basis, with coal and stone bands sampled separately if thick enough (sufficient mass) to conduct analytical testing. Where a stone ply was too thin it was combined with the overlying coal ply. The sampling intervals were determined from the geophysical density log. All sampling was undertaken after the geophysical logs were received to ensure systematic and consistent sampling of the coal plies to enable understanding of the seam qualities both vertically within the seam and laterally between the holes. Instructions were issued to the laboratory to combine samples to form specific seams which were later composited to form working sections.

Geophysical logs were acquired to supplement the geological description of the cores and to ensure that the core recoveries were satisfactory (>= 95%) and to assist with correlation of the various seams present. Historically, the geophysical logs included natural gamma, dual density, caliper, resistivity, verticality and multichannel sonic. MMS consistently acquired long and short

spaced density, natural gamma, caliper, verticality and multichannel sonic in all holes. Selected holes were also logged with the acoustic scanner, dual neutron and resistivity tools. All seam picks are corrected to geophysical logs. Of the 125 holes drilled in the project area 82 drill holes (66%) have verifiable geophysical logs. Basic raw coal quality data comes from 11 core holes from all explorers of which 10 holes were drilled within the Roper Creek deposit EPCs, while product composite testing is available from four holes within the EPC areas.

Downhole geophysical logging companies have as standard operating procedure, a logging tool calibration process to maintain a consistent quality of tool data collection. Calibration is fortnightly for most logging companies. MMS has a site calibration procedure and all loggers have to test the tools prior to logging on site.

4. Criteria used for classification

4.1 Geological Data

4.1.1 Drilling

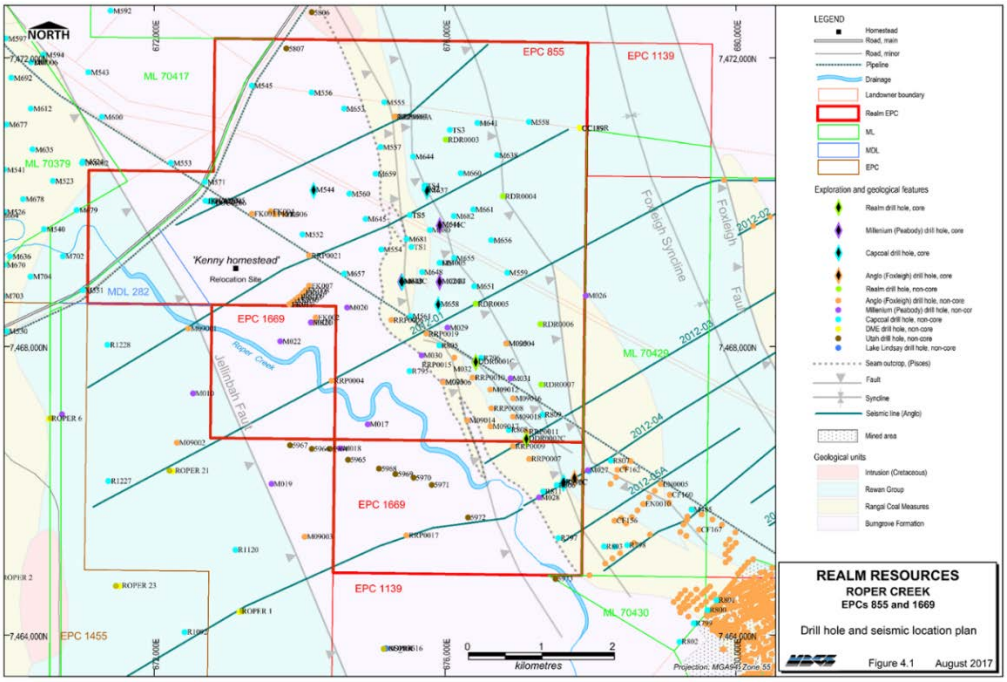
A total of 124 holes have been drilled in the Roper Creek deposit of which 59 intersected coal seams within the Rangal Coal Measures. The holes were drilled by various tenement holders from the 1960s to the present with most of the drilling undertaken by Capcoal in the 1980s. Whilst most holes are non-core there are nine core holes with coal quality analysis of the major seams. Core diameter recovered varied from HQ (61mm), HMLC (63mm) to PQ (83mm).

Drill hole spacing ranges from approximately 150 m up to about 1,000m, with more closely spaced holes occurring along the seam subcrop zone in the south with data paucity increasing towards the northeast. Spacing of the core holes with coal quality analysis ranges from 150m - 1,200m, with the typical spacing approximately 700m, (Figure 4.1).

4.1.2 Seismic

Six 2D seismic lines were acquired across the Roper Creek deposit by Anglo American, (Figure 4.1). Where the seismic, is not inhibited by Tertiary basalts at or near the surface, Rangal Coal Measures strata tend to provide excellent resolution for seismic data, and this is certainly apparent at Roper Creek. Reflectors represented by the coal seams are distinguishable in the seismic sections and the numerous large scale thrust faults can be resolved. These 2D seismic data were used in the construction of the 3D faulted geological structure model.

Figure 4.1 Drill Hole and Seismic Location Plan



4.2 Geological Modelling

A geological grid model was constructed in Minex software using drill hole and seismic data. The orientation and displacements for four thrust faults interpreted from cross sectional studies were incorporated into a 3D faulted model, which enables the complex geology and seam repetition through overthrusting, to be well represented in the model. The fault displacements range in magnitude from 3m to 120m, striking north-northwest. Grids of the roof, floor and thickness were generated for all coal plies, the Tralee 2 Seam igneous sill and Yarrabee Tuff. A total of 15 horizons are generated in the geological structure model.

Coal quality data is available for Roper 3 Seam, Middlemount Seam, Tralee 1 Seam, Tralee 2 Seam and Pisces 1 Seam. However, sufficient information to generate coal quality models only exists for the Roper 3 Seam, Middlemount 1 Ply and Tralee 1A & 1B plies. Raw coal proximate analyses, total sulphur, calorific value and laboratory density were modelled to create grid surfaces.

4.3 Resource Classification

Resources at Roper Creek were classified on the basis of drill hole spacing supported by the consistency and continuity of coal seam character represented by geophysical logs obtained for each hole and complemented by five 2D seismic lines across the deposit (Figure 4.1). Because these seismic lines

display such high quality resolution of the seams and structure, confidence is high that coal seams have continuity between drill holes. However, although the seismic data indicates coal seams extend to the eastern tenement boundary of the project area, coal resource classifications were limited by the last drill hole intersection for each seam.

Using geophysical logs, consistency of the coal seam character, thickness and indicative in situ quality was able to be confirmed between like holes. Similar in situ coal quality was clearly indicated by the logs within domains populated by holes demonstrating similar seam density profiles when compared with geophysically logged holes from which coal core was recovered and analysed.

Using the guiding principles of seam continuity and consistency of seam character, it was assessed that there was sufficient drill hole density, adequate coal quality analyses and confidence in continuity of coal seam character to determine that the majority of the resource area for Roper 3 Seam, Middlemount Seam and Tralee 1B Ply is of Indicated status.

Where geophysical logs were not available, the confidence in seam character was low. This combined with a paucity of coal quality data classified the resource as Inferred. Spacing between drill holes with geophysical logs in Inferred areas is typically 800m – 1500m.

Spacing between drill holes with geophysical logs in Indicated areas is typically 200m – 500m.

Some drill hole and seismic data located outside the Roper Creek tenure in the Eagle's Nest area were used to determine Coal Resources in the south-eastern portion of EPC1669.

Coal Resources were limited to a depth of 200m below topography and MBGS consider these resources to have potential for economic open cut extraction.

5. Sample analysis method

Roper Creek is a coal deposit and is therefore stratiform and relatively homogenous. Sample intervals include both geophysical logged non-core holes (structure data points) and geophysically logged cored holes with valid coal analyses (quality data points). Any erroneous values either geophysical (coal structure thickness) and or coal quality have been checked by senior MBGS geologists and retained if valid or excluded if incorrect. The correlation and naming of the seams has had several iterations with MBGS geologists reviewing the seam and the seam nomenclature and revising the seam correlations in June/July 2017.

No twinned holes have been drilled to date at RCCP.

MMS coal analyses were analysed by PrepLab supervised by the site geologist.

All primary coal intersection data was compiled and edited in the Minex geological database by the modeller, (estimator). All primary coal quality analyses have been compiled in spreadsheets by the testing laboratory with reference to sample numbers and supplied to the client.

Relative density values were adjusted to a default in situ moisture value of 4%.

Raw coal quality variables loaded at an air dried moisture basis into the Minex database.

6. Estimation methodology

A total of 48Mt of Coal Resources have been estimated within the Roper Creek area, of which 42 Mt are classified as Indicated (Table 4.1). Approximately 30Mt occur at depths less than 150m. This report highlights an initial coal resource estimate for the Roper Creek deposit, reported in accordance with the JORC Code.

Due to its relatively thin nature (<1.5 m), Roper 3 Seam comprises only a small amount of the total resources, with approximately 6Mt classified as Indicated and approximately 1Mt classified as Inferred (Figure 4.2).

Middlemount Seam contains most of the Coal Resources within the Roper Creek with approximately 25Mt, of which approximately 21Mt is classified as Indicated and 4 Mt classified as Inferred (Figure 4.3). These resources are within the Middlemount 1 Ply and only include the Middle Upper and Lower plies where they are coalesced.

Tralee 1 Seam resources are contained within the thicker and more consistent Tralee 1B Ply. Approximately 16Mt of coal have been estimated for Tralee 1B Ply with 15Mt Indicated and 1Mt of Inferred (Figure 4.4).

Approximately 10Mt of Pisces 1 Seam were estimated at depths shallower than 200m. However, due to the interburden thickness (~50m) separating it from the overlying Tralee 1 Seam and therefore increasing strip ratio, as well as the seam's higher inherent ash (>35%), these tonnes have not been included in this resource report as they are not considered to be economic.

The combined Coal Resources of approximately 50Mt reported for the Roper 3 Seam, Middlemount Seam and Tralee 1B Ply have similar coal qualities. Typically they have low volatile matter and high coal rank so can produce a PCI coal product.

Coal Resources have been estimated and reported using an in-situ density calculated from the laboratory density using the Preston and Sanders formula at an in-situ moisture basis of 4%.

7. Cut-off grades

Although no seam thickness or coal quality cut-offs were applied to the estimation of resources for Roper Creek, an analysis of the linear stripping ratio was undertaken. The results of the analysis indicated that with the current level of information there is less than likely prospects of eventual economic extraction of the Pisces 1 Seam. The factors contributing to this decision include the elevated linear stripping ratio, Pisces 1 Seam's high ash (>35%) and Tralee 2 mostly being intruded. Coal Resources reported herein are limited to the base of the Tralee 1 Seam and 200m depth of cover.

8. Mining and Metallurgical methods and parameters

A drill core laboratory testing program designed to test the coal washability and clean coal product was carried out on a selection of cores. The program was designed to establish likely product types from the coal seams at Roper Creek. Analysis of float/sink and clean composite results confirmed that the coal will require washing to meet the target product market specification and indicated that a low ash low volatile PCI product could be beneficiated at economic yields. MMS' production and sale of this coal product type at Foxleigh Mine from the same seams is confirmation that the coal from Roper Creek could be sold into these markets.

Table 4.1 Coal Resources, Roper Creek

Coal Resources
Roper Creek Project, EPC855 and EPC1669

Tenement	Depth interval (m)	Seam / Ply	Coal Resources			Typical raw coal quality		
			Measured (Mt)	Indicated (Mt)	Inferred (Mt)	Ash (%) [1]	Moisture (%) [1]	In situ density (g/cc) [2]
EPC855	0 - 50	Roper 3	-	0.1	-	21.5	2.0	1.50
		Middlemount	-	0.5	-	14.5	1.5	1.40
		Tralee 1B	-	0.2	-	20.0	2.0	1.50
	50 - 100	Roper 3	-	1.8	0.3	21.0	2.0	1.50
		Middlemount	-	5.9	-	16.0	1.5	1.45
		Tralee 1B	-	4.3	-	18.0	2.5	1.50
	100 - 150	Roper 3	-	2.7	0.2	21.0	2.0	1.50
		Middlemount	-	6.5	0.3	18.0	2.0	1.45
		Tralee 1B	-	5.1	0.0	15.5	2.5	1.50
	150 - 200	Roper 3	-	1.4	0.3	19.5	2.0	1.50
		Middlemount	-	8.1	0.6	18.5	2.0	1.50
		Tralee 1B	-	5.5	0.2	14.5	2.0	1.50
	Sub-total		-	42.2	1.9			
EPC1669	0 - 50	Roper 3	-	-	-	-	-	-
		Middlemount	-	-	-	-	-	-
		Tralee 1B	-	-	-	-	-	-
	50 - 100	Roper 3	-	-	0.2	20.5	2.0	1.50
		Middlemount	-	0.06	1.6	14.0	1.5	1.45
		Tralee 1B	-	0.07	0.4	13.5	1.0	1.45
	100 - 150	Roper 3	-	-	0.1	17.0	1.5	1.45
		Middlemount	-	-	1.1	14.0	2.0	1.45
		Tralee 1B	-	0.01	0.4	15.5	1.5	1.45
	150 - 200	Roper 3	-	-	-	-	-	-
		Middlemount	-	-	0.4	14.0	2.0	1.45
		Tralee 1B	-	-	0.2	16.0	1.5	1.45
	Sub-total		-	0.1	4.4			
Total			-	42.3	6.3	June 30, 2017		
Total (rounded)			**-**	**42**	**6**			
				48				

Notes:

(1) Raw coal quality variables reported on an air dried moisture basis.

(2) In situ density calculated using Preston and Sanders formula at 4% in situ moisture.

(3) Approximately 10 Mt of Pisces Seam resources have been estimated at depths shallower than 200 m, however this tonnage has not been included in coal resources at this stage because of the high (>35%) raw ash and the thickness (~50 m) of interburden (and therfore, strip ratio) between the Pisces Seam and the overlying Tralee 1 Seam.

Figure 4.2 Coal Resources, Roper 3 Seam

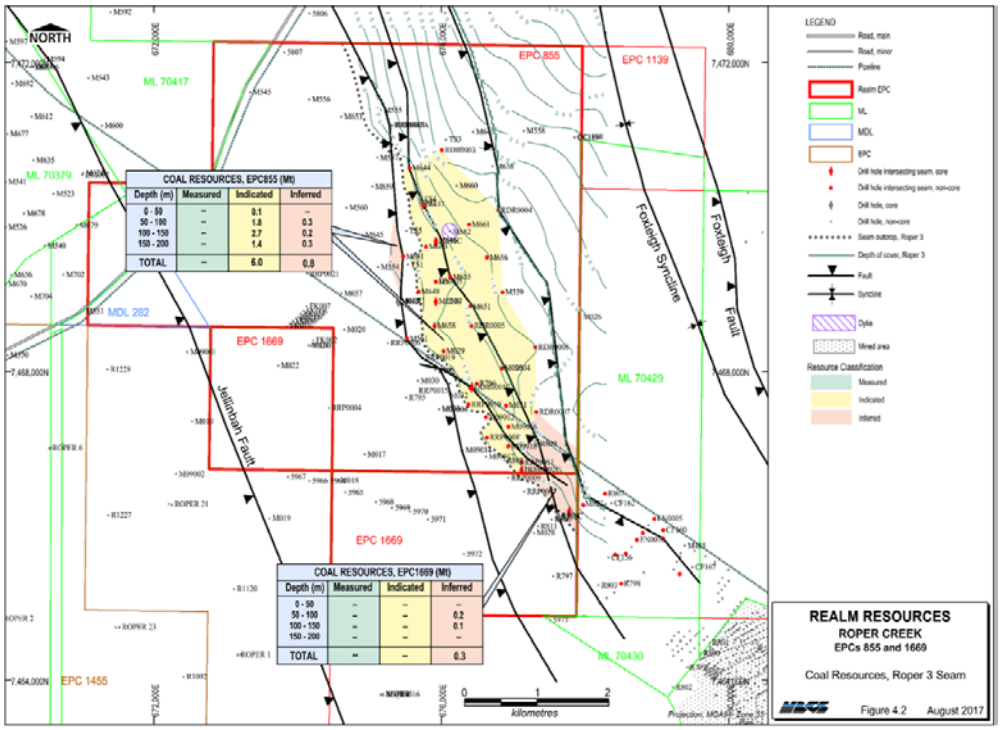


Figure 4.3 Coal Resources, Middlemount Seam

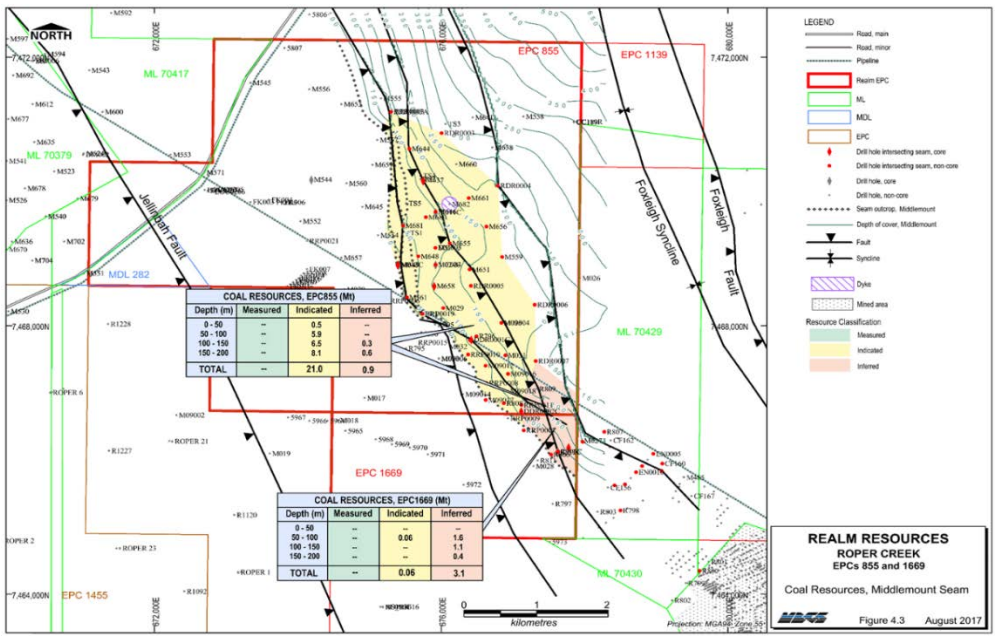
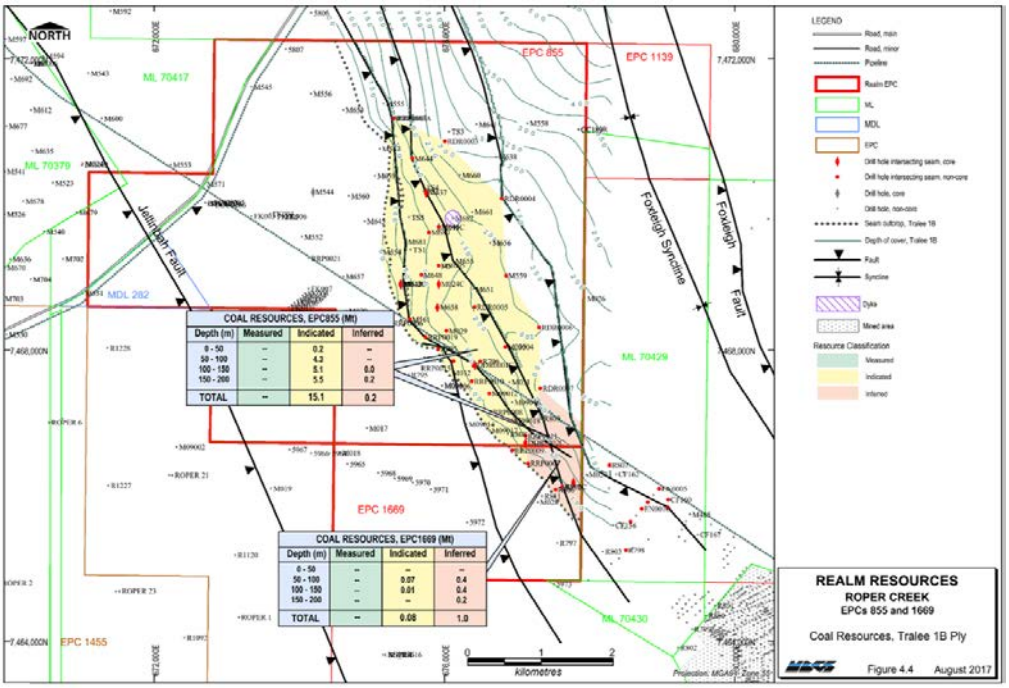


Figure 4.4 Coal Resources, Tralee 1B Ply



Appendix 2 Coal Resources Declaration and Competent Persons' Statement

1: PROJECT / MINE NAME	ROPER CREEK, Bowen Basin, Queensland
MMS Interest (%)	100%
2: MINING / EXPLORATION TITLE (s)	EPC855 (Expires October 19, 2017) & EPC1669 (Expires November 10, 2019)

3: PROJECT / MINE STATUS & DESCRIPTION OF MINING METHOD & COAL TYPE
Roper Creek is approximately 240 km southwest of Mackay and 272 km northwest of Rockhampton. It is covered by two EPCs, EPC855 and EPC1669. EPC855 comprises 9 sub-blocks 6 km south of Middlemount township and adjacent to and northwest of the Foxleigh Mine. EPC1669, comprises 3 sub-blocks that adjoin the southern part of EPC855. Access to EPC855 is via the Dysart-Middlemount Road, in the northwest corner, thence via the Barwon-Middlemount Road. Coal Resources reported for Roper Creek are considered to have eventual prospects for economic extraction via open cut methods and, with vitrinite reflectance values greater than 1.80, are expected to produce a pulverised coal injection (PCI) product after beneficiation.

4: COAL RESOURCE ESTIMATION DETAILS

A geological grid model was created of coal seam structure surfaces, thickness and raw coal quality using Geovia's Minex version 6.5 software. In situ density was calculated from laboratory density using the Preston and Sanders formula at an in situ moisture basis of 4%. In situ density was loaded into the Minex database and grids constructed, which were used for coal resource estimation. Coal resource classification polygons, based on the limit and distribution of drill hole and seismic data, were applied on an individual seam basis. Coal Resources were estimated to a maximum depth below topography of 200m. As such, all Coal Resources reported are considered to have potential for eventual economic extraction via open cut mining methods. However, approximately 10 Mt of Pisces 1 Seam estimated at depths of cover less than 200m; were not included in the resources due the thickness (~50m) of the interburden (and therefore strip ratio) separating Pisces 1 Seam from the overlying Tralee 1 Seam as well as Pisces 1 Seam's higher inherent ash (>35%). The seams/plies for which resources have been reported; Roper 3, Middlemount and Tralee 1B, maintain adequate thickness (>0.3m) and raw ash (<35%) to be considered appropriate for open cut mining extraction.

5: COMPETENT PERSON			
Name:	*CHARLES PARBURY*	Membership of AusIMM:	*AusIMM (Membership No. 101430)*
Title / Employer:	*Director, McElroy Bryan Geological Services Pty Ltd*	Telephone:	*(+61) 2 8440 7800*
Qualifications:	*BA(Hons) Macquarie University, 1976*	Email:	charles.parbury@mbgs.com.au
Brief Description of Relevant Experience:	*More than 35 years working in the coal industry of which more than 20 years has involved resource estimation, due diligence and technical reviews of coal deposits within Australia (Qld, NSW, Tasmania, and WA) as well as in South Africa, Indonesia, Thailand, China, Russia and Mongolia.*	Signed:	

The information in this report that relates to Coal Resources, is based on and fairly represents information and supporting documentation compiled under the supervision of, and reviewed by the Competent Person, Charles Parbury, who is a full-time employee of McElroy Bryan Geological Services and a Member of the Australasian Institute of Mining and Metallurgy. He has no conflict of interest with Middlemount South Pty Ltd.
The Coal Resource report for Roper Creek has been prepared in accordance with the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition" (The JORC Code).
Charles Parbury has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code'.

6: COAL RESOURCES											
6A: Coal Resources Within EPC855 30 June 2017											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			IRD (g/cc)	Ash (%)		IRD (g/cc)	Ash (%)			IRD (g/cc)	Ash (%)
OC	0 – 50	-			0.8			0.8	-		
OC	50 - 100	-			12.1			12.1	0.3		
OC	100 - 150	-			14.3			14.3	0.5		
OC	150 – 200	-			15.0			15.0	1.0		
Total		-	-	-	42.2	1.47	17.3	42.2	1.9	1.45	16.2

6B: Coal Resources Within EPC1669 30 June 2017											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			IRD (g/cc)	Ash (%)		IRD (g/cc)	Ash (%)			IRD (g/cc)	Ash (%)
OC	0 – 50	-			-			-	-		
OC	50 - 100	-			0.1			0.1	2.2		
OC	100 – 150	-			0.0			0.0	1.6		
OC	150 - 200	-			-			-	0.6		
Total		-	-	-	0.1	1.43	13.7	0.1	4.4	1.43	14.6

6C: Total Coal Resources *6A +6B* ***(Inclusive of Resources modified to produce Reserves)*** 30 June 2017											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			IRD (g/cc)	Ash (%)		IRD (g/cc)	Ash (%)			IRD (g/cc)	Ash (%)
OC	0 – 50	-			0.8			0.8	-		
OC	50 - 100	-			12.2			12.2	2.5		
OC	100 – 150	-			14.3			14.3	2.1		
OC	150 - 200	-			15.0			15.0	1.7		
Total		-	-	-	42.3	1.47	17.3	42.3	6.3	1.44	15.1
Total Resources (Rounded)		**-**	**-**	**-**	**42**	1.5	17	**42**	**6**	1.4	15

Notes:

1. For further information, refer to Appendix A, JORC Code 2012 Edition Table 1.
2. Resources and in situ density reported at in situ moisture basis (4%). Raw ash is reported on an air-dried basis.

Appendix 3 JORC Code 2012 Table 1 for Roper Creek Coal Resources

SECTION 1. SAMPLING TECHNIQUES AND DATA		
CRITERIA	**EXPLANATION**	**COMMENTS**
SAMPLING TECHNIQUES	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	Industry standard drill holes of variable diameter have been drilled to recover whole cores of coal ranging in size ranging from HQ (61 mm), HMLC (63 mm) to PQ (83 mm) diameter. Historically, core samples were sampled in sections of nominally 0.4 m - 0.5 m with significant stone bands sampled separately. The core was sampled at the rig. Working sections were determined based on the raw coal results of the plies and combined based on the correlation of the seams at that time. From May 2017, coal sampling was changed by Middlemount South (MMS) to a down hole geophysical log ply sampling basis, with coal and stone bands sampled separately if thick enough (sufficient mass) to conduct analytical testing. Where a stone ply was too thin it was combined with the overlying coal ply. The sampling intervals were determined from the geophysical density log. All sampling was undertaken after the geophysical logs were received to ensure systematic and consistent sampling of the coal plies to enable understanding of the seam qualities both vertically within the seam and laterally between the holes. Instructions were issued to the laboratory to combine samples to form specific seams which were later composited to form working sections. Geophysical logs were acquired to supplement the geological description of the cores and to ensure that the core recoveries were satisfactory (>= 95%) and to assist with correlation of the various seams present. Historically, the geophysical logs included natural gamma, dual density, caliper, resistivity, verticality and multichannel sonic. MMS consistently acquired long and short spaced density, natural gamma, caliper, verticality and multichannel sonic in all holes. Selected holes were also logged with the acoustic scanner, dual neutron and resistivity tools. All seam picks are corrected to geophysical logs. Of the 125 holes drilled in the project area 82 drill holes (66%) have verifiable geophysical logs. Basic raw coal quality data comes from 11 core holes from all explorers of which 10 holes were drilled within the Roper Creek deposit EPCs, while product composite testing is available from four holes within the EPC areas. Downhole geophysical logging companies have as standard operating procedure, a logging tool calibration process to maintain a consistent quality of tool data collection. Calibration is fortnightly for most logging companies. MMS have a site calibration procedure and all loggers have to test the tools prior to logging on site.
DRILLING TECHNIQUES	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	In the Roper Creek Project area, a variety of drill holes have been drilled, including, non-core and partially cored holes. Of the 164 historical holes drilled within and around the area by Utah Development Company, Capcoal/Shell Coal Australia JV, Peabody's Millennium Coal and Anglo Australia (German Creek), 17 were partially cored HQ diameter holes and 17 were non-core structure holes. Since acquiring EPC855 in late August 2016, Middlemount South has completed a small exploration program of 8 holes (2 core holes and 6 open holes) by mid-June 2017.
DRILL SAMPLE RECOVERY	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample*	A review of the historical core data on a seam by seam basis was undertaken and some seam quality data was excluded where the general raw coal analyses did not recover at least 95% of the seam thickness. Core recovery for drill holes at Roper Creek was generally satisfactory (>95 %), except in drill holes affected by faulting.

	recovery and ensure representative nature of the samples. • *Whether a relationship exists between sample recovery and coal quality and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	All core had its lithology described and then the coal seam roof and floor depths were reconciled to downhole wireline geophysical logs and core loss allocated accordingly. Where core recovery was unsatisfactory, a re-drill was undertaken at the drill contractor's expense. No sample bias was generated by the method of sampling at Roper Creek. Historical sampling was undertaken at the drill site by the geologist. MMS geologists loaded the coal core samples into core boxes for storage at the core shed, where the core was later sampled as soon as possible after the geophysical logs were received. Core was double bagged to minimise moisture loss which may generate unreliable analytical results for estimation of grade and resources and couriered to the laboratory for testing to limit the effects of oxidation.
LOGGING	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Coal Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	All drill cuttings and core have had lithology described either on hand written sheets or encoding sheets. The logs were encoded and loaded into a computer geological database for modelling. Historical drill holes contain a range of qualitative data from brief hand written lithological logs of non-core holes to detailed lithological logs of core intervals. More recent drilling by Peabody and Anglo (2003-2010), were logged with detail sufficient for their sample drill type; i.e. core sections were logged with reasonable detail; while open-hole sections were described in less detail for the cuttings. Anglo and MMS adopted a similar methodology and have recorded the field logs on hand written geological encoding sheets using the CoalLog V2.0 dictionaries to conform to the standard. Anglo data was entered into acQuire while the MMS data has been entered into LogCheck software. Logging of core samples is detailed and qualitative and includes a record of the recovery of the total length and the drilled core length, lithology type, lithology descriptions to describe the sample in terms of colour, grainsize, bedding and bedding spacing, bedding dip, mechanical state, weathering, bedding relationship, structure, dip of structures, mineral forms and there associations, primary bedding forms, sedimentary contacts, defects and spacing, all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. All cores were photographed. All seam information has been uploaded into Geovia's Minex Version 6.5 geological modelling software. Base of weathering was estimated from visual descriptive lithological logging.
SUB-SAMPLING TECHNIQUES AND SAMPLE PREPARATION	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	All coal core and parting samples were despatched for analysis. Whole cylindrical coal core sections were sampled individually into bags and labelled. No chip samples have been analysed for coal quality. Core sampling by MMS has been undertaken in conjunction with the geophysical logs to ensure the ply sampling intervals are consistent from hole to hole for comparison of the coal properties of the coal seams. Prior to MMS, historical sampling was not ply based. The core was sampled into coal and non-coal (minimum core length of 5 cm) sections where possible. Sampling used a nominal maximum thickness and numerous samples were taken for each seam. The testing laboratory was issued with instructions to combine samples to form working sections as required for testing based on the geophysical logs. No coal core duplicates are taken as the analysis methods for coal require the whole cylindrical seam section for analysis. Sub-sampling of the sampled core is part of the treatment procedure at the laboratory where a portion of the sample is reserved after pre-treatment and liberation studies have been completed and the sample crushed for sample analysis checks and or additional testing. Where there is ambiguity with an analysis then another whole core sample is then recovered from the same site (a redrill) and core is crushed to a specified size and the sample divided into several samples for round-robin testing to be conducted at several laboratories. No redrills have been conducted to date. No round robin or duplicate sample testing has been undertaken on Roper Creek to date. Historically HQ core (61 mm) was acquired, which provided sufficient sample mass for the suite of coal quality testing analysis to be conducted. MMS recovered PQ size (83 mm) diameter cores, which provides considerably more sample to conduct the standard analytical testing. Both are typical standard industry core diameters suitable for the analysis of coal core and washability studies

		respectively and are appropriate sizes for the typical analysis of Roper Creek coal cores.
QUALITY OF ASSAY DATA AND LABORATORY TESTS	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established).*	The types of testing undertaken historically and by MMS are industry standard tests used internationally as part of the analysis and assessment of hard black coal deposits and conform to the Australian Standard. Historically, coal quality testing programs have varied with the explorer, although the fundamental tests conducted were often similar. The control procedures are primarily with the NATA approved laboratories which undertake the testing to Australian Standard testing procedures. The testing program procedures have sufficient reserve sampling in-built in the program to allow for checks of the analytical testing to be undertaken as required if the result is anomalous. External testing will be undertaken when required. Different laboratories have undertaken the analytical testing over the history of the exploration in the area. No obvious laboratory specific anomalies have been identified.
VERIFICATION OF SAMPLING AND ASSAYING	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	Roper Creek is a coal deposit and is therefore stratiform and relatively homogenous. Sample intervals include both geophysical logged non-core holes (structure data points) and geophysically logged cored holes with valid coal analyses (quality data points). Any erroneous values either geophysical (coal structure thickness) and or coal quality have been checked by senior MBGS geologists and retained if valid or excluded if incorrect. The correlation and naming of the seams has had several iterations with MBGS geologists reviewing the seam and the seam nomenclature and revising the seam correlations in June/July 2017. No twinned holes have been drilled to date at Roper Creek. MMS coal analyses were analysed by PrepLab supervised by the site geologist. All primary coal intersection data was compiled and edited in the Minex geological database by the modeller, (estimator). All primary coal quality analyses have been compiled in spreadsheets by the testing laboratory with reference to sample numbers and supplied to the client. Relative density values were adjusted to a default in situ moisture value of 4%. Raw coal quality variables loaded at an air dried moisture basis into the Minex database.
LOCATION OF DATA POINTS	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Coal Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	Historical drill hole collars were surveyed originally to either WGS66 or WGS84 and AHD and have been converted to MGA94. All MMS drill holes were surveyed to MGA94 datum, Zone 55. All elevations use a reduced level (RL) based on the Australian Height Datum (AHD). In 2010, a LiDAR (Light Detection and Ranging) laser survey surface was acquired across the area. This LiDAR survey with an (accuracy of +/- 0.1-0.2 m) was used to construct the topographic DTM surface in Minex. Survey collars of historical holes are poorly documented; however, the area is relatively flat with no apparent collar RL discrepancies. All holes since 2003 have been surveyed using GPS by a licenced surveyor or the mine surveyor. The topographic surface is of reasonable quality across EPC855 and EPC1669 and satisfactory for construction of a detailed geological model suitable for resource estimation and detailed mine planning.
DATA SPACING	• *Data spacing for reporting of Exploration Results.*	Drilling has been conducted mostly on northeast trending drill lines spaced approximately 500 m apart along the strike of the Roper

AND DISTRIBUTION	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and coal quality continuity appropriate for the Coal Resource and Coal Reserve estimation procedure(s) and classification applied.* • *Whether sample compositing has been applied.*	Creek deposit. Typical drill hole spacing along the drill lines ranges from 200 m - 250 m although along the seam subcrop areas, the drill holes have been more closely drilled, while spacing tends to increase to 500 m - 1000 m apart in the down-dip areas. Most holes have been drilled to the Tralee 2 Seam. The MMS drilling strategy was to infill the broad spacing between selected drill holes to confirm the structure and stratigraphy with selected coal quality holes drilled as required to confirm the coal quality in selected parts of the deposit. Six 2D seismic lines have been acquired trending to the northeast across the deposit. Spacing of the 2D seismic lines varies from 700 m - 1000 m in the south of the Roper Creek area, increasing to 1500m - 2000 m apart to the north. Only vertical sample compositing within a single hole has been undertaken to represent a "working section". No samples have been composited together from several holes over several sites to form a single composite sample of the deposit and analysed.
ORIENTATION OF DATA IN RELATION TO GEOLOGICAL STRUCTURE	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	The orientation of the drill lines and the 2D seismic lines is approximately perpendicular to the regional structural features (Jellinbah and Foxleigh thrust fault zones) in the area. This has enabled a good assessment/interpretation of several major thrust structures that are present along the strike of the deposit. Many drill holes have been logged with a verticality tool to measure drill hole trajectory. All structure and stratigraphic drilling and coring has been undertaken using nominally vertical holes. This is satisfactory given the stratiform nature of the Roper Creek coal deposit. This drilling method will not bias the sampling as the drilling and coring acquires a cylindrical cross section of the coal intervals in the drill hole. No sampling bias will be generated by this exploration method.
SAMPLE/DATA SECURITY	• *The measures taken to ensure sample security*	Recent core and drill cuttings are geologically described only by a qualified MMS project specific geologist. The core samples are double bagged and a sample ID tag included and referenced to that bag by a geologist trained in the procedures to undertake this role. The reference tag is recorded by the sampling geologist and the tag numbers loaded to track the chain of custody of the sample. The tag is also used to identify the analytical testing requirements of the individual sample. It is unknown what measures were taken to ensure sample security in historical drill holes.
AUDITS OR REVIEWS	• *The results of any audits or reviews of sampling techniques and data.*	No recent audits or reviews of sampling techniques and data have been carried out

SECTION 2. REPORTING OF EXPLORATION RESULTS		
CRITERIA	**JORC CODE 2012 EXPLANATION**	**COMMENTS**
MINERAL TENEMENT AND LAND TENURE STATUS	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	EPC855 and EPC1669 are all held by the Foxleigh Coal Pty Ltd, a wholly owned subsidiary of MMS and cover an area of 3,788 hectares. In late August 2016, MMS purchased the rights to Anglo Coal (Foxleigh) Pty Ltd from Anglo American. MMS now currently manages the tenure. Restricted Area 384 (urban) extends into two of the northern sub-blocks *CLER 2505* "*g and h*". No areas of Strategic Cropping Land are present within EPC855 and EPC1669. A tiny portion of Endangered Regional Ecosystem extends into EPC855 within sub-block *CLER 2505 "l"*. No conservation reserve areas lie within the current EPCs. EPC855 is due to expire on 19 October 2017, while EPC1669 is due to expire on 10 November 2019.
EXPLORATION DONE BY OTHER PARTIES	• *Acknowledgement and appraisal of exploration by other parties.*	Utah Development Company Pty Ltd under Authority to Prospect (ATP) 6C commenced exploration in the Middlemount area in 1964 and drilled 12 holes which lie within and around EPC855. Utah Development Company considered the area was too structurally complex with folding, faulting and acidic intrusions negatively impacting Coal Resources and subsequently relinquished this part of ATP6C in 1966. There was a break of activity in the area until Capcoal in association with Shell held several tenements; EPC315 from 1980 to 1987; Capcoal was the successful tenderer for the Roper Creek area (EPC414) from 1983 to 1996, which resulted in the discovery of the German Creek East deposit (ML1998) in the Rangal Coal Measures and EPC470 from 1987 to 1991 discovering high quality PCI coal in commercial Rangal Coal Measures further east in part of what is now referred to as Foxleigh (ML70429). Several extensive exploration campaigns were conducted over the 16 years of tenure with 180 holes drilled within and adjacent to EPC855 during that time. In 1996 Ribfield Pty Ltd (Excel Coal) was granted EPC597. Peabody subsequently acquired the area through the purchase of Excel Coal in late 2003 and formed EPC855 under Millennium Coal Pty Ltd. In 2005, Millennium Coal flew an aeromagnetic survey that interpreted faulting and intrusions in the area. Millennium Coal also conducted an exploration program consisting of 15 open holes and 2 cored holes. Anglo American (German Creek) Pty Ltd acquired the area in mid-2010 through their subsidiary Anglo Coal (Foxleigh) Pty Ltd and undertook a program of work including a Heli-mag survey in 2008 and conducted exploration programs consisting of 17 open holes and 2 core holes. Anglo also carried out seismic investigations across the area with approximately 20 km of 2D seismic along 6 lines within the tenement area. These high quality seismic sections were particularly useful in providing confidence in the continuity of coal seams through areas where there is a paucity of drill hole intersections and as a result, were used to increase the confidence classification of JORC resources from Inferred to Indicated. The sections were invaluable in characterising the major structural features as well as the many lesser faults present in the area. A total of 125 historical holes have been drilled within the tenement area of which 8 holes were cored with valid coal quality information.

		Since acquiring EPC855 in August 2016, MMS have completed a small exploration program of 8 holes (2 core holes and 6 open holes) by mid-June 2017 to provide sufficient data for MBGS to update the new structural geological model and prepare a JORC resource estimate.
GEOLOGY	• *Deposit type, geological setting and style of mineralisation.*	Roper Creek is located on the eastern flank of the Comet Ridge, a major structural feature of the southern Bowen Basin, and west of the complex Dawson Tectonic Zone. Locally, Roper Creek lies between two major structural features: the Jellinbah Fault Zone to the west and Foxleigh Fault Zone to the east. These fault zones comprise numerous east over west thrust structures striking north-northwest with considerable cumulative vertical displacements in excess of 400 m. Associated with these major structures are smaller scale thrust faults (20 m – 100 m), which have up-thrown coal-bearing strata on the eastern side of these structures. At least three such faults pass through Roper Creek and, because of the up-thrusting, most of the coal within the area occurs at depths less than 200 m. Two Late Permian bituminous coal-bearing formations are present within the area; the Rangal Coal Measures and Burngrove Formation. Conformably overlying the Rangal Coal Measures are the Triassic Rewan Group sediments, which do not contain any coal occurrences and consist predominantly of siltstones and sandstones. Sequences of Tertiary clays and sands that increase from 20 m thick in the southwest to 70 m in the northeast cover the Roper Creek area. The east-northeast dipping Rangal Coal Measures contain the primary coal targets in the Roper Creek area – the five coal seams, in descending stratigraphic order, are Roper 3, Middlemount , Tralee1, Tralee 2, and Pisces 1. Down hole geophysical density logs confirm the consistency and continuity throughout the area of the main coal plies within these coal seams: Roper 3, Middlemount, Tralee 1, Tralee 2 and Pisces 1. However, since the Tralee 2 Seam is often intruded, particularly in the northern half of the Roper Creek deposit, the Roper 3, Middlemount and Tralee 1 will comprise the Coal Resources within the mine plan. The Pisces Seam is also a potential target but the approximately 50 m interburden separating it from the overlying Tralee 1 seam increases the strip ratio and reduces its commercial potential. The underlying Burngrove Formation typically contains highly banded coal seams that have high raw ash and low product yields. Nevertheless, these seams tend to have reasonable coking/plastic properties (high CSN and fluidity) when washed, and therefore attract some commercial interest. Despite the widespread occurrence of Burngrove coals throughout the southern Bowen Basin, and the active exploration of numerous deposits throughout the area (e.g. Washpool, Wilton, Comet Ridge, etc.), as yet there has been no successful economic exploitation of these coals. Nevertheless, these seams warrant investigation, as the expected rank of Burngrove coals at Roper Creek is likely to be similar to the Rangal Coal Measures (Ro max 1.8 – 2.0) and may produce a similar, low volatile PCI product, i.e. ultra-low volatile PCI coal albeit with very low yields. The seams subcrop along strike to the north-northwest with structural dips to the east-northeast ranging from 5° to 15°, steepening significantly adjacent to the thrust faults. Depth of weathering generally ranges from 35 m - 55 m in the south to in excess of 75 m in the north of the area where the depth of Tertiary is significantly thicker.
DRILL HOLE INFORMATION	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar*	The inclusion of the collar coordinates and elevation, drill hole total depth, hole direction, hole inclination and the seam intervals is not material to this report. This information requires the inclusion of the wireline geophysical logs to provide proof of the determination of the coal seam intervals. It is the responsibility of the Competent Person to ensure that due diligence has been done to check the veracity of the database intersections used for the modelling against the geophysical logs. Where considered material to Coal Resources reported here, these modelled data are shown on figures within the body of this report.

	○ *elevation or RL (Reduced Level- elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *downhole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	There are 172 holes drilled within and adjacent to the EPCs of the Roper Creek deposit and of these, 104 holes have been used to undertake the geological modelling. Aside from the fact that all this data is proprietary, a listing of the data will not help the reader ascertain the veracity of the resource estimate. The exclusion of this data set will not detract from the understanding of the deposit as the resource figures present the modelled drill hole data and locations and justify why the Competent Person has defined the resource category areas. All drill hole data that pertains to coal seams has been loaded and modelled in the geological computer models used to estimate Coal Resources in the various deposits. The coal resource table presented in this report presents summary thickness and grade information (average thickness, raw ash, in situ density) relating to each seam. Coal Resource plots with overburden depth increments are presented in the report to show the pertinent spatial seam geology.
DATA AGGREGATION METHODS	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	The seam intervals have not been aggregated/composited during the modelling for both the seam thickness and the coal quality modelling. The seams have been modelled as individual coal layers throughout the tenements to avoid where possible the inclusion of stone partings as coal. Compositing of individual seam ply qualities has been undertaken for the working sections and a thickness weighting method has been used. These composites have been modelled and used for the resource estimations. There are no metal equivalents used to report the Coal Resources. This is not a standard reporting requirement for coal.
RELATIONSHIP BETWEEN MINERALISATION WIDTHS AND INTERCEPT LENGTHS	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known).*	Dip of the coal seams in the Roper Creek deposit varies from 5° to 15°. All holes have been drilled vertically and with the slight up-dip deviation of the drill string during drilling, many coal intersections will be almost vertical. At these structural dips, the variation from true thickness ranges from 96.6% for dips of 15° - 99.6% for dips at 5°. Therefore, downhole intersections of coal seams are close to the true vertical thickness of the coal seam. No depth adjustment has been undertaken for any holes in the Roper Creek drill hole database.
DIAGRAMS	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not limited to a plan view of drill hole collar locations and appropriate*	Diagrams and cross sections considered material to the coal resource description are incorporated within the body of the report.

	sectional views.	
BALANCED REPORTING	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high coal quality and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All coal quality results have been included in the modelled data used to estimate Coal Resources reported here. Average values have been reported for resources shown here, and whilst some outlying values do exist the averages are considered representative of the Coal Resources. Generally raw coal density ranges 1.45 g/cc - 1.50 g/cc, with air dried inherent moistures at 1.5% - 2.0% and air dried ashes 14% - 20% for each of the Roper 3 Seam, Middlemount Seam and Tralee 1 Ply. This represents a consistent range of qualities throughout the area.
OTHER SUBSTANTIVE EXPLORATION DATA	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater; geotechnical and rock characteristics; potential deleterious or contaminating substances.*	In 2005, Millennium Coal (Peabody) flew an aeromagnetic survey that interpreted faulting and intrusions in the area. Anglo Coal (Foxleigh) Pty Ltd undertook a Heli-mag survey across the north of the Foxleigh area in 2008 and also conducted 2D seismic investigations across the area from 2010 to 2012 with approximately 20 km of 2D seismic along 6 lines within the tenement area. These high quality seismic sections were useful in providing confidence in the continuity of coal seams through areas where there is a paucity of drill hole intersections and as a result, were used to increase the confidence classification of JORC resources from Inferred to Indicated. The sections were invaluable in understanding the major structural features.
FURTHER WORK	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	With renewal of the permit, MMS proposes to conduct further exploration drilling within the Roper Creek deposit area both within the current extents and down-dip to acquired additional geological and coal quality information necessary for modelling to elevate the Coal Resources to Measured and Indicated status. Additional 2D seismic surveys, which have been used effectively in the Foxleigh Mine area, will assist the structural interpretation, resolving and identifying significant faults that might hinder mining operations and development. MMS will conduct feasibility studies and mine planning and proposes to progress the tenure to a Mining Lease. These diagrams are commercially sensitive and proprietary to the development of the Roper Creek and will not be published here.

SECTION 3. ESTIMATION AND REPORTING OF COAL RESOURCES		
CRITERIA	**JORC CODE 2012 EXPLANATION**	**COMMENTS**
DATABASE INTEGRITY	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Coal Resource estimation purposes.* • *Data validation procedures used.*	All historical hole information was compiled by Anglo into an acQuire database. With purchase of the project by MMS a database was exported from the acQuire database into spreadsheets to be imported into another database system. For the purposes of this report the relevant data for the Roper Creek area were imported into Minex for modelling. MBGS conducted a check of the data and found the naming of the coal seams was inconsistent. A complete revision of all seam intersections was conducted. In mid-February 2017, MBGS commenced the review of Roper Creek geological data, including historical drill holes dating back to the 1970s. Seam correlations and seam depths were reviewed for all available drill holes (73 holes containing seam intersections from the Rangal Coal Measures) and included in a Minex database compiled by MBGS. Geophysical logs, including those from the recent drilling undertaken in 2014 and 2015 by Anglo American, were used to confirm the correlation of the coal seams prior to their inclusion in the Minex database. Review of the geology included compiling hand-drawn structural cross sections and stratigraphic domain plans that demonstrate the continuity of the coal seams. A geology map was prepared showing drill hole locations, infrastructure, cadastral and tenure boundaries and presenting the seam domains/limits and fault structures. Lithology, seam interval picks, sample horizons, coal quality and geophysical data were loaded into a Minex database. Data were transferred to Minex without transcription checks and validated further during and after the upload process. Detailed sections through the geological model were generated and validated against raw data.
SITE VISITS	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	Mr Charles Parbury, the Competent Person for this resource report, visited the site in March 2017 to acquire data, understands the mine operations and procedures used in drilling, logging and sampling of the core. During MBGS' visit to the Foxleigh Mine site a large quantity of additional information and reports was provided for review. This set of data was particularly significant as it included the many high quality seismic exploration survey sections acquired by Anglo to 2015. A second visit was conducted by Rowan Johnson (MBGS) in late May to check the field drilling operations, acquisition methodology of the geological information, the geophysical logging and the coal sampling routines and strategies to ensure they were conducted competently and consistently to an acceptable standard.
GEOLOGICAL INTERPRETATION	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the coal deposit.* • *Nature of the data used and any assumptions made.* • *The effect, if any, of alternative interpretations on Coal Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	Geology of the Roper Creek deposit is understood with a reasonable level of confidence and it is believed that coal volume estimations are sound. The confidence in the geology is directly related to the drill hole spacing and the consistency of the seam geophysical long spaced density signature which provides confidence in the continuity and the character of each of the seams. Drill hole spacing is generally 200 m - 250 m apart along the seam subcrop areas increasing to 500 m - 1000 m apart in the down-dip areas. Roper Creek is affected predominantly by large thrusts and numerous smaller sympathetic thrust faults which locally thicken the coal seams. The structural interpretation is complemented by six high quality 2D seismic lines, spaced along the strike of the area providing a good understanding of the nature and extent of faulting and folding. Three large thrust faults striking north-northwest have been interpreted from the 2D seismic survey and drilling information. Estimations of fault throws have been used to structure the models. Further drilling will be required to refine the estimates of the fault throws to improve the model. Faulting could affect the continuity and consistency of the seam and the quality. No significant changes in seam character, thickness or quality have been observed due to the thrust faulting.

DIMENSIONS	• *The extent and variability of the Coal Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Coal Resource.*	The Rangal Coal Measures contain the Coal Resources within EPCs 855 and 1669 and extend along strike from the Foxleigh Mine to the southeast on the western flank of the Foxleigh Syncline. The coal measures extend over a strike length of approximately 8 km. The width of the shallow measures is nominally 2 km, generally from subcrop to 200 m below the surface. Additional deeper resources are present in the down dip areas within the tenements, but have not been reported.
ESTIMATION AND MODELLING TECHNIQUES	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Coal Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlations between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using coal quality cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	The Roper Creek geological model was constructed using Geovia's Minex Version 6.5 stratigraphic grid modelling software. Of the 172 holes in the database, 104 drill holes have been used to construct the structural model of the Roper Creek deposit, of which 10 holes had coal quality data. A set of structure grids (roof, floor, coal thickness and interburden thickness) were generated using drill hole information at a mesh size of 25 m. General Purpose or ECS Growth Technique algorithms were used for interpolation of data to generate the structure grids. Coal quality grids of raw ash and density were generated using drill hole information at a mesh size of 250 m using an Minex's General Purpose gridding algorithm to interpolate the coal quality data. The geological seam structure model is acceptable, although some smaller faults have not been modelled. More seismic may be warranted to delineate the complex faulting at Roper Creek. The method of resource estimation is based on defining polygons for each resource category based on the geology, geological boundaries including faults, seam split lines and subcrops and the spacing and arrangement of the coal quality data points and the geophysically logged holes. No nominal arc distances were used to define the resource categories, rather the confidence in the geology, consistency of the geophysical log signatures and the spacing of the drill holes and coal quality holes were used to define the resource categories. No geostatistical analyses have been undertaken. Fault strings were designed with a throw and direction of throw to offset the coal seam structure grids. A triangulated surface of the fault strings was created. The faults were not modelled as vertical planes. Laboratory density measurements were used to derive Preston Sanders in situ densities corrected to a nominal in situ moisture of 4%, consistent with the high rank of the Rangal Coal Measures at this location. The topography grid used the LiDAR to generate a topographic DTM surface. Resources were estimated using Minex generated grid models of seam thickness, ash and density limited by the seam subcrops, resource and tenement limits and category boundary polygons. There are no by-products from the processing and beneficiation of the coal to produce a thermal coal product. No estimation of the deleterious elements was undertaken as part of this statement. No block models have been constructed from the Minex grid models. No selective mining working sections were modelled. No assumptions have been made about correlations between variables for this estimate. The seams were all modelled individually to minimise the risk of including stone partings in the thickness of the coal and overestimating the Coal Resources.

		No coal quality cut-offs were used. All coal seams had low to moderate ash contents and all would be suitable to produce marketable products. Seam thickness and quality values are posted at drill holes and compared to contour outputs from modelled grids. Manual checks were undertaken to confirm computer derived estimates.
MOISTURE	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	In situ density grids were generated from values calculated using in situ moisture of 4%. This in situ moisture value was determined by MBGS from the moisture holding capacity measurements available and is considered appropriate for the rank of the Rangal Coal Measures coals in this region.
CUT-OFF PARAMETERS	• *The basis of the adopted cut-off or quality parameters applied.*	Although no seam thickness or coal quality cut-offs were applied to the estimation of resources for Roper Creek, an analysis of the linear stripping ratio was undertaken. The results of the analysis indicated that with the current level of information there is less than likely prospects of eventual economic extraction of the Pisces 1 Seam. The factors contributing to this decision include the elevated linear stripping ratio, Pisces 1 Seam's high ash (>35%) and Tralee 2 mostly being intruded. Coal Resources reported herein are limited to the base of the Tralee 1 Seam and 200 m depth of cover.
MINING FACTORS OR ASSUMPTIONS	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Coal Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	The mining is assumed to be by open cut methods given the average seam thicknesses, depth to the seams, structural complexity and the general dip of the strata as the bulk of the resources are shallower than 200m and in the defined deposit areas the seams vary in thickness from 1 m - 5 m. The Roper Creek deposit area is located 3 km southeast of the township of Middlemount and directly northwest of MMS' Foxleigh Mine operations. Sealed road access to the deposit area is via the Middlemount-Dysart Road, with additional access via the Barwon-Middlemount Road which traverses the tenure. The water pipeline to BMA crosses the tenure. The tenure is conveniently located close to existing infrastructure with the Middlemount Branch Rail loop and stockpile area less than 13 km to the west, which services product from the Foxleigh Coal Mine. Middlemount, with a population of approximately 1,900 people, services the region's coal mining and agricultural industries and is demographically favorable to provide the workforce to operate the mine. Roper Creek would either be mined as a satellite pit or be mined as part of the progressive northward advance of the Foxleigh Mine operations piggy-backing the existing infrastructure that is used by the Foxleigh Mine. The rank of the coal and the seams are the same as those mined at Foxleigh and the coal preparation and handling is expected to be the same or similar. Coal Resources have NOT been reported for depths of cover greater than 200 m due to insufficient data providing any certainty at this depth.
METALLURGICAL FACTORS OR ASSUMPTIONS	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical*	A drill core laboratory testing program designed to test the coal washability and clean coal product was carried out on a selection of cores. The program was designed to establish likely product types from the coal seams at Roper Creek. Analysis of float/sink and clean composite results confirmed that the coal will require washing to meet the target product market specification and indicated that a low ash low volatile PCI product could be beneficiated at economic yields. MMS' production and sale of this coal product type at Foxleigh Mine from the same seams is confirmation that the coal from Roper Creek could be sold into these markets.

	treatment processes and parameters made when reporting Coal Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
ENVIRONMENTAL FACTORS OR ASSUMPTIONS	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	Given the proximity of the Roper Creek deposit to the Foxleigh Mine and that the same coal measures are the targets, it is likely that the overburden chemistry and coal processing rejects of the mining operation and the coal handling facilities respectively will be largely the same. It is therefore assumed that the expected environmental impacts will be similar and the methods and costs to manage will also be the same.
BULK DENSITY	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	Relative Density, which measures the coal density without the void space, and ash measurements have been conducted systematically on all coal and many stone samples from the Roper Creek deposit core samples. The Moisture Holding Capacity has also been tested on numerous samples across the project area which has enabled an assessment of the in situ moisture. An in situ moisture of 4% for the coal within EPC855 and EPC1669 is used. Derived regressed in situ density grids (based on this in situ moisture of 4%) were used for the resource estimate. These data were loaded into Minex and in situ density grids generated. In situ density grids were then applied to convert volumes to tonnes.
CLASSIFICATION	• *The basis for the classification of the Coal Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/coal quality*	Coal Resources have been classified into Indicated and Inferred resources based on the spacing of drill hole data and confidence in seam continuity, grade and predictability. Where drill hole data are closely spaced and supported by seismic data, confidence in coal seam continuity, grade and predictability is sufficient to allow these resources to be classified as Indicated. Continuity of seam character is based on the consistency of the geophysical signature of the coal seams. This method of defining the resources is inherently based on geological principles of correlating and comparing like geological and geophysical data which produces very

	estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	similar coal analytical data. Where the analytical data does not reflect the consistency of the seam data then the analytical data is inspected to assess whether the sampling is reliable. If the sampling is inconsistent or unreliable then the data is excluded and this impacts on the resource category. If the spacing and distribution of the coal quality holes is poor then the continuity of grade is reduced and the resource category is downgraded. Where data spacing has increased, confidence in coal seam continuity and predictability decreases and Coal Resources in these areas are classified as Inferred Resources. Resources are limited to the last line of down-dip geophysically logged holes and the subcrops of each of the seam. This method of resource assessment is appropriate to represent the geological seam complexity and variation within the Roper Creek deposit.
AUDITS OR REVIEWS	• *The results of any audits or reviews of Coal Resource estimates.*	The Roper Creek resource estimate is a maiden estimate and has not been checked by a third party. Selected manual checks were carried out and the geological model was subject to internal peer review by MBGS.
DISCUSSION OF RELATIVE ACCURACY/ CONFIDENCE	• *Where appropriate a statement of the relative accuracy and confidence level in the Coal Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits or if such an approach is not deemed appropriate a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	Confidence in continuity and predictability of coal seams at Roper Creek was established by removing a selection of drill holes from the geological model and then regenerating the model. Predictions of seam RL and thickness as well as coal quality variables were then undertaken at the locations of the removed drill holes. Predicted values were compared to actual values from the removed drill holes to establish levels of confidence for each seam. Coal Resources for Roper Creek were estimated within polygons connecting and containing multiple drill holes, and as such are considered global estimates. The factors that affect the accuracy of the resource estimate include the modelled limit of the subcrop, the coal thickness and the density. The coal subcrops can vary with the modelling method and the reliability of the BOW. A check of the BOW grid is undertaken to ensure that it honours the data and no obvious anomalies exist which are not geologically sound given the regular and consistent nature of the weathering profile and the complex seam stratigraphy/structure in these stratiform conformable deposits. The thickness grids of each of the seams can be affected by the modelling method where a seam is missing it can be set to zero thickness and the seam pinched to that hole or at some defined distance from the hole. The modelling method has the seams pinched to zero at the holes which is acceptable modelling practice for these stratiform deposits. Coal seam thickness is modelled only in holes where the seam has been determined from geophysical logs and or cored holes where the recovery is 95% or better. This is an exploration area and no production data are available.