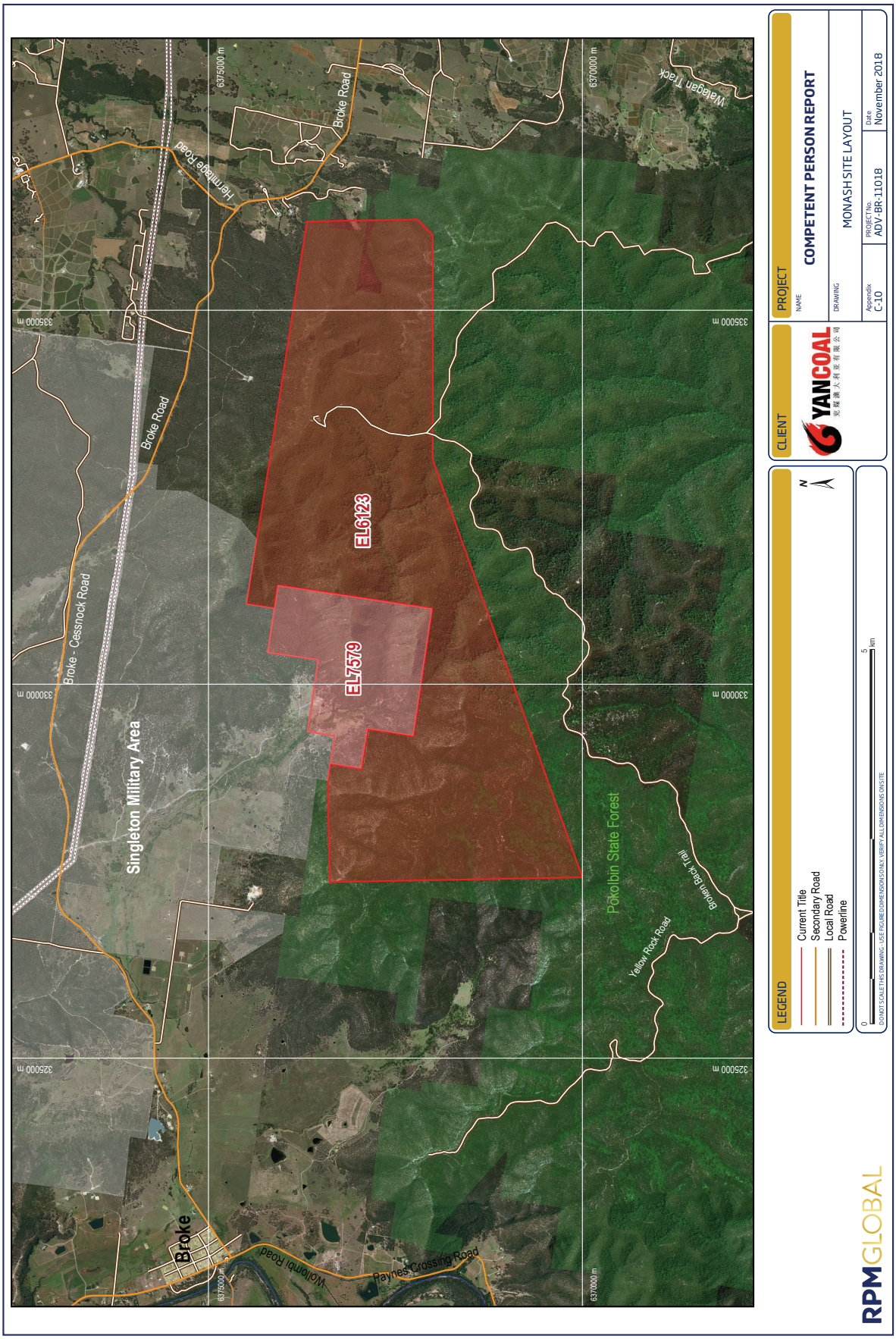
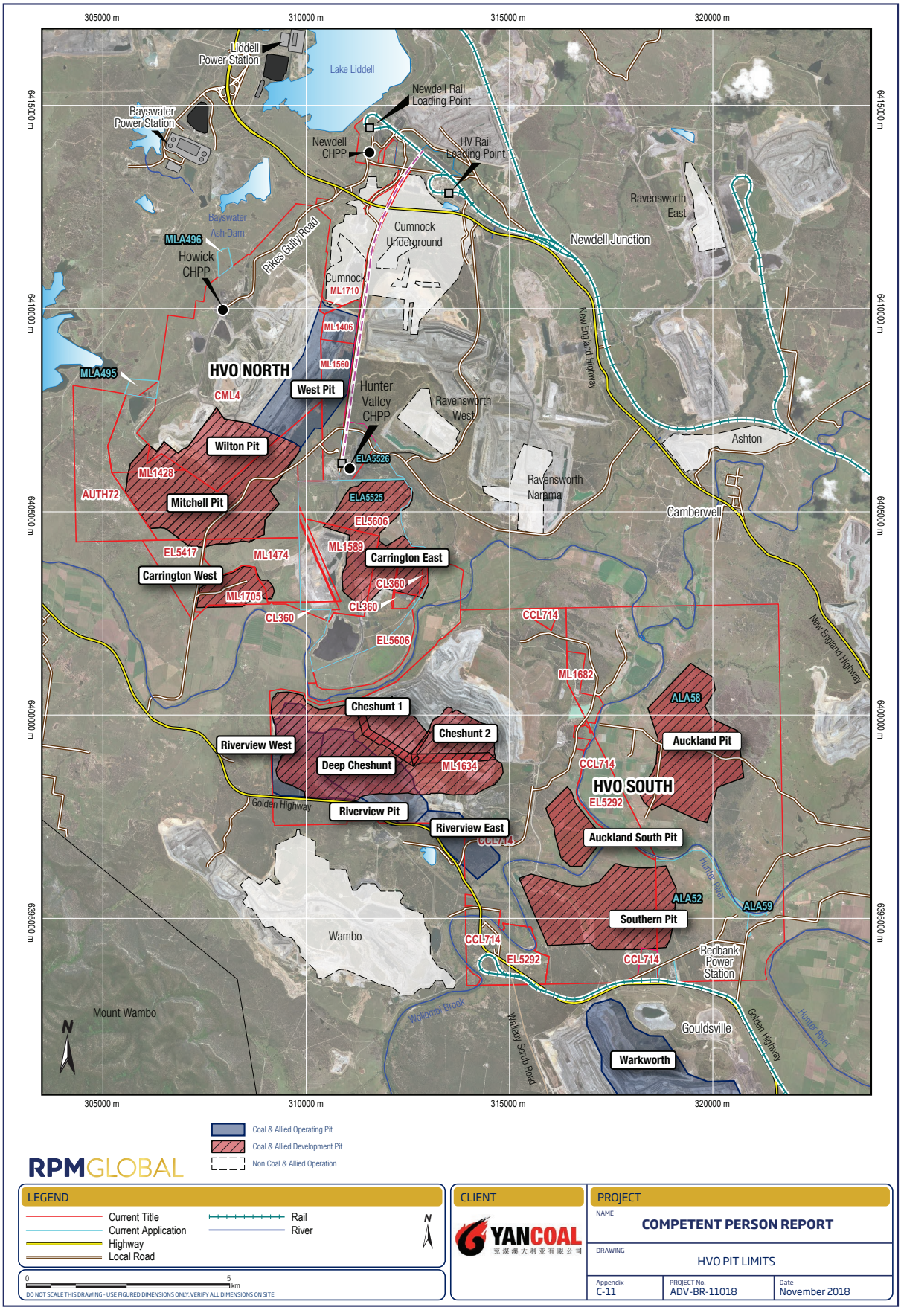
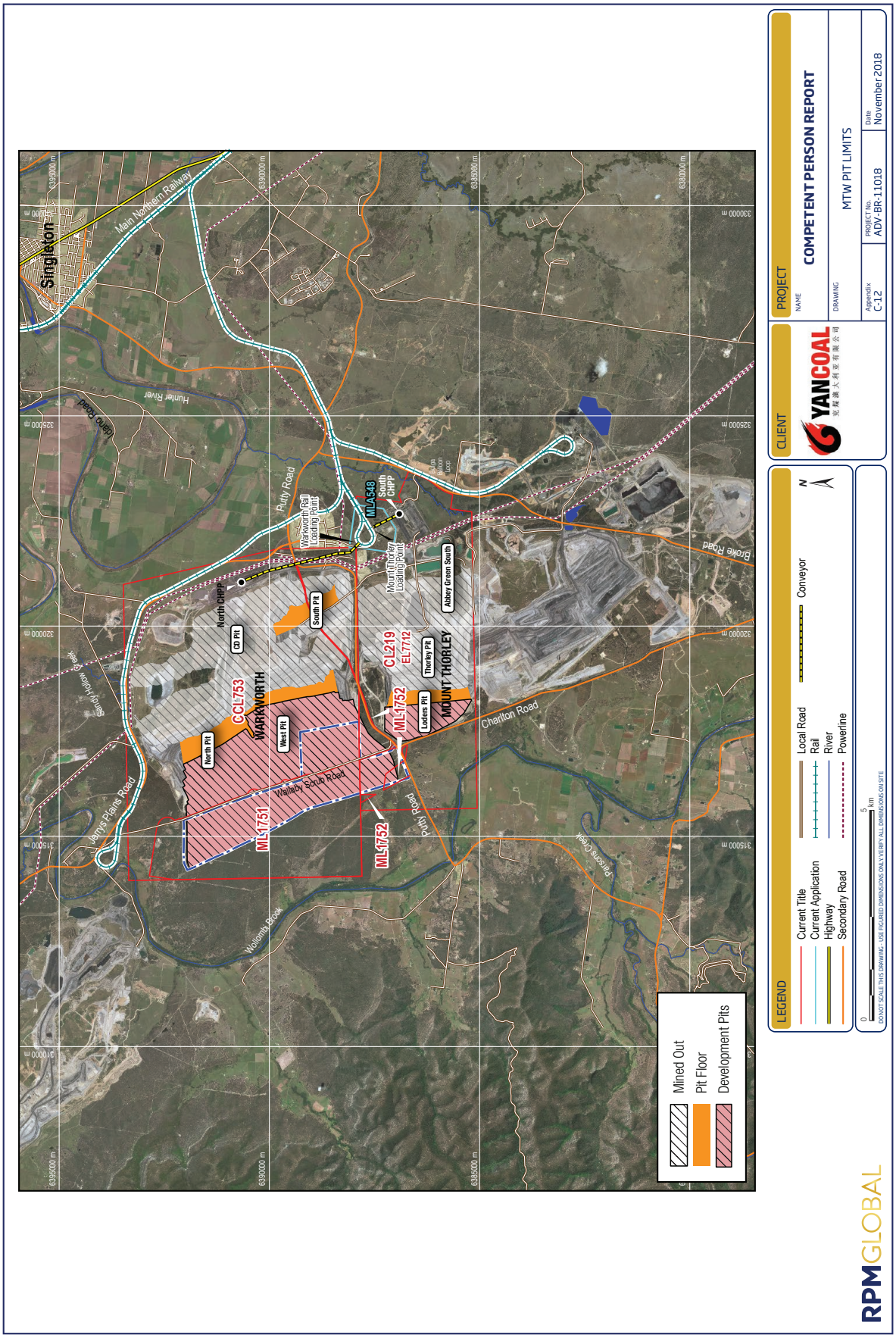
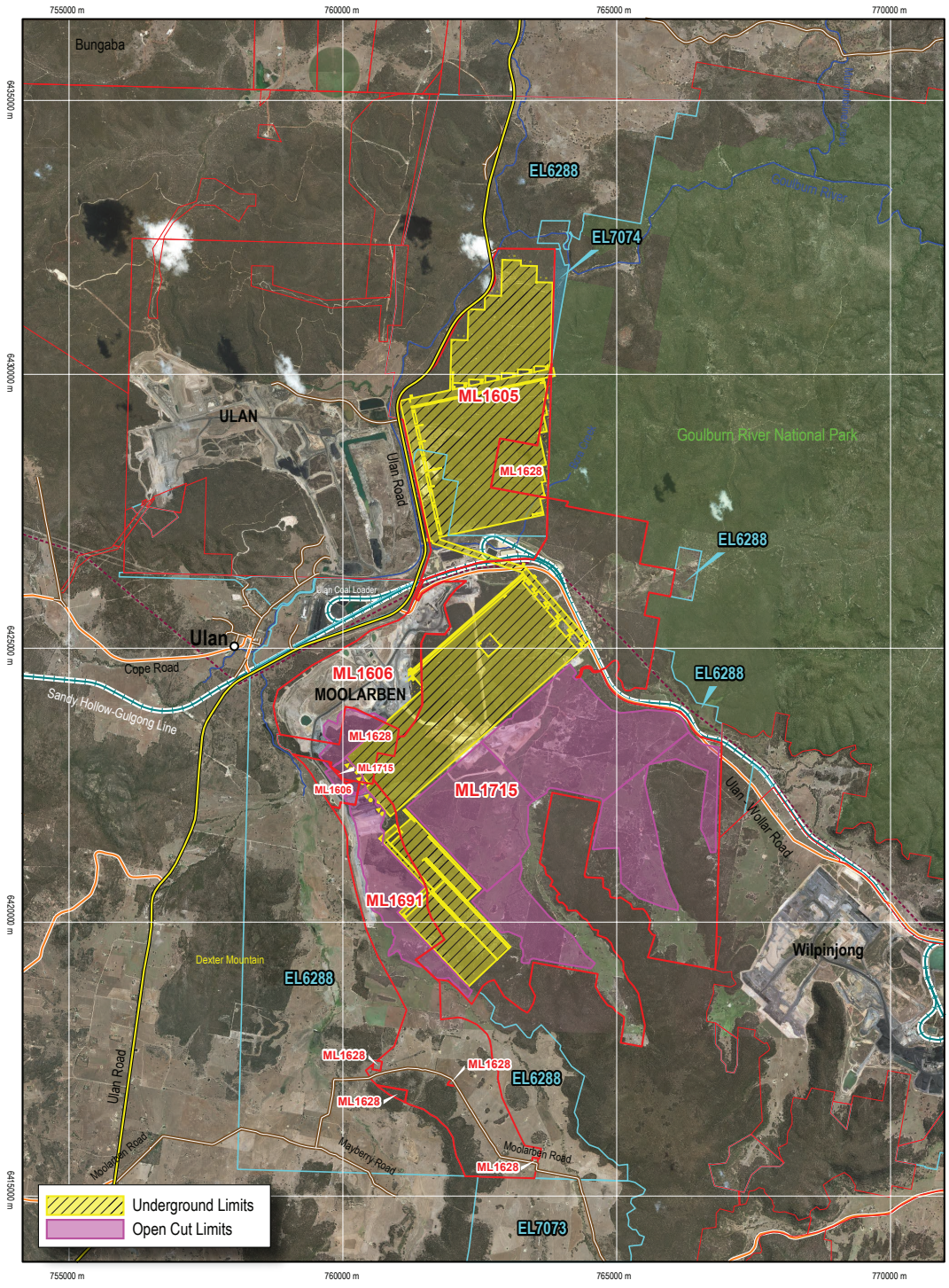

EL6123
EL7579
Broke Road
Broke - Cessnock Road
Singleton Military Area
Pokolbin State Forest
Yellow Rock Road
Bolwarra Back Trail
Wollombi Road
Paynes Crossing Road
Broke
Wahgan Track
Fernmeade Road
6375000 m
6370000 m
325000 m
330000 m
335000 m
LEGEND
Current Title
Secondary Road
Local Road
Powerline
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE
CLIENT
YANCOAL
PROJECT
NAME
COMPETENT PERSON REPORT
DRAWING
MONASH SITE LAYOUT
Appendix
C-10
PROJECT No.
ADV-BR-11018
Date
November 2018
RPMGLOBAL


305000 m
310000 m
315000 m
320000 m
6415000 m
6410000 m
6405000 m
6400000 m
6395000 m
Liddell Power Station
Lake Liddell
Bayswater Power Station
Newdell Rail Loading Point
Newdell CHPP
HV Rail Loading Point
Ravensworth East
Bayswater Ash Dam
MLA496
Howick CHPP
Pikes Gully Road
Cumnock Underground
Newdell Junction
Cumnock
ML1710
ML1406
ML1560
New England Highway
MLA495
HVO NORTH
CML4
West Pit
Hunter Valley CHPP
Ravensworth West
Ashton
Wilton Pit
ELA5526
ML1428
AUTH72
Mitchell Pit
Ravensworth Narama
ELA5525
EL5606
Camberwell
EL5417
ML1474
ML1589
Carrington East
Carrington West
CL360
ML1705
CCL714
EL5606
ML1682
ALA58
Cheshunt 1
Cheshunt 2
Auckland Pit
Riverview West
Deep Cheshunt
ML1634
CCL714
HVO SOUTH
EL5292
Golden Highway
Riverview Pit
Riverview East
Auckland South Pit
Hunter River
ALA52
ALA59
Southern Pit
Wambo
CCL714
EL5292
CCL714
Redbank Power Station
Mount Wambo
Wollombi Brook
Wallaby Scrub Road
Gouldsville
Golden Highway
Hunter River
Warkworth
N
Coal & Allied Operating Pit
Coal & Allied Development Pit
Non Coal & Allied Operation
RPMGLOBAL
LEGEND
Current Title
Current Application
Highway
Local Road
Rail
River
0
5
km
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE
CLIENT
YANCOAL
兖煤澳大利亚有限公司
PROJECT
NAME
COMPETENT PERSON REPORT
DRAWING
HVO PIT LIMITS
Appendix
C-11
PROJECT No.
ADV-BR-11018
Date
November 2018


Singleton
Main Northern Railway
Hunter River
Putty Road
Broke Road
Wollombi Brook
Jerrys Plains Road
Charlton Road
Wallaby Scrub Road
Peabodys Creek
MLA548
South CHPP
Warkworth Rail Loading Point
Mount Thorley Rail Loading Point
North CHPP
CD Pit
South Pit
North Pit
West Pit
Loders Pit
Thorley Pit
Abbey Green South
CCL753
WARKWORTH
ML1751
ML1752
CL219
EL7712
MOUNT THORLEY
Mined Out
Pit Floor
Development Pits
LEGEND
Current Title
Current Application
Highway
Secondary Road
Local Road
Rail
River
Powerline
Conveyor
N
0
5
km
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE
RPMGLOBAL
CLIENT
YANCOAL
PROJECT
NAME
COMPETENT PERSON REPORT
DRAWING
MTW PIT LIMITS
Appendix
C-12
PROJECT No.
ADV-BR-11018
Date
November 2018



RPMGLOBAL

LEGEND

ML Boundary
EL Boundary
Main Road
Secondary Road
Local Road
Rail
River
Powerline
N

0 5 km

DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE

CLIENT

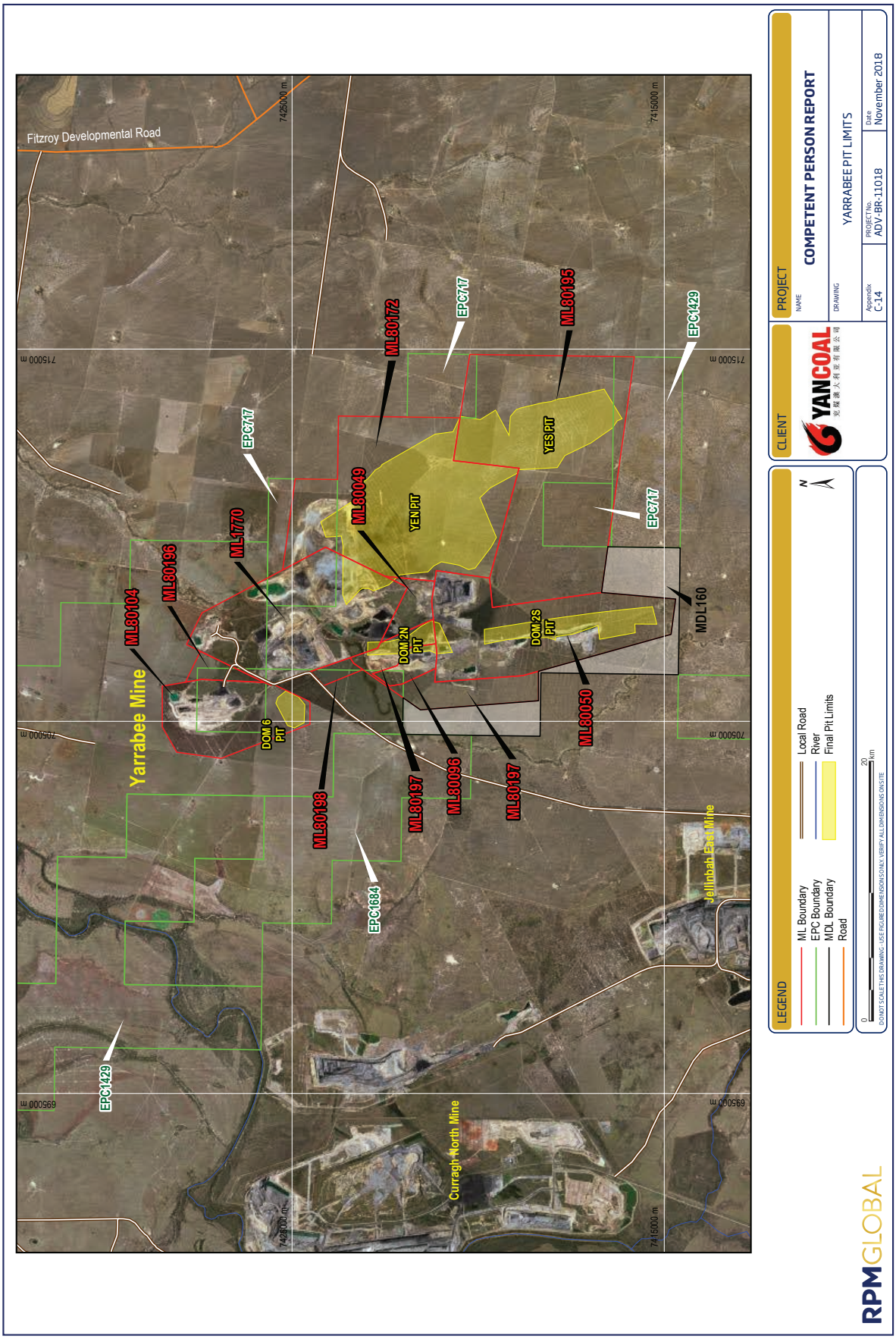
YANCOAL 兖煤澳大利亚有限公司

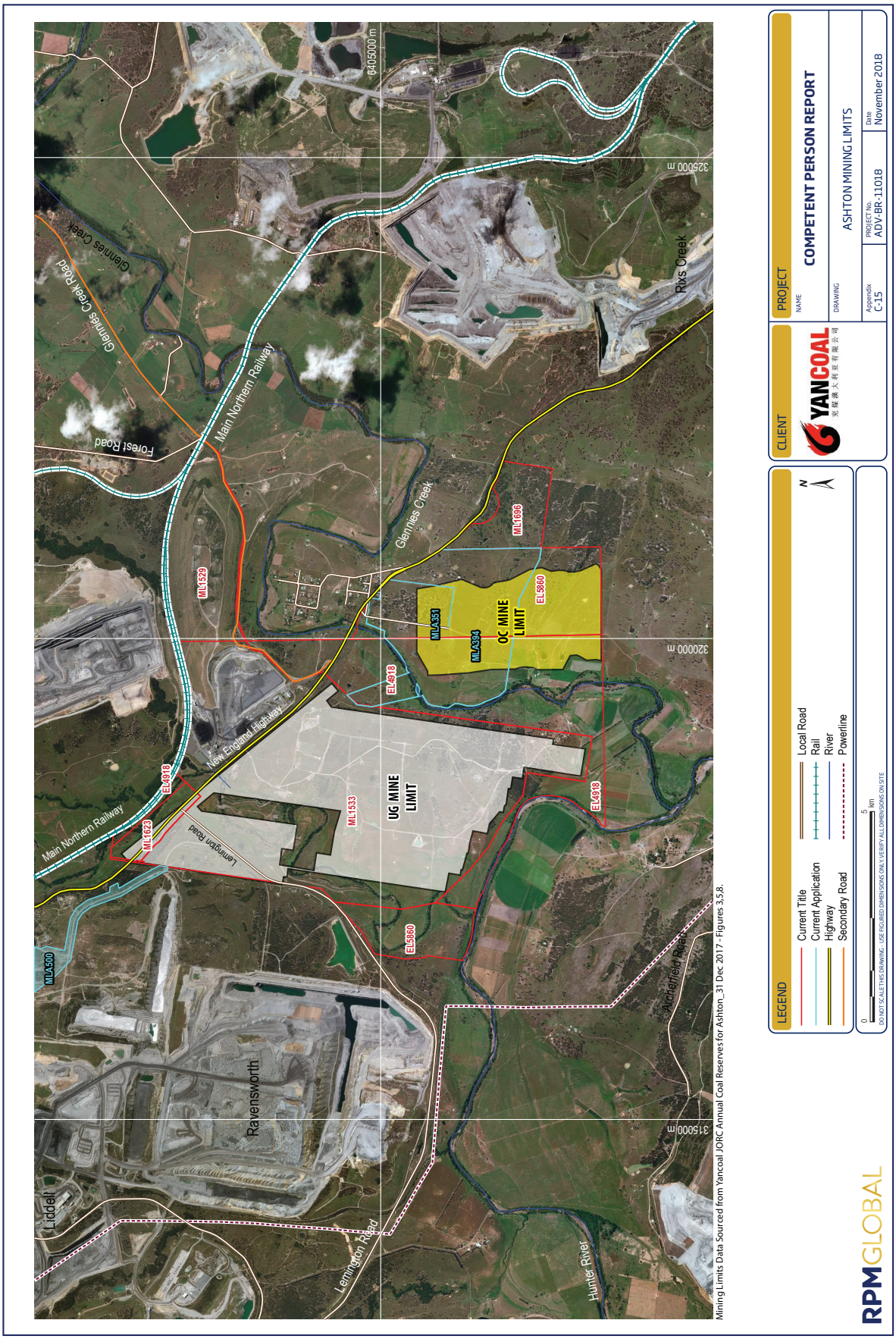
PROJECT

NAME
COMPETENT PERSON REPORT

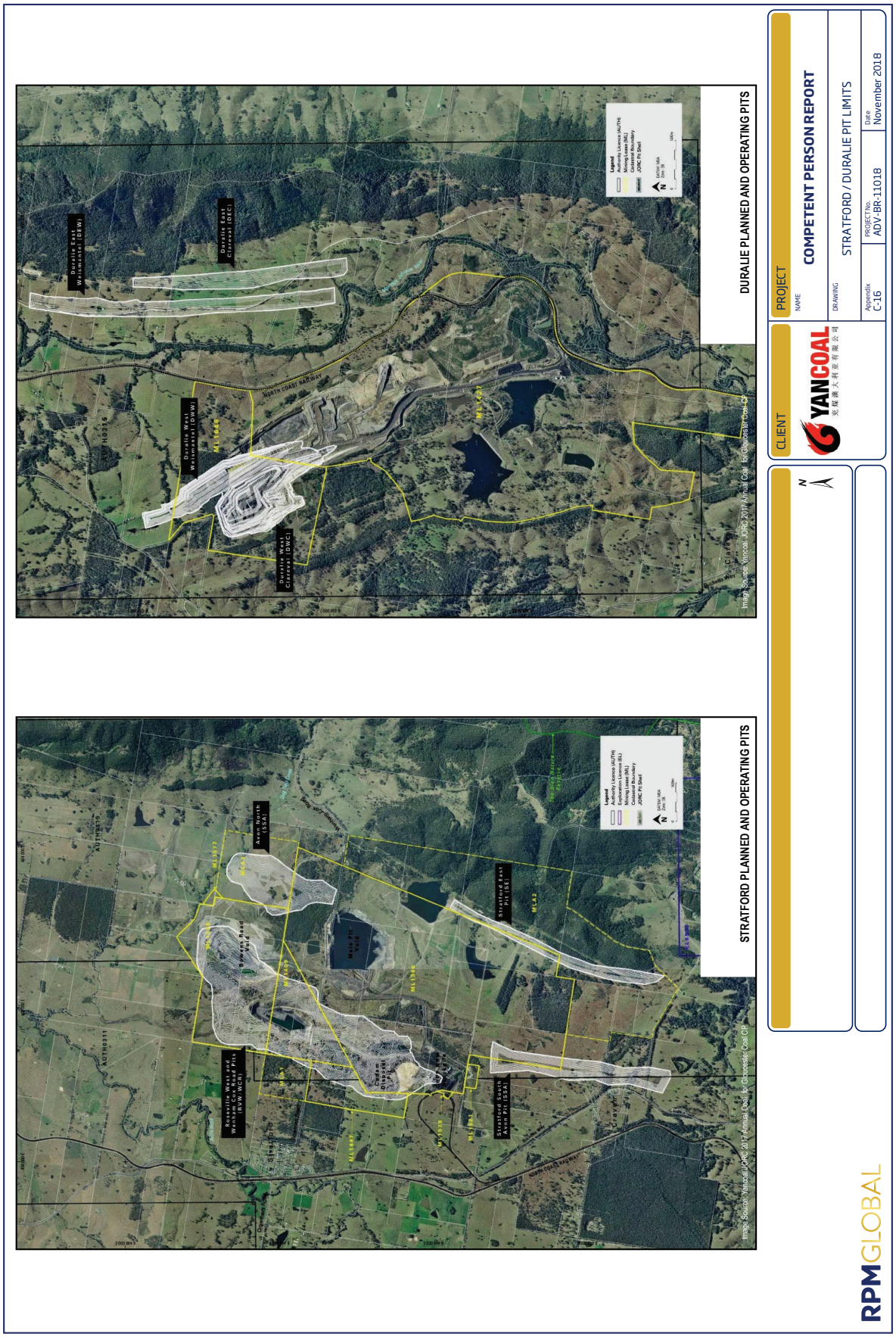
DRAWING
MOOLARBEN MINING LIMITS

Appendix	PROJECT No.	Date
C-13	ADV-BR-11018	November 2018


Fitzroy Developmental Road
Yarrabee Mine
Curragh North Mine
Jellinbah East Mine
ML80104
ML80196
ML1770
EPC717
ML80049
YEN PIT
ML80172
EPC717
YES PIT
ML80195
EPC1429
EPC717
MDL160
DOM 2S PIT
DOM 2N PIT
DOM 6 PIT
ML80050
ML80198
ML80197
ML80096
ML80197
EPC1684
EPC1429
7425000 m
7416000 m
7150000 m
7065000 m
6965000 m
LEGEND
ML Boundary
EPC Boundary
MDL Boundary
Road
Local Road
River
Final Pit Limits
N
0
20
km
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE
CLIENT
YANCOAL
PROJECT
NAME
COMPETENT PERSON REPORT
DRAWING
YARRABEE PIT LIMITS
Appendix
C-14
PROJECT No.
ADV-BR-11018
Date
November 2018
RPMGLOBAL



Mining Limits Data Sourced from Yancoal JORC Annual Coal Reserves for Ashton_31 Dec 2017 - Figures 3,5,8.


DURALIE PLANNED AND OPERATING PITS
Duralie East Woolumeter (DEW)
Duralie East Clareval (DEC)
Duralie West Woolumeter (DWW)
Duralie West Clareval (DWC)
North Coast Railway
Image Source: Yancoal, JORC 2017 Annual Coal for Gloucester Coal CP
STRATFORD PLANNED AND OPERATING PITS
Avon North (SSA)
Stratford East Pit (SE)
Stratford West and Wenham Cox Road Pits (SW, WC)
Stratford South Avon Pit (SSA)
Cedar Glen Road
Image Source: Yancoal, JORC 2017 Annual Coal for Gloucester Coal CP
CLIENT
YANCOAL
PROJECT
NAME
COMPETENT PERSON REPORT
DRAWING
STRATFORD / DURALIE PIT LIMITS
Appendix C-16
PROJECT No. ADV-BR-11018
Date November 2018
RPMGLOBAL

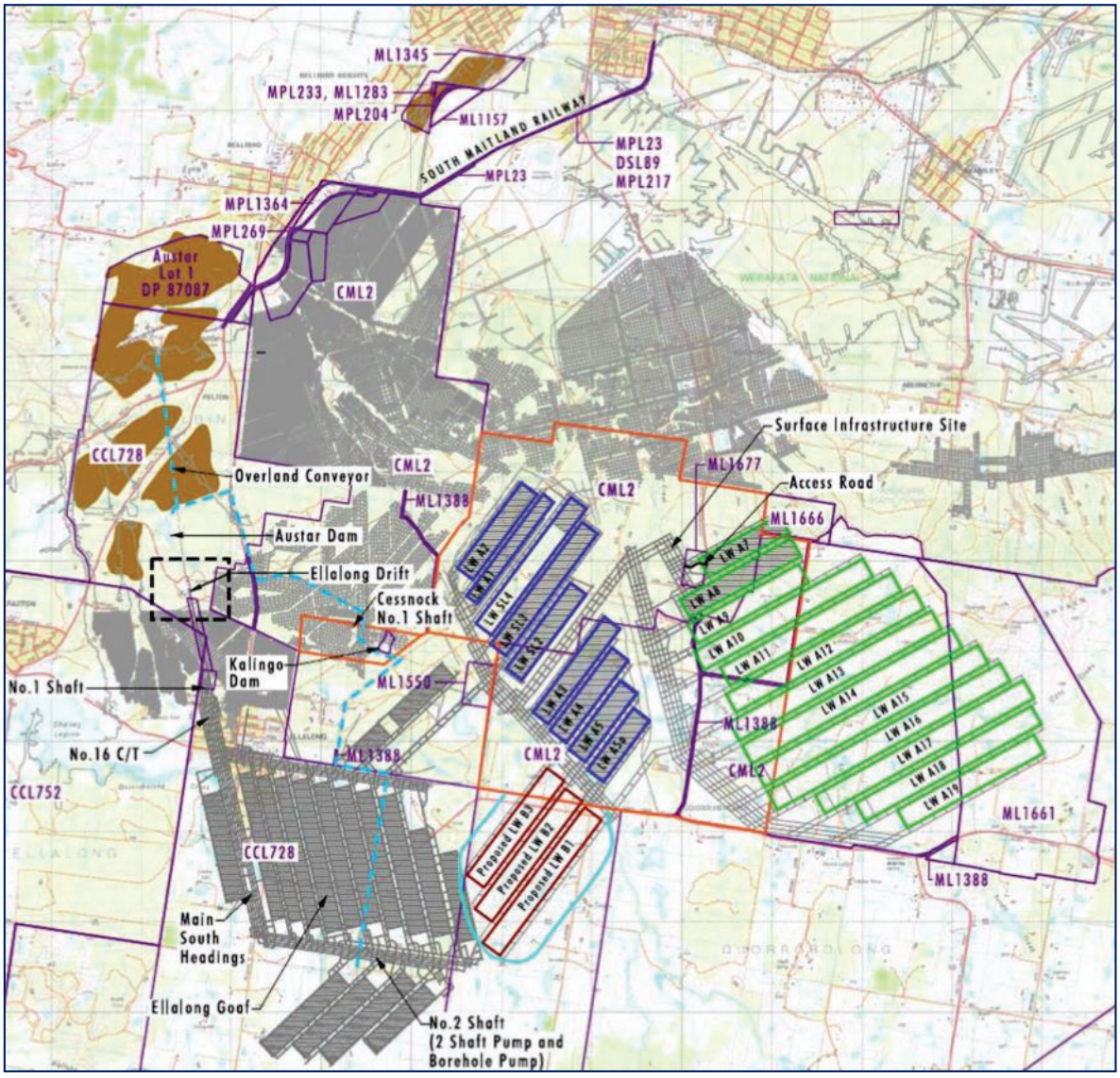


Image Sourced from Yancoal JORC 2017 Annual Coal Reserve for Austar_31 Dec 2017 - Final_Figure 1A

RPMGLOBAL

CLIENT

YANCOAL 兖煤澳大利亚有限公司

PROJECT

NAME

COMPETENT PERSON REPORT

DRAWING

AUSTAR MINING LIMITS

Appendix	PROJECT No.	Date
C-17	ADV-BR-11018	November 2018

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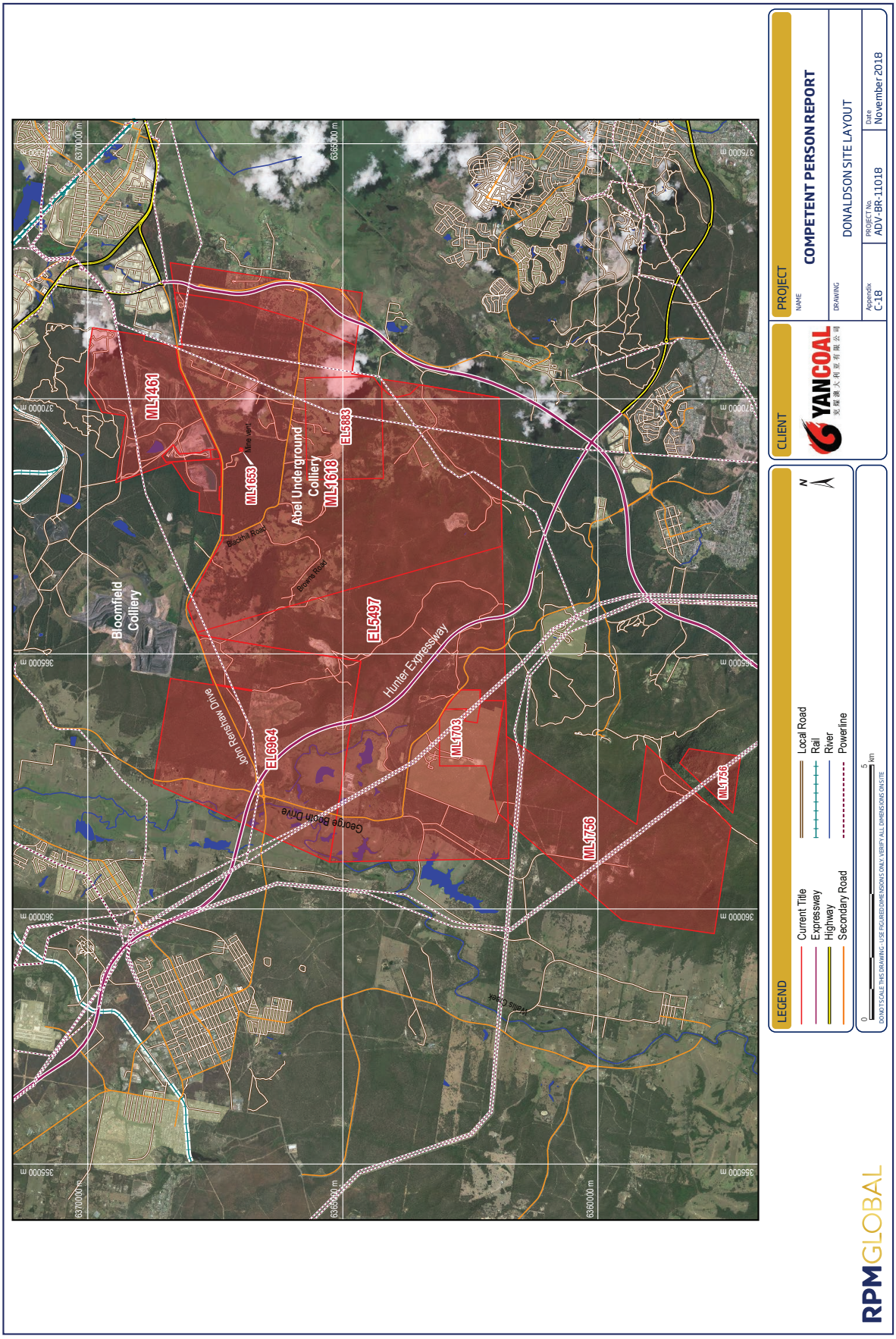
ML1461
ML1633
Mine vent
Abel Underground Colliery
ML1618
EL6333
Bloomfield Colliery
Bucchia Road
Browns Road
EL5497
Hunter Expressway
John Renshaw Drive
EL6964
ML1703
ML1756
George Booth Drive
Pelaw Main Creek
LEGEND
Current Title
Expressway
Highway
Secondary Road
Local Road
Rail
River
Powerline
N
0
5
km
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE
CLIENT
YANCOAL
PROJECT
NAME
COMPETENT PERSON REPORT
DRAWING
DONALDSON SITE LAYOUT
Appendix
C-18
PROJECT No.
ADV-BR-11018
Date
November 2018
RPMGLOBAL

RPMGLOBAL

LEGEND

ML Boundary
EPC Boundary
MDL Boundary
Road
Local Road
Rail
River
Powerline
N
0 5 km
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE

CLIENT

YANCOAL 兖煤澳大利亚有限公司

PROJECT

NAME
COMPETENT PERSON REPORT

DRAWING
MIDDLEMOUNT MINING LIMITS

Appendix	PROJECT No.	Date
C-19	ADV-BR-11018	November 2018

Appendix D. JORC Code Disclosure Requirements

RPMGLOBAL

JORC Code Disclosure Requirements

HVO / MTW

RPMGLOBAL

JORC Code, 2012 Edition – Table 1 report template

The completed Table 1, Sections 1, 2 & 3 are in response to the current ADV-BR-11019_Hunting Eagle_CPR Report completed in part by Competent Person Mr Peter Ellis on behalf of RPM.

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
Sampling techniques	▪ *Nature and quality of sampling (eg 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 (eg 'reverse circulation drilling was used to obtain 1 m 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 (eg submarine nodules) may warrant disclosure of detailed information.*	▪ A total of 9,557 boreholes (585,019 m) support the Resource estimate at HVO. Cored drilling represents 34% of the total metres and open hole drilling 66%. ▪ The boreholes are up to 616 m in depth and average 67 m. The boreholes were all nominally recorded as vertical. During RTCA ownership boreholes which deviated by more than 5% from vertical of the total boreholes length the borehole were redrilled. ▪ In addition a limited number of large diameter (LD) holes have been drilled: 103 holes at 100 mm (4") and six holes at 200 mm (8") diameter sizes. ▪ Each drill rig is managed and supervised by a qualified geologist who is normally a contract geologist, who works according to a set of site guidelines for data acquisition. ▪ Site geologists manage all of the site based exploration. ▪ Governance and overview is provided by the Yancoal corporate Resource Knowledge Department.	▪ A combination of open hole and cored holes for coal quality (CQ), geotechnical and gas sampling have been used at MTW ▪ A total of 2,628 boreholes (274,585 m) support the Resource estimate Cored drilling represents 45% of the total metres and open hole drilling 55%. ▪ The boreholes are up to 725 m in depth and average 92 m. The boreholes were all nominally recorded as vertical. During RTCA ownership boreholes that deviated by more than 5% were re-drilled by contractor. Coring has predominantly been done using a HQ3-sized (63 mm) and open hole drilling to an equivalent hole diameter size. ▪ In addition a number of large diameter (LD) holes have been drilled: seven holes at 150 mm (6") and 49 holes at 200 mm (8") diameter sizes for evaluation of detailed coal processing and preparation options.
Drilling techniques	▪ *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether*	▪ Industry standard drilling techniques are used. ▪ All drilling has been completed using vertical holes. No core orientation has been performed.	

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
	core is oriented and if so, by what method, etc).		
Drill sample recovery	▪ *Method of recording and assessing core and chip sample recoveries and results assessed.* ▪ *Measures taken to maximise sample recovery and ensure representative nature of the samples.* ▪ *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	▪ Core recovery is recorded by the rig geologist while logging the borehole. Actual recovered core lengths are measured by the rig geologist with a tape measure, and compared with the as drilled cored interval. Core loss is recorded in the geological logs, coal quality sample intervals and in the run by run drilling record field sheets. ▪ If core recovery for a coal ply is less than 95%, then that section of the hole is redrilled to ensure a representative sample is taken. ▪ As received and air dried sample masses are typically recorded and reported during analysis and provide a check for sample recovery where core diameter, sample intervals and density is known. This also provides a useful check where sample mix ups are suspected. ▪ Open hole chip samples are taken every 1 m of drill advance. Open hole chip recovery is assessed qualitatively by the rig geologist.	
Logging	▪ *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral 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.*	▪ Standardised logging systems were followed by the previous owner for all drilling logging and sampling. All data is currently logged directly into Geobank via tablet computers. ▪ Core is geologically and geotechnically logged and open hole chip samples are taken every 1 m and logged for lithology changes. ▪ All holes have been lithologically logged by qualified geologists. Cored coal sections have been brightness logged. The logging of the chip and core samples is detailed and includes a record of the recovery of the total length and the cored length, rock type, stratigraphic unit and numerous adjectives to describe the sample in terms of colour, grainsize, bedding etc. all of which is sufficient to describe the various lithologies and coal samples to support the Coal Resource estimation from a geological, geotechnical and coal quality consideration. ▪ All bore core recovered during RTCA ownership is photographed on both the core table (0.5 m increment) and in a core tray on a nominal 5 m tray basis. ▪ Chip samples are photographed as laid out in 1 m intervals. ▪ All holes are logged using a comprehensive suite of industry standard downhole geophysics tools (caliper, gamma, density, neutron, deviation, and sonic), with the addition of acoustic scanner that is used for geotechnical assessment in cored holes.	
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*	▪ Core sampling is completed at the drill site and follows standardised sampling documentation. Samples are bagged and tagged with a unique sample number at the drill site, and stored in a secure core storage area until being transported to the laboratory for analysis at the completion of each borehole.	

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Criteria	JORC Code explanation	Commentary (HVO / MTW)
	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.*	▪ Prior to May 2013 all core samples were analysed by the Australian Laboratory Services Steel River, Newcastle laboratory. Since that time coal testing has been performed by Bureau Veritas. ▪ The laboratories which completed the core sample testing are accredited by National Association of Testing Authorities certified laboratory (NATA). ▪ Coal testing is performed in accordance with the various Australian and or International Standards. ▪ The entire core samples only were dispatched to the laboratory for analysis. There is no splitting or halving of core. Only full core sample analyses were used to create the coal quality models. ▪ Laboratory sample preparation and subsampling has been performed at the coal testing laboratory following instructions made by RTCA. ▪ All samples are weighed, air dried and then re-weighed before being crushed to an 11.2 mm top size. A rotary splitter is used to divide the sample into portions for coal quality analysis. ▪ Coal quality analysis follows a three stage method involving raw analysis on all plies followed by stage 2 washability and stage 3 product testing on composite samples that are defined by the RTCA geologist in the laboratory instructions. ▪ All instructions issued to the laboratory follow a standard format that forms the basis for reporting the results of laboratory testing.
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	▪ Non-formalised quality assurance/quality control (QAQC) involving duplicate samples has been completed. ▪ Routine checks have been completed including laboratory round robin and basic reproducibility tests provided by the coal testing laboratory. ▪ All laboratory test results are assessed by site geologists by a number of techniques for precision and accuracy that includes but is not limited to: – Ensuring that all test work has been completed according to the issued testing instructions; ▪ Sample intervals are correctly reported; ▪ Sample intervals match the seam pick intervals; ▪ Sum of proximate and ultimate analysis equals 100%; and ▪ Sum of ash analysis is in the range 98 to 102%. – Crossplots of energy and ash, density and ash, energy and volatile matter, and basic statistics to identify outlier values.

RPMGLOBAL

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
		▪ Responsibility for quality control and quality assurance for analyses is primarily the responsibility of the NATA approved laboratories which complete the testing according to the various Australian Standards. Tested samples had sufficient reserve sample to allow for check analyses to be completed when site determined from their QC procedures that the reported coal quality results were anomalous or inconsistent with the geological expectation. ▪ Data checks and check analyses are requested where YAL identifies outliers results in the reported analytical test results that cannot be explained by geological processes.	
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.*	▪ All CQ sampling and analysis is managed and checked by YAL personnel. ▪ Data transfer from MTW and HVO was covered by protocols. The system documents primary assaying data, data entry procedures, data verification, and data storage (physical and electronic) into the ABB GDB relational geological database. ▪ Coal quality data is loaded to the GDB database and is validated against load limits. Once loaded the data is not altered, with the exception of converting data to different basis, such as converting air dried relative density data to an in situ basis using the Preston Sanders equation. The original as reported laboratory data is still retained in the database, and the data calculated data is contained in additional calculated columns in the database. ▪ All data is contained in the GDB database, even that data which has been identified to be incorrect. The incorrect data is excluded from Resource model development by use of borehole templates or data flags.	
Location of data points	▪ *Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* ▪ *Specification of the grid system used.* ▪ *Quality and adequacy of topographic control.*	▪ The topographic surface for HVO is derived from a combination of Lands and Property Management Authority 10 m contours which originated from the early 1980s, and ▪ More recent (September 2008) 2 m contours derived from an airborne LiDAR survey. Borehole collars and mine survey data were also used. The digital terrain model was created with a 50 m × 50 m cell size triangulation at 0.2 m decimation. ▪ All surveyed coordinates are within Map Grid of Australia 1994 MGA (MGA94) Zone 56 projection using datum GDA94. ▪ Borehole collars were surveyed post drilling by licensed surveyors using differential global positioning systems with an accuracy of ±10 mm.	▪ The topographic surface is derived from a combination of 2 m and 5 m contour data digitised from topographic maps and 10m digitised data from the Bulga 1st edition topographic map covering the mined areas. Borehole collars and mine survey data were also used. The digital terrain model was created with a 20 m × 20 m cell size triangulation at 0.2 m decimation. ▪ All surveyed coordinates are within Map Grid of Australia 1994 MGA Zone 56. ▪ Borehole collars were surveyed post drilling by licensed surveyors using differential global positioning systems with an accuracy of ± 10mm. ▪ Downhole surveying has been undertaken using downhole verticality and caliper tools

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
		▪ Downhole surveying has been undertaken using downhole verticality and caliper tools since 2007, including attempted resurvey of earlier boreholes. Overall 84% of the diamond drilling metres have been surveyed downhole over the entire borehole length but only 40% of the total open hole drilling metres have been downhole surveyed.	since 2007, including attempted resurvey of earlier boreholes. Overall 84% of the diamond drilling metres have been surveyed downhole over the entire borehole length for MTW, but only 40% of the total open hole drilling metres have been downhole surveyed.
Data spacing and distribution	▪ *Data spacing for reporting of Exploration Results.* ▪ *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* ▪ *Whether sample compositing has been applied.*	▪ Borehole spacing for core holes is on an equilateral triangle grid of 500 m or less. For open holes spacing is on a 250 m or less equilateral triangle grid. ▪ All core samples are composited within defined seam boundaries.	▪ Borehole spacing for core holes is on an equilateral triangle grid of 250 m or less. For open holes spacing is on a 125 m or less equilateral triangle grid. ▪ All core samples are composited within defined seam boundaries.
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 coal measures show a relatively consistent layering and dip at 3° to 7°. ▪ The orientation of drilling is suitable for flat lying stratified deposits.	
Sample security	▪ *The measures taken to ensure sample security.*	▪ Core/chip samples were taken at the drill site by the qualified geologists and then transported daily to the locked MTW or HVO core shed for storage. The MTW core shed stores coal samples in a refrigerated unit. Once each borehole has been completed the samples are transported to the laboratory via a dedicated courier service. ▪ In light of the bulk commodity nature of coal, no higher level security measures are deemed necessary since it is very unlikely to be subject to material impact from sample tampering theft or loss.	
Audits or reviews	▪ *The results of any audits or reviews of sampling techniques and data.*	▪ MTW has had one audit completed in the past eight years. The audit was conducted in March 2010 by the Xstract Group (report: Resources and Reserves Internal Audit Report Executive Summary Mt Thorley Warkworth). The review concluded that the fundamental data collection techniques are appropriate.	

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

RPMGLOBAL

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
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 license to operate in the area.*	▪ HVO was acquired by Yancoal Australia Ltd in a sale process that was completed on 1 September 2017. HVO is owned 51% by Yancoal Australia Ltd and 49% by Glencore, and will be operated by a JV management committee. ▪ HVO contains numerous leases and licenses (see Figure 1, note that this is schematic only): – one authorisations covering 454 ha; – two consolidated coal leases covering 1,743 ha; – five coal leases covering 247 ha; – one coal mining lease covering 2,162 ha; – six exploration leases covering 5,8783 ha; – 24 mining leases covering 7,380 ha; – five mining lease applications covering 56 ha; and – one assessment lease application covering 430 ha. ▪ All leases containing Resources are in good standing.	▪ MTW is an amalgamation of two previously independent mines – Mt Thorley Operations and Warkworth Mining Limited. Each mine was developed at approximately the same time and combined by Coal & Allied Limited (CNA) in 2004. ▪ Yancoal Australia Ltd acquired MTW after a sale process that was completed on 1 September 2017. ▪ MTW is operated by Yancoal on behalf of the joint venture (JV) participants. There are two JV partnerships – one for each of the formerly separate operations. Participants in the JVs are outlined below. ▪ Mount Thorley Operations (MTO) – Yancoal Australia Ltd (share: 80%); and – Posco Australia Pty Ltd (share: 20%). ▪ Warkworth Mining Limited (WML): – CNA Resources (a subsidiary of CNA) (share: 28.75%); – CNA Warkworth Australasia Pty Ltd (a subsidiary of CNA) (share: 26.82%); – Mitsubishi Development Pty Ltd (share: 28.9%); – Mitsubishi Materials (Australia) Pty Ltd (share: 6.000%); and – Nippon Steel (Australia) Pty Ltd (share: 9.53%). ▪ MTW contains numerous leases and licences including: – one consolidated coal lease covering 4,192 ha; – one coal lease covering 1,992 ha;

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
			– one exploration licence covering 1,988 ha; – three mining leases covering 29 ha; and – two mining lease applications covering 1,370 ha
Exploration done by other parties	▪ *Acknowledgment and appraisal of exploration by other parties.*	▪ HVO is an amalgamation of several previously independent mines: Howick, Hunter Valley, and Lemington. Each mine was developed at different times resulting in variable exploration summarised as follows: ▪ Howick open-cut (west pit) – exploration initiated in the 1940's and 1950's by the Joint Coal Board and the Bureau of Mineral Resources. Drilling at 200 m – 300 m spacing for cored holes and 50 m – 150 m spacing for open holes. ▪ Hunter Valley No.1 & 2 mines – exploration initiated in the 1960's and early 1970's by the New South Wales (NSW) Department of Mines. Drilling to 212 m spacing for cored holes and 100 m spacing for open holes. ▪ Lemington South open cut and underground mines – exploration initiated in the 1970's by the Joint Coal Board. Drilling to 200 m - 800 m spacing for cored holes.	▪ 1949 - 1950: Newly formed Joint Coal Board commence drilling shallow percussion boreholes (McMenamins and JCB Warkworth series). ▪ 1960s: Clutha Bargo explored the Whybrow Seam for coking coal potential. ▪ Early 1970's: Armco conducted diamond drilling in the Bulga area. ▪ 1970 - 1975: Department of Mines conducts fully cored hole drilling program (DM Warkworth and DM Doyles Creek series). ▪ 1976: Warkworth Consortium is formed (later established as WML) and awarded mining bid for Warkworth area. Commenced exploration program with 12 rigs drilling fully cored, HQ-size holes and large diameter (LD) core drilling in selected seams. ▪ 1976: Drilling program started at Mt Thorley site – similar to Warkworth drilling program. Main concentration of drilling was in the shallower, eastern parts of the lease. ▪ 1980s and 1990s: Main focus at Warkworth was open-hole drilling. Mt Thorley increased open holing with production, and a concerted effort at core drilling during the 1990's. ▪ 2002 - 2005: Little drilling was undertaken.

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<table>
<tr><th rowspan="2">Criteria</th><th rowspan="2">JORC Code explanation</th><th colspan="2">Commentary</th></tr>
<tr><th>HVO</th><th>MTW</th></tr>
<tr><td></td><td></td><td></td><td>▪ 2006 - 2014: Pre-production and further exploration drilling was undertaken. Focus was on: improving borehole data density, testing in situ gas content, provide data for underground Resources, testing the geology of Abbey Green, and extending pre-production drilling 3 years ahead of mining (MTO and WML).
▪ Drilling data acquired on both sites (Warkworth and MTO) has been combined into a single geological database.</td></tr>
<tr><td>Geology</td><td>▪ Deposit type, geological setting and style of mineralisation.</td><td colspan="2">▪ MTW and HVO are located in the Permian age Hunter Coalfield in the northern part of the Sydney Basin.
▪ MTW exploits the coal seams contained within the Jerrys Plains Subgroup, (Whybrow to Bayswater seams).
▪ HVO exploits the coal seams of the Jerrys Plains and underlying Vane Subgroup which contains the Lemington to Hebden seams.
▪ The main rock types at MTW and HVO include sandstone, siltstone, sandstone and conglomerate, which occur with subordinate coal and tuffaceous claystone.</td></tr>
<tr><td>Drillhole Information</td><td>▪ A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:
– easting and northing of the drillhole collar
– elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar
– dip and azimuth of the hole
– down hole 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.</td><td colspan="2">▪ All borehole data is stored within the ABB GDB database for both the Warkworth and MTO leases. A summary of borehole numbers completed by year since 2004 since consolidation of the Warkworth and MTO data is shown below:
<table>
<tr><th></th><th>2004</th><th>2005</th><th>2006</th><th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th></tr>
<tr><td>Open holes</td><td>35</td><td>11</td><td>71</td><td>75</td><td>23</td><td>62</td><td>103</td><td>39</td><td>45</td><td>6</td><td>28</td><td>5</td></tr>
<tr><td>Cored holes</td><td>7</td><td>1</td><td>6</td><td>19</td><td>18</td><td>17</td><td>24</td><td>47</td><td>44</td><td>31</td><td>13</td><td>3</td></tr>
</table>
▪ All borehole data is stored within the ABB GDB database for the HVO leases. A summary of borehole numbers completed by year since 2002 and consolidation of the Lemington, Howick and Hunter Valley mines into one operation (as HVO) is shown below:</td></tr>
</table>

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Criteria	JORC Code explanation	Commentary

	Area/year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
		HVO								MTW					
Open Holes	Carrington	43	20	31							11	102			
Open Holes	Cheshunt	23	7	2	6	16	43		3	19	51		2	15	
Open Holes	West	37			25		9	134	38			6	5	4	
Open Holes	Mitchell	13										43			
Open Holes	Riverview	84			8		29		26	14	47		24	33	
Open Holes	Southern										12	25			
Cored Holes	Carrington		1	7				17	4		5	40			
Cored Holes	Cheshunt	10	1		5	5	8		4	8	8	4		2	
Cored Holes	West	4	7		8		3	7	4	4	3	9		2	
Cored Holes	Mitchell										5	1			
Cored Holes	Riverview				1	1			1	15	8	2			
Cored Holes	Auckland											18			6
Cored Holes	Southern										15				

Criteria	JORC Code explanation	Commentary
Data aggregation methods	▪ *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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.*	▪ Ply samples are combined to create composites (for washability and product coal analyses) that represent the mineable seam working sections. ▪ Individual ply samples have been weighted by thickness and density (mass weighting) to represent the mineable seam working sections. Laboratory determined air dried ARD has been used for the density weighting. Where no ARD data is available and ash data is available then an air dried ash to ARD regression has been used to assign individual sample ARDs prior to weighting. ▪ There are no metal equivalents used to report the Coal Resources. This is not a standard reporting practice for Coal Resources.
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 drillhole 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 (eg 'down hole length, true width not known').*	▪ The strata at MTW in general dip shallowly to the west at 4° to 6°. Boreholes are drilled vertically. ▪ The strata at HVO in general dip shallowly into the centrally located Bayswater syncline, which plunges to the south. ▪ Based on drilling techniques and seam dip, the coal seam intercepts therefore approximate the true coal thickness.

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
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 be limited to a plan view of drillhole collar locations and appropriate sectional views.*	▪ All relevant figures depicting information considered material to the Coal Resources reported are contained within the JORC report associated with this Table 1.	
Balanced reporting	▪ *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	▪ Not applicable. There are no exploration results for the MTW and HVO areas.	
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.*	▪ Resistivity surveys, ground and airborne magnetic and 2D seismic surveys have been completed to identify faults, dykes, and alluvial limits in the HVO and MTW areas.	
Further work	▪ *The nature and scale of planned further work (eg 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.*	▪ Both pre-production drilling and strategic brownfields drilling is required down dip of the current MTO, WML and HVO highwalls. The drilling includes associated coal quality, geotechnical, gas and environmental testing and environmental monitoring. ▪ Brownfields exploration is required to support the MTW underground concept study which covers the areas of the present open cut pits and extending to the western extents of the MTW licence areas. ▪ Greenfields exploration at HVO includes investigations in the Auckland and Southern areas. In addition exploration and evaluation are being made to assess the underground potential of HVO and the adjoining areas of MTW.	

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in Section 1, and where relevant in Section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
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 Mineral*	▪ All borehole data has been migrated to Geobank which is located on a server in Sydney and is backed up daily.	

Criteria	JORC Code explanation	Commentary HVO	Commentary MTW
	Resource estimation purposes. ▪ *Data validation procedures used.*	▪ The ABB GDB database contains all hole surveys, drilling details, lithological data, and coal quality results and is the primary source for all such information. There is only one copy of the database and any data additions, changes to or edits of the data are made directly into the database. ▪ Where possible, all original geological field logs (scanned or hard copy), down-hole geophysics (LAS) files and hard copy logs, hole collar survey files, digital laboratory data and reports and other similar source data are maintained on the project server or library and referenced within the database to provide an audit trail to this original source data. ▪ Data is validated at the drill site and also prior to loading into the database by the responsible geologist. ▪ There are a number of underlying "business rules" built into the database that help ensure consistency and integrity of data including, but not limited to: – relational link between geological, down hole geophysical and coal quality data; – exclusion of overlapping geological intervals; – restriction of data entry to the interval of the defined hole depth; – use only of defined rock type and stratigraphic codes; and – basic coal quality integrity checks such ensuring data is within normal range limits, that proximate analyses add to 100 percent etc. ▪ Other checks performed either periodically or before export of data for model development include: – missing or unlogged geological intervals highlighted; – stratigraphic picks are out of correct stratigraphic sequence; – missing stratigraphic codes; and – missing, anomalous, non-zero thickness, multiple or inappropriate (e.g. within overlying stratigraphy rather than host stratigraphy). ▪ The database contains automated validation processes which are activated during data loading and prevent un-validated data from being loaded to the GDB database. ▪ Field geologist seam and stratigraphic picks and correlations are independently checked and rechecked by senior geological staff. After modelling anomalous seam and interburden structure and thicknesses are reviewed to determine if they have a geological explanation, or are errors which are iteratively corrected or removed from the database. ▪ It is highly unlikely that there is significant volume of corrupt data in the database, given the validation procedures that have been described above. Some errors may still pass through to the geological and coal quality models. Coal is a bulk commodity of relative even	

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<tr><td></td><td></td><td colspan="2">consistency which combined with the large number of boreholes on which the Resource is based, such errors are unlikely to have a material impact on the Resource estimate.</td></tr>
<tr><td>Site visits</td><td>▪ 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.</td><td colspan="2">▪ The RPM Resources Competent Person has visited MTW in January 2015, and both MTW and HVO in February 2017. In addition the RPM Resources Competent Person was employed by the previous owner (RTCA) from 2006 to 2013 as a Principal geologist and was responsible for governance over the operating RTCA mines.</td></tr>
<tr><td>Geological interpretation</td><td>▪ Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.
▪ Nature of the data used and of any assumptions made.
▪ The effect, if any, of alternative interpretations on Mineral Resource estimation.
▪ The use of geology in guiding and controlling Mineral Resource estimation.
▪ The factors affecting continuity both of grade and geology.</td><td colspan="2">▪ Detailed coal ply logging is completed by geological logging of open and fully cored holes supported by geophysical log data.
▪ Coal seam and ply correlation are relatively simple where drill spacing is adequate and are sufficient to establish the variability of interburden thicknesses.
▪ The geology of the MTW Resource is well known because it has been in production since the early 1980s. The coal plies predominantly have a tabular layer-cake disposition, however, interburden thicknesses are characterised by common rapid lateral thickness changes due to channel splays propagating from alluvial fan structures located to the north of the MTW area. The major channel structures appear to have a north – south orientation (parallel to strike), and are sinuous in nature.
▪ The geology of the HVO Resource is well known because it has been in production since 1969 at Howick, 1971 at Lemington and 1979 at Hunter Valley No. 1.
▪ The coal plies predominantly have a tabular layer-cake disposition, however, interburden thicknesses are characterised by common rapid lateral thickness changes due to channel splays propagating from alluvial fan structures located to the north of the HVO area. The major channel structures appear to have an east – west orientation (perpendicular to strike), and do not appear to have the sinuosity that is seen at MTW.
▪ Infill drilling and mining exposure and mapping has supported and refined the MTW and HVO models. The current geological interpretations are considered to be robust.</td></tr>
<tr><td>Dimensions</td><td>▪ The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td colspan="2">▪ The MTW Resource area trends 8 km northwest to southeast and is 8.5 km in width. The deposit extends to a depth of 460 m below the topographic surface.</td></tr>
<tr><td>Estimation and modelling techniques</td><td>▪ 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.</td><td>▪ Coal Resources were estimated by the Competent Person using ABB Mincom software from a geological model developed by the previous owners. The geological model was updated in 2015 and is called HVO_1508_LOM.</td><td>▪ Coal Resources were estimated by the Competent Person using ABB Mincom software from a geological model developed by the previous owners. The geological model was updated in 2012 and is called MTW_1208_LOM.</td></tr>
</table>

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<tr><td></td><td>▪ The availability of check estimates, previous estimates and/or mine production records and whether the Mineral 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 (eg 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 correlation between variables.
▪ Description of how the geological interpretation was used to control the resource estimates.
▪ Discussion of basis for using or not using grade cutting or capping.
▪ The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.</td><td></td><td></td></tr>
<tr><td>Moisture</td><td>▪ Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td colspan="2">▪ All tonnages are estimated on an in situ moisture basis, following the practice of estimating in situ moisture as air dried moisture content plus 4%. This offset was derived by RTCA by comparing the difference between the average total moisture content of shipments of coal that have by-passed the coal plant, and the average air dried moisture content of that coal.
▪ The Competent Person considers that this approach is reasonable.</td></tr>
<tr><td>Cut-off parameters</td><td>▪ The basis of the adopted cut-off grade(s) or quality parameters applied.</td><td colspan="2">▪ Resources polygons are limited to the limit of oxidation, and tenement boundaries.
▪ Mined out surfaces are used as the upper surface.
▪ At MTW the Bayswater seam is the lowest seam for which Resources have been estimated. Tenure at MTO does not extend to the seams stratigraphically lower than the Bayswater.
▪ At HVO the Barrett seam is the lowest seam for which Resources have been estimated.
▪ No cut-off coal quality parameters or thickness limits have been applied to coal plies for Resource estimation because coal plies are aggregated during the Reserve estimation</td></tr>
</table>

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<tr><th rowspan="2">Criteria</th><th rowspan="2">JORC Code explanation</th><th colspan="2">Commentary</th></tr>
<tr><th>HVO</th><th>MTW</th></tr>
<tr><td></td><td></td><td colspan="2">process. It is during the Reserve estimation process that coal plies are assigned to Resource or waste based on the mining aggregation rules used.</td></tr>
<tr><td>Mining factors or assumptions</td><td>▪ 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 Mineral 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.</td><td colspan="2">▪ Open cut mining methods are currently used at both mining sites using both draglines and truck and shovel / excavator mining equipment.
▪ Potential underground mining areas have been identified at both sites.</td></tr>
<tr><td>Metallurgical factors or assumptions</td><td>▪ 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 treatment processes and parameters made when reporting Mineral 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.</td><td colspan="2">▪ MTW has two coal handling and preparation plants: North CHPP and South CHPP. Both plants are operational. North CHPP is capable of single product washing and South CHPP is capable of two-product washing.
▪ HVO has three CHPPs, Hunter Valley, West and Newdell. The Hunter Valley CHPP is located at Hunter Valley and the West CHPP handles ROM coal from the West pit.
▪ The processes used are standard for the coal industry and so are well tested technologies. All bore core samples are wash/cut-point tested and so the representativeness of test work undertaken is implicit in the Resource classification status.
▪ In-seam partings where they are included in the coal seam are included in the bore core samples tested.
▪ Coal Reserve estimation is based on existing product specifications.
▪ Nominally coal is washed to produce a semi-soft coking coal product at 9% air dried ash or to three types of thermal products (11% air dried ash, 13% air dried ash and 18% air dried ash). For all products, product moisture is at 9%. Air dried is quoted at a 2.5% moisture basis.</td></tr>
<tr><td>Environmental factors or assumptions</td><td>▪ 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</td><td colspan="2">▪ MTW has a number of current mining and exploration titles.
▪ All the various mining leases across MTW are defined by a 21 year consent limit. This consent limit is particular to each mining lease, and as such leases are constantly being renewed. There is a dedicated tenements manager to ensure the application for lease renewal occurs on time.
▪ An appeal of the project approval for Reserves west of Wallaby Scrub Road was upheld (disapproved) by the NSW Land and Environment Court in April 2013. A 350 m modification within this area was subsequently secured in January 2014 and Rio Tinto Coal Australia</td></tr>
</table>

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Criteria	JORC Code explanation	Commentary (HVO / MTW)
	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.	management worked through a process that resulted in further approvals being granted in November 2015. In September 2018, Wallaby Scrub Road was closed and ownership transferred to MTW. ▪ Coarse rejects are dumped within the mines overburden dumps, while the fines coal washery rejects are stored within dedicated tailings dams. Rejects material and completed tailings dams must be covered by at least 3 m of inert waste rock material. ▪ Overburden waste rock has low acid forming potential.
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.*	▪ Certain boreholes samples have only true relative density ("RD") analysis; some have both apparent relative density ("ARD") and true RD, and most have ARD. Relationships between ARD and RD were determined from the paired sets of ARD and RD analyses. The relationships used to populate the ply by ply data with missing ARDs or RDs are: – RD (ad) = 1.0003 x ARD 1.0645, and ARD = 1.0045 x RD 0.9316. ▪ The in situ relative density (i.e. the density of materials at an in situ moisture basis) was calculated using the Preston Sanders equation: – RD2 = [RD1*(100-M1)] / [100+RD1*(M2-M1)-M2] – Where RD1 is true RD (ad), M1 is air dried moisture and M2 is the in situ moisture. (M1 +4) ▪ A regression of laboratory ARD measurements against raw ash was used for the in situ density when density values had not been determined in the laboratory, such as when coal plies were aggregated on a working section basis.
Classification	▪ *The basis for the classification of the Mineral Resources into varying confidence categories.* ▪ *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade 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.*	▪ The classification of the Coal Resources into varying confidence categories is based on a standardised process of utilising points of observation (PoO) according to their reliability. The PoOs are used to categorise quantity and quality continuity (or both) or support continuity. ▪ A quantity PoO has the following attributes: – open hole; – seam interval geophysically logged; and – reliable collar survey. ▪ A quality PoO has the following attributes: – cored hole in which 100% of the seam interval has been cored; – linear core recovery greater than 95%; – reliable collar survey; and – raw coal ash (can be used as a proxy for relative density).

Criteria	JORC Code explanation	Commentary HVO / MTW
		▪ Support data for PoOs includes: – in-pit mapping data for faults and dykes; and – seam floor or roof survey data. ▪ The radii of influence for PoOs were determined by consideration of the following for each coal ply: – variability of seam thickness; – variability of interburden thickness; – seam splitting and coalescing patterns; are they sedimentary or due to seam correlation inconsistency between stages of exploration; – structural variability; – variability of coal quality; – understanding of relationship between raw coal quality and washed product coal quality; – relationship between overburden thickness variation and coal quality variability; – examining aerial distribution of data points, histograms and statistics of the ash content of seam groups; – review of as mined seam roof or floor survey data in conjunction with modelled roof and floor contours, and borehole intersections to assess reliability of input data and model output to assess; – the variability of the geology between boreholes; and – the reliability of borehole data. ▪ There are many coal plies at MTW and HVO, and in general seam groups (equivalent to the seam names) were used as the Resource entities. Where variability of plies within a seam group were identified and a single Resource entity for the seam group was not justified multiple Resource entities were categorised. The MTW Resource contains 15 seam groups, but Resources have been categorised for 28 seam entities. ▪ Previous Resource classifications of the MTW Resource have been based on the 15 primary seam groups, and at HVO the 17 primary seam groups. Detailed review of each of the MTW and HVO plies has shown that in general the lower plies of some seam groups have greater variability, or have less extensive or consistent lateral development than the upper plies of the seam group. As a consequence some seam groups have multiple coal plies categorised. ▪ Radii of influence were plotted around PoOs to produce maps of quantity and quality. ▪ Areas of low, medium, and high confidence are produced from these plots for structure (quantity) and coal quality for each Resource entity. The quantity and quality areas of

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Criteria	JORC Code explanation	Commentary — HVO / MTW
		confidence are intersected to produce areas of Measured, Indicated and Inferred to categorise the Resource tonnage estimates. ▪ In summary quantity radii range: – 100 m - 250 m for high confidence; – 200 m - 500 m for medium confidence; and – 400 m - 1,000 m for low confidence. ▪ In summary quality radii range: – 200 m - 400 m for high confidence; – 400 m - 1,000 m for medium confidence; and – 800 m - 1,200 m for low confidence. ▪ The ranges reflect the variability within and between the fifteen seam groups modelled at MTW. ▪ The Competent Person is satisfied that the stated Coal Resource classification reflects the geological controls interpreted and the estimation constraints of the deposits.
Audits or reviews	▪ *The results of any audits or reviews of Mineral Resource estimates.*	▪ MTW has had one external audit which was conducted in March 2010 by the Xstract Group as part of RTCA's internal compliance requirements. ▪ The outcome of this audit was an overall satisfactory rating with a number of recommendations made and acted upon by Rio Tinto Coal Australia. ▪ In September 2011 an audit into the modelling and Resource estimation process at HVO was completed (report: Rio Tinto Corporate Assurance Resources and Reserves Internal Audit Report. Hunter Valley Operations. 2.1). ▪ The outcome of this audit was overall a satisfactory rating with a number of recommendations made and acted upon by Rio Tinto Coal Australia.
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Mineral 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*	▪ Reconciliation at MTW is performed on an annual rather than a spatial basis. The following is noted from the MTW 2015 Annual Reconciliation: (see table below)

	Unprocessed Coal ROM		Yield (%)	Waste	Strip Ratio	Product Coal	Product Strip Ratio
	Mass(t)	Ash(%)		M m^3	bcm/t	Mass(t)	bcm/t
AOP	17,485	38.3	54.5	94,936	5.43	9,529	9.96
To Plant	16,576	24.3	66.9	99,333	5.99	11,089	8.96
Plant/AOP	95%	63%	123%	105%	110%	116%	90%

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<tr><td></td><td>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.</td><td colspan="2">▪ The Annual Operating Plan ("AOP") underestimates:
– waste volume;
– yield;
– strip ratio; and
– product coal tonnes.
▪ The AOP overestimates:
– ROM tonnes; and
– ROM ash.
▪ In summary, the in situ structural and coal quality models, and the assumptions used to convert from in situ to ROM models show material difference between estimated and actual performance.
▪ The assessment of variability on a ply or seam basis at both HVO and MTW has not been performed geostatistically. The variability of seam and interburden thickness, seam structure and raw and product ash between adjacent boreholes was assessed by the RPM Competent Person to determine the PoO spacing used for the Resource categorisation and estimation at both HVO and MTW.
▪ Variability between adjacent boreholes was categorised by the following ranges, which represent high, moderate and low confidence spacing respectively:
– plus or minus 10%;
– plus or minus 10 to 20%; and
– plus or minus 20 to 40%.
▪ Reconciliation at HVO is performed on an annual rather than a spatial and temporal basis after each mining unit is completed. The following is noted from the MTW 2015 Annual Reconciliation:
<table>
<tr><th rowspan="3"></th><th colspan="2">Unprocessed Coal</th><th colspan="3"></th><th>Product</th><th>Product</th></tr>
<tr><th colspan="2">ROM</th><th>Yield (%)</th><th>Waste</th><th>Strip Ratio</th><th>Coal</th><th>Strip</th></tr>
<tr><th>Mass(t)</th><th>Ash(%)</th><th></th><th>M m³</th><th>bcm/t</th><th>Mass(t)</th><th>bcm/t</th></tr>
<tr><td>AOP</td><td>18,849</td><td>37.5</td><td>66.5</td><td>101,808</td><td>5.4</td><td>12,535</td><td>8.12</td></tr>
<tr><td>To Plant</td><td>16,709</td><td>26.8</td><td>77.3</td><td>101,072</td><td>6.05</td><td>12,916</td><td>7.83</td></tr>
<tr><td>Plant/AOP</td><td>89%</td><td>71%</td><td>116%</td><td>99%</td><td>112%</td><td>103%</td><td>96%</td></tr>
</table>
▪ The results of the HVO annual reconciliation are similar to the findings of the MTW reconciliation, and the same comments made for MTW can apply to HVO.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
		▪ Resource estimates in this stratiform conformable deposit are directly dependent on three factors: the size (aerial extent) of the coal seam Resource polygons, the coal seam thickness and the coal density. The coal seam Resource polygons are limited by the modelled coal seam subcrops, mapped and interpreted faults and by the borehole distribution. The Resource polygons are not significantly extrapolated past the "last" borehole which is considered to be a conservative approach.	

Section 4 Estimation and Reporting of Ore Reserves

The completed Table 1, Sections 4 is in response to the current ADV-BR-11019_Hunting Eagle_CPR Report completed in part by Competent Person, Mr Doug Sillar on behalf of RPM.

(Criteria listed in Section 1, and where relevant in Sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
Mineral Resource estimate for conversion to Ore Reserves	▪ *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* ▪ *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	▪ The Coal Resource estimate used as the basis for this Coal Reserves Statement is described as part of this statement. The Resource estimate has been prepared by Mr. Peter Ellis. The Competent Person, Mr. Ellis, has sufficient expertise that is relevant to the style of mineralisation and type of deposit and activity to qualify as a Competent Person as specified under the JORC Code and is a member of the Australian Institute of Mining and Metallurgy . ▪ The Resources Statement was compiled in accordance with The JORC Code 2012 Edition. ▪ The Coal Resources reported are inclusive of the Coal Reserves. ▪ The same geological model has been used for the estimation of Resources and Reserves.	
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.*	▪ A site visit to the MTW and HVO Mines was undertaken by a representative of RPM in January 2017. The Reserves Competent Person was unable to attend but interviewed the RPM representative who completed the site visit. The outcome of the site visit was a better understand of the location, environmental, social, groundwater and existing infrastructure considerations, and in particular the way the two sites managed to meet their license to operate obligations.	
Study status	▪ *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* ▪ *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is*	▪ MTW is an operating mine. The Reserves are located within an extension of the existing active mining pits. ▪ HVO is an operating mine consisting of a number of operating pits which will be expanded down dip and new future pits for expansion.	

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Criteria	JORC Code explanation	Commentary	
		HVO	MTW
	technically achievable and economically viable, and that material Modifying Factors have been considered.	▪ Reserves are based on the results of a life of mine plan prepared by Yancoal at MTW and Yancoal/RPM at HVO. Both LOM plans have been reviewed by RPM. The Modifying Factors are based on Yancoal's experience in operating similar mines and are considered reasonable by RPM. As such, the level of confidence in the data and assumptions exceed those of a Prefeasibility Study.	
Cut-off parameters	▪ *The basis of the cut-off grade(s) or quality parameters applied.*	▪ A 55% (ad) ROM ash cut off has been applied to the MTW model. ▪ At HVO a 55% (ad) ROM ash cut off is applied in the West, Wilton, Mitchell, Carrington West and Riverview pits. The cut off was not applied at Cheshunt, Southern, Auckland and Auckland South pits. RPM has reviewed and the impact is not material.	
Mining factors or assumptions	▪ *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* ▪ *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* ▪ *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* ▪ *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* ▪ *The mining dilution factors used.* ▪ *The mining recovery factors used.* ▪ *Any minimum mining widths used.* ▪ *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* ▪ *The infrastructure requirements of the selected mining methods.*	▪ A combination of Margin Ranking, Break Even Strip Ratio Analysis, pit design and LOM planning have been used as the basis of converting Coal Resources to Coal Reserves. ▪ The mining method at both Assets utilises draglines and truck and shovel for waste removal. Coal is mined by FEL / Excavator and hauled to ROM locations by rear dump trucks. This method is proven at the mine and considered appropriate for future planning based upon geology and strip ratio. Draglines will be phased out of operation when there are no longer suitable working areas. ▪ Pit designs use criteria based on operational knowledge as well as input and advice from external geotechnical consultants. All pit designs are based on those previously prepared by RTCA for the 2015 Reserves Statement. ▪ RTCA completed a pit optimisation in 2015. Yancoal then undertook a Marking Rank process in XPAC to confirm the economic limits of a number of pits at the Assets. The results of the margin rank indicate that the pits reviewed are economic and that there is potentially economic coal below the RTCA designed pit floors. RPM completed a break even strip ratio analysis as a basis for confirming the pit limits at HVO (Carrington Pits, Riverview East and Wilton/Mitchel/West pit extensions). ▪ The mining factors used were: – minimum coal working section mining thickness of 0.4 m; – minimum parting mining thickness of 0.3 m; – overall average coal losses of 10%; – dilution of 4%; – dilution ash assumed to be 80%; and – in situ moisture standardised to 6.5%. ROM moisture is assumed to be 6.5%. ▪ Inferred Coal has been included in the LOM Plan. ▪ All necessary infrastructure is in place and operational at both MTW and HVO.	

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Criteria	JORC Code explanation	Commentary	
		HVO	MTW
Metallurgical factors or assumptions	▪ *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* ▪ *Whether the metallurgical process is well-tested technology or novel in nature.* ▪ *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* ▪ *Any assumptions or allowances made for deleterious elements.* ▪ *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.* ▪ *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	▪ HVO has three Coal Handling and Preparation Plants (CHPP); Hunter Valley CHPP, West Pit CHPP and the Newdell CHPP. Newdell is only used for coal handling purposes. The metallurgical process is appropriate for the mine. ▪ MTW has two Coal Handling and Preparation Plants; North CHPP and South CHPP. The South CHPP has two product washing. The metallurgical process is appropriate for the MTW mine. ▪ Discrepancies identified between historical yield performance data and mine plan estimates at HVO, with the actual yield higher than predicted. HVO do not record the ROM feed Ash % making analysis of the actual yield results difficult. ▪ Yancoal commissioned a coal quality expert to review production data and determine an estimate of current yield at Assets. Sufficient historical data available to produce a regression relationship between ROM Ash % and the product yield using MTW data. As the HVO pits are mining from the same coal measures it is reasonable to apply the MTW yield regression to the HVO model. ▪ Product logic based on the following: – Total product tonnes estimated from ROM tonnes and yield are derived from the ash / yield regression). – Semi soft coking coal tonnes are estimated from ROM tonnes and the F1.6 yield data in the model. – Total thermal product tonnes is the difference between the total product tonnes and the SSCC tonnes. – Thermal products further split into Low Ash, Mid Ash and High Ash products based on the annual LOM splits in the LOM plan. ▪ No bypass products assumed in the LOM plan though some minor quantities actually produced on site. ▪ No allowance has been made for deleterious elements.	
Environmental	▪ *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	▪ Environmental approval required for the Cheshunt Deep pit within the next five years. Yancoal advised that this is sufficient time to achieve this approval. All other primary approvals are in place for HVO for the short to medium term. ▪ Environmental Approval is required for the Southern and Auckland pits at HVO. ▪ Coarse rejects are placed within the mine overburden emplacements. Washery fines material is stored within specific tailings dams. When tailings dams are full they are dried and require 3 m of inert capping material. ▪ Overburden material has low acid forming potential.	

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Criteria	JORC Code explanation	Commentary – HVO / MTW
Infrastructure	▪ *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	▪ All necessary infrastructure is in place and operational for the current operations at Assets.
Costs	▪ *The derivation of, or assumptions made, regarding projected capital costs in the study.* ▪ *The methodology used to estimate operating costs.* ▪ *Allowances made for the content of deleterious elements.* ▪ *The source of exchange rates used in the study.* ▪ *Derivation of transportation charges.* ▪ *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* ▪ *The allowances made for royalties payable, both Government and private.*	▪ All major infrastructure is in place. Capital forecasts have been included which represent the growth and sustaining requirements for the completion of the LOM plan. ▪ All operating costs are based on LOM planning estimates from Yancoal and have been reviewed by RPM. ▪ Current long-term exchange rate assumptions were provided by Yancoal. ▪ Transport charges based on actual contracted prices taking into account existing Take or Pay arrangements. ▪ NSW state government royalties are included in the estimate. ▪ RPM reviewed all costs and they are considered reasonable.
Revenue factors	▪ *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* ▪ *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	▪ Long term product coal pricing assumptions have been provided by Yancoal Marketing and is based on independent third party research and reporting. ▪ The revenue factors are considered reasonable for the purposes of estimating Reserves.
Market assessment	▪ *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* ▪ *A customer and competitor analysis along with the identification of likely market windows for the product.* ▪ *Price and volume forecasts and the basis for these forecasts.* ▪ *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	▪ A Marketing Study has not been reviewed however markets are well established for the mine's coal products. The projects typically produce up to four main products: – Three Thermal at approx. 12 - 15.5% ash (ad); and – SSCC at approx. 8 - 9% ash (ad). ▪ Based upon these products and specifications, RPM anticipates no foreseeable issues in demand for these products.
Economic	▪ *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* ▪ *NPV ranges and sensitivity to variations in the significant*	▪ The inputs to the economic analysis are derived capital and operating cost estimates outlined in the "Costs" section of Table 1. The source of the inputs is real and the confidence satisfactory. The economic modelling is in real terms and a range of discount rates have been used in assessing NPV.

Criteria	JORC Code explanation	Commentary	
		HVO	MTW
	assumptions and inputs.	▪ The NPV results for the Project produced from economic modelling generated positive and acceptable NPV's for all discount rates and the Project is considered economic from an NPV stand-point. ▪ Sensitivity analysis has been completed on the Project over a range of variable. The Project is most sensitive to changes in exchange rate, revenue and operating costs.	
Social	▪ *The status of agreements with key stakeholders and matters leading to social licence to operate.*	▪ MTW has received development consents which authorise mining at Mt Thorley and Warkworth to 2036. Yancoal will need to continue to work with the local community to earn its social licence. ▪ Native Title has not been extinguished for some areas (including crown land, water ways and access roads) and Native Title may still exist. The majority of the Assets holdings are however not subject to native title and future material risk associated with currently approved projects is not anticipated as a result of the Native Title. It is noted no native title issues occur in the current LOM.	
Other	▪ *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* ▪ *Any identified material naturally occurring risks.* ▪ *The status of material legal agreements and marketing arrangements.* ▪ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	▪ All mining projects operate in an environment of geological uncertainty. RPM is not aware of any other potential factors, legal, marketing or otherwise, that could affect the operation's viability. ▪ At HVO the LOM plan includes pits that are outside the current approvals limits. The pits are forecast for mining from 2021 which RPM believe is an acceptable amount of time to achieve approval. Updating of approvals is an ongoing process and it is reasonably expected that any modifications to existing agreements or additional agreements that may be required can be obtained in a timely manner.	
Classification	▪ *The basis for the classification of the Ore Reserves into varying confidence categories.* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.* ▪ *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	▪ Classification of Coal Reserves has been derived by considering the Measured and Indicated Resources and the level of mine planning. – At HVO the West, Wilton, Mitchell, Carrington West, Riverview and Cheshunt pits. Measured Coal Resources are classified as Proved Coal Reserves and Indicated Resources classified as Probable Coal Reserves, as the pits are either operating or the level of mine planning is considered adequate to support this level of certainty in the Reserves estimate. – The Carrington East, Auckland South, Southern and Auckland pits at HVO are classified as Probable for both Measured and Indicated Resources, as the pit is not currently	

Criteria	JORC Code explanation	Commentary – HVO / MTW
		operating, the level of mine planning is regarded as preliminary and approvals are not in place. – At MTW, Measured Coal Resources are classified as Proved Coal Reserves and Indicated Resources classified as Probable Coal Reserves, as the pits are operating and the level of mine planning is considered adequate to support this level of certainty in the Reserves estimate. ▪ The Inferred Coal Resources have been excluded from the Reserve estimates. ▪ The result reflects the Competent Persons view of the deposit.
Audits or reviews	▪ *The results of any audits or reviews of Ore Reserve estimates.*	▪ Internal peer review of the Reserves Report has been completed.
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which 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.* ▪ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ▪ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	▪ The current active pits at HVO are supported by approximately 80% of Measured Coal Resources. ▪ The shells at MTW is supported by approximately 35% Measured Coal Resources. ▪ The basis of the estimate are actual operating costs and LOM planning. ▪ CHPP's and infrastructure are in place and operating at both MTW and HVO. ▪ Analysis of the coal quality has been undertaken by independent laboratories working under international standards of method and accuracy. Coal products from both MTW and HVO is produced from blended washed coal products. ▪ The level of accuracy will continue to be dependent on the ongoing update of the geological model and monitoring of the Modifying Factors affecting the coal estimate. ▪ Geotechnical studies have been completed for existing pits. Expansion pits will need geotechnical study prior to development.

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JORC Code Disclosure Requirements

Moolarben

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JORC Code, 2012 Edition – Table 1 report template

The completed Table 1, Sections 1, 2 & 3 are in response to the current ADV-BR-11019_Hunting Eagle_CPR Report completed in part by Competent Person Mr Brendan Stats on behalf of RPM.

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	▪ *Nature and quality of sampling (eg 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 (eg 'reverse circulation drilling was used to obtain 1 m 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 (eg submarine nodules) may warrant disclosure of detailed information.*	▪ The Moolarben Coal Complex ("MCC") area includes exploration drillholes identified as MC (MCD, MCR, MCL, MCX), MCOL, WD, WMLB, R and C series. Most WMLB, MC and MCOL holes were logged with downhole geophysical logs (density, caliper, gamma). R and C series were drilled by another mining operation (Ulan Coal Mines Ltd) and geophysical logs were not transferred when MCC was acquired. ▪ The majority of holes (MCD, MCOL, WMLB, WD and C series) are partially cored HQ size. The pre-collar sections from surface to 10 m - 20 m above the Ulan seam have been sampled at 1 m intervals which are logged by the field geologist and representative samples of each metre are sampled and stored. All core was logged by the field geologist and depth corrections using geophysical logs were undertaken. Each coal ply is sampled separately for analysis. ▪ MC and MCOL series coal core was sampled in plastic bags with sample tags inserted in the bags and the information also labelled on the bags with permanent markers. Coal core is not split when sampled and the entire cylindrical section of core per ply is bagged for later analysis by NATA approved coal quality laboratory. ▪ Rotary holes to define limit of oxidation (LOX) were drilled along the interpreted subcrops. These holes were lithologically logged every meter and coal samples were taken every 0.5 m.
Drilling techniques	▪ *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).*	▪ The MCC area includes more than 1,000 drillholes: – 517 core holes, most of these holes were pre-collared to within 20 m of the target Ulan seam and then diamond cored using triple tube (HQTT) to below the seam. Several holes have been fully cored to gather geological information on the full stratigraphic package and at least five large diameter holes (6") for full washability analysis. – 285 rotary holes. – 223 rotary air blast for limit of oxidation definition. ▪ All holes were drilled vertically which is considered the most appropriate given the flat lying nature of the deposit.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	▪ *Method of recording and assessing core and chip sample recoveries and results assessed.* ▪ *Measures taken to maximise sample recovery and ensure representative nature of the samples.* ▪ *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	▪ Chip sample recoveries are not relevant as these samples are only used to define limit of oxidation not to assign quality parameters to the coal seam. Core recoveries are calculated using geophysical logs and measured core lengths recorded in the lithology logs. ▪ Core recovery for the coal seams is generally very good (>95%). Core loss is infrequent in this deposit. Samples with core loss greater than 5% were excluded from the geological model and Resource estimation. No bias related to sample recovery has been identified and is considered very unlikely. The Ulan seam is a thick, consistent seam with thin partings (~0.03 m) dividing the plies, the only thick parting (CMK) is modelled separately and not included in the Resource estimate
Logging	▪ *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral 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 holes have detailed lithological logging through the whole length of the hole (100%), which have been used for seam correlation supported by geophysical logs where available. ▪ Core holes include geotechnical logging, point loading tests and selected samples are sent to geotechnical labs to support mining studies. Most recent MC, MCOL and WMLB series holes (except redrills, some pilot holes and piezometer holes) have been geophysically logged to total depth and core has been photographed. ▪ The amount, type and detail of information collected from logging of the drillholes is considered appropriate to support the Resource Estimate.
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.*	▪ The entire cored section of each coal ply is placed in the sample bag. No splitting, subsampling or sawing takes place outside the laboratory. Coal quality analysis undertaken by NATA approved laboratories which comply with Australian Standards for coal sample preparation. ▪ Bureau Veritas and SGS Australia (for the latest samples) analysed the core samples from the MC, MCOL and some WMLB series holes. CCI Australia analysed earlier samples from WMLB holes. All laboratories followed similar treatment procedures. Coal samples undergo proximate analysis, relative density, total sulphur and specific energy; and selected plies (DTP and DWS) were tested for hardgrove grindability (HGI). The remaining sample undergoes float/sink testing and each density fraction is analysed for ash. Clean coal analysis has been undertaken for each ply at 1.50 g/cc or 1.60 g/cc density, including Proximate Analysis, sulphur, calorific value, HGI, phosphorous and ash analysis. ▪ Based on ply thickness and HQ core size the amount of sample available for testing is reasonable for the tests completed.
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,*	▪ All coal core for the Ulan seam is sampled on a ply by ply basis. The sampling procedure has changed since last Resource report of 2014. Previously drill logs were corrected to downhole geophysical logs after sampling. Current procedure includes reconciliation of geophysical logs with actual core prior to the sampling process to ensure core loss is accurately reflected in the samples and ply sampling is consistent. Laboratory analysis of samples is conducted by NATA approved companies in accordance with Australian Standards.

Criteria	JORC Code explanation	Commentary
	etc. ▪ *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	▪ Groundsearch Australia Pty Ltd geophysically logged most of the holes. Groundsearch follows their calibration protocols for all the tools before using them on site. ▪ All coal quality results were checked and verified by Bureau Veritas before final reports were issued. Data was verified for obvious errors prior to loading into the geological model.
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.*	▪ No anomalous intersections have been identified. The Ulan seam has a consistent nature. ▪ Twinned holes are not a standard in the coal industry. A non-core prior to a core hole has been used in the past to ensure consistency with coal ply sampling as samples were taken before geophysical corrections. This practice ceased due a change in procedure (now sampling is carried out after reconciliation with geophysical logs). Where there are two closely spaced core holes it likely the later hole was drilled for core recovery purposes, only drilled for data verification if there was any uncertainty with the existing data. ▪ All quality data is checked by modeller for anomalous results and are investigated upon identification. Laboratories keep a reserve sample in case re-analysis is required as part of the standards. ▪ Laboratory raw coal and washability data is kept in digital format on site. Digital data is provided in MS Excel spreadsheets which is then loaded into Geobank. All data is also loaded into Minex and identified anomalies are subsequently reviewed by modeller and site geologist. ▪ Coal density is adjusted to in situ moisture, no other adjustments to quality data takes place.
Location of data points	▪ *Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* ▪ *Specification of the grid system used.* ▪ *Quality and adequacy of topographic control.*	▪ Drillhole collars and mined surfaces have been surveyed by registered surveyors using GPS equipment. ▪ The current grid system is GDA94 in Zone 55. ▪ A LiDAR topography survey was acquired in 2010 to an accuracy of +/- 0.1 m which is considered very accurate for the Resource estimation process and mined out areas are surveyed by registered site surveyors.
Data spacing and distribution	▪ *Data spacing for reporting of Exploration Results.* ▪ *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* ▪ *Whether sample compositing has been applied.*	▪ Drillhole spacing varies from <250 m to >1 km towards the edges of the lease. Drillhole data intersecting the Ulan seam exist outside the MCC tenements and two coal mines mining the Ulan seam (Ulan and Wilpinjong) are located adjacent to MCC. ▪ Resources were mostly extended to lease boundaries as drillholes and existing mine operations intersected and target the Ulan seam within and outside the MCC tenement boundaries. ▪ Samples may be composited in order to represent seams or plies as is standard.
Orientation of data in relation	▪ *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	▪ Strata generally maintain a north-westerly strike and dip approximately 1° - 3° northeast. No structures have been identified at MCC.

Criteria	JORC Code explanation	Commentary
to geological structure	▪ *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.*	▪ No sampling bias has taken place. All drillholes were drilled vertically. Sampling from vertical drillholes is perpendicular to the coal seams.
Sample security	▪ *The measures taken to ensure sample security.*	▪ All samples are sealed and marked appropriately with a tag inside and outside the plastic bag. Information is recorded on a third tag which is kept on site and on drillhole sampling schedule forms. Copies of the sampling schedule are despatched with the samples. Coal samples are sent by secured courier to the laboratory.
Audits or reviews	▪ *The results of any audits or reviews of sampling techniques and data.*	▪ Sampling techniques were reviewed by Mr. R. Dyson (Operations Manager – MBGS) in September 2015 and minor recommendations were reviewed by site. Coal quality data was reviewed by Bob Leach (Coal quality expert - BLPL).

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
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 license to operate in the area.*	▪ MCC holds tenements covering an approximate area of 105 km^2 containing five mining leases (65 km^2) and three exploration leases (65 km^2) partially overlapping two mining leases (25 km^2). ▪ A mining purpose lease (MPL0315) held by Ulan Coal Mines Ltd (UCML) overlaps a small portion (approx. 0.3 km^2) of EL6288 in the northwest of the tenement. This MPL does not affect Coal Resources for MCC as it only provides surface rights for UCML to a depth of 15 m; Coal Resources in this area exist at depths greater than 50 m. ▪ Exploration leases cover mainly the northern and southern areas of MCC: EL6288, EL7073, EL7074 and Mining leases cover the central area and extent to the north under EL6288; where current mine plans exist: ML1605, ML1606, ML1628, ML1691 and ML1715. There are no known impediments for the majority of the area, except for a small sensitive area called The Drip, considered a local natural attraction located near the northeast boundary of EL6288. ▪ MCC is owned by Yancoal Australia Pty Ltd (81%), Kores Australia Moolarben Coal Pty Ltd (9%) and Sojitz Moolarben Resources Pty Ltd (10%).
Exploration done by other parties	▪ *Acknowledgment and appraisal of exploration by other parties.*	▪ Exploration in the area commenced in 1950 but historical mining at UCML (immediately west of MCC) has occurred since 1920's. A summary of key exploration periods completed by other parties is provided below: – The New South Wales Mines Department carried out initial exploration in 1950 with 6 core holes.

Criteria	JORC Code explanation	Commentary
		– In 1977 the Joint Coal Board drilled 21 core holes. – In the late 1970's the Energy Recycling Corporation drilled 33 core holes inside MCC leases and 41 core holes in the surrounding areas. – White Industries in early 1980's drilled 25 core holes. – In late 1980's Ulan Coal Mine drilled 38 holes (core and non-core). – Between 1999 - 2003 the Department of Mineral Resources drilled 47 holes (core and non-core) to define potential open cut areas. ▪ All drilling includes detailed lithological logging, the majority of holes include downhole geophysical logs and most core holes were analysed for quality parameters. Exploration in the area is to a good standard and appropriate for Resource estimation.
Geology	▪ *Deposit type, geological setting and style of mineralisation.*	▪ The MCC coal deposit is located on the western margin of the Sydney Basin's Western Coalfield. Sedimentary strata of Permian, Triassic and Jurassic age overlie Carboniferous granite and folded metamorphic basement and dip towards the northeast at 1° - 3°. The Permian strata contains the coal-bearing sequence (the Illawarra Coal Measures) and the underlying barren Shoalhaven Group, which in turn unconformably overlie the Lachlan Fold Belt basement rocks. Igneous activity occurred in the area during the Tertiary, manifesting as extrusive basalt flows, intrusive dykes, sills and plugs and explosive diatremes. The Illawarra Coal Measures contain the Ulan seam which is the main coal seam of economic significance in this part of the basin. MCC is currently a thermal open cut and underground coal operation.
Drillhole Information	▪ *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* – *easting and northing of the drillhole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar* – *dip and azimuth of the hole* – *down hole 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.*	▪ More than 1,000 holes have been drilled at MCC. Individual drillhole results are not tabulated and presented in this report as it is not considered material to understand the deposit. All drillhole data that pertains to MCC and surrounding area has been loaded and used to construct the geological computer model which was used to estimate Coal Resources. The drillhole locations are shown in Resource figures accompanying this report. Coal Resource tables also presented in this report present summary information on each ply of the Ulan seam including: – average thickness; – average in situ density; – average raw ash; – average sulphur; – average calorific value; and – depth range.
Data aggregation methods	▪ *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*	▪ All laboratory data is loaded into the computer model and no data is excluded. No cut-offs have been applied to the loaded data or to the computer model.

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Criteria	JORC Code explanation	Commentary
	▪ *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 Ulan seam is sampled on a ply by ply basis. Weighted averages were used to show Coal Resources as working sections. Where compositing of coal quality samples is necessary, the coal quality variables are weighted by density and thickness.
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 drillhole 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 (eg 'down hole length, true width not known').*	▪ The Ulan seam extends across the MCC leases and through the Western Coalfields. Seam dip is close to horizontal. Verticality (Groundsearch hole deviation log) has been acquired in most recent holes and it has shown minimal deviation (<5% from vertically drilled holes). Due to the shallow dip of the seams and vertical nature of drilling, the seam thickness is considered to very close to the true thickness.
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 be limited to a plan view of drillhole collar locations and appropriate sectional views.*	▪ All relevant figures depicting information considered material to the Coal Resources reported are contained within the JORC report associated with this Table 1.
Balanced reporting	▪ *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	▪ All drillhole results are checked prior to loading into the computer model. Laboratory coal quality results have been used as reported. The Moolarben Coal Resource table presents summarised average coal quality parameters and thickness of reported intervals. This coal deposit is consistent and presenting averaged data is considered representative of the deposit.
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.*	▪ An airborne magnetic survey was carried out over the planned underground longwalls (UG1 and UG2) to identify magnetic features. This survey identified a number of potential igneous bodies which may affect underground mining. Drilling targeted two main features and confirmed two diatremes. RIM borehole to borehole survey has been undertaken to define the size and shape of the diatremes at seam level but one of these features requires further investigation; long hole drilling across the first longwall panel was carried out. ▪ Several piezometers to monitor groundwater levels have been installed across the deposit at different stratigraphic horizons. ▪ Core holes include geotechnical testing and logging.
Further work	▪ *The nature and scale of planned further work (eg 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*	▪ Recommended work includes infill drilling to increase Resource classification to measured status within the mine plan area (OC3 pit). ▪ Resource figures in this report show an area within a proposed open cut pit shell with Inferred status that require further exploration.

Criteria	JORC Code explanation	Commentary
	and future drilling areas, provided this information is not commercially sensitive.	

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary	
		Open Cut	Underground
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 Mineral Resource estimation purposes.* ▪ *Data validation procedures used.*	▪ Drillhole data is entered into Geobank and then depth corrected to downhole geophysical logs. Once the data is corrected it is flagged as completed and then requires special permissions to edit. Digital drill data is loaded into Minex for modelling and reporting. Seam thickness and ply correlations for each seam are checked in the Minex model via cross sectional analysis and contour plots. ▪ Prior to modelling, statistical reports are generated to check anomalies have not been introduced to the dataset. Any anomaly is reviewed against original logs and reports.	
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.*	▪ The Competent Person has experience with several coal Assets in the Western coalfields. A site visit to MCC was carried out in April 2018, during which the open cut and underground operations where viewed as well as technical discussions with relevant personnel on site. The Competent Person also reviewed and discussed the geological data and geological model with the Geologist who built the geological model.	
Geological interpretation	▪ *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* ▪ *Nature of the data used and of any assumptions made.* ▪ *The effect, if any, of alternative interpretations on Mineral Resource estimation.* ▪ *The use of geology in guiding and controlling Mineral Resource estimation.* ▪ *The factors affecting continuity both of grade and geology.*	▪ Strata at MCC dips gently to the northeast at approximately 1° - 3°, as does the remaining Permian and Triassic sequence. This has been confirmed from drillhole data and adjacent mine operations (Ulan Coal Mines and Wilpinjong). ▪ No major structures within the mine plans have been identified; but two faults are interpreted from regional mapping and drillhole data in the north of the deposit. Small scale unidentified faults may exist but these will have little effect on the Resource estimate. The major risk to mining is unidentified igneous bodies disrupting the coal seam, however the effect on the Resource estimate will be minor compared with the total area of the deposit, as seen in adjacent operations. ▪ The Ulan seam and Triassic/Permian stratigraphy are highly consistent across the leases and beyond, the deposit geology is well understood. There is a high degree of confidence in the geological interpretation. ▪ Coal Resources reflect this confidence level with most of the MCC area considered a Measured Resource.	
Dimensions	▪ *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan*	▪ MCC leases cover a length of approximately 20 km (north-south) and up to 8 km wide (east-west). The Ulan seam is present over most of the area covered by the leases with exception	

Criteria	JORC Code explanation	Commentary	
		Open Cut	Underground
	width, and depth below surface to the upper and lower limits of the Mineral Resource.	towards the west boundary where the seam subcrops at the edge of the basin. Drillhole data outside the lease and in adjacent mine operations (north-west and east) proved continuity of the seam extending beyond the lease area. Overburden thickness ranges from surface to <400 m from southwest to northeast; but >90% of the deposit has a the depth of cover < 200 m. Coal Resources are not limited to any depth cut-off as the seam is thick enough (approx. 11 m) to be mined by either open cut or underground methods.	
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 Mineral 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 (eg 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 correlation between variables.* ▪ *Description of how the geological interpretation was used to control the resource estimates.* ▪ *Discussion of basis for using or not using grade cutting or capping.* ▪ *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	▪ The MCC geological computer model was built using Minex software (version 6.5.2). The model was generated using Minex proprietary growth algorithms. Drillhole data was used to control the model and there is enough data within and outside the lease to avoid extrapolation for Resource estimation. Resource estimation was done in Minex using vertical sided polygons, seam thickness and in situ density. ▪ In situ density grids were produced at an estimated in situ moisture of 6%. ▪ Structural and quality grids were generated using 20 m mesh size mesh size. ▪ No assumptions are made regarding by-products. ▪ Resource classification and estimates are limited and based entirely on drillhole data and supported by existing data outside MCC. Resources were mostly extended to lease boundaries as drillholes and existing mine operations intersected and target the Ulan seam within and outside the MCC boundaries. Inferred and Indicated Resources on the western edge of OC3 and to the west of EL7073 were not extended beyond the last drillhole due to the lack of data to locate the seam subcrop and define seam continuity and character, which can rapidly change due to proximity to the edge of the basin. ▪ No coal quality cut-offs were used however the A2 ply is excluded from the Resource Estimate on account of quality. A2 plies have previously been mined and reported as a Resources, however currently the operation removes it as waste. The remaining Ulan seam plies are mined in the open cut pits and the quality of the plies means that applying a typical quality cut-off would have no material impact on the Resource Estimate. ▪ The process used by the previous Competent Person to develop the 2017 geological model used to estimate Resources was to load all drillhole data into a Minex database after validation of seam depth intervals and correlation has been undertaken with geophysical logs. Seam and sample statistics reports, cross sections and plots with drillhole annotations for each seam through the deposit are output from Minex and reviewed. At the end of 2015 the entire database was reviewed and seams above the Ulan seam were correlated. RPM reviewed the drillhole database and a selection of the drillhole records in order to understand and validate the drillhole data. ▪ Reconciliation with previous estimates and mine production was completed and the results support the confidence in the Resource. Resource estimates are completed using mined out surveyed topography as at 30 June 2018. Comparison with recent exploration supports the	

Criteria	JORC Code explanation	Commentary	
		Open Cut	Underground
		conclusion that any future exploration will have minimal impact on the current Resource estimate due to the consistent nature of the Ulan seam. Also the bulk of the Resource is contained within the Measured and Indicated classifications with large amount of control from close spaced drillhole data and unlikely to change with new data.	
Moisture	▪ *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	▪ Coal Resources were reported at in situ moisture of 6%. This was based on knowledge of the coal in the area and current operations. Other coal quality parameters were reported at air dried basis (adb).	
Cut-off parameters	▪ *The basis of the adopted cut-off grade(s) or quality parameters applied.*	▪ The small Resources associated with the Moorlaben and Glen Davies seam is only included in the Resource Estimate where the seams are coalesced and have a thickness of around 3.0m. ▪ No coal quality or thickness cut-off parameters were applied to the Ulan seam (apart from excluding the A2 ply) on the basis that the seam is thick and quality uniform and applying reasonable cut-offs for thickness or quality would have no material impact on the Resource Estimate.	
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 Mineral 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.*	▪ MCC contains an active open cut operation mining the Ulan Seam in working sections and has commenced underground longwall operations on the lower section of the Ulan seam. ▪ MCC mine plan considers open cut potential mostly where depth of cover is less than 100 m. Coal Resources for the uppermost ply of the Ulan seam (A1) is only reported at less than 100 m depth because it is considered that this ply only have economic potential if mined by open cut methods. The rest of the Ulan seam can be mined by either open cut or underground methods as it is currently mined at MCC and adjacent operations. It is noted that currently only a portion of the Ulan seam (DWS) is mined using the longwall, however the rest of the seam could be mined by incorporating Top Coal Caving. ▪ Other seams above the Ulan seam are present within the deposit but only Moolarben and Glen Davis seams are considered a Resource in some areas of the open cut pit OC4 where these two seams coalesced to a thickness of approximately 3 m. This report considers these two seams as an Inferred Resource at this stage due to lack of quality data to better define economic mining potential.	
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 treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical*	▪ No metallurgical assumptions are made. MCC currently extracts the full Ulan seam and beneficiates to produce an export thermal product to market specifications.	

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Criteria	JORC Code explanation	Commentary: Open Cut / Underground
	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.*	▪ Yancoal Australia maintains the MCC area complying with all mining and environmental conditions pertaining to the relevant leases. ▪ There are not known impediments for mining at MCC.
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 (RD) has been determined in most analysed samples on an air dry basis using Australian Standards. RD is then adjusted to in situ moisture basis using the Preston & Sanders equation at an estimated in situ moisture of 6%.
Classification	▪ *The basis for the classification of the Mineral Resources into varying confidence categories.* ▪ *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade 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.*	▪ The combination of all existing data within and outside MCC including regional drillhole data as well as surrounding mines (Ulan and Wilpinjong) confirms the presence of a very consistent Ulan seam across the area. – Measured Resources – supported by drillholes approximately 500 m apart but up to 900 m apart (south and north areas). The consistent nature and predictability of the Ulan seam and utilizing public information and knowledge of neighbouring operations provides confidence in Measured status Resources. – Indicated Resource – mainly towards the edge of the lease where there is supporting data outside the MCC tenements. Classification supported by drillholes up to 1.2 km. – Inferred Resources – supported by drillholes up to 2 km apart. Inferred Resources exist on the edges of the lease, classified using data outside the MCC tenements to extend Resources to the lease boundaries.

Criteria	JORC Code explanation	Commentary	
		Open Cut	Underground
		▪ Inferred Resources on the western side of proposed open cut pit OC3, and to the west of EL7073 were not extended beyond drillholes to the western lease boundary due to lack of data defining the Ulan seam subcrop as it onlaps the Gulgong granite. ▪ Resource estimates exclude the A1 Ply on areas with depth of cover >100 m due to unlikely mining potential by underground methods. ▪ A2 plies are no longer reported as a Resource because the open cut operation is removing them as waste.	
Audits or reviews	▪ *The results of any audits or reviews of Mineral Resource estimates.*	▪ An updated geological model for 2017 Coal Resource estimation was generated in March 2017 - 48 new holes were added. The reconciliation with the geological model used for the previous Resource estimate showed a minor change (<1%) in Coal Resources due to model update. ▪ No external audits or reviews have been completed.	
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Mineral 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.*	▪ Resources have been classified as either Measured, Indicated or Inferred depending mainly on the density of drillhole data and supported by existing mine operations. ▪ Prior to drilling, seam and horizon depth intervals predictions are generated from the geological model and after drilling the predictions are compared with the actual drilling results. The reliability of the predictions/differences support the level of confidence for each category determined by the Competent Person. ▪ Coal Resources were estimated for areas defined by drillhole data, an area of approximately 90 km^2. As single data points in a tabular coal environment such as this will have little or no effect on the total Coal Resource, the estimate is considered to be a global estimate.	

Section 4 Estimation and Reporting of Ore Reserves

The completed Table 1, Sections 4 is in response to the current ADV-BR-11019_Hunting Eagle_CPR Report completed in part by Competent Persons, Mr Doug Sillar (Open Cut) and Mr Graeme Rigg (Underground) on behalf of RPM.

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

RPMGLOBAL

Criteria	JORC Code explanation	Commentary	
		Open Cut	Underground
Mineral Resource estimate for conversion to Ore Reserves	▪ *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* ▪ *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	▪ The Coal Resource estimate used as the basis for this Coal Reserves Statement is described as part of this statement. The Resource estimate has been prepared by Mr. Brendan Stats. The Competent Person, Mr. Stats, has sufficient expertise that is relevant to the style of mineralisation and type of deposit and activity to qualify as a Competent Person as specified under the JORC Code and is a member of the Australian Institute of Mining and Metallurgy . ▪ The Resources Statement was compiled in accordance with The JORC Code 2012 Edition. ▪ The Coal Resources reported are inclusive of the Coal Reserves. ▪ The same geological model has been used for the estimation of Resources and Reserves.	
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.*	▪ A site visit to the Moolarben Mine was undertaken by representatives of RPM in April 2018. The Reserves Competent Persons were unable to attend but interviewed the representative following the visit. The outcome of this visit was observation of the Asset area to better understand location, environmental, social, groundwater and existing infrastructure consideration.	
Study status	▪ *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* ▪ *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	▪ Moolarben is an operating mine. LOM studies undertaken during the project planning and design stages have now been complemented by actual operating experience and ongoing exploration and assessment. ▪ Yancoal completed a Life of Mine Plan in 2017. ▪ The level of detail in the LOM plan is sufficient to meet requirements of JORC.	
		▪ Moolarben is an operating mine consisting of a number of operating Open Cut pits (OC1, OC2 and OC4) and a planned pit (OC3).	▪ Moolarben is an operating mine consisting of an operating Underground mine (UG1) and planned undergrounds (UG2 and UG4).
Cut-off parameters	▪ *The basis of the cut-off grade(s) or quality parameters applied.*	▪ A thickness cut-off of 0.3 m and ash cut-off of 50% is applied to the A1 and ELW plies which are the top and bottom plies of the Ulan seam. ▪ The A2 plies are excluded from Resources and hence Reserves in all OC pits due to high ash content of the coal.	▪ There are no coal quality cut-off parameters used to eliminate the conversion of Coal Resources to Coal Reserves. LOM planning has been used to determine whether Coal Resources will convert to Coal Reserves.
Mining factors or assumptions	▪ *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* ▪ *The choice, nature and appropriateness of the selected*	▪ A combination of break-even strip ratio, pit design and LOM planning have been used as the basis of converting Coal Resources to Coal Reserves. RPM estimated a break even strip ratio and compared against each of the pit shells to confirm pit limits.	▪ LOM planning has been used as the basis of converting Coal Resources to Coal Reserves. ▪ The selected mining method is that in use in the operating mine, i.e. conventional

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Criteria	JORC Code explanation	Commentary – Open Cut	Commentary – Underground
	mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. ▪ *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* ▪ *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* ▪ *The mining dilution factors used.* ▪ *The mining recovery factors used.* ▪ *Any minimum mining widths used.* ▪ *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* ▪ *The infrastructure requirements of the selected mining methods.*	▪ The OC mining method at Moolarben open cut is conventional truck and excavator with some dozer assist on waste. The operating method is well proven and suitable for the nature of the deposit. ▪ Pit slopes are based on practical and geotechnical criteria which include 12 – 15 m berm every 45 m vertical. Pit walls are typically pre-split with the exception of paleo channel areas at OC2 where an additional berm is required 50 m above the coal. ▪ The mining factors are based on reconciliations of production between 2013 and 2017. Assumptions used were: – Minimum coal mining thickness of 0.3 m; – Overall mining loss of 1%; – Loss and Dilution: ▪ coal roof loss of 0.055 m; ▪ coal floor loss of 0.055 m; ▪ coal roof dilution of 0.055 m; ▪ coal floor dilution of 0.055 m; and – The quality of diluting material is relative density of 2.4 t/m^3, and ash of 76% (ad). ▪ In situ moisture assumed to be 11 - 14%. ROM moisture is assumed to be 9.5%. Washed moisture is assumed to be 11.5%. ▪ A1 recovery of 55% and additional ash 13%. ▪ ELW recovery of 90%. ▪ WS1L recovery, total moisture of: – OC1 = 98% and 6.1%; – OC2 = 98% and 6.5%; – OC3 = 93% and 6.5%; and	longwall extraction with continuous miner development. ▪ Geotechnical studies were used to support the mine layout parameters. ▪ The mining factors used were: – Development roadways 5.4 m wide by 3.4 m high – Longwall operating height 3.0 m - 3.4 m – Longwall panel width 250 m - 300 m – It is assumed that a combined average of 100 mm of in situ working section will be lost from the roof and floor of the mineable coal sections during development and longwall extraction; – It is assumed that an average of 50 mm of higher ash material will be mined with both the roof and the floor of the coal seam during development and longwall operations, thereby diluting the in situ coal quality. – The quality defaults assigned to the UG1 roof were assumed to be relative density of 1.64 t/m^3, ash of 44%; – The quality defaults assigned to the UG1 floor were assumed to be relative density of 1.51 t/m^3, ash of 30%; – The quality defaults assigned to the UG4 roof were assumed to be relative density of 1.47 t/m^3, ash of 24%; – The quality defaults assigned to the UG4 floor were assumed to be relative density of 1.56 t/m^3, ash of 34%; – The quality defaults assigned to the UG2 roof were assumed to be relative density of 1.62 t/m^3, ash of 42%;