

18 AUGUST 2016

TABLE 1 – CHECKLIST OF ASSESSMENT AND REPORTING CRITERIA (THE JORC CODE, 2012 EDITION)

The following table provides a summary of important assessment and reporting criteria used for the Maules Creek Mine in accordance with the Table 1 Checklist of Assessment and Reporting Criteria, in The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code) 2012 Edition. Criteria in preceding sections apply, where applicable, to the succeeding sections.

Section 1 – Sampling Techniques and Data

Criteria	Explanation
<i>Sampling Techniques</i>	<p>A very substantial borehole data base exists for the Maules Creek area with data acquired both by Whitehaven and by a number of prior title holders over an extended period dating from the 1970's. In this context, the data has been acquired in a variety of formats over extended time periods with widely varying content, particularly in regards to lithological coding and analytical data. This dataset has been recoded and unified into CoalLog format by an extensive conversion and data entry program.</p> <p>All points of observation are based on cored holes with geophysical logs. Base of weathering surface defined by a combination of visual estimates and proximate analysis on core samples when available.</p> <p>All samples for coal quality are based on cored holes only. Samples collected between 1975 to present with analysis based on the accepted Australian standard at the time of collection. Sample intervals within a seam were determined after examination of the geological and geophysical logs, and the sampling scheme adopted for surrounding drillholes. All coal and in-seam stone bands were sampled. The standard downhole geophysical logging suite is Calliper, Natural Gamma and Density. These logs are not used to estimate coal quality parameters for resource calculations, and are only used for the identification of coal seam roof/floor levels, the identification of stone bands within the seams or to confirm the presence of igneous intrusions in non-cored holes. All full seam intersections are considered potential working sections. Resources were determined on full seam sections.</p> <p>Most samples crushed to top size limit (11.2mm). Subsequent analysis consisted of raw coal proximate, SE, TS, CSN, RD; washability completed at various steaming and coking fractions on likely working sections; coking plastometric testing was conducted but considered to be unreliable due to elapsed time between drilling and sampling to lab testing. Pretreatment and detailed sizing has also occurred on a limited number of samples most of which were from large diameter boreholes.</p>
<i>Drilling techniques</i>	<p>Cored holes are 8C core (200 mm diameter), GC (150 mm diameter), 4C core (100 mm diameter), HQ Triple Tube core (61 mm diameter), and NQ Triple Tube core (45 mm diameter). Open holes are generally open hole hammer or PCD air blast in the 90 mm to 120 mm range. Some limited mud drilling has also occurred.</p> <p>All holes have been drilled vertically.</p>
<i>Drill sample recovery</i>	<p>Drill sample recovery only relevant for cored holes. Open hole samples limited to determination of base of weathering or identifying heat affected coal only. That is, chip results are only indirectly used in the model for determination of base of weathering surfaces and intruded aureoles.</p> <p>Recent drill core is logged in accordance with Whitehaven Coal procedure using the CoalLog coding system and LogCheck software. Coal intervals are logged in detail by describing its coal brightness profile. Volumetric recoveries determined by the analysing laboratory are primarily used to assess core recoveries. Volumetric recoveries are recalculated following adjustments using downhole geophysical logs made to sample length for broken core intervals. Coal quality data was incorporated into the coal quality model if it meets the following criteria:</p> <ul style="list-style-type: none"> • Linear core recovery of greater than 90%; • Linear core recovery of between 80% and 90% where volumetric recovery is above 65% and the raw ash contents are consistent with values from surrounding drillholes; • A geophysical (wireline) log, to allow confirmation of linear seam recovery and lithological logging.

Criteria	Explanation
	<p>Observations suggest that core loss is concentrated on the more fragile bright coal bands. Consequently, samples with losses tend to have higher ash results than those with high recovery. No statistics have been performed to test this observation.</p>
<i>Logging</i>	<p>Recent (2010+) open holes drilled have been sampled and photographed at 1 m intervals with samples stored in trays or clip lock bags. Chips are logged in the field and then corrected to geophysics. Coal brightness is not generally recorded on open holes. No detailed sample records exist for open holes drilled prior to 2010; however, corrected lithological and geophysical logs are available for most holes in hardcopy and softcopy. Cored holes have detailed lithological records. Approximately 10% of cored holes drilled since 2000 have geomechanical logs and an extensive database of geotechnical testing has been established. All holes were wireline logged if possible (i.e. not blocked). The minimum suite of logs is gamma, density, and calliper. Acoustic scanning has been completed on a selection of holes across the deposit. Coal and non-coal strata from chip and core descriptions encoded in CoalLog lithology database on a hole by hole basis. Coal seams correlated between holes with corrections to database made using full screen editor. The standard and level of detail is considered appropriate for mineral resource estimation. Total aggregate length of cored and open holes available is 112,357 m, in 997 drillholes.</p>
<i>Sub-sampling techniques and preparation</i>	<p>NQ, HQ, 8C, GC, and 4C coring used to ensure sample is representative, and that sufficient material is available for sub-samples. Sample preparation, subsampling and quality control procedures ensured by using NATA accredited commercial labs employing recognised QA procedures and following Australian Standards for coal testing.</p> <p>Samples sent to the laboratory are sub-sampled and reserve samples are placed in storage. This is standard industry practice, however, most reserve samples for historic programs have been lost or destroyed. Reserve samples are available for drilling completed since 2010. No reserve samples of holes drilled earlier are available.</p> <p>Cored interseam partings of holes drilled since 2000 are generally available in areas which have not been mined out. Cored hole analysis samples are generally crushed. These samples have been taken at sub-ply level for proximate analysis, relative density (RD), total sulphur, and calorific value (CV). Samples then composited into working sections for washability and clean coal composite analysis.</p>
<i>Quality of assay data and laboratory tests</i>	<p>All coal analysis based on the accepted Australian standard at the time.</p> <p>The coal quality database is in LogCheck format. The resultant database appears to have a valid range of data and exhibits sound regression relationships such as ash-CV, ash-RD and washability-ash.</p> <p>All laboratories involved in the sample analysis since at least 2000 have a system in place of blind assaying and quality control. These records are maintained at the respective laboratories.</p> <p>Laboratories used to analyse coal cores from the Maules Creek deposit comply with Australian Standards for sample preparation and coal quality testing, and are certified by the National Association of Testing Authorities Australia (NATA). As part of NATA registration there is an obligation to complete all analysis in accordance with relevant round robin checks and other routine checking procedures to ensure they meet the required accuracy for each tests.</p>
<i>Verification of sampling and assaying</i>	<p>Coal intersections used in the geological model were verified by geophysical measurements obtained by wireline logging, carried out by an independent contractor, supported more recently by digital photographs. Coal intersection depths and seam correlations have been validated by independent reviewers/auditors and/or alternative company personnel (Database Geologist).</p> <p>Twinned holes are not used. Pre 2009 data was verified by Novacoal (a Rio Tinto Subsidiary). 2010 and 2012 drillhole data acquisition and verification protocols were by MBGS geologists. Boreholes drilled since 2012 have been validated by Whitehaven staff geologists.</p> <p>Drillhole collar, lithology and basic raw coal quality data is stored in a LogCheck database and exported to a Vulcan database for modelling. All available source field records, lab reports, core photographs, survey data etc. are stored in electronic form on the Whitehaven Coal network, and hard copy in borehole folders at the company's Gunnedah office. The moisture basis of coal quality data may have been adjusted. Values stored in the Log check database are on an air dried basis.</p> <p>Anomalous results are checked and reanalysed using their reserve sample as required. The resultant database is cross referenced to ensure it has a valid range of data and exhibits sound regression relationships such as ash-CV, ash-RD and washability-ash.</p>
<i>Location of data points</i>	<p>The declaration is based on survey surface as of the 31st March 2016. This surface was an</p>

Criteria	Explanation
	<p>end of month surface compiled by the site surveyor. The surface was patched into the undisturbed portions of a topographic data from a LiDAR survey undertaken over the whole project during 2010. This early data was collected prior to mining operations commencement and is consequently prior to any disturbance.</p> <p>Mined out seam limits for each seam were also provided by the site surveyor and used to manually clip the occurrence of each seam. Drillholes and pit limits surveyed by Mine surveyors. Drillhole collars all within 1.5m of DTA elevation. Grid system is MGA 56, Datum GDA 94.</p> <p>Pre 2010 borehole collars were surveyed by a Registered Surveyor, using triangulation and reported using ISG Coordinates. 2010 and 2012 borehole collars were surveyed by a Registered Surveyor, utilising GPS methods and reported using MGA coordinates. Surveyor's Reports are not available for some boreholes, however every effort was made to verify borehole locations from old reports etc.</p>
<p><i>Data spacing and distribution</i></p>	<p>The Maules Creek model covers an area of ~70 km² and contains 997 boreholes of which 765 are directly used in the model. Bore data has been collected over the previous 40 years with the resultant dataset reflecting the standards and exploration targets of the time of the works. There is a bias in the dataset towards information on the Braymont seam which represents the principal open cut target and 26% of the total resource. There are also high concentrations of boreholes, often non-cored, around shallower coal occurrences likely to be amenable to shorter term open cut operations. This combined dataset exhibits a high level of variability in data distribution and reliability both in plan and stratigraphically. Cored holes (coal quality data points) are generally spaced at <500m for most of the initial Open Cut resource with open holes infilled to a 100m x 200m grid. Cored borehole spacing in the north and extreme south of the project is 400m-1500m between drillholes.</p> <p>Many boreholes intersect only part of the sequence i.e. were spudded stratigraphically below one or more seams, or were not drilled deep enough to intersect lower seams. The vast majority of non-cored and cored holes have been geophysically logged, providing roof and floor seam picks.</p> <p>Raw, float and clean coal composite data stored in Excel database for each ply and working section (as analysed). In situ Density (10%), ash, raw sulphur and specific energy grids produced for most plies. Washability and clean coal composite data is also available as based on an extensive database in LogCheck format. Sizing data sourced from two large diameter programs are also available.</p> <p>The data spacing and distribution is considered by the Competent Person to be sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Where coal intersections have been sampled in multiple sections per seam, compositing of samples, on a length x RD basis, has been applied.</p>
<p><i>Orientation of data in relation to geological structure</i></p>	<p>The orientation of data in relation to geological structure is not believed to have introduced any sampling bias.</p> <p>The high degree of differential subsidence across the basin causes the development of thinner and higher ash coal seams towards the western onlapping edges of the basin, with thicker coal accumulations occurring towards the basins centre. This introduces east west anisotropy to the deposit that is geostatistically significant but consistent and well understood.</p>
<p><i>Sample security</i></p>	<p>Samples have a unique sample number that is provided on tags in the bag, outside the bag and in separate digital and hard copy sample advice. Each item of advice lists project name, borehole, top and base of sample and sample number.</p> <p>Given that coal is a commodity, samples are not considered to be at risk of salting. Reserves of samples drilled since 2010 are stored and maintained at the laboratories for further testing if necessary. Core samples were either delivered to the lab by the field geologist, courier or collected by lab personnel.</p>
<p><i>Audits or reviews</i></p>	<p>The Pre 2010 borehole database was independently audited in 2010 by JB Mining and Rio Tinto Staff in 2009. An entirely new Coal Log format Log Check borehole database was created and validated by independent consultants and WHC geological personnel during 2014 to 2016. The geological model was validated by the Competent Person, using reports, tables, contour plans and cross-sections.</p>

Section 2 – Reporting of Exploration Results

Criteria	Explanation																																				
<i>Mineral tenement and land tenure status</i>	<p>The current Development Consent for an open cut mine at Maules Creek was granted on the 23rd October 2012. This approval is for the extraction of coal to a maximum 13 million tonnes per annum within CL375. CL375 has been renewed for a further 21 years until June 2033. In March 2013 MCC was granted Exploration Lease (EL) 8072 and subsequently granted Mining Lease (ML) 1701 over a portion of EL8072 in October 2014. CL375 is current until 2033. AUTH346 is current until 2018. EL8072 is current until 2018. ML1701 was recently granted and expires in 2035. All resources declared in this document are contained within CL375 and AUTH346.</p> <p>The freehold land overlying most of the Maules Creek Mine is owned by either Whitehaven Coal Limited, or the Maules Creek Joint Venture. Crown Land and State Forest also overly the Maules Creek Mine.</p> <p>Land use in the local area is dominated by agricultural operations and open cut mining, with rural residential holdings mainly located to the north and west of the Project Boundary. The Maules Creek Coal Mine (MCCM) is situated on land largely occupied by the Leard State Forest, which has historically been predominantly used for forestry, recreation and more recently, mining related activities (including biodiversity offsets). Other land within the Project Boundary which is owned by MCCM has historically been predominantly used for cattle grazing. The Namoi River alluvial floodplains to the west of the Leard State Conservation Area are used for various agricultural grazing and cropping enterprises. Two other coal mines and several exploration leases exist within close proximity to the MCCM. These include, but are not limited to, the Boggabri Coal Mine, Tarrawonga Coal Mine and the Goonbri Exploration Lease located to the south and south east of the Project Boundary.</p> <table border="1"> <thead> <tr> <th>Title</th> <th>Holder</th> <th>Granted</th> <th>Expiry</th> <th>Renewal</th> <th>Area (ha)</th> </tr> </thead> <tbody> <tr> <td>CL375</td> <td>Aston Coal 2 Pty Ltd</td> <td>04-06-91</td> <td>04-06-33</td> <td>09-05-13</td> <td>4,154</td> </tr> <tr> <td>AUTH346</td> <td>Aston Coal 2 Pty Ltd</td> <td>28-02-84</td> <td>27-02-16</td> <td>sought</td> <td>1,270</td> </tr> <tr> <td>EL8072</td> <td>Aston Coal 2 Pty Ltd</td> <td>12-03-13</td> <td>12-03-18</td> <td>09-10-14</td> <td>303</td> </tr> <tr> <td>ML1701</td> <td>Aston Coal 2 Pty Ltd</td> <td>09-10-14</td> <td>09-10-25</td> <td>-</td> <td>232.1</td> </tr> <tr> <td>ML1719</td> <td>Aston Coal 2 Pty Ltd</td> <td>11-11-15</td> <td>11-11-36</td> <td>-</td> <td>404.3</td> </tr> </tbody> </table> <p style="text-align: center;">Table A – Maules Creek Tenement Summary</p>	Title	Holder	Granted	Expiry	Renewal	Area (ha)	CL375	Aston Coal 2 Pty Ltd	04-06-91	04-06-33	09-05-13	4,154	AUTH346	Aston Coal 2 Pty Ltd	28-02-84	27-02-16	sought	1,270	EL8072	Aston Coal 2 Pty Ltd	12-03-13	12-03-18	09-10-14	303	ML1701	Aston Coal 2 Pty Ltd	09-10-14	09-10-25	-	232.1	ML1719	Aston Coal 2 Pty Ltd	11-11-15	11-11-36	-	404.3
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<i>Exploration done by other parties</i>	<p>A very substantial borehole data base exists for the Maules Creek area with data acquired both by Whitehaven and by a number of prior title holders over an extended period dating from the 1970's to present.</p> <p>During the late 1940s, the NSW Geological Survey Department undertook surface geological mapping of the Maules Creek area. In 1974–1975 the first drilling was undertaken with the NSW Geological Survey Department completing seven boreholes in the general area. Between 1980 and 1990, Pacific Coal Pty Ltd and its successors undertook a comprehensive program of exploration drilling, geological evaluation, baseline environmental studies, mine planning and infrastructure studies in order to determine the technical and economic feasibility of developing a coal mining operation at Maules Creek. A total of 681 boreholes were drilled during this period, of which approximately 225 were cored holes. In 1996, Novacoal Australia Pty Ltd undertook an exploration program to improve the geological knowledge of the southwestern corner of CL375. After purchasing the tenement in 2010, Aston Coal 2 undertook two exploration programs in 2010 and 2012. The exploration objectives were to gain contemporary coal quality data and coal processing information. Whitehaven Coal has recently undertaken preproduction and Life of Mine pit definition drilling. This drilling has focused on characterising the geology of a potential pit extension to the north of the current Maules Creek shell as well as gaining additional data on the principal geological features such as seam thickness, coal quality, crop lines and basement location. A total of 997 boreholes were drilled during this period, of which approximately 274 were cored holes as well as 26 large diameter coal quality holes. The drilling had a total coverage of 112,357 metres (m) throughout and in the immediate vicinity of the area now subject to CL375 and AUTH346.</p>																																				
<i>Geology</i>	<p>Regionally, Maules Creek is located within the Permian sedimentary sequence of the Maules Creek Sub-basin in the Gunnedah Basin of New South Wales, Australia. The Maules Creek sub-basin unconformably overlies (onlaps) a basement surface formed by the Early Permian Boggabri Volcanics. Structurally, the seams are deposited in a generally north south orientated basin that shallows to the south but is open ended to the north. The Maules Creek Resource is situated on the western limb of the basin which dips to the east–south east at grades of 2 to 6 degrees, with areas of local steepening.</p>																																				

Criteria	Explanation
	<p>The Maules Creek Formation contains a multi-seam resource in a sedimentary section dominated by lithic conglomerate and sandstone, siltstone and minor claystone. The formation is interpreted as being deposited primarily in a braided fluvial system. The coals are generally thicker and closer together on the western side of the basin. To the east and southeast the coal seams are split by increasingly thick sections of clastic rocks, mainly conglomerates. Within the basin the coal bearing horizons, and the sediments between them, form an essentially 'layer cake' stratigraphy, with some gentle post depositional folding and several phases of relatively minor tectonic dislocation. Localised variations in dip angle and dip direction occur, largely due to differential compaction of strata over interseam sedimentary wedges.</p> <p>The close spatial association of basement outcrops and relatively thick accumulations of the Maules Creek Sub-basin suggest that the paleo-topography of the basement strata was relatively steep. Notably, the steeply dipping nature of the Permian topography suggests that the sediment accumulation in the sub-basin may have been structurally controlled by the periodic reactivation of deep seated basement faults situated beneath the onlapping boundary of Permian Sediments. This structural arrangement resulted in a high degree of differential subsidence across the basin which caused the development of thinner and higher ash coal seams towards the western onlapping edges of the basin, with thicker accumulations towards the basins centre.</p> <p>The lower coal seams at the Maules Creek Mine onlap the basement in the west. An east west trending basement ridge exists toward the central part of the tenement with the lower coal seams abutting and subcropping against this ridge. The maximum depth from surface to the Templemore Seam within the project area is in the vicinity of 400m along the eastern boundary of CL375.</p> <p>The Permian strata at Maules Creek is characterised by a single constructive coal-bearing depositional episode. The generally low sulphur content, lateral continuity of most coal seams and common occurrence of thick conglomerate wedges suggest that deposition occurred in a terrestrial succession in a river dominated upper deltaic plain generated by braided rivers. The low proportion of tuffaceous and interseam layers suggest coal deposition occurred in a comparatively quiet environment that was distant to any volcanic arc. The common occurrence of thick conglomerate wedges indicates the periodic inundation of the peat bog by significant flood events. Notably, the conglomerates tend to be sheet deposits dumped in short lived depositional events. This view is supported by the limited evidence of washouts or other erosive features. Differential subsidence and sediment accumulation along the basins western margins appears to be more episodic and less consistent than the sub-basins central portion which has negatively impacted on both coal seams thickness and ash content as they approach their subcrop on the basement surface.</p> <p>The complex seam splitting that characterizes the Maules Creek Deposit has resulted in the recognition of up to 16 coal seams which are further sub-divided into 59 plies. The principal coal seams, in descending order are the Herndale, the Onavale, the Teston, the Thornfield, the Braymont, the laterally inconsistent Bollol Creek, the Jeralong, the Merriown, the Velyama, the Nagero, the Northam, the Therebri, the Flixton, the Tarrawonga and the basal Templemore.</p>
<i>Drillhole information</i>	<p>The MC0716 geological model was constructed using Maptek Vulcan software (version 10) based on an ISIS database containing 997 boreholes, of which 765 are directly used in creation of the model. The 232 boreholes not included in the model were excluded because they were either considered unreliable, were outside the crop of the coal or were redrills of existing holes.</p> <p>All holes have been lithologically logged, with coal brightness logs for cored holes.</p> <p>All major seams are correlated between holes with a level of confidence in accordance with their resource status (Measured, Indicated or Inferred).</p> <p>All coal quality samples taken at a ply by ply level for ARD or RD and ash determination and then composited into working sections for subsequent working section analysis and clean coal composites. Core recovery generally adequate; roof and floor dilution samples and analysis generally limited to ash, moisture and ARD.</p> <p>Structural data contained in Vulcan database; database updated with all exploration data, mining survey pickups and other relevant data. Coal quality data contained in Excel but linked to structural database by both roof and floor picks and seam name.</p>
<i>Data aggregation methods</i>	<p>Coal intersections may have been sampled in multiple sections per seam, so compositing of density is aggregated by volume. Proximate analysis results, sulphur and washability are aggregated by mass. Clean coal results are aggregated by the sum product of yield and mass. These approaches are industry standards. Where quoted coal quality is for the full seam. Grade cut-offs have not been applied to exploration results in the database.</p>

Criteria	Explanation
<i>Relationship between mineralisation widths and intercept depths</i>	<p>Seams dip gently (2-6°). All thicknesses in the geological model are apparent thickness. Given the deposits shallow seam dip, the differential between apparent and true thickness in a vertical borehole is not considered material to the resource estimate.</p> <p>All boreholes have been drilled vertically. Verticality data on boreholes has only been routinely collected since 2010. Verticality has not been applied to the boreholes in the model. Available verticality records have been inspected and the data has been found to be in a range where their omission from the digital dataset is not considered material.</p>
<i>Diagrams</i>	Drillhole Location Plan is appended.
<i>Balanced reporting</i>	<p>There is no preferential reporting of results.</p> <p>The Maules Creek geological model has three primary purposes; as a mine planning and scheduling tool for the Maules Creek Operation, a tool for performing JORC resource estimates over the Maules Creek Leases, and as a tool for identifying additional open cut resources. This work was completed in mid-2016 and resulted in the establishment of the MC0716 model.</p> <p>Data has been extensively cross referenced against raw records. Key validation tools include the generation of cross sections and isopach plans and generic Vulcan borehole validation checks.</p> <p>All model releases are formally documented and sensitivity studies between old and replacement models are conducted.</p> <p>No material information has been excluded and outputs from the model honour data. Average values have been included for resources reported here and whilst some outlying values may exist the average values are considered representative of Coal Resources.</p>
<i>Other substantive exploration data</i>	Geotechnical, groundwater, localised ground magnetic and geochemical studies have been completed and reported elsewhere. No material potentially deleterious or contaminating substances have been identified.
<i>Further Work</i>	<p>Indicated and Measured resources can be increased at the expense of Inferred resources with further drilling.</p> <p>Other works currently envisaged are as follows:</p> <ul style="list-style-type: none"> • Additional preproduction drilling in advance of the operation; • A broad ground magnetic survey to check for unidentified igneous intrusions; • Ongoing and periodic reconciliations against production.

Section 3 – Estimation and Reporting of Mineral Resources

Criteria	Explanation
<i>Database integrity</i>	<p>All points of observation meet the following criteria:</p> <ul style="list-style-type: none"> • Linear core recovery of greater than 90%; • Linear core recovery of between 80% and 90% where volumetric recovery is above 65% and the raw ash contents are consistent with values from surrounding drillholes; • A geophysical (wireline) log, to allow confirmation of linear seam recovery and lithological logging. <p>Base of weathering surface defined by a combination of visual estimates and proximate analysis on cored samples.</p> <p>All samples for coal quality based on cored holes only. Cores recovered have been analysed with varying laboratory procedures for the various exploration programs that have been conducted over time. There is basic comparability of data for parameters such as ARD and raw coal analysis however float / sink testing and subsequent theoretical washed coal analysis procedures have given data of varying relevance. It is considered that there is sufficient coal quality data to characterise and evaluate the deposit at the differing resource categories. Virtually all coal analysis data obtained in the past 30 years has been from NATA registered laboratories. Earlier analytical testing was conducted in both company and other laboratories to the then current Australian or British Standards and is considered reliable within laboratory tolerances.</p> <p>All laboratories involved in the sample analysis have a system in place of blind assaying and quality control. Their scope has been to ensure the maintenance of acceptable levels of accuracy and precision in the reporting and process selection. They have also audited reported results and ensured that laboratory losses are allocated appropriately. These records are maintained at the respective laboratories.</p> <p>Recovery on cored holes calculated based on sample mass if available. Older holes have recovery documented only on full seam basis rather than plies.</p> <p>Open hole samples limited to determination of base of weathering or identifying heat affected coal only. These chip results are only indirectly used in the model for determination of base of weathering surfaces and intruded aureoles.</p> <p>Open holes chips are logged in the field and then corrected to geophysics. Coal brightness is not generally recorded on open holes. Borehole data from virtually all cored holes has been recorded as English listed bore logs with subsequent production of downhole graphical representations. The majority of bores drilled since the mid-1980's have been geophysically logged with a suite of downhole tools.</p> <p>All major seams are correlated between holes with a level of confidence in accordance with their resource status. All thicknesses in the geological model are apparent thickness. All boreholes have been drilled vertically. Verticality has not been applied to the boreholes in the model. Available verticality records have been inspected and the data has been found to be in a range where their omission from the digital dataset is not considered material.</p> <p>Structural data contained in Vulcan borehole database; database updated with all available exploration data as, mining survey pickups and other relevant data. Coal quality data contained in Log check but linked to structural database by both roof and floor picks and seam name. Coal quality database updated with all available exploration data as of April 2016.</p> <p>Raw geological data fully transferred to Vulcan database has been carried out with diligence using best geological practice. Data has been extensively cross referenced against raw records. Key validation tools include the generation of cross sections and isopach plans and generic Vulcan borehole validation checks. All model releases are formally documented and sensitivity studies between old and replacement models are conducted.</p>
<i>Site visits</i>	<p>Competent Person inspected the site in June 2016, accompanied by Mr Hugh Jennings – Maules Creek Mine Geologist and Mr James Smith – Maules Creek Senior Mining Engineer.</p>
<i>Geological interpretation</i>	<p>MC0716 Geological Model Details:</p> <ul style="list-style-type: none"> • Model in MGA co-ordinate system – GDA Zone 56; • Grid origin Structural model: 221800E, 661000N; Grid extent 228500E, 6621000N; • Grid mesh structural model: 20m x 20m mesh; • Vulcan Structural and Coal Quality Database: MC0716.geo.isis. <p>The database has been manually and electronically interrogated to produce Vulcan database (.isis) files representing xy coordinates and data values for structural parameters such as depth to coal seam roof and floor, and raw coal quality parameters. The computer generated</p>

Criteria	Explanation
	<p>models of the Maules Creek deposit were generated using Maptek Vulcan Software V10. Resources have been estimated within the Maules Creek leases using Vulcan block modelling software within vertical sided polygons. The model used geological data from drilling, topographic and mined surfaces as at the end of March 2016. The stratigraphic model was created using Vulcan software with a grid size of 20m. Resources were excluded from zones up to 60m wide around 2 dykes that are interpreted to bisect the deposit. Structurally, the deposit is well understood and an alternative interpretation is highly unlikely. The main factor affecting coal seam continuity is the interplay of seam dip, depth of weathering, surface topography and the variable nature of the volcanic basement which determines seam subcrops. Most seams show good continuity of grade, although deteriorations of quality towards crop are common. Seam specific influences include the consistent, predictable development of a stone band within a seam to form a seam split, some regional trends of deterioration and also locally developed stone lenses which are mainly responsible for the outliers in the ash contours.</p>
<i>Dimensions</i>	<p>The tenements comprising Maules Creek cover an irregular shaped area 11 km north south and 7 km east west.</p> <p>This statement covers the Maules Creek pits as well as the remainder of the coal resources within the Maules Creek leases, where there is no proposed mine plan.</p> <p>Resources estimated in July 2016 for the period ending 31st March 2016.</p> <p>All open cut resources at Maules Creek are less than 400m from the surface. A minimum coal thickness of 0.2 m was applied to all seams. A 45% maximum ash was also applied to all resources.</p>
<i>Estimation and modelling techniques</i>	<p>The geological model was developed by WHC employees under the supervision of the Competent Person, using Maptek Vulcan software. The current estimate supersedes a previous Report prepared by WHC personnel dated March 2015.</p> <p>The MC0716 model updates the previous geological model released in August 2014 and used for the previous JORC declaration. The new model is based on and incorporates the MC0716 geological database as well as accounting for mined out areas as of the 28-03-16.</p> <p>The geological model is a grid model; however, the site utilizes a HARP block model for all its resource reporting requirements. The stratigraphic model was created using Vulcan software and a grid size of 20 m. Structural data contained in Vulcan database was updated with all exploration borehole data and other relevant data as of June 2016 and all coal quality data as of April 2016. The MC0716 model release also includes the most recent topographic survey data as of the 28-03-16. This model is an update of the 2014 model and incorporates changes based on the following key areas:</p> <ul style="list-style-type: none"> • Incorporates the results of a recorrelation exercise conducted by site personnel (John Rogis); • Incorporates the results of exploration conducted on site between 2014 and June 2016; • Includes a revised interpretation of igneous intrusions in the leases; • Incorporates a revised interpretation of the basement surfaces. <p>The geological model utilized Maptek Vulcan software. The model outputs grids for each structural and coal quality variable. These are combined into a single block model which also accounts for intruded areas, maximum seam ash limits, minimum seam thickness limits, and mined out areas.</p> <p>Interpolation of missing structural data utilized Vulcans FIXDHD module. Seams were only interpolated outside hole extents, thus ensuring all non-logged seams were pinched to a zero thickness. After interpolation, seam structure points were modelled using stacking with a triangulation algorithm (trend order=1, smoothing=9, maximum triangulation side length=5000 m). The Braymont seam was used as the principal reference seam.</p> <p>Coal quality parameters are modelled using used inverse distance squared interpolation. A number of scripts were then performed on the outputs to ensure the seams maximum and minimum values were maintained within the range detailed in the borehole database. This process prevented the extrapolation anomalous results.</p> <p>In situ density was gridded directly from bore data on an air dried basis. Moisture grids were also produced which facilitated the production of density, ash and energy grids on a 10% moisture basis. Specific energy is modelled via regression relationship derived from borehole data.</p> <p>Namely $SE (Mj/kg) = 0.383 \cdot ash + 31.989$ (ash and SE on a 7% basis).</p> <p>Base of weathering total depth information is based on 753 picks from borehole data. The picks are used to generate a total depth of weathering grid surface. This grid is subtracted from the original topographic model using grid arithmetic to provide an estimate of the base of weathering structure floor surface. Depth of weathering data averages 25 m in total depth, with maximum and minimums of 106 m and 6.5 m respectively.</p>

Criteria	Explanation
	<p>The Basement model is based on 312 boreholes that are interpreted to intersect the Boggabri Volcanics or the overlying pelletoid claystone. Notably, this is a complex paleo-topography surface with a number of prominent drainage features. This complexity places the interpretation at risk, particularly were boreholes are widely spaced.</p> <p>Mined voids were accommodated as void surfaces within the block model. There are no known records of historic underground mining in the resource area.</p> <p>All open resources at Maules Creek are less than 400 m from the surface. The open cut potential is demonstrated by the strip ratio plot shown at the rear of this Statement.</p> <p>Structural data is contained in Vulcan borehole database. The database is updated with all available structural and coal quality exploration data as of June and April 2016 respectively.</p> <p>There are no material concentrations of deleterious elements of economic significance. There is no assumption of selective mining. Full coal thickness roof to floor is modelled for all seams. The deposit is sufficiently characterised by drilling to allow the chosen modelling parameters to operate freely without interpreted geological controls such as dummy boreholes or extrapolated survey data. The resource model is cut by either the base of weathering grid or the basement. There is a high degree of repeatability in the resource estimates prepared by external parties during 2009, 2010, 2011 and 2014. The geological model is validated by generating and inspecting reports, tables, cross sections, contour plans and comparisons with posted drillhole values.</p>
<i>Moisture</i>	<p>The basis of the tonnage estimate is in- situ moisture (Mis). In-situ moisture is estimated to be 10%, which is approximately equivalent to the open cuts Run of Mine Moisture.</p> <p>All moisture conversions for density use the Preston and Sanders method.</p>
<i>Cut-off parameters</i>	<p>Resources are limited to coal tenement boundaries; subcrop against base of weathering and basement; a minimum coal thickness of 0.2 m and a 45% maximum ash cut-off (applied to all seams).</p> <p>A 2% global resource loss is applied to all seams.</p>
<i>Mining factors or assumptions</i>	<p>A minimum coal thickness of 0.2 m and a 45% maximum ash was applied to all resources. This approach approximately reflects existing practical recovery limits for thin seam open cut mining.</p> <p>Selective mining methods may result in improved recovery results.</p>
<i>Metallurgical factors or assumptions</i>	<p>Raw variables are modelled. There is no known material data which would place at risk the assumption that the coal can be mined cleanly and/or blended and/or washed to a saleable specification.</p>
<i>Environmental factors or assumptions</i>	<p>Project approval, infrastructure, a mining operations plan and the necessary environmental licences are in place. The operation currently has designated out of pit spoil and tailings emplacement facilities. Feasibility and Life of Mine planning studies have developed a sequenced approach to the utilization of the resources over the life of the operation. This planning process is ongoing and iterative.</p> <p>The operations spoil is typical of the Gunnedah coalfields and is not considered to be potentially acid forming.</p>
<i>Bulk density</i>	<p>In situ density was converted from an air dried to in situ (10%) basis via the Preston and Sanders Method.</p> <p>Relative Density (Tonnage) estimated at 10% moisture. All Ash and calorific values estimated on a 10% moisture basis.</p>
<i>Classification</i>	<p>Classification of Measured Resources is based on cored drillholes approximately 500 m apart. Indicated Resources were supported by drillholes up to 1000 m apart, while Inferred Resources require a spacing of less than 2000 m. Points of observation include cored holes with analysis. Consideration of the confidence to predict seam continuity, thickness and coal quality have been incorporated in the positioning of resource category limits, in addition to data spacing criteria. Geostatistical analysis of thickness and ash data generally support the applied classification criteria (completed by the Competent Person).</p> <p>Approximate linear strip ratios are generally less than 10:1 down to the Templemore seam exist across most of the project area.</p>
<i>Audits or reviews</i>	<p>The model was created by Whitehaven personnel on a database prepared by Mr John Rogis. The resultant model was validated by Tamplin Resources in order to prepare this statement.</p>
<i>Discussion of relative accuracy/confidence</i>	<p>The structural character of the deposit as a whole is well understood in relation to the location and character of the principal geological features.</p> <p>All remaining coal resources in the Maules Creek leases have open cut potential. Resources have a high level of confidence. Drillholes are spaced closely enough for coal seam continuity and quality to be assumed justifying Measured and Indicated status except in the</p>

Criteria	Explanation
	<p>northern and southern portions where spacing's are only adequate for Inferred Resources. Location of individual coal seam subcrops are only approximate and would require additional drilling if shallow seam mining were to take place.</p> <p>The extent of igneous intrusions and coal washouts may affect negatively the coal resource tonnage for each affected coal seam. Minor faults with small throws may exist throughout the deposit.</p> <p>The basement forms the limiting surface to coal deposition and accordingly inaccuracies in its modelled location may impact negatively on coal resources.</p>

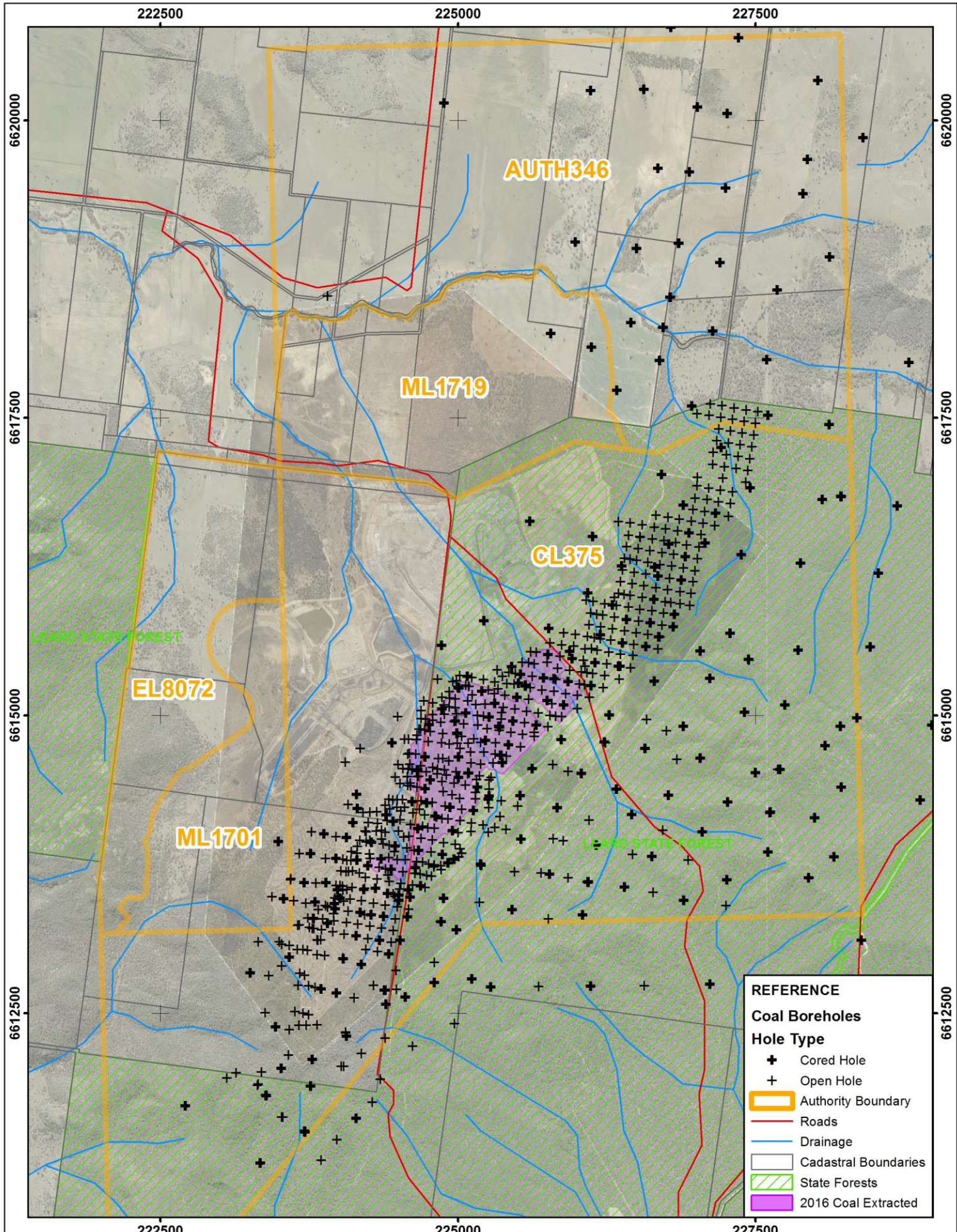
Section 4 – Estimation and Reporting of Ore Reserves

Criteria	Explanation
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	The Mineral Resource estimate used as the basis for this Coal Reserves Statement is the “Competent Person Report - COAL RESOURCES FOR THE MAULES CREEK OPEN CUT COAL MINE”, prepared by Shaun Tamplin of Tamplin Resources Pty Ltd. Table 1 summarizes the Resource Declaration. Reserves are reported inclusive of Resources. That is, Reserves include resources and are not in reported in addition.
<i>Site visits</i>	The competent person has been employed by Whitehaven as the Senior Long Term Mining Engineer for the Maules Creek Site since March 2015.
<i>Study status</i>	Maules Creek is an approved and active mining operation that was developed after successful completion of a feasibility study and investment case. First coal was extracted from the operation in December 2014. The investment case included a detailed mine plan and many of the relevant modifying factors were based on Whitehaven’s experience operating their nearby mines in the Gunnedah Coalfield. The mining operation reviews its plans and schedule every year as part of its Life of Mine Planning and Five year Budget processes. The 2016 JORC pit shell is an extension of the previous JORC pit shell. The feasibility level mine planning for this expanded shell was conducted by Whitehaven personnel. The key conclusion of this work is that finding sufficient spoil capacity will be an ongoing issue for the project at certain periods but this is likely to be manageable through detailed mine planning and optimisation. This planning process is ongoing and iterative.
<i>Cut-off parameters</i>	The general working sections rules are as follows: <ul style="list-style-type: none"> Working Sections less than 0.3 m in thickness has been discarded; Partings less than 0.2 m thick has been combined with the coal; Minimum coal to waste ratio of 0.7 (at least 2/3rds of the section must be coal); Aggregation of plies to working sections weight averages quality variables; Stone bands are assumed to have a default ash of 85% and SG of 2.20 for this aggregation; A total dilution and depletion of 0.15 m and 0.08 m respectively for each working section; Coal within the two dykes that bisect the deposit and their potential “cindered zones” have been masked and reported as waste.
<i>Mining factors or assumptions</i>	A pit shell design that follows geotechnical design guidelines has been used to convert coal resources to reserves. Run of mine (ROM) conversion factors were then applied to convert in-situ resources to a ROM. The mine will continue to employ open cut truck and shovel operations. This will initially involve out of pit dumping and then in-pit dumping will occur. Given the deposit depth (up to 300 m) and the high proportion of thin seams (80% are less than 2.5 m thick) this is deemed to be the most appropriate method. Haul back ramps will be developed on the advancing face so that an overall angle of advance of approximately 12-15 degrees is achieved and the in-pit dump is planned to develop at an overall angle of 18-26 degrees depending on geotechnical conditions. Pit Optimisation, pit design and mine planning has been used as the basis of converting Coal Resources to Coal Reserves. The pit limits have been determined using results from the incremental ratio and economic assessment as a guide. These assessments use Spry mine planning software and include allowances for bench and batters, working room and access constraints and geological features. The pit limits of the JORC pit shell are generally the Braymont outcrop in the West and physical limits dictated by either exploration coverage or tenement boundaries (rather than economic limits). In situ moisture estimated to be 10%. ROM moisture is typically 9%. Approximately 30 Mt of inferred coal is contained within the Maules Creek pit shell and represents 6% of the coal in the pit. This coal is not included in this Reserve Declaration; however, it is included in mining studies. Given that the Inferred resources are located on the extremities of the pit boundaries its exclusion should not impact on the outcomes of the study. The mine plan has been approved by professional qualified geotechnical consultants. Modifications have been made to the pit design to account for geotechnical risks.
<i>Metallurgical factors or assumptions</i>	Maules Creek CHPP was recently completed and has operated as expected since commissioning. The mining process involves bypassing clean ROM coal and washing

Criteria	Explanation
	<p>interface coal that is rich in partings. Overall, 33% of total ROM feed is forecast to be washed with the remainder being bypassed. The CHPP is currently underutilized as it has a washing capacity of over 11 Mtpa. This approach minimizes washing costs while ensuring a high coal recovery is still achieved. Typically, the top interface coal (Tops) from each seam is always washed, whereas the middle and floor coal is combined if a ROM product of less than 20% can be produced. ROM coal with ashes in excess of 20% are usually washed. The current forecast is that 69% of total ROM feed will be bypassed. Upgrades to the CHPP have been budgeted for to upgrade the CHPP capacity to 13 Mtpa.</p> <p>The CHPP utilises an industry standard Dense Medium Cyclone (DMC)/Reflux Classifier process to remove a proportion of rock impurities from the coal and ensure product specifications are maintained. The Maules Creek CHPP has a nameplate capacity of 1800 tph and consists of a dense medium cyclones (+1.7 mm square mesh equivalent), spirals (-1.7 mm – 0.125 mm) and a conventional thickener and belt press filter.</p> <p>The operation produces three products as follows:</p> <ul style="list-style-type: none"> • SSCC - fluidity > 50 dd/min, CSN > 3, Ash < 8% (ad); • PCI - CV > 6478 kcal/kg NAR, Ash < 8% (ad); • Thermal <p>Washed product moisture is assumed to be 11.5% (ar) and the bypass product coal is assumed to be as per the ROM moisture of 9.0% (ar). The budget is based on 50% combined PCI/Coking coal product with the remaining 50% being sold into the export thermal market. Yield projections are based on simulations and slim core data unification study conducted by A&B Mylec in 2013.</p> <p>Iron and Calcium are present in higher concentration in certain seams at Maules Creek but it is expected that these can be blended down in final products. As such, no allowance has been made for deleterious elements in the Reserves estimate.</p>
<i>Environmental</i>	<p>Geochemical testing undertaken as part of environmental assessment which determined that the overburden is likely to be Non Acid Forming. Overburden predicted to produce slightly alkaline and relatively low salinity runoff following surface exposure. A small proportion of the potential coal reject materials have been classified and Potentially Acid Forming and needs to be placed at a depth of at least 5 m in the overburden emplacement.</p>
<i>Infrastructure</i>	<p>Construction of required infrastructure is completed and the site is fully operational. The infrastructure and layout is suitable for the project.</p> <p>Further minor upgrades will be completed as the operation reaches 13 Mtpa.</p>
<i>Costs</i>	<p>The capital schedule has been built up through the completion of concept, prefeasibility and feasibility studies as well as a detailed design/pre execution phase prior to the execution of the project. At each stage of the project cycle the capital schedule was reviewed against comparable operating Gunnedah Basin sites and projects. The operating capital requirements developed are reviewed annually as part of the budget process for the forward 5 years.</p> <p>All operating costs were derived from the 2016 Maules Creek 3 year budget estimates developed by WHC and include allowances for royalties, commissions, mining costs, ship loading and administration. Current long-term exchange rate assumptions were provided by WHC. Transport charges derived from actual contracted prices. Revenue assumptions and product Benchmark specifications were provided by WHC and logic for penalties for failure to meet specification confirmed. All costs and assumptions are considered reasonable. The level of accuracy applied to capital and operating costs is +/- 10% according to commercial estimates.</p>
<i>Revenue factors</i>	<p>Three year coal price and exchanges rate forecasts developed internally by WHC with the long term thermal coal price based on the April 2016 Consensus Forecast. The long term SSCC and PCI prices are as per the WHC Year 3 estimates. These assumptions are considered reasonable for the purposes of estimating Reserves.</p>
<i>Market assessment</i>	<p>A Marketing Study was included in the feasibility study. WHC blend product coal from its mines in the Gunnedah region to meet product specifications prior to shipment through the Port of Newcastle. There are no foreseeable issues in demand for this product.</p>
<i>Economic</i>	<p>The inputs to the economic analysis of the Maules Creek Mine are the Project derived capital and operating cost estimates. The source of the inputs is real and the confidence satisfactory. The economic modelling is in real terms and a range of discount rates between 6% and 10% have been used in assessing NPV. The NPV results 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. The NPV at 8% discount rate has been assessed for variations of +/- 20% in the key value drivers of revenue, operating costs,</p>

Criteria	Explanation
	<p>exchange rate, and capital costs. In the majority of cases the project returned positive NPV demonstrating the robust project economics.</p> <p>The Project is most sensitive to changes in revenue and operating cost.</p>
<i>Social</i>	<p>A comprehensive stakeholder consultation program was undertaken for the MCCM during the three to four year period leading up to the granting of the State and Commonwealth environmental approvals in late 2012/early 2013. Since then, Whitehaven's consultation program has been ongoing and has evolved as the mine has moved through the pre-construction, construction and operations phases. Much of the consultation has been associated with obtaining licences, leases, permits required for the MCCM and the preparation of the numerous environmental management plans required under the State and Commonwealth approvals. Local, State and Commonwealth Government agencies that have been involved in this consultation include the following:</p> <ul style="list-style-type: none"> • Division of Resource and Energy (DRE); • Department of Planning and Environment (DP&E); • Department of Primary Industries – Water (DPI – Water); • Office of Environment and Heritage (OEH); • North West Local Land Services (NWLLS); • Narrabri Shire Council (NSC); • Forestry Corporation of NSW; • Environment Protection Authority (EPA); • Commonwealth Department of the Environment (DotE); • Gunnedah Shire Council (GSC); • Department of Primary Industries (DPI); • Rural Fire Service (RFS); and • Roads and Maritime Service (RMS). <p>In addition to the above, Whitehaven has consulted extensively with local landholders and residents, as well as the Registered Aboriginal Parties and other members of the Aboriginal community in regard to local community and cultural heritage management issues. The Maules Creek Community Consultative Committee (CCC) has been established, as required by Condition 7 of Schedule 5 of PA 10_0138.</p>
<i>Other</i>	<p>All mining projects operate in an environment of geological uncertainty. The 2016 JORC pit shell extends outside some of the current approval's limit. An Authorisation exists over the Northern portion of the reserve and WHC owns all the land in this area. All reserves within AUTH346 have been classified as probable due to the lower status of approvals in this area. 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.</p> <p>There is a strong history and knowledge of mining the targeted seams in this region. Many of the same seams have been extracted by neighbouring mines, which provides confidence in the practical and economic extraction of these seams.</p> <p>Adverse market conditions have been identified as the highest risk to Maules Creek Open Cut.</p>
<i>Classification</i>	<p>Coal reserves are based on indicated and measured resources from the same geological model (MC0716).</p> <p>Coal classified as Measured under the coal resource statement were estimated as Proven for the coal reserve statements. Similarly, coal classified as Indicated has been estimated in the Probable category. Polygons provided from the Resource estimate completed by Shaun Tamplin were used to delineate the classified areas. Additionally, all measured coal resources outside the current approval limit have been classified as Probable to accommodate the approval risk of this reserve.</p> <p>Inferred Coal Resources are included in the LOM plan but have been excluded from the Reserve estimates.</p>
<i>Audits or reviews</i>	<p>The reserve estimate has been internally peer reviewed by Whitehaven technical staff. Additionally, the statement has been reviewed by Shaun Tamplin, the competent person for resources.</p>
<i>Discussion of relative accuracy/ confidence</i>	<p>The statement is supported by approximately 62% of Measured Coal Resources. The basis of the estimate is the 2014 Project derived 3 year budget operating costs. CHPP construction is completed and being tested. Other infrastructure construction is essentially complete. Analysis of the coal quality has been undertaken by independent laboratories working under international standards of method and accuracy. Product coal is to be produced from blended washed and bypass coal products. The level of accuracy will continue to be dependent on</p>

Criteria	Explanation
	<p>the ongoing update of the geological model and monitoring of the Modifying Factors affecting the coal estimate. Geotechnical studies have been completed for project. The Reserve estimations have been independently checked along with the pit shell volumes. WHC have a reconciliation process in place at Maules Creek and their neighbouring open cut mines aimed at testing the appropriateness of the assumed modifying factors for the project. It is recommended that this practice be undertaken at Maules Creek as the mine develops to validate modifying factors.</p>



MAULES CREEK PROJECT

CL375 AUTH 346 EL8072

DRILLHOLES, TENURE AND
COAL EXTRACTION LIMITS



Coordinates: GDA 1994 MGA Zone 56 Scale: 1:40,000

Author: ABT

Date: 10-Aug-16



WHITEHAVEN COAL