

## VICKERY PRECINCT – JORC RESOURCE AND RESERVE

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### 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 Vickery Precinct in accordance with the Table 1 checklist in The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition). Criteria in each section apply to all preceding and succeeding sections.

<b>Section 1</b>	<b>Sampling Techniques and Data</b>
<b>Criteria</b>	<b>Explanation</b>
<i>Sampling Techniques</i>	<p>Coal intervals have been determined by sinking vertical drill holes and creating systematic geological descriptions of the strata encountered by visual determination. Data from mining operations in the area were also used. Drill hole types were:</p> <ul style="list-style-type: none"> <li>• Non-cored where field geological logs are initially created by describing chip samples recovered at 1 m intervals. Coal seam intercept depths are initially estimated to within about 0.5 m. Coal seam roof and floor depths are adjusted to match downhole geophysical logs with horizon boundaries reported to 0.10 m, and non-coal bands within seams to about 0.05 m.</li> <li>• Cored where strata is geologically logged in the field to within 0.01m, and field logging checked against downhole geophysical logs where available.</li> </ul> <p>Coal seams intersected by non-cored drill holes were not sampled for quality analysis. Coal seams intersected by cored drill holes were visually logged in detail by seam brightness profiling. Sample intervals within a seam were determined after examination of the geological and geophysical logs, and the sampling scheme adopted for surrounding drill holes. 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. Core recovery was maximised by:</p> <ul style="list-style-type: none"> <li>• Using triple tube technology</li> <li>• Using minimum HQ core diameter</li> <li>• Employing experienced coal drilling contractors</li> </ul>
<i>Drilling techniques</i>	<p>All holes are drilled vertical. Drill core was not oriented. 8C core (200mm diameter). 4C core (100mm diameter). HQ Triple Tube core (61mm diameter). NQ Triple Tube core (45mm diameter). Percussion and rotary open-hole methods using air circulation.</p>
<i>Drill sample recovery</i>	<p>Chip samples were not used to assess coal quality for determining coal resources. Recent drill core is logged in accordance with Whitehaven Coal procedure. 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. Where volumetric core recoveries are not available (eg historical data), linear core recoveries are used. Core losses are recorded as a logged interval within WHC geological logs. They are estimated following adjustment against downhole geophysical logs. 8C, 4C and HQ TT wireline coring is used to maximise sample recovery. Volumetric sample losses generally occur within the "bright coal", or vitrinite rich zones within coal seams, as this material is brittle and fractures easily during the drilling process. Vitrinite-rich coal is the lowest ash component of Vickery Project area coal seams. The ash content of coal samples with reduced recoveries is therefore likely to be biased towards increasing the reported ash content. Coal quality full seam points of observation used in this report are those where:</p> <ul style="list-style-type: none"> <li>• Volumetric recoveries were 90% or more</li> </ul>

	<ul style="list-style-type: none"> <li>• Volumetric recoveries were more than 70% and linear recoveries greater than 80% and raw ash contents consistent with surrounding values.</li> <li>• In the absence of volumetric recovery values, a linear recovery of 90% or more.</li> </ul>
<i>Logging</i>	<p>Core and chip samples were logged by degree qualified geologists experienced in coal resource investigation and evaluation. The standard and level of detail is considered appropriate for mineral resource estimation. The project database has drill hole data collected from the early 1970's. Since that time, more than 1,700 drill holes have been sunk for continued exploration and mining operations support. The data collected was amongst the first to be computer encoded and modelled, with particular attention paid to database integrity at the time and all subsequent programmes through the initial mining phase in the 1990's. The historical drill hole data has been revalidated and considered appropriate for this resource estimation. All core recovered since 2006 was digitally photographed. Total aggregate length of cored holes in the geological model is 53,567 m in 347 drillholes. Total aggregate length of non-cored holes in the geological model is 78,466 m in 1,295 drillholes.</p>
<i>Sub-sampling techniques and preparation</i>	<p>Chip samples were not used to assess coal quality. Full cores were used for coal quality testing (all core taken). Gas content testing coal samples have been slabbed (halved) prior to final gas content analysis. The remaining slabbed half was analysed in the normal manner as a separate ply. These samples are identified in the geological database and coal quality database as partial gas testing residue samples, and accepted for resourcing if analyses are consistent with surrounding values. Historical NQ cores were generally full seam samples (few ply subsamples) to ensure a representative sample mass was available. Later HQ, 8C &amp; 4C coring used to ensure ply samples are representative, and that sufficient material is available for sub-samples. Laboratory sample preparation, sub-sampling and quality control procedures were ensured by using NATA accredited commercial labs employing recognised QA procedures and following Australian Standards for coal testing. No large diameter testing results are included in the coal quality database.</p>
<i>Quality of assay data and laboratory tests</i>	<p>Sample preparation, sub-sampling and quality control procedures ensured by using commercial laboratories employing recognised QA procedures and following Australian Standards for coal testing. Samples were split and reserves retained where sufficient mass remained after testing. Coal quality was not estimated from geophysical measurements. Standards, blanks, duplicates, external laboratory checks have not been used by Whitehaven Coal. Acceptable levels of accuracy and precision are maintained by using commercial labs that are regularly benchmarked by external auditors against ISO 17025. These labs employ regular internal and external blind proficiency programs to provide a demonstration that results are controlled (may not have occurred for historic testing).</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, and more recently by digital photographs. Coal intersection depths and seam correlations have been validated by independent reviewers/auditors and/or alternative company personnel (Manager Geology). Twinned holes are not used. Data acquisition and verification protocols are documented in Whitehaven Coal standards and procedures. Drill hole collar, lithology and basic raw coal quality data is stored in a LogCheck database and exported to a Ventyx Minescape GDB database for modelling. Other coal quality data may be imported directly into a GDB database. Source field records, laboratory reports, core photographs, survey data and other supporting data are stored in electronic format on the Whitehaven Coal</p>

	network, and hard copy in borehole folders at the company's Gunnedah office. Quality data stored in the GDB database are on an air dried basis. Assay data was not adjusted during the modelling process.
<i>Location of data points</i>	Borehole collars were surveyed by a Registered Surveyor, using triangulation or dGPS RTK methods. Surveyor's Reports are not available for some drill holes, and locations were verified through comparison with historical reports. The grid system used is the Map Grid of Australia (MGA) zone 56, based on the Geocentric Datum of Australia 1994 (GDA94) values. Older survey data has been converted from ISG. Topographic control is provided by the following: <ul style="list-style-type: none"> <li>• Bluevale DTM, dated May 2012</li> <li>• Rocglen DTM, dated June 2013</li> <li>• NSW State DEM</li> <li>• Contours digitised from historical plans.</li> <li>• Spot heights digitised from historical plans.</li> </ul>
<i>Data spacing and distribution</i>	Many boreholes intersect only part of the sequence ie were spudded stratigraphically below one or more seams, or were not drilled deep enough to intersect lower seams. Borehole spacing was considered on a seam-by-seam basis. For Measured resources, Points of Observation are generally less than 500 m apart. For Indicated resources, Points of Observation are generally less than 1000 m apart. For Inferred resources, Points of Observation are generally less than 4000 m apart. 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.
<i>Orientation of data in relation to geological structure</i>	Industry standard vertical drilling has been used to sample stratiform coal seams. The orientation of data in relation to geological structure is not believed to have introduced any sampling bias.
<i>Sample security</i>	Drill core stored in a secure facility until sampled. All samples delivered to NATA registered laboratories. Laboratory results are reviewed and validated against sampled intervals to check sample integrity.
<i>Audits or reviews</i>	The borehole database was independently audited in 2010 by JB Mining and Rio Tinto staff in 2009. An entirely new CoalLog format LogCheck drill hole database was created and validated by independent consultants and Whitehaven Coal geological personnel. Boreholes drilled since were audited by the Competent Person during 2014/2015, and adjustments made in LogCheck where necessary. The geological model was audited by the Competent Person, using reports, tables, contour plans and cross-sections.

Section 2	
Reporting of Exploration Results	
Criteria	Explanation
<i>Mineral tenement and land tenure status</i>	Tenements and approvals held 100% by Whitehaven Coal Mining Limited and its subsidiaries: Project approval (Development Consent) SSD-5000 for a maximum annual output of 4.5 million ROM tonnes; CL316 is current until 2033; ML1464 is current until 2020; ML1471 is current until 2021; A406 is pending renewal; EL4699 is current until 2018; EL5831 is current until 2018; EL7407 is pending renewal; EL8224 is current to 2018; MLA447 is pending (includes parts of A406 and EL4699);



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	Native Title interests exist in parts of EL7407 and EL4699. WHC owns most of the freehold land overlying the project. Crown Roads and the Vickery State Forest exist over the project.
<i>Exploration done by other parties</i>	Sunshine Gold and successors: early 1970's – 1988. Amax/BHP: 1976 – 1977. Rio Tinto subsidiary Novacoal and predecessors: 1981 – 2009. Coalworks (Vickery South): 2009 – 2012.
<i>Geology</i>	Stratiform bituminous coal deposit of Cisuralian (early Permian) age. Gently folded multiple coal seams, with dips generally less than 10°. Regional dip generally to the southeast. Deposit intersected by 5 major normal faults, and 7 smaller normal faults. Igneous intrusions are present and affected areas are excluded from the resource determination process.
<i>Drill hole information</i>	Information from 1,642 holes has been used in the evaluation of coal resources in the Vickery Project area. Information from 84 holes has been excluded from the evaluation as they are variously: <ul style="list-style-type: none"> <li>• Open holes without geophysical logs (such as LOX holes)</li> <li>• Shallow holes located in mined-out areas</li> <li>• Locations could not be verified.</li> </ul>
<i>Data aggregation methods</i>	Coal intersections may have been sampled in multiple sections per seam, so compositing of samples, on a length x RD basis, has been applied. Where quoted, coal quality is for the full seam including stone bands.
<i>Relationship between mineralisation widths and intercept depths</i>	All drillholes were (nominally) vertical. The dip of strata is generally less than 10°. Coal thicknesses quoted are for downhole intercept lengths, which may have been exaggerated slightly by seam dips. Coal resource modelling and estimation takes this effect into account.
<i>Diagrams</i>	A Drillhole Location map is included at the end of this table.
<i>Balanced reporting</i>	There is no preferential reporting of results.
<i>Other substantive exploration data</i>	Geotechnical, groundwater and geochemical studies have been completed. Ground magnetic surveys, as follows: <ul style="list-style-type: none"> <li>• Bluevale - 2011</li> <li>• Vickery - 2012</li> <li>• Vickery Extended – 2013</li> <li>• Underground/Vickery South/Canyon West - 2014</li> </ul>
<i>Additional cored holes will be required to increase confidence in grade continuity for some areas.</i>	Additional cored holes will be required to increase confidence in grade continuity for some areas. Additional loxline drilling will be required in some areas.





<b>Section 3</b>	
<b>Estimation and Reporting of Mineral Resources</b>	
<b>Criteria</b>	<b>Explanation</b>
<i>Database integrity</i>	Borehole collar locations and RL's were checked against surveyors' reports, field records, historical plans and the DTM. Lithological logs and coal intersection depths were reconciled with wireline logs. Coal quality data were cross-checked against lab reports and sample depths were correlated with the lithological database. Acquisition, validation and entry of data is per Whitehaven Coal Procedures (refer to Section 1 above). All survey, lithological and quality data are compiled in CoalLog format in LogCheck and Ventyx Minescape GDB databases.
<i>Site visits</i>	The Competent Person's most recent visit was during July 2015. No exploration or mining activity was taking place at this time.
<i>Geological interpretation</i>	The geological interpretation is based on reports from mine areas, ground magnetic surveys and drill hole data. The drill hole database is extensive and an alternative interpretation is highly unlikely. The main factor affecting coal seam continuity is the interplay of seam dip, depth of weathering and surface topography and the variable nature of the volcanic basement which determines seam subcrop. Closer spaced drilling near fault lines may alter allocation of resources from one reporting area to another. Most seams show good continuity of grade. 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 bullseyes in the ash contours.
<i>Dimensions</i>	The extent of the potential Vickery open cut resource area is about 10 km north-south by 6 km west-east, from the base of weathering (about 30 m below surface) to a maximum depth of 300 m. The potential underground resource area is about 10 km north-south by 5 km west-east, to a maximum depth of 600 m.
<i>Estimation and modelling techniques</i>	The geological model was developed by the Competent Person, using Ventyx Minescape software. The current estimate supersedes a previous report dated 15 February 2013. There is a history of resource reports for the Vickery Project dating back to the 1980's. 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 with only a few geological controls as survey data to assist modelling of basement and seam behaviour approaching faults. The resource model is cut by either the base of weathering grid or the mined surface. A maximum raw ash content of 40% (ad) has been imposed as a resource cut-off. All areas of previously mined coal seams as determined by a registered surveyor have been excluded from the resource estimates. Areas of suspected influence from igneous intrusions have been excluded from each seam. There is a high degree of repeatability in the resource estimates prepared each year since 1983. Acquisition, validation and entry of data is per WHC Procedures (refer to Section 1 above). The geological model is validated by generating and inspecting reports, tables, cross sections, contour plans and comparisons with posted drill hole values. Apart from the effects of igneous intrusions and faulting, there are no known deleterious elements of economic significance.
<i>Moisture</i>	The basis of the tonnage estimate is in situ moisture (Mis). Mis was estimated for each seam using the "Meyers" model based on non-linear multivariable analysis (Meyers et al 2003), and varies from 9 – 11 %. Coal density for resource estimation has been adjusted using the Preston-Sanders methodology, and are reported on an Mis basis.



<i>Cut-off parameters</i>	Coal tenement boundaries. Coal extraction boundaries as at 1 July 2015 Subcrop against base of weathering. Minimum coal thickness for open cut coal is 0.1 m. Maximum overburden ratio is ~20:1 bcm/tonne. Minimum coal thickness for underground coal is 1.8 m. Maximum raw ash for all coal resources is 40% (air dried).
<i>Mining factors or assumptions</i>	It is planned that the resource in the West and Karu Blocks will be mined by open cut methods. Open cut mining assumptions are based on a waste to coal ratio cut-off and a maximum depth of 300 m for un-oxidised coal which has a full-seam raw ash of less than 40% (ad) and a coal thickness in excess of 0.1 m. The cut-off strip ratio for this resource was determined by a margin rank exercise with RPM employees in 2012. Open cut mining studies are of a conceptual nature only. It is planned that the resource in the Woodlands and Yarrowonga Blocks will be mined by underground methods. A minimum 1.8 m thickness of fresh coal outside of the defined open cut area is the mining assumption for the Shannon Harbour and Stratford seams. Underground mining studies are of a conceptual nature only.
<i>Metallurgical factors or assumptions</i>	It is assumed that all coal can be mined and beneficiated to a saleable product using Whitehaven's existing coal preparation facilities at Gunnedah or a new facility.
<i>Environmental factors or assumptions</i>	An environmental Impact Statement has been prepared and Project Approval is in place for CL316 and MLA447. A Mining Operations Plan has not been submitted.
<i>Bulk density</i>	Air dried relative density (Standard RD) was gridded, using SRD values determined for each core sample and composited on a seam-by-seam basis. For each seam average SRD was adjusted to an in situ basis (RDis) by applying the "Preston-Sanders" (Preston & Sanders, 1993) equation, using a global value for in situ moisture (Mis) derived using the "Meyers" method. The estimate has not been adjusted for void spaces, in so far as the "Meyers" equation estimates moisture at the time of sampling, when the coal is assumed to be partly dewatered and some voids may be air-filled. There is no industry standard method of estimating empty void spaces.
<i>Classification</i>	The basis for classification of resources are the maximum distances from a coal quality point of observation recommended in the Australian Guidelines For Estimating And Reporting Of Inventory Coal, Coal Resources And Coal Reserves (2003). The use of these distances is moderated by factors such as geological continuity as discussed in the report text. The result reflects the Competent Person's view of the deposit.
<i>Audits or reviews</i>	The geological model and resource estimate is reviewed by the Competent Person preparing the reserve estimate. Manager Geology for Whitehaven Coal, Mr Mark Dawson has reviewed the resource estimate.
<i>Discussion of relative accuracy/confidence</i>	An informed but qualitative judgement of the relative error of each resource category is: Measured – up to 10%; Indicated – up to 25%; Inferred – up to 40%. This judgement is applicable to the global resource. Global resource estimates for the main CL316 area have varied by less than 10% for the period 1983 – 2015, with the main variances occurring in the allocation of tonnages to resource categories.

<b>Section 4</b>	
<b>Estimation and Reporting of Ore Reserves</b>	
<b>Criteria</b>	<b>Explanation</b>
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	The Mineral Resource estimate used as the basis for this Coal Reserves Statement is described in the document "Coal Resource Report for the Vickery Project Area. Tenements CL316, EL7407, EL4699, EL5831, EL8224 and ML1464/ML1471. Gunnedah Coalfield", prepared by Mr. John Rogis, August 2015. The Competent



	<p>Person, Mr. Rogis, 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 Geoscientists. The Resources Statement was compiled in accordance with The JORC Code 2012 Edition. The Coal Resources reported are inclusive of the Coal Reserves.</p>
<i>Site visits</i>	<p>A site visit to the Vickery Precinct was undertaken by the Reserves Competent Person (“CP”) in 2015. The outcome of this visit was observation of the Project area to better understand location, environmental, social, groundwater and existing infrastructure consideration. The CP visited the nearby WHC-owned Rocglen, Maules Creek and Tarrawonga Mines to observe mining conditions and the existing Gunnedah CHPP and train loading facility. The CP visited the nearby WHC-owned Rocglen, Maules Creek and Tarrawonga Mines to observe mining conditions and the existing Gunnedah CHPP and train loading facility. The CP has had discussions with WHC personnel that contributed to defining Project parameters used in the Vickery Precinct PFS completed in April 2014. The CP has also been involved in the Vickery South (EL7407) PFS and FS work conducted by Coalworks prior to acquisition by WHC.</p>
<i>Study status</i>	<p>The mine is not currently operational. The Vickery Precinct PFS was completed by RPM in April 2014 for an operation with target annual ROM production of 4.5 Mt with a total open cut mine life of 49 years. An EIS has been completed and a project approval (SSD5000) granted for a 4.5 Mtpa ROM stand-alone Vickery operation (CL316).</p>
<i>Cut-off parameters</i>	<p>The Minex Pit Optimiser was used to confirm the pit limits. Cost inputs were based on existing WHC operations and studies. WHC provided revenue and exchange rate assumptions for the next three years and RPM sourced the long term thermal coal price from the April 2015 Consensus forecast. Pit shells were limited to 50 m off the alluvium contact. The practical pit design is supported by the results of the 90-95% FF optimizer pit shells. Minor modifications to the pit shell were completed to better fit the shell to the updated Resource Model.</p>
<i>Mining factors or assumptions</i>	<p>Pit Optimisation, pit design and LOM planning in the PFS have been used as the basis of converting Coal Resources to Coal Reserves. The PFS strategy was replicated using the updated geological model. The selected mining method is a conventional truck and excavator mining method based around the targeted mine production and strip ratio of the deposit, with expit and inpit dumping of waste. This method is considered appropriate for future planning based upon geology, strip ratio and regional experience at nearby WHC mines. Geotechnical study recommendations from the Vickery Draft FS and Vickery South Project, overall slopes of 45° have been adopted for all pit slopes with the exception of the western slope of the Vickery Pit which has an overall slope of 40°. This makes allowance for mine access roads into the pit on all pit walls. The western limit of the Vickery Pit has been stood 100 m off the Boggabri Ridge contact, as per geotechnical recommendation. The Minex Pit Optimiser was used to guide and confirm the pit limits. The mining factors used were:</p> <ul style="list-style-type: none"> <li>- Minimum coal mining thickness of 0.3 m;</li> <li>- Minimum parting mining thickness of 0.3 m;</li> <li>- Overall geological loss of 1% and mining loss of 1%;</li> </ul>



	<ul style="list-style-type: none"> <li>- Mineable coal section roof loss of 0.075 m;</li> <li>- Mineable coal section floor loss of 0.025 m;</li> <li>- Mineable coal section roof and floor dilution of 0.025 m;</li> <li>- The quality of diluting material is relative density of 2.4 t/bcm, and ash of 85%; and</li> <li>- Relative density data in the geological model is based on in situ moisture ranging from 9-11%. ROM moisture is assumed to be 8%, bypass product coal moisture at 8% and washed product coal moisture at 10%.</li> </ul> <p>Inferred Coal Resources are included in the LOM production schedule, but are not converted to Coal Reserves. A total of 5.6Mt of Inferred coal is included in the pit shell, which is Less than 3% of the total Reserves and is thus considered immaterial. The Project will require the construction of various items of surface infrastructure to assist the mining operations. It is anticipated that these items will generally be contained within the Mine Industrial Area (MIA). The Vickery Precinct PFS assessed a 4.5 Mtpa ROM operation and assumed the same infrastructure requirements as the Vickery Draft FS, including Administration and Bathhouse Facilities, Heavy Vehicle Workshops, Store Yards etc. It is assumed that ROM coal would be crushed on site before being transported by road to the existing Gunnedah CHPP for processing. The coal would be transported to the Port of Newcastle using the existing train load-out facility and rail network.</p>
<i>Metallurgical factors or assumptions</i>	<p>The geological Resource model supplied by WHC contained raw quality grids for each modelled ply, Practical CPP yields and product ash results are based on regression data from the Vickery geological database. Product fluidity grids are as per those generated by JB Mining Services in the 2013 Resource model. A coal flow model was developed using WHC coal processing assumptions; the result is approx. 38% of the ROM coal planned to be bypassed with the remaining 62% washed with an average practical F1.6 yield of 82%. Use of the existing Gunnedah CHPP has been assumed and the process is well-tested and considered appropriate for the Project; it is currently used by WHC for processing from their existing operations. LD holes have been drilled and results incorporated into the coal processing studies. No bulk samples have been taken in recent times however coal has been previously produced from the site. No allowance has been made for deleterious elements. The site has been previously operated with saleable products being produced after processing at the Gunnedah CHPP.</p>
<i>Environmental</i>	<p>An EIS has been completed for a stand-alone Vickery 4.5 Mtpa ROM operation. The stand-alone Vickery project was approved in 2014. The EIS has not been updated for the Vickery Precinct. Waste rock characterisation results indicate that it does not require special placement requirements or procedures in the dumps. Coal Processing plant rejects will be transported from the Gunnedah Plant to approved final void locations available to WHC and stored appropriately in the waste dumps or storage cells in accordance with environmental approvals. Waste residues will be stored in appropriate facilities and disposed of or treated in accordance with environmental approvals. Waste water will be stored in appropriate facilities and disposed of or treated for recycling in accordance with environmental approvals.</p>
<i>Infrastructure</i>	<p>The Project will require the construction of various items of surface infrastructure to assist the mining operations. Sufficient land is available at the Project to accommodate necessary infrastructure. It is anticipated that these items will</p>

	<p>generally be contained within the Mine Infrastructure Area. The Vickery Precinct PFS assessed a 4.5 Mtpa ROM operation and assumed the same infrastructure requirements as the Vickery Draft FS, including Administration and Bathhouse Facilities, Heavy Vehicle Workshops, Store Yards etc. It is assumed that ROM coal would be crushed on site before being transported to the existing Gunnedah CHPP for processing. The product coal would then be transported to the Port of Newcastle using the existing train load-out facility and rail network. Initially the existing infrastructure on site (from mining during the 1990's) would be utilised and expansion of infrastructure would occur over the first 3-4 years of mining as production ramps-up to full capacity. The Gunnedah CHPP, train load-out facility and rail network are excluded from requiring expansion, as they currently have sufficient capacity to accommodate Vickery Precinct at 4.5 Mtpa ROM production. The transport solution for the Project is to haul crushed ROM coal via Bluevale Road to the Gunnedah CHPP. A realignment of Bluevale Road has been designed (during the Vickery Draft FS) at the intersection with the Kamilaroi Highway and the construction of an overpass on the Kamilaroi Highway is proposed. The Vickery draft FS assumes power supply by generators, a de-energised 66kV line extends to the existing Vickery MIA. Water supply through rainwater harvesting and pit dewatering is planned. The primary water requirement at the site is for dust suppression. The workforce would reside locally either in Gunnedah or other nearby townships.</p>
<b>Costs</b>	<p>Variable costs for waste removal and coal mining were estimated for the Vickery PFS and benchmarked against similar projects. Costs for road transport and coal washing were supplied by WHC based on actual operating costs and tendered contract pricing for other WHC projects. RPM reviewed these costs and believe they are reasonable for use in this study. Capital cost estimates were based on the Vickery Draft FS capital estimate, due to the synergies that exist between the studies for the development of a 4.5 Mtpa ROM operation with the same infrastructure requirements and assumed utilisation of existing infrastructure including the Gunnedah CHPP and coal transport networks. As a Contractor Operated waste mining fleet was assumed, waste mining equipment capital is included in the waste mining operating cost unit rate. Current long-term exchange rate assumptions were provided by WHC. Product benchmark specifications were provided by WHC. RPM reviewed all costs and they are considered reasonable.</p>
<b>Revenue factors</b>	<p>Three year coal price forecasts were supplied by WHC, RPM sourced long term thermal coal price estimate from the April 2015 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>
<b>Market assessment</b>	<p>A detailed Market Study has not been carried out for the Vickery Precinct product coals, however markets are well established for WHC's nearby mine's that are producing similar products. WHC blend product coal from its mines in the Gunnedah region to meet product specifications prior to shipment through the Port of Newcastle. This allows WHC a lot of flexibility in preparing shipments. WHC typically produce three main products:</p> <ul style="list-style-type: none"> <li>○ Thermal at approx. 11-15% ash (ad);</li> <li>○ PCI at approx. 6-8% ash (ad);</li> <li>○ SSCC at approx. 6% ash (ad); and</li> </ul> <p>In addition to the products above, the LOM plan indicates that WHC may produce a Semi-hard Coking Coal (SHCC) at approximately 7% ash (ad) at Vickery. No price</p>



	premium has been applied to the SHCC product in this study. Based upon these products and specifications, RPM anticipates no foreseeable issues in demand for this product.
<i>Economic</i>	The inputs to the economic analysis of the Vickery Precinct are the Project 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 between 6% and 10% have been used in assessing NPV. The NPV results produced from economic modelling generated positive 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, exchange rate and capital costs. In some instances the NPV becomes negative and the Project is highly sensitive to changes in exchange rate, revenue and operating costs. Given the high average strip ratio at the Vickery Precinct of 10.1 bcm / tonne ROM, the Project is extremely sensitive to variations in the waste mining cost which makes up over 50% of the total operating cost.
<i>Social</i>	WHC have the majority of key stakeholder agreements in place and do not anticipate any issues in finalising.
<i>Other</i>	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 operations viability. RPM understands that the pit shells that the Statement is based on extend into existing EL’s in the Vickery South, Bluevale and Pinehill areas. WHC has applied for MLA’s covering a portion of this area. Should these areas be awarded there will still be parts of the Mineable Pit Shell within EL areas and AUTH406. 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.
<i>Classification</i>	Classification of Ore Reserves has been derived by considering the Measured and Indicated Resources and the level of mine planning. All Coal Reserves are classified as Probable for <u>both</u> Measured and Indicated Resources, as the mine is not currently operating and the level of mine planning is regarded as preliminary. Detailed mine planning of the entire Project is required to enable some of the Measured Resource to meet Proved Coal Reserve classification. The Inferred Coal Resources have been excluded from the Reserve estimates. The result reflects the Competent Persons view of the deposit.
<i>Audits or reviews</i>	Internal peer review and reconciliation by RPM of the Reserves estimate has been completed.
<i>Discussion of relative accuracy/ confidence</i>	The pit shell is supported by approximately 80% of Measured Coal Resources. The basis of the estimate is the Vickery Precinct PFS. The quantity schedule and economic model has been updated based on the 2015 Resource geological model. Existing CHPP and rail loading infrastructure is in place. Analysis of the Coal quality has been undertaken by independent laboratories working under international standards of method and accuracy. Metallurgical studies have been completed as part of the Vickery Draft FS and the Vickery South Studies. 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 during operations. Geotechnical studies have been completed The Reserve estimations have been independently checked along with the pit shell volumes. No current production data is available for comparison.



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