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DINGO (PEARL CREEK) PROJECT – JORC RESOURCE

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 Dingo (Pearl Creek) Project 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.

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Section 1	Sampling Techniques and Data
Criteria	Explanation
<i>Sampling Techniques</i>	With several exceptions all core holes were fully cored. Drilling rigs comprised both conventional and top head drive units providing core samples of 100mm, 83.1mm and 61.1mm diameter core. Openhole rotary drilling provided chip samples where seams were not cored. All holes were attempted to be drilled vertical and all holes were geophysically logged.
<i>Drilling techniques</i>	Rotary drilling using downhole blades or hammer bit. Wireline core drilling.
<i>Drill sample recovery</i>	Core sample drilled and recovery noted by supervising geologist. Sample weights compared with estimated weights to aid determination of sample recovery. Seam intervals with less than 90% linear recovery were not used as data points for coal assay.
<i>Logging</i>	Core and chip samples were logged by geologists experienced in coal resource investigation and evaluation. Where possible, wireline logging of all drill holes has been routinely undertaken for the industry standard suite of logs - calliper, gamma and density. Deviation logs have been run in all holes due to the geological structure. The majority of core has been photographed. The level of detail is considered to be appropriate for coal resource definition.
<i>Sub-sampling techniques and preparation</i>	Full cores were used for sample testing. Samples have been crushed and sub-sampled using NATA registered laboratories following appropriate Australian Standards for coal testing. No chip samples were used to assess coal quality.
<i>Quality of assay data and laboratory tests</i>	NATA registered laboratories have been used for all coal testing. All test-work for Pearl Creek core samples was monitored by independent coal quality and utilisation consultants A&B Mylec.
<i>Verification of sampling and assaying</i>	Coal assay results have been compared with predictions from downhole geophysical logs and results checked and again, reviewed by A&B Mylec.
<i>Location of data points</i>	Drillhole collars were surveyed on a regular basis by registered surveyors from Shanahan Survey Services Pty Ltd. An aerial survey was flown and a DTM compiled by AAM Hatch Pty Limited in 2005. Drillhole collars have been checked against the DTM and found to be consistent. All collar levels are supplied in MGA94 co-ordinates which are based on GDA94 datum for Zone 55.
<i>Data spacing and distribution</i>	Data spacing varies dependent on classification of coal resources. Drillhole spacing is deemed sufficient to confirm coal seam continuity along strike whilst geological structure normal to strike is at lesser confidence due to the degree of geological complexity in this direction.
<i>Orientation of data in relation to geological structure</i>	Drilling has been attempted at all times to maintain hole verticality. Geological structure precludes truly vertical holes thus the employment of downhole deviation logging and computer modelling methods to attempt to correctly position the coal intersections was needed.
<i>Sample security</i>	All core samples designated for coal quality analysis were kept in cold storage on-site prior to delivery to the laboratory by the geological field services personnel.
<i>Audits or reviews</i>	No formal audit has been undertaken. The resource estimate and draft report were reviewed by Whitehaven Coal technical personnel.

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Section 2	Reporting of Exploration Results
Criteria	Explanation
<i>Mineral tenement and land tenure status</i>	<i>Exploration Permit (Coal) 862 "Dingo"</i> is comprised of 48 sub-blocks and is held in joint venture by Boardwalk Dingo Pty Ltd (70%-WHC subsidiary) and Independent Coal Pty Ltd (30%-Cockatoo Coal subsidiary). Tenure excludes area subject to any Native Title claim and expires on 3 rd May 2019.
<i>Exploration done by other parties</i>	Prior to 2004 only broad-scale reconnaissance exploration activity had occurred over the area of EPC862 with no exploration aimed at any specific coal targets. The bulk of exploration has been undertaken by Cockatoo Coal Pty Ltd and Whitehaven Coal Limited.
<i>Geology</i>	The Pearl Creek coal deposit is contained within the Baralaba Coal Measures and Burngrove Formation in the central portion of the Permian aged Bowen Basin. There is no indication of igneous intrusions. Multiple coal seams strike in a north-westerly direction. All seams are affected by faulting to varying extent and the overall seam dips are steep.
<i>Drill hole information</i>	All drillhole information used in the evaluation of the coal resources at Pearl Creek is included as appendices to the JORC Resource Report dated January 2013.
<i>Data aggregation methods</i>	A number of contiguous coal seam samples may have been composited on an industry standard length by density basis. Reported coal quality is for the full seam (inclusive of non-coal intervals generally less than 0.20m thick).
<i>Relationship between mineralisation widths and intercept depths</i>	Coal thickness is quoted for downhole vertical thickness. Coal resource modelling and estimation methods adjust for seam thickness versus the apparent thickness.
<i>Diagrams</i>	Maps are included at the end of this table.
<i>Balanced reporting</i>	All drillhole data used in geological modelling and resource estimation are included as appendices to the resource report and there has been no preferential reporting of exploration results.
<i>Other substantive exploration data</i>	No field mapping has been undertaken by Boardwalk Resources or Whitehaven Coal. A 2D Mini-SOSIE survey was undertaken during 2005 and re-interpreted following completion of a number of drillholes during the 2012 exploration work. Field acquisition and re-interpretation was undertaken by Velseis Pty Limited.
<i>Further Work</i>	Additional drilling will be required to increase confidence in Indicated and Inferred category resource areas. Significant core drilling will be required to permit an upgrade of resources to the Measured category.

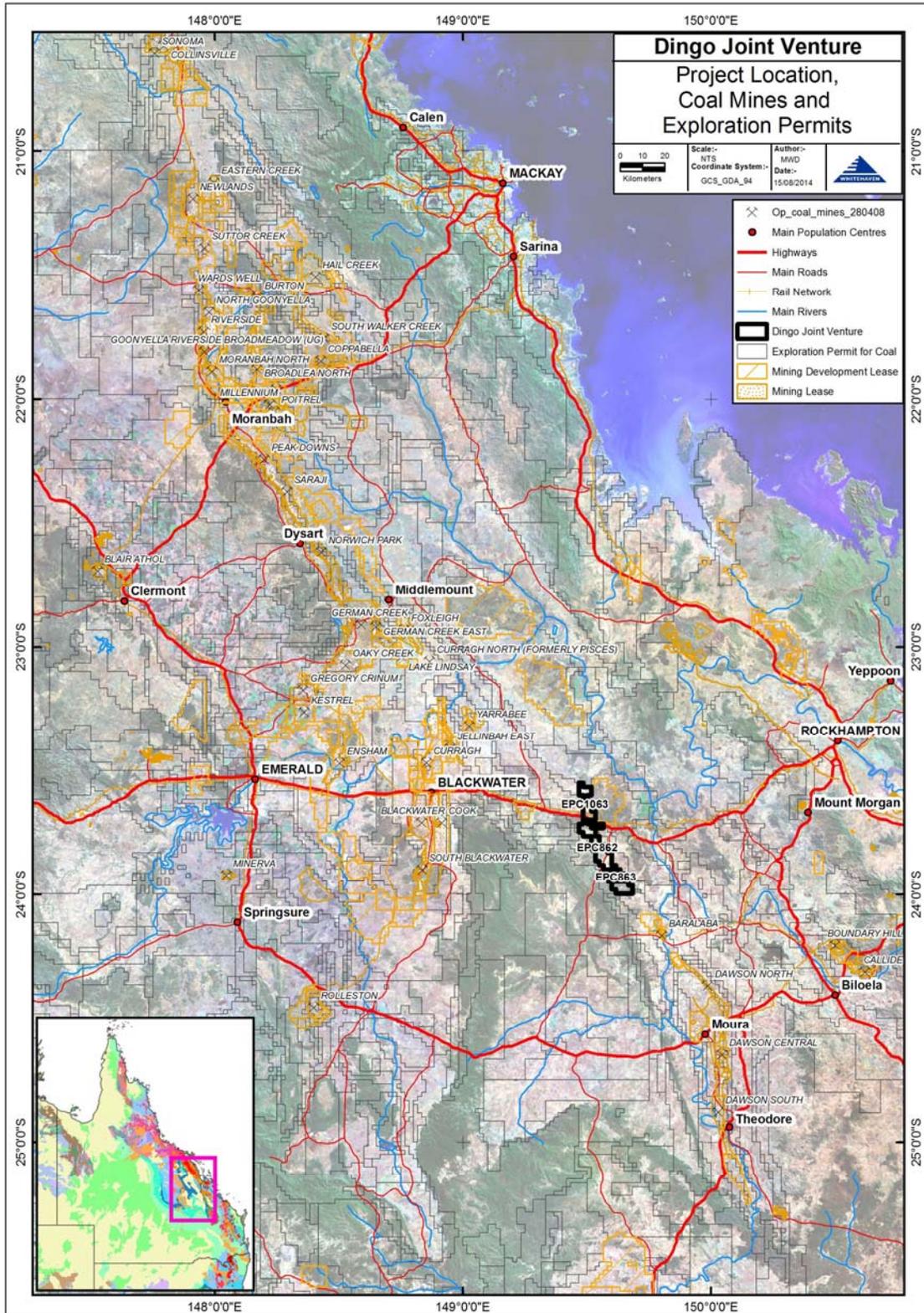
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Section 3	
Estimation and Reporting of Mineral Resources	
Criteria	Explanation
<i>Database integrity</i>	Lithological logs, wireline geophysical logs, assay results and coal intersection depths were reconciled before modelling and resource estimation. Coal quality data was checked by independent consultants prior to resource estimation.
<i>Site visits</i>	No specific site visit was undertaken by the competent person. All senior personnel from each discipline held weekly teleconferences to monitor the programme status. A visit was made to Cockatoo Coal's Baralaba Coal Mine during September 2012 where a meeting was held with on-site geological staff to discuss geological aspects of the area..
<i>Geological interpretation</i>	The geological interpretation is based in the integration of all historical drillhole and recent assay data. Whilst there are no previous resource estimates for the Pearl Creek area, the current resource estimates are considered conservative.
<i>Dimensions</i>	The dimensions of the Pearl Creek project area are approximately 6,000 metres by 1,500 metres and the maximum depth to which resources are reported is 300 metres. The deposit is oriented in a north-north westerly direction.
<i>Estimation and modelling techniques</i>	Geological modelling has been undertaken using Version 8 of Maptek's VULCAN 3-D geological modelling software. Resources have been estimated by the Competent Person using standard Vulcan estimation tools. Areas of suspected seam repetition due to faulting have been excluded from resources by each seam. Apart from the effects of the complex coal seam geometry, there are no known deleterious elements of economic significance.
<i>Moisture</i>	<i>In-situ</i> moisture has been assumed to be 7% (average air dry moisture plus 5%) and coal density used for resource estimation has been adjusted using the Preston & Sanders method.
<i>Cut-off parameters</i>	General limitations for potential opencut resources include minimum 0.1m fresh coal thickness, 300 metre depth cut-off and raw ash of $\leq 45\%$(air dry). No weathered coal or fault-repeated coal is included in the resource. Resources are reported for coal less than 300 metres deep.
<i>Mining factors or assumptions</i>	No mining factors or assumptions have been applied. Based on existing mining operations in these coal measures it has been assumed that opencut coal extraction is viable.
<i>Metallurgical factors or assumptions</i>	Only raw coal parameters were modelled for this resource estimation. It is assumed that the Pearl Creek coal can be mined and processed to a saleable product using an industry-standard coal preparation facility.
<i>Environmental factors or assumptions</i>	No environmental factors or assumptions have been considered.
<i>Bulk density</i>	<i>In-situ</i> density estimated using the Preston & Sanders formula and estimated <i>in-situ</i> moisture of 7%.
<i>Classification</i>	The classification of resources into Indicated and Inferred categories is based on the 2003 Australian Guidelines and subsequently moderated by such factors as geological structural complexity. Coal resources have been estimated only for seams that have at least three valid points of observation (raw ash and relative density as a minimum).

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<p><i>Audits or reviews</i></p>	<p>This is the first JORC resource statement for Pearl Creek and no formal audit or review has been undertaken apart from internal review of the draft version by Whitehaven Coal personnel.</p>
<p><i>Discussion of relative accuracy/confidence</i></p>	<p>This is the first resource report for Pearl Creek. Apart from the Baralaba Coal Mine there are no known coal deposits within the immediate region with which to compare. The Competent Person has previous experience with successful exploration and resource assessment in the Yarrabee area which is located approximately 100km to the north-west in the Rangal Coal Measures (Baralaba equivalent) and is similarly geologically complex. Both Yarrabee and Baralaba are successful “small mine” operations. Based on available exploration data the current resource estimation for Pearl Creek is considered to accurately reflect the <i>in-situ</i> resource.</p>

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