



# ASX ANNOUNCEMENT

## Significant JORC Resource Increase for Isaac Plains Coking Coal Complex

### HIGHLIGHTS

- Total JORC Resource<sup>1</sup> more than doubled from 30.1Mt to 76.9Mt with a significant portion (74%) as Measured and Indicated Resource
- Total Resource includes maiden JORC Resource for the Isaac Plains East mine extension of 28.7 Mt
- Raw coal quality shows a material improvement in Isaac Plains East extension

Stanmore Coal Limited (**Stanmore** or the **Company**) (**ASX:SMR**) is pleased to announce a significant increase to JORC Resources at the Isaac Plains Complex consisting of the existing Isaac Plains Coal Mine (**Isaac Plains**) and the Isaac Plains East Project (**Isaac Plains East**). As a result, total JORC Resources have increased by more than 2.5 times since the two assets were acquired in late 2015.

Following completion of the transactions to acquire Isaac Plains from Vale SA and Sumitomo Corp and Isaac Plains East from Peabody Energy, the Company undertook a confirmatory exploration campaign to delineate the potential mining extension areas for both open cut and underground assessment. A total of 21 rotary holes, 20 cored holes and 32.7 km of seismic analysis were completed in the period from October 2015 through March 2016.

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<sup>1</sup> Refer Competent Person Statement, page 5.

Included within the total Resource is a substantial Measured and Indicated Resource of 56.9Mt. This underpins the mining study and JORC Reserve update separately provided by the Company today.

**Table 1: JORC Status by category<sup>2</sup>**

Resource Category	Previous JORC			Update JORC (April 2016)			Increase
	IP	IPE	Total	IP	IPE	Total	
Measured	10.0	-	<b>10.0</b>	15.2	-	<b>15.2</b>	<b>52%</b>
Indicated	9.1	-	<b>9.1</b>	23.0	18.7	<b>41.7</b>	<b>358%</b>
<b>Total M&amp;I Resource</b>	<b>19.1</b>	<b>-</b>	<b>19.1</b>	<b>38.2</b>	<b>18.7</b>	<b>56.9</b>	<b>198%</b>
Inferred	11.0	-	<b>11.0</b>	10.0	10.0	<b>20.0</b>	<b>82%</b>
<b>Total Resource</b>	<b>30.1</b>	<b>-</b>	<b>30.1</b>	<b>48.2</b>	<b>28.7</b>	<b>76.9</b>	<b>155%</b>

Refer Appendix A and B for Table 1 assumptions and information prepared by Xenith Consulting Pty Ltd for Isaac Plains and Isaac Plains East respectively.

### *Isaac Plains*

The confirmatory exploration program at Isaac Plains focused on the Leichhardt coal seam in the eastern area of the Mining Lease which had not previously been drilled extensively. The Leichhardt seam is part of the Rangal Coal Measures with an average thickness of 3.6 metres within the Isaac Plains Resource area. The information from this program provides further understanding of the geology which will inform the ongoing assessment of potential underground mining opportunities. A breakdown of JORC Resource by potential mining zone is noted in Table 2.

**Table 2: JORC Resource by potential mining zone and indicative coal quality – Isaac Plains**

Resource Category	Mining zone <sup>3</sup>		
	OC	UG	Total
Measured	4.9	10.3	<b>15.2</b>
Indicated	1.1	22.0	<b>23.1</b>
Inferred	-	10.0	<b>10.0</b>
<b>Total Resource</b>	<b>6.0</b>	<b>42.2</b>	<b>48.2</b>
Raw proximate analysis (adb) <sup>4</sup>			
Ash %	17.6	16.8	<b>16.7</b>
Inherent moisture %	2.3	3.0	<b>2.9</b>
Volatile matter %	24.4	23.9	<b>24.0</b>
Fixed carbon %	56.6	56.4	<b>56.4</b>
Total sulphur %	0.43	0.42	<b>0.42</b>
Energy content (kcal/kg)	6,600	6,691	<b>6,685</b>

Note: Totals may not add due to minor rounding differences

<sup>2</sup> IP stands for Isaac Plains; IPE stands for Isaac Plains East

<sup>3</sup> OC stands for open-cut; UG stands for underground

<sup>4</sup> Adb stands for air dried basis

## Isaac Plains East

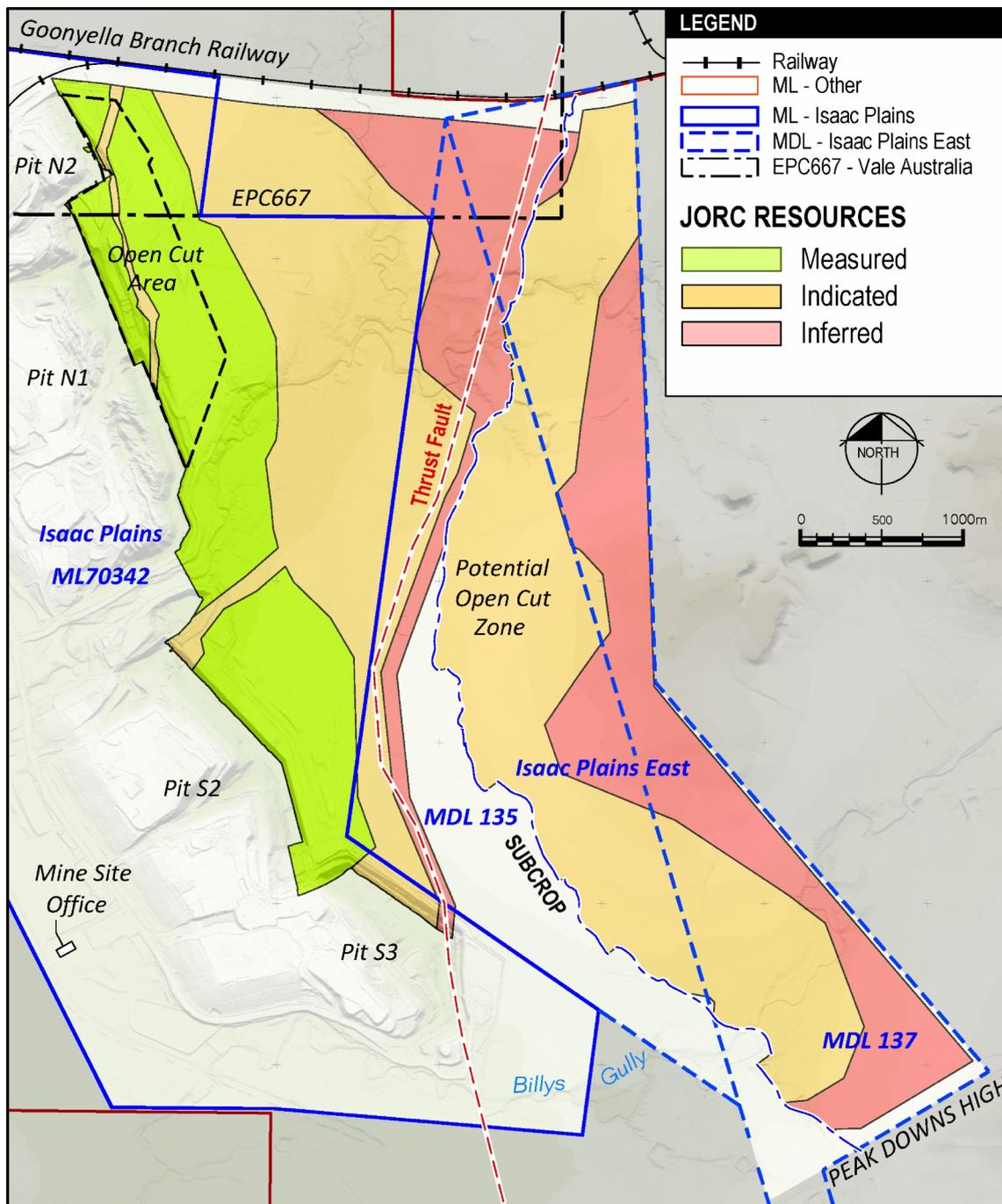
The confirmatory program at Isaac Plains East focused on the shallower areas in the west of the deposit, identified via historic exploration carried out by BHP in the 1980s. The Leichhardt coal seam at Isaac Plains East is the same as that mined at Isaac Plains. An upthrust fault brings the easterly dipping coal measures back to sub crop within 15m of the surface in the western section of Isaac Plains East. Seam thickness averages 2.7m across the Isaac Plains East Resource area. Activities conducted include rotary and core drilling, 2D seismic traverses and limits of oxidation definition drilling to underpin a proposed open-cut mining operation.

The confirmatory drilling program has provided the Company with analysis on indicative raw coal quality parameters for Isaac Plains East. A summary of the outputs is contained below at Table 3. Overall the in-situ coal exhibits lower ash and volatile percentage values than the same coal seam within Isaac Plains, indicating a higher potential processing yield and enhanced coking properties.

**Table 3: Isaac Plains East JORC categories and indicative coal quality**

Resource Category	Depth	Insitu Tonnes x 10 <sup>6</sup>	In situ RD (g/cc)	Raw Proximate Analysis (adb)				General Analysis (adb)		
				Ash %	Inherent Moisture %	Volatile Matter %	Fixed Carbon %	Chlorine %	Total Sulphur %	Specific Energy (Gross Sulphur Corrected) (kcal/kg)
Indicated	< 100m	17.0	1.40	13.5	2.3	24.1	60.1	0.06	0.43	7,037
Indicated	> 100m	1.7	1.40	13.3	2.2	24.5	60.0	0.06	0.41	7,045
<b>Total Indicated</b>		<b>18.7</b>	<b>1.40</b>	<b>13.5</b>	<b>2.3</b>	<b>24.2</b>	<b>60.0</b>	<b>0.06</b>	<b>0.43</b>	<b>7,037</b>
Inferred	< 100m	3.0	1.42	15.0	2.3	23.7	59.0	0.06	0.40	6,888
Inferred	> 100m	7.0	1.40	13.3	2.3	24.2	60.2	0.07	0.44	7,060
<b>Total Inferred</b>		<b>10.0</b>	<b>1.40</b>	<b>13.8</b>	<b>2.3</b>	<b>24.0</b>	<b>59.9</b>	<b>0.07</b>	<b>0.42</b>	<b>7,007</b>
<b>Total Resource</b>		<b>28.7</b>	<b>1.40</b>	<b>13.6</b>	<b>2.3</b>	<b>24.1</b>	<b>60.0</b>	<b>0.06</b>	<b>0.43</b>	<b>7,027</b>

Map 1: JORC Resource areas within Isaac Plains Complex



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Yours faithfully

**Andrew Roach**  
Company Secretary

### **FOR FURTHER INFORMATION, PLEASE CONTACT:**

**Mr Nick Jorss**  
Managing Director  
07 3238 1000

**Mr Andrew Roach**  
Chief Financial Officer & Company Secretary  
07 3238 1000

### **ABOUT STANMORE COAL LIMITED (ASX CODE: SMR)**

Stanmore Coal operates the Isaac Plains coking coal mine in Queensland's prime Bowen Basin region. Stanmore Coal owns 100% of the Isaac Plains mine and the adjoining Isaac Plains East expansion project. The company is focused on the creation of shareholder value via the efficient operation of Isaac Plains, timely development of Isaac Plains East and identification of further development opportunities within the region. In addition Stanmore Coal holds a number of high quality development assets in both coking and thermal coal located in the Queensland's Bowen and Surat Basins.

### **COMPETENT PERSON STATEMENT**

The information in this report relating to the Isaac Plains Coal Mine and Isaac Plains East Project coal resources is based on information compiled by Mr Troy Turner who is a member of the Australian Institute of Mining and Metallurgy and is a full time employee of Xenith Consulting Pty Ltd. Mr Turner is a qualified geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Turner consents to the inclusion in the report of the matters based on the information, in the form and context in which it appears.

#### **Stanmore Coal Limited ACN 131 920 968**

p: +61 (7) 3238 1000  
f: +61 (7) 3238 1098

e: [info@stanmorecoal.com.au](mailto:info@stanmorecoal.com.au) w:  
[www.stanmorecoal.com.au](http://www.stanmorecoal.com.au)

Level 8, 100 Edward Street, Brisbane QLD 4000  
GPO Box 2602, Brisbane QLD 4001

## APPENDIX A – TABLE 1 FOR ISAAC PLAINS RESOURCE UPDATE

This Appendix details sections 1, 2 and 3 of the JORC Code 2012 Edition Table 1. Sections 4 ‘Estimation and Reporting of Ore Reserves’ and 5 Estimation and Report of Diamonds and Other Gemstones’ have been excluded as they are not applicable to this deposit and estimation.

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	CP Comments
Sampling techniques	<ul style="list-style-type: none"> <li>• <i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>In cases where ‘industry standard’ work has been done this would be relatively simple (eg ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Exploration 2015 – Present:</li> <li>• 66 open holes were drilled, mainly for the purpose of fault delineation.</li> <li>• 5 cored coal quality holes were completed within the ML. An additional 5 holes were drilled within Isaac Plains East where the LHD seam has been intersected on the western side of the Isaac Thrust, and is consequently included in the Isaac Plains project.</li> <li>• For the Stanmore 2015/2016 program, all cored intervals were sampled where coal was present at thickness of 0.1m or more, with a maximum sample thickness of 0.5m. Coal plies were sample discretely on the basis of lithological characteristics and quality. All non-coal material and partings less than 0.1m were included with the coal ply and noted in the lithological description. Non-coal interburden material greater than 0.1m and up to a maximum of 0.3m were sampled separately. Approximately 0.30 of immediate roof and floor were also collected as dilution samples.</li> <li>• Geotechnical samples were collected from roof (up to 10m above seam) and floor sections (up to 6 metres below seam). Selected samples were</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<p>analysed with testing including UCS, Young's Modulus, Poisson's Ratio and Slake Durability.</p> <ul style="list-style-type: none"> <li>• All remaining un-sampled cored material has been retained in marked core boxes for future reference..</li> <li>• All coal quality samples were double bagged at site and marked with sample number, hole and project. The samples were then kept in cold storage on site before dispatch to the laboratory via a tracked freight service. Chain of Custody and sample documentation were sent to the laboratory by email ahead of the samples. Coal was stored on site for periods of no more than two weeks prior to dispatch. Geophysical corrections were undertaken as soon as practicable following sample collection and these were used to confirm representative core recovery.</li> <li>• Line of Oxidation chip samples were collected from the shallowest coal seam in each of the holes where coal was intersected, regardless of whether it appeared weathered or not. If deeper seams also appeared weathered, these were also sampled. Samples were collected in 1m intervals in sealed plastic bags and marked with sample number, hole number and project. These small sample bags were then bagged in groups into larger plastic bags. These samples were stored and shipped in the same manner as the coal quality core samples.</li> <li>• Coal quality samples were sent to Bureau Veritas Laboratories in Brendale, Queensland. Bureau Veritas Minerals Pty Ltd is a NATA registered and a well-recognized coal analytical organization conducting coal quality sampling for many years. Bureau Veritas are accredited for compliance with ISOMECEC 17025, corporate accreditation number 1805. Site accreditation number 18415.</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<ul style="list-style-type: none"> <li>• Samples were stored in cold storage at Bureau Veritas until instruction are available to conduct the analytical program.</li> <li>• Exploration 2009 to 2014:</li> <li>• Xenith is not aware of any Coal quality drilling undertaken within in this period.</li> <li>• Exploration drilling in 2013 involving 36 holes of structural fault definition.</li> <li>• Exploration 2008 to 2009</li> <li>• In July 2008 to September 2009 BCCM drilled a further 287 drillholes to assist with determining gas content, improving fault definition.</li> <li>• For the 2008 program, samples were taken at approximately 30cm intervals (2010 JORC Resource report)</li> <li>• All cored holes were photographed in the field (digital Camera), sampled, boxed into core trays where depth were recorded for subsequent reference.</li> <li>• No detail of interburden thickness sampling rules was presented.</li> <li>• The immediate roof and floor have been sampled of lengths &gt;than 0.1m in general. At the minimum Ash and RD analysis has been conducted..</li> <li>• All coal samples were collected into plastic bags and then transported to the laboratory via courier and were accompanied by a sample advice sheet.</li> <li>• Coal Quality samples were sent to ALS / Actest Laboratory in Maitland NSW, or Bureau Veritas (previously CCI) Laboratory in Newcastle.</li> <li>• All coal quality samples were prepared and analysed using ALS/ Actest or Bureau Veritas testing parameters. Both laboratories are NATA registered and have been operating in Australia for over 50 years.</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<ul style="list-style-type: none"> <li>•</li> <li>• Exploration 2004 to 2006</li> <li>• For the 2004 program, samples were taken on approximately 25-30cm intervals (2010 JORC Resource report)</li> <li>• For cored holes, coal seams were sampled discretely on the basis of lithological characteristics such as the brightness profile, and where reasonable were sampled on a ply basis into approximately 0.5m plies</li> <li>• No detail of interburden thickness sampling rules was presented.</li> <li>• The immediate roof and floor have been sampled of lengths &gt;than 0.1m in general. At the minimum Ash and RD analysis has been conducted..</li> <li>• All coal samples were collected into plastic bags and then transported to the laboratory via courier and were accompanied by a sample advice sheet.</li> <li>• Coal Quality samples were sent to Casco Australia Pty Ltd (Casco) laboratory in Mackay.</li> <li>• All coal quality samples were prepared and analysed using Casco testing methodologies. Casco is a National Association of Testing Authorities (NATA) registered organisation.</li> <li>• Line of oxidation (lox) samples were collected in 0.5m samples.</li> <li>• Lox samples were bagged on site and sent to CCI Australia Laboratory in Moranbah for analysis.</li> <li>• Gas sampling was conducted at three sites, located in pits N1, N2 and S3. The full seam was sampled into gas canisters.</li> <li>• Q1 gas testing was undertaken by the field Geologist in the field. The process of analysis involved Geogas standard procedures.</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<ul style="list-style-type: none"> <li>• Gas samples were sent to Geogas laboratory in Mackay for gas analysis (Q2 and Q3).</li> <li>• Seven fully cored (diamond) holes were drilled to analyse the overburden, coal and floor sediments for rock strength and other geotechnical issues. Samples were stored in core trays, with representative 30cm length samples wrapped in plastic and sealed from moisture.</li> <li>• Geotechnical samples were reviewed from 7 HQ fully cored drill holes by Insite Geology and sent samples for destructive geotechnical test work with Ullman and Nolan laboratories I Mackay.</li> <li>• Multiple mini-Sosie seismic work undertaken by Velseis Pty Ltd in March/April 2004 and July/August 2005 (8.7km and 9.3km surveys respectively) to better delineate structure within the deposit.</li> <li>• Ground magnetic survey undertaken by Resolve Geological in October 2004 to delineate extent of intrusive material within the area.</li> <li>• 15 lines of Mini-Sosie seismic survey were completed by Velseis in 2015 / 2016 covering 32 km. These traverse both the IP and the IPE project areas.</li> <li>• Historic exploration:</li> <li>• Details for the sampling of historic drilling information Pre -2004 are not available.</li> <li>• A review of suitable historic holes was reported to have been conducted as part of the 2010 resource estimate.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple</i></li> </ul>	<ul style="list-style-type: none"> <li>• 2015/16 exploration:</li> <li>• For the Stanmore 2015/2016 exploration program, part-cored holes for</li> </ul>

Criteria	JORC Code explanation	CP Comments
	<p><i>or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></p>	<p>coal quality were drilled in HQ3 diameter (61.1mm diameter core). Holes were extended at least 4m below the base of the last intercepted coal seam to allow for geophysical logging of the entire seam.</p> <ul style="list-style-type: none"> <li>• Chip holes were drilled using either poly-crystalline diamond or blade bits and a downhole hammer was used when required in weathered and fresh basalt. Hole size varied between a minimum of 99 mm and a maximum of 229mm, depending on the type and diameter of bit used.</li> <li>• All core was photographed in 0.5m intervals against a blackboard with depth markings, lithology and sample numbers added. Chips were laid out on bare ground in lines of 30 one metre samples further subdivided into 6m runs. Chips were photographed in 6m runs with a whiteboard showing hole number, date and depth range. In all photographs, depth increases from left to right.</li> <li>• Historic exploration:</li> <li>• All coal quality holes were cored (partially or fully) using core barrel, producing a 63.5 mm and 100mm core diameter (also a series of 200mm cores were drilled late 2004).</li> <li>• Structural holes were drilled as part of a fault delineation program. As part of this work, these holes were fully open (chipped).</li> <li>• Lines of Oxidation (“LOX”) holes were drilled by a reverse circulation hammer drill rig.</li> <li>• Non-cored holes were used in the model to define structure and stratigraphy but were not used as Points of Observation (“POB”).</li> <li>• A full list of drill holes and drilling types is available at the end of Table 1 in Appendix C</li> </ul>

Criteria	JORC Code explanation	CP Comments
Drill sample recovery	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• 2015/16 program:</li> <li>• Only cores were sampled for analysis</li> <li>• Adequate recovery was assessed on a length basis</li> <li>• A 95% linear seam recovery was required; otherwise the seam would be redrilled.</li> <li>• The CP is adequately satisfied no sample bias has occurred.</li> <li>• Pre 2015:</li> <li>• No details of the process followed for determining % recovery were viewed for the purpose of producing this resource report.</li> <li>• If there was less than 95% core recovery, it appears the seam was required to be redrilled.</li> <li>• No details were available on the relationship between sample recovery and quality or sample bias.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All drill core was geologically logged, marked and photographed prior to sampling. Geological and geotechnical features were identified and logged as part of this process.</li> <li>• All chip holes had chips collected every metre, which were then geologically logged and photographed.</li> <li>• All drill holes have been geophysically logged (except where blocked) with the minimum suite of tools run including: Density, Calliper, Verticality/Deviation and Gamma.</li> <li>• A full list of the suite of geophysical logs that have been run on each drill hole can be found in Chapter 6.5 of the Resource estimate report.</li> <li>• The calibration of the geophysical tools was conducted by the</li> </ul>

Criteria	JORC Code explanation	CP Comments
		geophysical logging company engaged in the project at the time.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• 2015/16 program:</li> <li>• All core coal samples were double bagged on site and were transported by tracked freight courier to the laboratory for testing.</li> <li>• Ply samples were initially tested by Bureau Veritas for Apparent Relative Density (ARD), which is a non-destructive water immersion density test. The results were provided and analysed prior to creation of float-sink (wash) composite sections.</li> <li>• Two (2) composite divisions were created per seam intersection, consisting of a “top” approximately 2m division and a “bottom” remainder of seam thickness ranging 0.5 to 2m thick.</li> <li>• To simulate mine transport conditions each composite sample was then drop shattered 20 times from a height of 2 metres, any sample mass remaining of &gt;50mm was hand knapped to 50mm, dry tumbled and dry sized at 31.5, 25, 16, 8, 4 and 2mm.</li> <li>• Composite samples were then split and further analysed as follows:</li> <li>• 1/8 for quick coke: Crush to 11.2mm, float sink at 1.425 density, crush to 4mm and mill sample to test for Proximate, CSN, Gieseler &amp; Dilatation</li> <li>• 1/8 for raw analysis: Crush to 4mm, mill sample to test for RD, MHC, Proximate, TS, CSN, Calorific Value &amp; Cl</li> <li>• ¾ for float sink: Wet tumble and wet size at 31.5, 25, 16, 8, 4, 2, 1, 0.5, 0.25, 0.125 &amp; 0.063mm. Re-combine samples in following fractions: -50+16mm, -16+8mm, -8+2mm and -2+0.25mm. Float sink each size fraction at densities (F1.30, F1.35, F1.375, F1.40, F1.45, F1.50, F1.55,</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<p>F1.60, F1.70, F1.80, F2.00). -0.25+0mm fraction subject to tree froth flotation. All fractions analysed for ash and CSN.</p> <ul style="list-style-type: none"> <li>• Washability simulations were performed on the float sink results and from that data clean coal composite samples were compiled and analysed for: Primary Coking (-16+0mm), Coarse Coking (-50+16mm) and Secondary Thermal Coal Composites.</li> <li>• The various product types were identified for each hole (from the float sink dataset) and clean coal composite samples were derived and assayed for the various representative properties</li> <li>• Pre 2015:</li> <li>• Casco complies with the Australian Standards for sample preparation and sub-sampling.</li> <li>• All coal samples were crushed to a top size of 32mm before analysis, for HQ and PQ core (63.5 mm and 85 mm mm core diameter) and for 100mm core.</li> <li>• Two, 200mm cores were drilled to take a bulk sample for detailed sizing, washability and coke oven testing.</li> </ul>
<p><i>Quality of assay data and laboratory tests</i></p>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks,</i></li> </ul>	<ul style="list-style-type: none"> <li>• Bureau Veritas Minerals Pty Ltd is a NATA registered and a well-recognized coal analytical organization conducting coal quality sampling for many years. Bureau Veritas are accredited for compliance with ISOMECEC 17025, corporate accreditation number 1805. Site accreditation number 18415.</li> <li>• Casco in Mackay, QLD comply with the Australian Standards for coal quality testing and are certified by the NATA.</li> <li>• Geophysical tools were calibrated by the logging company engaged in</li> </ul>

Criteria	JORC Code explanation	CP Comments
	<p><i>duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></p>	<p>the project at the time.</p>
<p><i>Verification of sampling and assaying</i></p>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Bureau Veritas in Brendale, QLD comply with the Australian Standards for coal quality testing, and as such conduct the verifications for coal quality analysis outlined in the standards. Casco in Mackay, QLD comply with the Australian Standards for coal quality testing, and as such conduct the verifications for coal quality analysis outlined in the standards.</li> <li>• Coal quality results were verified by Stanmore and Xenith Consulting Pty Ltd (“Xenith”) personnel before inclusion into the geological model and resource estimate.</li> <li>• Product coal assessment and analysis procedure design was undertaken by Chris McMahon at McMahon Coal Quality Resources (MCQR).</li> <li>• No adjustments have been made to the lab analysis sheets sited in the data room.</li> </ul>
<p><i>Location of data points</i></p>	<ul style="list-style-type: none"> <li>• <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The topographic surface has been generated from LiDAR, which was flown by Atlass (Aust) Pty Ltd, 2<sup>nd</sup> September 2015. Vertical Accuracy: +/- 0.2m.</li> <li>• The 2015/16 drillholes were surveyed by MSS and JTH Surveys, Moranbah, using site base station (RTCM0000) and Trimble R10 GPS.</li> <li>• Previous drilling was surveyed by Shield Surveying Pty Ltd (Mackay) and Mackay Surveys Pty Ltd.</li> <li>• The datum used AGD 84 and the projection used AMG 84 Z55.</li> </ul>

Criteria	JORC Code explanation	CP Comments
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill hole spacing has been dictated by the characteristics and consistency of the target seams within the deposit.</li> <li>• Exploration drilling has been conducted on different drilling patterns depending on the nature of the program. For instance, the fault delineation drill holes were spaced between 10 to 20m apart along a pre-determined targeted line.</li> <li>• Structural drilling is in general on 250m centres and coal quality drilling is located on approximately 500m centres.</li> <li>• The inclusion of holes from neighbouring areas has given the model a reasonable amount of lateral continuity in the north of the ML area.</li> <li>• Samples were reported to have been taken on approximately 20 - 40 cm interval and compositing into top and bottom plies. and compositing into top and bottom plies. As such, where appropriate, sample compositing has been completed.</li> <li>• Considering the continuity of the target seam(s) in the deposit, this spacing has proven to be sufficient to give adequate control to the model and give the required confidence in the geological interpretation.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The orientation and spacing of the drilling grid is deemed to be suitable to detect geological structures and coal seam continuity within the resource area.</li> <li>• Comprehensive 2D seismic sections complement the distribution of drillholes.</li> </ul>

Criteria	JORC Code explanation	CP Comments
Sample security	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>All coal quality cored samples were double bagged in plastic bags on site and the dispatched to Bureau Veritas in Brendale Queensland via tracked freight service. Chain of custody and sample information was emailed to the laboratory ahead of the sample.</li> <li>All samples were held in cold storage prior to leaving site and at laboratory prior to analysis.</li> <li>The same procedure was used for all geotechnical samples derived from the cored holes.</li> <li>Previous programs provide no details on sample security from the provided literature.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Cross plots for raw Rd and ash% have been produced to validate the results of the coal quality data. The variability of the data is within the expected range.</li> <li>Bureau Veritas undertake internal audits and checks in line with the Australian Standards and their NATA certification. Corporate Accreditation no. 1805 and site no. 18415</li> <li>Casco undertake internal audits and checks in line with the Australian Standards and their NATA certification.</li> <li>Vale reported to have performed a high level technical review of the a geological data system during the sale process in 2007</li> </ul>

## SECTION 2 REPORTING OF EXPLORATION RESULTS

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

Criteria	JORC Code explanation	CP Comments																								
<p><i>Mineral tenement and land tenure status</i></p>	<ul style="list-style-type: none"> <li><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>Isaac Plains Mine consists of Mining Lease 70342, held by Stanmore IP Coal Pty Ltd, and fully owned subsidiary of Stanmore Coal Limited.</li> <li>EPC is located to the North of the ML and is currently held by Vale Australia. Stanmore have signed a Designated Area Agreement (DAA) with Vale. The DAA allows Stanmore to explore and apply for a Mining Lease over the area of the DAA within EPC 667 between ML 70342 &amp; MDL135 to the South of the Goonyella to DBCT Rail line.</li> <li>Stanmore acquired MDL135 and the northern part of MDL137 from Millennium Coal Pty Ltd, a subsidiary of Peabody Australia, in July 2015, with the transaction completed in September 2015. Stanmore have contractual rights to explore and apply for higher level tenure over the aggregated area as though it were the underlying holder.</li> </ul> <table border="1" data-bbox="1256 999 2119 1335"> <thead> <tr> <th>Tenure</th> <th>Tenement Holder</th> <th>Grant Date</th> <th>Expiry Date</th> <th>Area (Ha)</th> </tr> </thead> <tbody> <tr> <td>ML 70342</td> <td>Stanmore IP Coal Pty Ltd</td> <td>1/12/2005</td> <td>31/12/2025</td> <td>2141.9</td> </tr> <tr> <td>EPC 667</td> <td>VALE AUSTRALIA (CQ) PTY LTD</td> <td>17/10/1997</td> <td>30/05/2016 (renewal lodged)</td> <td>10807, (34 Sub-blocks)</td> </tr> <tr> <td>MDL</td> <td>Millennium Coal</td> <td>7-Jun-93</td> <td>30-Jun-</td> <td>589.4</td> </tr> </tbody> </table>					Tenure	Tenement Holder	Grant Date	Expiry Date	Area (Ha)	ML 70342	Stanmore IP Coal Pty Ltd	1/12/2005	31/12/2025	2141.9	EPC 667	VALE AUSTRALIA (CQ) PTY LTD	17/10/1997	30/05/2016 (renewal lodged)	10807, (34 Sub-blocks)	MDL	Millennium Coal	7-Jun-93	30-Jun-	589.4
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Criteria	JORC Code explanation	CP Comments				
		135	Pty Ltd		18	
		MDL137	Millennium Coal Pty Ltd	7-Jun-93	30-Jun-18	1203.4 (N and S)
		<ul style="list-style-type: none"> <li>There are no known impediments to obtaining a licence to operate in the Isaac Plains area.</li> </ul>				
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Historically (since the early 1970's), there have been 6 EPC's (EPC 6, 3, 292, 755, 602, 1454) held over the Isaac Plains area.</li> <li>A total of 7 parties have undertaken exploration activities within the project area.</li> <li>Exploration drilling and geophysical surveys that have been completed within and in close proximity to the Isaac Plains area have been reviewed as part of this report.</li> <li>Within the lease boundary and EPC 677 resource zone, a total of 37 drill holes with publically available information drilled by other parties were reviewed, including drilling for coal. Among them, 36 historic holes were considered suitable for use in the geological model.</li> <li>An additional 3 drill holes located outside of the lease boundary and EPC resource zone were included to ensure adequate structural control of the resource deposit.</li> <li>MGC Resources Australia Pty Ltd conducted 2D dynamite seismic surveys within the area during the early 1990's.</li> </ul>				
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Isaac Plains project area lies within the Permo-Triassic Bowen Basin. The Bowen Basin consists of 10 kilometre (km) thick sequences of</li> </ul>				

Criteria	JORC Code explanation	CP Comments
		<p>volcanic, shallow marine and terrestrial sediments and is categorised back-arc to foreland basin.</p> <ul style="list-style-type: none"> <li>The general stratigraphy of the project area includes (oldest to youngest) – Lower-Permian Reids Dome Beds, Lower-Upper Permian Back Creek Group, Upper Permian Blackwater Group, and Rewan group.</li> <li>Coal seams occur within the Rangal Coal Measures which are Late Permian in age. These seams dip gently to the east at approximately 5 degrees.</li> <li>The coal seams found within the Rangal Coal Measures are as follows – Leichhardt, Leichhardt Upper and Leichhardt Lower, and Vermont.</li> <li>The seams have a cumulative thickness of approximately 7-10 m across the deposit.</li> <li>The Vermont seam was not included in the resource estimate due to the lack of geological information. The results at hand indicate the coal to be of poor quality.</li> </ul>
<p><i>Drill hole Information</i></p>	<ul style="list-style-type: none"> <li><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>dip and azimuth of the hole</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>A detailed list of the drill holes used to define the coal quality of the resource in the Isaac Plains Project can be found in Appendix C.</li> <li>All drill holes have been modelled from vertical, although hole deviation (from vertical) has been recorded for all holes.</li> </ul>

Criteria	JORC Code explanation	CP Comments
	<ul style="list-style-type: none"> <li>• down hole length and interception depth</li> <li>• hole length.</li> <li>• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	
Data aggregation methods	<ul style="list-style-type: none"> <li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>• Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• It is reported that all seams where multiple coal quality samples were taken were given composite coal quality values based on top and bottom plies.</li> <li>• Coal quality samples were weighted on thickness (length) and relative density, and composited on a per seam basis.</li> <li>• Seams with a raw ash (adb) above 50% are not classified as coal and has not been included as a resource.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>• All holes were all drilled vertical.</li> <li>• Constraints were applied in thickness modelling to exclude over thickened and under thickened working sections in the model. The variations in the thickness were attributable to faulting.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill</li> </ul>	<ul style="list-style-type: none"> <li>• All appropriate diagrams are contained within the main body of the report</li> </ul>

Criteria	JORC Code explanation	CP Comments
	<i>hole collar locations and appropriate sectional views.</i>	
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>All available exploration data for the Isaac Plains area has been collated and reported.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>All exploration data was gathered and or utilised in the resource estimation.</li> <li>Geotechnical logging, sampling and testing from the overburden, interburden, seam roof/floor and coal (such as defect logging, field point load testing and laboratory testing) has been undertaken.</li> <li>A geostatistical assessment of the Isaac Plains deposit was reported to have been undertaken by Snowden Mining Industry Consultants (Snowdens) in 2010. The original report and date for which were not cited. This study concluded that a drill hole spacing of 250m is “suitable for to confirm the thickness continuity as indicated by the JORC Code of 1999 for the definition of Measured Resources”.</li> <li>Velseis conducted a 2D seismic survey featuring 15 lines to further define faults in the IP and IPE areas. Historical seismic data as described above was re-evaluated. This work resulted in updated fault interpretations which were used in the creation of the geological model.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Production drilling will be planned based on the mine reserves and mining schedule that is currently being prepared.</li> <li>Further resource drilling has not yet been planned.</li> </ul>

## Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	CP Comments
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Data was entered in the field by the field Geologist into LogCheck software.</li> <li>All Lithological logs, and coal intersection depths have been reconciled and corrected to the geophysical log.</li> <li>A review of the historical geophysical logs was conducted as part of the 2015 resource estimate.</li> <li>All new data was validated by Xenith post correction by exploration geologists.</li> <li>All bore hole collars were checked against the natural topographic surface and with the exception of approximately 18 drill holes the difference in RL was less than 1m.</li> <li>Coal Quality data has been checked against lab reports and cross referenced with lithology and ply logs.</li> <li>As part of the 2015 resource estimate seam picks and sample thicknesses for historical holes were validated and raw qualities were compared to results from the historic resource reports.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Mr T. Turner as Competent Person conducted a site visit in late November 2015. Drilling, logging and sampling procedures and techniques were evaluated. All works sighted during the site visit were found to be of a satisfactory standard.</li> <li>The Competent Person's familiarity with the Isaac Plains project area</li> </ul>

Criteria	JORC Code explanation	CP Comments
		and stratigraphy is sufficient. Review of the previous exploration data indicates that the geology is typical of the area.
<i>Geological interpretation</i>	<ul style="list-style-type: none"> <li>• <i>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</i></li> <li>• <i>Nature of the data used and of any assumptions made.</i></li> <li>• <i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></li> <li>• <i>The use of geology in guiding and controlling Mineral Resource estimation.</i></li> <li>• <i>The factors affecting continuity both of grade and geology.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The drill hole density (core and chip) in the Isaac Plains project allows good level of confidence in the nature of seam splitting, seam thickness, coal quality, the location of sub-crops and general location of faults.</li> </ul>
<i>Dimensions</i>	<ul style="list-style-type: none"> <li>• <i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Leichhardt target seam(s) extends approximately 5 km along strike and from 3km (max) in the North to less than 100m (min) in the South, perpendicular to strike with an approximate average cumulative thickness of 3.5m.</li> <li>• The depth of first coal ranges from between 15m in the proximal to the main central thrust fault (uplifted), and 300m in the Northeast.</li> <li>• The current resource extent covers approximately 9.2km<sup>2</sup></li> <li>• Variability in the coal seam parameters, such as seam thickness and raw coal quality, is reflected in the resource classifications assigned to each seam.</li> </ul>
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> <li>• <i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation</i></li> </ul>	<ul style="list-style-type: none"> <li>• The geological model was constructed in ABB Minescape version 5.9 using different modelling algorithms for structure and coal quality parameters. The Finite Element Method (FEM) interpolator with Order: 0 for thickness, 1 for surface and 0 for trend.</li> </ul>

Criteria	JORC Code explanation	CP Comments
	<p><i>method was chosen include a description of computer software and parameters used.</i></p> <ul style="list-style-type: none"> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The inverse distance squared interpolator was used for raw coal quality modelling.</li> <li>• A maximum extrapolation distance of 3000m from the last data point has been used.</li> <li>• Limits were placed on the Resource Estimate with cut-offs at 0.3m thickness for all coal seams within the proposed opencut region and 1.5m for the remainder of the resource, with the minimum parting thickness of 0.3m to be considered within the seam. Stone bands greater than 0.3m are not included within the seam, so modelling of the seam split occurs.</li> <li>• The fault zone (reverse) in the Northern part of the mine has been downgraded to Indicated. The zone is between 20 – 60m wide.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>• <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Coal resource tonnages were estimated using a calculated Preston and Sanders in situ relative density.</li> <li>• Based on the results from coal quality testing, the in situ moisture has been estimated to be 4.5%. The 4.5% was assumed based on similar Rangal Coal Measure seams located within the area, as well as MHC data.</li> <li>• Coal qualities relating to the resource tonnages are reported on an air-</li> </ul>

Criteria	JORC Code explanation	CP Comments
		dried basis.
Cut-off parameters	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>A maximum raw ash percentage has been applied, where a maximum raw ash of 50%, air-dried basis, has been applied to the resource estimate.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>Xenith have applied a minimum thickness appropriate to the potential mining method, see 'Modelling technique' and deem the coal resource have reasonable prospects of economic extraction.</li> <li>Outside of the proposed opencut area N1 pit strip 39 to 46 and N2 pit strip 15 to 21, the majority of ML 70342 and EPC 667 were only considered for potential underground extraction. As such a minimum mining thickness of 1.5m was needed outside the proposed opencut area.</li> <li>Absolute depth of resource was a maximum of 300m from topography.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>It is Xenith's opinion that at this stage of the project that there are no limiting metallurgical factors.</li> <li>Isaac Plains has been an operating opencut mine since 2006.</li> <li>Some historically reported higher than average Rangal Coal Measures phosphorous percentages may potentially require blending before shipping.</li> </ul>
Environmental factors or	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to</i></li> </ul>	<ul style="list-style-type: none"> <li>It is Xenith's opinion that at this stage of the project that there are no limiting environmental factors.</li> </ul>

Criteria	JORC Code explanation	CP Comments
assumptions	<p>consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</p>	
Bulk density	<ul style="list-style-type: none"> <li>• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>• The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>• Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Preston and Sanders In situ Relative Density Estimation – The in situ density of the coal seams has been estimated using the Preston and Sanders in situ relative density estimation equation:  <math display="block">RD(in\ situ) = \frac{RDad \times (100 - Ma)}{\{100 + RDad \times (ISM - Ma) - ISM\}}</math> </li> <li>• Inherent (air dried) moisture values have been derived from sampled core intervals.</li> <li>• In situ Moisture was assumed to be 4.5% for the purpose of the resource estimation.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>• Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>• Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>• Three resource categories have been identified within the Isaac Plains area, depending on the level of confidence in the seam structure and continuity plus the level of variability in the coal quality data.</li> <li>• Drill holes, mined out areas, and seismic sections provide the basis for structural/thickness continuity.</li> <li>• Points of Observation have been used to establish coal quality continuity.</li> <li>• The level of drilling information and presence of an operating mine also assist with the classification of resource categories.</li> </ul>

Criteria	JORC Code explanation	CP Comments
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>No external audits have been performed, but internal QAQC protocols have been followed.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>Xenith have assigned three level(s) of confidence to the coal resource estimate, depending on the seam and drill hole spacing, as described in the Chapter 10 of the 2016 JORC Resource report.</li> <li>A geostatistical review of the coal seam thickness data for the Isaac Plains Project area was conducted in 2010 by Snowden.</li> <li>Factors that could affect accuracy include unknown structures between completed drill holes, seam washouts in roof or in-seam stone bands developing. No evidence exists at this point in time for these, apart from what has currently been geologically modelled or exists within the models design database. The inclusion/exclusion of these features was discussed in the report.</li> </ul>

## APPENDIX B – TABLE 1 FOR ISAAC PLAINS EAST RESOURCE UPDATE

This Appendix details sections 1, 2 and 3 of the JORC Code 2012 Edition Table 1. Sections 4 ‘Estimation and Reporting of Ore Reserves’ and 5 Estimation and Report of Diamonds and Other Gemstones’ have been excluded as they are not applicable to this deposit and estimation.

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	CP Comments
Sampling techniques	<ul style="list-style-type: none"> <li>• <i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>In cases where ‘industry standard’ work has been done this would be relatively simple (eg ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<p><u>Exploration Prior to 2002 JB Mining Report</u></p> <ul style="list-style-type: none"> <li>• 227 holes were drilled in the 1980’s, prior to the resource report being completed by JB Mining in 2002. Of these 14 were cored holes and 213 were chipped holes. Only 177 of the chipped holes made it into the 2016 resource model. 36 were rejected based on locality (outside IPE), suspect survey and twinned locations.</li> <li>• No Coal quality drilling was included in the current model.</li> </ul> <p><u>Exploration 2011</u></p> <ul style="list-style-type: none"> <li>• Blue Energy Limited drilled several CSG wells within and around the area under ATP 814P in 2011. One hole, Sapphire_4 was drilled within the IPE area. Data supplied for this hole was sufficient enough to be able to use for the resource model.</li> </ul> <p><u>Exploration 2015 / 2016</u></p> <ul style="list-style-type: none"> <li>• For the 2015 / 2016 program, samples were taken on</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<p>approximately 20-40cm intervals.</p> <ul style="list-style-type: none"> <li>• For cored holes, coal seams were ply sampled discretely on the basis of lithological characteristics an quality.</li> <li>• Non coal interburden material greater than 0.1m thick and up to 0.3m was sampled separately.</li> <li>• The immediate roof and floor have been sampled of lengths of approximately 0.3 m in general. At the minimum ARD analysis has been conducted.</li> <li>• All coal samples were collected into plastic bags and then transported to the laboratory via tracked freight courier and were accompanied by a sample advice sheet. Chain of Custody and field observation information was emailed to the Bureau Veritas Laboratories to arrive before the sample.</li> <li>• Coal Quality samples were sent to Bureau Veritas Pty Ltd laboratory in Brendale, Queensland.</li> <li>• All coal quality samples were prepared and analysed using Bureau Veritas testing methodologies. Bureau Veritas is a National Association of Testing Authorities (NATA) registered organisation.</li> <li>• Line of oxidation (lox) samples, were collected in 1 m samples.</li> <li>• Lox samples were bagged on site and sent to Bureau Veritas Laboratory in Brendale Queensland for analysis.</li> <li>• Ten of the fully cored (diamond) holes from the 2015 / 2016</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<p>campaign were drilled to analyse the overburden, coal and floor sediments for rock strength and other geotechnical issues. Samples were stored in core trays, with representative 30cm length samples wrapped in plastic and sealed from moisture.</p> <ul style="list-style-type: none"> <li>• 23 geotechnical samples were reviewed and collected from the 10, 4C cored holes by Stanmore’s geologist. Samples were dispatched for destructive geotechnical test work to Cardno, Ullman and Nolan Geotechnic laboratories in Mackay. Samples received UCS, Modulus and Poisson’s Ratio testing.</li> <li>• For the entire Isaac Plains and Isaac Plains East area multiple mini-Sosie seismic work has been undertaken by Velseis Pty Ltd including March / April 2004 (8.7km), July / August 2005 (9.3 km) and February 2016 (32km – of which 22km on nine lines are within IPE). The seismic has enabled further delineation and confirmation of structure within the Isaac Plains and IPE deposits.</li> </ul> <p><u>Historic exploration:</u></p> <ul style="list-style-type: none"> <li>• Details for the historic drilling information Pre -2015 are not available.</li> <li>• A review of suitable historic holes was conducted as part of this resource estimate</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<ul style="list-style-type: none"> <li>• All coal quality holes were cored (partially or fully) using core barrel, producing a 100mm core diameter.</li> <li>• Structural holes were drilled as part of a resource program and to confirm historic drilling information. As part of this work, these holes were fully open (chipped).</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<ul style="list-style-type: none"> <li>• Lines of Oxidation (“LOX”) holes were drilled by a reverse circulation hammer drill rig.</li> <li>• Non-cored holes were used in the model to define structure and stratigraphy but were not used as Points of Observation (“POB”).</li> <li>• A full list of drill holes and drilling types is available at the end of Table 1 in Appendix C</li> </ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Interpreted intersection thickness, determined by downhole geophysics, versus corrected logged thickness was used to help determine core sample recoveries.</li> <li>• If there was less than 95% core recovery, and sample recovery did not satisfy CP the hole was required to be redrilled.</li> <li>• No details were available on the relationship between sample recovery and quality or sample bias.</li> </ul>
<i>Logging</i>	<ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All drill core was geologically logged, marked and photographed prior to sampling. Geological and geotechnical features were identified and logged as part of this process.</li> <li>• All chip holes had chips collected every metre, which were then geologically logged and photographed.</li> <li>• All 2015 / 2016 coal quality, structural and LOX holes have been geophysically logged (except where blocked or no coal exists (LOX Holes only)) with the minimum suite of tools run including: Density, Calliper, Verticality/Deviation (not for LOX) and Gamma.</li> <li>• A full list of the suite of geophysical logs that have been run on each drill hole can be found in Chapter 6.5 of the 2015 Resource estimate report. And for each hole in Appendix C</li> <li>• The calibration of the geophysical tools was conducted by the Weatherford Pty Ltd.</li> </ul>

Criteria	JORC Code explanation	CP Comments
<p>Sub-sampling techniques and sample preparation</p>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All core coal samples were double bagged on site and were transported to the laboratory for testing.</li> <li>• The lab(s), Bureau Veritas complies with the Australian Standards for sample preparation and sub-sampling.</li> <li>• Raw Coal plies were initially tested for Apparent Relative Density (ARD). Plies were then combined to create two (2) composite sections, being a "TOP" ~2m sample and a remainder "BOTTOM" sample of between 0.5 and 2m.</li> <li>• To simulate mine transport conditions each composite sample was then drop shattered 20 times from a height of 2 metres, any sample mass remaining of &gt; 50 mm was hand knapped to 50 mm, dry tumbled and dry sized at 31.5 mm, 25 mm, 16 mm, 8 mm, 4 mm and 2 mm.</li> <li>• 1/8 for quick coke: Crush to 11.2mm, float sink at 1.425 density, crush to 4mm and mill sample to test for Proximate, CSN, Gieseler &amp; Dilatation</li> <li>• 1/8 for raw analysis: Crush to 4mm, mill sample to test for RD, MHC, Proximate, TS, CSN, Calorific Value &amp; Chlorine</li> <li>• 3/4 for float sink: Wet tumble and wet size at 31.5, 25, 16, 8, 4, 2, 1, 0.5, 0.25, 0.125 &amp; 0.063mm. Re-combine samples in following fractions: -50+16mm, -16+8mm, -8+2mm and -2+0.25mm. Float sink each size fraction at densities (F1.30, F1.35, F1.375, F1.40, F1.45, F1.50, F1.55, F1.60, F1.70, F1.80, F2.00). -0.25+0mm fraction subject to tree froth flotation. All fractions analysed for ash and CSN.</li> <li>• Washability simulations were performed on the float sink results and from that data clean coal composite samples were compiled</li> </ul>

Criteria	JORC Code explanation	CP Comments
		and analysed for: Primary Coking (-16+0mm), Coarse Coking (-50+16mm) and Secondary Thermal Coal Composites.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Bureau Veritas in Brendale, QLD comply with the Australian Standards for coal quality testing and are certified by the NATA.</li> <li>Geophysical tools were calibrated by Weatherfords Pty Ltd, the company engaged in geophysically logging the holes from the 2015 and 2016 coal quality, structural and LOX drilling. Weatherfords conduct regular testing on all logging equipment.</li> <li>No geophysical logging was conducted on the historic drilling.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Bureau Veritas in Brendale, QLD comply with the Australian Standards for coal quality testing, and as such conduct the verifications for coal quality analysis outlined in the standards.</li> <li>Coal quality results were verified by Stanmore and Xenith Consulting Pty Ltd (“Xenith”) personnel before inclusion into the geological model and resource estimate.</li> <li>Product coal assessment and analysis procedure design was undertaken by Chris McMahon at McMahon Coal Quality Resources (MCQR).</li> <li>No adjustment to the resultant assay data has been undertaken.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Professional survey of the exploration work was conducted by JTH Surveys Pty Ltd (Moranbah).</li> <li>The datum used AGD 84 and the projection used AMG 84 Z55. Data was also published in MGA 94</li> <li>The aerial topographic survey was conducted in September 2015 by Atlas (Aerometrex). The survey accuracy is determined to be +-0.25m.</li> </ul>

Criteria	JORC Code explanation	CP Comments
<p><i>Data spacing and distribution</i></p>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The previous topography model was based on drill collar coordinates</li> <li>• Drill hole spacing has been dictated by the characteristics and consistency of the target seams within the deposit.</li> <li>• 2015 / 2016 Exploration drilling has been conducted to both confirm selected historic drill results and to assign an Indicated resource category for the IPE area</li> <li>• 2015 / 2016 structural and coal quality drilling is in general on &lt; 1000m centres.</li> <li>• LOX drilling was on lines spaced between 200 to 250m apart with distance between holes on line at 20 to 50m.</li> <li>• Historic Drilling was generally constructed on lines spaced ~200 -250m apart with holes at 100 -200m spacing along those lines</li> <li>• Samples were reported to have been taken on approximately 20 - 40 cm interval and compositing into top and bottom plies. As such, where appropriate, sample compositing has been completed.</li> <li>• Considering the continuity of the target seam(s) in the deposit, this spacing has proven to be sufficient to give adequate control to the model and give the required confidence in the geological interpretation.</li> </ul>
<p><i>Orientation of data in relation to geological structure</i></p>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The orientation and spacing of the drilling grid is deemed to be suitable to detect geological structures and coal seam continuity within the resource area.</li> </ul>
<p><i>Sample security</i></p>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All coal quality cored samples were double bagged in plastic bags on site and the dispatched to Bureau Veritas in Brendale Queensland via tracked freight service. Chain of custody and sample information was emailed to the laboratory ahead of the</li> </ul>

Criteria	JORC Code explanation	CP Comments
		<p>sample.</p> <ul style="list-style-type: none"> <li>All samples were held in cold storage prior to leaving site and at laboratory prior to analysis.</li> <li>The same procedure was used for all geotechnical samples derived from the cored holes</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No results sited for this resource update</li> <li>Bureau Veritas undertake internal audits and checks in line with the Australian Standards and their NATA certification. Corporate Accreditation no. 1805 and site no. 18415</li> <li>Xenith performed a high level technical review of the historic geological data during the sale process in 2014 / 2015. Identifying the lack of geophysical data to support the historic seam picks down hole and the need to employ modern exploration standards and test holes near historic data to confirm findings and approve the historic resource assumptions.</li> </ul>

## SECTION 2 REPORTING OF EXPLORATION RESULTS

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

Criteria	JORC Code explanation	CP Comments																									
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The IPE area is covered by the MDL 135 (Morambah) and MDL 137 (Wotonga - North only). Stanmore IP Coal Pty Ltd, are in the process of drafting an ML that would encompass both MDLs and the southern portion of EPC667. Details for this application were not finalised prior to going to print.</li> <li>A Petroleum Lease (“PL”) 191 covers the western half of the IPE area and into the neighbouring Isaac Plains ML and is currently held by CH4 Pty Ltd. The eastern half and northern portion of the IPE area is overlain by an Authority to Prospect for petroleum (“ATP”) 814 under the tenure of Eureka Petroleum Pty Ltd.</li> </ul> <table border="1"> <thead> <tr> <th>Tenure</th> <th>Tenement Holder</th> <th>Grant Date</th> <th>Expiry Date</th> <th>Area (Ha)</th> </tr> </thead> <tbody> <tr> <td>MDL 135</td> <td>Millennium Coal Pty Ltd</td> <td>7-Jun-93</td> <td>30-Jun-18</td> <td>589.4</td> </tr> <tr> <td>MDL137</td> <td>Millennium Coal Pty Ltd</td> <td>7-Jun-93</td> <td>30-Jun-18</td> <td>1203.4 (N and S)</td> </tr> <tr> <td>PL191</td> <td>CH4 Pty Ltd</td> <td>21-Mar-02</td> <td>20-Mar-32</td> <td>W. side of IPE</td> </tr> <tr> <td>ATP 814</td> <td>Eureka Petroleum Pty Ltd</td> <td>2 Feb-06</td> <td>28-Feb-18</td> <td>E. side of IPE</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Stanmore acquired MDL135 and the northern part of MDL137 from Millennium Coal Pty Ltd, a subsidiary of Peabody Australia, in July 2015, with the transaction completed in September 2015. Stanmore have contractual rights to explore and apply for higher level tenure over the aggregated area as though it were the underlying holder.</li> <li>There are no known impediments to obtaining a licence to operate in the Isaac Plains area.</li> </ul>	Tenure	Tenement Holder	Grant Date	Expiry Date	Area (Ha)	MDL 135	Millennium Coal Pty Ltd	7-Jun-93	30-Jun-18	589.4	MDL137	Millennium Coal Pty Ltd	7-Jun-93	30-Jun-18	1203.4 (N and S)	PL191	CH4 Pty Ltd	21-Mar-02	20-Mar-32	W. side of IPE	ATP 814	Eureka Petroleum Pty Ltd	2 Feb-06	28-Feb-18	E. side of IPE
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Criteria	JORC Code explanation	CP Comments
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>Three parties have undertaken exploration activities within the project area, BHP Mitsui, Peabody Energy and Blue Energy</li> <li>Exploration drilling and geophysical surveys that have been completed within and in close proximity to the Isaac Plains East area has been reviewed as part of this report.</li> <li>Within the IPE resource a total of 228 drill holes one with publically available information drilled by other parties were reviewed, including drilling for coal seam gas. Among them, 192 historic holes were considered suitable for use in the geological model.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Isaac Plains project area lies within the Permo-Triassic Bowen Basin. The Bowen Basin consists of 10 kilometre (km) thick sequences of volcanic, shallow marine and terrestrial sediments and is categorised back-arc to foreland basin.</li> <li>The general stratigraphy of the project area includes (oldest to youngest) – <ul style="list-style-type: none"> <li>Lower-Permian Reids Dome Beds,</li> <li>Lower-Upper Permian Back Creek Group,</li> <li>Upper Permian Blackwater Group, and</li> <li>Rewan group.</li> </ul> </li> <li>Coal seams occur within the Rangal Coal Measures which are Late Permian in age. These seams to the east at approximately 4 to 10 degrees.</li> <li>The coal seams found within the Rangal Coal Measures are as follows – Leichhardt, Lower Leichhardt Seam and Vermont.</li> <li>The Lower Leichhardt Seam and Vermont seams were not included in the resource estimate as the seams were judged to be either of poor quality</li> </ul>

Criteria	JORC Code explanation	CP Comments
		and or poorly represented in the drilling data.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>• <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li>• <i>easting and northing of the drill hole collar</i></li> <li>• <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>• <i>dip and azimuth of the hole</i></li> <li>• <i>down hole length and interception depth</i></li> <li>• <i>hole length.</i></li> </ul> </li> <li>• <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A detailed list of the drill holes used to define the coal quality of the resource in the Isaac Plains Project can be found in Appendix C.</li> <li>• All historic drill holes have been modelled from vertical, hole deviation (from vertical) has been applied for all 2015 / 2016 holes.</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>• <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li>• <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• It is reported that all seams where multiple coal quality samples were taken were given composite coal quality values.</li> </ul>

Criteria	JORC Code explanation	CP Comments
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historically holes were all drilled vertical. All 2015 / 2016 holes have verticality data applied to the downhole survey information.</li> <li>• As reported in the 2002 resource report constraints were applied in thickness modelling to two historic holes to exclude over thickened sections in the model.</li> <li>• The variations in the thickness was largely attributable to faulting and LOX thinning</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All appropriate diagrams are contained within the main body of the report</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All available exploration data for the Isaac Plains area has been collated and reported.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All current and historic drilling data was gathered and or utilised in the resource estimation except where excluded for reasons of twinning suspect drilling location data.</li> <li>• Historic model interpretations assisted with the interpretation of the 2016 resource model.</li> <li>• The incomplete 2D seismic data was referred to where available for the approximate truthing of the interpreted faulting.</li> <li>• Geotechnical logging, sampling and testing from the overburden, seam roof / floor (laboratory testing) has been undertaken by Cardno, Ullman &amp; Nolan Geotechnic Pty Ltd in Mackay.</li> </ul>

Criteria	JORC Code explanation	CP Comments
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Interpretation and utilisation of the 2D seismic lines will be incorporated into the next model iteration.</li> <li>No future work has been planned for the IPE area.</li> <li>Recommendations for future work have been proposed but no detailed planning has been undertaken.</li> </ul>

## Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	CP Comments
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Data was entered in the field by the field Geologist into LogCheck software.</li> <li>Lithological logs and coal intersection depths were reported to have been reconciled and corrected to the geophysical log. A review of the geophysical logs was conducted as part of this resource estimate</li> <li>All bore hole collars were checked against the natural topographic surface and all historic hole locations were adjusted to the new topographic surface. The adjustment was conducted because of limited confidence in the scaling and input from historic drilling data. All 2015 / 2016 drilling was within one metre of the topographic surface used</li> <li>Coal Quality data was reportedly checked against lab reports and cross referenced with lithology and ply logs. At each stage of lab reporting, lab reports were validated by a range of tests, using proprietary coal quality software by consultant Chris McMahon (MCQR). Where queries arose Bureau Veritas was asked to check and provide updates as required. All data is as such considered validated and final. As part of this resource estimate seam picks and sample thicknesses were validated and raw qualities were compared to results from the historic resource reports.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>The CP visited the neighbouring Isaac Plains Mining Lease and IPE area in late November 2015.</li> <li>The Competent Persons familiarity with the nearby Isaac Plains project area and stratigraphy is sufficient as exploration data indicates that the IPE geology is typical of the area.</li> </ul>

Criteria	JORC Code explanation	CP Comments
Geological interpretation	<ul style="list-style-type: none"> <li>• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>• Nature of the data used and of any assumptions made.</li> <li>• The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>• The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>• The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>• The drill hole density (core and chip) in the IPE area allows for a good level of confidence in the nature of seam splitting, seam thickness, coal quality, the location of sub-crops and general location of faults.</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>• The Leichhardt target seam(s) extends approximately 7 km along strike and approximately 1.2km perpendicular to strike with an approximate average cumulative thickness of 2.7m.</li> <li>• The depth of first coal ranges from between 15 to 20 m in the west at the fresh coal interface, and 170 m in the east under the central topographical high.</li> <li>• The current resource extent covers approximately 7km<sup>2</sup> the central and eastern part of the tenement.</li> <li>• Variability for the LHD seam is very minimal; the thickness generally increases to the central north and raw ash increase slightly to the south.</li> </ul>
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>• The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>• The assumptions made regarding recovery of by-products.</li> <li>• Estimation of deleterious elements or other non-grade variables of</li> </ul>	<ul style="list-style-type: none"> <li>• The geological model was constructed in Minescape using different modelling algorithms for structure, thickness and coal quality parameters. The finite element method was applied for structure thickness and trend. Finite element method was also applied for structure surface but with first order factor applied. Inverse distance algorithm was used for creating the raw seam interval composited coal quality grids.</li> <li>• A maximum extrapolation distance for resource categorization of 500 m from the last data point has been used for Indicated Resources.</li> <li>• 2 holes with anomalously thick sections were “normalized to the surrounding average thickness. These historic holes without</li> </ul>

Criteria	JORC Code explanation	CP Comments
	<p><i>economic significance (eg sulphur for acid mine drainage characterisation).</i></p> <ul style="list-style-type: none"> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>geophysical support material are located near interpreted faults. Seam interpreted floor and roof for these holes was picked through sectional analysis.</p> <ul style="list-style-type: none"> <li>Where drilling is sparse in the down dip areas of IPE deposit, the preliminary seismic interpretation was utilized to confirm the consistency in seam structure.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>Coal resource tonnages were estimated using a calculated Preston and Sanders in situ relative density, using air-dried moisture, total moisture and moisture holding capacities from coal samples (where available).</li> <li>Based on the results from coal quality testing, the in situ moisture has been estimated to be 4.7%. The 4.7% was derived from the analysed Moisture Holding Capacity values.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Typically, a maximum raw ash percentage has been applied, where a maximum raw ash of 50%, air-dried basis, has been applied to the resource estimate.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>A depth categorisation was estimated for the nominal cut –off for potential opencut resource of 100m to the top of the target LHD seam.</li> <li>The LHD seam thickness and depth is deemed suitable for highwall or underground development and therefore underground resources have been classified.</li> </ul>

Criteria	JORC Code explanation	CP Comments
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>It is Xenith’s opinion that at this stage of the project that there are no limiting metallurgical factors.</li> <li>The nearby Isaac Plains Mine has been an operating opencut mine since 2006. Target seams within IPE are similar in coal quality characteristics.</li> </ul>
<i>Environmental factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>Two drainage channels lie across the IPE area one in the north, Smokey Creek and one in the south, Billy’s Gully.</li> <li>Neither channel is a permanent water course but should be considered for future evaluation.</li> </ul>
<i>Bulk density</i>	<ul style="list-style-type: none"> <li><i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></li> <li><i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></li> <li><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>Preston and Sanders In situ Relative Density Estimation – The in situ density of the coal seams has been estimated using the Preston and Sanders in situ relative density estimation equation.</li> <li>Inherent moisture values have been derived from the supplied grids the 11 4C cored holes across the IPE area.</li> <li>In situ Moisture (“ISM”) was assumed to be 4.7% for the purpose of the resource estimation. The average ISM was calculated from the analysed moisture holding capacity values derived from the cored holes. Formula for calculation was based on the ACARP report C10041 and is: <math>ISM = 0.348 + 1.1431 \times MHC</math>.</li> <li>Air dried RD that was used in the Preston Sanders Equation was derived</li> </ul>

Criteria	JORC Code explanation	CP Comments
		from analysis of the 11 cored holes
Classification	<ul style="list-style-type: none"> <li><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li><i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></li> <li><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>Two resource categories have been identified within the IPE area, dependent on the level of confidence in the seam structure and continuity plus the level of variability in the coal quality data.</li> <li>The level of drilling information determined the classification of resource categories.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>There have been no independent reviews of this resource estimate.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>Xenith have assigned two level(s) of confidence to the coal resource estimate, depending on the seam and drill hole spacing, as described in the Chapter 10 of the 2016 JORC Resource report.</li> <li>No geostatistical review of the coal seam thickness data for the Isaac Plains Project area has been conducted.</li> <li>Overlying basalt altered areas have been recognised at site and interpreted for the resource estimate.</li> <li>Factors that could affect accuracy include unknown structures between completed drill holes, seam washouts in roof or in-seam stone bands developing. No evidence exists at this point in time for these, apart from what has currently been geologically modelled or exists within the models design database. The inclusion/exclusion of these features was discussed in the report.</li> </ul>