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# **ASX RELEASE**





# For Immediate Release – 31 January 2014

# QUARTERLY REPORT Quarter Ended 31 December 2013

During the Quarter, Aspire Mining Ltd continued to make progress towards the commercial development of its Ovoot Coking Coal Project and Ovoot – Erdenet Railway. Highlights include:

- Detailed mine re-scheduling undertaken. Revised Mine Plan sees reduction in operating costs in first two years of production.
  - Forecast cash costs FOR China border now fallen to US\$76-US\$86 (from US\$83-US\$93) per tonne for the first two years of production.
  - Forecast cash cost FOR China border for the first five years of production estimated at US\$82–US\$92 per tonne.
- Non-binding MOU's signed with Russian customers totalling up to 1.3 Mtpa.
   Raises total potential sales covered by Non-Binding MOU's for the Ovoot Coking Coal Project to 6.9 Mtpa.
- Russian rail and port capacity identified to deliver coal to Nakhodka port.
  - Non-binding MOU signed totalling up to 2 Mtpa of rail and port capacity for delivery of Ovoot coking coal to the Nakhodka seaport; and
  - Total port capacity signed under non-binding MOUs now total up to 6 Mtpa through Russian Far East and Black Sea ports.
- Mongolia agrees to act as transport corridor between Russia and China to increase trade flows between the two countries. Significant upgrade in capacity to Trans Mongolian Railway forecast by Russian Railways by 2016.
  - Russian, Mongolian and Chinese rail representatives formerly agree on 19 December 2013 to an MOU to jointly complete feasibility studies and discuss funding arrangements for the Trans-Mongolian Railway upgrade.
  - Staged development targeting a 100 Mtpa rail connection by 2018.
- New Mongolian Investment Law enacted on 1 November 2013 provides certainty and incentives for both foreign and domestic investors.

Aspire Mining Limited (ASX: AKM, "**Aspire**" or the "**Company**") is pleased to present its December 2013 Quarterly Report.

Aspire is focussed on developing its world class 100% owned Ovoot Coking Coal Project ("**Ovoot Project**"), and associated rail infrastructure through its wholly owned Mongolian rail infrastructure subsidiary, Northern Railways LLC ("**Northern Railways**").



Figure 1: Aspire Project Locations in Mongolia

#### **EXPLORATION AND DEVELOPMENT**

#### **Ovoot Coking Coal Project (100%)**

Minimal exploration work was conducted during the quarter. Annual exploration reports in relation to the licenses both held and returned during the 2013 year were prepared and lodged with the Mongolian Resource Authority.

An additional bulk sample was acquired from the nearby Mogoin Gol Coal Mine. This material reflects the Ovoot lower seam, which is the largest of the three seam packages. After confirmation of coking properties, this bulk sample was bagged and sent to ALS laboratory in Queensland for further coking and blending analysis. This bulk sample will also provide preliminary marketing samples for prospective customers.

During the Quarter, the Company undertook a review and detailed rescheduling of the Ovoot open pit. The focus was on how best to minimise waste removal during the early years of operation while achieving a high proportion of low ash by-pass coal. The re-scheduled open pit has been able to reduce costs in the first two years of production under the Ovoot Development Plan by maintaining an emphasis on low

ash by-pass coal and waste movement optimisation. The average life-of-mine strip ratio for the Ovoot Project Open Pit remains at 7.8 BCM of waste to 1 tonne of coal.

Cash costs on a Fixed-On-Rail ("**FOR**") basis in China are now estimated between US\$76 and US\$86 per tonne for washed coking coal over the first two years of production and US\$82 to US\$92 per tonne over the first five years.

#### Ovoot Project Coal Resources & Reserves Compliance with JORC 2012 Standards

Post 1 December 2013 new or material changes to previously reported Mineral Resources and/or Ore Reserves are required to be reported under new disclosure rules and in accordance with the Joint Ore Reserves Committee ("JORC") Code 2012.

The JORC Code 2012 was developed to provide a more comprehensive basis upon which investors can access in-depth details into the make-up of Resources, Reserves, production targets, exploration results, technical studies and other reportable items so as to make it easier to make informed comparisons between projects.

Notwithstanding that the Company does not have any new or materially changed Mineral Resources and or Ore Reserves to that reported on 31 July 2013, during the Quarter Aspire contracted its consultants, Xstract Mining Consultants Pty Ltd, to provide the additional disclosures for Aspire's Coal Reserves and Coal Resources (last updated 31 July 2013) estimates to be compliant with the JORC Code 2012.

These additional disclosures are included in the schedules attached as Appendix 1 at the end of this Report.

#### **MARKETING**

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Ovoot Project coking coal is a highly fluid, low ash, high rank premium coking coal classified as a Fat Coal (FM) within China and a Fat Coking Coal (KZh) within Russian markets. Its quality attributes make Ovoot Project coking coal an excellent blending coal, and when used with lower quality and/or non-caking coals, will create a high quality end coke product. Ovoot Project coking coal has been blend tested with low coking, thermal and oxidised coals on both a 50% and 25% basis (percentage of Ovoot Project coking coal within the blend) using a number of suitable coals from Australia, Mongolia and Russia.

### Additional customers in Russia increases total potential offtake to 6.9 Mtpa

During the period, Aspire has entered into another two non-binding Memoranda of Understanding ("Offtake MOU's") with two end users in Russia. The Offtake MOU's total a possible commitment to purchase up to 1.3 Mtpa of Ovoot Project coking coal over a minimum term of five years.

Non-binding Offtake MOU's signed by the Company account for potential purchase of up to 6.9 Mtpa of Ovoot Project coking coal from four Chinese and two Russian customers. Upon further clarity on the timing for first production, which is contingent on construction of the Erdenet to Ovoot Rail Line, Aspire will be seeking to convert these to actual sales commitments.

The Company's Ovoot Development Plan ("**ODP**") was developed on the success of the initial marketing achievements to date by the Company. The ODP allows first production of 5 Mtpa for which potential sales now cover 138% of this initial planned production.

#### Additional logistics solutions identified

During the Quarter, a non-binding Memorandum of Understanding ("**Logistics MOU**") was entered into to secure up to 2 Mtpa rail and port capacity through to Nakhodka Port at competitive tariffs.

This Logistics MOU follows the Company having already entered into two non-binding Memoranda of Understanding ("**Port MOU's**") for port capacity access of up to 2 Mtpa at each the Far East Russian seaport of Nakhodka, and the Black Sea port of Taman, in September 2013.



Figure 2: Location of Nakhodka and Taman Seaports and access to Eastern Europe and Mediterranean Coking Coal Markets

#### **RAIL UPDATE**

During the Quarter, the Mongolian Government made significant progress on developing the country's rail infrastructure.

#### Trans-Mongolian Rail Upgrade

Mongolia's geographic location between the heavily industrialised northeast of China and the resource and energy rich Russia, provides Mongolia with an opportunity to become a major trading corridor to support efforts being undertaken to sharply expand trade between Russia and China. This corridor will require investments in highway linkages, pipelines and rail infrastructure.

Significant expansions of the existing Trans-Mongolian Railway, up to as much as 100 Mtpa (current capacity 20 - 22 Mtpa), is currently being considered by the participants, and will be a major boost for Mongolian economic growth. Significant expansion of the Trans-Mongolian Railway will provide the capacity for the large quantities of freight to be delivered by Northern Railway's Ovoot to Erdenet Railway to markets and ports in China and Russia. Confirmation of the scale and timing of expansion for the

Trans-Mongolian Railway is a key prerequisite before Northern Railways LLC rail concession application can be considered.

On 19 December 2013, representatives of China, Russia and Mongolia's major rail conglomerates (being MTZ, Russian Railways JSC, Chinese Government, and UBTZ Railways JSC respectively) formally agreed on an MOU to complete feasibility studies and discuss funding in relation to the modernisation of the Trans-Mongolian Railway. In the MOU, each country acknowledged the strategic importance of Mongolia as a transport corridor, not only in connecting Russia and China but to create transport efficiencies between Asia and Europe.

It is expected that the capacity along the Trans-Mongolian Railway will be increased in stages through to a full dual track capable of carrying up to 100 Mtpa of freight in both directions. The expansion would be undertaken from Ulan-Ude on the Trans-Siberian Railway all the way through to Jining in northern China (refer Figure 3). Indicative timeframe for completion of the first upgrade in 2016 would allow Aspire's Ovoot Project coking coal direct access to Jining without experiencing the current delays at Erenhot on the Mongolia-Chinese border.

From Jining, Ovoot Project coking coal is within approximately 200 kilometres from some of the world's top steel producers located in north-east China.

#### Southern Mongolian Rail Progress.

There continues to be significant progress on the rail developments linking the Tavan Tolgoi coal deposit with China and Russia. Engineering is 45% complete on the Tavan Tolgoi – Sainshand – Choibalsan – Ereentsav Railway, as well as the eastern connections from Hoot to Bichil, and Nomrog (refer Figure 3).

Construction of the 240km Tavan Tolgoi - Gashuun Sukhait railway, is expected to be completed in the second half of 2014.

Significant progress on connecting Tavan Tolgoi to world markets was another important pre-requisite before consideration could be given to other rail projects, including the Ovoot to Erdenet railway.

The Company continues to lobby the Mongolian Government to award a rail concession for the Ovoot to Erdenet Railway on behalf of its subsidiary, Northern Railways LLC ("**Northern Railways**"). The Company remains hopeful of being awarded a rail concession in the near future given the recent progress on the expansion of the Trans-Mongolian Railway and the southern railway projects.

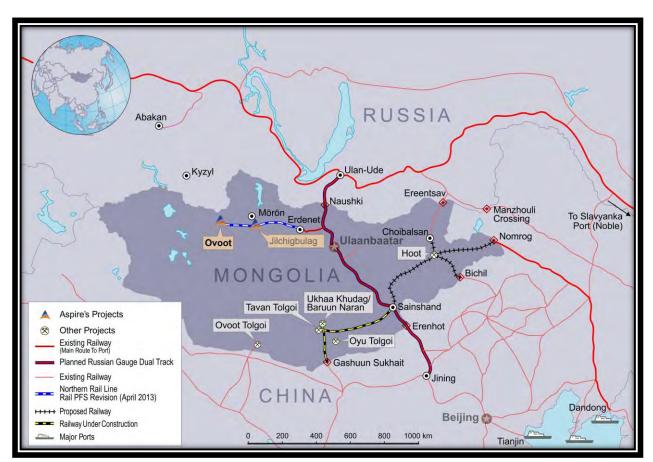


Figure 3: Mongolian Railway Developments

#### **Rail Satellite Imagery Purchased**

During the Quarter, the Company purchased satellite imagery data along the entire alignment of the Ovoot to Erdenet Railway. This satellite data is necessary to produce 1:5000 scale mapping of the rail alignment to be used to commence preliminary engineering work planned to occur after the receipt of a rail concession.

Mapping at the 1:5000 scale is acceptable for an engineering contractor to provide Northern Railways LLC with a relatively accurate capital cost assessment which will form part of the Rail funding strategy.

# **CORPORATE**

#### Austrade Supportive of Aspire's Ovoot Development Plan

During the Quarter, Australian Ambassador to Korea and Chief of Mission to Mongolia, his Excellency Mr Sam Gerovich, through the Ulaanbaatar based Austrade office, prepared a Position Paper in support of the development of the Ovoot Project and Northern Rail Line.

The Position Paper, which will be provided to the Government of Mongolia ("GOM"), highlights the contributions Aspire has made to the local communities within northern Mongolia from investing in Mongolia since early 2010, and petitions the GOM to also support the project development through the issue of various licences required for both the Ovoot Project and Erdenet to Ovoot Railway development. The Position Paper also outlines the considerable future beneficial impact on the people, society and GOM through the direct investment injection in the development of the railway and mine-site infrastructure and the associated creation of jobs and change in the balance of export trade through Russia to Europe and seaborne markets.

Australia has long been known as having significant mineral resource wealth and this support shown from the Australian Government to the GOM is welcomed by the Company.

#### **New Mongolian Investment Law Enacted**

During October 2013, the Mongolian Parliament agreed to repeal its Strategic Foreign Investment Legislation which was implemented in mid-2012, legislating to replace it with a new Investment Law that came into effect on 1 November 2013.

The new Investment Law is welcomed by the Company as it removes the previous rigorous requirements for investment approvals and proactively provides additional investment incentives. The new Investment Law does not distinguish between foreign and Mongolian nationals, and provided an investor is not 50% or more owned by a foreign government (otherwise considered a Sovereign Owned Entity), there are no restrictions on the level of investment (refer Table 1). The inclusion of provisions to regulate future changes to the law (which require 66% or more votes in favour by Parliament, and the support of both the major political parties) ensures investors a more stable, legal investment environment and better protection of their assets.

| INVESTMENT TYPE |                          | SEFIL                                  |  | new Investment Law                                  |
|-----------------|--------------------------|--|--|---|
|                 |                          | May 2012                               | April 2013                             | November 2013                                       |
|                 | < 33%                    | Register with relevant authority       | Register with relevant authority       | No restriction                                      |
| Private         | 33 – 49 %                | Mongolian<br>Government Approval       | Mongolian<br>Government<br>Approval    | No restriction                                      |
|                 | 100bn MNT<br>(~ US\$75m) | Mongolian<br>Parliamentary<br>Approval | n/a                                    | No restriction                                      |
| SOE             | < 33%                    | Mongolian<br>Parliamentary<br>Approval | Mongolian<br>Parliamentary<br>Approval | No restriction                                      |
| 30E             | ≥ 33%                    | Mongolian<br>Parliamentary<br>Approval | Mongolian<br>Parliamentary<br>Approval | Approval required by Investment Administrative Body |

Table 1: The new Investment Law creates a safer and streamlined approach for investments into Mongolia.

The key benefits to investors under the new Investment Law includes:

- The provision of tax stabilisation through a Stabilisation Certificate granted to eligible investors upon application which cannot be changed by future legislation unless those changes benefit the investor. Investors which meet certain criteria will have the current set of rates applied to corporate income tax, customs duties, VAT, and royalty frozen over a period. Within the "stabilisation period" these rates cannot be amended by the implementation of future laws unless the amendment benefits the investor. For development of rail and mine infrastructure, Aspire would likely meet the criteria applicable for a tax Stabilisation Certificate or Investment Agreement (a more detailed agreement covering other areas in addition to tax stabilisation) covering a period of greater than 20 years based on its investment in Mongolia since 2010 and future expected investment to develop the Ovoot Project and Northern Rail Line.
- Protection of investor interests with the formation of a specially appointed Council of non-salaried members appointed for this specific purpose,

- Relaxation of the percentage of foreign workforce employed,
- No restriction on the movements of assets in or out of the country, and
- Provisions protecting against nationalisation of investors' assets.

As it pertains to Sovereign Owned Entity investors, the approval process will be managed by an "Investment Administrative Body" appointed and directed by Cabinet. The Investment Administrative Body will consider the application based on the reason for investment, the affect it may have on restricting competition, the effect on Mongolia's budget and policies, and whether the investment may potentially conflict with national security.

#### **Cash Position and Reduced Overhead Expenditure**

Aspire had AU\$5 million cash as at 31 December 2013.

During the Quarter the Company received a research and development tax rebate from the Australian Taxation Office for \$1.2 million in respect of the 2012 financial year. The Company has recently submitted its claim for a research and development tax rebate for \$1.1 million in respect of the 2013 financial year. It is anticipated that this tax rebate will be received during the March Quarter 2014.

While the Company continues to lobby the Mongolian Government for the rail concession to cover the Ovoot to Erdenet Railway, overheads have been reduced wherever possible. During the Quarter, Fergus Campbell, Aspire's Chief Operating Officer, has moved to a part time basis.

#### Capital Structure at 31 December 2013:

| Security   | No on issue |
|--|-------------|
| Quoted Ordinary shares                             | 658,247,056 |
| Unquoted 5c Options (expire 12 Feb 15)             | 96,186,842  |
| Unquoted 5c Performance Options (expire 12 Feb 15) | 145,000,000 |
| Unquoted Performance Rights                        | 3,827,500   |

#### Interests in mining tenements at 31 December 2013:

| Tenement     | Location | Equity |
|--------------|----------|--------|
|              |          |        |
| Ovoot        | Mongolia |        |
| MV017098     |          | 100%   |
| 13636X       |          | 100%   |
| 017003X      |          | 100%   |
| Llvuima      | Mangalia |        |
| Hurimt       | Mongolia | 4000/  |
| 14510X       |          | 100%   |
| 14637X       |          | 100%   |
| Jilchigbulag | Mongolia |        |
| 12816X       | inongena | 100%   |

#### --Ends--

#### **ABOUT ASPIRE MINING LIMITED**

Aspire is listed on the ASX (Code: AKM) and owns 100% of the Ovoot Coking Coal Project in northern Mongolia. Aspire completed a Pre-Feasibility Study ("PFS") for the Ovoot Project in May 2012, a PFS Revision in December 2012 and was granted its Mining Licence in August 2012. Aspire is targeting first production of 5 Mtpa at the Ovoot Project in 2017 subject to funding, approvals, licenses and construction of rail infrastructure. Aspire's wholly owned subsidiary Northern Railways LLC is currently continuing to progress the development of railway which will connect the Ovoot Project directly to the existing Mongolian rail network.

Aspire's development timeline for its Ovoot Project relies primarily on i) the provision of a rail concession and other approvals from the Government of Mongolia for Northern Railways to build-own-operate the Northern Rail Line, connecting the Ovoot Project to the Trans-Mongolian Railway at Erdenet; and ii) financing of the Northern Rail Line. The timing with respect to the grant of a rail concession is outside of the control of Aspire Mining. Certain activities to further progress the Ovoot Project and Northern Rail Line development, and which will follow the grant of the rail concession, include the completion of bankable feasibility studies to support definitive financing negotiations. The Company's development timeline to achieve first production by 2017 is indicative and contingent on the grant of a rail concession by the end of 2013.

#### **ABOUT NORTHERN RAILWAYS LLC**

Northern Railways LLC ("Northern Railways") is the Mongolian registered rail infrastructure subsidiary of Aspire Mining Limited, established as the entity to focus on developing railway infrastructure in northern Mongolia.

Northern Railways is in charge of the advancement of an extension to the existing Trans-Mongolian Railway of approximately 547 kilometers from the current terminus at Erdenet through to the Ovoot Coking Coal Project ("Northern Rail Line"), thereby connecting the northern Mongolian Khuvsgul, Bulgan, and Orkhon provinces to the existing Trans-Mongolian rail network. In accordance with Mongolian National Rail Policy, the multi-user rail line will be available for the transport of bulk materials, agricultural and general freight and passengers from the region to export markets including China, Russia and seaborne markets.

#### For more information contact:

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#### **Production Target Assumptions**

The following are key assumptions used to achieve the first year target of 5Mtpa of marketable coking coal:

- 1. In the eight months prior to commencement of first year production, a 23 million BCM waste removal programme to pre-strip overburden to top of coal;
- 2. A strip ratio of 7.7:1 (BCM waste: tonne of coal);
- 3. Preferentially targeting the Upper Seam with a relatively high proportion of low ash coal;
- 4. Mining of 5.2Mt of ROM coal (at a 2% moisture on an as received basis) producing 5Mt of saleable coal. This is made up of 40% of washed coal and 60% of by-pass coal meeting a 13% ash cut-off;
- Higher ash coal totalling 2.1Mt will be washed in a 300 tonne per hour wash plant to be constructed at the Ovoot Project;
- 6. Overall product yield of 90% to be achieved averaging 9% moisture for a less than 10% ash product; and
- The mine design is that used to support the recently announced Coal Resource and Reserve update for the Ovoot Project (refer ASX announcement dated 31 July 2013).

#### Competent Persons Statement

In accordance with the Australian Securities Exchange requirements, the technical information contained in this announcement in relation to the JORC code (2012) Compliant Coal Reserves and JORC Compliant Coal Resource for the Ovoot Coking Coal Project in Mongolia has been reviewed by Mr Ian De Klerk and Mr Kevin John Irving of Xstract Mining Consultants Pty Ltd.

The Coal Resources documented in this release are stated in accordance with the guidelines set out in the JORC Code, 2012. They are based on information compiled and reviewed by Mr. Ian de Klerk who is a Member of the Australasian Institute of Mining and Metallurgy (Member #301019) and is a full time employee of Xstract Mining Consultants Pty Ltd. He has more than 20 years' experience in the evaluation of coal deposits and the estimation of coal resources. Mr. de Klerk has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration to qualify him as a Competent Person as defined in the JORC Code, 2012. Neither Mr. de Klerk nor Xstract have any material interest or entitlement, direct or indirect, in the securities of Aspire Mining Limited or any companies associated with Aspire Mining Limited. Fees for work undertaken are on a time and materials basis. Mr. de Klerk consents to the inclusion of the Coal Resources based on his information in the form and context in which it appears.

The Coal Reserves documented in this release are stated in accordance with the guidelines set out in the JORC Code, 2012. They are based on information compiled and reviewed by Mr. Kevin Irving who is a Fellow of the Australasian Institute of Mining and Metallurgy (Member #223116) and is a full time employee of Xstract Mining Consultants Pty Ltd. He has more than 35 years' experience in the mining of coal deposits and the estimation of Coal Reserves and the assessment of Modifying Factors. Mr. Irving has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration to qualify him as a Competent Person as defined in the JORC Code, 2012. Neither Mr. Irving nor Xstract have any material interest or entitlement, direct or indirect, in the securities of Aspire Mining Limited or any companies associated with Aspire Mining Limited. Fees for work undertaken are on a time and materials basis. Mr. Irving consents to the inclusion of the Coal Reserves based on his information in the form and context in which it appears.

The technical information contained in this announcement in relation to the Ovoot Coking Coal Project in Mongolia has been reviewed by Mr Neil Lithgow – Non-Executive Director for Aspire Mining Limited. Mr Lithgow is a Member of the Australian Institute of Geoscientists 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 a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves." Mr Lithgow consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

# **APPENDIX 1**

JORC 2012 Reporting

# JORC Code, 2012 Edition - Table 1

# Section 1: Sampling Techniques and Data

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

| Criteria               | JORC Code explanation   | Commentary  |
|------------------------|---|---|
| Sampling<br>techniques | <ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul> | <ul> <li>All drillholes that intersected coal seams were geophysically logged (hole conditions permitting) and the resulting LAS files used for seam correlation and core loss evaluation purposes in the resource estimate. In some instances it was necessary to run the sondes down the drill stem resulting in a somewhat attenuated, but still useful, response.</li> <li>Coal sample interval details were validated by Xstract to ensure that no sampling gaps exist within seam/ply intervals selected for modelling. In a few cases where gaps of less than 0.1 m were identified, suitable default raw coal quality values were inserted into the raw coal quality database. These were based on the logged lithology of the sampling gap, by using raw coal quality results obtained for a similar lithology from th same seam/ply in nearby drillholes.</li> <li>Xstract has reviewed sampling practices and treatment of samples while onsite and found them to be satisfactory; however no formal written sampling standards and procedures were supplied.</li> </ul> |



| Criteria               | JORC Code explanation  | Commentary   |
|------------------------|--|--|
| Drilling<br>techniques | Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).  | <ul> <li>The geological model is based on 180 partially cored drillholes completed during the 2010, 2011 and 2012 drilling campaigns. Most of the coring used a HQ (63 mm core diameter) core barrel, however 43 drillholes were cored specifically for coal quality using a PQ (83 mm core diameter) core barrel. In addition, six angled geotechnical holes were drilled to investigate ground conditions for slope stability work in the proposed pit.</li> <li>Australia Independent Diamond Drilling, Landrill and Major Drilling Group International carried out the drilling using a large range of drill rigs including the following:         <ul> <li>Schramm</li> <li>UDR 650</li> <li>Coretech 1000, 1800 and 3000</li> <li>EDM</li> </ul> </li> <li>All exploration holes (excluding geotech holes) were drilled vertically, some being pre-collared using reverse circulation ("RC") methods to approximately the base of the weathered zone followed by conventional double tube diamond coring for the remainder of the hole.</li> </ul> |
| Drill sample recovery  | <ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul> | Core recovery statistics over the width of the modelled seam interval were evaluated in order to ensure that only those intersections with sufficient core recovery are used as coal quality points of observation. After a sample bias study, a minimum acceptable core recovery limit of 85% was adopted and is considered by Xstract to be sufficient to ensure representivity of coal quality.   |



| Criteria | JORC Code explanation  | Commentary  |
|----------|--|---|
| Logging  | <ul> <li>Whether core and chip samples have been geologically and geotechnically logged<br/>to a level of detail to support appropriate Mineral Resource estimation, mining</li> </ul> | <ul> <li>Logging data includes lithology, collar, survey, coal quality, and<br/>geotechnical properties.</li> </ul> |
|          | studies and metallurgical studies.   | <ul> <li>Logging practices were reviewed by Xstract during the 2011</li> </ul>                                      |
|          | <ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean,</li> </ul>  | site visit and were generally found to be of a high standard and  |
|          | channel, etc) photography.   | adequate level of detail.   |
|          | <ul> <li>The total length and percentage of the relevant intersections logged.</li> </ul>  | Six geotechnical drillholes have been completed.  |
|          |  | Limited additional geotechnical data is logged within cored   |
|          |  | general exploration holes including structure type and  |
|          |  | strength.   |



| Criteria                                       | JORC Code explanation  | Commentary  |
|--|--|---|
| Sub-sampling techniques and sample preparation | <ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul> | <ul> <li>All drillholes that intersected coal seams were geophysically logged (hole conditions permitting).</li> <li>Depth corrections for lithological and sample intervals were completed by Aspire Mining Limited (AKM), guided by the downhole geophysics.</li> <li>Sampled seam intersections that failed the QA/QC validation measures applied by Xstract were removed from the raw coal quality database so that only representative composites, suitable for use in resource estimation, were generated in the raw coal composite table. Other QA/QC measures included: <ul> <li>Confirmation of appropriateness of seam picks against geophysical logs and lithological logging.</li> <li>Insertion of default raw coal quality values based on the logged lithology of sampling gap less than 0.1 m.</li> <li>Exclusion of sample intervals where the interval exceeded the composited seam intervals by &gt;20%.</li> <li>Exclusion of samples with &lt;85% core recovery.</li> <li>Graphical examination of raw coal quality values to observe any anomalous values.</li> <li>Statistical examination of ply composited coal quality parameters.</li> <li>Spatial examination of seam/ply coal quality values to validate spatial consistency.</li> </ul> </li> </ul> |



| Criteria  | JORC Code explanation  | Commentary  |
|---|--|---|
| Quality of<br>assay data and<br>laboratory<br>tests | <ul> <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> <li>AKM supplied statements of analytical standards applied and SGS Mongolia Minerals Laboratory certification.</li> <li>Industry standard analysis techniques for coal quality analysis were used, however laboratory Quality Assurance and Quality Control ("QA/QC") standards and procedures have not been provided. Statistical and spatial examination of raw coal quality values was completed to identify and address any anomalous coal quality values.</li> </ul>                   |
| Verification of<br>sampling and<br>assaying         | <ul> <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> <li>Xstract verified all coal seam intervals against geophysical logs and lithological logging.</li> <li>Xstract verified a representative selection of drill locations, drill core, and sampling of coal seam intersections during the site visit in 2011.</li> <li>Statistical examination of ply composited coal quality parameters was completed.</li> <li>Spatial examination of seam/ply coal quality values to validate spatial consistency was completed.</li> </ul>                 |
| Location of data points                             | <ul> <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> <li>The collar positions of drillholes were surveyed by differential GPS and those used in the model were compared to the topographic DTM. Collars with RL's differing by more than 1.5 m from the DTM RL were adjusted to the DTM RL. Five drillholes had collar RL's adjusted to the DTM RL.</li> <li>The grid system used is WGS84 47N</li> <li>Xstract found the quality and accuracy of topographic control and sample location to be suitable for Coal Resource estimation.</li> </ul> |



| Criteria   | JORC Code explanation  | Commentary  |
|--|--|---|
| Data spacing<br>and<br>distribution                              | <ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>                                 | <ul> <li>The initial drilling grid was based on a 750 m triangular pattern which was subsequently infill drilled to a spacing of approximately 300 m in higher interest areas. In some areas the drill spacing was further reduced to less than 150 m. Drill spacing is considered sufficient to establish coal seam structure continuity and generally within or at the limits of coal quality continuity.</li> </ul>  |
| Orientation of<br>data in relation<br>to geological<br>structure | <ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul> | <ul> <li>Drillholes have been vertically drilled and as such are generally<br/>orientated at a high angle to the coal seams resulting in seam<br/>intersections very close to true thickness.</li> </ul>  |
| Sample<br>security   | The measures taken to ensure sample security.  | <ul> <li>The sample security procedure is:</li> <li>Attach a tag to each sample during initial sampling</li> <li>Established an integrated sampling spreadsheet and attached it to each sample, as well as kept that spreadsheet updated in our data base</li> <li>Send samples to the laboratory with instructions regarding the appropriate analytical procedure</li> <li>Fill out the sample submission form at the laboratory and deliver the samples together with the documents</li> <li>Receive from the laboratory the analysis report complete with sample reconciliation advice.</li> <li>Update the sampling spreadsheet.</li> </ul> |
| Audits or reviews  | The results of any audits or reviews of sampling techniques and data.  | <ul> <li>Sampling technique reviews and data reviews occurred during<br/>Xstract's site visit in 2011. Xstract considers the techniques<br/>and procedures to be appropriate for this study. Xstract<br/>provided advice on aspects of AKM's 2010 to 2012 drilling<br/>programs.</li> </ul>   |



# Section 2: Reporting of Exploration Results

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

| Criteria   | JORC Code explanation  | Commentary   |
|--|--|--|
| Mineral<br>tenement and<br>land tenure<br>status | <ul> <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> <li>Through its wholly owned Mongolian subsidiary, Khurgatai Khairkhan LLC ("Khurgatai"), AKM has also been granted a Mining License – MV 017098, covering 5,758 ha. This license extends over both the proposed surface and underground mine areas. MV017098 expires in 2042.</li> <li>AKM holds four contiguous exploration licences adjacent to the Ovoot Coking Coal Project ("OCCP"): <ul> <li>Ovoot Exploration License 1 – 13636X, covering 6,640ha (overlaps MV 017098), expires 1/5/2014</li> <li>Ovoot Exploration License 2 – 17003X, covering 2,704ha, expires 1/5/2014</li> <li>Hurimt Exploration License – 14510X, covering 21,744ha, 4/12/2014</li> <li>Zuun Del Exploration License 2 – 14637X covering 19,844ha, expires 16/3/2015</li> </ul> </li> </ul> |
| Exploration done by other parties                | Acknowledgment and appraisal of exploration by other parties.  | <ul> <li>No information regarding historical exploration within the<br/>licence areas was made available for Xstract's review.</li> </ul>  |
| Geology  | Deposit type, geological setting and style of mineralisation.  | <ul> <li>The coal-bearing sediments of the Ovoot Basin are Jurassic in age and have been gently folded into an ENE – WSW trending syncline.</li> <li>Seams generally dip approximately 6° toward the fold axis.</li> <li>Compressional and extensional tectonic regimes have affected the Ovoot Basin. Both reverse and normal faulting is present with some displacements interpreted to be in excess of 100m, but generally in the range 10 to 40 m.</li> </ul>  |



| Criteria  | JORC Code explanation   | Commentary  |
|---|---|---|
| Drill hole<br>Information   | <ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </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> | Summary drillhole seam/ply intersection information including average seam thickness intersected, minimum and maximum thicknesses and corresponding Hole ID, as well as the standard deviation of the thickness for each seam intersect is provided in Appendix A. Appendix B summarises composited raw coal quality by seam/ply (air dried basis). Appendix C shows the location of exploration drillholes (2010 to 2012) in plan view. All drillholes have been vertically drilled. |
| Data<br>aggregation<br>methods  | <ul> <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> <li>Length and density weighted compositing by ply is undertaken<br/>during data preparation for Coal Resource estimation.</li> </ul>  |
| Relationship<br>between<br>mineralisation<br>widths and<br>intercept<br>lengths | <ul> <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> <li>Coal seams generally dip at 6° towards the fold axis. Drill spacing is in 750 m, 300 m or 150 m triangular pattern depending on the location.</li> <li>In general, the drilling orientation is at a high angle to the coal seam structures resulting in sample lengths being close to true thickness and minimal sampling bias.</li> </ul>   |
| Diagrams  | <ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should<br/>be included for any significant discovery being reported These should include, but<br/>not be limited to a plan view of drill hole collar locations and appropriate sectional<br/>views.</li> </ul>   | <ul> <li>Drillhole collar locations are shown in Appendix C. Fault<br/>locations are shown in Appendix D. The extent of coal seams<br/>are shown in contour plots (Appendix E and Appendix F).</li> <li>Maximum depth (m) of modelled coal resources is shown in<br/>Appendix G. More details are provided in the PFS report, dated<br/>November 2012.</li> </ul>   |

| Criteria                                    | JORC Code explanation   | Commentary  |
|---|---|---|
| Balanced reporting                          | <ul> <li>Where comprehensive reporting of all Exploration Results is not practicable,<br/>representative reporting of both low and high grades and/or widths should be<br/>practiced to avoid misleading reporting of Exploration Results.</li> </ul>   | <ul> <li>As individual exploration results are not being reported this<br/>section is not relevant to Ovoot Coal Resource reporting.</li> </ul>   |
| Other<br>substantive<br>exploration<br>data | <ul> <li>Other exploration data, if meaningful and material, should be reported including<br/>(but not limited to): geological observations; geophysical survey results;<br/>geochemical survey results; bulk samples – size and method of treatment;<br/>metallurgical test results; bulk density, groundwater, geotechnical and rock<br/>characteristics; potential deleterious or contaminating substances.</li> </ul> | <ul> <li>Additional exploration work completed by AKM consists of<br/>geological mapping and a nine-line resistivity survey. In March<br/>2011, Logantek Mongolia LLC reported on twelve 2D seismic<br/>survey lines located around the proposed Stage 1 pit. Xstract<br/>has used the interpreted seismic profiles to aid with the<br/>structural interpretation during construction of the geological<br/>model.</li> </ul> |
| Further work                                | <ul> <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> <li>Further infill drilling within the current proposed mining areas<br/>is recommended to increase confidence in classification,<br/>continuity and quality.</li> </ul>   |



# Section 3: Estimation and Reporting of Coal Resources

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

| Criteria              | JORC Code explanation   | Commentary  |
|-----------------------|---|---|
| Database<br>integrity | <ul> <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> <li>Xstract examined all lithological logging data supplied in conjunction with the seam pick information and geophysical logs in order to confirm that seam picks were appropriate.</li> <li>The geological modelling software (Minescape Stratmodel version 4.119) checks that sampled intervals correspond to seam intervals during compositing of model intervals and reports on any mismatches. Samples that extend outside of modelled intervals by more than 20% were excluded from the raw coal quality database, as they were not considered representative of the interval being sampled.</li> <li>Prior to importing the raw coal samples into the sample quality database in Minescape, scatter plots, were examined in order to assess key quality relationships, and to identify any anomalies.</li> </ul> |
|                       |   | <ul> <li>Postings and contours of seam/ply coal quality values were<br/>examined to ensure that the values were spatially consistent.</li> </ul>  |
| Site visits           | <ul> <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> <li>A site visit was carried out by a representative, C. Williams, of<br/>the Xstract Competent Person, I de Klerk, in June 2011 to<br/>review and advise on aspects of the coal exploration including<br/>suitability of logging and sampling for estimating and reporting<br/>a Coal Resources in accordance with the Australian Code for<br/>Reporting Exploration Results, Mineral Resources and Ore<br/>Reserves, 2012 Edition (JORC Code, 2012). Xstract was<br/>satisfied that the acquired exploration and coal quality data<br/>was suitable for resource estimation.</li> </ul>  |



| Criteria                     | JORC Code explanation  | Commentary   |
|------------------------------|--|--|
| Geological<br>interpretation | <ul> <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> <li>Twelve 2D seismic lines were completed in March 2011. The seismic lines show numerous faults in the basement volcanics. Xstract has used the interpreted seismic profiles to aid with the structural interpretation during construction of the geological model.</li> <li>Four reverse faults, which trend in a northwest-southeast direction and one major normal fault orientated in an east-west to east-north-east direction, were interpreted based on the drillhole data and the seismic profiles.</li> </ul> |
|                              |  | <ul> <li>Validation and adjustment of coal seam/ply nomenclature and<br/>correlations, as well as fault interpretations, through iterative<br/>modelling runs and examination of resulting contour plans and<br/>cross sections was completed.</li> </ul>  |



| Criteria   | JORC Code explanation  | Commentary   |
|------------|--|--|
| Dimensions | <ul> <li>The extent and variability of the Mineral Resource expressed as length (along<br/>strike or otherwise), plan width, and depth below surface to the upper and lower<br/>limits of the Mineral Resource.</li> </ul> | <ul> <li>A generalised stratigraphic column is presented in Appendix H of the PFS report dated November 2012. The upper sequence of coal seams (U01 to FP2) show the thickest development of good quality coking coal. The thickness of the upper sequence varies between 1.5m and 50m.</li> </ul>   |
|            |  | <ul> <li>The top of the upper sequence ranges in depth from 40m to<br/>340m below surface.</li> </ul>  |
|            |  | <ul> <li>The depth of weathering affects the coal in the range 40m to<br/>130m below the topographic surface, averaging 70 m.</li> </ul>   |
|            |  | <ul> <li>A second lower sequence of seams, LOA, LOB, LOC, and LOD is present along the southern margin of the coal bearing sediments, stratigraphically below the upper sequence of seams. The extent of these lower seams is controlled by the basement palaeo-valley, which runs in an approximate east-northeast direction. Seismic geophysical surveys indicate that this basement valley is often fault bounded and with steep sides, against which these lower seams are truncated. The basement trough does not truncate the upper seams, which usually sub-crop against the weathering surface along the Southern and Northern margins of the local basin. In the North, the upper seam also thins appreciably and may pinch out before sub-cropping.</li> </ul> |
|            |  | <ul> <li>A third, and lowest coal sequence, known as OVB Seam, is<br/>locally developed in a restricted basement low. This thick<br/>sequence averages 47 m in thickness and has been intersected</li> </ul>   |
|            |  | in four drillholes ranging in depth from 250 to 290 m.   |
|            |  | <ul> <li>Coal Resources available within the main OCCP area have been<br/>classified and summarised in Appendix I and Appendix J. Coal<br/>Resources within the proposed pit and underground areas have</li> </ul>   |
|            |  | been tabled separately.  |



| Criteria                            | JORC Code explanation   | Commentary   |
|-------------------------------------|---|--|
| Estimation and modelling techniques | <ul> <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 economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul> | The following modelling parameters/schema settings were applied within MineScape Stratmodel software:  Interpolators used:  Thickness: Planar (search radius 1,500 m) Surface: FEM (search radius 1,500 m) Trend: Planar (search radius 1,500 m) Quality: Inverse Distance Squared (search radiu 1,100 m)  Minimum interval thickness modelled 0.1 m Grid modelling smooth thickness "ON", smooth surface "OFF", Number of passes "= 1" Surfaces defined in the schema:  TUJU_Top of Jurassic (non-conformable continuous) BHWE_Base of Weathering (transgressive continuous) U07_FL U07 floor for trending of Upper Seam plies (contiguous, continuous) TUBA Top of Basement (transgressive, pinch) |
|                                     |   | floor and thickness contours, sub-crop limits and pinch outs of each seam in relation to the drillhole logged intervals, as well as numerous cross sections. The "verify model" function was also run in Minescape which compares values in the grid mode with drillholes for a given expression.  • The quality model was validated by visual inspection of contour plans of the gridded qualities, as well as comparing the mean and range of the gridded values against the original input composite qualities for each seam interval.  |
| Moisture                            | <ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and<br/>the method of determination of the moisture content.</li> </ul>  | <ul> <li>No adjustment has been made to the analysed air-dried<br/>Relative Density ("RD") values to account for the in-situ<br/>moisture basis, as this effect is considered to be insignificant.</li> </ul>  |



| Criteria                                   | JORC Code explanation  | Commentary  |
|--|--|---|
| Cut-off<br>parameters                      | The basis of the adopted cut-off grade(s) or quality parameters applied.   | <ul><li>No cut-off quality parameters were applied.</li><li>Minimum interval thickness modelled was 0.1 m</li></ul>   |
| Mining factors or assumptions              | <ul> <li>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.</li> </ul>   | <ul> <li>Mining of the Ovoot deposit is proposed to be primarily through open cut mining methods involving mechanised truck and shovel equipment. The geometry of the deposit makes it amenable to open cut mining methods employed in many similar coal mining operations around the world.</li> <li>A minimum interval thickness of 0.1 m was applied</li> </ul>  |
| Metallurgical<br>factors or<br>assumptions | <ul> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is<br/>always necessary as part of the process of determining reasonable prospects for<br/>eventual economic extraction to consider potential metallurgical methods, but the<br/>assumptions regarding metallurgical treatment processes and parameters made<br/>when reporting Mineral Resources may not always be rigorous. Where this is the<br/>case, this should be reported with an explanation of the basis of the metallurgical<br/>assumptions made.</li> </ul>   | In some areas, mainly along the northwestern sub-crop of the upper coal sequence, seams occurring above the base of weathering have coal qualities suitable for use as either a domestic thermal coal product or as a blend with higher quality coking coal. "Coal Above BHWE" Inferred Resources have been reported for coal intersected above the base of weathering. This coal was not considered as part of the coking coal resource, but could be considered as a suitable thermal coal raw product. |
| Environmental<br>factors or<br>assumptions | <ul> <li>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.</li> </ul> | No environmental factors are considered to have a material impact on the reported Coal Resource estimate. The removal and placement of topsoil has been included in the PFS economic ranking (Section 4).   |



| Criteria     | JORC Code explanation   | Commentary  |
|--------------|---|---|
| Bulk density | <ul> <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> </ul> | <ul> <li>Relative Density (RD) was laboratory analysed on an air-dried<br/>basis for each coal quality sample. Seam composited RD was<br/>interpolated using the inverse distance squared method into a<br/>50 x 50 m quality grid for Resource estimation purposes.</li> </ul> |
|              | <ul> <li>Discuss assumptions for bulk density estimates used in the evaluation process of<br/>the different materials.</li> </ul>   |   |



| Criteria          | JORC Code explanation  | Commentary  |
|-------------------|--|---|
| Classification    | <ul> <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 (i.e. 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> <li>Points of observation for resource classification purposes were defined as cored drillhole intersections of seams with 85% or better core recovery and coal quality composites (at least raw coal proximate analysis, specific energy and total sulphur) that pass all QA/QC checks. Interval elevations and thicknesses must also be supported by down-hole geophysics.</li> <li>The resource was classified as Measured if the distance between valid points of observation is less than 500m (effective maximum 250m radius around points of observation).</li> <li>The resource was classified as Indicated if the distance between valid points of observation is greater than 500m and less than 1,000m (effective maximum 500m radius around points of observation).</li> <li>The resource was classified as Inferred if the distance between valid points of observation is greater than 1,000m and less than 2,000m (effective maximum 1,000m radius around points of observation).</li> <li>An additional "Reconnaissance" class has been defined (greater than 2,000m and less than 4,000m). This is not used for Coal Resource reporting in accordance with the JORC Code, but is useful when planning infill drilling.</li> <li>At least two intersecting points of observation radii were required for classification, (i.e. no isolated circles of influence).</li> </ul> |
| Audits or reviews | The results of any audits or reviews of Mineral Resource estimates.  | <ul> <li>Xstract has completed an internal peer review of this estimate<br/>and report.</li> </ul>  |



| Criteria                                    | JORC Code explanation   | Commentary   |
|---|---|--|
| Discussion of relative accuracy/ confidence | <ul> <li>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.</li> <li>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.</li> </ul> | <ul> <li>The resource classification appropriately reflects the varying levels of confidence of the resource model to predict coal quality and tonnages for the resource if it were to be mined. It does not take into account any modifying factors for mining and processing. As such, it is useful for long term and life_of_mine planning, but does not have the degree of accuracy for short term mine planning and detailed mine scheduling.</li> <li>No production data is available for comparison as the project has not been developed to a mining stage.</li> </ul> |
|   | <ul> <li>These statements of relative accuracy and confidence of the estimate should be<br/>compared with production data, where available.</li> </ul>  |  |

# Section 4: Estimation and Reporting of Coal Reserves

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

| Criteria  | JORC Code explanation  | Commentary   |
|---|--|--|
| Mineral Resource<br>estimate for<br>conversion to Ore<br>Reserves | <ul> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>     | <ul> <li>The Mineral Resource Estimate was compiled by Ian De Klerk who is a full time employ of Xstract Mining Consultants Pty Ltd. Mr de Klerk BSc (Geol), MAusIMM who is the Competent Person for Mineral Resources and has over 20 years' experience as a geologist in resource estimation of coal resources. The details of the development of the Ovoot Coking Coal Resources for 2013 can be found above in the explanatory notes which accompany the Mineral Resource estimate.</li> <li>The Mineral Resource is inclusive of the Ore Reserves.</li> </ul> |
| Site visits   | <ul> <li>Comment on any site visits undertaken by the Competent<br/>Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is<br/>the case.</li> </ul>  | • A site visit was not conducted by the Competent Person taking responsibility for<br>the Coal Reserve as sufficient site information was collected by the Competent<br>Person for the Coal Resource estimate. This information proved satisfactory for<br>the level of the study and confidence of the Coal Reserve Estimate.   |
| Study status  | <ul> <li>The type and level of study undertaken to enable Mineral<br/>Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility<br/>Study level has been undertaken to convert Mineral</li> </ul> | The Coal Reserve is based on a Pre-feasibility Study conducted in 2012   |



| Criteria  | JORC Code explanation  | Commentary   |
|---|--|--|
|   | Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.  |  |
| Cut-off parameters  | <ul> <li>The basis of the cut-off grade(s) or quality parameters<br/>applied.</li> </ul>   | No minimum quality parameters were applied   |
| Mining factors or assumptions   | The method and assumptions used as reported in the Pre-<br>Feasibility or Feasibility Study to convert the Mineral<br>Resource to an Ore Reserve (i.e. either by application of<br>appropriate factors by optimisation or by preliminary or<br>detailed design).  The choice pature and appropriateness of the selected. | <ul> <li>The Coal Reserve estimate was based on conventional open pit mining operation using drilling and blasting and large hydraulic excavators loading off-highway trucks. The open cut mining will be accessed via ramps after a 6 month Pre-strip period. The method was deemed appropriate based on near outcropping coal, low strip ratios and relatively low dip angles.</li> <li>The Underground portion of the Coal Reserve was based on access to the coal</li> </ul> |
| mining method(s) and other mining parameters including seams via two declines and the convent | seams via two declines and the conventional room and pillar mining method using continuous miners. This method was deemed to be appropriate with the   |  |
|   | <ul> <li>The assumptions made regarding geotechnical parameters<br/>(eg pit slopes, stope sizes, etc), grade control and pre-<br/>production drilling.</li> </ul>  | seam thickness, shallow dips and requirement for low capital expenditure.  • The final pit design was based on an Xpac ™ optimised pit using economic ranking of the coal blocks (margin ranking), subsequently mine designs and   |
|   | <ul> <li>The major assumptions made and Mineral Resource model<br/>used for pit and stope optimisation (if appropriate).</li> </ul>  | production schedules were produced to determine the economic viability of the Coal Resource.   |
|   | <ul><li>The mining dilution factors used.</li><li>The mining recovery factors used.</li></ul>  | <ul> <li>Overall pit slopes were designed by the geotechnical consultant and are 35 and<br/>45 degrees in weathered and fresh rock respectively.</li> </ul>  |
|   | <ul> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>   | <ul> <li>Economic Ranking assumptions used to calculate Run_of_Mine ("ROM") tonnes are: mining units consisting of 100m by 100m blocks; a minimum mining thickness of 0.3 m; a dilution factor applied to each side of a mining unit within a coal seam resulting in the following mining recovery and dilution (recovery%, dilution%):</li> <li>Coal Seam greater than 9m thickness: 97.2%, 2.8%</li> </ul>   |
|   |  | <ul> <li>Coal Seam between 5 and 9m thickness: 95.3%,4.7%</li> <li>Coal Seam between 0.3 and 5m thickness: 92%, 8.1%</li> <li>Dilution qualities of 80% ash and 2.3t/m³ density</li> <li>Profitable mining blocks are included in the pit design, of which the inventory is reported for the mine schedule.</li> <li>Included in the mining study is 2% of Inferred Coal Resources located at the</li> </ul>   |

| Criteria                                   | JORC Code explanation   | Commentary  |
|--|---|---|
|  |   | northeastern extents of the final pit outline. These Inferred Coal Resources were not considered during the financial assessment of the project. The project is not sensitive to the Inferred Coal Resource as it is scheduled after 13 years of mine operation when the project demonstrates profitability on the third year of operation.  • The site will require infrastructure consisting of water bores, camp, offices, mobile equipment workshop, fuel and lubrication storage, explosives magazine, ROM stockpile, product stockpile, Coal Handling and Preparation Plant ("CHPP"), and a train load-out facility which are all accounted for in the costing.   |
| Metallurgical<br>factors or<br>assumptions | <ul> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul> | <ul> <li>The Coal Reserve is based on a dense medium processing plant typically employed in the beneficiation of coking coals. The design was based on work carried out by Sedgman Limited who conducted simulations of coal washing which are reported in their 2012 Pre-feasibility Study. Some of the coal with low inherent ash (&gt; 10%) will bypass the processing.</li> <li>The combination of the CHPP washed coal and bypassed ROM coal meets the product ash requirement of less than 10%.</li> <li>Varying percentages (63% - Upper Seam, 90% - Lower Seam and 100% - OVB Seam) of the ROM Coal is required to be washed based on the assayed ash estimates in the Coal Resource. The remainder of each seam will be bypassed straight to the product stockpile.</li> </ul> |
| Environmental                              | <ul> <li>The status of studies of potential environmental impacts of<br/>the mining and processing operation. Details of waste rock<br/>characterisation and the consideration of potential sites,<br/>status of design options considered and, where applicable,<br/>the status of approvals for process residue storage and<br/>waste dumps should be reported.</li> </ul>  | <ul> <li>Environmental baseline studies are underway.</li> <li>Management and mitigation strategies regarding air quality, water resources, biodiversity and soil are being considered.</li> <li>Testwork to determine the possibility of Acid Rock Drainage has not been undertaken. The proposed geotechnical test program on waste rock includes premining testing and ongoing weekly sampling.</li> </ul>   |
| Infrastructure                             | <ul> <li>The existence of appropriate infrastructure: availability of<br/>land for plant development, power, water, transportation</li> </ul>   | <ul> <li>Site layouts and planning have demonstrated appropriate space is available for<br/>the required infrastructure.</li> </ul>   |

| Criteria | JORC Code explanation  | Commentary   |
|----------|--|--|
|          | (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.  | <ul> <li>Water bores have been established and ongoing monitoring will establish the water reserve in the immediate project area and the dewatering requirement of the open cut. An estimated total of 15 bores will be required and there are currently five constructed.</li> <li>A potable water processing plant will be constructed.</li> <li>A camp site will be constructed 5 km north of the processing plant.</li> <li>A trafficable road is required between the project and Murun, approximately 191 km in length.</li> <li>The saleable product will be transported to international markets via rail. Approximately 628 km of rail is required between the project site and Erdenet, where the existing rail network reaches.</li> <li>A pre-feasibility study for the rail project between site and Murun (222 km) has been completed, and a study is ongoing for the Murun to Erdenet segment (406 km long).</li> </ul>   |
| Costs    | <ul> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul> | <ul> <li>Capital and operating costs have been derived from known costs already encountered onsite, and supplier quotes and consultant estimates for other site infrastructure and mobile equipment. Local knowledge and experience was drawn upon from Sedgman Limited for the processing fixed and variable costs, Xstract Mining Consultants for the site layout and equipment costs, and rail and road consultants for off-site infrastructure.</li> <li>The project assumes an exchange rate of 0.75:1.00 (USD:AUD) for the life of the project.</li> <li>Transport and logistics costs for rail to port and road to China and Russia have been sourced from quotes and information provided by Noble Resources Limited, South Gobi Sands, SUEK Logistic and Optimal Projects.</li> <li>The state mineral royalties in Mongolia are based on reference prices published monthly by the MMRE, not on the actual sales price. The base royalty for exported coal is 5%. In addition, there is a sliding scale royalty from 0-5%, depending on price and classification.</li> <li>The reference prices upon which royalty the royalty calculations are based are Mongolian standard prices and are \$119 for raw or DSO coal and \$206 for processed coal.</li> <li>For DSO product there will be a 5% base royalty plus 4% (from</li> </ul> |



| Criteria          | JORC Code explanation   | Commentary  |
|-------------------|---|---|
|                   |   | the sliding scale), or a total royalty of 9%. At the reference price of \$119/tonne this produces a royalty of \$10.71/tonne.  • For washed processed coal there will be a 5% base royalty plus 2.5% (from the sliding scale), or a total royalty of 7.5%. At the reference price of \$206/tonne this produces a royalty of \$15.45/tonne.  |
|                   |   | There are no private royalties  |
| Revenue factors   | <ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>   | <ul> <li>A product split of 50:50 to seaborne and Chinese markets is modelled. The differences in transport lengths to each market are considered, along with border and port handling charges.</li> <li>The revenue is based on a forecast by Wood Mackenzie in July 2011. Wood Mackenzie forecast a strong market for good quality (&lt;10% Ash) coking coal, valued at the reference price \$206/tonne.</li> <li>Transport cost has been calculated based on rail transport to China and Russia.</li> </ul>  |
| Market assessment | <ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul> | <ul> <li>Coal sales are based on 100% of the coal exported out of Mongolia via the Russian port of Vanino to the international seaborne market and to the Chinese city of Baotou near the Mongolian border.</li> <li>The revenue is based on a forecast by Wood Mackenzie in July 2011. Wood Mackenzie forecast a strong market for good quality coking coal based on the following: <ul> <li>China, India and Brazil as the key growth markets;</li> <li>China becoming increasingly reliant on imports;</li> <li>Established steel producers in Japan, Taiwan and Korea remaining significant buyers of seaborne metallurgical coals</li> <li>Growth required from traditional and emerging suppliers to meet this demand;</li> <li>Buyers are traditionally reliant on Australia for coking coal and will be seeking other places to secure supply diversity; and</li> <li>The coal properties are good for blending compared to coals traded in the seaborne market.</li> </ul> </li> </ul> |
| Economic          | <ul> <li>The inputs to the economic analysis to produce the net<br/>present value (NPV) in the study, the source and confidence<br/>of these economic inputs including estimated inflation,</li> </ul>  | <ul> <li>The PFS estimate inputs provided by Aspire and reviewed by Xstract Mining<br/>Consultants (capital and operating costs) are at +/- 25% as is the standard for<br/>this study phase.</li> </ul>   |



| Criteria       | JORC Code explanation   | Commentary  |
|----------------|---|---|
|                | discount rate, etc.  NPV ranges and sensitivity to variations in the significant assumptions and inputs.  | <ul> <li>A project discount rate of 12% was used.</li> <li>Inflation has not been included in the model and all costs are presented in real 2012 terms.</li> <li>Mongolian taxes are 15% on all profits up to MNT3B per year and 25% on all profits greater than MNT2B per year.</li> <li>Sensitivities are performed on transportation costs, wash plant throughput, point of sale, coal price, exchange rate and wash plant yield.</li> <li>The NPV is most sensitive to the coal sale price and the transportation costs. A 10% reduction in the coal price will reduce the IRR from 31% 22%. A 10% increase in the transportation costs will reduce the NPV to 27%.</li> <li>Sensitivities also demonstrated that the internal rate of return (IRR) is not sensitive to exchange rates and that for both a very strong and a very weak</li> </ul> |
| Social         | The status of agreements with key stakeholders and matters leading to social licence to operate.  | <ul> <li>USD: AUD rate the IRR will be sustained at approximately 31%.</li> <li>The OCCP is included within four contiguous exploration licences owned by Aspire's wholly owned subsidiary Khurgatai. The project is adjacent on the east of the Mogoin Gol Coal Mine which has been mined over a 40 year period.</li> </ul>  |
| Other          | <ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul> | <ul> <li>There are no known naturally occurring risks.</li> <li>The legal agreements and marketing arrangements required to carry out mining activities are in progress.</li> <li>There is no reason to expect approvals will not be gained before the project is advanced to mine status in mid-2015.</li> </ul>   |
| Classification | The basis for the classification of the Ore Reserves into varying confidence categories.  | The Coal Reserve estimate is based on the Coal Resource contained within the<br>final open pit and underground design classified as Measured and Indicated after  |



| Criteria          | JORC Code explanation  | Commentary   |  |  |  |  |
|-------------------|--|--|--|--|--|--|
|                   | <ul> <li>Whether the result appropriately reflects the Competent<br/>Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been<br/>derived from Measured Mineral Resources (if any).</li> </ul>  | <ul> <li>consideration of all mining, metallurgical, social environmental and financial aspects of the project. The Reserve estimate has been classed as Probable to on the understanding that the approval for the rail development between Mu and Erdenet is still in an approval process.</li> <li>This classification reflects the Competent Person's view of the deposit.</li> <li>77% of the Probable Coal Reserves have been derived from Measured Coal Resources.</li> <li>The Coal Reserve is shown in Appendix K</li> </ul>  |  |  |  |  |
| Audits or reviews | <ul> <li>The results of any audits or reviews of Ore Reserve<br/>estimates.</li> </ul>   | <ul> <li>Xstract has internally reviewed the Coal Reserve estimate.</li> <li>There have been no other external audits or reviews of the Coal Reserve estimate.</li> </ul>  |  |  |  |  |
|                   | <ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>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.</li> </ul> | <ul> <li>Factors that may affect the accuracy and confidence of this estimate relate to: <ul> <li>The relative accuracy of the yield variability across the deposit</li> <li>The variability of the "Limit of Oxidation" along the sub-crop line is yet to be fully defined</li> <li>The confidence of the Coal Reserve is dependent on the rail approvals for building a rail line between Ovoot and Ulaanbataa which remain to be granted.</li> <li>The magnitude of the estimate of the coal tonnages within the Coal Reserve is dependent on the variation of the assumptions the coal price and foreign exchange rates</li> </ul> </li> </ul> |  |  |  |  |
|                   | <ul> <li>Accuracy and confidence discussions should extend to<br/>specific discussions of any applied Modifying Factors that<br/>may have a material impact on Ore Reserve viability, or for<br/>which there are remaining areas of uncertainty at the<br/>current study stage.</li> </ul>   | This statement of Coal Resource and Coal Reserve relates to global estimates o tonnes and quality.   |  |  |  |  |
|                   | <ul> <li>It is recognised that this may not be possible or appropriate<br/>in all circumstances. These statements of relative accuracy<br/>and confidence of the estimate should be compared with</li> </ul>   | No production data is available.   |  |  |  |  |



| Criteria | JORC Code explanation             | Commentary |  |
|----------|-----------------------------------|------------|--|
|          | production data, where available. |            |  |



# Appendix A:

Summary drillhole seam/ply intersection information (main pit resource area)

| Seam<br>Ply | Intersections | Average<br>Thickness<br>(m) | Minin<br>Hole Thi<br>(m | ckness | Maxi<br>Hole Th<br>(n | ickness | Std. Dev. |
|-------------|---------------|-----------------------------|-------------------------|--------|-----------------------|---------|-----------|
| U01         | 62            | 3.26                        | DH216                   | 0.01   | DH323                 | 13.60   | 2.93      |
| U02         | 16            | 1.00                        | DH361                   | 0.25   | DH220                 | 3.07    | 0.68      |
| U03         | 11            | 1.52                        | DH313                   | 0.20   | DH271                 | 5.80    | 1.77      |
| U04         | 11            | 3.36                        | DH240                   | 0.40   | DH311                 | 8.70    | 2.74      |
| U05         | 42            | 4.43                        | DH353                   | 0.28   | DH253                 | 10.25   | 2.23      |
| U06         | 49            | 4.70                        | DH361                   | 0.85   | DH218                 | 9.66    | 2.02      |
| U07         | 72            | 5.15                        | DH244                   | 0.07   | DH246                 | 17.98   | 3.74      |
| U08         | 33            | 2.25                        | DH299A                  | 0.01   | DH308                 | 7.10    | 1.76      |
| UHA         | 1             | 2.55                        | GT08                    | 2.55   | GT08                  | 2.55    | -         |
| ULS         | 30            | 3.47                        | DH249                   | 0.01   | DH201                 | 12.50   | 3.42      |
| FP1         | 21            | 1.29                        | DH302A                  | 0.01   | DH309                 | 4.00    | 1.12      |
| FP2         | 8             | 0.86                        | GT08                    | 0.09   | DH340                 | 2.00    | 0.64      |
| LOA         | 51            | 4.17                        | DH208                   | 0.01   | DH243                 | 25.00   | 4.97      |
| LOB         | 43            | 5.12                        | DH234                   | 0.10   | DH235                 | 27.82   | 6.34      |
| LOC         | 45            | 4.35                        | DH308                   | 0.20   | DH203                 | 26.90   | 4.09      |
| LOD         | 28            | 1.75                        | DH244                   | 0.10   | GT05                  | 5.46    | 1.52      |
| OVB         | 5             | 49.81                       | DH340                   | 32.10  | DH234                 | 60.87   | 11.10     |

# **Appendix B:**

Drillhole composited raw coal quality summary by seam/ply (air-dried basis)

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| Seam |            | RD   | IM % | ASH % | VM %  | FC    | TS   | CV kcal/kg | CSN | P     | CL    | HGI | MHC    |
|------|------------|------|------|-------|-------|-------|------|------------|-----|-------|-------|-----|--------|
| Ply  |            |      |      |       |       | %     | %    |            |     | %     | %     |     | % (ar) |
|      | Composites | 28   | 28   | 28    | 28    | 28    | 28   | 25         | 19  | 9     | 12    | 11  | 7      |
|      | Min.       | 1.27 | 0.27 | 7.10  | 18.57 | 20.30 | 0.93 | 3231       | 3.5 | 0.019 | 0.000 | 60  | 1.02   |
| U01  | Max.       | 1.98 | 1.33 | 57.44 | 31.05 | 74.61 | 2.49 | 7974       | 9.0 | 0.231 | 0.038 | 119 | 1.65   |
|      | Mean       | 1.41 | 0.61 | 19.18 | 27.78 | 52.43 | 1.37 | 6756       | 7.5 | 0.089 | 0.011 | 92  | 1.37   |
|      | Composites | 9    | 9    | 9     | 9     | 9     | 9    | 9          | 8   | 4     | 7     | 7   | 4      |
|      | Min.       | 1.31 | 0.27 | 8.27  | 24.64 | 42.79 | 0.86 | 5751       | 1.5 | 0.010 | 0.000 | 62  | 0.82   |
| U02  | Max.       | 1.57 | 0.80 | 32.19 | 31.50 | 60.24 | 2.61 | 7750       | 9.0 | 0.055 | 0.030 | 102 | 1.27   |
|      | Mean       | 1.41 | 0.50 | 16.31 | 29.67 | 53.51 | 1.61 | 7042       | 6.5 | 0.026 | 0.007 | 88  | 1.04   |
|      | Composites | 7    | 7    | 7     | 7     | 7     | 7    | 6          | 5   | 2     | 4     | 4   | 2      |
|      | Min.       | 1.29 | 0.28 | 10.01 | 24.64 | 42.79 | 0.80 | 5751       | 6.0 | 0.035 | 0.000 | 62  | 0.93   |
| U03  | Max.       | 1.59 | 0.80 | 32.19 | 29.79 | 59.67 | 2.02 | 7526       | 8.5 | 0.075 | 0.010 | 98  | 1.56   |
|      | Mean       | 1.44 | 0.50 | 20.96 | 27.37 | 51.17 | 1.55 | 6706       | 7.0 | 0.055 | 0.005 | 77  | 1.25   |
|      | Composites | 8    | 8    | 8     | 8     | 8     | 8    | 7          | 6   | 2     | 4     | 4   | 2      |
|      | Min.       | 1.27 | 0.24 | 10.01 | 24.38 | 43.85 | 0.88 | 5658       | 6.0 | 0.041 | 0.000 | 71  | 1.35   |
| U04  | Max.       | 1.54 | 1.50 | 31.28 | 30.86 | 59.67 | 1.85 | 7526       | 9.0 | 0.060 | 0.040 | 95  | 2.79   |
|      | Mean       | 1.39 | 0.60 | 17.14 | 28.26 | 54.00 | 1.31 | 6866       | 7.0 | 0.051 | 0.011 | 85  | 2.07   |
|      | Composites | 26   | 26   | 26    | 26    | 26    | 26   | 23         | 18  | 6     | 9     | 7   | 5      |
|      | Min.       | 1.26 | 0.19 | 7.94  | 23.31 | 40.46 | 0.67 | 5380       | 5.5 | 0.073 | 0.000 | 69  | 0.93   |
| U05  | Max.       | 1.65 | 0.96 | 35.65 | 31.67 | 63.16 | 2.57 | 7858       | 9.0 | 0.167 | 0.042 | 124 | 1.86   |
|      | Mean       | 1.37 | 0.51 | 14.47 | 28.48 | 56.54 | 1.26 | 7138       | 8.0 | 0.112 | 0.010 | 99  | 1.27   |
|      | Composites | 30   | 30   | 30    | 30    | 30    | 30   | 27         | 21  | 8     | 11    | 9   | 7      |
|      | Min.       | 1.26 | 0.12 | 8.40  | 23.03 | 50.31 | 0.84 | 6030       | 5.5 | 0.020 | 0.000 | 86  | 0.87   |
| U06  | Max.       | 1.52 | 0.82 | 26.01 | 30.88 | 63.17 | 1.99 | 7689       | 9.0 | 0.373 | 0.036 | 123 | 1.50   |
|      | Mean       | 1.37 | 0.48 | 14.11 | 28.45 | 56.97 | 1.21 | 7157       | 8.0 | 0.105 | 0.014 | 107 | 1.17   |
|      | Composites | 44   | 44   | 44    | 44    | 44    | 44   | 41         | 36  | 16    | 21    | 18  | 12     |
|      | Min.       | 1.26 | 0.17 | 9.03  | 18.54 | 40.88 | 0.71 | 5157       | 1.5 | 0.010 | 0.000 | 60  | 0.86   |
| U07  | Max.       | 1.61 | 3.97 | 37.33 | 31.20 | 65.88 | 3.36 | 7776       | 9.0 | 0.153 | 0.049 | 133 | 4.99   |
|      | Mean       | 1.40 | 0.57 | 16.89 | 27.58 | 54.97 | 1.44 | 6916       | 7.0 | 0.066 | 0.014 | 100 | 1.54   |
| U08  | Composites | 19   | 19   | 19    | 19    | 19    | 19   | 18         | 17  | 13    | 14    | 11  | 11     |
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| Seam<br>Ply |            | RD   | IM % | ASH % | VM %  | FC<br>% | TS<br>% | CV kcal/kg | CSN | P<br>% | CL<br>% | HGI | MHC<br>% (ar) |
|-------------|------------|------|------|-------|-------|---------|---------|------------|-----|--------|---------|-----|---------------|
|             | Min.       | 1.33 | 0.26 | 13.31 | 19.34 | 34.22   | 0.27    | 4387       | 2.0 | 0.030  | 0.000   | 69  | 0.86          |
|             | Max.       | 1.76 | 2.41 | 43.23 | 33.64 | 64.51   | 3.07    | 7295       | 8.5 | 0.650  | 0.053   | 114 | 3.27          |
|             | Mean       | 1.55 | 0.63 | 28.32 | 25.89 | 45.16   | 1.58    | 5765       | 6.5 | 0.133  | 0.015   | 92  | 1.28          |
|             | Composites | 1    | 1    | 1     | 1     | 14      | 1       | 1          | 1   | 0      | 0       | 0   | 0             |
|             | Min.       | 1.50 | 0.43 | 23.37 | 26.84 | 49.36   | 1.03    | 6370       | 8.5 | -      | -       | -   | -             |
| UHA         | Max.       | 1.50 | 0.43 | 23.37 | 26.84 | 49.36   | 1.03    | 6370       | 8.5 | -      | -       | -   | -             |
|             | Mean       | 1.50 | 0.43 | 23.37 | 26.84 | 49.36   | 1.03    | 6370       | 8.5 | -      | -       | -   | -             |
|             | Composites | 14   | 14   | 14    | 14    | 14      | 14      | 14         | 12  | 6      | 7       | 5   | 4             |
|             | Min.       | 1.33 | 0.10 | 11.17 | 19.89 | 30.20   | 0.84    | 4228       | 4.5 | 0.030  | 0.000   | 60  | 1.09          |
| ULS         | Max.       | 1.83 | 0.80 | 41.67 | 31.41 | 60.97   | 2.17    | 7517       | 8.5 | 0.110  | 0.040   | 112 | 1.39          |
|             | Mean       | 1.49 | 0.48 | 23.65 | 26.63 | 49.24   | 1.46    | 6317       | 7.0 | 0.077  | 0.017   | 89  | 1.22          |
|             | Composites | 8    | 8    | 8     | 8     | 8       | 8       | 7          | 7   | 2      | 4       | 2   | 0             |
|             | Min.       | 1.36 | 0.30 | 20.02 | 19.00 | 36.90   | 1.07    | 4488       | 2.5 | 0.120  | 0.000   | 71  | -             |
| FP1         | Max.       | 1.72 | 0.80 | 43.30 | 28.08 | 51.43   | 2.18    | 6673       | 8.0 | 0.330  | 0.018   | 84  | -             |
|             | Mean       | 1.51 | 0.44 | 29.00 | 24.82 | 45.75   | 1.61    | 5872       | 6.5 | 0.225  | 0.007   | 78  | -             |
|             | Composites | 4    | 4    | 4     | 4     | 4       | 4       | 3          | 4   | 0      | 0       | 0   | 0             |
|             | Min.       | 1.44 | 0.35 | 25.28 | 15.63 | 33.84   | 1.35    | 3998       | 4.0 | -      | -       | -   | -             |
| FP2         | Max.       | 1.56 | 3.91 | 50.10 | 29.07 | 45.20   | 1.95    | 5990       | 7.5 | -      | -       | -   | -             |
|             | Mean       | 1.51 | 1.29 | 34.50 | 23.37 | 40.84   | 1.55    | 5170       | 6.0 | -      | -       | -   | -             |
|             | Composites | 29   | 29   | 29    | 29    | 29      | 29      | 27         | 28  | 7      | 10      | 6   | 3             |
|             | Min.       | 1.27 | 0.24 | 9.28  | 11.40 | 16.32   | 0.31    | 1377       | 1.0 | 0.050  | 0.000   | 61  | 1.17          |
| LOA         | Max.       | 1.89 | 0.77 | 71.69 | 30.58 | 60.21   | 4.92    | 7634       | 9.0 | 0.304  | 0.020   | 92  | 1.71          |
|             | Mean       | 1.51 | 0.46 | 29.45 | 24.74 | 45.28   | 1.39    | 5640       | 6.5 | 0.152  | 0.007   | 74  | 1.36          |
|             | Composites | 25   | 25   | 25    | 25    | 25      | 25      | 23         | 25  | 6      | 9       | 6   | 2             |
|             | Min.       | 1.30 | 0.24 | 11.04 | 13.70 | 23.49   | 0.56    | 2622       | 1.5 | 0.023  | 0.000   | 60  | 1.09          |
| LOB         | Max.       | 1.88 | 1.27 | 62.24 | 27.98 | 62.41   | 4.92    | 7810       | 9.0 | 0.080  | 0.025   | 86  | 1.24          |
|             | Mean       | 1.52 | 0.49 | 30.66 | 23.29 | 45.52   | 1.22    | 5622       | 6.5 | 0.055  | 0.009   | 74  | 1.17          |
| LOC         | Composites | 29   | 29   | 29    | 29    | 29      | 29      | 29         | 28  | 8      | 11      | 6   | 3             |
|             | Min.       | 1.33 | 0.29 | 10.25 | 18.13 | 33.24   | 0.57    | 4025       | 4.0 | 0.010  | 0.000   | 78  | 1.04          |



| Seam<br>Ply |            | RD   | IM % | ASH % | VM %  | FC<br>% | TS<br>% | CV kcal/kg | CSN | P<br>% | CL<br>% | HGI | MHC<br>% (ar) |
|-------------|------------|------|------|-------|-------|---------|---------|------------|-----|--------|---------|-----|---------------|
|             | Max.       | 1.71 | 0.79 | 48.23 | 29.17 | 63.51   | 1.93    | 7687       | 9.0 | 0.296  | 0.050   | 104 | 1.20          |
|             | Mean       | 1.45 | 0.46 | 24.11 | 25.09 | 50.30   | 1.03    | 6288       | 7.0 | 0.085  | 0.014   | 93  | 1.13          |
|             | Composites | 15   | 15   | 15    | 15    | 15      | 15      | 15         | 14  | 5      | 7       | 5   | 3             |
|             | Min.       | 1.38 | 0.31 | 14.81 | 15.26 | 21.75   | 0.50    | 3090       | 1.0 | 0.020  | 0.000   | 62  | 0.96          |
| LOD         | Max.       | 1.89 | 1.11 | 57.51 | 34.61 | 59.01   | 1.18    | 7267       | 8.5 | 0.270  | 0.060   | 101 | 1.16          |
|             | Mean       | 1.61 | 0.49 | 35.61 | 23.25 | 40.59   | 0.87    | 4          | 5.5 | 0.129  | 0.014   | 85  | 1.04          |
|             | Composites | 4    | 4    | 4     | 4     | 4       | 4       | 3          | 3   | 1      | 1       | 0   | 0             |
|             | Min.       | 1.45 | 0.49 | 26.23 | 19.65 | 34.22   | 0.56    | 4240       | 5.5 | 0.110  | 0.016   | -   | -             |
| OVB         | Max.       | 1.71 | 0.73 | 45.59 | 24.09 | 49.06   | 0.92    | 6170       | 8.5 | 0.110  | 0.016   | -   | -             |
|             | Mean       | 1.58 | 0.59 | 36.70 | 21.69 | 41.02   | 0.75    | 5130       | 6.5 | 0.110  | 0.016   | -   | -             |



# **Appendix C:**

Location of exploration drillholes (2010 to 2012)



