

# ATRUM COAL - OPERATIONS ADVANCE AT GROUNDHOG ANTHRACITE PROJECT

#### **HIGHLIGHTS**

- Groundhog site activities ramp up significantly following completion of PFS for Stage 1 underground anthracite mine production, to be known as "Groundhog North"
- Close spaced diamond drilling continues to support portal development at Groundhog North
- Additional diamond drill rig deployed to drill untested regional sites to support Atrum's long term vision for a world class multi-mine development at Groundhog
- S40 seam intersected with net anthracite thicknesses measuring an impressive 11m with the S70 seam averaging net anthracite thicknesses of 2.5m, confirming near term mine plans
- Very shallow anthracite encountered including 4.7m of anthracite at 3.3m depth in the S80 seam, above the S70 seam, not yet included in the PFS
- S60 seam, also not yet included in PFS, has been encountered between the S40 and S70 seam with thicknesses up to 6.4m representing an opportunity to strengthen PFS economics
- Site preparation with work underway designed to provide large customer samples and facilitate run-of-mine wash testing
- Inclusion of additional seams, mine site engineering, expanded mine planning, surface infrastructure, and logistics options underway with significant improvements in CAPEX, OPEX and economics in updated PFS by the end of Q3 2014

Atrum Coal NL ("Atrum" or the "Company") (ASX: ATU) is pleased to provide an operational update for the Company's flagship JORC 1.57 billion tonne Groundhog Anthracite Project ("Groundhog"), located in British Columbia, Canada.



ASX:ATU - Share Information Issued Shares: 161.5m

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#### **Board of Directors**

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G. D'Anna

C. Vorias

Groundhoa Peace River Naskeena Bowron River

**Key Projects** 

Ownership: 100% Ownership: 100% Ownership: 100% Ownership: 100% VP Operations, Mr Ben Smith commented:

"The operational team has been flat-out at Groundhog preparing to deliver first anthracite on ship."

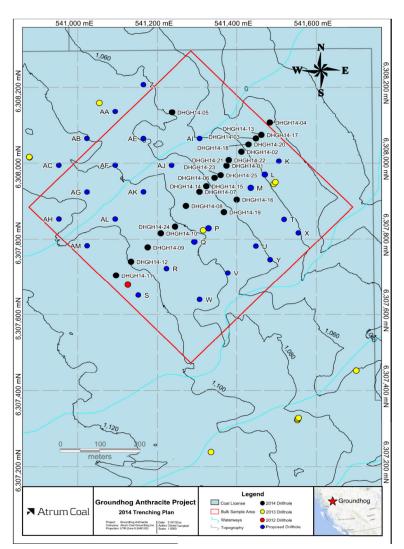
"Ultra-high grade anthracite has been accessed readily from a surface extraction program and we have exposed a thick anthracite seam at the proposed mine portal."

#### **EXPLORATION AT GROUNDHOG**

Following completion of the Pre-Feasibility Study (PFS) within the North-West area of Groundhog, where initial production is expected to commence, the site activities has ramped up considerably with an intense drilling and extraction program.

Close spaced diamond core drilling continues at Groundhog along section lines perpendicular to the strike of the main structure of the S70 seam as part of the portal development and main development headings. The Company continues to map the extent of the sub-crop and enhance understanding of the mine portal. A total of 28 diamond cored drill holes have been completed to date for this purpose within the portal area.

The map (above) provides an overview of the location of the drill holes that have been completed as part of the recent drilling campaign (black) as well as outlining the drill holes that are currently being drilled (blue).



Groundhog 2014 Drilling Plan

The additional drilling is expected to be completed in the next six weeks with a large number of samples sent to the laboratory for proximate and ultimate analysis. This will add further anthracite quality data and help underpin the initial mine plan and marketing strategy. Approximately 450 anthracite seam samples, including roof and floor samples, have been collected for quality analysis.

These samples have being sent to ALS' laboratory for weight, ash and moisture determination on a ply-by-ply basis. The returned information is then added to strip logs as it is received, which enables the Company to systematically update the mine plan and the geological model.

Recent drilling data supports a structure which will allow the Company to expand a small scale shallow adit style underground mining operation within the portal area into a full scale mine.

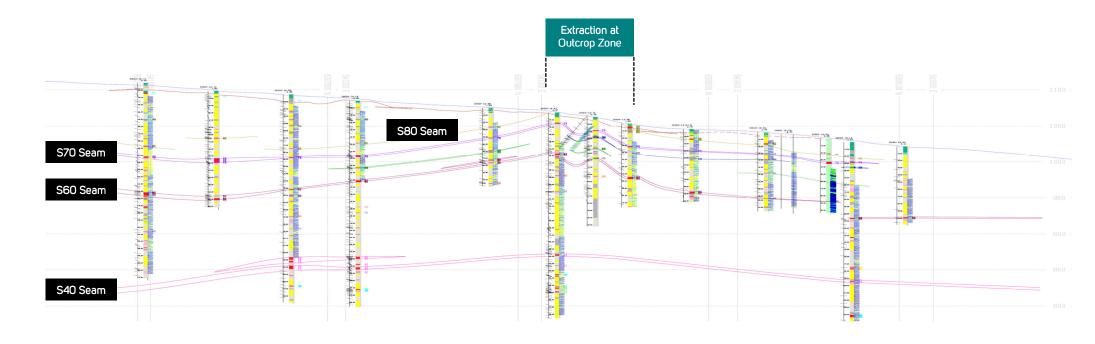
Anthracite located in an S80 seam outcrop close to diamond drill hole DH14-06 has been extracted for customer samples and wash testing. Due to the homogenous nature of the Groundhog deposit, particularly in respect of 'coal rank', the S80 seam has comparable anthracite qualities to the S70 and S40 seam and provides an ideal source of Groundhog anthracite for customer testing. The S80 seam measured 4.7m at 3.3m depth. This represents potential upside for the PFS mine – Groundhog North.

The S70 seam has been encountered at depths ranging from 14m to 101m below surface with a net anthracite thickness ranging from 1.0m to 6.4m and averaging approximately 2.5m. Recent drilling has identified a new opportunity in the S60 seam which has been encountered in several drill holes of significant thickness within the PFS and mine portal area, positioned between 30m and 50m below the S70 seam. The S60 seam ranges in drilled thickness from 0.4m to 6.4m and averages 2.5m of net anthracite. The Company is reviewing the potential inclusion of the S60 seam as part of an expanded anthracite mining inventory in the PFS revision to allow for increased throughput during the initial phases of the Groundhog mine and ultimately amplified economics. The S40 seam has been encountered at depths between 195m and 276m below surface with net anthracite thicknesses as high as 11.0m. Drilling and anthracite quality testing continues to support the PFS mine plan.

A regional drilling program is also currently underway at the Groundhog project designed to expand the global resources within the project area and delineate the extent of additional anthracite resources on untested regional targets, south and east of the current global anthracite resource, consistent with Atrum's view that Groundhog represents a regional opportunity, capable of multi mine development.

### PORTAL DRILLING AREA - CROSS-SECTION

The diagram below provides a representative cross section within the portal area:

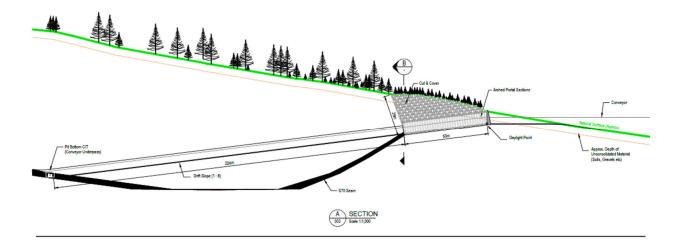


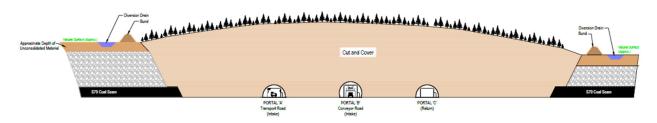
Groundhog Portal Drilling Area – Cross Section (Line 8) – S40 Sean (Pink); S60 Seam (Plum); S70 Seam (Purple)



#### **INITIAL PORTAL DEVELOPMENT**

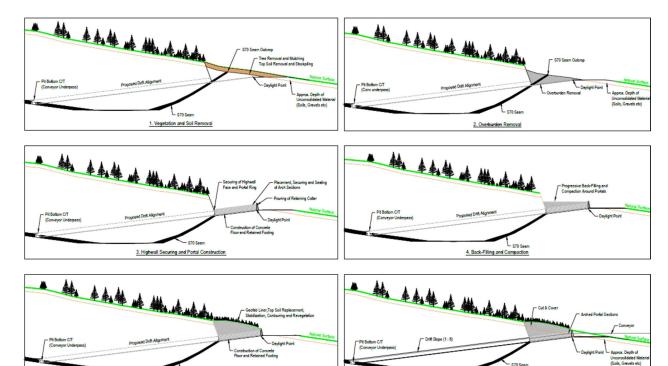
The following diagrams illustrate the portal development concept:

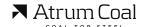




The following diagrams illustrate the portal development concept in stages:

5. Liner Placement, Top Soil Replacement, and Reven

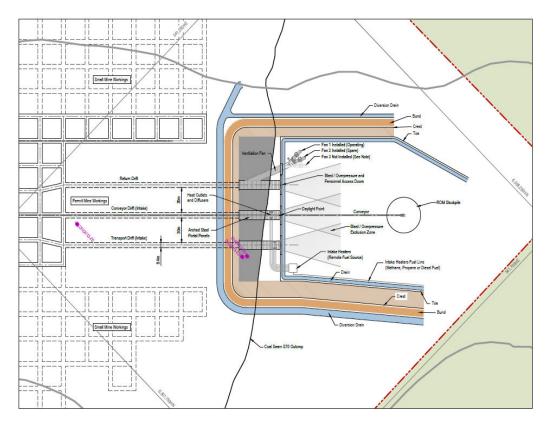




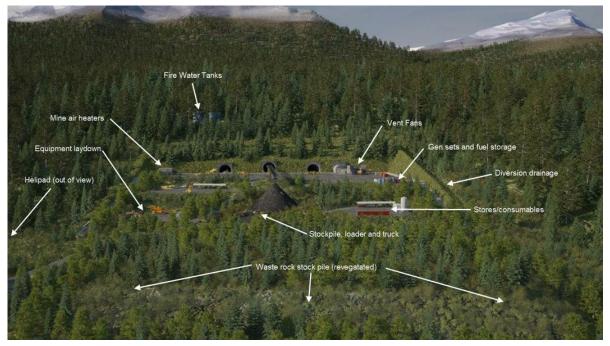
6. Final Design

## PROPOSED PORTAL ENTRY

The following diagrams illustrate an aerial view of the portal entry:



## LOW IMPACT MINE ENTRY

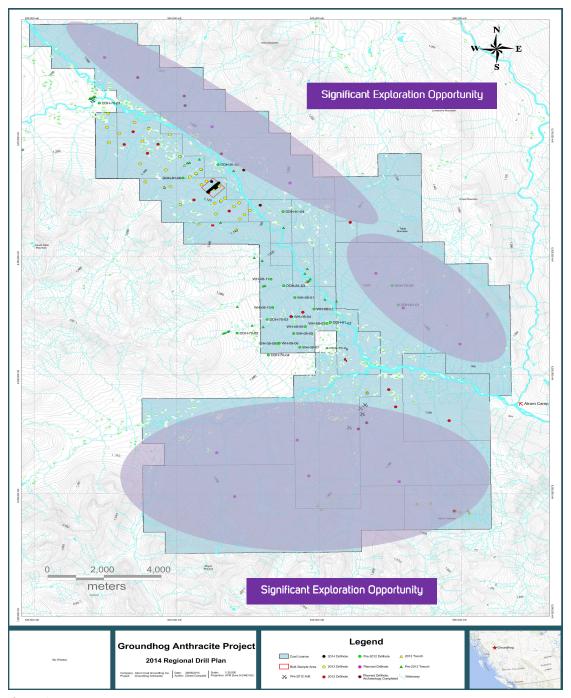


3D Render of Portal Entry at Groundhog

#### A WORLD CLASS MULTI MINE VISION

Atrum has long term plans to groom Groundhog to be a world class multi mine supplier of high grade and ultra-high grade anthracite products to the steel and specialty industries. To support this vision drilling continues in regional untested areas where there is potential for major resource expansion.

The map below outlines additional regional drilling locations (purple) which are currently underway. To date, the Company has drilled four of the regional drill holes with significant anthracite intersected.



Groundhog Regional Drill Hole Location Plan

#### PFS OPTIMISATION

The PFS is in the final stages of optimisation which will take into account additional anthracite inventory, extension to the mine plan geographically and incorporation of additional anthracite seams that have been encountered in significant thickness within the North-West area of Groundhog as a result of recent drilling.

The initial PFS completed for the first stage of production at Groundhog was based on the underground mining of the S70 and S40 anthracite seams in the North-West area of Groundhog. This area represented less than 5% of the total aerial extent of the project and considered only 2 out of 20 potentially mineable anthracite seams. The initial PFS demonstrated significant economic returns generating a pre-tax NPV8 of \$2.1 billion based on a pre-tax IRR of 68%.

Since release of the PFS, an extensive summer exploration program has been carried out to increase confidence to the initial mining areas of Groundhog North. In the process, additional seams of thicknesses favourable to mining have been identified – namely the S60 and S80 seam. The S80 seam sits close to surface while the S60 is located between the S70 and S40. Mine planning and economic evaluation of these additional anthracite measures is currently underway, with an augmented PFS to be released in due course.

The PFS optimisation is close to completion and addresses mine site engineering, mine planning, surface infrastructure and logistics options. The Company will release a summary of the PFS revision including CAPEX, OPEX and economic modelling during Q4 of 2014.

#### ADVANCED SITE WORKS AT GROUNDHOG

The Company recently mobilised heavy equipment to the staging platform in the North-West area at Groundhog, including an articulated dump truck, an excavator and a dozer. This equipment is being used to complete various site preparation activities as part of the portal and pre-production exploration program.

Site preparation commenced at Groundhog during mid-July 2014 with the initial centre line cleared to allow movement of the heavy equipment.

The Company has begun extracting anthracite for test purposes including customer samples. Extraction has been taken from a 1.5m wide trench consistent with the Company's low impact approach.



Ultra-high grade anthracite at Groundhog North

The vitrinite content of the anthracite gives the material its high lustre appearance and the well-developed cleats in the sample indicate the potential of the anthracite to retain strength supporting an ultra-high grade lump anthracite product for the steel and speciality metals industries.



As part of the Company's transition from explorer to developer, the Company has also updated its health and safety policies to reflect the direction of the Company and to outline the objectives and standards that are being set. This is being spear-headed by the VP Operations, Mr Ben Smith.

The Company looks forward to providing further operational updates at Groundhog as drilling continues.

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#### Competent Person Statement

#### **Exploration Results**

The information in this document that relates to Exploration Results is based on information compiled by Brad Van Den Bussche B.Sc P.Geo, who is a Member of a Recognised Overseas Professional Organisation (ROPO) included in a list promulgated by the ASX from time to time, being the Canadian Institute of Mining and Metallurgy. Mr Van Den Bussche has read and understands the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition). Mr Van Den Bussche is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in this document, and to the activity for which I am accepting responsibility.

Mr Van Den Bussche is Chief Technical Officer of Atrum Coal NL and has sufficient experience which is relevant to the style of mineralisation and type of deposit and mineralisation under consideration and to the activity which they are undertaking. Mr Van Den Bussche consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### Coal Resources

The coal resources documented in this report were estimated in accordance with the guidelines set out in the JORC Code, 2012. They are based on information compiled and reviewed by Mr Nick Gordon, who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Gordon Geotechniques Pty Ltd.

With more than 28 years of experience in open cut and underground coal mining, Mr Gordon 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 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves."

Neither Mr Gordon nor Gordon Geotechniques Pty Ltd have any material interest or entitlement, direct or indirect, in the securities of Atrum or any companies associated with Atrum. Fees for the preparation of this report are on a time and materials basis. Mr Gordon recently visited the Groundhog project area on 21st March 2014 whilst exploration personnel were preparing for the next drilling program. Two days were also spent with Atrum geological personnel in Victoria, British Columbia evaluating the geological, coal quality and geotechnical information relevant to the Groundhog project area.

Mr Gordon consents to the inclusion in the report of the matters based on the information, in the form and context in which it appears.

#### Forward Looking Statements

This release includes forward looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs. Forward looking statements in this release include, but are not limited to, the capital and operating cost estimates and economic analyses from the Study.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the company's actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of resources or reserves, political and social risks, changes to the regulatory framework within which the company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the company's business and operations in the future. The company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the company or management or beyond the company's control.

Although the company attempts to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be anticipated, estimated or intended, and many events are beyond the reasonable control of the company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements.

Forward looking statements in this release are given as at the date of issue only. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the company does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.



# **TABLE 1 - SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code explanation	Commentary
Sampling 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>For the Atrum Coal 2013 exploration program all coal seams intersected were sampled. Coal plies were sampled discretely on the basis of lithological characteristics and quality. All non-coal material and partings were included with the lower coal ply and noted in the lithological description. Non-coal interburden was sampled separately.</li> <li>The immediate roof and floor samples were submitted for geotechnical testing.</li> <li>All coal and roof and floor dilution samples were double bagged at site and marked with sample number, date, hole and project. These were retained on site until geophysical corrections confirmed representative core recovery of the seam and samples. The qualified samples were then transported to the laboratory via courier.</li> <li>Coal Quality samples from the Atrum Coal Drilling program were sent to Loring Laboratories and ALS Laboratories in Calgary and Vancouver, respectively.</li> <li>All coal quality samples were prepared and analysed using Canadian and International Standard testing methodologies.</li> </ul>
Drilling 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>All coal quality holes were cored (partially or fully) using a HQ size core barrel producing a 63.3 mm core diameter.</li> <li>Large diameter drill holes for bulk material extraction were cored using a PQ size core barrel producing an 83.1 mm core diameter.</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>	<ul> <li>An assessment of core recovery was completed by comparing the recovered thickness measured during geological logging and by the driller, to geophysical picked thicknesses from the geophysical logs.</li> <li>Volumetric analysis of samples was conducted on the Atrum Coal exploration program</li> <li>The analysis was based on sample mass received versus expected sample mass derived from sample length by core diameter by apparent Relative Density</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>If sample mass was below 95% a separate exercise interrogating the linear recovery via photos and logs was undertaken to decide whether the sample could be included and not bias the results.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All core was geologically logged, marked and photographed before sampling. Geological and geotechnical features were identified and logged.</li> <li>All drill holes have been geophysical logged with a minimum density, calliper, gamma and verticality unless operational difficulties prevented full or partial logging of the drill hole.</li> <li>The calibration of the geophysical tools was conducted by the geophysical logging company. Century Wireline Services</li> </ul>
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 core samples were double bagged on site and transported to the Laboratory for testing.</li> <li>Loring Laboratories and ALS Laboratories comply with Canadian and International Standards for sample preparation and sub sampling.</li> <li>Large wash samples were pre-treated and dry sized and various sizes before sample splitting and analysis. Proximate analysis was completed on a portion of the original sample.</li> <li>Raw analysis procedure keeps ½ of the sample as reserve.</li> </ul>
Quality of assay data and laboratory 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> </ul>	<ul> <li>Loring Laboratories and ALS Laboratories comply with the Canadian and International Standards for coal quality testing and are certified.</li> <li>Geophysical tools were calibrated by the logging company Century Wireline Services.</li> <li>The density measurement is calibrated to precise standards and where possible validated in a calibration hole.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <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>	
Verification of sampling and 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>Loring Laboratories and ALS Laboratories comply with the Canadian and International Standards for coal quality testing and as such conduct the verifications for coal quality analysis outlined in the standards.</li> <li>Coal Quality results were verified by Xstract Mining Consultants Pty Ltd before inclusion into the geological model and resource estimate.</li> <li>No adjustments have been made to the Coal quality data.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole 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>	Professional Survey of the coal quality boreholes for the Atrum Coal exploration program was completed by DMT Geosciences.
Data spacing and 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>Data spacing sufficient to establish the degree of geological and grade continuity for inclusion as Inferred, Indicated and Measured Resource estimation procedures were employed.</li> <li>Multiple samples were obtained for some seams within the Groundhog Project area. As such, where appropriate, sample compositing has been completed. Samples were weighted against sample thickness and in situ RD.</li> </ul>
Orientation of data in relation to geological 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>	A combination of vertical and inclined drill holes were completed from the same drill pad to ensure that a suitable understanding of the geological structure and orientation of the geology was captured.
Sample security	The measures taken to ensure sample security.	<ul> <li>Sample Security was ensured under a chain of custody between Atrum Coal personnel on site and Loring and ALS laboratories.</li> </ul>



Criteria	JORC Code explanation	Commentary
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Sampling was undertaken by Atrum Coal personnel. Loring and ALS undertook internal audits and checks in line with the Canadian and International standards</li> </ul>

# **TABLE 2 - REPORTING OF EXPLORATION RESULTS**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure 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>Coal tenures relate to the Groundhog Anthracite project, which is 100% owned by Atrum Coal</li> <li>The project consists of 18 granted coal licences and 8 coal licence applications totalling 22,815 hectares</li> <li>Security of tenure is not compromised and there is no known impediments</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Exploration drilling within and in close proximity to the Groundhog project has been reviewed and evaluated for data purposes</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Groundhog Project lies within the Bowser Basin.</li> <li>The Bowser Basin, which is the largest contiguous basin in the Canadian Cordillera, developed as a result of tectonic compression and uplift of the Coast Mountains during the Upper Jurassic.</li> <li>The dominant structural feature is the northwest-southeast trending Biernes Synclinorium. It resulted from northeast-southwest compression during the first phase of deformation ("F1"). Thrusting related to the F1 deformation is more intense in the southern part of the Groundhog Coalfield than in the northern part.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill hole Information	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:  a easting and northing of the drill hole collar  elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar  dip and azimuth of the hole  down hole length and interception depth hole length.  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	<ul> <li>The second, less intense, phase of deformation ("F2") resulted from northwest-southeast compression. The F2 deformation is superimposed on the broad, open type of F1 folding. The F2 imprint is visible in a series of plunge changes in the F1 folds in the order of up to 5°.</li> <li>F2 thrusts are generally flat lying and related to the hanging wall of drag folds. Displacement tends to be along bedding surfaces. The F2 fold structures superimposed on the major F1 synclinorium vary in wave length from 100 m to 700 m and vary in amplitude up to 100 m.</li> <li>All drill holes have been modelled from vertical, although hole deviation (from vertical) has been recorded for all drill holes.</li> </ul>
Data aggregation methods	<ul> <li>why this is the case.</li> <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>	All seams where multiple coal quality samples were taken were given a composite coal quality value. This composite value was generated within the Minescape software and was weighted on thickness and in situ RD. In situ RD was only weighted against thickness.
Relationship between mineralisation widths and intercept 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> </ul>	<ul> <li>The inclusion of boreholes from neighbouring areas has given the model a reasonable amount of lateral continuity in all directions.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <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>Point of observation spacing has been extrapolated in a maximum of a 2,000 m radius from the drill hole.</li> <li>Seam thicknesses have been corrected to geophysics to ensure accuracy</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	All appropriate diagrams are contained within the main body of the report
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All available exploration data for the Groundhog Project area have been collated and reported.</li> </ul>
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	No further exploration data were gathered and or utilised.
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>	Further work consisting of additional drilling and seismic activity is being evaluated.