15 February 2024

Significant new rare earths and uranium targets identified from geophysics at Joule Property, James Bay – Quebec

Highlights:

- **Exceptional geophysics results generated from high-resolution magnetic and spectrometric surveys with strong correlation to Rare Earths and Uranium.**
- **Elevated equivalent-Thorium (eTh) concentrations of up to 22ppm, typical of significant Rare Earth Element (REE) mineralisation, identified from radiometric surveys.**
- **Equivalent-Uranium (eU) readings of up to 29ppm obtained from radiometric surveys, with significant readings identified in three specific zones which will be investigated further.**

James Bay Minerals (ASX: **JBY**) ("**James Bay Minerals**" or "**the Company**") is pleased to advise that it has generated significant new rare earths and uranium targets from a review of aeromagnetic and spectromagnetic survey results across its flagship Joule Property, within the 100%-owned La Grande Lithium Project in the James Bay region of Quebec, Canada.

James Bay Executive Director, Andrew Dornan, commented:

"This is another fantastic result for the Company! While our exploration efforts will remain firmly focused on LCT pegmatites with potential for world-class lithium discoveries, the results obtained from aeromagnetic and spectromagnetic surveys cannot be ignored. As we have being doing for lithium, we will continue to sample and understand all relevant minerals on our properties."

Joule Property – La Grande Project

The Joule Property is James Bay Minerals' flagship asset which covers an area of 16,385 hectares along the Robert-Bourassa reservoir. Joule has a ~24km deformation zone running east to west through the property with deformation widths of up to 1.5km in the north-eastern part of the property.

As part of its maiden exploration program, the Company flew high-resolution magnetic and spectrometric surveys across its 100%-owned La Grande Project. Magnetic and spectrometric survey data has identified several zones with high equivalent-Uranium (eU) up to 29ppm and equivalent thorium (eTH) up to 22ppm.

"As a comparison, Joule is only one of two projects over the entire James Bay area, including the Matoush Uranium Project area, with maximum eU values exceeding 20 ppm, while the global average is approximately

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0.5 ppm. This is considering a thorough review of over 80,000 l-km of public airborne gamma-ray spectrometric data." commented Joel Dube from Dynamic Discovery Geoscience.

Follow-up exploration targets for potential Rare Earths and/or Uranium have been identified by taking radiometric data with unusually high eTh and eU values lining-up with narrow topographic highs taken from LiDAR, and/or lining-up with a magnetic low or a break in the magnetic signal.

Comparing eTh concentrations or eU values from one project to another from air borne radiometric surveys varies due to overburden thickness over the source rocks emitting U related gamma-rays.

Elevated eTh concentrations typical of significant rare earth deposits have been obtained throughout the highly prospective regional fault which runs east to west through the Joule Property. This zone is outlined as the prospective zone within Figure 1 below.

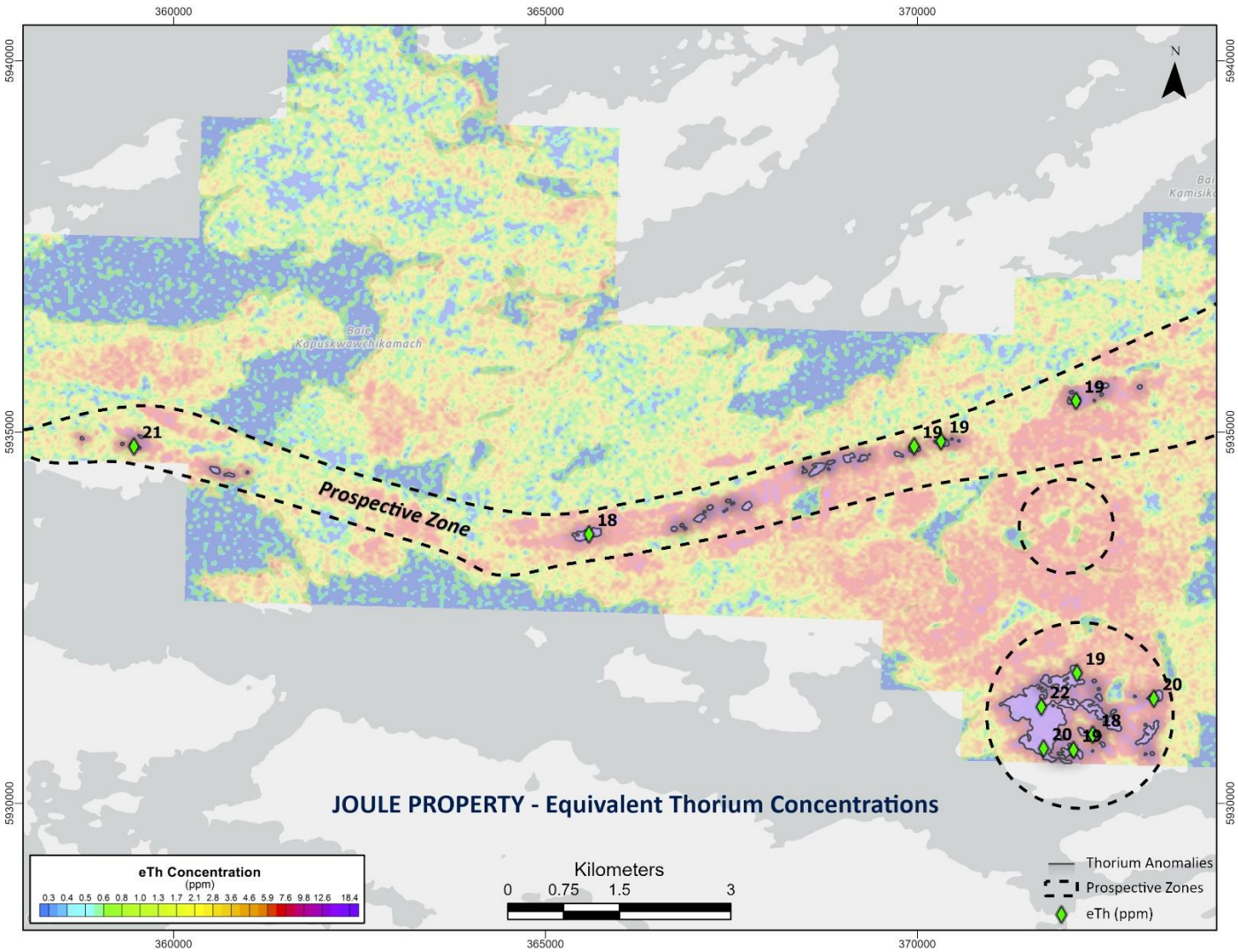

Figure 1 – Prospective Rare Earths zones with elevate radiometric eTh readings.

Radiometric surveys across the Company's Joule Property have indicated strong eU readings, with three intriguing zones having particularly high Uranium readings of up to 29ppm eU, detailed within Figure 2 below.

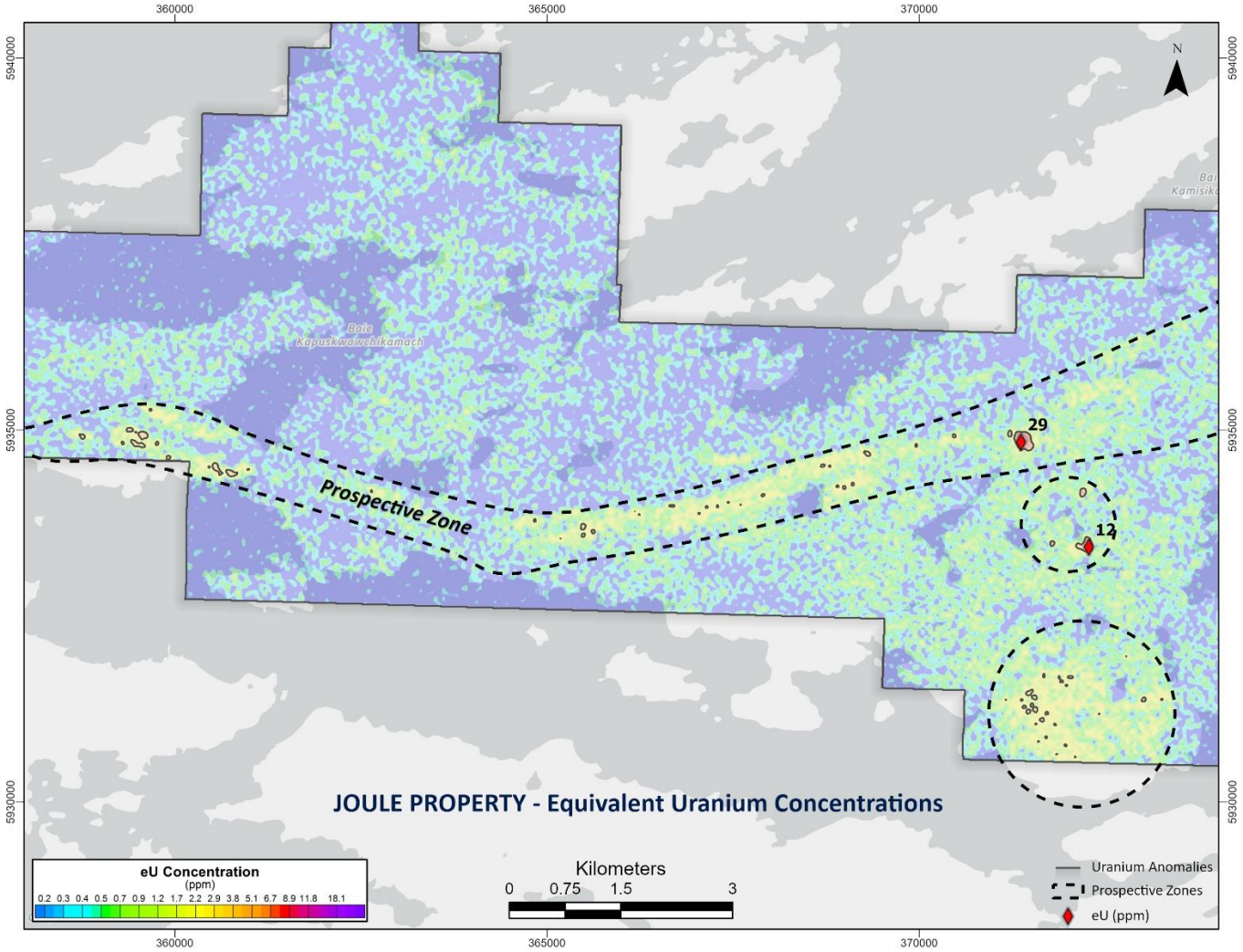

Figure 2 – Prospective Uranium zones with elevate radiometric eU readings.

The geophysics results outlined above, along with high-priority targets outlined within previous ASX announcements, will be carefully considered and prioritised for the upcoming field exploration program.

Geophysical methods of equivalent concentrations are not a replacement for assay determination and as such are to be taken as indicators of grade only. By their indirect nature, such measurements need to be considered in the context of their application and not relied upon for quantitative analysis.

Background on James Bay Minerals

James Bay has acquired a 100% interest in one of the largest lithium exploration portfolios in the James Bay region, covering an area of 34,572Ha or 346km^2. The Joule, Aero and Aqua properties are located in the La Grande sub province along trend from the Corvette deposit, where Patriot Battery Metals (ASX: PMT) recently reported a maiden Inferred Mineral Resource Estimate of 109.2Mt at 1.42% Li_2O and 160ppm Ta_2O_5 (0.40% Li_2O cut-off grade).[1]

The Troilus Project is located further to the south sitting only 5km to the north of Sayona's Moblan Lithium Project and proximity to Winsome Resources' Sirmac-Clappier Project.

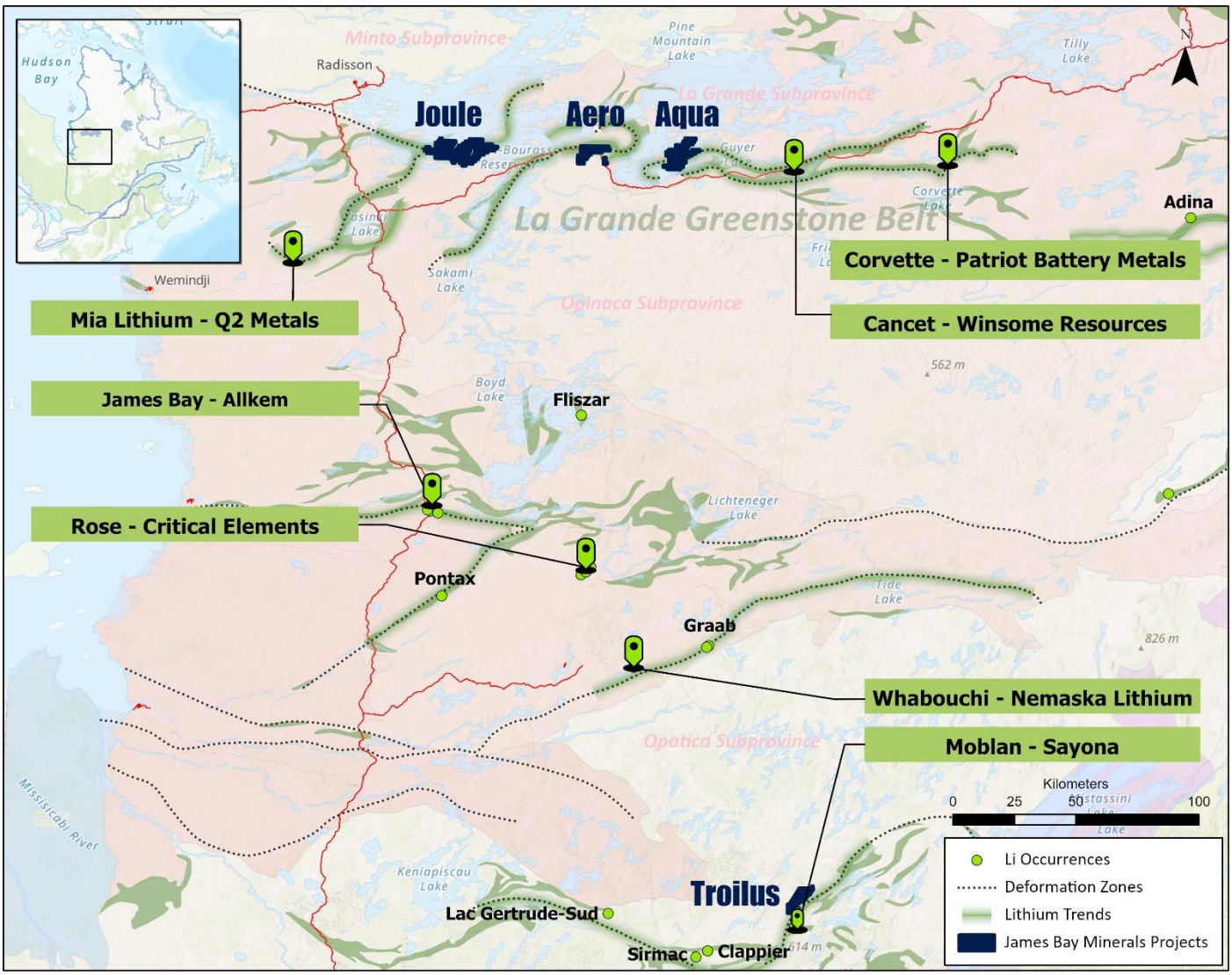

Figure 18 - James Bay Minerals' key lithium project locations in Quebec, Canada.

The flagship Joule Property encompasses a ~24km long prospective deformation zone along a regional fault which has been subject to minimal historical exploration. The eastern segment of the deformation zone extends for 14km and fan tails to reach a width up to 1.5km.

[1] See Patriot Battery Metals Announcement dated 31 July 2023: "Patriot Announces the Largest Lithium Pegmatite Resource in the Americas at CV5, Corvette Property, Quebec, Canada"

The Aero Prospect contains approximately 12km of deformation zones which are considered highly prospective for LCT pegmatites. Of note, the nearby Cancet (Winsome Resources Ltd) and Corvette (Patriot Battery Metals) properties both exhibit deformation zones upon which significant exploration success has occured[1].

All the properties have the three key ingredients required to host massive lithium-caesium-tantalum (LCT) pegmatites:

- Neo Archaean rocks;
- placement along major regional faults; and
- lying on greenstone belts in proximity to granites.

This announcement is authorised for ASX lodgement by the Board of Directors of James Bay Minerals Ltd.

ENDS

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Forward-looking statements

This announcement may contain certain forward-looking statements, guidance, forecasts, estimates or projections in relation to future matters (Forward Statements) that involve risks and uncertainties, and which are provided as a general guide only. Forward Statements can generally be identified by the use of forward-looking words such as "anticipate", "estimate", "will", "should", "could", "may", "expects", "plans", "forecast", "target" or similar expressions and include, but are not limited to, indications of, or guidance or outlook on, future earnings or financial position or performance of the Company. The Company can give no assurance that these expectations will prove to be correct. You are cautioned not to place undue reliance on any forward-looking statements. None of the Company, its directors, employees, agents or advisers represent or warrant that such Forward Statements will be achieved or prove to be correct or gives any warranty, express or implied, as to the accuracy, completeness, likelihood of achievement or reasonableness of any Forward Statement contained in this announcement. Actual results may differ materially from those anticipated in these forward-looking statements due to many important factors, risks and uncertainties. The Company does not undertake any obligation to release publicly any revisions to any "forward- looking statement" to reflect events or circumstances after the date of this announcement, except as may be required under applicable laws.

Competent Person Statement

The Exploration Results reported in this announcement are based on, and fairly represent, information and supporting documentation reviewed, and approved by Mr Ben Pollard, MAIuSIMM. Mr Pollard is a geologist and has adequate professional experience with the exploration and geology of the style of mineralisation and types of deposits under consideration to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Pollard consents to the form and context in which the Exploration Results are presented in this announcement.

JORC Code, 2012 – Table 1

Section 1 Sampling Techniques and Data – La Grande Project, Aero Property

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g. 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. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	• In connection to this announcement no sampling has been conducted.
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).	• In connection to this announcement no drilling has been conducted and no drill assays are being reported.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. 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.	• In connection to this announcement no drilling has been conducted and no drill assays are being reported.

Criteria	JORC Code explanation	Commentary
Logging	• 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. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• In connection to this announcement no drilling or sampling has been conducted and no results are being reported.
Subsampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all subsampling stages to maximise representivity of samples. • 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. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• In connection with this announcement no drilling or sampling has been conducted and no results are being reported. • Heliborne magnetic and spectrometric surveys were flown utilising a EC120 Eurocopter Helicopter utilising the following instrumentation: - **Airborne Magnetometers** - Geometrics G-822A - **Real-Time Differential GPS** – Omnistar DGPS - **Airborne Navigation and Data Acquisition System** – Pico-Envirotec AGIS-XP system - **Magnetic Base Station** –GEM GSM-19 - **Alimeters** – Free Flight Radar Alimeter • **Prospectair Digital Barometric Pressure Sensor**

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • 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. • Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.	• In connection with this announcement no drilling or sampling has been conducted and assays are being reported
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Data generated from Heliborne magnetic and spectromagnetic surveys has been downloaded and stored in a central database. • In connection with this announcement no drilling has been conducted and no drill assays are being reported.
Location of data points	• 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. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Magnetic surveys utilised real -time differential GPS known as Omnistar DGPS. • The grid datum is NAD 1983 UTM Zone 18N • In connection to this announcement no drilling has been conducted and no location or data points of drill holes reported.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • 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. • Whether sample compositing has been applied.	• Magnetic survey traverse and tie lines were over a 300m distance and a minimum traverse or tie-line being 3km. Distance between samples along survey lines data spacing was 3.3m. • In connection to this announcement no drilling has been conducted and no location or data points of drill holes reported.

Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• In connection with this announcement no sampling or drilling has been conducted, therefore no orientation data is generated in relation to geological structures.
Sample security	• The measures taken to ensure sample security.	• All survey data is held by the company within its access restricted exploration folders. • In connection to this announcement no drilling has been conducted and no drill assays are being reported.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits or review have been undertaken.

Section 2 Reporting of Exploration Results – La Grande Project, Joule Property

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• 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. • 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.	• The La Grande Project consists of 593 continuous claims covering an area of 30,168 hectares • The Joule, Aero and Aqua Properties which forms part of La Grande Project is 100% owned by James Bay Minerals Ltd. • The **Joule Property** consists of 320 continuous claims covering an area of 16,385 hectares. The Project is located in the La Grande, Greenstone belt. • All claims are in good standing and have been legally validated by a Quebec lawyer specialising in the field.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The La Grande Project is a greenfield project with limited historical exploration. • All data obtained on the properties has been generated by Quebec Government Stratigraphic surveys.

Criteria	JORC Code explanation	Commentary
Geology	• Deposit type, geological setting and style of mineralisation.	• The geology of the Project is relatively unexplored. The primary type of mineralization suggested by the data and mineralization on the adjacent properties is lithium-bearing spodumene which occurs in granite pegmatite and aplite dykes. • The property sits within three key geological ingredients which make it prospective to large LCT pegmatites. These are: - Right Archean Rock Age - Large deformation zones - Proximity to Greenstone Belts
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: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o 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 why this is the case	• No drilling activities have been undertaken or reported to date. • Geophysical methods of equivalent concentrations are not a replacement for assay determination and as such are to be taken as indicators of grade only. By their indirect nature, such measurements need to be considered in the context of their application and not relied upon for quantitative analysis.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated. • 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. • The assumptions used for any reporting of metal equivalent values should be clearly stated	• No drilling activities have been undertaken or reported to date.
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., ‘down hole length, true width not known’).	• No drilling activities have been undertaken or reported to date.

Criteria	JORC Code explanation	Commentary
Diagrams	• 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.	• Appropriate maps and figures have been included in this announcement.
Balanced reporting	• 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	• Only significant eTh (greater than 18ppm) and eU (greater than 12ppm) radiometric readings have been detailed within announcement.
Other substantive exploration data	• 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	• Geophysical survey results have been received however final results and interpretations are still pending. • All relevant and material exploration data for the target areas discussed, have been reported or referenced.
Further work	• The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Further work will include but not limited to systematic geological mapping, rock chip sampling, soil sampling, pXRF measurements, geophysics, structural interpretation and drilling to identify suitable host rock geology and structural architecture.