ASX Announcement

29 November 2023

40m Spodumene-bearing Pegmatite Discovery at Benham Lithium Project

Highly successful maiden exploration program uncovers coarse-grained spodumene-bearing pegmatite outcrops at the Benham Lithium Project.

Highlights

- **Spodumene-bearing pegmatite outcrop up to 40m long and 5m wide identified by PLN field teams in the north-west corner of the recently optioned Benham Project.**
- **Mineralised pegmatite outcrops indicates primary and accessory minerals associated with highly fractionated LCT (Lithium-Caesium-Tantalum) pegmatites, with visible spodumene concentrations of up to 80%.**
- **A total of 61 pegmatite outcrops have been identified, with 81 rock chip and channel samples systematically collected and delivered to AGAT Laboratories in Thunder Bay. Assays awaited.**
- **The pegmatite field is located ~1.3km from spodumene-bearing pegmatite discovered at Beyond Lithium's neighbouring Victory Project[1].**

Pioneer Lithium Limited (ASX Code: **PLN**) (**'Pioneer Lithium'** or **'the Company'**) is pleased to report a significant breakthrough in its recently commenced maiden exploration program at the Company's Benham Lithium Project in Ontario, Canada with the discovery of numerous pegmatite outcrops, including a mineralised pegmatite outcrop in the north-west corner of the project area.

Commenting on the exciting discovery, Pioneer Lithium Managing Director, Clinton Booth, said:

"This is an outstanding result from the Benham Project which reinforces our rationale for adding this property to our portfolio. The team has done a great job to mobilise a fieldwork crew so quickly and to leverage the short available weather window to conduct this work. In less than three weeks since completing the transaction for this property we have put boots on ground, made this discovery of mineralised pegmatite outcropping and identified another 60 pegmatite outcrops, requiring follow-up. We have been able to rapidly obtain significant data to inform our next suite of activities at Benham."

This announcement contains references to visual results and visual estimates of mineralisation. The Company draws attention to uncertainty in reporting visual results. Visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analyses where concentrations or grades are the factor of principal economic interest. Visual estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations. The

presence of pegmatite rock does not necessarily indicate the presence of lithium, caesium, tantalum (LCT) mineralisation. Laboratory chemical assays are required to determine the grade of mineralisation.

Maiden Fieldwork Program – 61 Pegmatite Outcrops Identified, including Mineralised Outcrop

The initial fieldwork program, completed in conjunction with experienced lithium geological consultants Coast Mountain Geological Ltd. ('**CMG**'), has identified spodumene-bearing pegmatite outcrops in the north-west portion of the Benham Lithium Project area.

The outcrop includes multiple mineralised veins exposed over a length of approximately 1.5-2m and containing cream, euhedral and very coarse-grained unaltered spodumene. This mineralogy is aligned with that reported on Beyond Lithium's neighbouring Victory Project[1].

A video of the channel sample can viewed on the company website.

A short five (5) day maiden fieldwork campaign was completed, but due to inclement weather the team was only able to conduct fieldwork activities over approximately 50% of the project area. Over the course of this fieldwork campaign, a total of 61 pegmatite outcrops were identified, including the mineralised outcrops. Given the limited weather window, it is possible that a further fieldwork campaign may indicate that these isolated pegmatite outcrops could be components of a much more extensive network of interconnected lodes.

During the fieldwork campaign a total of 81 rock chip samples and targeted channel samples were systematically collected. All samples have now been delivered to AGAT laboratories in Thunder Bay, Ontario with assays due next year.

[1] For full details of the Victory Project spodumene discovery, see Beyond Lithium releases dated 10 October 2023.

Figures 1, 2, 3 & 4. Photo's of abundant Spodumene crystals in channel Sample F0373658. Refer to Table 1 for further details.

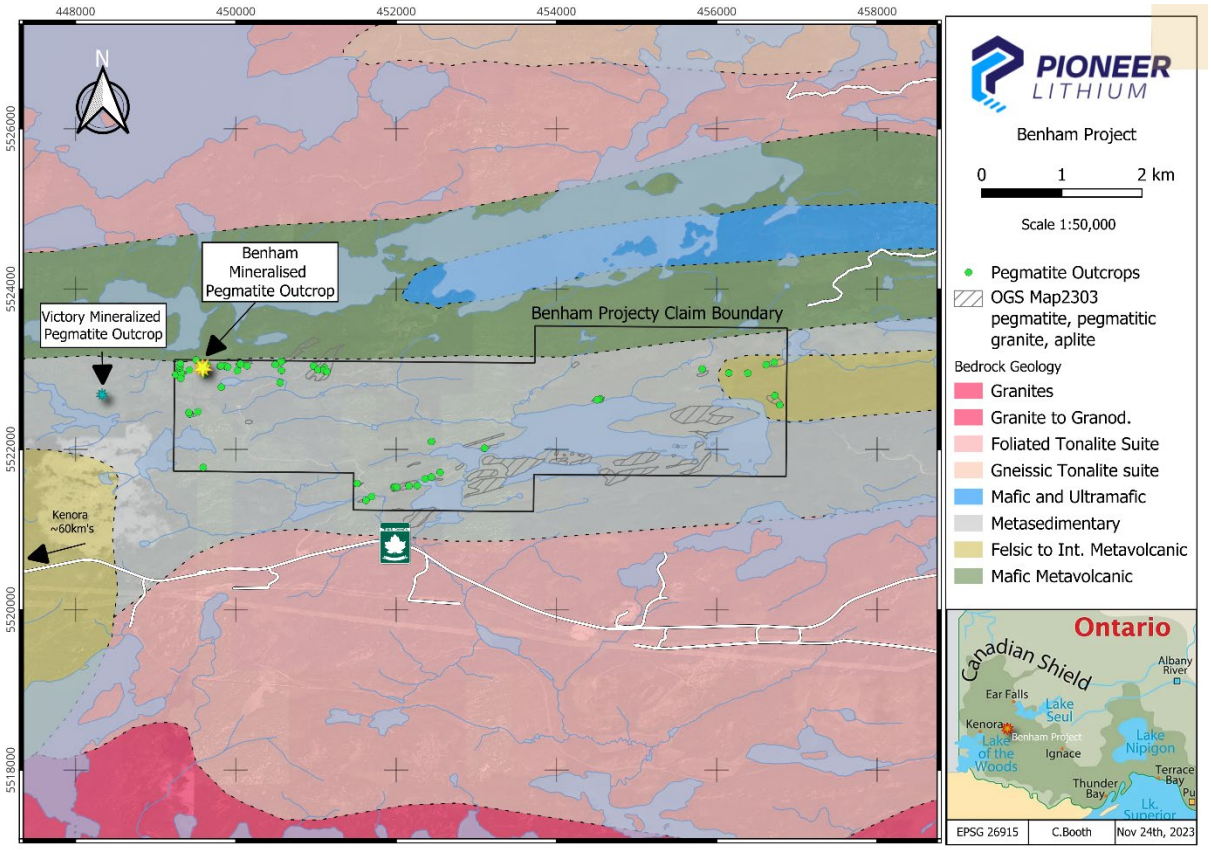
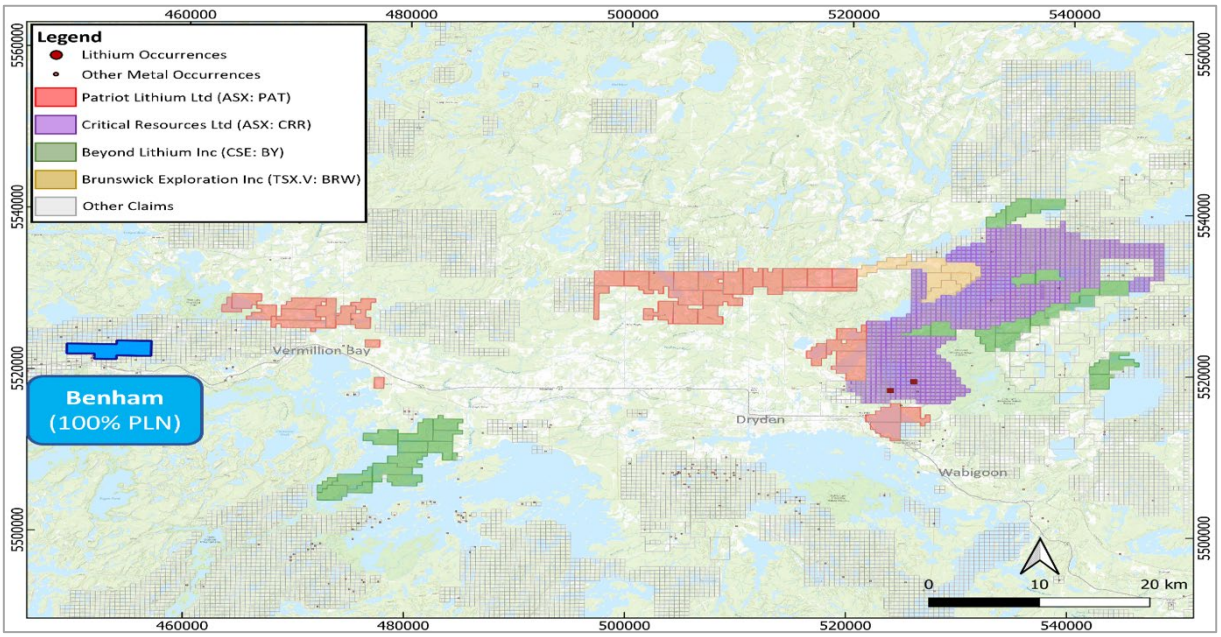


Figure 5. Map of the Benham Lithium Project showing the location of the mineralised pegmatite outcrop identified, within approx. 1.3km of Beyond Lithium's Victory Project spodumene discovery[2]. Refer to Table 1 for further details.

About the Benham Lithium Project

The Benham Lithium Project comprises 30 claims totalling approximately 1,245ha, located immediately south of the boundary between the Winnipeg River and Western Wabigoon Sub-provinces of the Archaean Superior Craton, straddling a narrow greenstone belt proximal to the peraluminous, two-mica Ghost Lake Batholith and its smaller satellites.

The Project is located approximately 70km west of Critical Resources' (ASX: CRR) Mavis Lake Lithium Project, which comprises over 20 LCT (Lithium-Caesium-Tantalum) pegmatites that are genetically related to the Ghost Lake Batholith.



For more information on Pioneer Lithium, refer to the Company's website at: pioneerlithium.com.au.

This announcement has been authorised for release by the Board.

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Cautionary Statement – Visual Estimates
This announcement contains references to visual results and visual estimates of mineralisation. The Company draws attention to uncertainty in reporting visual results. Visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analyses where concentrations or grades are the factor of principal economic interest. Visual estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations. The presence of pegmatite rock does not necessarily indicate the presence of lithium, caesium, tantalum (LCT) mineralisation. Laboratory chemical assays are required to determine the grade of mineralisation.

Competent Person Statement
The information in this Report that relates to Geological Data for the Benham Lithium Project is based on, and fairly represents, information and supporting documentation compiled and reviewed by Mr Nigel Broomham (BSc (Hons) Geology & Resource Economics) who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and holds a Professional Certificate in JORC Code Reporting. Mr Broomham is a Non-Executive Director of Pioneer Lithium. Mr Broomham 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 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Broomham consents to the inclusion in this report of the matters based on information in the form and context in which they appear. Mr Broomham holds securities in the Company.

Compliance statement

This announcement contains information on the Benham extracted from an ASX market announcement on 6 and 16 November 2023. The original market announcement is available to view on www.pioneerlithium.com.au and www.asx.com.au. Pioneer Lithium is not aware of any new information or data that materially affects the information included in the original market announcement.

Forward-looking statements

This announcement may contain certain forward-looking statements and projections. Such forward looking statements/projections are estimates for discussion purposes only and should not be relied upon. Forward looking statements/projections are inherently uncertain and may therefore differ materially from results ultimately achieved. Pioneer Lithium Limited does not make any representations and provides no warranties concerning the accuracy of the projections and disclaims any obligation to update or revise any forward-looking statements/projects based on new information, future events or otherwise except to the extent required by applicable laws. While the information contained in this report has been prepared in good faith, neither Pioneer Lithium Limited or any of its directors, officers, agents, employees or advisors give any representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this announcement.

Table 1 – Details of mineralised pegmatite mapped at Benham.

Sample ID	Easting	Northing	Lithology	Li Minerals	Spodumene Visual Estimate (%)
F0373654	449583	5523015	LCT Pegmatite	Spodumene, Lepidolite	10-30%
F0373655	449583	5523015	LCT Pegmatite	Spodumene, Lepidolite	30-60%
F0373656	449583	5523015	LCT Pegmatite	Spodumene, Lepidolite	5-20%
F0373658	449584	5523020	LCT Pegmatite	Spodumene, Lepidolite	60-80%
F0373659	449584	5523020	LCT Pegmatite	Spodumene	2-10%

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 techniques	• *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.* • *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 (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.*	• Initial rock chip sampling of observed pegmatite outcrops has been undertaken. • Cut, measured and mapped channel samples. No results have been received to date – all samples collected have been submitted for assaying to AGAT Laboratories Ltd in Thunder Bay, Ontario.
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).*	• No drilling has been conducted and no drill assays are being reported in this announcement.
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.*	• No drilling has been conducted and no drill assays are being reported in this announcement.
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.*	• No drilling has been conducted and no drill assays are being reported in this announcement.

Criteria	JORC Code explanation	Commentary
Sub-sampling 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 sub-sampling 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.*	• Initial rock chip sampling and channel samples of observed pegmatite outcrops has been undertaken. • Location of newly discovered pegmatite in this announcement referred to in the included map is shown in the Table 1 (co-ordinates in NAD83/UTM Zone 15N).
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• No assay data is being reported. • Both rock chip and channel samples are to be dispatched to AGAT Laboratories Ltd in Thunder Bay, Ontario on the conclusion of the fieldwork program. • AGAT Laboratories Ltd will utilise standards and blanks as part of their QA/QC protocols.
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.*	• All data generated from the fieldwork program has been uploaded into the company's data storage. • Data has been checked by personnel from CMG.
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.*	• All field data is being collected utilising a handheld GPS, a standard tool for early-stage reconnaissance exploration. • The grid datum is NAD83/UTM Zone 15N.
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.*	• Not applicable to early-stage reconnaissance exploration.
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 mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Not applicable to early-stage reconnaissance exploration.

Criteria	JORC Code explanation	Commentary
Sample security	• *The measures taken to ensure sample security.*	• All samples collected are being held onsite at AGAT Laboratories Ltd in Thunder Bay. Samples are stored within numbered sealed bags and labelled by field personnel.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews have been undertaken.

Section 2 Reporting of Exploration Results
(Criteria in this section apply to all succeeding sections.)

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.*	• Pioneer Lithium acquired an option over the Benham Project. • The Benham Lithium Project consists of 30 claims totalling 1,245ha (Please refer to the company announcement dated 6 November 2023 for a full list of the claims that make up the Benham Project). • All cell claims are in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Historical exploration for precious and base metals has occurred by various parties since the 1980s, with no reported historical exploration for lithium.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Benham Lithium Project claims are located south of the boundary between the Winnipeg River and Western Wabigoon Sub-provinces of the Archaean Superior Craton, straddling a narrow greenstone belt proximal to the peraluminous, two-mica Ghost Lake Batholith and its smaller satellites

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:*
	  ○ *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 why this is the case.*
		• No drilling has been conducted or reported to date.
		• No relevant data has been excluded from this announcement.

Criteria	JORC Code explanation	Commentary
Data aggregation methods	• *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.* • *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 has been conducted and no drill assays are being reported. • No metal equivalent values are being reported.
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 (eg 'down hole length, true width not known').*	• No drilling has been conducted and no drill assays are being reported.
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.*	• All relevant and material exploration data has been included in the 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.*	• All relevant and material exploration data has been included in the announcement. • No historical exploration for lithium has been reported within the claim areas.
Further work	• *The nature and scale of planned further work (eg 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 planned at Benham may include, but not be limited to, prospecting, geological mapping, structural interpretation, rock chip sampling, geophysics surveys and drilling.