

New Geophysics Targets Identified at Brazilian Lithium Projects

ASX Announcement 21 November 2024

Lightning Minerals (L1M or the Company) is pleased to announce the results of a regional geophysics targeting exercise across the Company's projects in the Lithium Valley in the state of Minas Gerais, Brazil. These results follow up the recent announcement relating to the discovery of high-grade lithium bearing spodumene up to 4.04% Li₂0 on the Company's Esperança tenement (ASX Announcement 18 November 2024)

HIGHLIGHTS

- REVO Geoscience has completed its geophysical interpretation of regional aeromagnetic data obtained from the from Geological Service of Brazil
- Six priority one targets identified within project tenure, supporting the ongoing exploration across the projects
- Follow up works to assess targets on ground will be completed shortly in conjunction with soil sampling and drilling scheduled for Q1 2025

The encouraging results are a result of reprocessing government geophysical data available from Servico Geologico do Brasil (Geological Service of Brazil) which supports the Company's ongoing exploration across all three project areas: Canabrava, Caraíbas and Esperança. The geophysical targets will complement the already identified areas of interest and form a key part of drill targeting across the tenements for the Company's inaugural drill campaign in Brazil.

Soil sampling and ground reconnaissance works are ongoing with further results to come over the next few weeks. Further infill soil sampling is being conducted over areas of interest to reduce sample spacing and improve targeting precision.

Lightning Minerals Managing Director Alex Biggs said, "The return of positive results from our geophysics works in Brazil is very encouraging. These results come quickly off the back of our recent spodumene discovery at Esperança with results supporting the overall idea of a highly prospective region as we have discussed previously. These results are a key component with our incoming soil sampling and ground reconnaissance results which together will allow us to further develop strong drill targets across our project areas. It is pleasing to see the quality and speed of works in Brazil and I would like to thank our geology team both in Australia and Brazil for conducting a diligent and focused exploration campaign. We feel that the results we are seeing on the ground represent an excellent opportunity for growth for the Company and I look forward to keeping you all updated in the coming weeks."



Regional Geophysics Reprocessing Generates Multiple Targets in Brazil

The geophysical reprocessing undertaken by leading Brazilian geophysical consultants has identified six priority one targets across the Company's three project areas: Canabrava, Caraíbas and Esperança. (Figure 1 and Figure 2). Brazilian geophysical consultancy REVO geoscience has used the latest data processing techniques to develop 2D and 3D models, utilising both Magnetization Vector Inversions (MVI) and two-dimensional Magnetic Vector Amplitude (MVA) analysis.

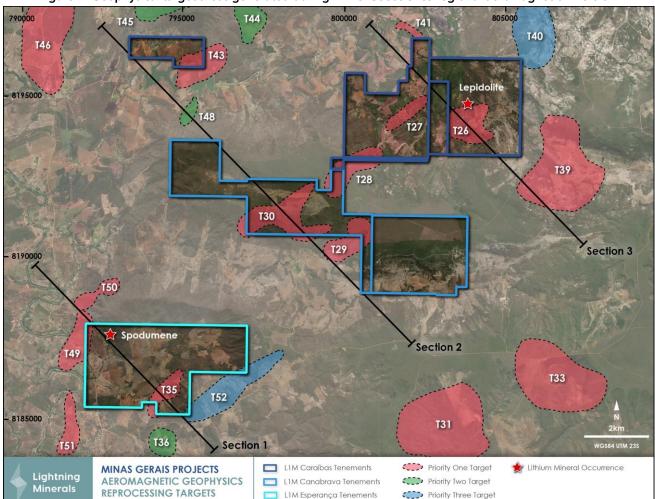


Figure 1: Geophysical target areas generated during REVO Geoscience regional aeromagnetic inversion.

The scope and objectives of the program included:

- A reinterpretation of the regional structural magnetic framework focusing on the NE orientated lineaments, which are known to host mineralised pegmatites in the region, as well as assessing the interaction of NW, NS, and EW lineaments with the NE lineament sets, which are theorised to be important features for potential mineral systems.
- To identify zones of unusually low magnetic amplitude, as silicification may be associated with the pegmatite veins which can generate negative suscept contrasts with the host metasediments.
- Define potential zones (targets) for hosting potential lithium mineralisation.



To achieve the objectives REVO geoscience have completed Magnetization Vector Inversions (MVI), this technique inverts magnetic field data to recover both magnetization direction and amplitude providing accurate and robust analysis of the magnetic properties of rock (Figure 2). Two-dimensional Magnetic Vector Amplitude (MVA) analysis has also been completed; the resultant imagery is considered one of the most representative products for pursuing the target mineralisation style in this regional geophysical dataset.

The application of these techniques has resulted in the identification of four main structural directions in the data. The main predominant corridor has a NE striking orientation from 035° to 040° coincident with the limits of the Salinas Basin. A later NW deformation event often displaces these structures and appears to radiate from the centre of the exposed S-type granitic intrusive suites. This regional NW structural orientation may form part of the genetic makeup required for pegmatite emplacement from the S Type granites. Regionally significant pegmatite deposits such as Latin Resources' (ASX: LRS) Colina project (and Sigma Lithium's (NASDAQ: SGML) Grota do Cirilo project display similar signatures in their respective regions, with an associated interaction of NE and NW structures.

The reprocessing exercise was conducted over a large area surrounding the Canabrava, Caraíbas and Esperança projects to thoroughly examine the entire project portfolio, ensuring comprehensive results and to provide a high degree of confidence in the findings.

800000 790000 805000 T44 T40 Lepidolite 8195000 T39 T30 8190000 Section 3 Spodumene Section 2 T33 8185000 T31 Section 1 Lithium Mineral Occurrence Priority One Target MINAS GERAIS PROJECTS L1M Caraíbas Tenements Lightning Priority Two Target TARGETS OVER MVI 3D L1M Canabrava Tenements 100M AMPLITUDE IMAGE Priority Three Target L1M Esperança Tenements

Figure 2: Geophysical target areas generated during REVO Geoscience regional aeromagnetic inversion, underlying image is MVI 3D Amplitude at 100m depth slice.



Specific Target Area Analysis of Geophysics Results

Of particular interest are priority one targets T26, T30, and T49. Within the Esperança project T49 is within 400m of the identified pegmatite spodumene occurrence as the Company's ASX announcement 18 November 2024. The connection between target T49 and the recent discovery of spodumene at the Esperança project will be closely mapped and investigated. A greater understanding will aid drill design for the company's inaugural drill campaign scheduled to begin Q1 2025.

Target T26 is located with the Caraíbas project area and is directly adjacent to a previously reported artisanal excavation and rock chip samples that were identified during project acquisition reviews (ASX Announcement 22 April 2024). The rock chip samples taken by the project vendor at the location returned up to 0.53% Li₂O (Lepidolite), 1,245ppm Tantalum, and exhibit excellent low Potassium to Rubidium ratios (K/Rb). A full investigation south of the artisanal mine area will be completed to ascertain if any relationship between the outcrop and the geophysics target can be confirmed.

Target T30 is located central to the Canabrava project and broadly correlates with a zone of interest that sits under tertiary alluvial cover. Exploration through the remnant tertiary alluvium is challenging as traditional soil sampling will be less effective at indicating the underlying lithium potential. With the new geophysical information, the area will receive further review to confirm target prioritisation in this area.

Regional Setting and Relevance of Geophysics Results

The REVO Geoscience analysis of the MVI and MVA suggests a low-amplitude response of the magnetisation vector for the S-Type Granites, which is naturally expected because these intrusions originate from the melting of metasediments and volcanic rocks, with little to no magnetite content and very little amphibole. The mapped boundaries of the S-Type batholiths are consistent with the Low-Susceptibility anomalies identified in 2D and 3D by the MVI3D Amplitude products.

The data integration of the MVI3D Inversion with the approximate locations of the known lithium deposits and lithium pegmatites occurrences within the Lithium Valley suggests that, in most cases, magnetic characteristics like the low amplitude of the magnetisation vector, with varied dimensions, are more extensive in the southern region (Grota do Cirilo) than in the northern region (Colina).

A multitude of cross sections along the project's tenure have been created and show the interpreted geophysical modelled position of S-Type granitic intrusives that can aid exploration target ranking. Three examples of the sections are shown in Figures 3 to 5 below, the full suite of sectional information is under review for target generation and prioritisation purposes.

Figure 3: MVI3D Inversion Section 1 - Legend colour spectrum represents Magnetic Susceptibility (SI units) from vector magnetization inversion, hatched area represents interpreted S-Type granitoid bodies at depth

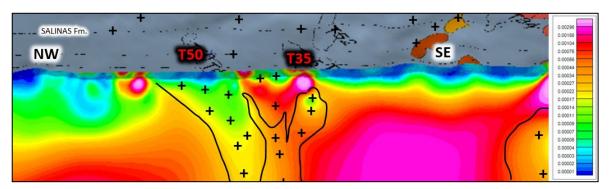




Figure 4: MVI3D Inversion Section 2 - Legend colour spectrum represents Magnetic Susceptibility (SI units) from vector magnetization inversion, hatched area represents interpreted S-Type granitoid bodies at depth

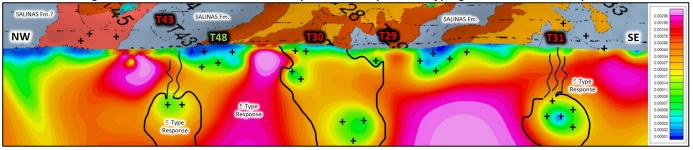
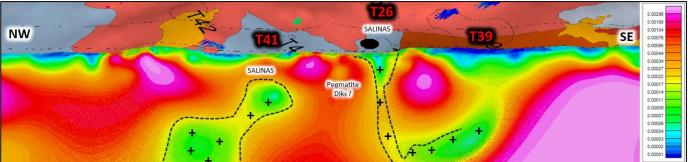


Figure 5: MVI3D Inversion Section 3 - Legend colour spectrum represents Magnetic Susceptibility (SI units) from vector magnetization inversion, hatched area represents interpreted S-Type granitoid bodies at depth



Utilisation of Results

The results of the geophysical reprocessing and targeting will be utilised in conjunction with early exploration data collected during field reconnaissance and soil sampling, influencing the ranking of prospectivity, and identifying areas which may require further works. The soil sampling results are eagerly anticipated as these are considered a powerful exploration tool when used in conjunction with the geophysical targeting. Partial geochemical results from the western portion of the Caraíbas project have been fast tracked and are due imminently.

Having concluded the highly encouraging geophysics program, the company intends to continue with the step of integrating all exploration data, including historical data that can be validated, to define future drilling targets.

Ongoing Works in Brazil

Initial Phase 1 soil sampling and ground reconnaissance works across the Canabrava, Caraíbas and Esperança projects are nearing completion with multiple results expected over the coming weeks. Discovery of spodumene and high grade lithium up to 4.04% Li₂O at Esperança (ASX Announcement 18 November 2024) is very encouraging and demonstrates the prospectivity of the region and the Company's tenements.

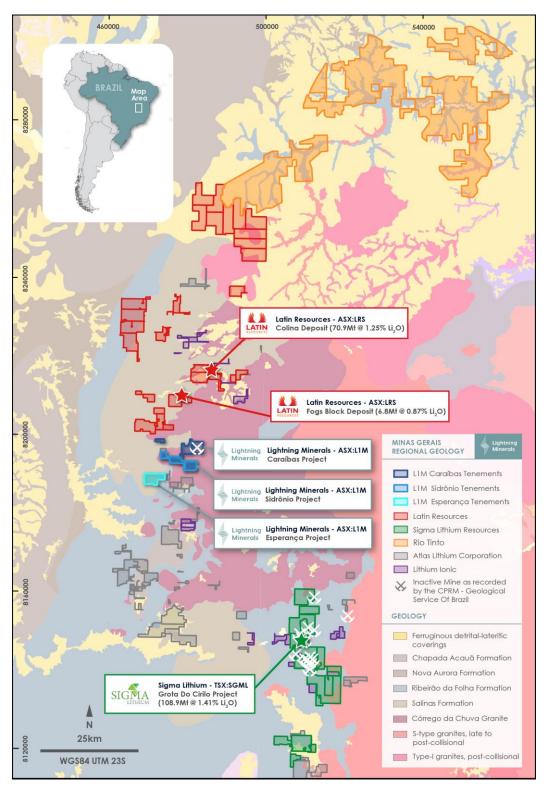
Phase 1 results from the Canabrava project have identified multiple pegmatites and lithium in soil anomalism up to 113ppm Li which is highly encouraging (ASX Announcement 03 October 2024). Drill targeting is now being discussed with a view to inaugural drilling in Q1 2025.



Relinquishment of Mt Jewell Project

The Company has opted to not renew its licence for the Mt Jewell project in Western Australia. This follows numerous studies on prospectivity and site visits. Works have indicated that the project presents little upside opportunity for the Company and allows focus on the key assets in the Lithium Valley of Brazil and Dundas, Western Australia

Figure 6: Lightning Minerals' Brazilian tenements in regional context of the Lithium Valley region of Minas Gerais



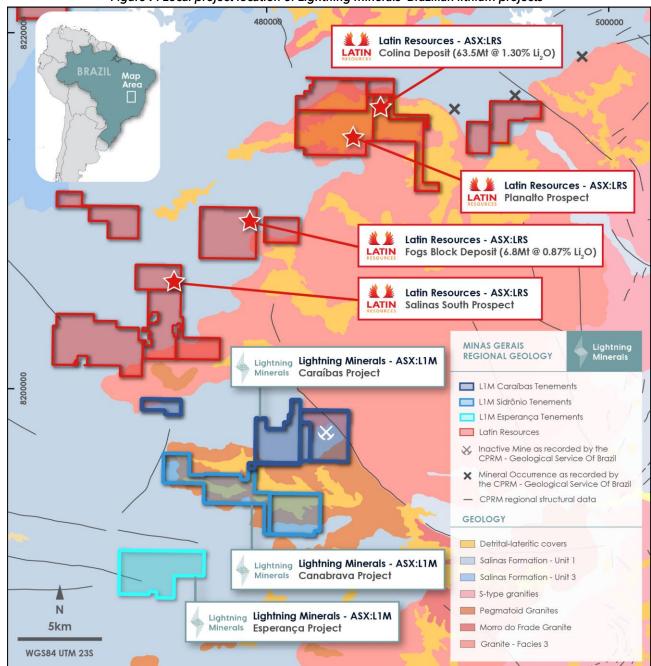


Figure 7: Local project location of Lightning Minerals' Brazilian lithium projects

Approved for release by the Board of Directors

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More information at www.lightningminerals.com.au



ABOUT LIGHTNING MINERALS

Lightning Minerals is a mineral exploration company, listed on the Australian Securities Exchange (ASX:L1M) and focused on the exploration of critical minerals and lithium at its tenements across Western Australia. The recent acquisition of the Caraíbas, Sidrônio (now Canabrava) and Esperança lithium projects in Minas Gerais, Brazil are potentially transformational to the Company's success in the lithium sector. The Company also owns the Dundas project in the prolific Dundas region of Western Australia, the Dalmas and Hiver lithium projects in Quebec, Canada, another significant and evolving lithium region globally. The Company also holds other projects in Western Australia which include Mt Bartle and Mailman Hill which are prospective for base metals and critical minerals.

FORWARD LOOKING STATEMENTS

Information included in this release constitutes 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 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 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 and has attempted 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 as 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 these materials speak only at the date of issue. 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.

COMPETENT PERSONS STATEMENT

The information contained herein that relates to exploration results is based on information compiled or reviewed by Mr Jarrad Woodland, who is a Competent Person and a member of the Australasian Institute of Mining and Metallurgy. Mr Woodland is a full-time employee of the Company. Mr Woodland has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Woodland consents to the inclusion of his name in the matters based on the information in the form and context in which it appears. Mr Woodland holds options in Lightning Minerals.

REFERENCES TO PREVIOUS ANNOUNCEMENTS

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements, and that all material assumptions and technical parameters have not materially changed. The Company also confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.



Appendix 1: Canabrava, Caraíbas and Esperança Projects - JORC Code 2012 Table 1 Criteria

The Table below summarises the assessment and reporting criteria used for exploration results for the Canabrava, Caraíbas and Esperança Projects and reflects the guidelines in Table 1 of The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC 2012 Code).

Section 1 - Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques Drilling 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. Drill type (eq core, reverse circulation, open-hole hammer, rotary air	 Data in this document relates to geophysical data processing and interpretations. Publicly available geophysics data from the Servico Geologico do Brasil (Geological Service of Brazil) has been used in the reprocessing reported herein. CODEMIG Geophysical Surveys that have received data Integration include: ÁREA 8 – Minas Novas - Riacho dos Machados – Espinosa ÁREA 11B – Montezuma – Indaiabira - Taiobeiras ÁREA 12 – Teófilo Otoni - Governador Valadares - Caratinga ÁREA 16 – Padre Paraíso - Nanuque – Mantena ÁREA 17 – Almenara - Itaobim - Jequitinhonha
	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 is 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.	No drilling is being reported
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 is being reported and is not applicable for geophysical data interpretation.
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.	No drilling is being reported and is not applicable for geophysical data interpretation.



	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.	
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.	The geophysical survey QC parameters and tolerances have been reviewed by the geophysical consultancy (REVO Geoscience) and are considered to be of an acceptable standard.
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.	 Geophysical data has been verified externally by REVO Geoscience, data quality and completeness are assured by both statistical and graphical means.
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.	 The original georeferencing of all geophysical survey areas was Córrego Alegre datum 1970-72. This work program reprojected the coordinates to the SIRGAS 2000 datum, with the UTM-projected metric coordinates in zone 23 south for the databases and the grid files. The Accuracy and quality of data has been verified externally by REVO Geoscience, data quality and completeness are assured.
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.	 The geophysical data collection spacing is considered appropriate for the reporting of the regional geophysical targeting results. No Mineral Resource or Ore Reserve Estimates have been completed.
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.	 The orientation of flightlines in relevant geophysical surveys is shown below, for the purpose of the regional project scale target generation the orientation is considered appropriate. ÁREA 8 – Minas Novas - Riacho dos Machados – Espinosa – N25°W ÁREA 11B – Montezuma – Indaiabira - Taiobeiras – N25°W ÁREA 12 – Teófilo Otoni - Governador Valadares - Caratinga – N30°W ÁREA 16 – Padre Paraíso - Nanuque – Mantena – N25°W ÁREA 17 – Almenara - Itaobim - Jequitinhonha – N25°W
Sample security	The measures taken to ensure sample security.	No sampling is being reported
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	All digital data was subject to auditing by the independent geophysical consultancy (REVO Geoscience).



Section 2 - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
	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 Carabias Project includes exploration licences 831.514/2018, 832.041/2011, 831.424/2013, 832.763/2014, 830.313/2014. The Canabrava Project includes exploration licences 830.439/2015, 830.440/2015. The Esperança Project includes exploration licence 301.033/2013. The Caraíbas, Canabrava and Esperança Projects totals ~44km2 and comprises six granted Research Authorisation licences and two mining request areas (Appendix 2) The Tenements are considered in good standing at the time of this report.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	 The Projects remain at a very early stage and little to no recorded work has been completed by prior explorers. Recent exploration within Caraíbas and Canabrava has included a small reconnaissance exploration program by project vendor Bengal Mining.
Geology	Deposit type, geological setting and style of mineralisation.	 No known mineral deposits occur within project tenure. The local geology to the project areas includes Neoproterozoic age sedimentary rocks of Araçuaí Orogen intruded by pegmatites interpreted to originate from the fractionation of magmatic fluids from the peraluminous S-type post tectonic granitoids of Araçuaí Orogen. The target commodity is hardrock lithium within lithium-caesium-tantalum pegmatites.
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:	No drillhole information is reported.
	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.	 No levelling of the raw geochemical data was undertaken. Plan images have been generated using QGIS software. No metal equivalent values are reported.
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 drining information is 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 reporting of results has been included in the body of this announcement; the plans, or lack thereof suitably represent the nature of the results.



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.	•	Comprehensive reporting of geophysical targets is included in the above document.
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.	•	New modelling of magnetics and 3D inversion modelling of airborne electro-magnetic data has been presented in this report. All modelling is based on publicly available historical data which is publicly available from the Servico Geologico do Brasil (Geological Service of Brazil). This report provides the total information available to date and is considered to represent a balanced report. All high priority geophysical anomalies near the project areas have been modelled.
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.	•	Follow up infill soil sampling is currently underway. A drill targeting and prioritisation exercise has also begun with a view to begin drill testing in Q1 2025

APPENDIX 2 - SUMMARY OF LIGHTNING MINERALS MINAS GERAIS TENEMENTS

Project Area	Licence / Tenement Number	Size (Ha)	Status	Current Phase	Registered Owner
	024 54 4 (2042)	47/ 44	A		
Caraíbas	831.514/2018	176.41	Active	Research Authorisation	Caraibas Granito Mineracao Exportacao e Importacao Ltda
	832.041/2011	716.85	Active	Mining Request	
	831.424/2013	677.17	Active	Mining Request	
	832.763/2014	134.56	Active	Research Authorisation	
	830.313/2014	28.34	Active	Research Authorisation	
Canabrava	830.439/2015	705.76	Active	Research Authorisation	Sidronio Teixeira Filho
	830.440/2015	932.63	Active	Research Authorisation	
Esperança	301.033/2013	1108.35	Active	Research Authorisation	Dado Não Cadastrado
TOTAL		4480.07			