Northern Territory
Environment Protection Authority

DIRECTION TO INCLUDE ADDITIONAL INFORMATION IN THE SUPPLEMENTARY ENVIRONMENTAL REPORT

This direction is given under regulations 119(2) and 121(2) of the Environment Protection Regulations 2020

Name of proposed action	Lei Lithium Project
Proponent	Lithium Plus Minerals Ltd
NT EPA reference	EP2024/038
Nature of proposed action	Mining
Description of proposed action	Lithium Plus Minerals Ltd is proposing to develop an underground mine, located approximately 30 km south of Darwin, on the Cox Peninsula. The Lei Lithium Project is located on parcel 2746 Hundred of Hughes within the Cox-Daly un-incorporated local government area (Mineral Lease Application 33874). The underlying land tenure is vacant crown land. The proposed action is: • to mine approximately 3.10 million tonnes (Mt) of spodumene ore via underground mining methods to an approximate depth of 700 m below surface • to crush and screen mined ore on site to produce direct shipping ore and transport it via truck to Darwin Port for export • to temporarily store waste rock at the surface before being used to backfill the box-cut and underground • to construct ancillary infrastructure including a power station, access roads and internal haul roads • a water management system to meet construction demand (300 ML for the initial 6 months) and operational demand (282 ML/ per year) comprising three water dams and a sediment dam. (Water supply will be a combination of 180 ML of clean runoff, 120 ML of mine affected run-off, which includes dewatering (groundwater extraction) from the underground and box cut, and additional groundwater in the dry season when there is a shortfall of water. Potable water will be trucked to site) • wastewater discharge and passive overflows of clean water from the raw water dam • to clear 100 ha of native vegetation. • approximately 7 years from construction to rehabilitation and closure. • predicted to require a workforce of 60 personnel during construction and between 80 and 100 personnel during operations.
Method of environmental impact assessment	Assessment by supplementary environmental report (SER)

NOTICE OF DIRECTION

Direction	The proponent is directed to: • prepare an SER to **address the submissions received** in relation to the referral information • include additional information in the SER as detailed in **Attachment 1.**
Submission period for SER	The SER must be submitted to the NT EPA within 24 months of the date of this notice.
Form	The SER must generally conform with the Web Content Accessibility Guidelines (WCAG) 2.0 Level AA and material relevant to creating accessible documents on the NT Government website In particular, the SER must: • be provided as: o accessible PDF files that do not exceed 20 MB o a printed copy to be displayed at the locations listed below • be divided into two parts: o a main report (with summary available as separate document) o appendices to the main report • have a navigable table of contents • present information in a format that is easy to follow • use hyperlinks to assist with navigation through the document • include a summary presented in appropriate local language/s • ensure that all spatial data is provided in GIS format, georeferenced, provided as an ESRI geodatabase or shapefile, uses GDA2020 and projected into the appropriate MGA zone.
Manner	The SER must be: • provided electronically to the NT EPA for publishing on its public register • published electronically on the proponent's webpage and maintained for the duration of the proposal • provided in printed hard copy for display at the following locations during the public consultation submission period: o NT EPA, Level 1, Arnhemica House, 16 Parap Road, Parap o Northern Territory Library, Parliament House, Darwin o Environment Centre NT, Unit 3, 98 Woods Street, Darwin o Northern Land Council, 45 Mitchell Street, Darwin o Litchfield Shire Council, 7 Bees Creek Road, Freds Pass o Minerals and Energy InfoCentre, Level 3 Paspalis Centrepoint Building, 48-50 Smith Street, Darwin
Person authorised to give direction	Dr Paul Vogel AM – Chairperson, Northern Territory Environment Protection Authority Delegate of the NT EPA under section 36 of the *Northern Territory Environment Protection Authority Act 2012*

NOTICE OF DIRECTION

Signature	
Date of direction	11 March 2025

Attachment 1 – Additional information requirements for the Supplementary Environmental Report Lithium Plus Minerals Ltd – Lei Lithium Project

Topic	Comment	Additional Information Required
The proposed action		
Proposed action description	The referral identifies power for the proposed action as being the external power grid or on-site generation, requiring 605 kL/year of diesel. The proponent is intending to investigate the feasibility of a small solar farm to provide power to the administration office, lighting and water plants. The mining fleet is predicted to require 16,800 kL of diesel over the life of mine. It is unclear if this includes the volume of diesel to fuel the haulage fleet. No estimate of greenhouse gas emissions is provided and the basis for assuming low emissions and the proposal will not trigger obligations under the Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act) Safeguard Mechanism is ambiguous.	1. Provide an estimate (and supporting information) of the proposal's annual and total scope 1 and scope 2 emissions over the life of the proposal including emissions from land clearing and diesel exhaust. 2. If projected scope 1 emissions exceed 100,000 tonnes per annum of CO_2-e, explain the measures for avoiding, mitigating or offsetting greenhouse gas emissions over the project's lifetime.
Closure and rehabilitation	The referral identifies that a Mine Rehabilitation and Closure Plan will be developed consistent with the following mine rehabilitation and closure guidelines: • International Council for Mining and Metals (ICMM) Integrated Mine Closure, Good Practice guide (2nd Edition, 2019) • International Council for Mining and Metals (ICMM, 2020), Key Performance Indicators – Tool for Closure • Mine Closure and Mine Rehabilitation - Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia, 2016)	3. Provide details for the proposed decommissioning, closure and rehabilitation of the proposal, with consideration of section 42 of the EP Act, in the form of a conceptual closure plan. The conceptual closure plan should detail proposed: • lifespan and planned closure timeframes • post development land use (after closure) including alternatives • timeframes of consultations to be undertaken with key stakeholders • strategies for managing unplanned or early closure • strategies for managing care and maintenance • options for progressive rehabilitation, decommissioning of infrastructure, removal and disposal of infrastructure prior to final closure

Topic	Comment	Additional Information Required
	• Mine Closure Plan Guidance - How to prepare in accordance with the Statutory Guidelines (DMIRS, 2020). Given the life of mine (seven years from construction to closure), the early stages of consultation on end land use objectives, and the high-level objective of returning the land "to its pre-mining land use", mine closure and rehabilitation must be appropriately planned and funded to ensure that there are no ongoing impacts from the operation. The stated mine life doesn't not account for periods of care and maintenance.	• site or domain specific revegetation methodologies • rehabilitation objectives and outcomes • rehabilitation and closure actions • performance indicators, constraints and reporting schedule. The conceptual closure plan must be consistent with the following guidelines: • Cooperative Research Centre – Transformations in Mining Economies (CRC-TiME) (2021) Integrated Mine Transitions Framework (IMTF) for mine closure planning • International Council for Mining and Metals (ICMM) Integrated Mine Closure, Good Practice guide (2nd Edition, 2019) • International Council for Mining and Metals (ICMM, 2020), Key Performance Indicators – Tool for Closure • Mine Closure and Mine Rehabilitation - Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia, 2016) • Mine Closure Plan Guidance - How to prepare in accordance with the Statutory Guidelines (DMIRS, 2020).
Consultation	The referral does not demonstrate that consultation with stakeholders is adequate and has been undertaken in accordance with the NT EPA's *EIA guidance for proponents: Stakeholder Engagement and Consultation*[1] and the General duty of proponents under section 43 (a) to (d) of the *Environment Protection Act 2019* (EP Act). Sufficient detail has not been provided to allow for the significance of any potential positive and/or negative	4. Demonstrate that affected communities and individuals have been adequately consulted on the potential benefits and negative impacts of the proposal 5. Information on consulted stakeholders must include: • how stakeholders were identified • how and when consultation was undertaken

[1] Stakeholder Engagement and Consultation, NT EPA

Topic	Comment	Additional Information Required
	impacts to be assessed. Stakeholder perspectives listed in the referral are limited and further consultation is required to ensure that communities and individuals likely to be affected understand the proposal and the potential impacts including cumulative impacts.	• the role / relevancy of the stakeholder to the proposed action. 6. Describe how concerns and issues raised in submissions and during community and stakeholder consultation and engagement processes have been considered and resolved.
WATER		
Hydrological processes	**<u>Extent of groundwater drawdown</u>** The referral provides an indicative zone of influence (ZOI) of 2 km around the proposed action, based on groundwater modelling of the Core Lithium BP33 mine. The referral states that a site-specific groundwater model will be developed. The model is required to determine the potential for significant impacts from groundwater extraction. The BP33 underground mine is also < 3 km from the Lei Lithium Project, it is unclear what the cumulative ZOI is predicted to be in the event both mines operate concurrently.	7. Provide a groundwater model that includes, as a minimum: • descriptions of groundwater dependent ecosystems and understanding of their interconnectivity and water dependence • predictions based on the relevant site-specific characteristics such as: o groundwater drawdown levels, spatial extent and recovery time o alterations to recharge and subsequent effect on anticipated recovery time o impacts to declared beneficial uses of the water within the Fog Bay Area and Darwin Rural Adelaide River Water Control District • modelling using appropriate precautionary scenarios, and accounting for different proposal stages, such as initial conditions (baseline) and relevant intervals in construction, operation, care and maintenance, and closure phases (including post closure). Future predicted climatic conditions must also be considered. • assumptions and parameters used in the predictive model and justification for their use, including a description of how the predictions would change in the event critical assumptions (including transmissivity, hydraulic conductivity and porosity) were found to be incorrect.

Topic	Comment	Additional Information Required
		• overall water balance of the target groundwater system, including inputs and outputs, and feasibility assessment to demonstrate that groundwater abstraction to facilitate mining will not result in adverse impacts to the environment, and current and future groundwater users. 8. Identify, describe and assess potential direct and indirect impacts and risks of the predicted groundwater extraction, including likely effects to groundwater dependent ecosystems including springs, wetlands, vegetation, connected surface water systems, declared beneficial uses and other groundwater users. 9. Describe the avoidance and mitigation measures to manage the impacts and risks of groundwater extraction identified by item **8**. 10. Describe any uncertainties and further work required to increase understanding of potential impacts, and the plan for completing further work. 11. Quantify the significance and extent of impacts at the project level and cumulatively. Quantify the significance of proposal impacts using: • the latest draft of the Northern Territory Water Allocation Planning Framework • Relevant guideline thresholds.
Inland water environmental quality	**Surface and groundwater quality** The referral identifies: • elevated aluminium, arsenic and zinc in groundwater • enrichment of arsenic in waste rock and process residues • elevated arsenic in water extracts and peroxide extracts.	12. Detail the chemical and physical characteristics of surface waters and groundwater within the predicted ZOI, through the collection of an appropriate baseline dataset. Identify any water quality standards and guidelines that would be used to describe the ecological values and health of surface water environments. 13. Identify the quantity, quality (including anions, cations, pH, EC, metals, arsenic and nutrients) and location of all potential discharges of water and wastewater by the proposal, to groundwater and surface water, whether as point sources (such as controlled discharges from regulated dams) or diffuse sources

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	Seepage and run off from waste rock and ore stockpiles, and discharge of groundwater through dewatering operations has the potential to, directly and cumulatively, significantly impact on: • surface water quality from the fate of metals, metalloids (particularly arsenic) and nutrients present in the groundwater and geology of the area, • groundwater quality from the fate of metals and metalloids present in waste rock and ore stockpiles • the ecological health of the Charlotte River from the migration of mine impacted water through the shallow alluvial aquifer.	(such as seepage from waste rock dumps/ ore stockpiles or irrigation to land of wastewater). 14. Demonstrate how water would be managed and treated to achieve a quality that provides for the protection of aquatic ecosystems prior to discharge. Provide a tabulated comparison of the predicted water quality and the standards and guidelines identified in item **12**. 15. Identify, describe and assess the potential impacts of any discharges on the quality and quantity of receiving waters taking into consideration cumulative impacts from other proposals and the practices and procedures that would be used to avoid or minimise impacts. 16. Describe the avoidance and mitigation measures to manage the impacts and risks of water discharges on the receiving environment identified by item **15**. 17. Provide details of a monitoring program, including trigger thresholds and response (corrective) actions.
	Groundwater drawdown The referral identifies that groundwater extraction may result in saline intrusion in the freshwater reaches of the Charlotte River, and the oxidation of subsurface acid sulfate soils leading to potential significant impacts to surface and groundwater quality.	18. Identify, describe and assess direct and indirect impacts of implementing the proposal, and cumulative impacts, on groundwater and surface water quality. This must include (at a minimum) consideration of impacts associated with: • disturbance / exposure of acid sulfate soils through groundwater extraction or removal of overburden • changes to the saltwater – freshwater interface for all waterways within the ZOI, including the Charlotte River • salinisation of groundwater aquifers from encroachment of seawater 19. Describe the avoidance and mitigation measures to manage the impacts and risks of groundwater extraction identified by item **18**.
LAND		

Topic	Comment	Additional Information Required
Terrestrial Ecosystems	The referral identifies that a large area of the disturbance footprint is mapped as having a moderate potential to be a terrestrial groundwater dependent ecosystem, similar to a "vast" area south and west of the proposal. Assessment and submissions on the referral indicate a key uncertainty is the potential impacts, including cumulative impacts, of groundwater extraction on seasonal surface water availability, groundwater dependent ecosystems, and significant or sensitive vegetation. Impacts to seasonal surface water availability may also result in threatened fauna attempting to access water dams and ponds on site during construction and operations during the dry season.	20. Refer to items **8** and **9** above. 21. Describe ongoing monitoring, inspection and reporting of impacts on terrestrial ecosystem values to ensure their protection.
PEOPLE		
Community and economy	The referral indicates that there will be an additional 30 heavy vehicle (quad road trains) movements per day between the mine site and the Port of Darwin. There is also an expected increase in traffic to and from the site associated with personnel. Noting that the increase in traffic will likely extend beyond the preferred haulage route with increases expected to be observed on Channel Island Road, Jenkins Road and Finn Road (i.e. the shortest route between Palmerston and the proposed mine site). There is a high likelihood that traffic increases will significantly impact nearby stakeholders including: • Berry Springs Primary School and the wider Berry Springs Community, • Communities at Dundee, Bynoe, Wagait and Belyuen, • mining operations, • tourism businesses, and	22. Conduct an updated road and traffic assessment to identify, describe and assess potential direct and indirect impacts and risks of implementing the proposal, and cumulative impacts, on the community, including on: • Traffic, due to delays, and congestion including, but not limited to, during peak traffic periods (e.g. school drop off and pick up, morning and afternoon commute) • Residences, due to reduced amenity at sensitive receptors such as residences near the road/s and mine, due to increase in noise and/or dust especially from increased traffic and road trains 23. Identify measures that will be implemented to avoid or mitigate these impacts. 24. Provide clarification on the role of other regulatory regimes (e.g. *Control of Roads Act 1953*, *Traffic Act 1987*) in avoiding or mitigating impacts from increased traffic associated with

Topic	Comment	Additional Information Required
	• other road users.	construction and operations (including cumulative impacts) on nearby stakeholders including: • Berry Springs Primary School and the wider Berry Springs Community, • communities at Dundee, Bynoe, Wagait and Belyuen, • mining operations, • tourism businesses, and • other road users. 25. Describe proposed processes for ongoing monitoring, inspection and reporting of impacts on the community and economy 26. Provide further information that demonstrates awareness of the community of the potential social and economic impacts on: • local infrastructure such as the Fog Bay Road and the Cox Peninsula Road, • users of the Fog Bay Road and Cox Peninsula Road and the communities serviced by the preferred haulage route • users of Channel Island Road, Jenkins Road and Finn Road including the residents of Finn Road • individuals • tourism, hospitality and other businesses • community cohesion and • recreational and cultural activities.
Culture and heritage	The referral identifies that there are no registered or recorded sacred sites within ML(A) 33874. However, submissions on the referral indicate the assessment undertaken by the proponent has not been adequately	27. Describe the characteristics and current condition of sacred sites, cultural and heritage values within the proposal area, including the zone of influence, which could be impacted. This must include (at a minimum) descriptive and spatial information for the following:

Topic	Comment	Additional Information Required
	informed by the Aboriginal Areas Protection Authority (AAPA). The proponent has indicated an intention for the project to be subject to a sacred site survey prior to commencement, and that the timing and area to be surveyed has not been determined. Dewatering operations may impact on groundwater dependent sacred sites, within the ZOI, or along the Charlotte River. It is unclear whether the ZOI will be subject to a sacred sites survey as the zone has not been delineated.	• Aboriginal and non-Aboriginal sites, places or objects of natural, historic or cultural heritage significance, current use and spiritual significance • Heritage places or objects protected under the *Heritage Act 2011*, • traditional land use or industry within or in proximity to the proposal area and ZOI • importance of amenity (i.e. visual, noise) to maintaining cultural values • registered or recorded sacred sites under the *Northern Territory Aboriginal Sacred Sites Act 1989*, taking into account confidentiality requirements. 28. Information sources must include published archaeological and anthropological information, site surveys, respective registers, consultations and other research. 29. In the event that an Authority Certificate (from AAPA) is not provided: • Justify the suitability of the methodologies, surveys or processes used to provide information about sacred sites, culture and heritage. • Detail any information gaps or uncertainties in relation to sacred sites, culture and heritage, including any further studies or measures required to address these gaps. • Identify measures that will be implemented to avoid or mitigate these impacts. 30. Describe ongoing monitoring, inspection and reporting of impacts on the condition of sacred sites, cultural and heritage values within the ZOI.