

Ms Lisa Bradley
Department of Lands, Planning and Environment
PO Box 3675
DARWIN NT 0801

Dear Ms Bradley

Re: Invitation to comment - Lithium Plus Minerals Ltd – Lei Lithium Project

The information submitted for the above Referral has been assessed by the relevant environmental divisions within the department and the following comments are provided:

Flora and Fauna Division

The Flora and Fauna Division have reviewed the referral and the associated information, comments are provided in **Attachment 1**.

The Flora and Fauna Division consider the risks to the majority of biodiversity values from the proposal are low. However, uncertainties remain around the presence of groundwater dependent ecosystems (GDEs), the potential for impacts to groundwater hydrology and the risk of surface water contamination.

In the absence of adequate information, it was determined by the proponent that receptors such as sensitive and/or significant vegetation communities face a moderate risk of significant residual impact.

The Flora and Fauna Division agrees with this assessment and recommends that the additional work outlined in the referral report is undertaken to resolve these uncertainties.

Mining Division

The Mining Division has reviewed the referral and provides comment in **Attachment 2**.

Environment Division

Heritage Branch

The Heritage Branch has reviewed the referral and have provided comment in **Attachment 3**.

Water Resources Division

Groundwater Assessment

The preliminary groundwater assessment for the Lei Lithium Project within ML33874 provides a satisfactory baseline understanding of the site's groundwater situation. The review identifies key groundwater receptors, potential impacts, and significant data gaps. The proposed recommendations for

further investigation, including monitoring bore installation, hydraulic testing, and groundwater quality sampling, are well-aligned with best practices for characterising groundwater conditions and addressing potential risks.

Licensing and Regulation

ML33874 is located on Lot 2746, Hundred of Hughes within the Darwin Rural Adelaide River water control district as declared in Gazette S61, 28 June 2024. EMP30684 and EMP30685 overlie the Howard Groundwater System (Central).

Based on the information provided, the Lei Lithium project will likely need a water extraction licence for the planned mine site at ML33874. Dewatering not managed under the mine's environmental mining licence will require management under the *Water Act 1992*. Any water (surface or groundwater) extracted and used on-site will require a water extraction licence under the *Water Act 1992*. There are currently no water extraction licences granted within the area of ML33874.

It is recommended that the proponent engage with the Water Resources Division to clarify the requirements for a potential surface and groundwater extraction licence. Additionally, discussions should be held regarding any potential impacts or interference with waterways and the need for permits if surface water storage is required.

Surface Water Assessment

ML33874 is located within the Charlotte River Catchment and is adjacent to the Charlotte River estuary. Storm surge mapping shows very minor risk of limited inundation to a small area on the southwest boundary for the 0.1% AEP storm surge event only.

Preliminary investigation by Water Resource Management (WRM) is appropriate with minimal impact from riverine flooding of the 1% AEP event. ML33874 is largely at elevations between 20m - 30m Australian Height Datum (AHD), with some areas to 10m AHD along the western boundary. Query risk of saline intrusion from dewatering of underground mine due to proximity to Bynoe Harbour.

Further information can be obtained from the DLPE website¹ and by contacting water.licensing@nt.gov.au or call 08 8999 4455.

Rangelands Division

Weed Management Branch

A desktop assessment of the NT Weeds Database for 2746 Hundred of Hughes, surrounding parcels and roads has revealed data records of the following:

Common Name	Botanical Name	Declared
Gamba grass	<i>Andropogon gayanus</i>	Class B
Lantana	<i>Lantana camara</i>	Class B
Hyptis	<i>Hyptis suaveolens</i>	Class B
Mission grass	<i>Centrus polystachios</i>	Class B
Flannel weed	<i>Sida cordifolia</i>	Class B
Spiny head sida	<i>Sida acuta</i>	Class B

¹ <https://nt.gov.au/environment/water>

All land in the Northern Territory (NT) is subject to the *Weeds Management Act 2001* (WM Act). The WM Act describes the legal requirements and responsibilities that apply to all persons, owners and occupiers of land regarding declared and potential weeds. General duties described in Division 1 of the WM Act include the requirement for owners or occupiers of land to take all reasonable measures to prevent land being infested with a declared weed and to prevent a declared weed from spreading.

The proponent must ensure that all vehicles and machinery are free of weeds, weed seeds, soil and vegetative material prior to entering or exiting the site. Vehicles must avoid driving through weeds already present on-site to prevent further spread. Vehicles and machinery exhibiting such material must be thoroughly washed down before entering/departing.

Any works that cause disturbance to vegetation and soils will create conditions favourable for the growth of weed species, and weed control will be required following disturbance caused by exploration and/or extraction. Weed control prior to seed set should be carried out in all areas affected by these works.

'Preventing Weed Spread is Everybody's Business' is a document outlining actions proponents can conduct to reduce the risk of weeds being spread. This document is available online².

Gamba grass is subject to a statutory weed management plan which has additional obligations. Management obligations outlined in these plans are legally binding on all owners and occupiers. Management requirements and copies of the statutory weed management plans are available online³.

Further information as to management requirements and the Weed Management Plan for gamba grass is available online⁴ or alternatively contact the Weed Management Branch for advice on (08) 8999 4567.

Should you have any further queries regarding these comments, please contact the Development Coordination Branch by email DevelopmentAssessment.DEPWS@nt.gov.au or phone (08) 8999 4446.

Yours sincerely



Maria Wauchope
Executive Director Rangelands

10 January 2025

Attachment 1 – Flora and Fauna Division comment

Attachment 2 – Mining Division comment

Attachment 3 – Heritage Branch comment

² https://nt.gov.au/_data/assets/pdf_file/0011/257987/preventing-weed-spread.pdf

³ <https://nt.gov.au/environment/weeds/weed-management-planning>

⁴ <http://www.nt.gov.au/environment/weeds>

Attachment 1

Submission under the Environment Protection Act

Lei Lithium Project – Lithium Plus Minerals

This submission is made under regulation 53 of the Environment Protection Regulations 2020

NT EPA reference number: EP2024/038

Government authority: Department of Lands, Planning and Environment - Flora and Fauna Division

Section of Referral	Theme or issue	Comment
5.2 Terrestrial Ecosystems	Sensitive or significant vegetation – Mangroves and Riparian vegetation	<p>The proponent identified significant vegetation types within or adjacent to the project footprint.</p> <p>Riparian vegetation occurs along the Charlotte River and associated tributaries that cross into the project area. This community is also modelled as having a moderate potential to be an aquatic Groundwater Dependant Ecosystem (GDE). Mangroves are mapped along the Charlotte River directly downstream from the proposed footprint where tidal inundation is irregular and infrequent. These communities have not been valued by the proponent, rather are treated as high value representations of the habitat. These communities have the potential to be impacted by reduction or contamination of runoff (including pollutants and sedimentation), weed invasion and removal. A 250m native vegetation buffer has been applied to the mangrove vegetation, which also captures the riparian vegetation such that there is a buffer of greater than 100m between the riparian vegetation and the project footprint. This buffer reduces the risk of impact to the riparian and mangrove communities such that the project is unlikely to have a significant impact.</p> <p>There is uncertainty about the ground water dependency of the riparian community. This is discussed further below.</p>
5.2 Terrestrial Ecosystems	Sensitive or significant vegetation –	Woodland with hollow bearing trees is significant because it provides important habitat for many woodland species. Woodland communities with a high density of hollows are considered old growth habitats. Hollow bearing trees were observed on the site and low numbers were recorded during 18 vegetation assessment survey

	Woodland communities	<p>plots. However, based on these plots the proponent concluded that large trees with hollows were not considered to occur at sufficient density to be considered old growth.</p> <p>The proponent proposes to reduce any potential impact to woodland species from land clearing by undertaking pre-clearing surveys for hollows and avoiding clearing of hollow trees where possible. Where removal of trees with hollows is unavoidable, translocation of any animals in hollows is proposed.</p> <p>The proponent does not provide detail on the above approaches. Parameters to consider include:</p> <ul style="list-style-type: none"> • how tree hollows could be adequately checked prior to clearing, given the complexity of, and often, height at which such hollows occur, and the challenge of definitively determining use of such tree hollows; • what action would be taken if animals are found in tree hollows; • whether all individuals of all species would be targeted for 'relocation', or just particular species, particular taxonomic group(s) or threatened species; • where animals would be moved and how it would be ensured that the areas into which these 'relocated' animals are placed are suitable; and • the action that would be taken for juvenile animals that are reliant on provisioning by parents. <p>If pre-clearing relocation is to occur, it should have a realistic objective and target pre-determined taxonomic groups/species. It should also detail to where fauna would be relocated, how those locations are selected, what their existing faunal densities are, how relocated individuals will be monitored, and what thresholds are in place to intervene if animals are failing to survive post-relocation.</p>
5.2 Terrestrial Ecosystems and Appendix B Ecological Assessment	Threatened Flora	<p>The proponent has adequately assessed the likelihood of occurrence of threatened flora. Although a large number of threatened plants have the potential to occur in the region, many are limited to specific habitat types that are not within the development footprint. The desktop assessment correctly identified three species for further on-ground assessment, <i>Typhonium praetermissum</i>, <i>Cycas armstrongii</i> and <i>Stylidium ensatum</i>. Field verification found that potential habitat for <i>T. praetermissum</i> and <i>S. ensatum</i> was actually unsuitable for these species. Cycads were recorded at a low density across the site during vegetation surveys. The <i>Cycas</i> species identified on site were <i>C. maconochiei</i>, not <i>C. armstrongii</i>, or a hybrid of the two, which is not considered threatened. The likelihood of occurrence of all threatened plants with potential to occur on site was correctly assessed as low or none. The Flora and Fauna Division agree with this assessment and therefore the project is considered to pose no risk to threatened plants.</p>
5.2 Terrestrial Ecosystems 5.2.3	Threatened Fauna	<p>The proponent accurately identified seven threatened fauna species as having moderate or high likelihood of occurrence on the site, Partridge Pigeon <i>Geophaps smithii smithii</i>, Black-footed Tree-rat <i>Mesembriomys gouldii gouldii</i>, Northern Brushtail Possum <i>Trichosurus vulpecula arnhemensis</i>, Mitchell's Water Monitor <i>Varanus Mitchellii</i>,</p>

<p>Significant impact assessment Appendix B Ecological Assessment</p>		<p>Mertens' Water Monitor <i>Varanus mertensi</i>, Bare-rumped Sheath-tailed Bat <i>Saccolaimus saccolaimus nudicluniatu</i>s, and Northern Blue-tongued Skink <i>Tiliqua scincoides intermedia</i>. Field surveys using appropriate methodology confirmed the presence of Black-footed Tree-rat and Brushtail Possum and the absence of Northern Blue-tongued Skink. Although not detected on site the proponent concluded that the other species have a moderate likelihood of occurrence.</p> <p>The proposed development site occurs in largely unmodified native bushland and proposes to remove a relatively small amount of habitat (<100ha). Assessment of the regional significance of threatened species at the site determined that the site may be important for Black-footed Tree-rat, due to the low numbers of tree-rats recorded during surveys outside of the footprint. To mitigate potential impacts to Black-footed Tree-rats the proponent has minimised the footprint area; included a 100m wide habitat corridor linking riparian habitat along the Charlotte River to woodland on the eastern side of the project footprint, and will leave the eastern side of the site as intact bushland (76ha) which will be managed to maintain and potentially increase habitat value for Black-footed Tree-rats, through fire and weed control.</p> <p>The Flora and Fauna Division agree with the significant impact assessments carried out for the six threatened fauna species likely to occur on site, which determine that the project is unlikely to have a significant impact. The mitigation actions proposed are considered likely to reduce the risk to Black-footed Tree-rat. For the other species, either their key habitats do not occur within the footprint (the water monitors) or there is sufficient habitat retained across the landscape such that the loss of habitat within the footprint is not likely to result in a significant impact.</p>
<p>5.3 Hydrological processes</p>		<p>The project is considered to trigger a referral because of the potential for a significant impact to aquatic ecosystems due to:</p> <ul style="list-style-type: none"> • altered surface water and groundwater hydrology reducing habitat quality and biodiversity; • degraded and/or altered water quality and temporal variation of water quality available, impacting habitat quality (including mangroves) and biodiversity; and • decreased habitat quality from the accumulation of sediments in mangroves from sediment laden runoff. <p>As there is some uncertainty about impacts to groundwater hydrology, the potential for impacts to aquatic ecosystems remains uncertain.</p>
	<p>Surface water changes</p>	<p>Water requirements of sensitive vegetation associated with the project footprint are likely to be provided by a combination of surface, ground and in some instances tidal water. All surface water run-off from the project drains into the Charlotte River. There is one minor stream (stream order 1) that intersects the project area. The</p>

		<p>stream is ephemeral and therefore subject to annual periods of no flow. The proposed layout includes construction of a dam within this drainage line.</p> <p>The Flora and Fauna Division agrees with the assessment undertaken by the proponent that the change in surface water flow volume is unlikely to have a significant impact on the downstream habitats. This is due to the small contribution of surface flow changes to the overall catchment of the Charlotte River (table 5-15) and the dam will allow passive overflow during the wet season when supply exceeds the mine site demand.</p>
	<p>Groundwater drawdown</p>	<p>The proponent states “Accounting for implementation of avoidance and mitigation described in Table 5-15, the Project has the potential to have a moderate residual impact on hydrological processes due to uncertainties regarding dewatering of the aquifer resulting in reduced groundwater levels.”</p> <p>If drawdown from dewatering the underground mine is significant and was to occur over an extended period of time, there could be indirect impacts on the GDEs (if present), riparian vegetation and mangrove woodlands downstream of the mine, which potentially have a level of groundwater dependence.</p> <p>The volume of change in groundwater likely to occur as a result of the proposed project is currently uncertain. The proponent has acknowledged this uncertainty and proposes to address it through a site-specific groundwater model to be developed in 2025, following baseline data collection. They have also taken a precautionary approach and assessed the potential for impact as moderate in the referral. The Flora and Fauna Division considers this a reasonable approach and should the modelling determine the change to be moderate – low, a well-designed significant vegetation monitoring program with adequate triggers and responses should be able to manage the risk to biodiversity values.</p>
<p>5.4 Inland water environmental quality</p>		<p>All surface water run-off from the project drains into the Charlotte River. Estuarine conditions are mapped as extending up the Charlotte River until a point around 300m south-west of the Lei deposit and is influenced by the movement of water from Bynoe Harbour due to tidal activity.</p> <p>Baseline groundwater quality has been recorded.</p> <p>Identified pathways for impact on water quality include:</p> <ul style="list-style-type: none"> • increased turbidity due to sediment runoff; • hydrocarbon contamination of surface and ground water via leaks and spills; • concentration of nutrients, metals and metalloids from ground water extraction; • leaching of metals/metalloids from mined waste and ore stockpiles; • saline intrusion due to de-watering; and • acid sulphate soil oxidation.

		<p>Mitigations proposed to reduce the risk of a decrease in habitat quality from accumulation of sediments in mangroves from sediment-laden run-off are considered likely to reduce the risk of impact to mangrove communities to low.</p> <p>The Flora and Fauna Division agree with the assessment that hydrocarbon contamination of surface and groundwater via leaks and spills is a low risk, with the adoption of the avoidance and mitigation measures proposed (Table 5-16).</p> <p>Nutrients (P and N) and metalloids (Al, As and Zn) naturally exceeding surface quality standards occur in the groundwater, the risk relates to the release of this water into the surface water via mine dewatering. The risk is likely to be mitigated through the proposal that discharge will only occur when flows are sufficient to achieve dilution factors for contaminants to meet the Australian and New Zealand Environment and Conservation Council (ANZECC) 1992 water quality guidelines. The Flora and Fauna Division notes that the referral report (Table 5-16) states that dilution factors will meet the <i>trigger values</i>, this is considered a low bar and dilution below the trigger values is preferred.</p> <p>The assessment of the risk of saline intrusion is dependent on understanding of the groundwater flows. This has been highlighted as an uncertainty by the proponent to be resolved through the development of a site-specific groundwater model.</p> <p>The assessment of the risk of acid sulphate soil oxidation is dependent on understanding the presence and distribution of acid sulphate soils, contaminants and groundwater flows. This has also been highlighted as an uncertainty by the proponent to be resolved through field sampling to characterise soils and risk.</p>
5.5 Aquatic Ecosystems		<p>Riparian vegetation and mangrove communities are known to occur adjacent to the project area.</p> <p>Modelling identifies that there is a moderate potential for aquatic GDEs to occur along the Charlotte River. The referral report states plans to verify the presence of this GDE with data from the end of the 2024 dry season, but this information was not presented in the referral report. The presence of this community therefore remains uncertain.</p> <p>The key pathways for impact to these communities is through directly clearing, or indirectly through changes to groundwater or surface water quantity and/or quality.</p> <p>None of these communities are to be cleared and the native vegetation buffers as recommended in the NT Planning Scheme Land Clearing Guidelines will be applied. The potential for indirect impacts to occur is discussed in other sections of this table (5.3 hydrological processes - water quantity and 5.4 water quality).</p>

Attachment 2

Submission under the Environment Protection Act

Lei Lithium Project – Lithium Plus Minerals

This submission is made under regulation 53 of the Environment Protection Regulations 2020

NT EPA reference number: EP2024/038

Government authority: Department of Lands, Planning and Environment, Mining Division

Summary: Under the *Environment Protection Act 2019* (EP Act) mining licensing framework and the proposed activities, an application for a tailored mining licence will be required, separate to any decision by NT EPA regarding the outcomes of the referral.

The EP Act allows for assessment of an application under the mining licensing framework concurrent with NT EPA assessment, however, no decision on the licence application can be made until the NT EPA assessment is concluded. Further, the EP Act mining licensing framework also allows for the following activities under section 124Z of the EP Act:

- interference with waterway;
- discharge of waste to water; and
- the carrying out of bore work.

The referral demonstrates appropriate understanding of the potential risks from the proposed activities, although key knowledge gaps remain. These are explained below in the context of the mining licensing framework, subject to the EP Act.

The proponent is targeting a well-understood pegmatite belt (West Arm – Mt Finniss) that has been developed by other proponents (BP33 and Grants deposit). As such the following matters are considered to have been addressed appropriately given the stage of the project:

- Acid and Metalliferous Drainage (AMD) – studies show very similar geochemistry to other developed deposits confirming the low AMD potential of the deposit.
- Erosion and sediment control – the proponent commits to the development of an erosion sediment control plan (ESCP) by a Certified Professional of Erosion and Sediment Control.

- Non-mineral waste management – the proponent appropriately applied the EP Act waste management hierarchy, proposing a majority of the non-mineral waste be appropriately recycled or disposed by a licensed contractor offsite.
- Hazardous substances – the proponent commits to the management of hazardous chemicals in accordance with relevant safety data sheets (SDS) for handling and management.
- Closure matters – the proponent commits to rehabilitating the disturbed site to its pre-mining state with no infrastructure left on the surface. The concepts proposed are considered appropriate for this planning stage of the project.

A number of critical data gaps remain, and the following matters require further attention and are explained in detail below:

- Mine design footprint;
- Water management; and
- Acid Sulphate Soils.

Theme / issue	Comment
Mine design - flooding	<p>Appendix I of the referral details the preliminary surface water assessment undertaken for the project.</p> <p>TUFLOW two-dimensional modelling was used to undertake flooding predictions, based on 1% annual exceedance probability (AEP) flood event; however, the Digital Elevation Model (DEM) used 1m contours that do not provide sufficiently high-resolution representation of ground levels.</p> <p>The modelled flood extent based on 1% AEP shows shallow inundation (up to 0.4m) occurs in low-lying areas within the mining lease (such as Raw Water Dam and Sediment Dam 1). More accurate topographical data is required to support infrastructure design, particularly in relation to the RWD, which the referral indicates may require a diversion structure.</p> <p>Similarly, the flood modelling assessment indicates potential minor water inundation in areas proposed for temporary waste rock dumps.</p> <p>Furthermore, significant flooding is predicted from the Charlotte River, based on inaccurate DEM data that needs to be better refined using more accurate data. Improved flood modelling studies are required to demonstrate that the proposed site layout is appropriate, based on the magnitude of the storm events that have been increasing in severity over recent years.</p> <p>It is recommended the proponent apply Probable Maximum Precipitation (PMP) and include an updated flood model assessment to provide an indication of “worst-case” scenario and the likely flood water management structures required, their size and location.</p>
Mine design – WRD landforms (temporary)	<p>Preliminary flood assessment (Appendix I) shows the proposed location of waste rock dumps (WRDs) may be prone to minor inundation. Geochemical studies (Appendix F) indicate “<i>temporary storage and final placement will subject waste</i></p>

	<p><i>rock and any process residues to water leaching and oxidation to various degrees depending on the design and management of mining operations”.</i></p> <p>Preliminary groundwater assessment (Appendix G) indicates:</p> <ul style="list-style-type: none"> • An alluvial aquifer that fringes the Charlotte River; • Primary fracture rock aquifer associated with the Burrell Creek Formation; and • Deeper dolostone aquifer. <p>The referral does not provide assessment with respect to the extent of the alluvial aquifer and a critical data gap remains regarding the potential for WRD basal seepage of potential contaminants into the shallow alluvial aquifer, which drains into surface water receptors such as Charlotte River and its tributaries.</p> <p>While the geochemistry of the deposit suggests very low potential for acidic drainage, multi-element analysis of water extracts show elevated arsenic (As) and aluminium (Al) that has a potential to impact the alluvial aquifer water quality, depending on the WRD design, and hence Charlotte River and its tributaries.</p> <p>Conceptual designs should be provided for the temporary WRDs, and accompanied by an informed assessment of the key hydrogeological units potentially impacted by the proposal (particularly if water levels fluctuate seasonally with rainfall recharge). The conceptual designs must be of sufficient detail to enable risk assessment by the department to determine the adequacy of proposed key design elements (particularly basal low permeability layer and/or perimeter toe drains).</p>
<p>Mine design – underground</p>	<p>Section 2.8 of the referral document proposes an option for paste-fill plant and ore sorting systems. However, should these options be considered further, the proposed location must be presented. Given the small disturbance footprint to accommodate the proposed infrastructure, with limited flexibility to accommodate additional infrastructure, it is unclear how the paste-plant will be accommodated without further clearing. Greater clarity is required for the proposed infrastructure and siting locations to inform assessment.</p> <p>Should the paste-plant not be included in the final mine design, the referral indicates backfilling of all waste rock into underground voids and the boxcut. This approach will necessitate double handling of material which needs to be accounted for in security calculations.</p> <p>Further, geochemistry study (Appendix F) recommends additional waste characterisation tests if paste-plant technology with cement binder is used for the generation of paste for backfill in order to assess the waste rock leaching characteristics from alkaline cement.</p> <p>If a paste-plant is proposed, its location and the results of further geochemical testing is needed to inform assessment of the environmental risks of waste rock management and backfill activities.</p>

Mine design – boxcut	<p>The referral indicates the mine design is in the concept stage until geotechnical assessments are undertaken to determine the best approach. Two options are proposed:</p> <ul style="list-style-type: none"> • Retaining the boxcut disturbance during operations, including management of water inventory within the boxcut catchment until the boxcut is backfilled on closure; or • Installation of a tunnel during boxcut excavations and rehabilitation of the disturbance by immediate backfilling, which would reduce water inventory management. <p>Surface water assessment (Appendix I) indicates the highest water demand (for dust suppression) for the project will be for construction purposes during the first year, with uncertainty regarding the volume of water generated from dewatering activities. Should sufficient water not be available, the referral suggests alternative water sources to meet the anticipated demand including surface water extraction from water storages and/or waterways and groundwater extraction.</p> <p>Greater clarity is required to understand the project water supply and demand, particularly during the first year of operation where dust and its management will be a key risk.</p>
Water Management	<p>Section 4.2.3 of the referral document indicates a Water Management Plan (WMP) for groundwater, surface water and aquatic ecosystems will be developed, including establishment of site-specific guideline values in accordance with Australian and New Zealand Guidelines for Fresh and Marine Quality (ANZG) 2018 and Darwin Harbour Water Quality Objectives (DHWQO).</p> <p>The DHWQO identifies priority water quality indicators to include nitrogen, phosphorous and total sediment for declared values and recommends application of site-specific guidelines based on ANZG 2018 for priority water quality indicators. The preliminary groundwater quality data provided (Appendix H) indicates that total nitrogen in groundwater beneath the site exceeds the DHWQO. Accordingly, groundwater (from dewatering) collected in above ground structures that may need to be discharged needs careful evaluation to ensure DHWQO will be met. Based on the reported total nitrogen and other key element concentrations, significant dilution may be required for offsite discharge.</p> <p>Should waste discharge, in accordance with DHWQO not be achievable or not supported given the sensitive Charlotte River receptor, alternative water management strategies or a combination of strategies need to be developed (e.g. irrigation to land and waste discharge) to demonstrate appropriate management of water inventory.</p>
Acid Sulfate Soils (ASS)	<p>The referral report (section 5.1.1) indicates a high probability for the presence of ASS in areas proximal to Charlotte River and its tributaries where elevation is below 5m AHD. The report indicates that <i>“as the mapped ASS area is not within the proposed disturbance footprint, there are no impacts due to land clearing activities.”</i></p>

However, geological logs (Appendix H) indicate mapped quaternary alluvial deposits in two of the holes drilled, although the measured thickness is relatively small (<1m).

Further, the extent of ASS also needs to be considered within the context of zone of influence (ZOI) from groundwater drawdown. Table 5-15 assumed ZOI measured from the BP33 and Grants study, given the similarity in geology and hydrogeology, and inferred that approximately 2.5-3 km of the Charlotte River section may potentially be impacted.

In the event that the dewatering ZOI impacts ASS deposits, there is a significant risk of exposure of the ASS to oxidation and environmental impacts.

Site-specific studies may be needed to better define ASS extent, including how dewatering activities may potentially impact on ASS, and if needed, an appropriate management plan be developed.

Attachment 3

Submission under the Environment Protection Act

Lei Lithium Project – Lithium Plus Minerals

This submission is made under regulation 53 of the Environment Protection Regulations 2020

NT EPA reference number: EP2024/038

Government authority: Department of Lands, Planning and Environment, Environment Division - Heritage Branch

Summary: The Heritage Branch are satisfied with the referral’s commitment to heritage management and look forward to working closely with the proponent to achieve good outcomes. Minor revisions only.

Theme / issue	Comment
Referral report feedback from the Heritage Branch.	<ul style="list-style-type: none">• The Heritage Branch approves of the commitments to heritage management in the referral and looks forward to working closely with the proponent to achieve positive outcomes. No revisions necessary.
Stakeholder engagement	<ul style="list-style-type: none">• Executive summary, Key issues, 7. Heritage and culture (Page 4):<ul style="list-style-type: none">○ Suggest inclusion of Heritage Branch alongside other agencies as only the Heritage Branch can enforce the <i>Heritage Act 2011</i>.• Issues analysis, Cultural and heritage impacts (Page 10-11):<ul style="list-style-type: none">○ Suggest similar mitigation for Aboriginal archaeological places and objects as for Sacred Sites.• Stakeholder analysis, Heritage Branch (Page 24)<ul style="list-style-type: none">○ The Heritage Branch has moved to the Department of Lands, Planning, and Environment.○ Recommend changing approach to read “...the existence of heritage places and objects that may be...”○ Recommend adding approach to read “Engage with the Heritage Branch to develop a suitable survey scope.”

	<ul style="list-style-type: none">○ Recommend changing approach to read “...archaeological consultant to undertake a survey and make management recommendations for the proposed works.”○ Recommend adding “Provide archaeological report and site data to the Heritage Branch and seek feedback as to the suitability of recommendations and the appropriateness of developing a Cultural Heritage Management Plan.”○ The above amendments are consistent with commitments made in the referral report.● Key messages, Impacts to historical heritage and culture (Page 32):<ul style="list-style-type: none">○ Recommend changing Key messages to read “...engage an archaeological consultant to undertake an archaeological survey and make recommendations for the project area.”
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