

07 July 2023

Michelle Kassman
Mining Team Manager
Department of Industry, Trade and Tourism
E: mineralinfo.DITT@nt.gov.au

Dear Michelle,

Re. MMP Amendment – Sediment Basin Relocation Works and MWD1 Cell 3 Construction

Lithium Developments (Grants NT) (LD) submitted Mine Management Plan (MMP) amendment to the Department of Tourism and Trade (DITT) on 28 April 2023. The amendment considered changes to the design and operation of several structures, necessitated by a drive to improve water management outcomes as well as revised mine geotechnical safety advice.

Geotechnical advice provided by SMEC (2022), identified the need to reduce the wall angle of the upper sections of Grants pit. Reduction of the wall angle resulted in the expansion of the pit crest and encroachment on Sediment Basin 1 and proposed MWD1 Cell 2 footprint. SMEC (2022) recommended relocation of MWD1 (Cell 2) and Sediment Basin 1 due to the proximity of large water storages immediately adjacent to the pit crest.

To ensure stability of the pit as well as ensuring available capacity to store and manage mine affected water, changes to water management structures in this area are required. These changes include:

- Relocation of MWD1 (Cell 2) south into the location Sediment Basin 5;
- Construction of an additional cell (Cell 3) of MWD1 outside the existing disturbance footprint;
- Relocation of Sediment Basin 1 and Sediment Basin 5 outside of the existing disturbance footprint and construction as High Efficiency Sediment (HES) Type B basins; and
- Dewatering and backfill of Sediment Basin 1;

This letter amendment has been revised to also facilitate construction of MWD1 Cell 2 and MWD1 Cell3 as well as incorporate the request for information (RFI) provided by the Department on 17 May 2023 (M2018/0050-0012~0009).

Yours sincerely,

Melissa Winks

Executive General Manager Sustainability
Lithium Developments (Grants NT) Pty Ltd
mwinks@corelithium.com.au

Objectives

In consideration of Condition 9 of Authorisation 1021-01, which prohibits the commencement of future activities until written approval, or the conditions of the Authorisation are varied, the objective of this amendment is to:

- Facilitate relocation of Sediment Basin 1 and 5 to ensure construction is complete prior to the 2023 / 2024 wet season;
- Facilitate construction of MWD1 Cell 2 and 3 to ensure available capacity to store and manage mine affected water from Grants pit prior to the 2023 / 2024 wet season;
- Detail the proposed structures including preliminary concept designs; and
- Justify the proposed works and assess potential risks of proposed works in consideration of existing commitments and obligations.

Proposed Works

Due to topography, drainage and a limited space within the current disturbance footprint, it is proposed to relocate Sediment Basin 1 and 5 and construct an additional MWD1 cell (Cell 3) outside of the existing Grants disturbance footprint (Figure 1). Cell 2 of MWD1 will be located within the existing disturbance footprint, in the location of the existing Sediment Basin 5.

Structure Design and Sizing

Sediment Basins

Engineering firm, Topo, have been engaged to provide concept and detailed designs of the proposed sediment basins. To improve environmental performance and wet season stormwater management outcomes, the relocated basins will be constructed as a High Efficiency Sediment (HES) Type-B basins (IECA, 2018).

Preliminary sizing of Sediment basins 1 and 5 provided by Topo (2023) indicates a nominal capacity of 26.1 ML and 20.1 ML, respectively. Proposed basins have been sized appropriately for the revised site layout, accounting for the maximum catchment area for the site in accordance with Appendix B of IECA (2018) best practice. Basin sizing have been prepared by Topo and provided in the table below.

HES Basin	Catchment Area (ha)	Volume (ML)	Length (m)	Width (m)	Depth (m)	Approx. Disturbance (ha)
Sediment Basin 1	50.2	26.1	183	61	3	3.5
Sediment Basin 5	38.6	20.1	163	54	3	2.5

Geotechnical advice of the proposed locations indicates Sed 1 should be lined with a low-permeability liner to minimise groundwater influence on the eastern pit slopes. This will be incorporated in the detailed design.

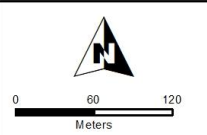
MWD1 Cell 2 and Cell 3

Engineering firm, GHD, have been engaged to provide concept and detailed designs of the proposed MWD1 Cell 2 and Cell 3. Dams will be constructed in accordance with ANCOLD (2003) guidelines and subject to independent certification. Dam sizing are provided in the Table below.

MWD 1 Cell	Volume (ML)	Length (m)	Width (m)	Disturbance (ha)
Cell 2	120	214	187	n/a area within existing disturbance.
Cell 3	120	154	213	4



Drain / Sediment Basin
 MWD1 Cell 2 / Cell 3



PROPOSED SEDIMENT BASIN AND MINE WATER STROAGES
Finnis Lithium Project - Grants, Cox Peninsula Road, Northern Territory

MAP INFORMATION
Scale: 1:11,000 @ A4
Projection: GDA 1984 MGA Zone 52
MAP INFORMATION
Imagery: LD (1804/23), ESRI

Vegetation Clearing, Topsoil and Earthworks

Additional clearing is required to facilitate construction of the sediment basins and Cell 3 of MWD1. Cell 2 of MWD2 has been relocated within the existing disturbance footprint with additional clearing not required.

Clearing requirements for both sediment basins and drainage lines, as well as MWD1 Cell 3 are provided in above. Approval is being sought to clear 10 ha of vegetation to allow construction of both basins and MWD1 Cell 3. It is anticipated that the final disturbance footprint / clearing requirements will be less than the proposed 10 ha.

Consistent with the existing MMP, the top 200 mm of topsoil is proposed to be recovered and stockpiled in the existing topsoil storage facility. Additional growth medium may be recovered should it be suitable for rehabilitation requirements.

Construction grade material comprising lateritic clays may also be recovered for use in construction of the basin and or to facilitate ongoing construction activities across the broader project area.

Timing

Both Mine Water Dam cells, sediment basins and associated drain lines are required to be constructed prior to the commencement of the wet season. LD anticipate construction to be complete, and the basin operational, prior to 31 October 2023. Key dates for the completion of all structures are provided in the table below.

Structure / Aspect	Proposed Completion Date
MWD1 Cell 3, Cell 4	<ul style="list-style-type: none"> Decommissioning Sed 5: 31 July 2023 Bulk Earthworks: 13 November 2023 Spillway: 22 November 2023 Commissioning: 28 November 2023
Sed 1 / Sed 5 and associated drainage works	<ul style="list-style-type: none"> 26 October 2023
Flood Inundation Bund (FIB) modification (If required – subject to final design)	<ul style="list-style-type: none"> 31 October 2023
Backfilling of Sed 1	<ul style="list-style-type: none"> 30 September 2023
Revised ESCP	<ul style="list-style-type: none"> Revised ESCP: 30 September 2023 Implement Controls: 31 October 2023

Flood Modelling

Flood impact was raised as an additional design consideration for both sediment basins and MWD1 Cell 3. Potential flood impact was assessed by WRM (2023) and compared to current modelled conditions to determine predicted peak flood extents, levels and depths for the 1% AEP design event. Modelling also allowed potential waterway impact to be assessed and provide design levels for the construction of Sed 1, Sed 5 and MWD1.

Modelling indicated construction of the proposed structures has negligible impacts on flood levels downstream in comparison to existing conditions, however several localised impacts during a 1% AEP rain event included:

- Ponding may occur south of Sed 1 and Sed5 with minor earthworks required to prevent permanent ponding against the embankment at this location.
- Localised increase in water levels immediately surrounding Sed 1 and Sed 5 by 0.3 – 0.4 m. This localised impact will be factored into the detailed design of the basin to prevent inflow from the floodplain.
- Flooding may extend 100-180 m further east of Sed 1 and Sed 5 as water moves through the flood plain around them. Flood extents are contained within the immediate area and to not encroach on existing surface infrastructure i.e access tracks.
- Increased likelihood of water from drainage line 3 entering drainage line 2 under high conditions flow (1 % AEP rain event).
- Minor reduction in flood levels north of proposed MWD1 Cell 3 and Sed 1.

Flood impacts or changes to hydrogeology of drainage line 2 and 3 are not considered material in comparison to existing conditions and impacts assessed in the Grants EIS. Flood impacts will continue to be monitored and mitigation measures provided in Surface Water Infrastructure Assessment Report (WRM 2022) implemented as required.

Flood mapping and modelling results are presented in Attachment A.

Additional Design Considerations

Topo (2023) have noted that correct levels are critical for operation of Type-B sediment basins which require cascading flow to ensure optimal operation. Due to the relatively flat topography, the location of the proposed basins may be required to be refined during the detailed design phase to ensure correct levels are achieved. The final basin design will be subject to survey and geotechnical advice. Detailed designs will be issued to the Department prior to construction.

Independent Certification

Within three months of completion of the sediment basins and additional mine water dams, as-built construction reports certified by an independent certified engineer will be provided.

Justification of Works

Grants Pit Geotechnical Stability

Upon receipt of Geotechnical advice provided by SMEC (2022), the Grants pit was expanded to facilitate reduction in the wall angle. SMEC (2022) recommended relocation of MWD1 (Cell 2) and Sediment Basin 1.

To meet the above recommendations, the proposed works are required to:

- Reduce the risk of instability and improve operational safety of the pit by removing large water storages from the expanded pit crest.
- Allow for MWD1 Cell 2 to be relocated to the south of Cell 1 within the footprint of the existing Sediment Basin 5.
- Increase disturbance outside the existing footprint to construct sediment basins due to the lack of available area within the current approved extents.
- Ensure site runoff currently bypassing Sed 5 is captured for treatment prior to leaving site.

Erosion Sediment Control and Water Management

Sediment Basin Management

Existing Sediment Basin 1 and 5 are constructed as traditional Type-D sediment basins which have limited effectiveness in the wet tropics due to their reduced ability to manage runoff during monsoonal rain conditions. The basins have been designed in accordance with (IECA, 2008) and are sized for a 5-year design rainfall event of 55 mm.

Despite best practice ESC and sediment basin management, rain events above 55 mm will result in the release of turbid water through a designated spillway. This was observed on several occasions during the 2022 / 2023 wet season.

Construction of the proposed sediment basins will improve wet season ESC performance and general water management as:

- The basins will be constructed as HES Type-B basins that will be sized to enable stormwater to be treated and passively released within adopted IECA (2018) water quality objectives.
- Type-B basins are expected to significantly reduce management requirements and improve water quality, allowing a greater quantity of water to be treated over traditional Type-D basins.
- The basins will be in a position that captures all stormwater runoff from the current disturbance footprint. Presently, runoff from a small portion of the site bypasses Sediment Basin 5 due to modelled surface flow paths that were not realised during the 2022 / 2023 wet season.
- The basins will provide additional water storage for possible use in mining and processing activities during the dry season to limit the reliance on water extracted from Observation Hill Dam (OHD).

Wet Season Water Management / Water Security

Wet season water management and water security are two critical management concerns at Grants mine. Effective water management during the wet season and security of dry season water supplies are key to maintaining continuity of mining operations and environmental values in the surrounding environment.

Two additional mine water dam cells will provide 240 ML of water to the Grants water balance, minimising the likelihood of offsite discharge during wet season months. Mine affected water will be retained onsite into the dry season, reducing the reliance on raw water drawn from Observation Hill Dam under an existing limited surface water extraction licence.

Vegetation Clearing and Disturbance

The existing Authorisation permits a disturbance footprint of 254 ha. To date, 213 ha of vegetation has been cleared. Clearing requirements have been reduced due to the retention of 'green belts' onsite and an evaluation and revision of topsoil requirements for rehabilitation activities.

Proposed additional disturbance is not considered a material change as:

- The additional disturbance required is within the original approved 254 ha permitted under existing approvals.
- Additional disturbance will not adversely impact the occurrence of the low open woodland vegetation type, impacting <1.7% of the extent mapped across ML31726 and ML32071.
- Clearing activities will not impact the occurrence of available habitat for sensitive threatened flora and fauna as previously assessed through the EIS approvals process.
- Clearing will be undertaken in accordance existing established procedures and management plans.
- Efforts will be made to minimise the required clearing of vegetation subject to completion of detailed designs.

EP Act (2019) Self-Assessment Tool

Proposed works were subject to self-assessment to determine if there was potential to meet a referral trigger under the Environmental Protection Act (2019). Self-assessment was undertaken in accordance with NT Environmental Protection Authority guidance on referring a proposal to the NT EPA (2021).

The pre-referral screening tool has been completed by EcOz, who determined that proposed works do not require referral under the Act. The screening tool and accompanying justification is provided in Attachment B.

Risk Assessment

A risk assessment was undertaken in accordance with the methodology detailed in the Section 5.6 of the current MMP (2022). For each project activity, events / incidents that has potential cause impact to environmental values were identified and assessed. The full risk assessment is provided as Attachment C and summarised in the Table below.

Environmental Factor	Residual Risk Rating				No. Impacts Assessed	Impacts with elevated residual risk
	Low	Medium	High	Very High		
Terrestrial Fauna and Flora	7	1	0	0	8	Introduction of weeds in imported materials
Terrestrial Environmental Quality	2	1	0	0	3	Soil erosion due to increased runoff from cleared areas
Downstream Water Quality	2	1	0	0	3	Increased turbidity in watercourses impacting environmental values and/or other users
Hydrogeological Processes	2	0	0	0	2	Reduced / altered flows affects environmental values
Air Quality and GHG	0	1	0	0	1	Release of GHG
Total	13	4	0	0	17	n/a

Risk ratings shown in the Table above do not indicate a high or very high residual risk for each event / impact assessed. Several impacts assessed retained a medium residual risk rating which is consistent with the impacts observed across the broader Grants site during the 2022 / 2023 wet season. Impacts can be managed through implementation of existing management plans, procedures and appropriate supervision. Additional flood modelling will be carried out prior to construction to guide development of detailed designs and assess / mitigate potential impact to overland flow in the adjacent floodplain.

Summary

A summary of the proposed works is provided in the Table below:

Aspect	Sediment Basin 1 and 5	MWD 1 Cell 2 and 3
Proposal	Construction of two HES Type-B sediment basins outside of the existing approved disturbance area.	Construction of two additional MWD1 cells. Cell construction will mirror the existing MWD 1 Cell 1 construction.
Objective	To facilitate removal / relocation of existing Sediment Basin 1 and 5 to ensure compliance with geotechnical safety advice for the expanded Grants pit	Increase storage capacity and treatment flexibility of mine effected water during the wet season. Provide a source of onsite water for dry season use and minimise reliance on OHD.
Proposed Basin Volume	52.9 ML	240 ML
Proposed Disturbance Required	6 ha	4 ha (MWD 1 Cell 3 only)
Risk Rating	Low	Low

References

EcOz (2022) Mine Management Plan Grants Lithium Project Mining Operations. Authorisation 1021-1 (September 2022)

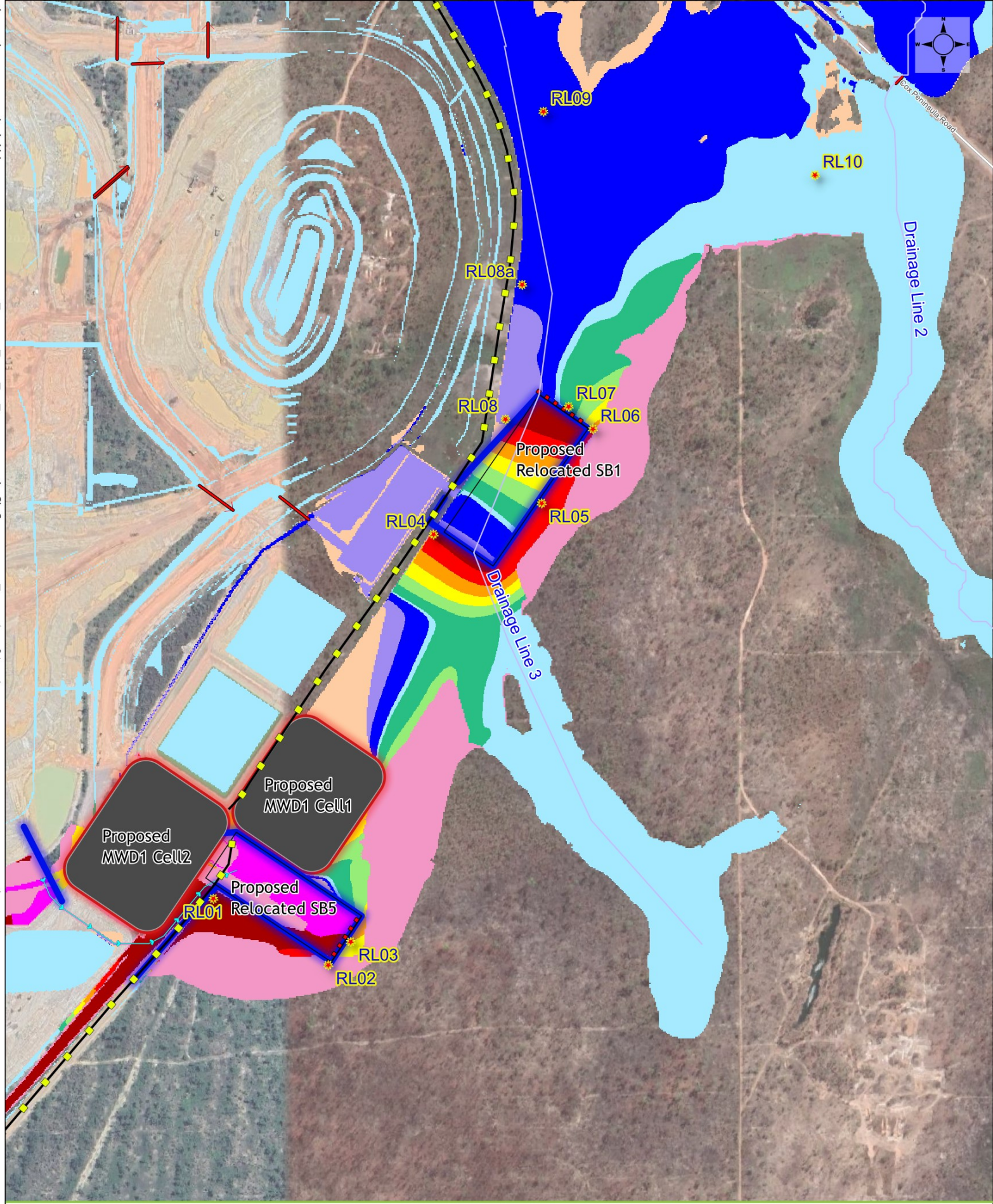
EcOz (2023) Self-Assessment Referral Screening – Grants Sediment Basin Relocation and MWD1 Cell 3 Construction. Document reference 228846) July 2023.

IECA (2008) Best Practice Erosion and Sediment Control (BPESC). International Erosion Control Association (November 2008)

WRM (2022) Grants Surface Water Infrastructure Assessment. Document reference 1727-02-K2 (March 2022)

WRM (2023) Grants SW1 Updated flood assessment. Mail advice 1727-19-A received 4 July 2023.

ATTACHMENT A – WRM FLOOD MODELLING

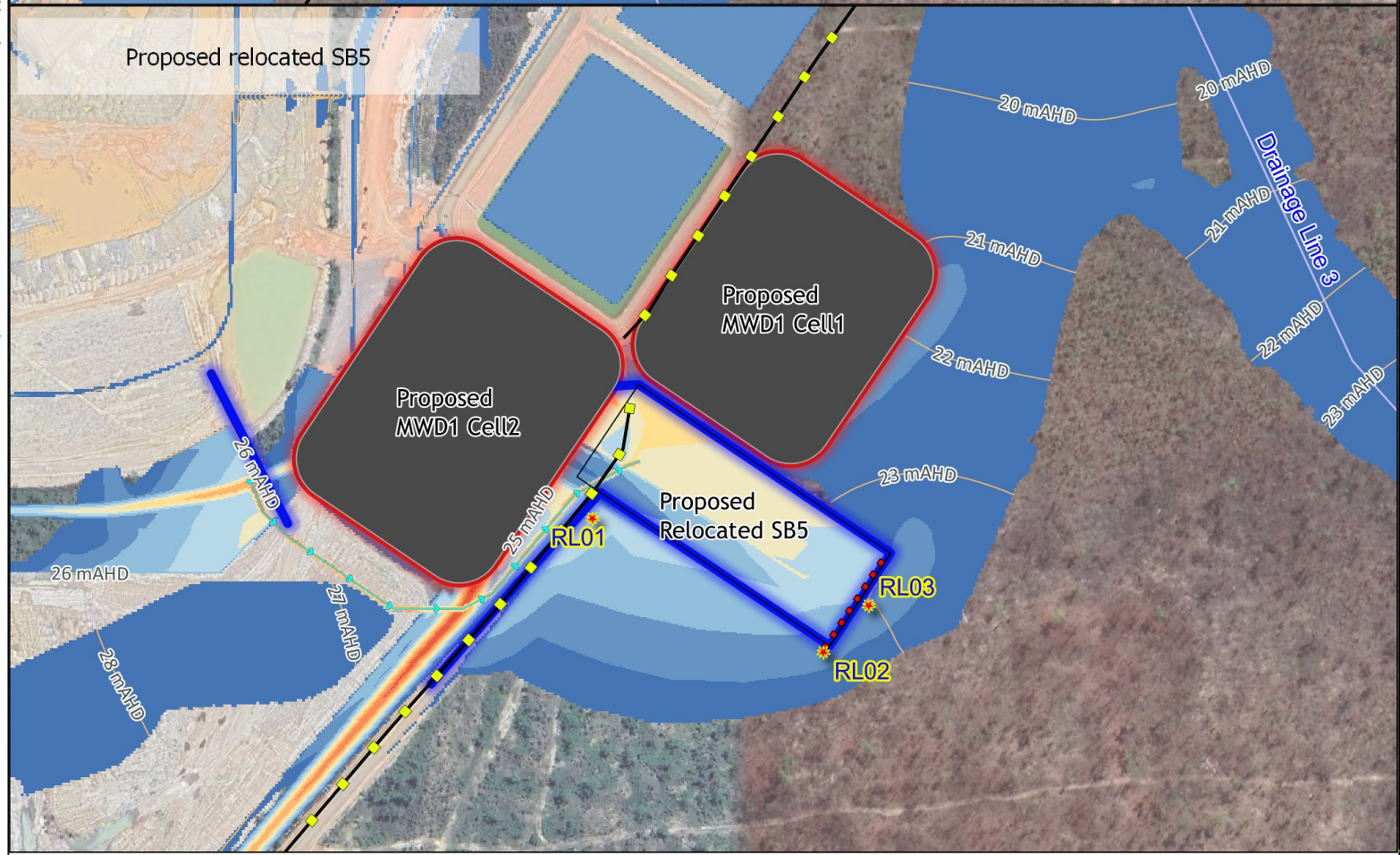
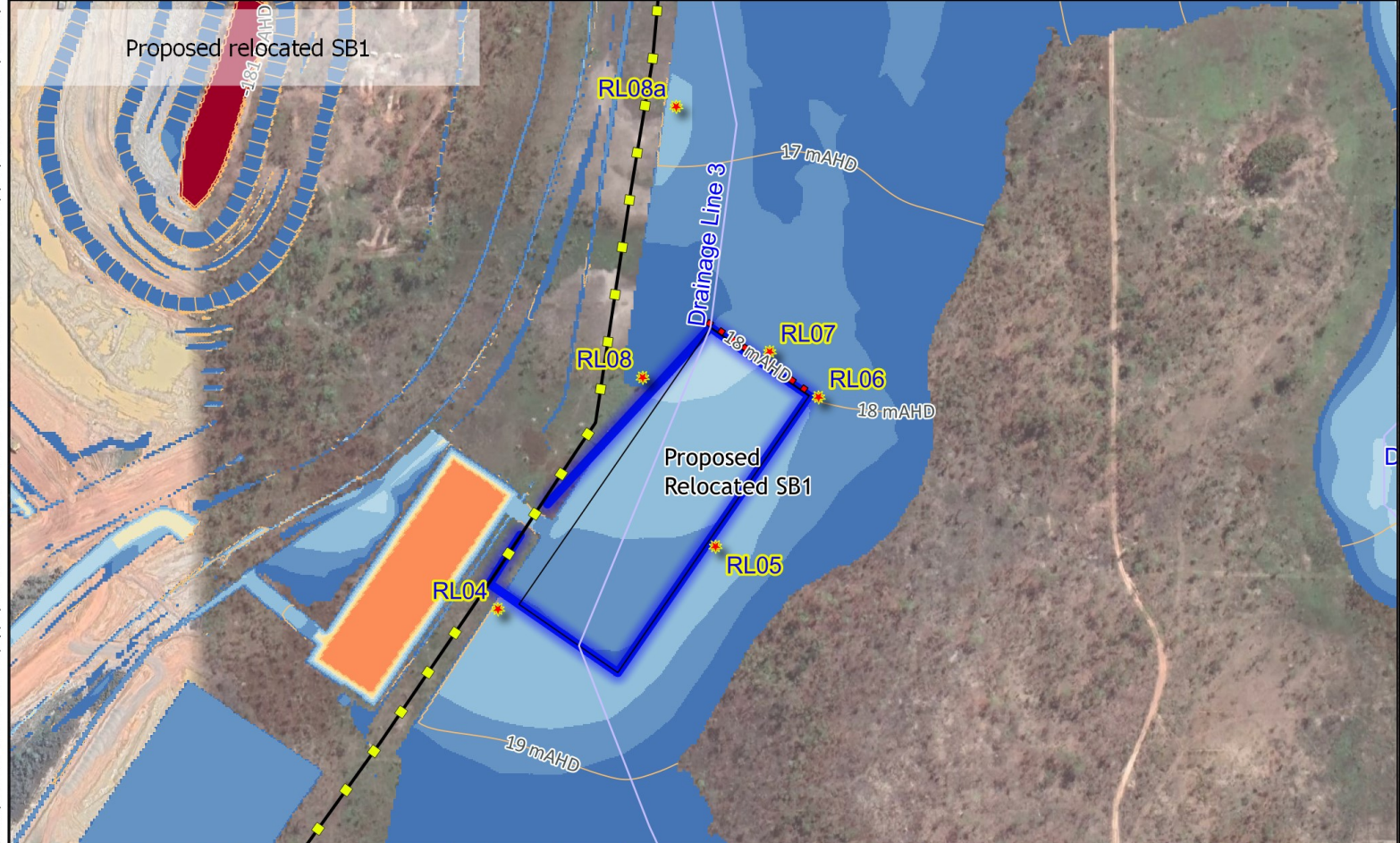


Legend		Afflux	
	Proposed bund or sediment dam wall		< 0.10 m
	Proposed MWD wall		0.10 m to 0.01 m
	Proposed drain		0.01 m to 0.01 m
	Proposed spillway		0.01 m to 0.10 m
	Drainage line		0.10 m to 0.20 m
	1 m water level contours		0.20 m to 0.30 m
	Flood Levee		0.30 m to 0.40 m
	Road		0.40 m to 0.50 m
	Culvert		0.50 m to 1.00 m
	Proposed relocated MWD		1.00 m to 5.00 m
	Proposed relocated sediment dam		> 5.00 m
	Reporting locations		Was wet now dry
			Was dry now wet

Grants SW1 flood assessment

Predicted peak 1% AEP flood level impacts





Legend	
	Proposed bund or sediment dam wall
	Proposed MWD wall
	Proposed drain
	Proposed spillway
	Flood Levee
	Drainage line
	1 m water level contours
	Reporting locations
	Proposed relocated MWD
	Proposed relocated sediment dam

Flood depth	
	up to 0.25 m
	0.25 to 0.5 m
	0.5 to 1.0 m
	1.0 to 1.5 m
	1.5 to 2.0 m
	2.0 to 2.5 m
	2.5 to 3.0 m
	3.0 to 3.5 m
	3.5 to 4.0 m
	4.0 to 4.5 m
	> 4.5 m

Grants SW1 flood assessment

Predicted peak 1% AEP flood depths, levels and extents



ATTACHMENT B – EP ACT (2019) SELF ASSESSMENT

Pre-referral Screening Report



Project: Grants - Sediment Basin Relocation Works and MWD1 Cell 3 Construction

The NT EPA have developed a pre-referral screening tool to assist proponents determine whether their Proposal has potential to have a significant impact on the environment and therefore requires referral under the *Environment Protection Act 2019*. The tool is also used to identify the key environmental factors that are relevant to a Proposal that may require more detailed consideration during site selection and project planning. The tool has two parts:

- Part 1 – Screening Questions.
- Part 2 – Answer Checklist.

The tool is provided in the *Guideline – Referring a Proposal to the NT EPA* <https://ntepa.nt.gov.au/publications-and-advice/environmental-management>.

EcOz Environmental Consultants (EcOz) were engaged by Lithium Developments (Grants NT) Pty Ltd (LD) to undertake pre-referral screening of the proposed construction works. To ensure stability of the Grants pit as well as ensuring available capacity to store and management mine affected water, changes to existing water management structures are required. These changes include:

- Relocation of MWD1 (Cell 2) to the south;
- Construction of an additional cell at MWD1 (Cell 3) outside the existing disturbance footprint;
- Relocation of Sediment Basin 1 and Sediment Basin 5 outside of the existing disturbance footprint and construction as High Efficiency Sediment (HES) Type B basins;
- Stabilising, filling and compaction of the former MWD1 Cell 2 footprint, for use as an additional hardstand area; and
- Dewatering and backfilling of former Sediment Basin 1.

The objectives of this assessment are to:

- Facilitate approval of the sediment basins to ensure construction is complete prior to the 2023/2024 wet season;
- Facilitate construction of MWD1 Cell 2 and 3 to ensure available capacity to store and manage mine affected water from Grants pit prior to the 2023/2024 wet season; and
- Justify the proposed works and assess potential risks of proposed works with consideration of existing commitments and obligations.

The screening was undertaken with reference to the screening questions shown in Figure 1 and the results are documented in Table 1 below.

Pre-referral Screening Report

Project: Grants - Sediment Basin Relocation Works and MWD1 Cell 3 Construction

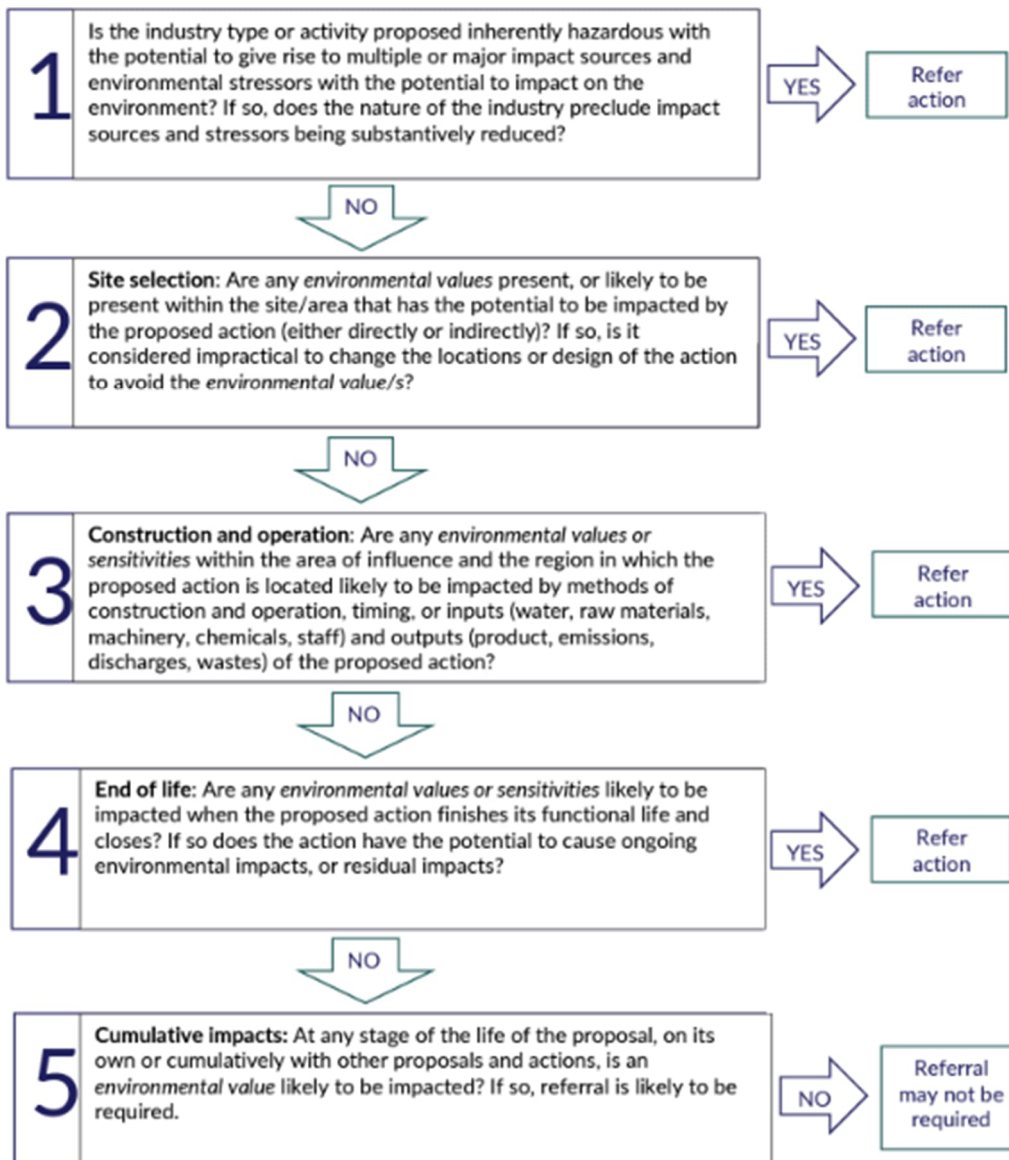


Figure 1. Pre-screening tool screening questions (Source: NT EPA 2021)

Pre-referral Screening Report

Project: Grants - Sediment Basin Relocation Works and MWD1 Cell 3 Construction

Table 1. Pre-referral screening tool checklist prepared for the relocation of sediment basins 1 and 5, and construction of MWD1 Cell 3 at Grants

Theme	Factor and Objective	Background information (about the Project)	Environmental values, sensitivities (based on desktop and/or surveys)	Pre-referral screening questions					Comments on whether or not referral required	
					Q1	Q2	Q3	Q4		Q5
				Yes No	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>		<input type="checkbox"/> <input checked="" type="checkbox"/>
Land	Landforms Objective: Conserve the variety and integrity of distinctive physical landforms.	<ul style="list-style-type: none"> No distinct natural landforms. 	<ul style="list-style-type: none"> No distinct natural landforms. 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	Does not trigger referral. <ul style="list-style-type: none"> No distinct natural landforms are identified in the Project area subject to this pre-referral screening tool.
	Terrestrial Environmental Quality Objective: Protect the quality and integrity of land and soils so that environmental values are supported and maintained.	<ul style="list-style-type: none"> The existing Authorisation permits a disturbance footprint of 254 ha. To date, 213 ha of vegetation has been cleared. Up to 10 ha will be cleared for the construction of two sediment basins (SB1 and SB5) and construction of one cell (Cell 3 of MWD1). The additional disturbance is within the original approved 254 ha permitted under existing approvals. The existing SB1 and SB5 are constructed as traditional Type-D sediment basins which have limited effectiveness in the wet dry tropics. Construction of the High Efficiency Sediment (HES) Type-B basins will improve wet season ESC performance. Engineering firm, Topo, have been engaged to provide detailed designs of the proposed sediment basins. Engineering firm GHD have been engaged to provide detailed designs of the proposed MWD1 Cell 3. Cell 2 of MWD1 will be relocated with the existing disturbance footprint, and additional clearing is not required. The former SB1 will be rehabilitated. The former MWD1 Cell 2 will be stabilised, filled and compacted to provide an additional hard stand area. Erosion risk will be managed through implementation of existing management plans, procedures and appropriate supervision. To avoid and mitigate impacts from erosion, LD operates under an Erosion and Sediment Control Plans (ESCP) that meets the IECA Guidelines and specifications (IECA, 2018). 	<ul style="list-style-type: none"> Land unit mapping for Greater Darwin (1:25:000) indicates that soils within the Project area predominately comprise hydrosols and rudosols with small areas of kandosols (Grants MMP, 2019). The land unit mapping groups land units into classes which describe the risk of acid sulphate soil (ASS) conditions. The land unit mapping shows the Project area has a Nil (class 1) risk of ASS conditions. This information correlates with the Land Systems of the Northern Part of the Northern Territory (1:250:000) which shows there is no area of potential ASS within the Project area (Grants MMP, 2019). 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	The proposed works are considered unlikely to have a significant impact on terrestrial environmental quality as: <ul style="list-style-type: none"> LD operates under a IECA certified ESCP which will be updated and implemented to reflect proposed works. Principles contained within the ESCP will be implemented during construction. HES Type B basins are more suited to manage stormwater runoff in the wet / dry tropics and are more effective in reducing sediment loads over existing conventional Type D basins. Basins will be built to detailed engineered design by a suitably qualified person. Flood impact modelling conducted by WRM (2023) indicate minor localised impact in the immediate vicinity of the proposed structures, with negligible impact downstream. LD will monitor for potential flood impacts and implement mitigation measures as required which have been provided in the Surface Water Infrastructure Assessment Report (WRM, 2022).

Pre-referral Screening Report

Project: Grants - Sediment Basin Relocation Works and MWD1 Cell 3 Construction

Theme	Factor and Objective	Background information (about the Project)	Environmental values, sensitivities (based on desktop and/or surveys)	Pre-referral screening questions					Comments on whether or not referral required	
					Q1	Q2	Q3	Q4		Q5
				Yes No	<input type="checkbox"/> <input checked="" type="checkbox"/>					
	<p>Terrestrial Ecosystems <u>Objective:</u> Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.</p>	<ul style="list-style-type: none"> The existing Authorisation permits a disturbance footprint of 254 ha. To date, 213 ha of vegetation has been cleared. Up to 10 ha will be cleared for the construction of 2 sediment basins (SB1 and SB5) and construction of one cell (Cell 3 of MWD1). The additional disturbance is within the original approved 254 ha permitted under existing approvals. Cell 2 of MWD1 will be relocated with the existing disturbance footprint, and additional clearing is not required. Clearing activities will not impact the occurrence of available habitat for sensitive threatened flora and fauna as previously assessed through the EIS process. Clearing will be undertaken in accordance with existing established procedures and management plans. Efforts will be made to minimise the required clearing of vegetation subject to completion of detailed designs. Consistent with the existing MMP, the top 200 mm of topsoil is proposed to be recovered and stockpiled in the existing topsoil storage facility. Weeds will be managed through implementation of existing management plans, procedures and appropriate supervision. 	<ul style="list-style-type: none"> Additional disturbance will not adversely impact the occurrence of the low open woodland vegetation type, impacting <1.7% of the extent mapped across ML31726 and ML32071. No permanent wetlands are located within the Project area. Some seasonally inundated areas are patchily distributed through the ML. These areas support sedges and herbs in the ground layer during the wet and early dry season and dry out later in the dry season (Grants EIS, Chapter 5). No riparian, wetland or mangrove communities are in the disturbance footprint (Grants EIS, Chapter 5). According to EcOz survey <i>Typhonium praetermissum</i> Survey Report Grants Lithium Project, 2019, the species has not been found in the Project area. 	<p>Yes No Uncertain N/A</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<p>The proposed works are considered unlikely to have a significant impact on terrestrial ecosystems as:</p> <ul style="list-style-type: none"> Clearing activities will not impact the occurrence of available habitat for sensitive threatened flora and fauna as previously assessed through the EIS process. Clearing will be undertaken in accordance with existing established procedures and management plans. Weeds will be managed through a Weed Management Plan. Clearing areas are within the total extent originally assessed in the EIS.
Water	<p>Hydrological Processes <u>Objective:</u> Protect the hydrological regimes of groundwater and surface water so that environmental including ecological health, land uses and the welfare and amenity of people are maintained.</p>	<ul style="list-style-type: none"> Potential flood impact was assessed by WRM (2023) and compared to current modelled conditions to determine predicted peak flood extents, levels, and depths for the 1% AEP design event. Modelling also allowed potential waterway impact to be assessed and provide design levels for the construction of SB1, SB5 and MWD1. Modelling indicated construction of the proposed structures would have negligible impacts on flood levels downstream in comparison to existing conditions, however, several minor localised impacts were identified. Modelling showed that the proposed configuration will increase flood levels against the existing levee at some locations. Notwithstanding this, the proposed changes would maintain a minimum freeboard of 0.3 m against the flood levee, during a 1% AEP flood event. The existing levee has been constructed to 1.4 m above natural surface which provides sufficient freeboard. Proposed works would not adversely impact the 1% AEP flood levels downstream of the mine at Cox Peninsula Road when compared with the previous conditions. However, as per SWIA report (WRM, 2022) the proposed flood levee will potentially result in increased flows towards Drainage Line 1 on Cox Peninsula Road when compared with pre-mining conditions. Mitigation measures to reduce the impacts as discussed in the SWIA report (WRM, 	<ul style="list-style-type: none"> The Project area is in the Finnis River drainage basin within the Timor Sea Drainage Division. Most of the Project area is within the Darwin Harbour catchment, with the southwest corner lying in the Bynoe Harbour catchment. All Project components are within the Darwin Harbour catchment. There are no major watercourses within the Project area. Surface water runoff from the Project area within the Darwin Harbour catchment is via three ephemeral drainage lines. These drainage lines meet at a perennial watercourse approximately 1.2 km north of the Project area, which drains into a tidal inlet of Darwin Harbour. The major project components do not intersect any of these mapped drainage lines. The southwestern corner of the Project area, within the Bynoe Harbour catchment, is drained by two ephemeral drainage lines, which meet at a perennial watercourse approximately 2.2 km southwest of the Project area. These will not be intersected by the proposal. 	<p>Yes No Uncertain N/A</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<p>The proposed works are considered unlikely to have a significant impact on hydrological processes as flood impact modelling conducted by WRM (2023) indicate minor localised impact in the immediate vicinity of the proposed structures, with negligible impact downstream.</p> <p>LD will monitor for potential flood impacts and implement mitigation measures as required which have been provided in the Surface Water Infrastructure Assessment Report (WRM, 2022).</p>

Pre-referral Screening Report

Project: Grants - Sediment Basin Relocation Works and MWD1 Cell 3 Construction

Theme	Factor and Objective	Background information (about the Project)	Environmental values, sensitivities (based on desktop and/or surveys)	Pre-referral screening questions					Comments on whether or not referral required		
					Q1	Q2	Q3	Q4		Q5	
				Yes No	<input type="checkbox"/> <input checked="" type="checkbox"/>						
	Air Quality <u>Objective:</u> Protect air quality and minimise emissions and their impact so that environmental values are maintained.	<ul style="list-style-type: none"> New emissions will be related to construction work only, and therefore are expected to be minimal. Operation of the ponds/cell are not anticipated to result in additional emissions to air. Clearing will be undertaken in accordance existing established procedures and management plans. Efforts will be made to minimise the required clearing of vegetation subject to completion of detailed designs. Dust will be managed through implementation of existing management plans, procedures and appropriate supervision. 	<ul style="list-style-type: none"> During the EIS process it was identified that the only major source of air emissions was dust from ore extraction and materials handling. The Project water balance includes adequate allowance of water for dust suppression activities and there are no sensitive receptors located in close proximity to the mine site. 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Does not trigger referral. <ul style="list-style-type: none"> No substantial or material change from existing conditions. 	
Air	Atmospheric Processes <u>Objective:</u> Minimise greenhouse gas emissions so as to contribute to the NT Government's aspirational target of achieving net zero greenhouse gas emissions by 2050.	<ul style="list-style-type: none"> New emissions will be related to construction work only, and therefore are expected to be minimal. Operation of the ponds/cell are not anticipated to result in additional emissions to air. 	<ul style="list-style-type: none"> Greenhouse gas emission (GHG) estimates were provided during the EIS process. The Project is not expected to be a significant contributor to NT GHG emissions. 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Does not trigger referral. <ul style="list-style-type: none"> No substantial or material change from existing conditions. 	
People	Communities and Economy <u>Objective:</u> Enhance communities and the economy and foster resilience to a changing climate, for the welfare, amenity and benefit of current and future generations of Territorians.	<ul style="list-style-type: none"> The mine currently employs over 250 direct employees and contractors, with a large proportion of the work force Territory-based. The NT Government will benefit from royalties under the Mineral Royalty Act. The Australian economy will benefit from export income. A lithium mine in the NT is a positive step in establishing a path to a renewable future. 	<ul style="list-style-type: none"> N/A 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Does not trigger referral. <ul style="list-style-type: none"> No substantial or material change from existing conditions. 	
	Culture and Heritage <u>Objective:</u> Protect sacred sites, culture and heritage	<ul style="list-style-type: none"> There is a Declared Heritage Area (Aboriginal archaeological site) within the Project area which is located in the north-west portion of the lease outside of proposed development footprints. An Authority Certificate has been obtained from the Aboriginal Areas Protection Authority (AAPA) for this site (Certificate #C2022-049). A search of AAPA Register did not identify any additional registered or recorded sacred sites. 	<ul style="list-style-type: none"> There are no significant aboriginal or European heritage items within the proposed disturbance footprint. 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Does not trigger referral. <ul style="list-style-type: none"> No substantial or material change from existing conditions.
	Human Health <u>Objective:</u> Protect the health of Northern Territory population.	<ul style="list-style-type: none"> During the EIS process it was identified that the Project does not involve any activities that pose a significant risk to human health and safety. There are no major sources of contaminants that could move off-site and impact the public. No additional sources or impacts are expected from the relocation of the basins and construction of an additional cell, when compared to the previous design. Workforce health and safety will be regulated in accordance with national requirements. Impacts associated with increased road traffic assessed in the EIS under the Social, Economic and Cultural Surroundings factor. 	<ul style="list-style-type: none"> There are no nearby sensitive receptors to the Grants site. The nearest residential dwelling is located approximately 10 km south of the site. There is no significant or continuous community use of areas within proximity and downgradient of the site. 	Yes No Uncertain N/A	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Does not trigger referral. <ul style="list-style-type: none"> No substantial or material change from existing conditions

ATTACHMENT C – RISK ASSESSMENT

Environment Factor	Incident / Event	Impact	Likelihood	Consequence	Inherent Risk	Controls	Likelihood	Consequence	Residual Risk
Terrestrial Flora and Fauna	Vegetation clearing	Loss of sensitive vegetation types	1	1	1 - Low	<ul style="list-style-type: none"> n/a communities not present 	1	1	1 - Low
		Loss of fauna habitat	2	1	1 - Low	<ul style="list-style-type: none"> Vegetation Clearing Procedure includes controls for marking of clearing boundaries, topsoil removal and storage, vegetation disposal and erosion and sediment control to further minimise impact. All clearing works are completed under a Ground Disturbance Permit which ensures clearing is undertaken in a manner that identifies and controls potential environmental risks. 	1	1	1 - Low
	Uncontrolled bushfire caused by construction or burning of stockpiled vegetation	Reduced habitat quality due to loss of understorey	3	2	2 - Medium	<ul style="list-style-type: none"> Vegetation Clearing Procedure includes controls for minimising fire risk during clearing and disposal of vegetation. The Ground Disturbance Permit contains controls when clearing areas with elevated fire risk. These include use of fire spotters during clearing as well as timing of clearing to ensure risk is minimised. 	1	2	1 - Low
	Dust emissions caused by operation of machinery and equipment	Reduced habitat quality due to smothering of plants with dust	2	2	1 - Low	<ul style="list-style-type: none"> Dust suppression will be undertaken using water carts during clearing and construction. A depositional dust monitoring program has commenced and assess for potential risk from generation of dust during clearing and construction activities. The Dust Management Plan will be implemented and provides a framework for the proactive identification and management of just generated through site activities 	2	1	1 - Low
	Removal of vegetation	Loss of Typhonium praetermissum habitat	1	1	1 - Low	<ul style="list-style-type: none"> n/a modelled suitable habitat is not present in proposed disturbance footprint. 	1	1	1 - Low
	Weed introduction by machinery and equipment	Reduced habitat quality from competition and fire risk	3	3	2 - Medium	<ul style="list-style-type: none"> All equipment to be used in clearing and bulk earthworks activities have been inspected and cleared as free of weeds, seeds and foreign materials. All new equipment brought to site will be subject to inspection prior to works. 	2	2	1 - Low
	Introduction of invasive pest species	Spread of invasive pest species	3	3	2 - Medium	<ul style="list-style-type: none"> All equipment is to be inspected and cleared as free of invasive species. 	2	2	1 - Low

Environment Factor	Incident / Event	Impact	Likelihood	Consequence	Inherent Risk	Controls	Likelihood	Consequence	Residual Risk
Terrestrial Flora and Fauna	Importation of quarried materials	Introduction and spread of weeds	4	3	3 - High	<ul style="list-style-type: none"> Off-site sources to be inspected prior to delivery of materials to site to confirm low weed risk. Implementation of controls detailed in the Flora, Fauna, Pest and Weed Management Plan. 	3	2	2 - Medium
Terrestrial Environmental Quality	Inappropriate topsoil removal and storage	Loss of soil structure and seedbank	3	2	2 - Medium	<ul style="list-style-type: none"> Topsoil and suitable growth medium will be transported to the topsoil dump and managed in accordance with the Vegetation Clearing Procedure to ensure topsoil retains structure and viable seedbank. Topsoil depths will be routinely inspected to confirm appropriate removal techniques. 	2	2	1 - Low
	Disturbance of soils and alteration of surface water flows	Soil erosion due to increased runoff from cleared areas	4	3	3 - High	<ul style="list-style-type: none"> Completion of construction of MWD1 cell 3 and sediment basins / associated drains prior to the 2023/24 wet season. Implementation of controls contained within the Grants ESCP prior to the 2023/24 wet season. 	3	2	2 - Medium
		Loss of riparian habitat downstream	2	2	1 - Low	<ul style="list-style-type: none"> Spillways will be constructed to IECA (2008) design standards and include appropriate protection and flow dissipation to prevent downstream erosion. Basins and associated drainage lines will be designed by specialist engineering firm Topo. 	2	1	1 - Low
	Downstream Water Quality	Erosion due to disturbance and exposure of ground surface	Increased turbidity in watercourses impacting environmental values and/or other users	4	3	3 - High	<ul style="list-style-type: none"> Completion of construction of MWD1 cell 3 and sediment basins / associated drains prior to the 2023/24 wet season. Implementation of controls contained within the Grants ESCP. Basins will be constructed as Type-B sediment basins which is expected to greatly improve wet season performance over traditional Type-D basins. Water quality monitoring addressed in Water Management Plan with exceedances addressed under associated management TARPs. 	3	3
Erosion of stream banks downstream		Increased turbidity in watercourses impacting environmental values and/or other users	3	2	2 - Medium	<ul style="list-style-type: none"> Spillways will be constructed to IECA (2008) design standards and include appropriate protection and flow dissipation to prevent downstream erosion. Basins and MWD will be designed by specialist engineering firms Topo and GHD. 	2	1	1 - Low

Environment Factor	Incident / Event	Impact	Likelihood	Conseque	Inherent Risk	Controls	Likelihood	Consequence	Residual Risk
Downstream Water Quality	Rainfall produces sediment and/or contaminated runoff that is released offsite	Poor water quality downstream of sediment affects environmental values and/or other users	3	2	2 - Medium	<ul style="list-style-type: none"> Basins will be constructed as Type-B sediment basins which is expected to greatly improve wet season performance over traditional Type-D basins. Water treated with flocculent and tested to achieve water quality criteria prior to release. Water Management Plan includes a surface water monitoring program to detect changes in water quality with corrective actions implemented as required. Water from MWD1 will be released under conditions of WDL248-1. ESCP to be implemented to control runoff from site. 	2	2	1 - Low
Hydrological Processes	Alteration of surface water flows and discharges	Reduced / altered flows affects environmental values	3	3	2 - Medium	<ul style="list-style-type: none"> Sediment basins will be operated in accordance with IECA (2008) to minimise a reduction in environmental flows. Basins are in the upper catchment which minimise impact on water movement through the adjacent floodplain. Discharge from MWD1 is managed under WDL241, impact from which has been assessed in existing approvals. Flood modelling undertaken (WRM, 2023) indicates some isolated impact surrounding the sediment basins and WMD1 Cell 3 but negligible impact downstream during a 1% AEP flood event. 	3	1	2 - Low
	Harvesting of surface water from the sediment basins for dry season use.	Reduced flows downstream into West Arm affects environmental values	2	2	2 - Low	<ul style="list-style-type: none"> Sediment Basins will be operated in accordance with IECA (2008) to minimise a reduction in environmental flows. Management of the structures will aim to retain water at the end of the dry for use for mining and processing activities. Retention of water to be undertaken in accordance with the Water Management Plan will reduce reliance on Observation Hill Dam for raw water. 	2	1	2 - Low
Air quality and Green House Gases	Removal of vegetation	Release of GHG	5	1	2 - Medium	<ul style="list-style-type: none"> Inclusion of increased clearing area in future GHG emissions reporting 	5	1	2 - Medium

Table 1: Risk matrix adopted in the risk assessment (Grants MMP, 2022)

			CONSEQUENCE				
			1	2	3	4	5
			Insignificant	Minor	Moderate	Major	Severe
LIKELIHOOD	5	Almost Certain	Medium	Medium	High	Very High	Very High
	4	Likely	Medium	Medium	High	Very High	Very High
	3	Possible	Low	Medium	Medium	High	Very High
	2	Unlikely	Low	Low	Medium	Medium	High
	1	Rare	Low	Low	Low	Medium	High