



## Application for Works Approval Amendment

### Part V Division 3 of the *Environmental Protection Act 1986*

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|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Works Approval Number</b> | W6901/2024/1                                                                                                                                                                                                                                                                                                              |
| <b>Works Approval Holder</b> | Talison Lithium Australia Pty Ltd                                                                                                                                                                                                                                                                                         |
| <b>ACN</b>                   | 139 401 308                                                                                                                                                                                                                                                                                                               |
| <b>File Number</b>           | APP-0026509                                                                                                                                                                                                                                                                                                               |
| <b>Premises</b>              | <p>Talison Lithium Mine</p> <p>Maranup Ford Road</p> <p>Greenbushes WA 6254</p> <p>Legal description –</p> <p>Part of Mining Tenements M01/6 and M01/7</p> <p>As defined by the coordinates in Schedule 4 of the Revised Works Approval</p> <p>As defined by the Premises maps attached to the Revised Works Approval</p> |
| <b>Date of Report</b>        | 11 April 2025                                                                                                                                                                                                                                                                                                             |
| <b>Proposed Decision</b>     | Revised works approval granted                                                                                                                                                                                                                                                                                            |

#### MANAGER, PROCESS INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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# 1. Decision summary

Works Approval W6901/2024/1 is held by Talison Lithium Australia Pty Ltd (Works Approval Holder) for the Talison Lithium Mine (the premises), located as part of mining tenements M01/6 and M01/7 at Greenbushes WA 6254.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Revised Works Approval W6901/2024/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary

On 20 November 2024, the Works Approval Holder submitted an application to the department to amend Works Approval W6901/2024/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendments are related to design specifications to the embankment raise for tailings storage facility (TSF) 4 Cells 1 and 2 to 1,270m RL including:

- embankment structural design;
- Bituminous Geomembrane (BGM) liner specifications; and
- construction of Cascade Decant Towers.

#### 2.2.2 Embankment design

The Works Approval Holder is requesting the general requirement for the construction to 270 m AHD lift with “(e) embankment constructed with clay core with permeability  $<10^{-8}$  m/s” to be removed. The Works Approval Holder has advised that the BGM liner is the main seepage abatement control, not the clay embankment core, and that the logistics of constructing a clay core with that specified permeability and measuring permeability of the clay core that is up to 20m + wide at the base, and the 5 m thick is technically challenging and time consuming.

The Works Approval Holder has advised that the divider and perimeter embankments will have a mine waste rock core with subgrade underlying the BGM liner for Stage 2. The perimeter embankments instead will have a mine waste rock core with subgrade underlying the BGM liner.

#### Original design report (GHD, 2021) and granting of W6618/2021/1

During the initial assessment, and as specified in the design report (GHD, 2021), TSF4 embankments were originally to be constructed with a clay core, for the purpose of seepage abatement through the embankment walls. A clay liner was originally prescribed for the base of the TSF4 as well for the same reasons. Since the granting of this version of the works approval, several changes have been made to the design, as discussed below.

#### Amendment History – W6618/2021/1

The W6618/2021/1 amendment granted on 4 July 2023 which allowed the staged construction of starter embankment for TSF4 Cell 1 for stage 1a (261 m AHD) and 1b (265 m AHD). Detail within report (GHD, 2023a) submitted during this application indicated that the perimeter

embankment will maintain the clay core, however the divider embankment design was changed from the clay core to a waste rock core and clay facing section on the western side of the divider embankment. It is noted that the change in this design was not specifically indicated by the Works Approval Holder at the time and was later assessed during the licence amendment (granted 1 August 2024) as a deviation to design.

Amendment granted on 1 September 2023, involved the modification of TSF4 Cell 1 liner. The supporting document submitted during this application indicated that the north-eastern embankment will be constructed with a waste rock core where the BGM liner would be placed along the embankment.

Amendment granted 27 March 2024 related to the modification of TSF4 Cell 2 to incorporate BGM liner. In the report submitted for this application, the design drawings indicated that the perimeter embankment included a mine waste rock core with the BGM liner. The report (GHD, 2023b) advised that the whilst the *'external embankment geometry will be retained, the original clay core will be replaced with a subgrade facing'*. In this assessment, the department considered the changes between clay liner and BGM liner and determined that due to permeability of the BGM, even with allowing for potential defects, that the seepage will be greatly reduced between the clay liner and BGM liner.

#### Addendum to Detailed Design Report (GHD, 2024)

This addendum indicates that the perimeter and northern starter embankments will have a 5 m wide subgrade facing extending to a shallow cut-off trench, whilst the divider embankment will retain the geometry of the portion of the dividing embankment that has been constructed (with the clay facing on the western side of the embankment).

#### Amendment to divider embankment – clay facing

This deviation to design was originally indicated during the submission of the Critical Containment Infrastructure Report for TSF4 Cell 1a and assessed under the licence amendment granted 1 August 2024. For the same reasons listed in the licence assessment (that (1), the inclusion of BGM lining along Cell 2; and (2), considering the change relates to an internal embankment; the assessment considered it unlikely that change would increase the overall seepage from the facility footprint), this change is considered acceptable.

### **2.2.3 BGM liner specifications**

The Works Approval Holder is requesting to change the existing specifications of Table 1, item 2, requirement (e), (iv) and (v) for the tensile properties of the BGM liner.

They are requesting:

1. Changing TSF4 Coletanche ES3 minimum tensile strength from 30 kN/m to 21.8 kN/m which is the manufacturers minimum cross direction tensile strength design specification; and
2. Changing TSF4 Coletanche ES3 minimum tensile resistance from 1,025 N to 638N which is the manufacturer's minimum cross direction tensile tear resistance design specification.

These values were originally provided in the technical specification (GHD, 2023) shown in Table 1. The delegated officer recognises that the current specifications in the Works Approval refer to these values as a minimum value, even though the table in GHD (2023) referred to these as maximum values.

**Table 1: BGM Properties (GHD, 2023)**

| Dimensions                        | Direction | Value   | Standard   |
|-----------------------------------|-----------|---------|------------|
| Tensile strength (maximum)        | MD        | 35 kN/m | ASTM D7275 |
|                                   | XD        | 30 kN/m |            |
| Tensile tear resistance (maximum) | XD        | 1,225 N | ASTM D4073 |
|                                   | MD        | 1,025 N |            |

The Works Approval Holder has requested these changes as the current requirements do not align with the manufacturer's design specifications (detailed in Table 2).

**Table 2: BGM liner properties as per product data sheet<sup>1</sup>**

| Dimensions      | Length                 | Standard   | Average | Minimum   |
|-----------------|------------------------|------------|---------|-----------|
|                 | Width                  |            |         |           |
| Tear strength   | Longitudinal direction | ASTM D7275 | 33 kN/m | 24.8 kN/m |
|                 | Cross direction        |            | 29 kN/m | 21.8 kN/m |
| Tear resistance | Longitudinal direction | ASTM D4073 | 950 N   | 713 N     |
|                 | Cross direction        |            | 850 N   | 638 N     |

### 2.2.4 Cascade decant tower

The Works Approval Holder has advised that the construction of this raise will also involve the construction of cascade decant towers.

It is noted that the original works approval (W6618/2021/1) does not specify the design of a decant system and instead, suggested that a mobile decant pump will be used during the initial deposition to accommodate for the migration of the supernatant pond in the initial stages. Construction of the decant tower may now be considered due to the settling of the pond location.

The Works Approval Holder has indicated that the construction of these decant systems will not have any impact on the currently assessed capacity of the decant pumping system, noting that the current Works Approval does not specify decant construction. The Works Approval Holder has also confirmed that construction and operation of decant towers would have no changes to the previous pumping capacity or water management of TSF4.

The delegated officer considers that the construction of these facilities will not significantly change the operations associated with TSF4 at an embankment height of 1,270 m RL.

### 2.2.5 Mining Act 1987

As part of the assessment, the delegated officer obtained advice from the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) regarding the scope of this application, specifically to ensure that the design proposed is consistent with that of the most current mining proposal under the *Mining Act 1987*, and that there are no structural implications to these changes. DEMIRS advised that the addendum to the design report (GHD, 2024) and the 'Talisson

<sup>1</sup> [FT COLETANCHE-ES3-ASTM-\(SI-units\) EN](#)

*Lithium Pty Ltd Greenbushes Lithium Mine Expansion TSF4 Life of Mine (LOM) Stability Update Rev 0'* dated June 2024, have undergone a geotechnical review and no further tenement conditions, or further questions were raised.

Notwithstanding the above, the delegated officer notes that it is the ongoing responsibility of the Works Approval Holder to ensure that they have obtained all relevant approvals under other legislation.

### 3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

#### 3.1 Source-pathways and receptors

##### 3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 3 below. Table 3 also details the proposed control measures the Works Approval Holder has proposed to assist in controlling these emissions, where necessary.

**Table 3: Works Approval Holder controls**

| Emission                                                      | Sources                                                                                                                                            | Potential pathways                                                                                                                                                                                                          | Proposed controls                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction</b>                                           |                                                                                                                                                    |                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Dust                                                          | Earthworks / construction associated with TSF4 embankment lift to 270 m AHD                                                                        | Air / windborne pathway                                                                                                                                                                                                     | <u>Existing conditions (W6901/2024/1):</u> <ul style="list-style-type: none"> <li>Condition 1: manage dust generation during construction of embankment lift;</li> </ul> <u>Existing controls for dust (L4247/1991/13):</u> <ul style="list-style-type: none"> <li>Conditions 27, 29, 35 and 36 require dust monitoring and management.</li> </ul>                                                                                                                                                                                                                                                                                                                                    |
| <b>Operation</b>                                              |                                                                                                                                                    |                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Tailings and contaminated water (metals / metalloids) seepage | Additional tailings storage associated with TSF4 embankment lift to 270 m AHD and additional tailing deposition (100,000 tonnes per year increase) | <ol style="list-style-type: none"> <li>Seepage through base and embankments causing groundwater contamination and mounding;</li> <li>Seepage through base and embankments causing contamination of surface water</li> </ol> | <u>Existing conditions (W6901/2024/1):</u> <ul style="list-style-type: none"> <li>Condition 2: design construction – includes tied in BGM liner (permeability of <math>&lt;1.0 \times 10^{-14}</math> m/s);</li> <li>Condition 3: installation of new groundwater bores;</li> <li>Condition 4: groundwater monitoring; and</li> <li>Condition 5: surface water monitoring</li> </ul> <u>Existing condition (W6618/2021/1):</u> <ul style="list-style-type: none"> <li>Existing liners (mixture of clay liners engineered to average permeability of <math>&lt;1 \times 10^{-9}</math> m/s and BMG liner); and</li> <li>Underdrainage system and seepage collections sumps.</li> </ul> |

### 3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors and contractors of the Works Approval Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

**Table 4: Sensitive human and environmental receptors and distance from prescribed activity**

| Human receptors                                                                                                  | Distance from prescribed activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Residential dwellings south of TSF4                                                                              | <p>The Greenbushes townsite is ~3.2 km north of TSF4.</p> <p>The closest residential dwellings to TSF4 are:</p> <p>K: Lot 504 on Plan 73712 (Talison owned) ~1.3 km south-west of TSF4</p> <p>J: Lot 11888 on Plan 162545 (Talison owned) ~1.1 km south of TS4</p> <p>I: Lot 5220 on Plan 136672 ~1.0 km south of TSF4</p>                                                                                                                                                                                                                   |
| Downstream surface water and groundwater users                                                                   | <p>Whilst the groundwater underlying the site is not recognised as a strategic resource area (not listed as a proclaimed area) there are a number of residential surface and groundwater users surrounding the site.</p> <p>The results of a water survey carried out by the licence holder in 2021 indicates that downstream users access surface water from Norilup Brook, Hester Brook and Woljenup Creek for purposes including drinking water, domestic uses such as showering, laundry, water for gardens, recreational activities</p> |
| Environmental receptors                                                                                          | Distance from prescribed activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Blackwood River and tributaries, including Woljenup creek                                                        | Woljenup creek is immediately south and downgradient of TSF4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Nearby native vegetation                                                                                         | Immediately adjacent to TSF4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| DBCA Legislated Tenure Greenbushes State Forest                                                                  | Surrounding the premises                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Threatened/priority flora and fauna                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cultural receptors                                                                                               | Distance from activity / prescribed premises                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Aboriginal Heritage Site – Blackwood River and Woljenup Creek listed under <i>Aboriginal Heritage Act 1972</i> . | <p>Woljenup creek tributaries running through TSF4 footprint.</p> <p>Woljenup creek immediately downstream of TSF4.</p>                                                                                                                                                                                                                                                                                                                                                                                                                      |

### 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Works Approval Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the Works Approval Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the Works Approval Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

The Revised Works Approval W6901/2024/1 that accompanies this Amendment Report authorises construction and time-limited operations. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises i.e. TSF4 embankment height to 270 m AHD. A risk assessment for the operational phase has been included in this Amendment Report, however licence conditions will not be finalised until the department assesses the licence application.

**Table 5. Risk assessment of potential emissions and discharges from the Premises during construction and operation**

| Risk Event                                                                                                                                                   |                                                        |                                                                                                                                                 |                                                                                                                                          |                                  | Risk rating <sup>1</sup><br>C = consequence<br>L = likelihood | Works Approval Holder's controls sufficient? | Conditions <sup>2</sup> of works approval                                                                                                                                                                        | Justification for additional regulatory controls                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source/Activities                                                                                                                                            | Potential emission                                     | Potential pathways and impact                                                                                                                   | Receptors                                                                                                                                | Works Approval Holder's controls |                                                               |                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Construction                                                                                                                                                 |                                                        |                                                                                                                                                 |                                                                                                                                          |                                  |                                                               |                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Construction activities associated with TSF embankment lifts                                                                                                 | Dust                                                   | Air/windborne pathway causing impacts to health, amenity and nearby native vegetation                                                           | Native vegetation immediately adjacent<br><br>Residences 1km south of TSF4                                                               | Refer to section 3.1.1           | C = Slight<br><br>L = Unlikely<br><br>Low Risk                | Y                                            | Condition 1: dust suppression with water cart                                                                                                                                                                    | Current works approval conditions are sufficient to mitigate the risk during construction.                                                                                                                                                                                                                                                                                                                                                                                                        |
| Time-limited Operation                                                                                                                                       |                                                        |                                                                                                                                                 |                                                                                                                                          |                                  |                                                               |                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Changes to previously assessed seepage risk due to requested changes to seepage controls (i.e. embankment core permeability and liner specification changes) | TSF4 seepage water contaminated with metals/metalloids | Increased seepage through base and embankments causing groundwater contamination and mounding and impacting the root zones of native vegetation | Nearby native vegetation                                                                                                                 | Refer to section 3.1.1           | C = Moderate<br><br>L = Possible<br><br>Medium Risk           | Y                                            | Condition 2: construction requirements (for lining with BGM)<br><br>Condition 3: monitoring well installation                                                                                                    | The delegated officer has considered the requested changes to the design are largely administrative, given the previous design reports and current design drawings on the works approval. It is noted that whilst the original design report (GHD, 2021) considered and specified the clay core as the main seepage abatement control (through the embankments), the updated design to include the BGM liner (which has a lower specified permeability) meets the intent of the clay core design. |
|                                                                                                                                                              |                                                        | Increased seepage through base and embankments causing groundwater contamination and mounding                                                   | Groundwater users (human receptors) – domestic, stock, irrigation                                                                        | Refer to section 3.1.1           | C = Moderate<br><br>L = Unlikely<br><br>Medium Risk           | Y                                            |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                              |                                                        | Seepage through base and embankments causing contamination of surface water                                                                     | Surface water users (human receptors) – drinking water and consumptions of fish/cray fish which may have been exposed to bioaccumulation | Refer to section 3.1.1           | C = Major<br><br>L = Possible<br><br>High Risk                | Y                                            | Condition 2: construction requirements (for lining with BGM)<br><br>Condition 3: monitoring well installation (additional monitoring bore adjacent to SW23-02)<br><br>Condition 4 and 17: groundwater monitoring |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                              |                                                        |                                                                                                                                                 | Surface water users (human receptors) – domestic use, stock, irrigation                                                                  | Refer to section 3.1.1           | C = Moderate<br><br>L = Possible<br><br>Medium Risk           | Y                                            | Condition 5 and 18: surface water monitoring<br><br>Condition 11 – derivation of DAF derived values                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                              |                                                        |                                                                                                                                                 | Water quality and ecology of creek lines and surface water bodies (Woljenup Creek and other tributaries of Blackwood River)              | Refer to section 3.1.1           | C = Moderate<br><br>L = Possible<br><br>Medium Risk           | Y                                            | Condition 5 and 18: surface water monitoring                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed Works Approval Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

## 4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

**Table 6: Consultation**

| Consultation method                                                                                      | Comments received                                                                          | Department response  |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------|
| Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal 7 January 2025. | Refer to section 2.2.5                                                                     | Noted                |
| Works Approval Holder was provided with draft amendment on 31 January 2025.                              | Comments received by the Works Approval Holder on 20 February 2025.<br>Refer to Appendix 1 | Refer to Appendix 1. |

## 5. Conclusion

Based on the assessment in this Amendment Report, the delegated officer has determined that a Revised Works Approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### Requested changes to embankment specifications

The delegated officer has accepted the Works Approval Holder's requested change to embankment design, noting that previous design reports for this facility have demonstrated this proposed embankment construction design due to the updates to include the BGM liner which is considered the main seepage abatement control. The department has previously assessed the difference between clay lining and BGM lining<sup>2</sup> (DWER, 2024), and agreed that the permeability of the BGM liner, is four orders of the magnitude lower than the specified permeability of the clay material. The delegated officer considers that provided the BGM liner is installed correctly, to the manufacture's specifications and tied into existing liner (all which are required under the current works approval), that the removal specification for the clay core will not significantly impact the risk of seepage from the facility.

### Requested changes to BGM liner specifications

The delegated officer has determined that it will not significantly impact the design considering the specifications have been amended to align with the design sheet for the BGM product. The delegated officer has also decided to include both directions (longitudinal and cross direction) for the properties for clarity.

### 5.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Works Approval as part of the amendment process.

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<sup>2</sup> [W6618/2021/1 - IR-T15 Amendment report template](#)

**Table 7: Summary of works approval amendments**

| Condition no.                | Proposed amendments                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Condition 2, Table 1, item 1 | Removal of requirement (e) that specifies the embankment to be constructed with a clay core with a specified permeability of $<10^{-8}$ m/s.                                                                                                                                                                                                                                                                                                       |
| Condition 2, Table 1, item 2 | <p>Updates to the requirement (e):</p> <ul style="list-style-type: none"> <li>(iv) change the requirement for tensile strength to meet the minimum value for that product and specify the direction of the parameter; and</li> <li>(v) change the requirement for tensile resistance to meet the minimum value for that product and specify the direction of that parameter.</li> </ul> <p>Inclusion of specifications for the Floor BGM liner</p> |

## References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. GHD 2021, *Talison Lithium Pty Ltd, Talison TSF4 Detailed Design Report – Revision 3*.
5. GHD 2023a, *Talison Commissioning TSF4 Stage 1a, TSF4 Cell 1 – Supporting information for replacing clay liner with BGM*.
6. GHD 2023b, *Substituting the Clay Liner with Bituminous Geomembrane (BGM) in TSF4 Cell 2*. Report prepared for Talison Lithium.
7. GHD, 2023c, *Talison Lithium Pty Ltd, TSF4 Cell 1 and Cell 2 1270 mRL Raise, Technical Specification*.
8. GHD 2024, *TSF4 Detailed Design Addendum to Design Report – Revision 0*.

## Appendix 1: Summary of Works Approval Holder's comments on risk assessment and draft conditions

| Condition / Items                                                                                      | Summary of Works Approval Holder's comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Department's response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Works Approval Conditions</b>                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Table 1 (1) (e)                                                                                        | Clay liner as drafted is no longer required as containment is provided by BGM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Noted. The Works Approval Holder's request to remove this requirement has been accepted. The delegated officer considers that the risks associated with seepage with TSF4 has been adequately assessed including the changes to the liner from clay lining to BGM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Table 1 (2) (e)                                                                                        | The Works Approval Holder provided suggested updates and additional clarification to the design specification for the BGM, including that for embankment and floor BGM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The Works Approval Holder's request to differentiate between the embankment BGM liner properties and the floor strength requirements has been accepted and updated within the table. The department notes that this differentiation matches the original design specification for the TSF (for floor basin and embankment slopes (Coletanche ES1 and Coletanche ES3)).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Groundwater monitoring well adjacent to surface water monitoring point SW23-02 (as shown in Figure 13) | <p>The Works Approval Holder requested the removal of the proposed monitoring bore as:</p> <ul style="list-style-type: none"> <li>a) The bore would be on non-Talison-owned private property; and</li> <li>b) The very steep terrain and limited access to the proposed location makes drill rig access problematic and unsafe.</li> </ul> <p>The Works Approval advised that there are currently two bores located in the Woljenup creek drainage lines, monitored as part of the current Licence:</p> <ul style="list-style-type: none"> <li>c) Nested bores PB22/01 located in the eastern creek drainage line approximately 320m south of TSF4</li> <li>d) Nested bores MB22/23 located in the western creek drainage line approximately 840m south of TSF4.</li> </ul> <p>The Works Approval Holder indicated that these existing bores would provide sufficient early detection of any potential seepage impacts, and potential impacts of TSF4 as far south as SW23-02 would be detected in surface water rather than groundwater as groundwater flows originating beneath TSF4 are modelled to daylight approximately 750m south of TSF4.</p> | <p>Whilst the department acknowledges the Works Approval Holders comments regarding the complications with installing a bore at this site, this request will require further consideration and likely impact the progression of the current assessment.</p> <p>Most notably:</p> <ul style="list-style-type: none"> <li>• the intent of this bore, as detailed in the section 3.3.5 of Decision Report_W6901/2024/1, is to determine background concentrations of key analytes in groundwater to inform the Dilution Attenuation Factor value. The potential removal of this bore will need to be considered with regard to this assessment outcome from the initial assessment,</li> <li>• this assessment will likely involve further technical review and input from the Works Approval Holder, and</li> <li>• consideration will be needed for potential alternate locations.</li> </ul> <p>Given this, the department will carry over this assessment to the next works approval amendment application assessment (submitted to the department, Ref: EO-APP-0028421).</p> |

| Condition / Items                 | Summary of Works Approval Holder's comment                                                                                      | Department's response                                                                                                                             |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments – Draft Amendment Report | Summary of Works Approval Holder's comment                                                                                      | Department's response                                                                                                                             |
| 2.2.2 Embankment Design           | The Works Approval Holder provided clarification to the embankment design as described in this section.                         | The description of the embankment design has been updated as per the Works Approval Holder's request to align with the updated embankment design. |
| 2.2.4 Cascade decant tower.       | The Works Approval Holder provided clarification to the cascade decant tower design and operation as described in this section. | The description of the cascade decant towers operation has been updated.                                                                          |

## Appendix 2: Application validation summary

| SECTION 1: APPLICATION SUMMARY                                                                                          |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application type</b>                                                                                                 |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| Amendment to an existing works approval                                                                                 | <input checked="" type="checkbox"/>                                                                         | Current works approval number                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | W6901/2024/1                                                                                                                                                      |
| Date application received                                                                                               |                                                                                                             | 20 November 2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                   |
| <b>Compliance reporting</b>                                                                                             |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| Has the required compliance report(s) been received?                                                                    |                                                                                                             | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                   |
| <b>Applicant and premises details</b>                                                                                   |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| Applicant name/s (full legal name/s)                                                                                    |                                                                                                             | Talisson Lithium Australia Pty Ltd (139 401 308)                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                   |
| Does the following information in the application form match those listed in the current ASIC company extract?          | Applicant name/s (full legal names):<br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Trading name (if applicable):<br>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>                                 |
|                                                                                                                         | Australian Company Number (ACN):<br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Registered business address:<br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                               |
| Has the applicant demonstrated occupancy (proof of occupier status)?                                                    | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mining lease / tenement <input checked="" type="checkbox"/> - <i>no changes to existing premises boundary and expiry dates are in line with instrument expiry</i> |
| Premises name                                                                                                           |                                                                                                             | Talisson Lithium Mine                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                   |
| Premises location                                                                                                       |                                                                                                             | Part of mine tenements M01/6 (expiry: 27/12/2026) and M01/7 (expiry: 27/12/2026)                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                   |
| Local Government Authority                                                                                              |                                                                                                             | Shire of Bridgetown-Greenbushes                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| <b>Application documents</b>                                                                                            |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| HPCM file reference number                                                                                              |                                                                                                             | Instrument (folder): DER2024/000099<br>Application (subfolder): DER2024/000099~1                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                   |
| Key application documents (supporting information provided in addition to the application form)                         |                                                                                                             | <u>Works approval supporting document:</u> <ul style="list-style-type: none"> <li>Attachment 8A: TSF4 Seepage Assessment: Human Health and Environmental Risk Assessment;</li> <li>Attachment 8B: Substituting the Clay Liner with Bituminous Geomembrane (BGM) in TSF4 Cell 2</li> </ul> <u>Not submitted as part of app but relevant to assessment:</u> <ul style="list-style-type: none"> <li>Addendum to Detailed Design Report; and</li> <li>Original design report (GHD, 2021).</li> </ul> |                                                                                                                                                                   |
| <b>Scope of application/assessment</b>                                                                                  |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| Summary of proposed activities and/or changes to existing operations                                                    |                                                                                                             | As detailed in section 2.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                   |
| <b>Category number/s (activities that cause the premises to become a prescribed premises)</b>                           |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| <b>Table 1: Prescribed premises categories</b>                                                                          |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |
| Prescribed premises category and description                                                                            | Proposed or existing production or design capacity <sup>1</sup>                                             | Proposed changes to the existing production or design capacity <sup>1</sup> (amendments only)                                                                                                                                                                                                                                                                                                                                                                                                    | Proposed activities, processes, or operations, including any changes to existing operations (if amendment)                                                        |
| Category 5: Processing or beneficiation of metallic or non-metallic ore                                                 | <u>Existing:</u><br>7,100,000 tonnes per year                                                               | No change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Change to design specifications.                                                                                                                                  |
| Are there any outstanding Notices of Amendment that need to be amended in the works approval / licence (if applicable)? |                                                                                                             | Notice of amendment of licence expiry dates (2016)<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Notice of amendment of licence reporting requirements (2022)<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Amendment Notices<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                     |                                                                                                                                                                   |

|                                                                                                                                          |                                                                                                  |                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Are there any unresolved DWER referred amendments from Regulatory Assurance to Industry Regulation relating to this premises?            | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              | N/A                                                                                                                                                                                                                                                                                                  |
| <b>Category specific checklists</b>                                                                                                      |                                                                                                  |                                                                                                                                                                                                                                                                                                      |
| Are there any of DWER's prescribed premises category checklists (application form annexes) relevant to the scope of the application?     | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | TSF checklist                                                                                                                                                                                                                                                                                        |
| Does the application include a completed version of the relevant prescribed premises category checklist(s)?                              | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> |                                                                                                                                                                                                                                                                                                      |
| <b>Legislative context and other approvals</b>                                                                                           |                                                                                                  |                                                                                                                                                                                                                                                                                                      |
| Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | Referral decision No: (noting - not for this specific assessment but overall project - assessment no. 2172)                                                                                                                                                                                          |
| Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?                                         | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | Ministerial statement No: MS 1111<br>EPA Report No: 1635                                                                                                                                                                                                                                             |
| Is the proposal a Major Project or subject to a State Agreement Act?                                                                     | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | Lead Agency: JTSI                                                                                                                                                                                                                                                                                    |
| Has the proposal been referred and/or assessed under the EPBC Act?                                                                       | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | Reference No:<br>EPBC 2018/8206 and EPBC 2013/6904.                                                                                                                                                                                                                                                  |
| Has the applicant obtained approval for their Mining Proposal?                                                                           | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> | Reg ID 92728 – Consult with DEMIRS to ensure requested changes are still consistent with the MP                                                                                                                                                                                                      |
| Has the applicant obtained all relevant planning approvals?                                                                              | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> | Mining Act 1978                                                                                                                                                                                                                                                                                      |
| Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?                                  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | CPS No: N/A<br>For noting – not specifically in relation to this proposal but clearing for the area of TSF4 has been approved under MS 1111.                                                                                                                                                         |
| Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?                               | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |                                                                                                                                                                                                                                                                                                      |
| Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?                              | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |                                                                                                                                                                                                                                                                                                      |
| Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?                          | Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>                   |                                                                                                                                                                                                                                                                                                      |
| Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?                                                                 | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |                                                                                                                                                                                                                                                                                                      |
| Is the Premises subject to any other Acts or subsidiary regulations?                                                                     | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | <ul style="list-style-type: none"> <li>Part IV of the EP Act (MS 1111)</li> <li>Environmental Protection (Noise) Regulations 1997, Regulation 17 exemption</li> <li>Part V of the EP Act, Native Vegetation Clearing permit</li> <li>Mining Act 1978</li> <li>Contaminated Sites Act 2003</li> </ul> |
| Is the Premises within an Environmental Protection Policy (EPP) Area or State Environmental Policy (SEP) Area?                           | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |                                                                                                                                                                                                                                                                                                      |
| Is the Premises subject to any EPP or SEP requirements?                                                                                  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |                                                                                                                                                                                                                                                                                                      |
| Is the Premises a known or suspected contaminated site under the Contaminated Sites Act 2003?                                            | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                              | Classification: contaminated – restricted use (C–RU) ID 34013<br>Date of classification: June 2007, and classified again October 2020                                                                                                                                                                |