



Our ref: DOC24/387833  
Your ref: SSD-33083358

Jack Turner  
Senior Environmental Assessment Officer  
Department of Planning, Housing & Industry  
Email: [jack.turner@planning.nsw.gov.au](mailto:jack.turner@planning.nsw.gov.au)

Dear Jack

**Subject: Moolarben OC3 Extension Project – Response To Submissions (SSD-33083358)**

Thank you for your request via the NSW Planning Portal dated 19 March 2024 to the Biodiversity, Conservation and Science Group (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) inviting comments on the Response to Submissions (RTS) for the Moolarben OC3 Extension Project. BCS and the NSW National Parks and Wildlife Service (NPWS), hereafter referred to collectively as NSW DCCEEW, have consulted closely and provide this combined response.

NSW DCCEEW has reviewed the amendment report and the revised Biodiversity Development Assessment Report (BDAR) against the recommendations set out in our advice of 25 January 2023 on the Environmental Impact Statement (EIS). While the proponent has addressed some of our previous recommendations, some recommendations have not been addressed or insufficient justification or evidence has been provided.

In our advice on the EIS, we recommended the proponent revise both the development footprint, and avoid and minimise strategies, to significantly reduce impacts of the proposed development to Munghorn Gap Nature Reserve and threatened biodiversity. We also recommended a minimum setback of at least 500 metres from the geological features within Munghorn Gap Nature Reserve to significantly reduce direct loss of habitat and commensurately reduce blasting vibration impacts.

In response to our recommendations, the proponent has:

- reduced the indicative surface disturbance extent in the EIS from 825 hectares to 675 hectares. This change reduces the area of impact for *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community* (Box Gum Woodland CEEC) from 477.75 hectares to 401.12 hectares and regent honeyeater important mapped habitat from 184.41 hectares to 81 hectares,
- established a 100 metre setback from the boundary of Munghorn Gap Nature Reserve and the mapped rocky habitat for the broad-headed snake, eastern cave bat and large-eared pied bat, and
- reduced the blast criterion from 250 millimetres per second (mm/s) to 50mm/s at the nearest rocky habitat features, unless further geotechnical investigation supports a higher value.

Even with these revisions, impacts on important biodiversity values, including those within Munghorn Gap Nature Reserve, remain likely. We have identified that the revised project is likely to result in a serious and irreversible impact (SAII) on Box Gum Woodland CEEC, regent honeyeater, broad-headed snake, eastern cave bat and large-eared pied bat.

We set out the key residual matters below, and have included detailed recommendations and comments at **Attachments A, B, C, D, E and F**. In some instances, the BDAR does not meet the minimum requirements of the Biodiversity Assessment Method (BAM).

### **Further effort to avoid and minimise project impacts is required**

We have reviewed the measures taken to reduce impacts to key biodiversity values. The revised project does not adequately demonstrate that the impacts to biodiversity have been avoided or minimised as required by the NSW *Biodiversity Conservation Act 2016* (BC Act) and the BAM. For example, the revised BDAR does not demonstrate avoidance of:

- Munghorn Gap Nature Reserve
- large, connected areas of woody vegetation identified as Box Gum Woodland CEEC, which includes koala and squirrel glider habitat, and the regent honeyeater Important Habitat Mapped areas along the boundary of the development footprint close to Munghorn Gap Nature Reserve
- rocky habitat for SAI entities large eared pied-bat, eastern cave bat and broad-headed snake, and
- riparian areas of Murdering and Moolarben Creeks, which are unlikely to be available for development.

We recommend that the proponent makes further effort to avoid and then minimise impacts prior to offsetting residual impacts to key biodiversity values, including SAI entities.

### **Mitigation measures do not address the residual and irreplaceable impact to rocky habitat for SAI entities large eared pied-bat, eastern cave bat and broad-headed snake**

The mitigation measures the proponent has proposed do not address the residual impact to the broad-headed snake, eastern cave bat and large-eared pied bat, which are all SAI entities, if rocky habitat is physically damaged or destroyed. These entities are at risk of SAI against Principle 4, meaning they are unlikely to respond to management. NSW DCCEEW recommends that the proponent prioritise protecting the rocky habitat in the first instance. If this habitat cannot be secured, the proponent must address the circumstances in which an impact to rocky habitat is detected and actions the proponent will take in the event habitat is damaged or destroyed.

### **Address additional and appropriate measures for any residual SAI impacts**

Once impacts to SAI entities have been avoided and minimised to the greatest extent practicable, the proponent will need to develop additional and appropriate measures to minimise impacts to SAI entities to comply with section 7.16(3) of the BC Act. The proponent should develop additional and appropriate measures in consultation with BCS, and these should be finalised prior to development consent being issued and included in conditions of consent.

### **The extent of Box Gum Woodland CEEC is likely underestimated**

Our EIS response raised concerns that Box Gum Woodland CEEC may have been designated as Category 1 land. The proponent provided only limited *'Interim Grasslands and Other Groundcover Method'* (IGGAM) transect and plot data to BCS for review. However, this data is not referenced in the assessment of Box Gum Woodland CEEC presence or absence presented in Section 1.3 of the revised BDAR.

The proponent needs to explain how the potential presence of Box Gum Woodland CEEC has been considered for these areas within the land categorisation method, and in doing so refer to the supporting evidence for absence of the CEEC against the relevant NSW Scientific Committee Final Determination. All areas of Box Gum Woodland CEEC must be assessed in accordance with the BAM.

### **The buffer from the Munghorn Gap Nature Reserve is insufficient**

The 100 metre buffer proposed does not meet the minimum 500 metre buffer recommended by NSW DCCEEW. The limited buffer raises concerns including, but not limited to, public safety, light

pollution and weed incursion. We recommend the open cut pit extents be reviewed to increase the buffer to 500 metres as a precautionary measure to avoid impacts on managing Munghorn Gap Nature Reserve and its natural features.

### **Noise impacts on Munghorn Gap Nature Reserve are poorly identified and assessed**

The proponent has not specifically included the Munghorn Gap Nature Reserve in the noise modelling report. As such, it does not consider the potential impact on public use of the reserve (i.e., remote bushwalkers, day user areas, scientific studies or camping) and impacts to wildlife from noise pollution.

The current proposal will see Munghorn Gap Nature Reserve being subject to noise levels that exceed the recommended amenity noise levels defined by the NSW Environment Protection Authority (EPA). The expected noise levels are likely to adversely impact on wildlife in Munghorn Gap Nature Reserve. Munghorn Gap Nature Reserve should not be used as a buffer for impacts to other sensitive receivers.

### **Blasting and vibration limits are not sufficient to prevent damage to rocky habitat and the Munghorn Gap Nature Reserve**

NSW DCCEEW considers that the proposed 50mm/s Peak Particle Velocity (PPV) is not enough to ensure there is no damage to rocky habitat and other values encompassed by Munghorn Gap Nature Reserve. There is a lack of available data for natural geological features, however minor impacts can occur at 15mm/s for areas of poor rock quality. Given the uncertainty of the surrounding rock quality and its susceptibility to impacts, the proponent should set the limit on blasting at 15mm/s to ensure the precautionary principle is met.

We note the commitment made to date by the proponent to revegetate in the Habitat Enhancement Area and revegetate the land post-mining. We appreciate these initiatives and welcome the opportunity for the proponent to provide further details to allow for a detailed assessment of the biodiversity benefits. Finally, we have also reviewed floodplain management aspects and raise no issues with the proposal on this basis.

We remain available to discuss our response further with Department of Planning, Housing and Infrastructure (DPHI) to ensure that the full extent of impacts of this proposal are identified, and measures to avoid and minimise impacts established prior to determination.

If you have any questions about this advice, please do not hesitate to contact Kate Tierney, Senior Conservation Planning Officer, via [kate.tierney@environment.nsw.gov.au](mailto:kate.tierney@environment.nsw.gov.au) or (02) 4904 2782.

Yours sincerely



**Sarah Carr**  
**Director North West**  
**Biodiversity, Conservation and Science**

25 June 2024

Attachment A – NSW DCCEEW's Consolidated Summary of Recommendations

Attachment B – BCS's Review of the Response to Submissions

Attachment C – BCS Advice on Serious and Irreversible Impact Entities

Attachment D – BCS's Detailed Comments - Biodiversity

Attachment E – NPWS's Detailed Comments – Biodiversity

Attachment F - Bilateral Assessment Information and Data Requirements

## BCS's Summary of Recommendations

### Moolarben OC3 Extension Project – Response to Submissions

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|               |                                                                        |
|---------------|------------------------------------------------------------------------|
| BAM           | Biodiversity Assessment Method                                         |
| BAM-C         | Biodiversity Assessment Method Calculator                              |
| BC Act        | <i>Biodiversity Conservation Act 2016</i>                              |
| BC Regulation | Biodiversity Conservation Regulation 2017                              |
| BCS           | Biodiversity Conservation Science Group                                |
| BDAR          | Biodiversity Development Assessment Report                             |
| CEEC          | Critically Endangered Ecological Community                             |
| DNG           | Derived Native Grassland                                               |
| DPHI          | Department of Planning, Housing and Infrastructure                     |
| EIS           | Environmental Impact Statement                                         |
| EPA           | Environmental Protection Authority                                     |
| EPBC Act      | <i>Environmental Protection and Biodiversity Conservation Act 1999</i> |
| GDE           | Groundwater Dependent Ecosystem                                        |
| IBRA          | Interim Biogeographic Regionalisation of Australia                     |
| IGGAM         | Interim Grasslands and Other Groundcover Method                        |
| LiDAR         | Light Detection and Ranging                                            |
| LLS Act       | <i>Local Land Services Act 2013</i>                                    |
| MIC           | Maximum instantaneous change                                           |
| MSEC          | Mine Subsidence Engineering Consultants                                |
| MNES          | Matters of National Environmental Significance                         |
| NPWS          | NSW National Parks and Wildlife Service                                |
| NSW DCCEEW    | NSW Department of Climate Change, Energy, the Environment and Water    |
| NVR map       | Native Vegetation Regulatory map                                       |
| PCT           | Plant Community Type                                                   |
| PPV           | Peak Particle Velocity                                                 |
| RTS           | Response to Submissions                                                |
| SAIL          | Serious and Irreversible Impacts                                       |
| SMART         | Specific, Measurable, Achievable, Relevant, and Time-Bound             |
| TARP          | Transport Access Regional Partnerships                                 |

|          |                                         |
|----------|-----------------------------------------|
| TEC      | Threatened Ecological Community         |
| TBDC     | Threatened Biodiversity Data Collection |
| VI score | Vegetation Integrity Score              |

## BCS's Recommendations on the Response to Submissions Report

- 1.3 If the project is approved, ensure that species credits calculated for prescribed impacts to pink-tailed legless lizard are included in the consent conditions.
- 2.2 Set an upper vibration limit based on Peak Particle Velocity (PPV) threshold criteria.
- 3.3a Provide an assessment of airblast impacts on threatened species and their habitats outside the development footprint.
- 3.3b Set an airblast overpressure maximum limit that effectively mitigates airblast impacts on threatened species and their habitats outside the development footprint.
- 4.1a Conduct and document monthly visual inspections of mapped rocky habitat closest to blast locations before and after the associated blasts to determine whether blast-related impacts have occurred.
- 4.1b Consult with BCS when updating the blast management plan.
- 5.1 If approved, impose noise criteria conditions at Munghorn Gap Nature Reserve and Goulburn River National Park limiting noise levels in accordance with the NSW EPA Noise Policy for Industry (2017).
- 7.1a Carry out further measures to avoid and minimise impacts prior to offsetting for key biodiversity entities including SAI entities.
- 7.1b As part of considering whether to approve the project, note BCS advice in relation to SAI entities including the adequacy of the avoidance and minimisation to biodiversity impacts proposed, and for this advice be incorporated into project conditions.
- 14.1a Explain how the potential presence of Box Gum Woodland CEEC has been considered within the land categorisation method (for the remaining land mapped within the BDAR as Category 1- exempt). This explanation should comprehensively and clearly present the evidence to support the claim that the CEEC is absent with reference to the NSW Scientific Committee Final Determination for that community.
- 14.1b Where Box Gum Woodland CEEC is known or assumed present, assess the land in accordance with the BAM.
- 17.1 Provide ground and surface water data to BCS for review.
- 18.1 Review the Plant Community Type (PCT) selection for PCT 1711, and either provide additional justification for the selecting PCT 1711 or assign a more appropriate PCT.
- 19.1 Review the vegetation zone stratification for PCT 281 within the subject site and provide justification on plot allocation.
- 20.1 Carry out additional BAM plots within the development footprint. These plots may be used for the BAM assessment and may be used as evidence that plots located outside the development footprint are representative of their respective vegetation zones.
- 21.1 Conduct a targeted survey to determine the presence or absence of giant burrowing frog and red-crowned toadlet, obtain an expert report, or assume presence.

- 24.1 Conduct further targeted survey to determine the presence or absence of the eastern pygmy possum and brush-tailed rock wallaby from previously unsurveyed areas within the project site, obtain an expert report or assume presence.
- 25.1 Correct the errors identified in the response to submissions and audit the Biodiversity Assessment Method Calculator (BAM-C) to ensure it is consistent with the BDAR.
- 35 Include adaptive management measures to address circumstances in which an impact to rocky habitat is detected in relation to broad-headed snake, eastern cave bat and large-eared pied bat. Measures should be Specific, Measurable, Achievable, Relevant and Time Bound (SMART) and provided prior to approval.
- 36 Develop additional and appropriate measures for Box Gum Woodland CEEC, regent honeyeater, broad-headed snake, eastern cave bat and large-eared pied bat in consultation with and to the satisfaction of BCS, following further efforts to avoid and minimise SAIL.
- 37 Provide evidence to clarify how areas of PCTs where there are no plots were delineated into vegetation zones.
- 38 Provide further information about the Habitat Enhancement Area project to BCS for review and comment prior to approval.
- 39 Review the supporting guidance document in Attachment F and provide a consistency table to facilitate review of bilateral assessment requirements.

## **NPWS Recommendations on the Response to Submissions Report**

- 27.1a Review data packages and reports to ensure the 100m buffer between open cut pits and Munghorn Gap Nature Reserve is applied consistently throughout the amended proposal.
- 27.1b Review open cut pit extents to increase buffer to 500m as a precautionary measure to avoid impacts on the management of Munghorn Gap Nature Reserve and its unique natural features. If an increased buffer is not attainable, alternative solutions to mitigate potential impacts should be investigated. For example:
  - A habitat enhancement area in the buffer zone.
  - direct artificial light away from Munghorn Gap Nature Reserve during OC3 extension operations as much as practical.
- 28.1a Consider all of Munghorn Gap Nature Reserve as publicly accessible areas reasonably expected to be used by people and assess noise impacts accordingly.
- 28.1b Assess the boundary of Munghorn Gap Nature Reserve (for recreation use and wildlife impacts) and Honeyeater Flat (for overnight accommodation) in the noise modelling assessment. Adjust the project to ensure these sites are not subject to noise levels in excess of the EPA recommendations and values that may harm wildlife based on peer reviewed scientific literature.
- 28.1c Define how the monitoring program will include Moolarben picnic area or Honeyeater Flat in any noise and acoustics monitoring programs.
- 29.1a Set blasting vibration criteria based on the threshold criteria to 15 mm/s (as per Table 7) as a precautionary approach due to the sensitive surrounding area including threatened species habitat, Aboriginal Cultural Heritage, Munghorn Gap Nature Reserve and the uncertainty around the presence of 'poor quality rock'.
- 29.1b Outline a monitoring program for measuring the PPV at sensitive sites and potential impacts to sites - including pre and post blasting visual inspections and other technologies (LiDAR, terrestrial laser scanning etc.) as appropriate.

- 29.2a Revise open cut pit extents to ensure any groundwater mounding or drawdown does not impact on the NPWS estate, considering the sections that are not depth restricted. This should also consider whether the depth of reservation of Munghorn Gap Nature Reserve on the eastern side of the proposed project means impacts are occurring on reserved land.
- 29.2b Demonstrate where the 0m drawdown/mounding contour will occur in relation to the Munghorn Gap Nature Reserve boundary and depth.
- 29.2c Demonstrate where the 0m drawdown/mounding contour will occur in relation to Groundwater Dependent Ecosystem (GDEs) within Munghorn Gap Nature Reserve – considering the depth of reservation of Munghorn Gap Nature Reserve.
- 29.2d Ensure groundwater mounding and drawdown will not change the flow direction that could cause groundwater contamination pathways to flow into NPWS estate – considering the sections of Munghorn Gap Nature Reserve that are not depth restricted.
- 29.2e Implement groundwater monitoring of deeper geologic layers that make up part of Munghorn Gap Nature Reserve that may be impacted to ensure no impact occurs (particularly in the southern edge of the project).
- 32.1a Model and assess sensitive receivers within Munghorn Gap Nature Reserve, as well as generally across Munghorn Gap Nature Reserve and Goulburn River National Park, for impacts of dust on public health, NPWS employee health and wildlife health.
- 32.1b Determine if dust accumulation will impact on Aboriginal Cultural Heritage sites and implement a monitoring program for this.
- 32.1c Include remediation of any Aboriginal Cultural Heritage sites within the relevant Transport Access Regional Partnerships (TARP) including consultation with Registered Aboriginal Parties and with NPWS (for sites within Munghorn Gap Nature Reserve).
- 31.2 Update the Moolarben Coal Complex Bushfire Management Plan in response to changes to operations and the site as part of this project.
- 34.1a Include NPWS in the notification and consultation requirements (i.e., TARPs) for any circumstances that occur in or under NPWS land or with potential to impact NPWS land.
- 34.1b Contact NPWS in relation to activities near the boundary of Munghorn Gap Nature Reserve that may impact management of the reserve or staff and visitor safety.

## BCS's Review of the of the Response to Submissions

### Moolarben OC3 Extension Project – Response to Submissions

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                                  | Addressed in updated BDAR | BDAR Reference                                | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1                          | Undertake habitat mapping for sandstone specialist threatened species habitat within the areas likely to receive vibration impacts from blasting. This should be undertaken after a revised damage criterion is established, as recommended in Heading 2. | Yes                       | BDAR section 2.1.4                            | <p>Since submission of the EIS, Mine Subsidence Engineering Consultants (MSEC) (2023) undertook mapping of features (cliffs and rock face features) from Light Detection and Ranging (LiDAR) in 2023. To compliment AMBS (2023), LiDAR data identifying potential natural geological features such as cliffs, minor cliffs and rock face features which may be utilised by sandstone specialist threatened species within and surrounding the Project was acquired and analysed by MSEC.</p> <p>Mapped LiDAR features were defined as follows:</p> <ul style="list-style-type: none"> <li>• Cliffs – A continuous rock face, including overhangs, having a minimum length of 20 metres, a minimum height of 10 metres and a minimum slope of 2 in 1 (&gt;63.4°)</li> <li>• Minor cliffs – A continuous rock face, including overhangs, which has a: <ul style="list-style-type: none"> <li>○ Minimum length of 20 metres and a height between 5 metres and 10 metres, or a maximum length of 20 metres and a minimum height of 10 metres; and</li> <li>○ Minimum slope of 2 to 1 (&gt;63.4°)</li> </ul> </li> <li>• Rock face features – A continuous rock face, including overhangs, which has a: <ul style="list-style-type: none"> <li>○ Minimum length of 20 metres and a height between 3 metres and 5 metres, or a maximum length of 20 metres and a minimum height of 5 metres; and</li> <li>○ Minimum slope of 2 to 1 (&gt;63.4°)</li> </ul> </li> <li>• Steep slopes – An area of land having a gradient between 1 in 3 (33% or 18.3°) and 2 in 1 (200% or 63.4°).</li> </ul> <p><b>Outcome:</b> This issue has been resolved. No further action required.</p> |
| 1.2                          | Describe the nature, extent, frequency, duration and timing of prescribed impacts that may occur for each species in accordance with Section 8.3 of the BAM.                                                                                              | Partially                 | BDAR sections 4.4<br>5.2.3<br>5.3<br>Table 26 | <p>A cursory description of the frequency, duration and timing of blasts is provided in Table 26. This states that:</p> <p><i>“Blasts would be of short duration and occur temporarily at any one location during operation of the mine (2025 to 2034).”</i></p> <p>Section 5.2.3 of the BDAR identifies that up to two blasts per day and up to nine blasts per week, averaged over any calendar year, would occur cumulatively at the Moolarben Coal Complex and the project (unless additional blasts are required following misfires or for mine safety). Blasting would only occur during daylight hours.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                             | Addressed in updated BDAR | BDAR Reference     | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |
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|                              |                                                                                                                                                                                      |                           |                    | <p>The BDAR concludes that, due to the 100m buffers from mapped rocky habitat and Munghorn Gap Nature Reserve, and the application of a 50mm/s vibration limit, there will be no residual prescribed impacts on sandstone specialist threatened species.</p> <p>While blast vibration and overpressure levels have been reduced from the levels proposed in the EIS, in our view the vibration level of 50 mm/s remains too high to demonstrate impacts to rocky habitat and the Munghorn Gap Nature Reserve will not occur. Further detail is provided in BCS Recommendation Reference 2.2.</p> <p><b>Outcome:</b> This issue has <b>not</b> been resolved. Further action is required. Please refer to BCS Recommendation Reference 2.2 for a detailed discussion and recommendation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |
| 1.3                          | For areas outside of NPWS estate, offset residual prescribed impacts in accordance with Section 6.1.2(b) of the Biodiversity Conservation Regulation 2017 and Section 8.6 of the BAM | Yes                       | BDAR section 5.3.4 | <p>The BDAR identifies that approximately 1.3 ha of potential pink-tailed legless lizard surface rocky habitat overlaps Category 1 – exempt land. When the species 50m buffer of rocky area habitat was applied, approximately 25.3 ha overlaps Category 1 – exempt land. As the Category 1 area is considered non-native, offsets for pink-tailed legless lizard in Category 1 land were calculated outside the BAM-C using the lowest condition native grassland habitat present (PCT 281_DNG-Low). The PCT 281_DNG_Low generated a species credit requirement of 16 credits per hectare for pink-tailed legless lizard. This was multiplied by the area of the species polygon overlapping Category 1 – exempt land resulting in the calculation for prescribed impacts on the species shown below:</p> <p><b>Pink-tailed legless lizard – prescribed impact credit calculations for Category 1 – exempt land</b></p> <table><tr><th>Stage</th><th>Area (ha)</th><th>Prescribed impact credits</th></tr><tr><td>1</td><td>12.2</td><td>195.2</td></tr><tr><td>2</td><td>12.7</td><td>203.2</td></tr><tr><td>3</td><td>0.4</td><td>6.4</td></tr><tr><td><b>TOTAL</b></td><td><b>25.3</b></td><td><b>404.8</b></td></tr></table> <p>We accept this method of calculating prescribed impacts to pink-tailed legless lizard on Category 1 – exempt land. Note that these species credits are additional to credits calculated in the BAM-C and presented the credit reports in appendices H, I, and J of the BDAR.</p> <p><b>Outcome:</b> This issue has been resolved.</p> <p><b>Recommendation:</b> If the project is approved, ensure that species credits calculated for prescribed impacts to pink-tailed legless lizard are included in the consent conditions.</p> | Stage | Area (ha) | Prescribed impact credits | 1 | 12.2 | 195.2 | 2 | 12.7 | 203.2 | 3 | 0.4 | 6.4 | <b>TOTAL</b> | <b>25.3</b> | <b>404.8</b> |
| Stage                        | Area (ha)                                                                                                                                                                            | Prescribed impact credits |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |
| 1                            | 12.2                                                                                                                                                                                 | 195.2                     |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |
| 2                            | 12.7                                                                                                                                                                                 | 203.2                     |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |
| 3                            | 0.4                                                                                                                                                                                  | 6.4                       |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |
| <b>TOTAL</b>                 | <b>25.3</b>                                                                                                                                                                          | <b>404.8</b>              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |           |                           |   |      |       |   |      |       |   |     |     |              |             |              |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                                                                   | Addressed in updated BDAR | BDAR Reference                            | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| 1.4                          | For areas within NPWS estate that will receive vibration impacts, establish setbacks between open-cut pits and all geological features, such that no impacts are expected to occur. This should be undertaken after a revised damage criterion is established, as recommended in Heading 2 | Partially                 | BDAR table 26                             | <p>The BDAR concludes that mitigation measures (100m setbacks from mapped rocky habitat and limiting vibration to 50 mm/s) will reduce impacts on rocky habitat to negligible so that there will be no residual prescribed impacts.</p> <p>Due to this, no offsets for prescribed impacts on rocky habitat are proposed.</p> <p>The BDAR now includes setbacks of 100m from Munghorn Gap Nature Reserve. Vibration impacts to mapped rocky habitat will be limited to 50 mm/s unless further geotechnical investigation supports a higher value.</p> <p>It remains our view that the vibration level of 50 mm/s may cause impacts to sandstone features in Munghorn Gap Nature Reserve.</p> <p><b>Outcome:</b> This issue has <b>not</b> been resolved. Further action is required. Please refer to BCS Recommendation Reference 2.2 for a detailed discussion and recommendation.</p> |
| 2.1                          | Undertake a ground-truthing survey for sensitive geological features surrounding the project which are expected to receive vibration impacts.                                                                                                                                              | Yes                       | BDAR section 2.1.4                        | <p>Surveys were conducted to ground-truth potential breeding habitat for the large-eared pied bat, eastern cave bat and the broad-headed snake. Potential breeding habitat was found to intersect the development footprint in five locations, where habitat for these species had not been previously mapped by AMBS (2023).</p> <p>It was determined that all five areas represent potentially suitable habitat for the broad-headed snake, and three of the areas represent potentially suitable habitat for the large-eared pied bat and the eastern cave bat.</p> <p><b>Outcome:</b> This issue has been resolved. No further action required.</p>                                                                                                                                                                                                                                |
| 2.2                          | Prepare a site-specific vibration damage analysis, inclusive of revised damage criterion, modelled for the actual context of the project and its surrounding geological complexity.                                                                                                        | Yes                       | Amendment report Appendix I BDAR Table 26 | <p>Appendix I of the Amendment Report provides an assessment of geological feature sensitivity at Moolarben Coal Complex. This found that there are a range of rock mass condition ranging from 'fair' to 'very good' in the area surrounding the project. The assessment notes that there may be areas of 'poor quality rock' that were not observed.</p> <p>Table 7 of Appendix I recommends vibration limits for sensitive geological features:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                            | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                               |                        |                              |    |    |                              |    |    |
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|                              |                                                                                                     |                           |                            | <p>Table 7 - PPV Limits for Sensitive Geological Features.</p> <table><tr><th>Rock Mass Classification</th><th>PPV Threshold Criteria (mm/s)</th><th>PPV Upper Limit (mm/s)</th></tr><tr><td>Poor Quality Rock (RMR &lt; 45)</td><td>15</td><td>25</td></tr><tr><td>Good Quality Rock (RMR &gt; 45)</td><td>40</td><td>50</td></tr></table> <p>Summary of criteria levels</p> <ul style="list-style-type: none"><li>Threshold criteria – Level of blast vibrations where geotechnical performance of the caves and cliff lines should be monitored before and after blasting to ensure outcomes are as expected.</li><li>Upper Limit – Blast vibration level where it is expected that the likelihood of damage is greater than acceptable.</li></ul> <p>The summary of criteria levels for table 7 states that the upper limit is a blast vibration level where it is expected that the likelihood of damage is greater than acceptable. The report then recommends that blasts should be designed so that the PPV at sensitive geological features (features with RMR &gt;45) does not exceed 50 mm/s unless a higher limit is justified following review of blast monitoring results in consultation with a geotechnical engineer.</p> <p>We consider that the recommendation of a 50 mm/s limit appears to be too high, given table 7 defines the upper limit as a level where the likelihood of damage is greater than acceptable. Limits for poor quality rock are 15mm/s.</p> <p>In addition, table 26 of the BDAR states that vibration impacts to mapped rocky habitat will be limited to 50 mm/s unless further geotechnical investigation supports a higher value.</p> <p>Given this, the vibration limit should be set using the threshold criteria presented in Table 7. We do not support any exceedance of the upper limit without adequate justification.</p> <p><b>Outcome:</b> This issue has <b>not</b> been resolved. Further action is required.</p> <p><b>Recommendation:</b> Set an upper vibration limit based on Peak Particle Velocity (PPV) threshold criteria.</p> | Rock Mass Classification | PPV Threshold Criteria (mm/s) | PPV Upper Limit (mm/s) | Poor Quality Rock (RMR < 45) | 15 | 25 | Good Quality Rock (RMR > 45) | 40 | 50 |
| Rock Mass Classification     | PPV Threshold Criteria (mm/s)                                                                       | PPV Upper Limit (mm/s)    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                               |                        |                              |    |    |                              |    |    |
| Poor Quality Rock (RMR < 45) | 15                                                                                                  | 25                        |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                               |                        |                              |    |    |                              |    |    |
| Good Quality Rock (RMR > 45) | 40                                                                                                  | 50                        |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                               |                        |                              |    |    |                              |    |    |
| 3.1                          | Determine an appropriate airblast criterion for threatened taxa within the vicinity of the project. | No                        | Submissions Report page 25 | <p>An assessment of airblast impacts on biodiversity has not been provided.</p> <p>The submissions report (page 25) refers to the history of mining activities adjacent to Munghorn Gap Nature Reserve since 2006, and that threatened species have been recorded directly adjacent to operating mine areas.</p> <p>The Submissions Report also states that sensitive geological features are expected to experience limited to no vibration, as well as reduced airblast levels, due to mitigation measures.</p> <p>The submissions report concludes that Moolarben Coal would implement all reasonable and feasible measures to minimise noise, blast and vibration impacts. As mining operations for</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |                               |                        |                              |    |    |                              |    |    |
| 3.2                          | Describe the nature, extent and duration of short-term and long-term impacts                        |                           |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                               |                        |                              |    |    |                              |    |    |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                       | Addressed in updated BDAR | BDAR Reference     | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                              | for each threatened taxa likely to be disturbed, in accordance with Section 8.2 of the BAM.                                                                                                    |                           |                    | <p>Wilpinjong Coal Mine are approved until 2034 and the Moolarben Coal Complex until 2038, vibration and airblast impacts will continue to be experienced.</p> <p>We consider that the proposed expansion of the mine will introduce airblast disturbance into new areas. The likely impacts of airblast on threatened species outside the development footprint should be assessed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3.3                          | If there is uncertainty related to the expected impacts that airblast disturbance may cause, a worst-case scenario should be assumed.                                                          |                           |                    | <p><b>Outcome:</b> This issue has <b>not</b> been resolved. Further action is required.</p> <p><b>Recommendations:</b></p> <ol style="list-style-type: none"> <li>Provide an assessment of airblast impacts on threatened species and their habitats outside the development footprint.</li> <li>Set an airblast overpressure maximum limit that effectively mitigates airblast impacts on threatened species and their habitats outside the development footprint.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4.1                          | Describe and justify, in detail, how vibration damage to biodiversity and geodiversity values are expected to be managed during the operation of the project, such that no impacts will occur. | Yes                       | BDAR Section 4.4.1 | <p>The proponent has proposed 100m buffers and a 50mm/s vibration limit on mapped rocky habitat and Munghorn Gap Nature Reserve. As detailed in BCS recommendation reference 2.2, in our view the 50mm/s limit is not low enough.</p> <p>Section 4.4.1 of the BDAR proposes monitoring and mitigation measures to manage potential blast vibration impacts to mapped rocky habitat:</p> <ul style="list-style-type: none"> <li>pre-blast desktop assessment to identify the proximity of mapped rocky habitat to planned blast areas, in order to inform vibration modelling and therefore blast design</li> <li>site-specific vibration modelling per blast to calculate Maximum instantaneous change (MIC) required to meet PPV limit for nearest mapped rocky habitat</li> <li>continuation of existing vibration monitoring as described in the Blast Management Plan (MCO, 2020d), and implementation of additional vibration monitoring at one or more new representative sites of mapped rocky habitat adjacent to the Project</li> <li>ongoing review of monitoring data to confirm and update site-specific vibration modelling where necessary and</li> <li>visual inspections of key representative mapped rocky habitat on a 6-monthly basis to confirm that the target outcome of no physical impact to mapped rocky habitat (and therefore no physical impact to the Munghorn Gap Nature Reserve) as a result of blasting vibrations continues to be achieved.</li> </ul> <p>We consider that, along with a lower vibration limit, additional vibration monitoring, more frequent (monthly) visual inspections of mapped rocky habitat closest to blast locations is required so that further reductions or cessations can be made to blast designs if impacts are detected. The blast trigger action response plan should include performance criteria for mapped rocky habitat when the blast management plan is updated.</p> |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                     | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|                              |                                                                                                                                                                                              |                           |                            | <p><b>Outcome:</b> this issue has not been fully resolved. Further action is required.</p> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>a. Conduct and document monthly visual inspections of mapped rocky habitat closest to blast locations before and after the associated blasts to determine whether blast-related impacts have occurred.</li> <li>b. Consult with BCS when updating the blast management plan.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5.1                          | Describe and justify, in detail, how noise impacts to threatened species and their habitats are expected to be managed during the operation of the project, such that no impacts will occur. | No                        | BDAR section 5.2.3         | <p>The BDAR concludes that the impacts of blasting on fauna (other than bats), including noise, may be expected to be minimal in the medium to long-term due to the localised, short duration and temporary nature of the disturbance. The BDAR states that impacts on bats is likely to be short-term and relatively localised.</p> <p>The BDAR states that:</p> <p><i>'Best practice noise minimisation and mitigation measures would be implemented for the project.'</i></p> <p>Potential noise impacts would be minimised by implementation of the existing noise control and management measures.</p> <p>The current consents for Moolarben Stage 1 (DA 05_0117) and Stage 2 (DA 08_0135) set noise criteria of 50 dB(A) for Munghorn Gap Nature Reserve and Goulburn River National Park 'when in use'. It is unclear what is meant by 'when in use' or how compliance with these conditions is achieved. We wish to ensure that noise impacts to threatened species and their habitats are not being minimised or managed. See also Section 28.1 of this response.</p> <p><b>Outcome:</b> This issue has <b>not</b> been resolved. Further action is required.</p> <p><b>Recommendation:</b> If approved, impose noise criteria conditions at Munghorn Gap Nature Reserve and Goulburn River National Park limiting noise levels in accordance with the EPA Noise Policy for Industry (2017).</p> |
| 6.1                          | Confirm that the total clearing required for the development has been included in the BDAR and accounted for in the BAM-C or that a worst-case scenario has been assumed.                    | Yes                       | Submissions report page 26 | <p>The submissions report states that the indicative surface disturbance extent assessed in the revised BDAR encompasses the total clearing footprint required for the project.</p> <p><b>Outcome:</b> This issue is resolved. No further action required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7.1                          | The consent authority notes BCS advice in relation to SAI criteria for Microbats and the                                                                                                     | Yes                       | BDAR section 6.4 – 6.6     | <p>The submissions report outlines amendments to the project since EIS. This includes avoiding direct disturbance of mapped rocky habitat and breeding habitat (defined as relevant vegetation within 100m of mapped rocky habitat) associated with the threatened bat species (Large-eared Pied Bat and Eastern Cave Bat) and Broad-headed Snake.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                           | Addressed in updated BDAR | BDAR Reference   | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                              | Broad-headed Snake when considering the adequacy of avoidance and minimisation to biodiversity impacts proposed, conditioning of the project and potential project approval.                                                                       |                           |                  | As a result of these amendments, section 2.2.2 of the submissions report states that the additional setbacks such that there would be no direct disturbance of mapped rocky habitat and breeding habitat (within 100m of mapped rocky habitat) associated with the Large-eared Pied Bat, Eastern Cave Bat and the Broad-headed Snake. On this basis, the amended development footprint would completely avoid areas that require consideration of SAII for these three entities.<br><br>Appendix D contains the consideration of serious and irreversible impacts for these entities.<br><br>We have updated our assessment on the likelihood of SAII for these three entities, following the project revisions. This assessment is provided in <b>Attachment C</b> . Note: we have identified that SAII is likely for the large eared pied-bat, the eastern cave bat, and the broad-headed snake.<br><br><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 7.1</b> . |
| 7.2                          | The proponent revises the currently presented development footprint and avoidance and minimisation strategies proposed to further reduce SAII to Microbats and the Broad-headed Snake.                                                             |                           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8.1                          | The consent authority notes BCS advice in relation to SAII criteria for Box Gum Woodland when considering the adequacy of avoidance and minimisation to biodiversity impacts proposed, conditioning of the project and potential project approval. | Yes                       | BDAR section 6.1 | The Submissions Report outlines amendments to the project since EIS. This includes a further reduction from 477.75ha to 401.12ha of Box Gum Woodland CEEC.<br><br>Appendix D contains the consideration of serious and irreversible impacts for this entity.<br><br>We have updated our assessment on the likelihood of SAII for this entity, following the project revisions. This assessment is provided in <b>Attachment C</b> . Note: we have identified that SAII is likely for Box Gum Woodland CEEC.<br><br><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 7.1</b> .                                                                                                                                                                                                                                                                                                                                                                                        |
| 8.2                          | The proponent revises the currently presented development footprint and                                                                                                                                                                            |                           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                            | Addressed in updated BDAR | BDAR Reference     | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                              | avoidance and minimisation strategies proposed to further reduce impacts to Box Gum Woodland.                                                                                                                                                       |                           |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 9.1                          | The consent authority notes BCS advice in relation to SAIL criteria for Regent honeyeater when considering the adequacy of avoidance and minimisation to biodiversity impacts proposed, conditioning of the project and potential project approval. | Yes                       | BDAR section 6.2   | <p>The submissions report outlines amendments to the project since EIS stage. This includes a reduction in disturbance of Regent Honeyeater Important Habitat Mapping (prepared by NSW DCCEEW) from approximately 184.41ha to 81ha.</p> <p>Appendix D contains the consideration of serious and irreversible impacts for this entity. We have updated our assessment on the likelihood of SAIL for this entity, following the project revisions. This assessment is provided in <b>Attachment C</b>. Note: we have identified that SAIL is likely for Regent honeyeater.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 7.1</b>.</p>                                                                                                                             |
| 9.2                          | The proponent revises the presented development footprint and avoidance and minimisation strategies proposed to significantly reduce proposed impacts to the Regent honeyeater                                                                      |                           |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 10.1                         | The proponent assesses the potential impacts of the depletion of seasonal foraging, breeding and refuge resource within the project for the Koala and Squirrel Glider.                                                                              | Yes                       | BDAR Section 3.6.1 | <p>Section 3.6.1 outlines the important foraging resources that are present within the study area, as well as the important breeding and refuge habitat that is present within the associated PCTs for Squirrel Glider. It also recognizes the non-associated PCTs which are likely to provide suitable habitat for connectivity and movement, as well as the potential for hollow-bearing trees to be used for breeding.</p> <p>For Koala, foraging resources and refuge habitat is also present within the study area. Foraging, breeding and refuge habitat for Koalas is present within the associated PCTs for Koala. The non-associated PCTs are acknowledged as likely to provide suitable habitat for connectivity and movement, as well as the potential for hollow-bearing trees to be used for breeding.</p> |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                                 | Addressed in updated BDAR | BDAR Reference               | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                              |                                                                                                                                                                                                                                                          |                           |                              | <b>Outcome:</b> Issue resolved. No further action required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10.2                         | The proponent assesses the cumulative impacts of vegetation clearance and connectivity disruption for the Koala and Squirrel Glider.                                                                                                                     | Yes                       | BDAR Section 5.1.3, Table 24 | Section 5.1.3 outlines the cumulative impacts of projects in the vicinity of the proposal on Koala and Squirrel Glider habitat.<br><b>Outcome:</b> Issue resolved. No further action required.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10.3                         | The proponent revises the presented development footprint and avoidance and minimisation strategies proposed to reduce proposed impacts to the Koala and Squirrel Glider.                                                                                | Yes                       | BDAR section 4.2.1           | Measures to avoid and minimise impacts for koalas and squirrel glider outlined in section 4.2.1 of the BDAR includes: <ul style="list-style-type: none"> <li>Avoiding and minimising higher quality box gum woodland remnants adjacent to Munghorn Gap Nature Reserve, and</li> <li>minimising infrastructure within the riparian areas and locating creek crossings within previously cleared areas.</li> </ul> The avoidance and minimisation measures proposed have removed some areas of woody vegetation but not others.<br><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 7.1.</b> |
| 10.4                         | The consent authority notes BCS advice in relation to impacts to the Koala and Squirrel Glider when considering the adequacy of avoidance and minimisation to biodiversity impacts proposed, conditioning of the project and potential project approval. | N/a                       | N/a                          | This is a note for the consent authority and does not require the proponent to address.<br><b>Outcome:</b> This issue is further discussed in <b>Attachment D – Issue 7.1.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                          | Addressed in updated BDAR | BDAR Reference                                                                                  | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 11.1                         | Provide an explanation for the identification of Bush-stone Curlew within the proposed project.                                   | Yes                       | Submissions Report page 39<br><br>Revised BDAR Section 3.5.3 (page 98)                          | The submissions report states that the bush stone-curlew records were submitted to BioNet in error. This species was not recorded during site surveys. Niche report that the erroneous records have now been marked as 'suspect' in BioNet.<br><br><b>Outcome:</b> Issue resolved. No further action required.                                                                                                                                                                                                                                                                                                                      |
| 11.2                         | If the species has been recorded on site prepare a species polygon in accordance with Section 5.2.5 of the BAM.                   |                           |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 11.3                         | If the records have been erroneously detailed, update the appendix and apply to remove these records from BioNet.                 |                           |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 12.1                         | Update the BDAR to account for the identification of the Gang-gang Cockatoo within the proposed project.                          | Yes                       | Submissions Report page 39<br><br>Revised BDAR pages 14-16, 95<br>Tables 3.2, 3.3 15, 17 and 34 | The Submissions Report and revised BDAR state that the gang-gang cockatoo was recorded outside the breeding season in June-July 2021.<br>Table 17 in the BDAR notes that where potential nest trees are identified, they should be monitored during the breeding season (Oct-Jan) to confirm the presence of any actual nest trees on the site. The targeted diurnal bird surveys were undertaken in November and December 2021. No signs of breeding were recorded during the targeted field surveys (the species was not recorded during the breeding season).<br><br><b>Outcome:</b> Issue resolved. No further action required. |
| 12.2                         | If the species recorded were exhibiting breeding behaviour prepare a species polygon in accordance with Section 5.2.5 of the BAM. |                           |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 13.1                         | Revise the species polygon for <i>Pomaderris cotoneaster</i> to be in accordance with the BAM.                                    | Yes                       | Section 3.6.1 of Revised BDAR                                                                   | We have reviewed section 3.6.1 of the revised BDAR and the targeted flora surveys against the proposed species polygon for <i>Pomaderris cotoneaster</i> and are satisfied that the species polygon is in accordance with the BAM.<br><br><b>Outcome:</b> Issue resolved. No further action required.                                                                                                                                                                                                                                                                                                                               |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                 | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| 14.1                         | In the absence of data supporting CEEC absence, land be designated as Category 2 – regulated land.                                                                                                       | Partially                 | Submissions Report page 40 | <p>At exhibition stage, the BDAR indicated that 20 <i>'Interim Grassland and other Groundcover Assessment Method'</i> (IGGAM) data points (transects and vegetation integrity plots) were established by ELA (December 2021- January 2022) to inform the land categorisation. The 'low conservation value' grassland/groundcover Category 1- Exempt land criteria does not override CEEC as a Category 2 – Sensitive regulated land criteria ( LLS Act 60H(4)(a)).</p> <p>Our response (dated 25 January 2023) noted CEEC as a Category 2 – Regulated land criteria and raised concerns (based on the vegetation mapping and data for the development site) that the Box Gum Woodland/Derived Native Grassland CEEC may have been designated Category 1 – Exempt. A precautionary approach was recommended.</p> <p>The Submissions Report states:</p> <p><i>"In addition to EcoLogical Australia's (ELA) (2023) land categorisation assessment, a site-based floristic assessment was also undertaken by Niche from the 31 July 2023 to the 4 August 2023 to further review the categorisation of the land within the indicative surface disturbance extent (particularly within the areas identified as derived native grassland). Section 1.3 of the revised BDAR (Niche, 2024a) provides additional data supporting the absence of the Box-Gum Woodland CEEC".</i></p> <p>The data supplied indicates that this floristic assessment was application of the Interim Grassland and Other Groundcover method (IGGAM) for land categorisation (<i>Local Land Services Act 2013</i>).</p> <p>No advice on the approach for collecting further evidence to justify the absence of the Box-Gum CEEC was requested from BCS. The Submissions Report states:</p> <p><i>"Box-Gum Woodland CEEC has been mapped by ELA and Niche in accordance with the listing under the BC Act and EPBC Act, a separate approach is not considered to be required."</i></p> <p>The Submissions Report also states:</p> <p><i>'Details of the land category assessment undertaken in the Project area, including Category 1 – exempt land mapping and supporting floristic data, were provided to BCS in May 2022. BCS reviewed the mapping and confirmed the methodology presented was appropriate for the initial identification of Category 1 – exempt land'.</i></p> <p>This inaccurately represents the initial BCS land categorisation advice (dated 2 June 2022). The advice indeed stated that the land categorisation method presented was appropriate for the initial identification of Category 1 land. However this advice also stated that there remained some key aspects of consideration to be addressed during the preparation of the BDAR, including the potential for the site to contain the Box Gum Woodland CEEC and the need for a site-based floristic assessment.</p> |
| 14.2                         | If the proponent wishes to collect further evidence to justify the absence of Box Gum Woodland/Box Gum Grassland from portions of the project site, liaise with BCS to determine an acceptable approach. |                           |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                        | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                              |                                                                                                                                                 |                           |                            | <p>The revised BDAR has not presented a coherent justification for the absence of the Box-Gum CEEC on land mapped as Category 1 – Exempt, against the NSW Scientific Committee Final Determination for the CEEC.</p> <p><b>Outcome:</b> This issue is not resolved, and it is further discussed in <b>Attachment D – Issue 14.1.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 15.1                         | Provide additional field verified evidence to support allocation of Category 1 land in areas which do not appear to have received IGGAM survey. |                           | Submissions Report page 40 | <p>The draft Native Vegetation Regulatory Map (NVR map) has recently been released and has been considered by the proponent (as confirmed on 8 May 2024).</p> <p>Additional IGGAM data has been collected by Niche at 15 sites for assessment against the ‘low conservation value’ grassland/groundcover Category 1 – Exempt land criteria, however the reporting requirements of the IGGAM have not been met by the BDAR. BCS is seeking advice from the NSW DCCEEW NVR map team in the context of the draft NVR map release.</p> <p>Four areas within the development site mapped as Category 1 – Exempt land by the proponent appear on the draft NVR map as Category 2 – Regulated land. The NSW DCCEEW NVR map team advise that those portions of the site have been mapped as Category 2 on the basis of a Commonwealth funding agreement dataset, overriding Category 1 – Exempt criteria (LLS Act s.60H(4)(a) and s.60I(2)). The funding agreement mapping may be tied to Lot/DP rather than the funded project extent. BCS is seeking further information from the Central West Tablelands Local Land Services to confirm the project extent.</p> <p>Regardless, an additional Category 2 – Regulated criteria may still apply (see Attachment D – Issue 4).</p> <p><b>Outcome:</b> BCS will provide additional advice on this matter as soon as possible.</p> |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                          | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 16.1                         | Quantify credits to be offset for the Pink-tailed Worm Lizard habitat that will receive residual prescribed impacts resulting from the project.                                                   | Yes                       | Submissions Report Page 18 | Our response (dated 25 January 2023) noted that impacts to non-native vegetation and geological features supporting threatened species habitat is listed as prescribed impact under Section 6 of the BAM, and the BDAR had identified 30.1 ha of residual prescribed impact on Category 1 – Exempt land.                                                                                                                                                                                                                                                            |
| 16.2                         | Consult with BCS to determine a method for the quantification of residual prescribed impact credits that will adequately compensate for the maximum potential impact resulting from the proposal. |                           | Revised BDAR Section 5.3.4 | <p>Consultation was not undertaken with BCS regarding the method for determining the quantification of the residual prescribed impact.</p> <p>Section 5.3.1 of the revised BDAR estimates a 25.3 ha residual prescribed impact for the pink-tailed worm lizard on land mapped as Category 1 within the revised direct impact footprint and a species polygon established for the calculation of credits for residual prescribed impacts on this species. This proposed approach is accepted.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p> |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                    | Addressed in updated BDAR | BDAR Reference                                                  | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| 17.1                         | Revise the BDAR to appropriately assess the nature, extent and duration of short-term and long-term impacts and predict the consequences to GDEs and threatened entities reliant upon GDEs. | No                        | Submissions Report page 41-42<br><br>Revised BDAR section 5.3.5 | <p>The Submissions Report indicates that Section 5.3.5 of the BDAR has been revised to address these recommendations.</p> <p>The revised BDAR concludes that there will be no significant impacts to any Groundwater dependent ecosystems (GDEs) or threatened ecological communities (TECs) as a result of prescribed impacts to waterbodies, water quality or hydrological processes as a result of the project and no offsets are required.</p> <p>Section 2.3.3 of Groundwater Report (Appendix F) outlines the impact on GDEs. Impacts to GDEs include:</p> <ul style="list-style-type: none"> <li>• A modelled drawdown of greater than 2 m is expected to last for up to approximately 25 years post mining, and</li> <li>• A maximum drawdown of approximately 6m is predicted to occur near Moolarben Creek.</li> </ul> <p>On 17 April 2024, to enable our review of impacts on ground and surface water we requested data from the proponent.</p> <p>The data request for groundwater spatial files was not provided in time for consideration and assessment of groundwater impacts. Without a review of the impacts to GDEs, we are unable to confirm whether impacts to these entities may occur. No assessment of the residual prescribed impacts has been undertaken.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 17.1</b>.</p> |
| 17.2                         | Offset any residual prescribed impacts in accordance with Section 6.1.2(b) of the Biodiversity Conservation Regulation 2017 and Section 8.6 of the BAM.                                     |                           |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                | Addressed in updated BDAR | BDAR Reference                                                                  | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 18.1                         | Review and provide additional justification for PCT selection as per Table 1.                                           | Partially                 | Revised BDAR Table 23 of Appendix B and Appendix E                              | <p>BCS have reviewed the additional justification provided in Appendix B and E of the revised BDAR and the floristic plot data for PCT 1655 and PCT 1711. BCS is satisfied that the data and information provided is consistent with PCT 1655.</p> <p>The revised BDAR does not provide sufficient justification for the selection of PCT 1711. The NSW Bionet Vegetation Classification database provides that in addition to <i>Leptospermum polygalifolium</i>, PCT 1711 contains 2 other 'diagnostic species', <i>Goodenia paniculata</i> and <i>Lepyrodia leptocaulis</i>.</p> <p>Table 23 of Appendix B states that <i>Goodenia paniculata</i> is present in Plot 5. This is not reflected in the plot data. According to the plot data, Plot 5 contains a '<i>Goodenia spp</i>', although it has not been identified to species level. There is no commentary in the BDAR supporting that the species found on site was positively identified as <i>Goodenia paniculata</i>. Plots 16 and 21 do not contain any <i>Goodenia sp</i>. None of the plots contain <i>Lepyrodia leptocaulis</i> or <i>Leptospermum polygalifolium</i> (Tantoon). We are not satisfied with the selection of PCT 1711.</p> <p><b>Outcome:</b> This issue is not resolved.</p> <p><b>Recommendation:</b> Review the Plant Community Type (PCT) selection for PCT 1711, and either provide additional justification for the selecting PCT 1711 or assign a more appropriate PCT.</p> |
| 19.1                         | Review vegetation zone stratification for PCT 281 within the subject site and provide justification on plot allocation. | No                        | Submissions Report page 43                                                      | <p>The Submissions Report states that additional justification for the PCT 281 vegetation zone stratification has been included within Appendix E of the revised BDAR. The revised BDAR concluded that no changes to the vegetation mapping were required.</p> <p>The additional justification does not appear within Appendix E.</p> <p><b>Outcome:</b> This issue has not been addressed.</p> <p><b>Recommendation:</b> Review the vegetation zone stratification for PCT 281 within the subject site and provide justification on plot allocation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 20.1                         | Provide additional justification for use of plot data outside of the subject land.                                      | Partially                 | Submissions Report page 43<br><br>Revised BDAR Table 8, Section 3.3.4 (page 35) | <p>Section 3.3.4 of the revised BDAR states that plots located outside of the development footprint were assessed as being representative of the PCT's and vegetation condition zones within the footprint. Table 8 of the BDAR addresses 27 plots located outside the development footprint. The rationale presented for plots located outside the development footprint being representative of those located within the development footprint is based on a similarity between these plots.</p> <p>For vegetation zones PCT1610 High and PCT1629 High all plots informing these zones are located outside of the development footprint. The plots are located between 140m and 3.4km away from the vegetation zones within the development footprint. In the absence of any plots inside of the development footprint, we are unable to verify whether these plots are representative of their respective vegetation zones. We do not accept the use of plots outside the development footprint without evidence of these plots being representative of the vegetation zones located within the development footprint.</p>                                                                                                                                                                                                                                                                                                                                       |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                 | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                              |                                                                                                                                          |                           |                            | <p>For vegetation zone PCT266 Scattered a single plot, Plot 23, has been used to inform this vegetation zone. Table 8 of the BDAR states 'VI Plot 23 was considered to be representative of V20, PCT266 Scattered Trees'. This plot is located 3km from the vegetation zone. We have no ability to verify the plots representativeness. BCS does not accept the use of this plot to inform the vegetation zone.</p> <p><b>Outcome:</b> This issue is not resolved.</p> <p><b>Recommendation:</b> Carry out additional BAM plots within the development footprint. These plots may be used for the BAM assessment and may be used as evidence that plots located outside the development footprint are representative of their respective vegetation zones.</p> |
| 21.1                         | Provide additional justification for exclusion of threatened frog species from habitat within the project area.                          | Yes                       | Revised BDAR, Table 12     | <p>Table 12 in the revised BDAR outlines that Booroolong frog is not associated with the Kerrabee IBRA subregion and the Study Area occurs at the edge of the species predicted range. We are satisfied with the exclusion of this species based on this justification.</p> <p>The justifications for giant burrowing frog and red-crowned toadlet are not adequate. This issue has not been addressed.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 21.1.</b></p>                                                                                                                                                                                                                                    |
| 21.2                         | If impacts to threatened frog species has the potential to occur, undertake further survey, assume presence or prepare an expert report. | Yes                       | Revised BDAR, Table 12     | <p>Table 34 in the revised BDAR outlines that Booroolong frog is not associated with the Kerrabee IBRA subregion and the Study Area occurs at the edge of the species predicted range. We are satisfied that no impact to this threatened frog species has the potential to occur.</p> <p>Presence or absence of giant burrowing frog and the red-crowned toadlet has not been assessed. This issue has not been addressed.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 21.1.</b></p>                                                                                                                                                                                                                |
| 22.1                         | Provide additional information to justify the presence/absence of potential Large Bent-winged Bat breeding habitat.                      | Yes                       | Revised BDAR section 3.5.3 | <p>Section 3.5.3 of the revised BDAR outlines that a small number of probable records were obtained from Anabats. This species polygon is created with a 100m radius buffer from the cave or other breeding feature. The development footprint is 100m or more from the nearest rocky habitat, and no caves or crevices that would likely be suitable for a maternity/breeding roost were observed in the study area. We accept that the proposal is not expected to impact on breeding habitat for the large bent-winged bat.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p>                                                                                                                                                          |
| 22.2                         | If impact to Large Bent-winged Bat breeding habitat has the potential to                                                                 | Yes                       | Revised BDAR section 3.5.3 | <p>As outlined above, no impact to large bent-winged bat breeding habitat is expected to occur. No further investigations or surveys are required.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                         | Addressed in updated BDAR | BDAR Reference             | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                              | occur, undertake further survey, assume presence or prepare an expert report.                                                                                                                                                                    |                           |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 23.1                         | Demonstrate adequate survey effort is compliant with the Department's guide Surveying threatened plants and their habitats (and Commonwealth survey guidelines where necessary) during optimal conditions for the species identified in Table 2. | Yes                       | Revised BDAR Table 14      | <p>Demonstration of adequate survey effort was requested for <i>Commersonia rosea</i>, <i>Dichanthium setosum</i>, <i>Euphrasia arguta</i> and <i>Kennedia retorsa</i>.</p> <p>Table 14 outlines that the method used to determine presence for these species is targeted threatened species survey. None of these species were detected.</p> <p>Appendix L in the BDAR provides the expert reports for <i>Commersonia rosea</i> and <i>Kennedia retorsa</i>. These expert reports conclude that the species are unlikely to be present on or use habitat on the subject land.</p> <p>Section 2.1.3 of the BDAR outlines that <i>Dichanthium setosum</i> and <i>Euphrasia arguta</i> are not associated with the Kerrabee Interim Biogeographic Regionalisation of Australia (IBRA) subregion and the species were further considered unlikely to occur due to lack of suitable habitat. The development footprint is considered as unsuitable habitat and no further assessment is required for these species.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p> |
| 23.2                         | Alternatively undertake additional targeted survey in the correct survey period and survey conditions, assume presence, or obtain an expert report for these species.                                                                            | Yes                       | Revised BDAR Table 14      | <p>The revised BDAR outlines that <i>Commersonia rosea</i> and <i>Kennedia retorsa</i> were determined to be unlikely to be present within the development footprint via expert report.</p> <p><i>Dichanthium setosum</i> and <i>Euphrasia arguta</i> were excluded from the list of candidate species credit species.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 24.1                         | Conduct further targeted survey to determine the presence or absence of the eastern pygmy possum and brush-tailed rock wallaby from previously unsurveyed areas                                                                                  | No                        | Revised BDAR section 3.5.3 | <p>Section 3.5.3 of the revised BDAR outlines that no further targeted surveys for the eastern pygmy possum or the brush-tailed rock wallaby have been undertaken.</p> <p>Despite the reduction in development footprint, we remain of the view that the survey effort for both the eastern pygmy possum and the brush-tailed rock wallaby is not sufficient to confirm absence of these species within the development footprint.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 24.1</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                    | Addressed in updated BDAR | BDAR Reference                               | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                     |
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|                              | within the project site, obtain an expert report or assume presence.                                                                                                                        |                           |                                              |                                                                                                                                                                                                                                                                                                                   |
| 25.1                         | Correct the specific spatial and BAM-C errors identified in this response.                                                                                                                  | No                        | BAM cases 00031450, 00033408, 00033409       | <p>We have reviewed the BDAR, spatial data and BAM-C cases and have noted a few inconsistencies.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment D – Issue 25.1</b>.</p>                                                                                              |
| 25.2                         | Audit all values of VI plot data, GIS shapefiles and data entered into the BAM-C and ensure these align with the BDAR.                                                                      |                           |                                              |                                                                                                                                                                                                                                                                                                                   |
| 26.1                         | Update mapping in the EIS to show that there will be no encroachment onto NPWS land.                                                                                                        | Yes                       | Revised BDAR, Summary section                | <p>The summary section of the BDAR states that there will be a 100m setback from the boundary of Munghorn Gap Nature Reserve. The Development_Footprint layer does not show any encroachment onto NPWS land.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p>                               |
| 27.1                         | Establish appropriate setbacks within the development site boundary to ensure an appropriate buffer between NPWS lands and mining operations, such that impacts to NPWS estate are avoided. | Partially                 | Submissions Report – Section 4.1.1 (Page 48) | <p>The NSW DCCEEW recommendation of a 500m buffer between Munghorn Gap Nature Reserve and the OC3 extension pits has not been met.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 27.1</b>.</p>                                                            |
| 28.1                         | Amend the assessment to consider the extent of any direct or indirect adverse impacts on Munghorn Gap Nature Reserve. Including, but not                                                    | No                        | Submissions Report – Section 4.1.1 (Page 48) | <p>The amended assessment reports do not specifically consider impacts on NPWS land and in some instances demonstrate that impacts will occur to Munghorn Gap Nature Reserve.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issues 28.1, 29.1 and 32.1</b>.</p> |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                 | Addressed in updated BDAR | BDAR Reference                                     | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                              | limited to, vibration, noise and air quality.                                                                                                                                            |                           |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 29.1                         | Incorporate the impacts observed from the UG2 Modification into modelling scenarios to establish the likely impacts if both modifications are to be given approval.                      | Yes                       | Submissions Report - Section 4.1.1 (Page 48)       | The Submissions Report states that UG2 Modification has been modelled for cumulative impacts with the OC3 extension.<br><b>Outcome:</b> Issue resolved. No further action required.                                                                                                                                                                                                                                                                                                                              |
| 29.2                         | Provide clarification on any potential groundwater mounding and if this may have impacts on groundwater flow in Munghorn Gap Nature Reserve.                                             | No                        | Submissions Report - Section 4.1.1 (Page 53)       | The revised documents have not accounted for the depth of reservation of Munghorn Gap Nature Reserve. The amended modelling shows impacts occurring in Munghorn Gap Nature Reserve and as such changes are required to avoid this impact.<br><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 29.2.</b>                                                                                                                                                            |
| 29.3                         | Provide clarification if any change in flow will facilitate contaminant transport pathways from mine spoil etc. that may impact Munghorn Gap Nature Reserve.                             | No                        | Submissions Report - Section 4.1.1 (Page 53)       | This comment was related to groundwater flow. The response from Moolarben seems to be related to surface water.<br><br>The potential groundwater impacts should consider the depth of reservation of Munghorn Gap Nature Reserve.<br><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 29.2.</b>                                                                                                                                                                    |
| 29.4                         | Install additional groundwater monitoring sites to include monitoring on:<br>• Triassic sandstone on the Eastern side of the project area<br>• The various Illawarra Coal Measure layers | Partially                 | Submissions Report – Section 4.1.1. (Page 53 – 57) | The Submissions Report sufficiently addresses concerns raised around monitoring of the Triassic sandstone layer and the cumulative impacts of the UG2 Modification.<br><br>The additional monitoring as proposed by Moolarben seems to disregard that Munghorn Gap Nature Reserve is not depth restricted, and sections of the Ulan Seam and the Permian layers are gazetted as part of the reserve.<br><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 29.2.</b> |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                     | Addressed in updated BDAR | BDAR Reference                               | Comment and Recommendation(s)                                                                                                                                                                                                                                                                  |
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|                              | around the project area. Including the southern side of the project for the Ulan Seam and the whole project area for the other Permian layers<br>• The cumulative impacts of the UG2 Extension modification. |                           |                                              |                                                                                                                                                                                                                                                                                                |
| 29.5                         | Clarify if there is a risk of the perched aquifers within Munghorn Gap Nature Reserve cracking from far field earth movements as part of Moolarben Coal Complex activities                                   | Yes                       | Submissions Report – Section 4.1.1 (Page 57) | The Submissions Report sufficiently addresses concerns raised around far field movement. Specifically, that the OC3 extension will not subject perched aquifers within Munghorn Gap Nature Reserve to the risk of cracking.<br><br><b>Outcome:</b> Issue resolved. No further action required. |
| 29.6                         | Incorporate the storage of brine and mine water in the UG4 void into groundwater modelling.                                                                                                                  | Yes                       | Submissions Report – Section 4.1.1 (Page 57) | The Submissions Report sufficiently addresses concerns raised about brine management. Noting that storage would be performed in line with the approved Brine Management Plan for the Moolarben Coal Complex.<br><br><b>Outcome:</b> Issue resolved. No further action required.                |
| 29.7                         | Confirm if there are any impacts on Goulburn River National Park (and associated GDEs) due to potential changes in water quantity/quality in both surface water and groundwater.                             | Yes                       | Submissions Report – Section 4.1.1 (Page 57) | The Submissions Report sufficiently addresses concerns about groundwater or surface water impacts on Goulburn River National Park.<br><br><b>Outcome:</b> Issue resolved. No further action required.                                                                                          |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                                                                                       | Addressed in updated BDAR | BDAR Reference                                                                        | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                      |
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| 29.8                         | Ensure no impact on groundwater in Munghorn Gap Nature Reserve and Goulburn River National Park.                                                                                                                                                                                                               | No                        | Submissions Report – Section 4.1.1 (Page 58)                                          | <p>The revised documents have not accounted for the depth of reservation of Munghorn Gap Nature Reserve. The amended modelling shows impacts occurring in Munghorn Gap Nature Reserve and as such more assessment is required.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 29.2.</b></p> |
| 30.1                         | Additional monitoring is required to confirm the presence of, or lack of, stygofauna in the area. Given that no sampling regime guidelines are currently in force for proposals in NSW, any sampling regime should be consistent with best practice from other state government agencies and technical bodies. | Yes                       | Submissions Report – Section 4.1.1 (Page 58 – 60) & Submissions Report – Attachment 2 | <p>The Submissions Report and attachments have outlined the additional stygofauna sampling that has been conducted for this project.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p>                                                                                                                                        |
| 30.2                         | Include stygofauna sampling to the southern end of the proposed project area in, or on the boundary of, Munghorn Gap Nature Reserve.                                                                                                                                                                           | Yes                       | Submissions Report – Section 4.1.1 (Page 58 – 60) & Submissions Report – Attachment 2 | <p>The Submissions Report and attachments have sufficiently outlined the occurrence of stygofauna in or on the boundary of Munghorn Gap Nature Reserve.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p>                                                                                                                     |
| 30.3                         | Confirmation is required of the location of the 23 hectares of GDEs within the 2 metres of drawdown area and the impacts that may occur on these                                                                                                                                                               | Partially                 | Submissions Report – Section 4.1.1 (Page 60 – 61) & Groundwater Review                | <p>The GDEs subject to over 2m of drawdown have been outlined in Figure 11 of the groundwater review. NPWS is seeking reassurance that GDEs within Munghorn Gap Nature Reserve will experience zero drawdown impacts.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 29.2.</b></p>          |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                   | Addressed in updated BDAR | BDAR Reference                                                                                 | Comment and Recommendation(s)                                                                                                                                                                                                                                                                                                                                                                                   |
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|                              | GDEs over the period of mining operation (30 years).                                                                                                                                                                       |                           | Figure 11 and Section 2.3.3                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 30.4                         | Clarification is required as to whether any GDEs within Munghorn Gap Nature Reserve are to be impacted, including areas with less than 2 metres of drawdown.                                                               | No                        | Submissions Report – Section 4.1.1. (Page 61)                                                  | <p>The Submissions Report has outlined that there is unlikely to be an impact on GDEs within Munghorn Gap Nature Reserve due to drawdown occurring in the regional groundwater table.</p> <p>The data requests of drawdown extent have not been provided so assessment cannot be confirmed.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 29.2.</b></p> |
| 31.1                         | Amend the EIS to assess the extent of edge effect impacts on Munghorn Gap Nature Reserve, noting the natural values of the nature reserve, and provide an adequate setback to the nature reserve to mitigate such impacts. | Partially                 | Submissions Report – Section 4.1.1. (Page 61)                                                  | <p>The NSW DCCEEW recommendation of a 500m buffer between Munghorn Gap Nature Reserve and the OC3 extension pits has not been met.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 27.1.</b></p>                                                                                                                                                          |
| 31.2                         | Ensure adequate protection from bushfire to the mine site and to adjacent lands such as Munghorn Gap Nature Reserve.                                                                                                       | Partially                 | Submissions Report – Section 4.1.1 (Page 61) & Moolarben Coal Complex Bushfire Management Plan | <p>NPWS acknowledges the Moolarben Coal Complex Bushfire Management Plan but notes it has not been updated to reflect any changes in operations as proposed by the OC3 extension project.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 31.2.</b></p>                                                                                                   |
| 32.1                         | Amend the EIS to assess the extent of blasting and airblasting impacts on Munghorn Gap Nature Reserve,                                                                                                                     | No                        | Submissions Report – Section 4.1.1 (Page 61)                                                   | <p>The amended assessment reports do not specifically consider impacts on NPWS land and in some instances demonstrate that impacts will occur to Munghorn Gap Nature Reserve.</p>                                                                                                                                                                                                                               |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                                                                                                                    | Addressed in updated BDAR | BDAR Reference                                  | Comment and Recommendation(s)                                                                                                                                                                                                                                                                      |
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|                              | noting the recreational, cultural and natural values of the nature reserve, and provide an adequate setback to the nature reserve to mitigate such impacts.                                                                                                                 |                           |                                                 | <b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issues 28.1, 29.2 and 32.1.</b>                                                                                                                                                                           |
| 33.1                         | Consider sites of Aboriginal cultural heritage across the landscape and in proximity to the proposal area (including any sites in Munghorn Gap Nature Reserve) rather than just within the Subject Area and update assessment to consider potential impacts to those sites. | Yes                       | Submissions Report – Section 4.1.1 (Page 61-62) | <p>The Submissions Report and attachments have clearly stated that there will be no impact to Aboriginal Cultural Heritage outside the indicative surface disturbance extent, including within Munghorn Gap Nature Reserve.</p> <p><b>Outcome:</b> Issue resolved. No further action required.</p> |
| 33.2                         | Consider the need for greater buffers to shelter sites (including any identified in Munghorn Gap Nature Reserve) as an avoidance measure to Aboriginal cultural heritage impacts.                                                                                           | Partially                 | Submissions Report – Section 4.1.1 (Page 63)    | <p>We acknowledge the reduction in direct impacts due to the reduction in pit footprint. Concerns are still present due to indirect impacts of dust and vibration.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 27.1.</b></p>             |
| 33.3                         | Amend the ACHA to accurately reflect the cumulative impacts of proposed damage to Aboriginal cultural heritage the locality                                                                                                                                                 | Partially                 | Submissions Report – Section 4.1.1 (Page 63-64) | <p>We acknowledge the reduction in direct impacts due to the reduction in pit footprint. Concerns are still present due to indirect impacts of dust and vibration.</p>                                                                                                                             |

| BCS Recommendation Reference | Summary of BCS Recommendation on the EIS                                                                                                                                            | Addressed in updated BDAR | BDAR Reference                               | Comment and Recommendation(s)                                                                                                                                                                                                                                               |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | (including to Munghorn Gap Nature Reserve) and provide updated avoidance and mitigation measures proportionate to those impacts.                                                    |                           |                                              | <b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issues 29.1 and 32.1.</b>                                                                                                                                                          |
| <b>34.1</b>                  | NPWS is to be included in the notification and consultation requirements (i.e. TARPs) for any circumstances that occur in or under NPWS land or with potential to impact NPWS land. | No                        | Submissions Report – Section 4.1.1 (Page 64) | <p>The Submissions Report does not outlined changes to TARPs that would incorporate notification or communication with NPWS for impacts on NPWS estate.</p> <p><b>Outcome:</b> This issue is not resolved. It is further discussed in <b>Attachment E – Issue 34.1.</b></p> |

## BCS's Advice on Serious and Irreversible Impact Entities

We have reviewed the revised Biodiversity Development Assessment Report (BDAR), including Appendix F which contains the applicant's consideration of Serious and Irreversible Impacts (SII) for the following known, predicted and/or assumed to occur SII entities within the development footprint.

The BDAR must present information relating to SII entities in accordance with section 6.12 of the *Biodiversity Conservation Act 2016* (BC Act) and section 9.1 of the Biodiversity Assessment Method (BAM) 2020. The 'Guidance to assist a decision-maker to determine a serious and irreversible impact'<sup>1</sup> (the Guidance) identifies that it is the role of the decision-maker to determine whether or not a proposal is likely to result in SII. BCS provides specialist advice on SII for the decision-maker to consider in their assessment of the project, based on review of the information presented in the BDAR.

Based on assessment against the principles at clause 6.7 of the *Biodiversity Conservation Regulation 2017* and relevant supporting guidance and evidence, such as the Guidance, the advice below indicates whether in our opinion the proposed development is likely or not likely to result in a SII on those entities.

### Summary of BCS SII guidance and recommendations

| Risk of SII as evaluated by BCS | SII Entity                                                                                                                                                 | BCS Guidance Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total SII (ha)                                             |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Likely                          | White Box-Yellow Box-Blakely's Red Gum Grassy Box Woodland and Derived Native Grassland critically endangered ecological community (Box Gum Woodland CEEC) | <p>The BDAR identifies Box Gum Woodland CEEC as being at risk of SII against SII Principle 1 (reduction in geographic extent) and Principle 2 (environmental degradation or disruption of biotic processes).</p> <p>According to the SII assessment it is expected that a total of 401.12 ha of impact to this CEEC will occur, inclusive of both woodland and Derived Native Grassland (DNG). <b>Issue 14.1 in Attachment D</b> identifies that the extent of Box Gum Woodland to be impacted by the proposal may be underestimated and likely exceeds 401.12 ha.</p> <p>The proposal will impact large, connected woody areas of Box Gum Woodland CEEC including in the south-eastern portion of Stage 3 of the development footprint. These woodland areas are connected to Munghorn Gap Nature Reserve. <b>Issue 7.1 in Attachment D</b> identifies that the proponent has not made an adequate effort to avoid and minimise impacts to Box Gum Woodland CEEC.</p> <p>The project will contribute to further decline of the geographic extent for this community, as it will create areas where it will be completely cleared, and as such SII is considered likely based on Principle 1.</p> <p>The project will also reduce the ecological function and increase the environmental degradation</p> | 401.12 ha of impact consistent with SII Principles 1 and 2 |

<sup>1</sup> Department of Planning, Industry and Environment (2019) *Guidance to assist a decision-maker to determine a serious and irreversible impact*. NSW Government. <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/guidance-decision-makers-determine-serious-irreversible-impact-190511.pdf>

| Risk of SAI as evaluated by BCS | SAI Entity                                                                                             | BCS Guidance Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Total SAI (ha)                                                                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                                                                                                        | experienced by this community and as such is considered likely based on Principle 2.<br>The proponent has not presented any proposals for additional and appropriate measures in the BDAR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                     |
| <b>Likely</b>                   | Regent honeyeater                                                                                      | <p>The BDAR identifies regent honeyeater as being at risk of SAI against SAI Principle 1 (a species which is currently reasonably suspected to be in a rapid rate of decline) and Principle 2 (species which are reasonably suspected to have a very small population size).</p> <p>According to the SAI assessment it is expected that a total of 80.5 ha of impact to regent honeyeater important mapped habitat will occur.</p> <p>The proposal will impact large, connected woody areas of native vegetation including in the south-eastern portion of Stage 3 of the development footprint. These woodland areas are connected to Munghorn Gap Nature Reserve. <b>Issue 7.1 in Attachment D</b> identifies that the proponent has not made an adequate effort to avoid and minimise impacts to regent honeyeater.</p> <p>The project will contribute to further decline of the geographic extent for this entity, and as such SAI is considered likely based on Principle 1.</p> <p>The project will also increase the environmental degradation experienced by this entity and as such is considered likely based on Principle 2.</p> <p>The proponent has not presented any proposals for additional and appropriate measures in the BDAR.</p> | 80.5 ha of impact consistent with SAI Principles 1 and 2.                                                                                           |
| <b>Unlikely</b>                 | Swift parrot                                                                                           | <p>The BDAR identifies swift parrot as being at risk of SAI against SAI Principle 1 (a species which is currently reasonably suspected to be in a rapid rate of decline).</p> <p>The development footprint does not include any Swift Parrot Important Habitat Map areas.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 105.52 ha of potential foraging habitat.                                                                                                            |
| <b>Likely</b>                   | Broad-headed snake                                                                                     | <p>The BDAR identifies broad-headed snake as being at risk of SAI against SAI Principle 4 (a species that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable).</p> <p>The proposal will not directly impact upon habitat for this entity.</p> <p>However, based on our analysis of the impacts of blasting and/or vibration, the impact on the suitable rocky habitat may have been underestimated. Impacts to rocky habitat for this entity could be damaged or destroyed by the proposal.</p> <p>In accordance with Principle 4, based on the best current ecological knowledge of the life history traits and characteristics of this species, the broad-headed snake requires habitat components that cannot be re-created within offset sites. As the areas of rocky habitat may be impacted, SAI is considered likely for this species based on Principle 4.</p> <p>The proponent has not presented any proposals for additional and appropriate measures in the BDAR.</p>                                                                                                                                                                                                           | 166 ha of potential refuge/foraging habitat woodland/forest with tree hollows within 500 m of mapped rocky habitat consistent with SAI Principle 4. |
| <b>Likely</b>                   | Cave dwelling microbats, including: <ul style="list-style-type: none"> <li>eastern cave bat</li> </ul> | <p>The BDAR identifies both the eastern cave bat and large-eared pied bat as being at risk of SAI against Principle 4 (a species that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable). As both species are listed under the same SAI principle and were found to</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A total of 113.02 ha of foraging habitat within the two-kilometre                                                                                   |

| Risk of SAI as evaluated by BCS | SAI Entity                                                             | BCS Guidance Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Total SAI (ha)                                                                                                                                                |
|---------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | <ul style="list-style-type: none"> <li>large-eared pied bat</li> </ul> | <p>be similarly impacted, they have been considered together in this SAI assessment.</p> <p>The proposal will not directly impact upon habitat for these entities.</p> <p>However, based on our analysis of the impacts of blasting and/or vibration, the impact on the suitable rocky habitat may have been underestimated. Impacts to rocky habitat for these entities could be damaged or destroyed by the proposal.</p> <p>In accordance with Principle 4, based on the best current ecological knowledge of the life history traits and characteristics of these species, both bats require habitat components that cannot be re-created within offset sites. As the areas of rocky habitat may be impacted, SAI is considered likely for both species based on Principle 4.</p> <p>The proponent has not presented any proposals for additional and appropriate measures in the BDAR.</p> | <p>buffer occurs within the Development Footprint.</p> <p>Loss of rocky habitat that surrounds the development footprint consistent with SAI Principle 4.</p> |

BCS's SAI assessment of Box Gum Woodland CEEC indicates that SAI is likely

| SAI Entity: White Box-Yellow Box-Blakely's Red Gum Grassy Box Woodland and Derived Native Grassland Critically Endangered Ecological Community (Box Gum Woodland CEEC) |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                                                                                                                                      | Steps<br>[as per section 3.2 of DPIE (2019)]                       | BCS Comments and Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                        | Identify relevant entities at risk of SAI                          | The BDAR has assessed risk of SAI to Box Gum Woodland CEEC against section 9.1.1 of the BAM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2                                                                                                                                                                      | Evaluation of the current extinction risk of the impacted entities | <p>The BDAR identifies Box Gum Woodland CEEC at risk of SAI against Principle 1 (community which is currently in a rapid rate of decline) and Principle 2 (community with a very small population size).</p> <p>The Conservation Assessment for Box Gum Woodland CEEC states that:</p> <p><i>"available data shows over 90% of the original extent of this ecological community has been cleared. Of the remaining area, a large proportion of it has been modified and occurs as trees over a predominantly exotic understorey. The Committee judge that less than 5% of the original extent of the ecological community remains of sufficient condition and size* to be included in the listed ecological community, having undergone a decline of 95% or more".</i></p> <p>The NSW Threatened Species Scientific Committee considers Box Gum Woodland CEEC to be at significant risk of extinction due to a range of threatening processes including the impacts of historic and contemporary broadscale clearing.</p> <p>The <i>National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland</i><sup>2</sup> outlines that to minimise the risk of extinction of Box Gum Woodland, there should be no</p> |

<sup>2</sup> Department of Environment, Climate Change and Water (2011) *National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland*. DECCW 2011.

|   |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                      | <p>net loss in extent or condition of this community throughout its geographic distribution.</p> <p>Table 30 in the BDAR states that the proposal will remove 401.12 ha of Box Gum Woodland CEEC.</p> <p>Box Gum Woodland is highly fragmented, isolated and modified, making it less resilient to degrading forces. At a local scale, broadscale clearing is a significant contributor to local extinction of composite flora and fauna.</p> <p>We have analysed the clearing impacts of the proposal locally in relation to the remaining extent of the Box Gum Woodland within a 5km radius of the development footprint. According to our analysis, the proposal will remove 30.2% of intact Box Gum Woodland within a 5km radius based on an identified 926.42 ha of Box Gum Woodland associated PCTs (Source: AcSVTM layer clipped to 5km of the development footprint and the mapped Box_Gum_Woodland_Impacts_Requiring_Offset layer).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3 | Detail measures taken to avoid impacts on the entity | <p>The SAI assessment in the BDAR provides detail on the actions the proponent has taken to avoid and minimise impact within the scope of the proposed project, including:</p> <ul style="list-style-type: none"> <li>• Preferentially locating disturbance in areas lacking Box-Gum Woodland CEEC (e.g., Category 1 – Exempt land) or where the vegetation/habitat is in the poorest condition (e.g., low quality DNG)</li> <li>• Avoiding open cut mining within 200 m of Moolarben Creek and Murdering Creek (which have a riparian zone comprising Box-Gum Woodland CEEC)</li> </ul> <p>The BDAR contains detail on the revised development footprint which has further reduced the area of Box Gum Woodland CEEC compared to the original design.</p> <p>Mitigation measures proposed in section 6.1.3 of the BDAR include:</p> <ul style="list-style-type: none"> <li>• implementing a vegetation clearance protocol to avoid accidental clearance;</li> <li>• taking measures to control weeds, pathogens and dust within the disturbance, revegetation and rehabilitation areas during construction and operations;</li> <li>• planting species characteristic of Box Gum Woodland CEEC;</li> <li>• fencing, managing weeds, pests and bushfire risk within approximately 109 ha of mapped Box Gum Woodland CEEC within the Habitat Enhancement Area;</li> <li>• conserving plant species consistent with the Box Gum Woodland CEEC within the Habitat Enhancement Area and rehabilitation areas;</li> <li>• monitoring areas within the Habitat Enhancement Area and rehabilitation areas to evaluate the need for supplementary seeding/plantings; and</li> <li>• reducing the risk of bushfire occurring with the Box-Gum Woodland CEEC.</li> </ul> <p>The <i>National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland</i><sup>3</sup> notes that land clearing is the main impact of mining, and this impact tends to be severe and localised. Previous mine site rehabilitation has been poorly implemented. Loss of topsoil from the original site, and specifically topsoil seed reserves affects the rehabilitation potential of sites. The specific impacts on Box Gum Woodland CEEC as a result of climate change are unknown, though these are likely to contribute to further reductions in extent.</p> <p>Our concerns about the avoid and minimise measures for this entity are outlined in <b>Attachment D – Issue 7.1</b>.</p> |

<sup>3</sup> Department of Environment, Climate Change and Water (2011) *National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland*. DECCW 2011.

|   |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Evaluate the impacts from the proposal | <p>The proposal will contribute to the loss of Box Gum Woodland CEEC. According to the revised BDAR, the project will impact 401.12 ha of Box Gum Woodland CEEC, which includes:</p> <ul style="list-style-type: none"> <li>34.22 ha of woodland: <ul style="list-style-type: none"> <li>Stage 1 – 5.6 ha</li> <li>Stage 2 – 18.4 ha</li> <li>Stage 3 – 11.3 ha</li> </ul> </li> <li>388.51 ha of DNG: <ul style="list-style-type: none"> <li>Stage 1 – 162.54 ha</li> <li>Stage 2 – 116.9 ha</li> <li>Stage 3 – 86.38 ha</li> </ul> </li> </ul> <p>The proposal will further fragment Box Gum Woodland CEEC within the landscape, contributing to loss of connectivity that could place component species at risk of local extinction.</p> <p>Given the different habitat and foraging provisions Box Gum Woodland provide in the local landscape, we consider it likely that the proposed development as it stands will cause a significant impact on Box Gum Woodland and its component fauna.</p> |
| 5 | Determine whether the impacts are SAI  | <p>On the basis of the information set out in this table, BCS considers that SAI is likely.</p> <p>The project will contribute to further decline of this ecological community which is already in a rapid rate of decline, and as such SAI is considered likely based on Principle 1.</p> <p>The project will contribute to further reduction of the population size of this ecological community which already has a very small population size, and as such is considered likely based on Principle 2.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### BCS's SAI assessment of regent honeyeater indicates that SAI is likely

| SAI Entity – Regent honeyeater ( <i>Anthochaera phrygia</i> ) |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                             | Steps                                                              | BCS Comments and Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                               | Identify relevant entities at risk of SAI                          | The BDAR has assessed risk of SAI to regent honeyeater against section 9.1.1 of the BAM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2                                                             | Evaluation of the current extinction risk of the impacted entities | <p>The BDAR identifies regent honeyeater at risk of SAI against Principle 1 (a species which is currently in a rapid rate of decline) and Principle 2 (species with a very small population size).</p> <p>The Threatened Biodiversity Data Collection (TBDC) states that the species has declined by more than 80% in three generations and &lt;50 individuals or &gt;250 individuals occur where threats are known.</p> <p><i>'Population viability in data deficient nomadic species: What will it take to save regent honeyeaters from extinction'</i><sup>4</sup> outlines that:</p> <ul style="list-style-type: none"> <li>without intervention, extinction of the species is predicted with 20 years,</li> <li>the current intensity of management strategies has limited efficacy to prevent extinction,</li> <li>the next five years (2022-2027) will be critical for implementing the most effective conservation strategy, which requires a combination of nest protection, release of zoo-bred birds with improved fitness,</li> </ul> |

<sup>4</sup> Heinsohn, R., Lacy, R., Elphinstone, A., Ingwersen, D., Pitcher, B.J., Roderick, M., Schmelitschek, E., Van Sluys, M., Stojanovich, D., Tripovich, J. & Crates, R. (2022). Population viability in data deficient nomadic species: What it will take to save Regent honeyeaters from extinction. *Biological Conservation* 266:109430.doi:10.1016/j.biocon.2021.109430.

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|---|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                             | <p>predator suppression, habitat protection and increased rates of habitat restoration, and</p> <ul style="list-style-type: none"> <li>conservation actions should aim to increase the size and density of the wild population.</li> </ul> <p>Habitat protection is required to reverse or slow the rate of extinction for regent honeyeater.</p> <p>Table ES-2 in the BDAR outlines that the proposal will result in a loss of 80.5 ha of regent honeyeater Important Habitat.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 3 | <b>Detail measures taken to avoid impacts on the entity</b> | <p>The SAI assessment in the BDAR provides detail on the actions the proponent has taken to avoid and minimise impact for this species within the scope of the proposed project, including:</p> <ul style="list-style-type: none"> <li>Avoiding the impact to mapped Important Habitat located around the periphery of the development footprint and some larger patches of remnant vegetation in the south-west of the Study Area.</li> <li>The amended project development footprint will result in a reduction to the area of woodland habitat impacted (from 84.22 ha to 34.22 ha). The majority of this is located in the south-east of the Development Footprint adjacent to Munghorn Gap Nature Reserve.</li> <li>Important Habitat along Moolarben and Murdering Creeks will also be retained and enhanced through revegetation.</li> </ul> <p>The BDAR contains detail on the revised development footprint which has a lower area of mapped Important Habitat for Regent honeyeater than in the original design.</p> <p>Mitigation measures proposed in section 6.1.3 of the BDAR include:</p> <ul style="list-style-type: none"> <li>developing and implementing a vegetation clearance protocol to avoid accidental clearance of vegetation to be retained;</li> <li>implementing measures to manage Noisy Miners prior to and during regent honeyeater breeding season;</li> <li>implementing measures within the Habitat Enhancement Area to manage and enhance mapped Important Habitat for the regent honeyeater;</li> <li>delivering a program to monitor for regent honeyeater breeding;</li> <li>evaluating methods to increase breeding success;</li> <li>identifying suitable Eucalypt species which could provide foraging habitat for the regent honeyeater that will be included within the Habitat Enhancement Area and rehabilitation areas, and</li> <li>monitoring revegetation within the Habitat Enhancement Area and rehabilitation on the mine final landform.</li> </ul> <p>Mitigation measures outlined in the '<i>Population viability in data deficient nomadic species: What will it take to save regent honeyeaters from extinction</i><sup>5</sup> include bolstering the population using captive-bred birds and nest population (nest predator suppression). Habitat restoration will only be an effective mitigation measure for regent honeyeater where the point of extinction is extended well beyond the predicted 20 year period.</p> |
| 4 | <b>Evaluate the impacts from the proposal</b>               | <p>The BDAR identifies regent honeyeater at risk of SAI against Principle 1 (a species which is currently reasonably suspected to be in a rapid rate of decline) and Principle 2 (species which are reasonably suspected to have a very small population size).</p> <p>The proposal includes a loss of 80.5 ha of mapped Important Habitat for regent honeyeater, contributing to the loss of habitat for this species.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5 | <b>Determine whether the impacts are SAI</b>                | <p>On the basis of the information set out in this table, BCS considers that SAI is likely.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

<sup>5</sup> Heinsohn, R., Lacy, R., Elphinstone, A., Ingwersen, D., Pitcher, B.J., Roderick, M., Schmelitschek, E., Van Sluys, M., Stojanovich, D., Tripovich, J. & Crates, R. (2022). Population viability in data deficient nomadic species: What it will take to save Regent honeyeaters from extinction. *Biological Conservation* 266:109430.doi:10.1016/j.biocon.2021.109430.

|  |  |                                                                                                                                                                                                              |
|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | The project will contribute to further decline of a rapidly declining species with a small population size by clearing important habitat, and as such SAIL is considered likely based on Principles 1 and 2. |
|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

BCS's SAIL assessment of swift parrot indicates that SAIL is unlikely

| SAIL Entity – Swift Parrot ( <i>Lathamus discolor</i> ) |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                       | Steps                                                              | BCS Comments and Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                         | Identify relevant entities at risk of SAIL                         | The BDAR has assessed risk of SAIL to swift parrot against section 9.1.1 of the BAM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2                                                       | Evaluation of the current extinction risk of the impacted entities | The BDAR identifies swift parrot as being at risk of SAIL against Principle 1 (a species which is currently reasonably suspected to be in a rapid rate of decline).<br>The TBDC states that the swift parrot has experienced a population decline of ≥80% in 10 years or three generations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3                                                       | Detail measures taken to avoid impacts on the entity               | The SAIL assessment in the BDAR provides detail on the actions the proponent has taken to avoid and minimise impact for this species within the scope of the proposed project, including: <ul style="list-style-type: none"> <li>Avoiding impact to foraging habitat including Box-Gum Woodland located around the periphery of the development footprint and some larger patches of remnant vegetation in the south-west of the Study Area.</li> <li>The amended Project Development Footprint will result in a reduction to the area of woodland habitat impacted (from 84.22 ha to 34.22 ha). The majority of this is located in the south-east of the Development Footprint adjacent to Munghorn Gap Nature Reserve</li> <li>Potential foraging habitat along Moolarben and Murdering Creeks will also be retained and enhanced through revegetation.</li> </ul> The BDAR contains detail on the revised development footprint which has a lower area of impact for swift parrot foraging than in the original design. The BDAR provides a map of the study area illustrating the locations of foraging for swift parrot. |
| 4                                                       | Evaluate the impacts from the proposal                             | The BDAR identifies swift parrot at risk of SAIL against Principle 1 (a species which is currently reasonably suspected to be in a rapid rate of decline).<br>The SAIL assessment in the BDAR states that the loss for this species is identified as 105.52 ha of potential foraging habitat including remnant woodland, forest and shrubland, DNG, regenerating and scattered trees would be impacted by the Project.<br>No areas identified on the swift parrot Important Habitat Map will be directly impacted by the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5                                                       | Determine whether the impacts are SAIL                             | On the basis of the information set out in this table, BCS considers that SAIL is unlikely.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

BCS's SAIL assessment of broad-headed snake indicates that SAIL is likely

| SAIL Entity – Broad-headed snake ( <i>Hoplocephalus bungaroides</i> ) |                                            |                                                                                            |
|-----------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------|
| 1                                                                     | Steps                                      | BCS Comments and Recommendations                                                           |
|                                                                       | Identify relevant entities at risk of SAIL | The BDAR has assessed risk of SAIL to broad-headed snake against section 9.1.1 of the BAM. |

|   |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Evaluation of the current extinction risk of the impacted entities | <p>The BDAR identifies broad-headed snake as being at risk of SAI against Principle 4 (a species which is unlikely to respond to management).</p> <p>Based on the best current ecological knowledge of the life history traits and characteristics of the broad-headed snake, they require habitat components that cannot be re-created within offset sites. In this case, the essential habitat component they require is the suitable rocky habitat.</p> <p>The TBDC states that this species shelters under rocks and crevices during the late summer to early spring and as conditions warm up it shifts to using hollows in trees – often in sandstone gully forest just downslope from the outcrops.</p>                                                                                                                                                                                                                                                                                      |
| 3 | Detail measures taken to avoid impacts on the entity               | <p>The SAI assessment in the BDAR provides detail on the actions the proponent has taken to avoid and minimise impacts on this species within the scope of the proposed project, including:</p> <ul style="list-style-type: none"> <li>avoiding direct impacts on mapped rocky habitat (i.e., caves, crevices, cliffs, rocks)</li> </ul> <p>The BDAR contains details on the revised development footprint which has avoided all mapped rocky habitat with a 100m buffer for the broad-headed snake.</p> <p>The amendment report provides a map of the study area illustrating the locations of the mapped rocky habitat and breeding habitat (100m buffer from the mapped rocky habitat) for the broad-headed snake.</p>                                                                                                                                                                                                                                                                           |
| 4 | Evaluate the impacts from the proposal                             | <p>The BDAR identifies broad-headed snake at risk of SAI against Principle 4 (a species which is unlikely to respond to management).</p> <p>The SAI assessment in the BDAR states that all mapped rocky habitat for the broad-headed snake would be avoided by the project, including woodland and forest within 100m of the mapped rocky habitat (breeding habitat). Potential refuge/foraging habitat for the broad-headed snake includes any suitable woodland/forest with tree hollows within 500m of suitable rocky habitat. As such, the Project would remove 166 ha of potential refuge/foraging habitat woodland/forest with tree hollows within 500m of mapped rocky habitat.</p> <p>Based on BCS's analysis of the impacts of blasting and/or vibration, the impact on the suitable rocky habitat may have been underestimated. This is further discussed in <b>Attachment D – Issue 7.1</b>. Impacts to rocky habitat for this entity could be damaged or destroyed by the proposal.</p> |
| 5 | Determine whether the impacts are SAI                              | <p>On the basis of the information set out in this table, BCS considers that SAI is likely.</p> <p>The project will contribute to the loss of irreplaceable habitat features, and/or the buffers around them, and as such SAI is considered likely based on Principle 4.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

BCS's SAI assessment of cave-dwelling microbats indicates that SAI is likely

| SAI Entity – Large-eared Pied Bat ( <i>Chalinolobus dwyeri</i> ) and Eastern Cave Bat ( <i>Vespadelus troughtoni</i> ) |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                                                                                      | Steps                                                              | BCS Comments and Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                        | Identify relevant entities at risk of SAI                          | <p>The BDAR has assessed the risk of SAI to eastern cave bat and large-eared pied bat against section 9.1.1 of the BAM.</p> <p>As both species are listed under the same SAI principle and were found to be similarly impacted, we have considered the species together in this SAI assessment.</p>                                                                                                                                                                                                                                              |
| 2                                                                                                                      | Evaluation of the current extinction risk of the impacted entities | <p>The BDAR identifies both the eastern cave bat and large-eared pied bat at risk of SAI against Principle 4 (a species that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable).</p> <p>Based on the best current ecological knowledge of the life history traits and characteristics of these species, they require habitat components that cannot be re-created within offset sites. In this case, the essential habitat component they require is the suitable rocky habitat.</p> |

|          |                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |                                                             | The TBDC states that the large-eared pied bat is found in areas with extensive cliffs and caves whilst the eastern cave bat is a cave-roosting species that is usually found in open forest and woodland, near cliffs or rocky overhangs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>3</b> | <b>Detail measures taken to avoid impacts on the entity</b> | <p>The SAIL assessment in the BDAR provides detail on the actions the proponent has taken to avoid and minimise impact within the scope of the proposed project, including:</p> <ul style="list-style-type: none"> <li>Avoiding direct impacts on mapped rocky habitat (i.e., caves, crevices, cliffs, rocks)</li> </ul> <p>The BDAR contains details on the revised development footprint which has avoided all mapped rocky habitat and all woodland or forest within 100m of the mapped woodland/ forest for the cave-dwelling microbats.</p> <p>It includes a discussion of alternative technologies, routes and sites which were considered for the study corridor.</p> <p>The amendment report provides a map of the study area illustrating the locations of the mapped rocky habitat and breeding habitat (100m buffer from the mapped rocky habitat) for the cave-dwelling microbats.</p> |
| <b>4</b> | <b>Evaluate the impacts from the proposal</b>               | <p>The SAIL assessment in the BDAR states that the Project would avoid all suitable rocky breeding habitat. A total of 113.02 ha of foraging habitat within the two-kilometre buffer occurs within the Development Footprint. This is the area of habitat to be impacted by the Project.</p> <p>Based on BCS's analysis of the impacts of blasting and/or vibration, the impact on the suitable rocky habitat may have been underestimated. This is further discussed in <b>Attachment D – Issue 7.1</b>. Impacts to rocky habitat for this entity could be damaged or destroyed by the proposal.</p>                                                                                                                                                                                                                                                                                              |
| <b>5</b> | <b>Determine whether the impacts are SAIL</b>               | <p>On the basis of the information set out in this table, BCS considers that SAIL is likely.</p> <p>The project will contribute to the loss of irreplaceable habitat features, and/or the buffers around them, and as such SAIL is considered likely based on Principle 4.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## BCS's detailed comments – Biodiversity

### Moolarben OC3 Extension Project – Response to Submissions Report

#### 7.1 The revised project does not adequately avoid and minimise impacts to biodiversity

Section 7.1.1 of the BDAR outlines that knowledge of biodiversity values should inform decisions about the location of a proposal. Impacts from clearing native vegetation and threatened species habitat can be avoided or minimised by locating the proposal in areas:

- a) lacking biodiversity values
- b) where the native vegetation or threatened species habitat is in the poorest condition
- c) that avoid habitat for species with a high biodiversity risk weighting or land mapped on the important habitat map, or native vegetation that is a TEC or a highly cleared PCT.
- d) outside of the buffer area around breeding habitat features such as nest trees or caves.

We have reviewed the updated BDAR and note further amendments to the development footprint undertaken since EIS stage. The amendment report outlines the revised development footprint, including a reduction in the extent of proposed disturbance from approximately 825 ha to 675 ha. The summary section of the BDAR outlines that measures to avoid and minimise impacts on biodiversity values include:

- Refining and reducing the development footprint to reduce impacts biodiversity
- Avoiding all direct disturbance to mapped rocky habitat plus a 100m buffer for the broad-headed snake, eastern cave bat and large-eared pied bat
- Implementing a blast criterion of 50 millimetres per second (mm/s) at nearest rocky habitat features
- Avoiding and minimising vegetation clearance within riparian habitat
- Minimising impacts on the Box Gum Woodland CEEC
- Avoiding rocky habitat for the pink-tailed legless lizard in the south-west
- Progressively back-filling and rehabilitating open cut pits to ensure on-going replacement of habitat/resources
- Establishing a 100m setback from boundary of Munghorn Gap Nature Reserve.

Section 4.1 of the BDAR outlines the alternatives considered for the location of the development, alternative modes or technologies, alternative routes and alternative sites to avoid or minimise direct and indirect biodiversity impacts. We understand that there were limited opportunities for alternative technologies to be used. No alternative routes were considered based on using existing infrastructure. No alternative sites were considered due to the limitation of the existing mining tenements. The opportunities to avoid and minimise impacts to biodiversity were understood to be confined to the location selected for the development footprint from within the study area.

Section 4.1 of the BDAR states that the general location of the Project has been determined by the presence of the coal resource able to be economically mined, existing mining tenements and environmental constraints. No further detail about the location of the coal resources at the site or the existing mining tenements is provided in the amended BDAR. Whilst detail is provided about the biodiversity constraints on site and how avoidance and minimisation have been addressed, it is unclear why further avoidance and minimisation was not undertaken at the proposal site. The proposal site could have been further reduced to further avoid and minimise impacts to key biodiversity entities, notably SAIL entities Box Gum Woodland CEEC, regent honeyeater, large eared pied-bat, the eastern cave bat, and the broad-headed snake.

The BDAR outlines that the development footprint consists of 186.6 ha of non-native vegetation. Concentrating the development footprint in non-native areas and the minimal areas of native vegetation required for project connectivity between these areas would demonstrate greatly improved avoidance of key biodiversity values, avoid or reduce likely SAI and the need for additional and appropriate measures and reduce the overall credit obligation.

In our EIS response (dated 25 January 2023), we advised that further avoidance of impacts should be undertaken. We recommended impacts be further avoided and minimised to reduce proposed impacts to SAI entities including Box Gum Woodland, regent honeyeater, large eared pied-bat, the eastern cave bat, and the broad-headed snake, as well as koala and squirrel glider.

As part of this avoidance and minimisation of impacts to key biodiversity values, we recommended a minimum setback of at least 500m (or greater of vibration damage to roosts are still expected) from the geological features within Munghorn Gap Nature Reserve, to significantly reduce the direct loss of habitat and create a commensurate reduction in blasting vibration impacts. In response the revised BDAR has adopted a 100m setback from the development footprint to mapped rocky habitat.

### **Biodiversity mitigation hierarchy**

The biodiversity mitigation hierarchy requires, in order, to avoid, then minimise impacts and only offset residual impacts remaining after all steps are taken to avoid or minimise have been undertaken.<sup>6</sup> We have reviewed the avoid and minimise efforts in the revised BDAR and are not satisfied that the proposal has adequately applied the mitigation hierarchy.

Proponents cannot rely on the provision of biodiversity offsets as sufficient justification for the acceptability of proposed development. Land which is already cleared and therefore does not require offsets should be prioritised and utilised for development as far as possible.

The avoidance of areas that are not capable of being developed cannot be used as evidence of avoidance.<sup>7</sup> For example, avoiding riparian land which contains both Murdering and Moolarben Creeks, set aside as part of the Habitat Enhancement Area cannot be as an avoidance measure under the BC Act hierarchy because this land is not capable of being developed due to the existing waterways. The revised BDAR has overstated the measures undertaken for the proposal in regard avoiding creeks. Avoidance measures must be limited to only areas capable of being developed as part of the proposal, which were then subsequently avoided.

As outlined above, the proposal had limited opportunities to avoid and minimise by considering alternative technologies, routes or sites. However, the development footprint could have been amended to further avoid key biodiversity entities. Opportunities to undertake meaningful avoidance to entities at risk of SAI have not been taken. Issues raised for avoidance and minimisation of these SAI entities are outlined below.

### **Box Gum Woodland CEEC**

In our response at EIS stage (dated 25 January 2023), we advised that Box Gum Woodland CEEC is listed as a SAI entity under Principle 1 and Principle 2 in accordance with Section 6.7 of the *Biodiversity Conservation Regulation 2017*. We stated that a loss of a cumulative 477.75 ha of Box Gum Woodland would contribute significantly to the risk of this entity becoming extinct within NSW. We recommended that the development footprint be amended to reduce impacts on the proposed development on Box Gum Woodland.

Section 8.4.1 of the BDAR outlines how the impacts to clearing Box Gum Woodland have been avoided and minimised through project design by:

- Reducing the development footprint, particularly the relatively high quality woodland areas of Box Gum Woodland

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<sup>6</sup> *Tomasic v Port Stephens Council* [2021] NSWLEC 56.

<sup>7</sup> *Planners North v Ballina Shire Council* [2021] NSWLEC 120.

- Locating disturbance in areas lacking Box Gum Woodland or where the vegetation/habitat is in the poorest condition
- Avoiding open cut mining within 200m of the creeks which have a riparian zone comprising Box Gum Woodland

Figure ES-6 in the Amendment report shows the location of the woodland component of Box Gum Woodland relative to the additional avoid and minimise measures for the amended project. The text accompanying Figure ES-6 in the Amendment report states that residual impacts to Box Gum Woodland are limited to scattered/isolated patches that are not feasible to avoid.

Figure 12 in the BDAR shows large, connected patches of Box Gum Woodland occurring within the development footprint. Some woodland components of Box Gum Woodland adjoin the edge of the development footprint and could therefore have been excluded. No further details about why it is not feasible to avoid these areas of Box Gum Woodland is provided.

We note that whilst the development footprint has been further reduced by approximately 150 ha, only approximately half of this reduction is Box Gum Woodland. Furthermore, approximately a third of this reduction comprises the woodland component of Box Gum Woodland. While the project as reduced impacts to Box Gum Woodland by approximately 77 ha overall, a residual impact on 401.12 ha remains.

The development footprint comprises large, connected areas of Box Gum Woodland including substantial areas of woodland in the south-eastern portion of Stage 3 of the development footprint. These areas of Box Gum Woodland are primarily surrounded by woodland with connectivity to Munghorn Gap Nature Reserve. It is unclear why greater avoidance or minimisation was not taken at the known locations of Box Gum Woodland.

In summary:

- Box Gum Woodland is a key biodiversity value known to occur at specific locations within the study area.
- Further avoidance for this entity was previously recommended by BCS.
- Despite the opportunity to reduce and locate the development footprint within non-native vegetation, the revised BDAR includes limited efforts to further avoid impacts to Box Gum Woodland.
- Revised avoidance measures did not exclude substantial areas of this entity from development impacts.
- Based on the loss of a cumulative 401.12 ha of Box Gum Woodland, we consider SAIL is likely for this entity.

### **Regent honeyeater**

In our response (dated 25 January 2023), we advised that regent honeyeater is listed as a SAIL entity under Principle 1 and Principle 2 in accordance with Section 6.7 of the *Biodiversity Conservation Regulation 2017*. We stated that a direct loss of 181.41 ha of woodland defined as habitat which is essential to support critical life stages of the species and maintain the survival of the species in the wild and an additional disturbance to 2,481 ha of potential habitat via operational noise, artificial light and air blasts would contribute significantly to the risk of the regent honeyeater becoming extinct within NSW. We recommended that the development footprint be amended to reduce impacts on the proposed development on regent honeyeater.

Section 8.4.5 of the BDAR outlines how following submission of the EIS, the Project design was amended to further minimise the impacts to areas of woodland in the Study Area, particularly the relatively high quality woodland areas mapped on the regent honeyeater Important Habitat Map adjacent to Munghorn Gap Nature Reserve.

Figure ES-7 in the Amendment report shows the location of the regent honeyeater Important Habitat Mapping relative to the additional avoidance and minimisation for the amended project. The text accompanying Figure ES-7 in the Amendment report states that residual impacts to

regent honeyeater Important Habitat Mapping are limited to scattered/ isolated patches that are not feasible to avoid.

Figure ES-7 shows large, connected patches of regent honeyeater Important Habitat Mapping occurring within the development footprint. Since the regent honeyeater Important Habitat Mapping generally follows woodland, there is overlap between the regent honeyeater Important Habitat Mapping and the woodland component of Box Gum Woodland, especially in the south of the development footprint. There are many areas where the regent honeyeater Important Habitat Mapping adjoins the edge of the development footprint and could therefore have been excluded. No further details about why it is not feasible to avoid these areas are provided.

Following revisions, the amended project will still impact upon 81 ha of regent honeyeater Important Habitat Mapping. We note that whilst the development footprint has been further reduced by approximately 150 ha, only approximately half of this reduction has occurred on land within the regent honeyeater Important Habitat Map.

The development footprint includes large, connected areas of regent honeyeater Important Habitat Mapping including substantial areas of woodland in the south-eastern portion of Stage 3 of the development footprint. These areas of woodland are primarily surrounded by other areas of regent honeyeater Important Habitat Mapping with connectivity to Munghorn Gap Nature Reserve, which is also recognised by the Important Habitat Map criteria. It is unclear why greater efforts to avoid or minimise impacts on mapped regent honeyeater habitat were not undertaken.

In summary:

- Regent honeyeater is a key biodiversity value known to occur at specific locations within the study area.
- Further avoidance for this entity was previously recommended by BCS.
- Despite the opportunity to co-avoid with some areas of Box Gum Woodland and the opportunity to reduce and location the development footprint within non-native vegetation, limited avoidance measures were implemented.
- Revised avoidance measures did not exclude substantial areas of this entity.
- Based on the loss of a cumulative 81 ha of regent honeyeater Important Habitat Mapping, we consider that SAI is likely for this species.

### **Cave Dwelling Microbats and the Broad-headed Snake**

In our response (dated 25 January 2023), we advised that two threatened microbats, the large eared pied-bat and the eastern cave bat, along with the broad-headed snake are listed as a SAI entity under Principle 4 in accordance with Section 6.7 of the *Biodiversity Conservation Regulation 2017*. We stated that a direct loss of habitat for these species, in addition to potential impacts to cave and sandstone features from vibration damage, would contribute significantly to the risk of these three entities becoming extinct within NSW.

These three SAI entity species require habitat components that cannot be recreated within offset sites. As per our response (dated 25 January 2023), we outlined that the project could irreversibly disturb or destroy fragile geological features and cave complexes near proposed blasting areas. This rocky habitat is likely relied upon by these species for habitat and/or breeding. Therefore, of greater concern for these species, are the additional prescribed and indirect impacts that may occur to a much more significant extent of breeding habitat surrounding the project. We raised concern about the ability to adequately manage these impacts. We recommended a setback of at least 500m or greater if vibration damage to roosts is still expected.

Section 4.4.1 of the BDAR outlines how following submission of the EIS, the development footprint was amended to avoid direct impacts on mapped rocky habitat for these species. A 100m setback from mapped rocky habitat associated with threatened species reliant on sandstone was incorporated. The blast vibration was proposed to be limited to 50mm/s at the nearest mapped rocky habitat, unless further geotechnical investigation supports a higher value.

The 100m buffer from the mapped rocky habitats is a welcome amendment to the development footprint, since it removes the previous direct impact to habitat for large eared pied-bat, the eastern cave bat and the broad-headed snake. However, the potential remains for indirect impacts to the rocky habitat these entities require.

It is generally accepted that fauna would prefer habitat with less disturbance and therefore fauna may alter their range to move further away from the blasting areas. Blasting has the potential to temporarily disrupt bat roosting and breeding, and could cause them to exit the roost during the day.

The proposal outlines that the blasting will continue for 10 years and occur across different locations within the development footprint as mining progresses. The blasts are proposed to occur during the day, which could disrupt nocturnal fauna.

Section 6.1.1 of the Appendix I of the EIS (the Blast Vibration Impact Assessment) states:

*“The most likely mechanism to potentially impact geological features outside of the development process is as follows: Vibration induced damage beyond the permanent damage zone ground motion is typically elastic and takes the form of vibration where deformation is largely recoverable. However, repeated elastic motion due to vibration can be high enough itself to result in damage to the rock mass. This can take the form of cracks developing and/ or widening, spalling of rocks off rock faces and the roofs of caves.”*

The conclusion of Appendix I of the EIS states that an indistinguishable level of damage to sensitive geological features is an acceptable outcome of blasting. However, the report acknowledges that it is difficult to distinguish between natural processes and blast induced damage. Accurate estimation of ground vibration levels is complex.

Appendix I of the EIS acknowledges that poor quality rock can be impacted at just 15 mm/s. The onset of damage is highly variable and depends on factors such as geology and rock mass condition. The BDAR does not discuss what an appropriate setback distance from rocky habitat would be to support the protection of this habitat for SAI entities. While it removes direct impact to these species, the 100m setback has been justified in terms of its indirect impacts.

The BDAR outlines an intention to monitor for the cave dwelling threatened bats. However, this approach does not propose any measures which would address a scenario where rocky habitat is destroyed or decreased by the proposal. As rocky habitat is not replaceable, it is imperative that these areas are not impacted by the proposal in the first instance.

Where there is uncertainty surrounding the impact of subsidence on the biodiversity values at the development site, the precautionary principle applies. There is a considerable uncertainty surrounding:

- How the large eared pied-bat, the eastern cave bat and the broad-headed snake will respond to the impact of blasting, and
- The degree to which blasting will impact upon the rocky habitat.

Greater protection should be offered given the sensitivity of the entities at risk of SAI, and also the degree to which the habitat, if impacted by the proposal, is not capable of being replaced. Our previous recommendation that a setback of at least 500m (or greater if vibration damage to roosts is still expected) has not been implemented.

It is unclear what geotechnical investigations would be undertaken to indicate that a higher value of blast vibration would be supported. In the absence of any evidence that a higher value of blast vibration is supported, and the existing uncertainties that could occur above 15mm/s, BCS does not support instances which would exceed 15mm/s.

Based on the loss of rocky habitat which provides support for the large eared pied-bat, the eastern cave bat and the broad-headed snake, we consider SAI is likely for these species.

## Koala and Squirrel Glider

In our response (dated 25 January 2023), we recommended revising the development footprint to further avoid and minimise impacts to the koala and squirrel glider. Section 2.2.2 of the amendment report outlines that the proposed amendments have reduced disturbance of potential habitat for threatened species, including these two species.

Measures to avoid and minimise impacts for koalas and squirrel glider outlined in section 4.2.1 of the BDAR includes:

- Avoiding and minimising higher quality Box Gum Woodland remnants adjacent to Munghorn Gap Nature Reserve, and
- minimising infrastructure within the riparian areas and locating creek crossings within previously cleared areas.

Section 5.1.3 of the BDAR provides that the proposal will impact 113.02 ha of both koala and squirrel glider habitat. The amendments include a reduction from 84.22 ha to 34.22 ha of woodland impacted and a reduction from 393.53 ha to 366.9 ha of derived native grassland impacted.

Evidence of presence for both species was recorded on several occasions. Figure 14a shows koala records surrounding the development footprint, including within the north-eastern section near Munghorn Gap Nature Reserve. Squirrel glider has been recorded in a similar location to the koala within the development footprint, and in a patch of woodland in the north of the development footprint. These areas are of high importance as they provide known habitat for both threatened species.

Figures 17g and 17h show the species polygons for koala and squirrel glider, being the areas of direct impact requiring offsets for these species. These areas are woody vegetated areas within the development footprint. This woody vegetation overlaps with known habitat for SAI entities, including Box Gum Woodland and the regent honeyeater Important Habitat Mapping. Efforts to prioritise avoidance of woody vegetation also prioritises the protection of important habitat for other threatened species and communities.

Section 8.4.8 of the BDAR outlines that the proposal would result in the clearance of sparse isolated patches of koala habitat across the valley floor, reducing the area of habitat and foraging resources available to the species and potentially impacting movement from east to west (Figure 17g). These species would be displaced over the life of the project as habitat is progressively cleared.

Section 3.4.5 in Appendix C of the BDAR states:

*“Considering the recent large declines that have been recorded throughout the species range (DAWE 2022a), and that there is evidence to suggest the population within the Study Area has survived the recent and historical temperature increases (see Lane et al. 2020), drought and bushfires comparably well, there is evidence to suggest habitats within the Study Area could be critical to the survival of the (Koala) species.”*

The avoidance and minimisation measures proposed have removed some areas of woody vegetation but not others. Patches of woodland with good proximity and connectivity to Munghorn Gap Nature Reserve within the development footprint provide habitat for a range of threatened species, including koala and squirrel glider. It is not clear what constraints prevented further avoidance of the habitat for koala and squirrel glider, especially at the known recorded locations within the woody vegetation.

As outlined in our response (dated 25 January 2023), the consent authority should note our advice in relation to the entities addressed above when considering the adequacy of the avoidance and minimisation to biodiversity impacts proposed, conditioning of the project and potential project approval.

### Recommendations:

- 7.1a Carry out further measures to avoid and minimise impacts prior to offsetting for key biodiversity entities including SAI entities.
- 7.1b As part of considering whether to approve the project, note BCS advice in relation to SAI entities including the adequacy of the avoidance and minimisation to biodiversity impacts proposed, and for this advice be incorporated into project conditions.
- 35 Mitigation measures do not address the residual impact to SAI entities broad-headed snake, eastern cave bat and large-eared pied bat if physical impact to rocky habitat is detected.

Mitigation measures should be used where there is uncertainty on the extent of impacts. Section 8.4 of the BAM outlines that the BDAR should evaluate the risk and consequence of any impact likely to remain after mitigation measures are applied. Thresholds can be used for adaptive management to identify when a prescribed impact has occurred, and when the implantation of adaptive management actions is triggered. Proposed measures should address residual prescribed impacts on threatened entities during construction or operation phases.

Section 4.4.1 of the revised BDAR outlines the monitoring and mitigation measures to manage potential blast impacts to mapped rocky habitat as:

- *“pre-blast desktop assessment to identify the proximity of mapped rocky habitat to planned blast areas, in order to inform vibration modelling and therefore blast design*
- *site-specific vibration modelling per blast to calculate MIC required to meet PPV limit for nearest mapped rocky habitat*
- *continuation of existing vibration monitoring as described in the Blast Management Plan, and implementation of additional vibration monitoring at one or more new representative sites of mapped rocky habitat adjacent to the Project*
- *ongoing review of monitoring data to confirm and update site-specific vibration modelling where necessary and*
- *visual inspections of key representative mapped rocky habitat on a 6-monthly basis to confirm that the target outcome of no physical impact to mapped rocky habitat (and therefore no physical impact to the Munghorn Gap Nature Reserve) as a result of blasting vibrations continues to be achieved.”*

Whilst beneficial to detecting impacts to mapped rocky habitat, the mitigation measures outlined above do not provide specific mitigation measures to address the circumstances in which visual inspections reveal physical impacts have occurred to mapped rocky habitat.

The mapped rocky habitat (i.e., caves, crevices, cliffs, rocks) 100m away from the development footprint boundary provides habitat for the broad-headed snake, eastern cave bat and large-eared pied bat. Section 4.4.1 acknowledges that impact to mapped rocky habitat could occur through blasting vibrations.

The broad-headed snake, eastern cave bat and large-eared pied bat are listed under SAI Principle 4 as a species that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable.

If this rocky habitat is damaged or destroyed by the proposal, there are no mitigation measures which will address the impact which has already occurred to the habitat for these SAI entities. Any impact to the rocky habitat caused by blasting could result in a residual impact to SAI entities which is not addressed by the proposed mitigation measures.

### Recommendations:

- 35 Include adaptive management measures to address circumstances in which an impact to rocky habitat is detected in relation to broad-headed snake, eastern cave bat and large-eared

piebald bat. Measures should be Specific, Measurable, Achievable, Relevant and Time Bound (SMART) and provided prior to approval.

### 36 Additional and appropriate measures are required to minimise SAI

We have reviewed the SAI assessments provided in the amended BDAR and provided detailed advice on SAI entities in Attachment C. Our SAI assessment indicates that SAI is likely for Box Gum Woodland, regent honeyeater, broad-headed snake, eastern cave bat and large-eared piebald bat.

Section 7.16(3) of the *Biodiversity Conservation Act 2016* provides that where impacts on SAI entities are likely, consideration should be given whether there are any additional and appropriate measures that will minimise impacts to SAI entities. No such measures have been proposed as part of the RTS, and we recommend that a package be prepared addressing each entity where it is determined that SAI is likely.

Additional and appropriate measures should be developed in consultation with BCS, finalised prior to consent and subsequently included as a requirement of conditions of development consent. The development of additional and appropriate measures should occur following further revision of the avoidance and minimisation hierarchy to address the impacts for the SAI entities outlined in Issue 7.1. We remain available to discuss additional and appropriate measures with DPHI and the proponent, and to provide further detailed advice as required.

#### Recommendations:

- 36 Develop additional and appropriate measures for Box Gum Woodland CEEC, regent honeyeater, broad-headed snake, eastern cave bat and large-eared piebald bat in consultation and to the satisfaction of with BCS, following further efforts to avoid and minimise SAI.

### 14.1 The extent of Box Gum Woodland CEEC may have been under-estimated

Our review of the initial draft land categorisation for the project (DOC22/435468 dated 2 June 2022) highlighted the need for assessment of the presence or absence of Box Gum Woodland CEEC (a Category 2 – regulated land criteria) as part of finalising the land categorisation.

Our EIS response (dated 25 January 2023) raised concerns that Box Gum Woodland CEEC may have been designated as Category 1 – exempt land. In response to the BCS recommendations, the Submissions Report states that Niche undertook a site-based floristic assessment in winter 2023 to further review the land categorisation, with additional data provided in Section 1.3 of the BDAR.

The only additional data supplied to BCS is ‘*Interim Grasslands and Other Groundcover Method*’ (IGGAM)<sup>8</sup> transect and plot data collected by Niche at 15 locations on land within the development footprint, mapped as Category 1. Only the Niche raw transect data (i.e., without percentage calculations, native species statistics and referenced calculator outputs) is presented in the revised BDAR (Appendix K). The additional Niche data is not specifically referenced in the assessment of Box Gum Woodland CEEC presence/absence presented on pages 5 to 7 of Section 1.3 of the revised BDAR.

The floristic assessment<sup>9</sup> (Appendix B of revised BDAR) describes why specific mapped vegetation zones were considered to meet the Box Gum Woodland CEEC NSW Scientific

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<sup>8</sup> <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/native-vegetation-regulatory-map/request-a-free-map-review/interim-grasslands-and-other-groundcover-assessment-method>

<sup>9</sup> Eco Logical Australia (2022). *Moolarben Coal Complex OC3 Extension Project baseline Flora Survey Report*. Prepared for Moolarben Coal Operations Pty Ltd.

Committee Final Determination<sup>10</sup>. However, that assessment did not explain how the remaining areas mapped as Category 1 land did not meet the criteria for Box Gum Woodland CEEC. The revised BDAR has not effectively addressed this deficiency. Section 1.3 of the revised BDAR has not suitably justified the absence of the Box Gum Woodland CEEC (on land mapped in the BDAR as Category 1 – exempt) against the Scientific Committee Final Determination for Box Gum Woodland CEEC. As stated in Attachment C, derived native grassland formations of Box Gum Woodland do meet the communities Final Determination, and as such must be assessed to fully capture the project's SAIL quantum.

We have only had access to the raw Niche IGGAM data and part of the raw ELA IGGAM data in excel spreadsheets (ELA IGGAM transect data was requested on 8 May 2024 and not yet provided). The ELA floristic assessment<sup>9</sup> also indicates data collection from 'rapid data points', however BCS has not been provided this data. We have not been able to reconcile the assessment in section 1.3 of the BDAR with the data provided.

Specific comments are provided in Table 1 below.

**Table 1 BCS comments on the Niche Box Gum Woodland CEEC conclusions for land mapped within the BDAR as Category 1- exempt land**

| Revised BDAR – summarised reasoning for Box-Gum CEEC absence (Section 1.3)                                                                                                                                                                                                            | BCS comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>The assessor cannot assign a PCT due to groundcover being floristically depauperate and only containing five characteristic species for PCT 281.</p>                                                                                                                               | <p>Section 3.3.1 of the BAM Operational Manual – Stage 1<sup>11</sup> states that vegetation which does not strictly meet the definition of a PCT, as per the BioNet Vegetation Classification, can be allocated to the PCT to which it most closely aligns.</p> <p>The assessor must determine the most likely original PCT for areas of derived native vegetation. In determining the most likely PCT that occupied the site prior to modification, the assessor should use nearby reference sites with similar geophysical characteristics (e.g., position, landform, aspect and lithology).</p> <p>ELA previously assigned PCT 281 to the Category 1 land on the basis of the native species recorded and the adjacent PCT assigned. The land mapped as Category 1 is adjacent to/surrounding mapped zones 'PCT 266 DNG', 'PCT 281 DNG' and PCT 281 DNG low'.</p> <p>BCS also notes that across all data supplied for the remaining Category 1 land, the number of species recorded on the list of characteristic ground stratum species for PCT 281 in BioNet is 14 rather than 5 (and 11 for PCT 266).</p> |
| <p>19 species from the Final Determination are present but '<i>not uniformly distributed</i>' across the area mapped as Category 1.</p> <p>Total native species diversity is lower than in the areas mapped as vegetation zones (Table 3 of the BDAR reports total native species</p> | <p>Parts 1 and 2 of the Final Determination<sup>10</sup> note that:</p> <ol style="list-style-type: none"> <li>1. the listed characteristic species may be abundant or rare and comprise only a subset of the complete list of species recorded in known examples of the community.</li> <li>2. the CEEC may contain species additional to those specifically listed in the Determination.</li> <li>3. species presence and relative abundance (dominance) will vary from site to site as a function of environmental factors, disturbance and weather.</li> <li>4. at any one time, above ground individuals of some species may be absent but represented below ground.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                             |

<sup>10</sup> <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Scientific-Committee/Determinations/2020/white-box-yellow-box-final-determination-ceec.pdf>

<sup>11</sup> DPIE (2020) *Biodiversity Assessment Method 2020 Operational Manual – Stage 1*.  
<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/biodiversity-assessment-method-2020-operational-manual-stage-1-200582.pdf>

| Revised BDAR – summarised reasoning for Box-Gum CEEC absence (Section 1.3)                                                                                                                                                                                                                                 | BCS comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>diversity of 55 for the 'cleared' land).</p> <p>The number of species noted in the individual plots/transects is 'low': <i>'Only two plots supported eight or more native species (IGGAM4 [11] and IGGAM5 [8]) whilst the remaining plots only supported two to three native species per plot'.</i></p> | <p>5. all occurrences of the community, independent of condition, are covered by the Determination.</p> <p>Part 3 of the Determination<sup>10</sup> notes:</p> <p>6. The condition of remnants of the CEEC ranges from relatively good to highly degraded, such as paddock remnants with weedy understories and only a few hardy natives left.</p> <p>Part 4 of the Determination<sup>10</sup> notes:</p> <p>7. Floristic composition and abundance may vary significantly in the derived native grassland component of the community and grassland areas may be dominated by only a few of the characteristic species.</p> <p>8. The State listed CEEC is included within the Commonwealth listed CEEC, however some examples of the State listed CEEC are excluded from the Commonwealth listing on the basis of condition or structure thresholds, as those restrictions are not applicable to the State listing.</p> <p>The assessment does not discuss the site characteristics against the above considerations.</p> <p>BCS understands that ELA IGGAM data (20 transects and VI plots) collected in summer 2021-22 and additional Niche IGGAM data (15 transects and VI plots) collected in winter 2023, contributed to the assessment of Box Gum Woodland CEEC presence/absence. BCS has access to the Niche transect and plot data and partial ELA data (BCS only has the ELA plot data, not the transect data).</p> <p>It appears the revised BDAR has only directly referenced ELA IGGAM data in the assessment of CEEC presence/absence and the Niche IGGAM data has only been referenced in relation to assessment of 'low conservation value' grasslands/groundcover – a Category 1 – exempt land criteria (which does not override CEEC as Category 2 – regulated land).</p> <p>We have also been unable to reconcile statements made in the revised BDAR against the data provided. For example, the revised BDAR states that:</p> <ul style="list-style-type: none"> <li>o IGGAM4 contained 11 native species. However, the ELA plot data indicates 23 native species.</li> <li>o IGGAM5 contained 8 native species. However, the ELA plot data indicates 12 native species.</li> <li>o remaining plots on land mapped as Category 1 (i.e., not mapped as Box Gum Woodland CEEC) supported only two to three native species per plot. However, the number of native species in the remaining ELA plots ranged from 6 to 17 native species. At the Niche winter IGGAM data points, the number of native species ranged from 3 to 8 in the transect data and 2 to 12 in the plot data.</li> </ul> |
| <p>Dominance of exotic species versus natives:</p> <ul style="list-style-type: none"> <li>• exotics rather than natives characterising the site</li> <li>• relative values between higher</li> </ul>                                                                                                       | <p>The Final Determination<sup>10</sup> does not reference any thresholds in relation to the relative dominance or the abundance of native species versus exotic species. Measures of 'low conservation value' grassland/groundcover in the context of the land category criteria in the LLS Act do not override Box Gum Woodland CEEC as Category 2 – regulated land.</p> <p>Regardless:</p> <ul style="list-style-type: none"> <li>• The BDAR does not present processed data for easy reference against arguments made.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

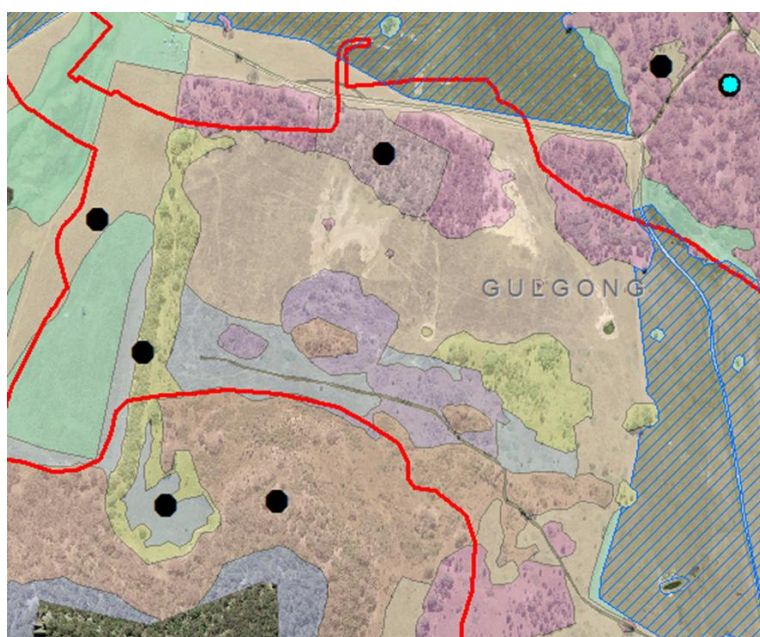
| Revised BDAR – summarised reasoning for Box-Gum CEEC absence (Section 1.3)                                                                                                                                                                                                                                                                    | BCS comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <p>and lower condition areas of the site</p> <ul style="list-style-type: none"> <li>the percent exotic cover is higher, and the number of native species lower, on the 'cleared' land (Table 3).</li> <li>Ratio of individuals of native species to exotic cover, with higher diversity IGGAM plots having high exotic weed cover.</li> </ul> | <ul style="list-style-type: none"> <li>More than half of the Niche winter IGGAM sites do not support claims of exotic dominance based on percent cover (12 of 15 transects where native cover ranges from 51% to 97% and 9 of 14 VI plots (where data is available) where native cover ranges from 50% to 90.8%)</li> <li>ELA plot data indicates three plots on land mapped as Category 1 where native species cover was greater than exotic cover (with native cover of 45.9% (IGGAM 10), 59.5% (IGGAM 20), and 73.1% percent (IGGAM9).</li> <li>Average exotic cover of 42.6% across the 'cleared land' is stated in the revised BDAR and appears to be based on the ELA data. The Niche data indicates average native percent cover across at sites sampled by Niche to be 61.2% based on plot data and 59.3% based on transect data.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Vegetation integrity score <15                                                                                                                                                                                                                                                                                                                | <p>The Final Determination<sup>10</sup> does not reference vegetation integrity scores within the Box Gum Woodland CEEC description. The condition of the CEEC may be highly degraded.</p> <p>A vegetation integrity (VI) score &lt;15 does not necessarily mean that the CEEC is absent. Areas of vegetation with low vegetation integrity are more likely to be those with less resilience, however the assessment does not discuss the VI score results in the context of the Final Determination. As stated in section 5.2 of the 'BAM 2020 Operational Manual – Stage 2'<sup>12</sup> <i>'if the vegetation is a TEC at risk of SAI, the criteria in BAM Subsection 9.1.1 must be addressed, even if no offset is required'</i>.</p> <p>Regardless, section 1.3 of the BDAR reports a VI score of 3 for entirety of the 'cleared land' zone. The supporting calculator outputs are not provided. It is not clear what data has been used for that calculation nor which calculator (BAM-C or IGGAM trial online calculator) has been used. The BDAR does not indicate that full BAM plots were established within the land mapped as Category 1, to enable collection of all attribute data required by the BAM calculator (see 'function' comments below). BCS has no information on how the 'cleared land' may have been stratified considering plot data variation.</p> |
| Function score of zero means that zone has low ability to function as an ecological community – natural restoration is unlikely and a high degree of active intervention and revegetation would be required to recreate the community.                                                                                                        | <p>The Final Determination<sup>10</sup> does not include any thresholds indicative of loss/cessation of function and notes that recovery may be dependent on active remediation.</p> <p>References to 'function' within Part 4 of the Final Determination are not a reference to the function score within the BAM-C.</p> <p>Regardless, it is unclear what data was used to calculate a function score (as per the BAM-C). BCS only has access to IGGAM VI plot data on the 'cleared land', as IGGAM does not require the collection of function attribute data (number of large trees, tree regeneration, tree stem size class, total length of fallen logs, litter cover) to assess the conservation value of ground cover for the purposes of the <i>Local Land Services Act 2013</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

<sup>12</sup> DPE (2023) *Biodiversity Assessment Method 2020 Operational Manual – Stage 2*.  
<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/biodiversity-assessment-method-operational-manual-stage-2-230164.pdf>

### Recommendations:

- 14.1a Explain how the potential presence of Box Gum Woodland CEEC has been considered within the land categorisation method (for the remaining land mapped within the BDAR as Category 1- exempt). This explanation should comprehensively and clearly present the evidence to support the claim that the CEEC is absent with reference to the NSW Scientific Committee Final Determination for that community.
- 14.1b Where Box Gum Woodland CEEC is known or assumed present, assess the land in accordance with the BAM.
- 37 It is unclear what data has informed the delineation of PCTs and vegetation zones within the development footprint

We note that there are numerous vegetation patches throughout the development footprint that have been allocated to a PCT and condition class to form a vegetation zone or part of a vegetation zone, however there are no plots within the patch (see Figure 1 below).



**Figure 1: Snip of vegetation mapping presented as part of the BDAR**

Figure 1 shows a number of vegetation zones (coloured shading) that do not contain any plots. It is unclear how these areas were delineated into vegetation zones.

### Recommendation:

- 37 Provide evidence to clarify how areas of PCTs were stratified where no detailed survey has been undertaken.
- 21.1 Removing giant burrowing frog and red-crowned toadlet from the candidate species list is not adequately justified

In our response (dated 25 January 2023), we outlined that some amphibians had been excluded from the candidate species list based on lack of suitable micro-habitats and habitat degradation in the BAM-C, including giant burrowing frog and red-crowned toadlet.

Table 12 in the revised BDAR outlines that these species have been removed on the basis of:

- giant burrowing frog:
  - no suitable breeding habitat (soaks or pools within first or second order streams, as well as 'hanging swamp' seepage lines and where small pools form from the

collected water) within the Study Area and the species has never been recorded that far west.

- red-crowned toadlet:
  - the microhabitats required by the species are absent from the study area (heathland and woodland located on Triassic sandstones within 100m of ephemeral streams or pools). PCT 1711 has been subject to disturbance and fragmentation and is degraded. The closest record of the species is located about 35km to the southeast of the Study Area.

A species can only be removed from the list of candidate species if:

- a) The assessor can manually apply any relevant geographic limitations to the species, which are based on information collected from BioNet Atlas, where the site is located outside the defined geographical area.
- b) the assessor determines that none of the habitat constraints for the species are present on the site. Documentation in the BDAR should reflect the TBDC information and evidence that the features are not present (field data).
- c) the species is a vagrant in the IBRA subregion. Vagrancy is taken as the record being well outside the species range or natural distribution. The suspect record will need to be reviewed against the species known distribution and the assessor will need to confirm with species experts that it is likely to be a vagrant. If agreed by experts the assessor should contact BCS to have the record quarantined from BioNet Atlas and re-labelled as vagrant. The BDAR will need to contain supporting information such as who was contacted, when, their credentials and the resultant response from BCS.
- d) After carrying out a field assessment, the assessor determines that microhabitats required by a species are absent from the subject land (or specific vegetation zone). The assessor must include a description of the microhabitats assessed as being required by the species in the BAR. This must be based on evidence such as published literature.

We note that there are no habitat constraints for either species in the TBDC. The development footprint is within the known distribution for both species. The absence of nearby records cannot be used to exclude candidate species from the requirement for targeted survey.

No evidence in the form of published literature has been presented to support the removal of these species on the basis of an absence of microhabitats. In these circumstances we do not support the removal of the species from the candidate species list.

Assessors must proceed to BAM Step 4: Determining the presence of a candidate species credit for giant burrowing frog and red-crowned toadlet.

#### Recommendations:

21.1 Conduct a targeted survey to determine the presence or absence of giant burrowing frog and red-crowned toadlet, obtain an expert report, or assume presence.

24.1 **There has not been appropriate survey effort for eastern pygmy possum and brush-tailed rock wallaby to confirm absence.**

Our response (dated 25 January 2023) outlined concerns surrounding the survey effort not being adequate to reliably detect eastern pygmy possum and brush-tailed rock wallaby across such a large site with the amount of survey effort undertaken. We raised the following concerns:

- Eastern pygmy possum – the coverage of survey being is not sufficient to reliably confirm absence of this cryptic species across the suitable habitat.
- Brush-tailed rock wallaby – the large extent of suitable habitat and the highly mobile nature of this species in being able to reliably detect or confirm absence of brush-tailed rock wallaby.

The amendment report outlines the amendments made to the development footprint, including reducing the extent of proposed disturbance from approximately 825 ha to 675 ha. This includes a reducing the area of suitable habitat for both eastern pygmy possum (from 47.83 ha to 21.69 ha) and brush-tailed rock wallaby (from 525.47 ha to 422.77 ha).

Section 3.5.3 of the revised BDAR outlines that no further targeted surveys for the eastern pygmy possum or the brush-tailed rock wallaby have been undertaken. The revised BDAR justifies this on based on a lack of local records, survey effort already undertaken, consistency of survey methods with relevant guidelines and a lack of recording the species on neighbouring projects.

An absence of local records cannot be used to determine presence of a species at a site without adequate survey effort. The survey effort undertaken in the original BDAR was reviewed and further survey was recommended for both species to demonstrate presence or absence beyond a reasonable doubt. The TBDC identifies that the eastern pygmy possum is very difficult to detect. There is a known presence of brush-tailed rock wallaby in the vicinity of the development footprint.

Suitable rocky habitat for brush-tailed rock wallaby should be mapped across the development footprint. Justification about the areas of suitable rocky habitat targeted for survey should be provided in the BDAR.

The '*Survey guidelines for Australia's threatened mammals*'<sup>13</sup> describes 10 cameras per hectare for survey of mammals. Section 3.5.3 of the revised BDAR outlines that 14 camera trap nights were used at 14 locations for both species. A discussion of the amount of area of suitable habitat for the brush-tailed rock wallaby and the eastern pygmy possum is needed to confirm if the amount of camera traps is sufficient for the area surveyed.

The BDAR does not include details about the scat surveys which were undertaken, including what scats were found and if any species were identified from these scats. It is unclear if the spotlighting was carried out in rocky habitats suitable for brush-tailed rock wallaby.

The areas removed from the development footprint in the amended BDAR are largely along the eastern, southern and western boundaries. The large central connected areas of potential habitat for both species remain in the development footprint following the amendments. The amended development footprint contains large areas where survey effort is sparsely distributed for the eastern pygmy possum and the brush-tailed rock wallaby.

Despite the reduced development footprint, it appears the survey effort for both the eastern pygmy possum and the brush-tailed rock wallaby has not been sufficient to confirm absence of these species within the development footprint. Brush-tailed rock wallaby is a SAI entity and therefore survey effort needs to be sufficient to determine presence or absence so that the risk of SAI to this species as a result of the proposal can be adequately assessed.

Survey methods and effort to determine presence or absence of the eastern pygmy possum and the brush-tailed rock wallaby at the development footprint should be developed in consultation with BCS. The proposed approach should fill in the gaps of the survey method undertaken to date and be designed to maximise the probability of detection or confirm absence with justifications and supporting information.

#### Recommendations:

- 24.1 Conduct further targeted survey to determine the presence or absence of the eastern pygmy possum and brush-tailed rock wallaby from previously unsurveyed areas within the project site, obtain an expert report or assume presence

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<sup>13</sup> Commonwealth of Australia (2011). '*Survey guidelines for Australia's threatened mammals. Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999.*'

Department of Sustainability, Environment, Water, Population and Communities.

## 38 Further detail on the Habitat Enhancement Area project is requested

Section 6.1.3 of the revised BDAR outlines that the Habitat Enhancement Area will be revegetated and fenced, with weed, animal pest and fire management measures undertaken to facilitate the ecological restoration and ongoing maintenance of retained areas of native vegetation, threatened species, threatened ecological communities and their habitat. The protection and regeneration of the Habitat Enhancement Area would provide habitat connectivity and protection of the riparian corridor for Murdering and Moolarben Creeks.

Section 5.7.2 of the revised BDAR outlines that a monitoring program will be developed and implemented for the regeneration of the Habitat Enhancement Area including evaluating the need for supplementary seedings/ planting. It is not clear what criteria would be used to determine if supplementary seeding or planting is required. The monitoring program for the Habitat Enhancement Area should be developed in consultation with BCS.

Table 39 in the revised BDAR outlines that the Habitat Enhancement Area will act as an avoidance and minimisation measure for Matters of National Environmental Significance (MNES) including Box Gum Woodland CEEC, Eucalypt Forest and Woodland CEEC, regent honeyeater, large-eared pied bat, koala and swift parrot. We understand that the intention is for this area to be revegetated with species consistent with the CEECs. It is unclear where each CEEC is intended to be established, and how the vegetation will be restored in order to reach the criteria for each CEEC.

It is understood that further detail regarding the establishment, monitoring and the operation of the Habitat Enhancement Area is yet to be developed. For example, it is unclear:

- if the intention is to manage the Habitat Enhancement Area for a set period of time or to protect this asset in perpetuity,
- if the Habitat Enhancement Area will be secured under a certificate of title or other contractual agreement or secure mechanism,
- which areas will be prioritised for which plant community types and associated threatened entities,
- the level of regeneration being sought to be achieved, including the vegetation integrity score aims for the project, and
- who will be responsible for managing the Habitat Enhancement Area including undertaking the restoration actions.

We welcome the opportunity to provide feedback on the development of the Habitat Enhancement Area project including seeking opportunities to maximise the biodiversity outcomes from this project. While we are supportive of the Habitat Enhancement Area in principle, further information should be provided prior to consent to allow for more detailed review of this aspect of the project.

### Recommendations:

- 38 Provide further information about the Habitat Enhancement Area project to BCS for review and comment prior to approval.

## 25.1 Review and update BDAR, GIS shapefiles and BAM-C to resolve inconsistencies

As part of reviewing the BDAR, BCS conducted an audit of a sub-sample of VI plot data, GIS shapefiles and the values entered into the BAM-C and has noted a few inconsistencies. These errors include, but are not limited to:

- 'Indicative\_Open\_Cut\_Pit\_Extent' GIS layer comes within 50m of the boundary with Munghorn Gap Nature Reserve despite the assertion that there will be a 100m buffer, and
- Inconsistencies exist between the spatial data and the BAM-C for the species polygon total areas.

We recommend a full audit of VI plot data, GIS shapefiles and the values entered into the BAM-C is undertaken and all errors detected are updated.

### Recommendation:

- 25.1 Correct the errors identified in the response to submissions and audit the Biodiversity Assessment Method Calculator (BAM-C) to ensure it is consistent with the BDAR.

### 17.1 Review of impacts on ground and surface water could not be undertaken

On 17 April 2024, to enable our review of impacts on ground and surface water we requested the following data:

- Contours of maximum predicted drawdown/mounding with and without the current proposed extension (model setup 3 and 5 in AGE 2024 report)
- Contours of cumulative drawdown/mounding
- Contours of maximum predicted drawdown/mounding for each sensitivity scenario (including base case)
- Contours of maximum predicted drawdown/mounding from the OC3 Model and Recalibrated UG4 Model
- Groundwater monitoring sites (existing and proposed)
- Potential GDEs assessed for impact
- Natural springs assessed for impact
- Proposed original and amended open cut pit boundaries

The data request for groundwater spatial files were not provided in time for adequate consideration and full assessment of groundwater impacts. Our advice cannot comment on the impact to GDEs until such time as this review has been undertaken.

### Recommendations:

- 17.1 Provide ground and surface water data to BCS for review.

### 39 Information regarding bilateral assessment requirements has been provided to ensure adequate

The assessment of biodiversity impacts and offsetting is being undertaken under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Assessment Bilateral Policy. As a consequence of the assessment being undertaken in this manner additional information will be required to inform BCS that all relevant MNES have been addressed within the bilateral assessment.

The North West BCS Branch has prepared a guidance document to assist with undertaking bilateral assessments according to the BAM; this guidance document has been provided in **Attachment F**. We recommend this guidance document be reviewed and a similar consistency table be provided in relation to the guidance document to maximise efficiency of review by DCCEEW.

### Recommendations:

- 39 Review the supporting guidance document in Attachment F and provide a consistency table to facilitate review of bilateral assessment requirements.

## NPWS's detailed comments

### Moolarben OC3 Extension Project – Response to Submissions Report

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#### 27.1 Buffer between Munghorn Gap Nature Reserve and the OC3 Extension Project is not sufficient

The recommended buffer between Moolarben OC3 open cut pits and Munghorn Gap Nature Reserve of 500m has not been met. Instead, a buffer of 100m is proposed. NPWS note that in some sections of the submissions report (Figure 4-4), the amendment report (Figure 2-2) and the provided data package buffers did not reach this 100m minimum as proposed and only outlined a 50m buffer.

The 100m minimum buffer is not enough to adequately manage Munghorn Gap Nature Reserve including but not limited to public safety, light pollution and weed incursion. This is detailed as below:

- Public safety issues are raised due to the frequency of remote bushwalking recreational users that could be subject to additional risk from blasting operations.
- Remote bushwalkers are potentially closer than identified by Moolarben and could be subject to noise and vibration impacts.
- Light pollution from operations impacting on nocturnal species within Munghorn Gap Nature Reserve.
- Possible weed incursion due to disturbances on Moolarben Coal's land.

#### Recommendations:

- 27.1a Review data packages and reports to ensure the 100m buffer between open cut pits and Munghorn Gap Nature Reserve is applied consistently throughout the amended proposal.
- 27.1b Review open cut pit extents to increase buffer to 500m as a precautionary measure to avoid impacts on the management of Munghorn Gap Nature Reserve and its unique natural features. If an increased buffer is not attainable, alternative solutions to mitigate potential impacts should be investigated. For example:
- A habitat enhancement area in the buffer zone.
  - direct artificial light away from Munghorn Gap Nature Reserve during OC3 extension operations as much as practical.

#### 28.1 Noise impacts on Munghorn Gap Nature Reserve are poorly identified and assessed

NPWS has concerns that Munghorn Gap Nature Reserve has not specifically been included in the noise modelling report (Appendix H). This does not allow for the potential impact on public use of the reserve (i.e., remote bushwalkers, day user areas, scientific studies or camping) or wildlife impacts from noise pollution.

The noise assessment has only commented on what is described as 'publicly accessible areas reasonably expected to be used by people'. There is no definition of what areas this includes, considering that all of Munghorn Gap Nature Reserve is public land and accessible to the public. It is common for bushwalking and orienteering groups to venture off marked trails within this reserve. Additionally, wildlife is widespread across Munghorn Gap Nature Reserve and has not been assessed for impact. Wildlife that may be impacted by noise is protected under the *National Parks and Wildlife Act 1974* and *National Parks and Wildlife Regulation 2019*. It is important that wildlife will not be impacted by the noise impacts of this proposal.

Honeyeater Flat is used for camping events regularly and for bird census studies annually. At its closest point, the OC3 extension pits will occur 1.5km away from Honeyeater Flat. These bird studies may have future data collection be skewed due to excessive noise pollution and the camping accommodation they provide will also be impacted with seemingly no specific assessment of noise impacts at this location. Additionally, recreation facilities in Munghorn Gap Nature Reserve such as Moolarben picnic area (1.5km away) and Castle Rocks Walk (2km away) may have their amenity impacted with no specific assessment being performed for these areas.

Between prior mining and the proposed OC3 extension, large sections of Munghorn Gap Nature Reserve are experiencing LAeq (15minute) of over 50 dBA. The [EPA Noise Policy for Industry](#) may provide an appropriate guide for noise assessment criteria. It appears that the current proposal will see Munghorn Gap Nature Reserve being subject to noise levels in excess of the recommended amenity noise levels defined by the EPA. Additionally, Shannon et al. (2016)<sup>14</sup> documented two decades of global research which has shown noise levels of 40 dBA can start to impact terrestrial wildlife with 20% of studies showing levels under 50 dBA showing impacts on wildlife. Munghorn Gap Nature Reserve should not be used as a buffer for impacts occurring to the public or wildlife.

Finally, there is no mention of a noise monitoring program to ensure these levels are adhered to. NPWS is specifically concerned about the lack of acoustic monitoring that will occur at sensitive sites on the boundary of, and within, Munghorn Gap Nature Reserve (i.e., Moolarben picnic area, Honeyeater Flat).

#### Recommendations:

- 28.1a Consider all of Munghorn Gap Nature Reserve as publicly accessible areas reasonably expected to be used by people and assess noise impacts accordingly.
- 28.1b Assess the boundary of Munghorn Gap Nature Reserve (for recreation use and wildlife impacts) and Honeyeater Flat (for overnight accommodation) in the noise modelling assessment. Adjust the project to ensure these sites are not subject to noise levels in excess of the EPA recommendations and values that may harm wildlife based on peer reviewed scientific literature.
- 28.1c Define how the monitoring program will include Moolarben picnic area or Honeyeater Flat in any noise and acoustics monitoring programs.

### **29.1 Blasting and vibration limits would not protect rocky habitat and other features**

The 50 mm/s PPV is considered not enough to ensure there is no damage to rocky habitat, Aboriginal Cultural Heritage and Munghorn Gap Nature Reserve. These natural assets should be guaranteed of no impact occurring to them due to the reservation of NPWS land.

The Blast Vibration Impact Assessment has included a summary of case studies that include PPVs. While a lot of sites are shown to only be impacted with PPVs well over 50 mm/s, the report also notes that due to the lack of information available, studies on manmade structures were included. Importantly Case Study #15, which has 'minor impacts' occurring at the lower limit of 25 mm/s is one of the only studies on natural geologic features included wherein 343 minor rock falls (<250mm) were reported.

Further to this in Section 6.2.2, the report states that these case studies have documented:

- no impacts with PPV ranging from 5 mm/s to 650 mm/s
- minor impacts with PPV ranging from 25 mm/s to 450 mm/s
- major impacts with PPV ranging from 120 mm/s to 2000 mm/s

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<sup>14</sup> Shannon G, McKenna MF, Angeloni LM, Crooks KR, Fristrup KM, Brown E, Warner KA, Nelson MD, White C, Briggs J, McFarland S, Wittermyer G. A synthesis of two decades of research documenting the effects of noise on wildlife. *Biol Rev Camb Philos Soc.* 2016 Nov;91(4):982-1005. doi: 10.1111/brev.12207.

These aggregated case study figures significantly overlap between impact categories. This information cannot be relied upon with any certainty to inform vibration criteria for this project – especially given the lack of data/studies on natural features.

Table 4 suggests that lower PPV precedents exists of 25 mm/s within the Western Coal Fields on sandstone cliff lines at Invincible Mine which at the time was adjacent to Ben Bullen State Forest (now Gardens of Stone State Conservation Area). Given that Moolarben OC3 extension is within the same coal fields with blasting potentially impacting on very similar geology (i.e., sandstone ridgelines) but being adjacent to Munghorn Gap Nature Reserve (rather than a State Forest with less protections at the time the PPV limit was set) the 50 mm/s limit is considered too high. There is also potential impact on known threatened species habitat and Aboriginal Cultural Heritage which should even further increase the precautionary measures being taken in the blasting design for this project.

Inset 6 shows the blast monitoring at Moolarben Coal Complex with the vast majority of PPVs occurring under 25 mm/s. NPWS does not have confidence that setting a limit of 50 mm/s will achieve no impacts to sensitive geologic receivers given the majority of data collected to this point has been under the 25 mm/s limit. This inset also show that setting a lower limit is completely achievable by Moolarben while they continue operations.

The report has classified nearby rock shelters into a rock mass classification with the sites described ranging from ‘fair to good’ to ‘good to very good’. In Section 8.3 the report states “it should be noted that there may be areas of ‘poor quality rock’ that were not observed”. It then follows on to give PPV threshold criteria and upper limits based on their assessment:

**Table 7 - PPV Limits for Sensitive Geological Features.**

| Rock Mass Classification        | PPV Threshold Criteria (mm/s) | PPV Upper Limit (mm/s) |
|---------------------------------|-------------------------------|------------------------|
| Poor Quality Rock<br>(RMR < 45) | 15                            | 25                     |
| Good Quality Rock<br>(RMR > 45) | 40                            | 50                     |

**Summary of criteria levels**

- **Threshold criteria** – Level of blast vibrations where geotechnical performance of the caves and cliff lines should be monitored before and after blasting to ensure outcomes are as expected.
- **Upper Limit** – Blast vibration level where it is expected that the likelihood of damage is greater than acceptable.

Given the uncertainty of the presence of ‘poor quality rock’ and their susceptibility to impacts, the limit on blasting should be set at 15 mm/s to ensure the precautionary principle is met to avoid damage to threatened species habitat, Aboriginal Cultural Heritage sites and Munghorn Gap Nature Reserve.

Given these uncertainties, NSW DCCEEW is of the opinion that the monitoring program requires updating to reflect the sensitive environment surrounding the proposed project. This is to ensure the PPV limits are adhered too, and any potential damages can be identified and remediated as required.

**Recommendations:**

- 29.1a Set blasting vibration criteria based on the threshold criteria to 15 mm/s (as per Table 7) as a precautionary approach due to the sensitive surrounding area including threatened species habitat, Aboriginal Cultural Heritage, Munghorn Gap Nature Reserve and the uncertainty around the presence of ‘poor quality rock’.
- 29.1b Outline a monitoring program for measuring the PPV at sensitive sites and potential impacts to sites - including pre and post blasting visual inspections and other technologies (LiDAR, terrestrial laser scanning etc.) as appropriate.

## 29.2 Sections of Munghorn Gap Nature Reserve are not depth restricted

Munghorn Gap Nature Reserve has a complex reservation history. Some sections of the reserve are depth restricted, while some are not. The section to the East of the proposed OC3 extension project is depth restricted to 100 feet while the sections to the South are not depth restricted. This means geologic layers at deeper depths are still part of Munghorn Gap Nature Reserve and as such impacts should be avoided by the proposed development.

All water, vegetation, rock, soil, sand, stone and similar substances that are within the reserve are all protected under the *National Parks and Wildlife Act 1974* and *National Parks and Wildlife Regulation 2019* and impacts on these should be completely avoided. The groundwater within Munghorn Gap Nature Reserve should be protected, including from incidental take, to ensure any species within it are also protected.

Groundwater drawdown and mounding from the OC3 extension pits seems to extend into Munghorn Gap Nature Reserve. For example, Figure 4-9 of the Submission Report and Figure 9 of the Groundwater Review shows mounding well within Munghorn Gap Nature Reserve. The groundwater modelling sensitivity analysis (Figure 18 of the Groundwater Review) shows potential scenarios that drawdown is impacting on Munghorn Gap Nature Reserve with the 2m drawdown contour. The drawdown at the Munghorn Gap Nature Reserve boundary, in non-depth restricted sections, should be zero (0) to avoid direct impacts on reserved land. From the provided reports these drawdown/mounding impacts are occurring within a section of the reserve that is not depth restricted and as such is impacting directly on NPWS estate. These impacts should be completely avoided.

NPWS notes the additional groundwater monitoring that is proposed in the Triassic sandstone for the monitoring of potential impacts on Springs and GDEs in and near Munghorn Gap Nature Reserve. As the southern end of this proposed development neighbours a non-depth restricted section of Munghorn Gap Nature Reserve there should be sufficient monitoring to ensure Moolarben can demonstrate there is no impacts on groundwater occurring within the Ulan Seam which makes up part of Munghorn Gap Nature Reserve.

NPWS notes that the data request for groundwater spatial files were not provided in time for adequate consideration and full assessment of groundwater impacts.

### Recommendations:

- 29.2a Revise open cut pit extents to ensure any groundwater mounding or drawdown does not impact on the NPWS estate, considering the sections that are not depth restricted. This should also consider whether the depth of reservation of Munghorn Gap Nature Reserve on the eastern side of the proposed project means impacts are occurring on reserved land.
- 29.2b Demonstrate where the 0m drawdown/mounding contour will occur in relation to the Munghorn Gap Nature Reserve boundary and depth.
- 29.2c Demonstrate where the 0m drawdown/mounding contour will occur in relation to GDEs within Munghorn Gap Nature Reserve – considering the depth of reservation of Munghorn Gap Nature Reserve.
- 29.2d Ensure groundwater mounding and drawdown will not change the flow direction that could cause groundwater contamination pathways to flow into NPWS estate – considering the sections of Munghorn Gap Nature Reserve that are not depth restricted.
- 29.2e Implement groundwater monitoring of deeper geologic layers that make up part of Munghorn Gap Nature Reserve that may be impacted to ensure no impact occurs (particularly in the southern edge of the project).

## 32.1 Dust impacts on Munghorn Gap Nature Reserve have been overlooked

The air quality assessment report has concluded that “the predicted air quality levels at the privately-owned receptor locations remain below the relevant criteria for all assessed dust metrics for the amended Project”. NPWS are concerned about increases to the TSP, DD, PM<sub>2.5</sub> and PM<sub>10</sub>

levels at popular public areas of Munghorn Gap Nature Reserve and the potential health effects of this on unsuspecting visitors.

This is of particular concern as Appendix A - Figures 4 and 6 of the Air Quality and Greenhouse Gas Addendum Report shows a sizable increase in the predicted incremental maximum 24-hour average PM<sub>2.5</sub> and PM<sub>10</sub> concentrations across the Moolarben picnic area, Honeyeater Flat and Castle Rocks Walk during year 3 of the amended project. Also noted is the Year 3 modelling of air quality that does not seem to include the southern open cut pit and hence impacts on NPWS facilities could be higher than those shown in Figure 4 and 6. The modelling presented shows increases generally across Munghorn Gap Nature Reserve and the edge of Goulburn River National Park which NPWS has concerns over staff health in these areas and wildlife health.

The dust impact assessment has not identified if there is a risk of dust accumulation on Aboriginal Cultural heritage sites. If this was to occur this would damage these sites. Additionally, there is no commitment to periodic monitoring of these sites to ensure dust has not settled here or actions for dust removal if it does occur (i.e. remediation). Any remedial work would need to be done in consultation with Registered Aboriginal Parties and NPWS.

#### Recommendations:

- 32.1a Model and assess sensitive receivers within Munghorn Gap Nature Reserve, as well as generally across Munghorn Gap Nature Reserve and Goulburn River National Park, for impacts of dust on public health, NPWS employee health and wildlife health.
- 32.1b Determine if dust accumulation will impact on Aboriginal Cultural Heritage sites and implement a monitoring program for this.
- 32.1c Include remediation of any Aboriginal Cultural Heritage sites within the relevant TARP including consultation with Registered Aboriginal Parties and with NPWS (for sites within Munghorn Gap Nature Reserve).

### 31.2 Fire risks to Munghorn Gap Nature Reserve

In response to our response dated 15 March 2023, NPWS acknowledges the Moolarben Coal Complex Bushfire Management Plan. We also note that this has not been updated to reflect any changes to operations that would occur as part of the OC3 extension project.

#### Recommendation:

- 31.2 Update the Moolarben Coal Complex Bushfire Management Plan in response to changes to operations and the site as part of this project.

### 34.1 NPWS be considered a potentially impacted landowner

In our response dated 15 March 2023, we recommended adding NPWS to notification lists for circumstances that impact, or have potential to impact, NPWS land. The Moolarben response to this concern has not indicated that NPWS have been added to the various TARPs. In addition, if activities such as blasting, are occurring near the boundary of Munghorn Gap Nature Reserve, NPWS should be included as a contact to allow for management activities of Munghorn Gap Nature Reserve to be changed accordingly for staff and visitor safety.

#### Recommendations:

- 34.1a Include NPWS in the notification and consultation requirements (i.e., TARPs) for any circumstances that occur in or under NPWS land or with potential to impact NPWS land.
- 34.1b Contact NPWS in relation to activities near the boundary of Munghorn Gap Nature Reserve that may impact management of the reserve or staff and visitor safety.

## Bilateral Assessment Information and Data Requirements

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### Assessment of EPBC Act-listed threatened species and communities for projects *Suggested information for inclusion in the BDAR*

#### 1. Background & Description of Action

The Environmental Impact Statement (EIS)/ Biodiversity Development Assessment Report (BDAR) should include:

1. Descriptions and maps of the operational and construction footprints of the project with regards to Matters of National Environmental Significance (MNES).
2. Descriptions and maps of staging and timing of the action that may impact on MNES.
3. Maps of the subject land boundary showing the final proposal and disturbance footprint with regards to MNES.

Submit GIS shapefiles of all maps that relate to MNES.

#### 2. Landscape Context of the MNES

Ensure that the 'Landscape Context' of BAM 2017 (Section 4) or 'Establishing the site context' of BAM 2020 (Section 3) have been fully met in the BDAR in relation to MNES.

#### 3. EPBC Act Listed Threatened Species & Communities

The EIS should include the following:

1. Demonstration that field-based survey effort meets BCD survey guidelines and, where available, Commonwealth survey guideline.
2. Demonstration of access and use of supporting databases (e.g., NSW BioNet Vegetation Classification, NSW BioNet Threatened Biodiversity Data Collection, NSW BioNet Atlas, Commonwealth Species Profile and Threats Database search results)
3. Demonstration of access and use of published peer-reviewed literature
4. Demonstration of access and use of local data (if relevant)
5. Demonstration of appropriate mapping of all EPBC Act-listed threatened species and communities in accordance with the relevant Commonwealth listing advice.
6. Demonstration of consideration of important populations and critical habitat as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans.
7. A list of all EPBC Act listed threatened species and communities that occur on the subject land, or in the vicinity (including species that are 'ecosystem credits' in BAM)
8. A discussion, with data and analysis where any species and communities identified by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) referral documents have been ruled out as occurring on or near the subject site.

#### 4. Avoidance, Minimisation, Mitigation & Management

The BDAR should include:

1. The demonstration of all feasible alternatives and efforts to avoid and minimise impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including an analysis of alternative:
  - a. designs and engineering solutions

- b. modes or technologies
  - c. routes and locations of facilities
  - d. sites within the subject site
  - e. the identification of any other site constraints in determining the location and design of the proposal (such as bushfire protection requirements, flood planning levels, servicing constraints, etc).
2. A discussion and justification of all feasible impact avoidance, minimisation, and management all feasible alternatives and efforts to avoid and manage impacts (including adaptive management) Provide feasible measures to mitigate and/or manage impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including:
  - a. techniques, timing, frequency and responsibility
  - b. identify measures for which there is risk of failure
  - c. evaluate the risk and consequence of any residual impacts
  - d. any adaptive management strategy proposed to monitor and respond to impacts.

## 5. Impact Assessment

The EIS / BDAR should include the following:

1. Identification of the residual adverse impacts likely to occur to each EPBC Act listed threatened species and/or community after the proposed avoidance and mitigation measures are taken into account.
2. Justification and evidence for the predicted level of impact, with reference to the Commonwealth's Significant Impact Guideline and DPIE's 'Guidance to Assist a Decision-Maker to Determine a Serious and Irreversible Impact (SAIL)'
3. Provide a summary table with the following information:

| Name of EPBC Act listed entity | Nature & consequence of impact (direct & indirect) | Duration of impact (e.g., construction, operation, life of project) | Quantum of impact | Consequence of impact (local, state & national scales) | Impact requires offsetting? (significant or not) |
|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------|-------------------|--------------------------------------------------------|--------------------------------------------------|
|                                |                                                    |                                                                     |                   |                                                        |                                                  |

4. Provide data and justification where any EPBC Act-listed threatened species or communities to be considered in the BDAR are considered to be at low risk of impact during the assessment.
5. For projects that DCCEEW considers that MNES have been significantly impacted by the 2019-2020 bushfires additional assessment is required. Those MNES will be identified in DCCEEW's 'Decision on referral'. The proponent must discuss in the EIS whether any additional bushfire impacts to those MNES were significant, and also whether any other local MNES were significantly impacted by those fires.

## 6. Offsets

The EIS / BDAR should include the following:

1. The identification of any MNES that haven't been offset using the BAM
2. Details of how impacts requiring offset correlate to the MNES impacts
3. Details of the Plant Community Types that require offsetting and the number and type of ecosystem credits required for impacts to MNES
4. Details of threatened species requiring offset and the number of species credits/ecosystem credits required for impacts to MNES

5. A demonstration of the correct uses the BAM (and BAM calculator) to identify the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity
6. Any details of ecological rehabilitation and/or biodiversity conservation actions proposed for offsetting
7. The identification of any other offsetting approach proposed, such as land-based offsets, retiring credits by payment into the Biodiversity Conservation Fund and/or through supplementary measures
8. Provide a summary table with the following information:

| Threatened Species / Community listed under EPBC Act | PCTs associated with the ecosystem credit species / ecological community (if applicable) | Area of Impact (ha) | Credits Required | Offsetting Approach | Reference (EIS/BDAR) |
|------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------|------------------|---------------------|----------------------|
|                                                      |                                                                                          |                     |                  |                     |                      |
| <b>TOTAL</b>                                         |                                                                                          |                     |                  |                     |                      |

## 7. Other considerations

The EIS / BDAR should include the following:

1. Consideration of all relevant Commonwealth guidelines and policy statements that are applicable to the action and listed threatened species and/or communities, including but not limited to:
  - a. International environmental obligations
  - b. Recovery Plans
  - c. Approved Conservation Advice
  - d. Threat Abatement Plans
2. An assessment for each EPBC Act listed threatened species and/or community, that has been adequately informed by applicable Commonwealth guidelines and/or policy statements. For example, the interaction between the proposed action and important populations or critical habitat identified in policy documents and/or the interaction between the proposed action and threatening processes or recommended conservation actions outlined in Commonwealth policies and plans.