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Your ref: MP09_0182-Mod-8

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Dear Rose-Anne

Boggabri Coal Mine – MOD 8 – Increase in Depth of Mining

Thank you for your e-mail dated 9 August 2021 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning, Industry and Environment inviting comments on the modification application for Boggabri Coal Mine (MOD 8).

BCS has reviewed the modification application and understand that MOD 8 would involve increasing the approved maximum depth of mining down to recover an additional 61.6 million tonnes of run of mine coal within the currently approved mine disturbance boundary.

BCS also notes that the modification application proposes to construct a fauna movement crossing across a mine haulage road to encourage the movement of fauna from Leard State Forest through to mine rehabilitation areas. This construction proposes to clear up to 3.1 hectares of native vegetation and threatened species habitat outside of the approved mine disturbance boundary.

The biodiversity gain and benefit to be achieved from the construction of the fauna movement crossing is unclear from the detail contained within the BDAR and associated modification report. In addition, the purpose of constructing the crossing, given the presence of a vegetative corridor to the north of the mine site already providing connection to Leard State Forest, has not been clearly explained within the BDAR or modification documents.

BCS has concerns that the impact required from the construction of the fauna movement crossing may outweigh any potential benefit to fauna movement and habitat connectivity.

BCS's biodiversity recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Ben Ellis, Senior Conservation Planning Officer, via ben.ellis@environment.nsw.gov.au or (02) 8275 1838.

Yours sincerely

A handwritten signature in black ink that reads "Samantha Wynn". The signature is written in a cursive, flowing style.

Samantha Wynn
Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

13 September 2021

Attachment A – BCS's Recommendations

Attachment B – BCS's Detailed Comments

BCS's recommendations

Boggabri Underground Mine - MOD 8 - Increase in Depth of Mining

Recommendations

- 1.1. Provide further justification for the purpose and relevancy of the proposed fauna crossing.
- 2.1. The BDAR must clearly describe the structure proposed to be constructed.
- 3.1. Address the limiting factors which may affect the efficacy of the proposed fauna crossing and willingness for fauna species to utilise the crossing.
- 3.2. Provide clear justification of the net biodiversity outcomes and benefit to be achieved through the proposed fauna movement crossing against the extent of impact required for its construction.
- 4.1. The credit equivalence of the surrendered land vs the proposed impact area (worst-case scenario) must be provided to demonstrate that a net gain in biodiversity value will result.
- 4.2. Provide evidence that the biodiversity offsets identified have been provided as compensation for the dragline erection pad and walk road and that these offsets have been secured under an in-perpetuity agreement.
- 5.1. The BDAR should be updated to only include the subject land and any areas which may be indirectly affected from the proposed development i.e. its immediate surroundings.
- 6.1. The BDAR should clarify the key factors listed by BCS which are currently unclear.
- 6.2. Further justification is provided regarding survey effort. Where limitations on the detection of species are still considered to be present, further targeted survey, an expert report or assuming species presence will be required in accordance with Section 6.4.1.21 of the BAM.
- 7.1. Conduct an audit of the data within the BAM-C against plot data sheets.
- 8.1. Conduct a targeted survey to determine the presence or absence of the Bush Stone-curlew, obtain an expert report or assume presence.

- 9.1. Conduct a targeted survey to determine the presence or absence of the Eastern Pygmy Possum, obtain an expert report or assume presence.
- 10.1. The BDAR should be certified by the accredited assessor.
- 10.2. Provide a finalised BAM-C credit report.
- 11.1. The assessor should note the information and BCS's recommendation to pre-emptively update the BDAR to the current BAM (BAM 2020).
- 12.1. No action required, the information has been supplied for the accredited assessor's information only.

BCS's detailed comments

Boggabri Underground Mine - MOD 8 - Increase in Depth of Mining

1. The proposed modification should further justify the purpose and relevancy of the proposed fauna movement crossing

Section 3.4 of the modification report of the BDAR describes the following purpose of the fauna movement crossing:

"To improve the east-west regional biodiversity connectivity for fauna (such as arboreal animals, reptiles, birds and bats) through mine rehabilitation areas, BCOPPL is proposing to construct a fauna movement crossing over the haul road on the western side of the existing rehabilitation area. The ultimate design process, post approval of MOD 8. It is proposed that the crossing will be a minimum of 50m wide and will be located generally within and to the east of the MOD 8 disturbance footprint"

The reasons for proposing the construction of the fauna crossing is unclear given that a 500m wide vegetation corridor of greater width, higher connectivity and ecosystem value is present to the north of the Boggabri mine site providing the same east-west regional biodiversity connectivity for fauna through to Leard State Forest. This corridor is detailed within the project's development consent (SSD 09_0182, Condition 51, Schedule 3).

The modification application and BDAR should clearly justify the purpose and relevancy of the proposed fauna crossing. This justification should consider the information provided above and the information outlined in Issue 2 and 3 below.

Recommendation

- 1.1. Provide further justification for the purpose and relevancy of the proposed fauna crossing.

2. The detail of the fauna connectivity structure which is being proposed is unclear and should be clarified

Several key aspects regarding the proposed fauna crossing are unclear, this includes, but is not limited to:

- The type of structure proposed i.e. canopy bridge, vegetated overpass
- The specific species of fauna which are expected to utilise the proposed structure; and
- Why the proposed location of the structure was chosen and how this location provides the best opportunity for habitat connectivity and fauna movement in the landscape surrounding the mine site.

The BDAR states that the proposed design of the fauna crossing will be determined post-approval. However, an adequate understanding of what structure is being proposed is essential for BCS to consider the efficacy of the proposal and understand if all potential impacts resulting from the proposed development have been adequately captured in the BDAR. This information cannot be deferred to a post-approval stage.

Recommendation

2.1. The BDAR must clearly describe the structure proposed to be constructed.

3. The net biodiversity benefit and outcomes to be achieved through the construction of the proposed fauna movement crossing should be clearly articulated and considered against the extent of impact required for its construction

From the detail within the BDAR BCS understands that construction of the proposed fauna crossing would require impact to the following biodiversity values:

- Up to 3.31 ha of very high condition native vegetation (PCT 88 - Vegetation Integrity Score: 96.5/100)
- Up to 3.31 ha of both assumed and confirmed habitat for the Pale-headed Snake, Koala and Squirrel Glider
- The loss of several large old hollow-bearing trees (as defined in the BDAR and detailed within plot data sheets)

The efficacy of the proposed fauna crossing and willingness for fauna species to utilise the crossing have not been addressed. This includes, but is not limited to:

- The current state and condition of the rehabilitation area, its potential to provide suitable habitat for the suite of fauna species expected to utilise the proposed fauna crossing or its connectivity to other areas of habitat to the east.
- The immediate adjacency of the proposed fauna crossing to heavy infrastructure areas within the mine site and the potential for this to affect the willingness for fauna species to utilise the crossing.
- The level of disturbance likely to arise from the mine haulage road the fauna crossing is proposed to cross and how this disturbance may affect the willingness for fauna species to utilise the crossing.
- The connecting patch of vegetation to the west of the proposed fauna crossing appears to be already disconnected from any larger patches of vegetation, owing to the following obstructions to its connectivity:
 - o Leards Forest Road to the north,
 - o A mine road leading to a water retention basin to the south; and
 - o Cleared agricultural land and infrastructure to the west.

The above listed obstructions to connectivity would likely create a series of gaps around the proposed fauna crossing by which some species may physically be able to cross but would be unwilling to do so because of unfavourable ambient conditions or perceived risk. An aerial image of the proposed location of the fauna crossing showing the surrounding obstructions to fauna connectivity have been provided below in Figure 1.

The net biodiversity outcomes and benefit to be achieved through the construction of the proposed fauna movement crossing should be clearly articulated and justified against the extent of impact required for its construction. This justification should specifically address the concerns of BCS as listed above.



Figure 1 Proposed fauna crossing and surrounding obstructions to connectivity

Recommendations

- 3.1. Address the limiting factors which may affect the efficacy of the proposed fauna crossing and willingness for fauna species to utilise the crossing.
 - 3.2. Provide clear justification of the net biodiversity outcomes and benefit to be achieved through the proposed fauna movement crossing against the extent of impact required for its construction.
4. Additional information is required to inform the surrendering of the dragline erection pad and walk road

Section 12 of the BDAR states the following:

BCOPL has indicated a preference to surrender the proposed disturbance areas associated with the Dragline Erection pad and walk road, which was approved under SSD 09_0182 and compensated for under Boggabri Coal Mine's Revised Biodiversity Offset Strategy. Using the estimated final disturbance area of 1.21 ha associated with the Modification, surrendering the Dragline Infrastructure (construction pad and walk road) would result in a net decrease of approximately 2.06ha of impact associated with the project, thus a net gain in biodiversity values.

BCS notes that the impact extent of 1.21 hectares (the minimum expected impact required for the fauna crossing) has been provided in comparison to the 3.27 hectares of the surrendered land, resulting in what has been identified by the proponent as a net gain in biodiversity values.

Identifying the 1.21 ha minimum impact associated with the project is inconsistent with all other sections within the BDAR which identify a 3.31 ha maximum total clearing (worst-case scenario). The comparison of net loss vs net gain should compare the surrendered land to the maximum total clearing (worst-case scenario) which may be required for the project.

It is also noted that no credit equivalence has been provided comparing the actual quantified biodiversity values associated with both areas of land. Instead, the BDAR compares hectares impacted vs hectares surrendered, which may not be representative of actual biodiversity value.

From review of the comparison table in the BDAR (Table 11.3) it appears that several dissimilar PCT 's have been proposed to be surrendered in compensation for the native vegetation proposed to be impacted. It also appears that at least 1.73 hectares of this vegetation would be composed of disturbed or derived grassland vegetation of a much lesser condition to the very high condition vegetation proposed to be cleared (totalling 120 ecosystem credits of PCT 88). In addition, no proposal has been made to compensate for the 480 species credits for Pale-headed Snake, Koala and Squirrel Glider required to be cleared.

For the proponent to demonstrate that a net gain for biodiversity would result in the surrendering of the dragline erection pad and walk road, the following information should be provided:

- The credit equivalence of the surrendered land vs the proposed impact area would result in a net increase in biodiversity values of a like-for-like credit trading class and credit value to the 120 ecosystem credits of PCT 88 proposed to be removed; and
- The credit equivalence of the surrendered impact area vs the proposed impact area would result in a net increase in species credits for the Squirrel Glider, Pale-headed Snake and Koala (as confirmed by survey according to the steps defined in the BAM) to the 480 species credits proposed to be removed.

Section 12 of the BDAR also states the following:

Additionally, biodiversity offsets where provided for impacts associated with the Dragline Infrastructure for the projects comprehensive Biodiversity Offset Strategy and Revised Biodiversity Offset Strategy.

BCS are unaware if the biodiversity offset liability associated with the dragline erection pad and walk road have been finalised and secured in-perpetuity. Evidence should be provided that the biodiversity offsets identified have been secured under a finalised in-perpetuity agreement i.e. a signed Conservation Agreement with the Biodiversity Conservation Trust, and that these offsets have been secured specifically to compensate for the impact associated with the dragline erection pad and walk road.

Recommendations

- 4.1. The credit equivalence of the surrendered land vs the proposed impact area (worst-case scenario) must be provided to demonstrate that a net gain in biodiversity value will result.
- 4.2. Provide evidence that the biodiversity offsets identified have been provided as compensation for the dragline erection pad and walk road and that these offsets have been secured under an in-perpetuity agreement.

5. The survey effort which has occurred within the subject land should be clarified and the BDAR should be revised to only include the subject land

Section 1.2.2 of the BDAR provides the following definitions for the study area and the development footprint.

Modification study area: the development footprint and adjacent areas of vegetation and associated habitat surveyed as part of this investigation which may be subject to direct or indirect impacts as a result of the proposed Modification.

Development footprint: the area of land that would be directly impacted on by the proposed Modification outside the approved mine disturbance boundary. The development footprint assessed in this report includes a 300 m x 110 m area for the design and construction of a fauna movement crossing.

It is noted that the total area of the development footprint (analogous with the definition of subject land, as defined in the BAM) is 3.31 hectares whereas the size of the modification study area is 101 hectares in size. It is unclear, given the localised nature of the development's impact and limited opportunities for alternative locations/sites, why such a disproportionately large study area has been chosen.

Continual reference to the modification study area throughout the BDAR makes it very unclear what survey effort and detailed assessment has occurred specifically within the subject land. As an example, the BDAR states that the assessor has conducted 20 diurnal bird surveys and 110 person hours of opportunistic surveys for the Glossy-black Cockatoo. BCS wishes to understand how much of this survey effort specifically occurred within the subject land.

The BAM requires all relevant steps of assessment to be focused within the subject land. In order for the BDAR to clearly and transparently explain what amount of survey and detailed assessment has occurred within the subject land, the BDAR should be updated to only include the subject land and any areas which may be indirectly affected from the proposed development i.e. its immediate surroundings.

In addition, BCS notes that several aspects of the survey design and techniques utilised to inform the BDAR have been chosen to accommodate for large sites i.e. sites greater than 50 hectares. These survey techniques are considered far too coarse for the small area considered in the modification and thus an inadequate level of survey effort. This has been explained further in Issue 7 below.

Recommendation

- 5.1. The BDAR should be updated to only include the subject land and any areas which may be indirectly affected from the proposed development i.e. its immediate surroundings

6. The targeted survey effort undertaken for threatened flora should be clarified and further justification should be provided that survey effort was adequate

Section 5.3.2 of the BDAR provides information on the threatened flora surveys undertaken, from review of this Section BCS understanding the following:

- Drought conditions are likely to have influenced the detectability of threatened flora carried out in 2018 and 2019
- Most of the targeted surveys for candidate threatened flora species were completed in 2019 and early 2020
- Some species were surveyed outside of their designated survey window
- 20m width field traverses were undertaken within the subject land owing to the large size of the 101 ha study area
- The two-phase grid based systematic survey technique was utilized within the subject land owing to the large size of the 101 ha study area

It is unclear to BCS from review of the BDAR what targeted survey effort was undertaken specifically within the 3.31 ha subject land, if any of the survey techniques undertaken conformed to the minimum standards detailed in relevant flora survey guidelines and how said surveys may have been affected by prolonged drought conditions.

The BDAR should explicitly detail and clarify the following key factors:

- the survey effort which has been undertaken within the 3.31 ha subject land
- which survey techniques were utilised
- if surveys were compliant with the flora survey guidelines
- which species were surveyed for outside of their optimal survey period or during drought

The assessor should note that, given the subject land is approximately 3.31 hectares in size, BCS do not consider the two-phase grid-based systematic surveys undertaken to be an appropriate survey method to determine the presence/absence of candidate flora species. If the targeted survey effort for any of the candidate flora species within the subject land was reliant on this survey technique alone; further survey, an expert report or assuming species presence will be required in accordance with Section 6.4.1.21 of the BAM.

The assessor should also note that BCS considers the 20m width field traverses utilised for the subject land to be an inadequate survey method for detecting the projects candidate threatened flora species. The maximum distance between parallel field traverses for the subject land should be 5m in width in accordance with Table 1 of '*Surveying threatened plants and their habitats – NSW survey guide for the biodiversity assessment method*'.

Further justification will be required to provide, beyond reasonable doubt, that the targeted survey undertaken for candidate flora species was adequate. Where limitations on the detection of species are still considered to be present, further targeted survey, an expert report or assuming species presence will be required in accordance with Section 6.4.1.21 of the BAM.

Recommendations

- 6.1. The BDAR should clarify the key factors listed by BCS which are currently unclear.
- 6.2. Further justification is provided regarding survey effort. Where limitations on the detection of species are still considered to be present, further targeted survey, an expert report or assuming species presence will be required in accordance with Section 6.4.1.21 of the BAM.

7. There are inconsistencies between the plot data and the data entered into the BAM-C

There are inconsistencies between plot data sheets and the data that has been entered into the BAM-C, these inconsistencies are highlighted in Table 1 below. The data provided in the plot data sheets must be consistent with the data entered into the BAM-C, any errors in the calculator will have an impact on the final credit liability for the project.

Table 1 Data Comparison for Plot Q46

Data	Plot Data Sheet	BAM-C
Stem Classes (50-79cm)	Ticked	Not ticked
Number of large trees	No number provided, only ticked as present	2
Hollow-bearing trees	5	3
Litter Cover	61	85
Length of fallen logs	32	32

Recommendation

7.1. Conduct an audit of the data within the BAM-C against plot data sheets.

8. Justification for removal of Bush Stone-curlew from the candidate list is not adequate

Table C.2 of the Biodiversity Development Assessment Report (BDAR) states '*Potential Habitat within Modification Study Area. However, species has drastically reduced in range*' within the BAM-C the species has been assessed as vagrant.

The Threatened Biodiversity Data Collection (TBDC) identifies the Bush Stone-curlew as known to occur in the Brigalow Belt South IBRA subregion. PCT 88, is associated with the Bush Stone-curlew and the BDAR identifies that there is suitable habitat for this species within the subject site. Furthermore, many records for this species are present to the north, south and west of the subject site.

As such, the assessor must conduct a targeted survey to determine the presence or absence of the species, obtain an expert report or assume presence.

Recommendation

8.1. Conduct a targeted survey to determine the presence or absence of the Bush Stone-curlew, obtain an expert report or assume presence.

9. Justification for removal of Eastern Pygmy Possum from the candidate list is not adequate

Table 6.10 of the Biodiversity Development Assessment Report (BDAR) states '*The Eastern Pygmy Possum is known to occur west of the modification study area in the Pilliga forests, however no records occur within the Modification study area or locality. The Eastern Pygmy Possum prefers heathy woodlands with thick/dense understorey of banksias, eucalyptus and bottlebrushes. Due to the lack of important preferred habitat of thick understorey and the lack of records within the Modification study area and locality this species is unlikely to occur in the Modification study area and is not considered to be a candidate species*'.

The assessor should note that a lack of nearby BioNet Atlas records is not adequate justification for a candidate species exclusion given the relative paucity of threatened species records within the region and the low frequency of threatened species survey that has occurred over the past 20-year period. This is especially the case for the Eastern Pygmy Possum which is exceedingly cryptic and difficult to detect.

The assessor should note that while the shrub layer of PCT 88 does not appear to contain a thick/dense understorey of banksias, eucalyptus and bottlebrushes; the presence of both

eucalyptus and wattles is sufficient to support Eastern Pygmy Possums in low densities. As such, it is considered that PCT 88 contains necessary habitat requirements for the Eastern Pygmy Possum such that it could not be excluded, beyond reasonable doubt, as a candidate species for further survey.

The assessor must conduct a targeted survey to determine the presence or absence of the species, obtain an expert report or assume presence.

Recommendation

- 9.1. Conduct a targeted survey to determine the presence or absence of the Eastern Pygmy Possum, obtain an expert report or assume presence.

10. The BDAR should be certified by the accredited assessor and the BAM-C credit report should be finalised

In accordance with section 6.15(1) of the Biodiversity Conservation Act 2016, '*a biodiversity assessment report cannot be submitted in connection with a relevant application unless the accredited person certifies in the report that the report has been prepared on the basis of the requirements of (and information provided under) the biodiversity assessment method as at a specified date and that date is within 14 days of the date the report is so submitted.*' To meet this requirement a BDAR must be certified, for instance by signing and dating the first page, within 14 days of the relevant submission date of the EIS.

In addition, the date of submission of the BDAR must be within 14 days of the date shown on the relevant finalised credit report generated using the BAM Calculator. Submission of relevant BAM-C information is detailed within Table 25 of Appendix 10 of the BAM as forming part of the minimum requirements for a BDAR.

The BDAR submitted for the project has not been certified by the accredited assessor by signing and dating the BDAR within the relevant submission timeframes. In addition, the credit report generated by the BAM calculator, appended to the BDAR, has not been finalised.

Recommendations

- 10.1. The BDAR should be certified by the accredited assessor.
- 10.2. Provide a finalised BAM-C credit report.

11. The assessor should note that transitional period between BAM 2017 and BAM 2020 is soon to end and may affect resubmission of the BDAR

Proponents seeking to apply BAM 2017 need to ensure that the Biodiversity Assessment Report (BAR) is prepared, submitted and certified within the allowable transition timeframes.

Where an amendment to a BAR is required during the response to submissions stage for SSD/I projects: If the amendments involve changes to any assessment data entered into the BAM Calculator, this includes, but is not limited to:

- Changes to any credit outcomes,
- Addition of any threatened species,
- Changes to size or location of impact areas; and
- Changes to status of a threatened entity

or any changes to the outcomes of the BAR; then the BAM calculations and BAR must be recertified when it is resubmitted to the decision-maker (i.e. credit reports finalized within the last 14 days) to comply with Section 6.15 of the *Biodiversity Conservation Act 2016*.

The last date the transition arrangements could allow for a BAR to be submitted, reliant on BAM 2017, is 14 days after the transition period specified in the BC Regulations. This means if on 21 October 2021, BAM calculations are finalised and a BAR is certified by an accredited assessor (indicating that it has been prepared in accordance with BAM 2017), it may be accepted on that basis if submitted before 3 November 2021 (within 14 days of certifying/finalising).

After this date the transition period no longer applies and a BDAR must be prepared in accordance with the current BAM (BAM 2020).

BCS recommends that for any projects that are likely to extend beyond 3 November 2021 and/or may require further amendments to an existing BDAR a precautionary approach is taken and the BDAR is pre-emptively prepared in accordance with BAM 2020. As any amended and re-certified BDAR submitted after 3 November 2021 must be prepared in accordance with BAM 2020.

To assist with the transition, BCS have prepared a guidance document for assessors and consent authorities which details the elements of the BDAR that may require updating to ensure a BDAR prepared under BAM 2017 aligns to BAM 2020. This guidance document is available [here](#).

Recommendation

- 11.1. The assessor should note the information and BCS's recommendation to pre-emptively update the BDAR to the current BAM (BAM 2020).

12. The assessor should note that placement of vegetation plots is not in accordance with the BAM

BCS notes that both BAM plots used to inform the vegetation integrity of the subject land have been undertaken outside of the subject land assessed by the BDAR. Both plots Q40 and Q46 being located within completely disconnected patches of vegetation.

The BAM requires vegetation survey data to be collected on the subject land. BCS however is satisfied that the plots outside the footprint are representative and are likely to have little impact on the calculated offset requirement, being that the vegetation integrity score of the combined plots is almost at benchmark value i.e. 96.5/100. No further action is required.

Recommendation

- 12.1. No action required, the information has been supplied for the accredited assessor's information only.