



Office of
Environment
& Heritage

Our Ref. DOC16/558641
Your Ref. SSD 0127 Mod 5

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Dear Paul

Invincible Coal Mine – Southern Extension Modification (SSD 0127 Mod 5)

Thank you for your invitation for the Office of Environment Heritage (OEH) to comment on the exhibited Environment Assessment for the Invincible Coal Mine Southern Extension Modification.

OEH understands that Castlereagh Coal Pty Ltd seeks to modify the Invincible Project approval to extend the life of the mining operations at Invincible and obtain approval to extend the open cut mining operations into an area immediately south of the existing operations.

Attachment A details OEH's recommendations and **Attachment B** provides detailed comments on biodiversity. **Attachment C** provides detailed comments on Aboriginal Cultural Heritage.

Should you require further information regarding issues that are the responsibility of the OEH please contact David Geering on 02 68835335 or david.geering@environment.nsw.gov.au.

Yours sincerely

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ATTACHMENT A

Invincible Coal Mine Southern Extension Modification

Recommendations

1. Additional plot data for CW263 should be collected. If this is not possible, the values of the plot closest to benchmark should be used in the BioBanking calculator.
2. Targeted systematic searches be conducted to determine the precise distribution and population size of *Eucalyptus cannonii* across the Southern Extension Area.
3. Targeted surveys from late August to late November be conducted to determine whether Bathurst Copper Butterflies are present in the Southern Extension Area.
4. A detailed offset strategy should be provided prior to the approval of the impact so that its likely effectiveness in maintaining or improving biodiversity can be assessed. The offset strategy should:
 - Propose an offset which is consistent with the *NSW Biodiversity Offsets Policy for Major Projects*.
5. Remove reference to ecosystem-species credits in Section 5.3
6. Table 5.1, Ecosystem-credit species requiring offset, is not required.
7. OEH supports the recommendation to revise the Aboriginal Cultural Heritage Management Plan for PA 07/0127, in consultation with the registered Aboriginal parties
8. OEH recommends that the identification of the potential scar tree be tested against the *Aboriginal Scarred Tree Identification Field Manual* (DEC 2005).

ATTACHMENT B

Invincible Coal Mine Southern Extension Modification

Adequacy of Vegetation Survey

Recommendation

1. Additional plot data for CW263 should be collected. If this is not possible, the values of the plot closest to benchmark should be used in the BioBanking calculator.

The BioBanking calculator requires three plots to be sampled in the vegetation type CW263. The BAR indicates that only two plots were sampled due to the remapping of an area of CW263 containing the third plot being remapped as CW117. This deficiency has been compensated for by using the mean value of each of the site values of the other two plots. OEH recommends that additional plot data is collected however, if this is not possible, the values of the plot closest to benchmark should be entered into the credit calculator.

Capertee Stringybark (*Eucalyptus cannonii*)

Recommendation

2. Targeted systematic searches be conducted to determine the precise distribution and population size of *E. cannonii* across the Southern Extension Area.

Twenty four individuals of *E. cannonii* are reported to occur across five locations in the Southern Extension Area. Figure 2.1 provides details of flora survey locations and flora survey tracks. Table 2.4 indicates that the search effort for *E. cannonii* entailed general meandering searches. OEH has concerns that this survey effort is insufficient to detect all *E. cannonii* trees within the Project Area as there appears to be areas where survey has not been undertaken.

Descriptions of the vegetation communities provided in the BAR indicate that Narrow-leaved Stringybark (*E. sparsifolia*) is a co-dominant in both vegetation communities that occur in the Project Area while Blaxland's Stringybark (*E. blaxlandii*) occurs scattered throughout CW117. OEH officers visited the site on 24 October 2016 and confirmed that stringybark trees were common in the Southern Extension Area and are of the view that the survey methods described may not have detected all *E. cannonii* present in the area.

The offset credit requirement for *E. cannonii* is based on the number of individuals impacted by the development. It is therefore important that the survey effort be sufficiently robust to detect all *E. cannonii* trees occurring in the Project Area.

Bathurst Copper Butterfly (*Paralucia spinifera*)

Recommendation

3. Targeted surveys from late August to late November be conducted to determine whether Bathurst Copper Butterflies are present in the Southern Extension Area.

The BAR (Table 3.13) indicates that targeted surveys were conducted for the Bathurst Copper Butterfly however no details of such surveys are provided. The BAR concludes that this species is not likely to occur in the Southern Extension Area, and thus not be impacted, as its host plant *Bursaria spinosa* occurs in small patches and is "distributed sporadically". The BAR acknowledges that the closest record of the species 5 kilometres to the south-east. This is within the dispersal distance for the species. On a site visit on 24 October 2016, OEH officers identified some *Bursaria* patches that were of sufficient size and suitably located, i.e. in patches receiving periods of direct sunlight, to potentially support a population of Bathurst Copper Butterflies. No butterflies were observed on 24 October although the peak period of activity for adults is September.

The butterflies emerge between August (later at higher altitude sites) and November, with a two-week peak of activity in September. Surveys are required throughout the length of the flying season as the period of activity can be influenced by site variables such as the aspect of the site. OEH

recommends surveys are undertaken from late August to late November. Surveys will be required throughout this timeframe as individual butterflies may appear for periods as short as two weeks.

Offsetting Requirements

Recommendation

4. A detailed offset strategy should be provided prior to the approval of the impact so that its likely effectiveness in maintaining or improving biodiversity can be assessed. The offset strategy should:
 - Propose an offset which is consistent with the *NSW Biodiversity Offsets Policy for Major Projects*.

While the credit requirement for offsetting has been calculated no Biodiversity Offset Strategy (BOS) has been provided. The FBA states (Section 11.1.1.2) that the BOS should be submitted with the BAR as part of the EIS. No explanation has been provided as to why a BOS has not been provided.

Offset commitments should be demonstrated prior to the approval of the impact.

Broad-headed Snake

The Broad-headed Snake was not recorded within the Southern Extension Area. The BAR indicates that while winter refuge habitat does not occur within the Project Area summer foraging habitat does occur. As the closest known record is 1.5 kilometres to the north-east of the Project Area a precautionary approach has been adopted and it has been considered that the species may occur in what has been described as marginal habitat within the Southern Extension Area.

Tree hollows within 500 metres of sandstone outcrops were buffered by 24 metres to map the potential summer habitat for the Broad-headed Snake within the Southern Extension Area.

OEH supports the approach taken to determine the offset requirement for the species.

Threatened Species Requiring Offset

Recommendation

5. Remove reference to ecosystem-species credits in Section 5.3
6. Table 5.1, Ecosystem-credit species requiring offset, is not required.

Section 5.3 indicates that a number of ecosystem-credit species require offsets as part of the Project.

Ecosystem species do not require offsetting. Impacted vegetation types are offset with ecosystem credits being calculated based on the threatened species that can be reliably predicted to occur within a PCT. The BioBanking calculator uses the highest threatened species offset multiplier to determine the credit requirements for impacted vegetation types.

The Biodiversity Credit Report (Appendix E), and Section 6 of the BAR, correctly summarises the credit requirements of the Project.

Table 5.1 is not required.

ATTACHMENT C

Invincible Coal Mine Southern Extension Modification

Aboriginal Cultural Heritage

ACH Assessment

OEH have reviewed the Aboriginal cultural heritage (ACH) assessment for the proposed southern expansion of the Invincible mine and identify no major issues with the ACH assessment report (Umwelt 2016). The report concludes that several sites of low archaeological significance will be impacted by the development proposal and recommends salvage of site items and then long term protection. OEH is satisfied with the overall site descriptions, survey methodology and survey coverage of difficult terrain. Consultation with the registered Aboriginal parties (RAPs) is consistent with the consultation requirements set out in the Aboriginal consultation requirements for applicants (DECCW 2010).

To guide the appropriate management of ACH within the mine footprint and, in light of the recent assessment, OEH support the recommendation to revise the Aboriginal Cultural Heritage Management Plan for PA 07/0127, in consultation with the registered Aboriginal parties. OEH note that the Aboriginal Place, *Maiyingu Marragu* (Blackfellows Hands), is located 7 kms outside of the proposed development easement and that no indirect impacts from the proposed development will occur to the site.

Recommendation

7. OEH supports the recommendation to revise the Aboriginal Cultural Heritage Management Plan for PA 07/0127, in consultation with the registered Aboriginal parties.

Intangible Finds

The assessment of cultural significance is more than a component of an archaeological assessment or investigation and in some cases additional expertise is required. OEH expect professional services are made available to the RAPs to assist in articulating intangible values in order to verify the significance of the feature so that it is better understood and appropriately managed (OEH 2010:5) especially, in circumstances where intangible values are at threat and require a different approach to mitigating those threats. OEH is unable to form a view on the claims of a birthing tree and the culturally sensitive pagodas because of the lack of information provided in the assessment report, beyond those descriptions provided by some members of the registered Aboriginal parties involved in the fieldwork.

Aboriginal Scarred Tree

The ACH assessment report describes a traditional Aboriginal scarred tree (Umwelt 2016: 47-48 & Appendix A, Aboriginal cultural assessment report) and presents a recommendation of salvage. OEH supports the salvage and protection of Aboriginal scarred trees particularly in circumstances as described in the report where the tree is identified as dead and laying in a spoil heap. However OEH note that the *Aboriginal Scarred Tree Identification Field Manual* (DEC 2005) has not been referred to when making an identification of the tree as an Aboriginal scarred tree. The evidence presented in the ACH assessment is lacking in sufficient detail to conclude supporting evidence for registering the scarred tree onto the OEH Aboriginal Heritage Information System (AHIMS).

Recommendation

8. OEH recommends that the identification of the potential scarred tree be tested against the *Aboriginal Scarred Tree Identification Field Manual* (DEC 2005).

UMWELT 2016	Aboriginal Cultural Heritage and Archaeological Assessment. Invincible Mine. Appendix 7.
DEC 2005	Aboriginal Scarred Trees of NSW. A Field Manual (Andrew Long)
OEH 2010	Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW.