



Our ref: DOC19/965736

Your ref: SSD 5581

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Dear Andrew

Airly Coal Expansion – Modification 3 (SSD 5581 Mod 3)

Thank you for your email dated 31 October 2019 to the Biodiversity and Conservation Division (BCD) and National Parks and Wildlife Service (NPWS) of the Department of Planning, Industry and Environment inviting comments on the environmental impact assessment (EIA) for the Airly Coal Expansion Modification 3.

BCD and NPWS have reviewed the EIA and require additional information regarding potential impacts on significant surface features. We consider that the EIA does not adequately assess the impacts of blasting and the increased extraction rate on Mugii Murum-ban State Conservation Area, the Greater Blue Mountains World Heritage Area or Matters of National Environmental Significance.

Our recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B** and **Attachment C**. If you require any further information regarding this matter, please contact Liz Mazzer, Conservation Planning Officer, via liz.mazzer@environment.nsw.gov.au or 6883 5325.

Yours sincerely

28 November 2019

Debbie Love
Acting Director North West Branch
Biodiversity and Conservation Division

Enclosure: Attachments A, B and C

BCD and NPWS recommendations

Airly Mine Extension Modification 3 – Environmental Impact Statement

- 1 If blasting is to be undertaken, a geotechnical assessment report should be prepared. This report should consider the impacts of blasting on landforms, biodiversity and Aboriginal cultural heritage across the SCA and the adjoining World Heritage Area. It should assess current stability and the thresholds of vibration for formations based on the geology of the site and quantify safe limits for vibration that ensure impacts do not exceed the current performance measures in Schedule 3 Condition 2 of the consent for SSD 5581.
- 2 The Department of the Environment and Energy should be contacted regarding Matters of National Environmental Significance under the EPBC Act.
- 3 The assessment should include the impacts of changes to groundwater and surface water on the ecosystems and significant features of Mugii Murum-ban SCA and Gardens of Stone National Park.
- 4 If the modification is approved, extraction plans and the subsidence monitoring program should be revised to ensure the overlying geodiversity and other sensitive features are protected.
- 5 The proponent should note that NPWS will not approve the installation of monitoring infrastructure in the Genowlan Point area.

BCD and NPWS detailed comments

Airly Mine Extension Modification 3 – Environmental Impact Statement

1. Blasting may impact sensitive surface features

BCD notes that underground blasting has been proposed as part of this project modification. No underground blasting is currently undertaken at Airly Mine. The environmental impact assessment (EIA) (section 8.8) states that underground blasting will only be required in the project where geological structures are encountered. There is no information in the EIA regarding whether geological structures have been encountered in the past, or how these were dealt with. The need for blasting has not been well explained.

The EIA does not assess the impacts of blasting on sensitive features in Mugii Murum-ban State Conservation Area (SCA).

The noise and vibration impact assessment for the modification briefly outlines blasting assessment criteria for archaeological and geological features (section 9.1.5). The assessment states that there are no regulatory criteria nominated in Australia for assessment of damage to archaeological and geological structures from vibration.

The assessment references research conducted by the United States Army Corps of Engineers in 1985 into the effects of large surface blasts on the dynamic stability of nearby unlined tunnels of various diameters in sandstone and granite. The results of this research indicated that intermittent rock fall or observable damage was not observed until vibration levels exceeded 460 mm/s.

The assessment has used this single reference to adopt a blast design vibration criterion of 250 mm/s as being applicable to archaeological and geological structures. This criterion has not been supported by evidence.

The EIA does not provide an analysis of how blasting might impact on sensitive surface features such as cliffs, pagodas, hydrology and Aboriginal heritage sites including rock shelters.

It also has not assessed the potential impacts of vibrations from blasting on threatened species, particularly *Pultenaea* sp. Glenowlan Point which is critically endangered under both the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This species is known from a single, small population located on an exposed rocky area within metres of a cliff edge and is part of the Saving our Species program.

In addition, the Glenowlan Point *Allocasuarina nana* heathland, which is listed as an Endangered Ecological Community under the BC Act, is also only found on Glenowlan Point.

It should be noted that impacts of development on caves, crevices, cliffs and other geological features of significance are additional biodiversity impacts to which the biodiversity offsets scheme applies (clause 6.1 of the *Biodiversity Conservation Regulation 2017*). Introducing blasting at Airly Mine is an additional impact not previously assessed.

Impacts of blasting on the following features should be specifically assessed through a geotechnical report. This should include, but not be limited to, impacts on geological features of significance, hydrological processes and features that sustain threatened species and threatened ecological communities, and Aboriginal cultural heritage, particularly rock shelters.

Assessment of the impacts of blasting on biodiversity should address the heads of consideration provided in **Attachment C**.

2. Impacts on Matters of National Environmental Significance have not been assessed

The Airly Mine Extension project was declared to be a controlled action, and an approval with conditions was issued under the EPBC Act (reference number 2013/7076) on 18 May 2017. The following controlling provisions were identified:

- World Heritage
- National Heritage
- listed threatened species and communities
- water resources impacted by coal seam gas and large coal mining development.

The EIA concludes that Airly Mine's consent as modified will operate within the constraints of the EPBC Approval 2013/7076, and therefore a referral to the Department of Environment and Energy is not required.

BCD and NPWS consider that the proposal will have potential direct and indirect impacts on Matters of National Environmental Significance under the EPBC Act, particularly if blasting is approved. These potential impacts have not been identified or assessed in the EIA.

Recommendation 2

The Department of Environment and Energy should be contacted regarding Matters of National Environmental Significance under the EPBC Act.

3. Extraction plans and the subsidence monitoring program should be updated to reflect changes in rate of coal extraction

Limited information on subsidence impacts, and potential changes to these due to the increased rate of coal extraction and blasting, is provided in the EIA. The EIA concludes that subsidence impacts will not change, and the mine will continue to meet subsidence impact performance measures included in the consent for SSD 5581. However, there is no revised subsidence assessment to support this assertion.

We note that each mining zone as outlined in the proposal is subject to an approved extraction plan, and the subsidence monitoring program forms part of the extraction plans. It is not clear whether the mining zones subject to the increased extraction rates will have their extraction plans, and subsidence monitoring programs reviewed.

Under the current consent, BCD must be consulted on the extraction plans. Detail should be provided regarding the revision of extraction plans. This should include descriptions of how they will be reviewed, timing and sequencing, and how they will address the extraction rate increase for each mining zone. The subsidence monitoring program should be updated to reflect the new plans and operations.

Recommendation 3

If the modification is approved, extraction plans and the subsidence monitoring program should be revised to ensure the overlying geodiversity and other sensitive features are protected.

The following items are particular concerns raised by NPWS due to the potential impacts on the SCA and the adjacent World Heritage Area.

4. Changes to groundwater and surface water, and the impact on significant features, should be assessed

NPWS and BCD are concerned that the discharge from mine operations will affect water quality, especially Airly Creek as the receiving environment for the main production area. Dewatering, and release of water with a higher salt content is also of concern for aquatic ecology of the SCA.

The proposal predicts that impacts to groundwater and surface water flow will remain within the environmental performance criteria set under the consent for SSD 5581, however NPWS is concerned about the level of drawdown in Gap Creek (as 1.9 metres) and Genowlan Creek (1.9 metres, which is higher than the 1.1 metres predicted in the 2014 environmental impact statement) that will result in baseflow reductions to watercourses and water availability for elevated plant communities that rely on seepage.

The proposal mentions no noticeable variation to end users but fails to consider impacts on groundwater or surface water dependent ecosystems. The residual groundwater impacts are assumed to be of Level 1 Criteria under the NSW Aquifer Interference Policy (dated September 2012) thus deemed acceptable. How this is applied is not explained, and what it means for the ecosystems of the Mugii Murum-ban SCA remains unclear.

Surface water and watercourses flow through the Grotto and the Oasis, significant features for visitors to Mugii Murum-ban SCA, and through the adjacent World Heritage Area (Gardens of Stone National Park). NPWS maintains its concern around the potential impacts to water quantity and quality at these localities.

Assessment of the impacts of the project modification on water quality, water bodies and hydrological processes should be undertaken by addressing the heads of consideration provided in **Attachment C**.

Recommendation 4

The EIA should include the impacts of changes to groundwater and surface water on the biodiversity and significant features of Mugii Murum-ban SCA and Gardens of Stone National Park.

5. NPWS will not approve installation of monitoring infrastructure in the Genowlan Point area

The draft Plan of Management for Mugii Murum-ban SCA states that vehicle access to the Genowlan Point peninsula will be restricted due to the sensitive values of the area which include threatened entities such as *Pultenaea* sp. Genowlan Point and the Genowlan Point *Allocasuarina nana* Heathland.

NPWS advises that they will not approve installation of monitoring infrastructure, including subsidence monitoring infrastructure, in the Genowlan Point area.

Recommendation 5

The proponent should note that NPWS will not approve the installation of monitoring infrastructure in the Genowlan Point area.

Geotechnical report – assessment of biodiversity

Karst, caves, crevices, cliffs and other features of geological significance

The assessment of the impacts of development on the habitat of threatened species or ecological communities associated with karst, caves, crevices, cliffs and other features of geological significance should:

- (a) identify the species and ecological communities likely to use the habitat
- (b) describe, with reference to relevant literature and other reliable published sources of information, the importance within the bioregion of the habitat to these species or ecological communities
- (c) predict the nature, extent and duration of short and long-term geological impacts
- (d) predict the nature, extent and duration of short and long-term impacts on processes critical to the formation and persistence of the unique natural features of the area of karst, geological features of significance, and cliff fall
- (e) predict the consequences of impacts for the persistence of the suite of threatened species and communities likely to use these areas as habitat, with reference to relevant literature and other published sources of information
- (f) justify the predictions of impacts with appropriate modelling and with reference to relevant literature and guidelines.

Water quality, water bodies and hydrological processes

The assessment of the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including subsidence or upsidence resulting from underground mining or other development) should:

- (a) identify water bodies with potential to be habitat for threatened species or threatened ecological communities that are likely to be impacted by the proposal
- (b) identify the threatened species and threatened ecological communities likely to use the habitat
- (c) identify hydrological processes that sustain threatened species or threatened ecological communities and the species and communities that are dependent on them
- (d) describe, with reference to relevant literature and other reliable published sources of information, the importance within the bioregion of the water body or hydrological process to these species or ecological communities
- (e) describe the nature, extent and duration of known short and long-term impacts on water bodies and hydrological processes
- (f) describe the nature, extent and duration of short and long-term impacts on water quality

- (g) predict the consequences of the impacts for the bioregional persistence of the suite of threatened species and communities likely to use these areas as habitat, with reference to relevant literature and other published sources of information
- (h) predict the nature, extent and duration of short and long-term impacts on the habitat and life cycle of species using the natural features of any water dependent plant community
- (i) justify predictions of impact on any water dependent plant communities, with appropriate modelling and with reference to relevant literature and other published sources of information
- (j) predict the cumulative impacts of the project together with existing mining operations mining underneath the same water dependent plant communities
- (k) based on predictions of impacts on water dependent plant communities and the species they support, calculate the maximum predicted offset liability in accordance with the Upland Swamp Policy
- (l) justify any prediction of 'nil' or 'negligible' environmental consequences for any impact on water dependent plant communities and the species they support.