



Office of  
Environment  
& Heritage

Your reference: DA 305-7-2003 MOD 15  
Our reference: DOC15/294971-2  
Contact: Robert Gibson, 4927 3154

Dr Hamish Aiken  
Team Leader, Resource Assessments  
Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Dr Aiken

**RE: WAMBO MINE MODIFICATION APPLICATION (DA 305-7-2003 MOD 15)**

I refer to your email dated 3 August 2015 seeking comments on the Environmental Assessment (EA) for the South Bates (Wambo Seam) Underground Mine Modification. The Office of Environment and Heritage (OEH) has reviewed the EA for this project in relation to Aboriginal cultural heritage and potential impacts to threatened biodiversity and national park estate.


OEH understands that future discussions are planned in relation to the existing Aboriginal Heritage Impact Permit (AHIP). This will determine if it can be revised or whether a new AHIP will be required to cover modifications to mining operations. In relation to threatened biodiversity, OEH notes that some local threatened biodiversity entities or records were omitted from the assessment for this project and that no commitment has been made to appropriately offset any potential impacts to threatened biodiversity.

This project is predicted to cause mine subsidence impacts to the adjacent Wollemi National Park. OEH considers any risk of subsidence in the park to be unacceptable. Wollemi National Park also forms part of the Greater Blue Mountains World Heritage Area. OEH recommends referral to the Australian Government Department of the Environment for assessment under the *Environment Protection and Biodiversity Conservation Act 1999*.

Further details and recommended conditions of approval are provided in **Attachment 1**.

If you require any further information regarding this matter, please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4927 3154.

Yours sincerely



24 AUG 2015

**RICHARD BATH**  
Senior Team Leader Planning, Hunter Central Coast Region  
Regional Operations

Enclosure: Attachment 1



## **ATTACHMENT 1: REVIEW OF THE ENVIRONMENTAL ASSESSMENT FOR THE SOUTH BATES (WAMBO SEAM) UNDERGROUND MINE MODIFICATION (DA 305-7-2003 MOD 15) WITH RECOMMENDED CONDITIONS OF APPROVAL**

The Office of Environment and Heritage (OEH) has undertaken a review of the report '*South Bates (Wambo Seam) Underground Mine Modification Environmental Assessment for the Modification of DA 305-7-2003 (MOD15) the Addition of South Bates (Wambo Seam) Underground Mine Longwalls 14-16*' (EA) prepared by Peabody Energy (dated August 2015). The review of the EA is in relation to possible impacts of the proposed development on Aboriginal cultural heritage, flooding and threatened biodiversity. OEH's comments and recommended conditions of consent are provided below:

### **ABORIGINAL CULTURAL HERITAGE ASSESSMENT**

OEH has reviewed '*Cultural Heritage Impact Assessment – South Bates (Wambo Seam) Underground Mine Modification, Prepared by RSP Australia East Pty Ltd, Prepared for Wambo Coal Pty Ltd, July 2014*', which forms Appendix D of the EA with respect to Aboriginal cultural heritage. OEH makes the following comments with regarding the proposed Aboriginal cultural heritage management recommendations:

1. OEH concurs that all nine (9) AHIMS registered Aboriginal sites should remain *in situ* unless any impact is unavoidable. OEH also supports the proposed subsidence monitoring of the nine (9) AHIMS registered Aboriginal sites, however, OEH additionally recommends that the sites are clearly marked and fenced to ensure that their locations are visible and thus will be protected from unintended harm.
2. OEH supports the recommendation that Aboriginal sites within the existing Aboriginal Heritage Impact Permit (AHIP) # 2222 boundary, continue to be managed in accordance with the terms and conditions of that AHIP, and that such works must be undertaken in consultation with the registered Aboriginal parties. OEH will also support the recommendation that any collected Aboriginal objects being transferred to the established '*temporary keeping place*' under the existing Care and Control Agreement Permit # 3130, however, OEH is not in a position to provide advice with respect to varying AHIP # 2222 to include the Modification Project Area until such time as an AHIP Variation application is submitted for review and assessment.
3. OEH supports the inclusion of the location of the Aboriginal sites located within the Modification Project Area in the Wambo Coal environmental management framework.

In addition to the above suggestions, OEH recommends that the following standard conditions for Aboriginal cultural heritage are considered in any consent issued:

### **Recommended Conditions of Approval for Aboriginal Cultural Heritage**

1. The proponent must consult with and involve all the registered local Aboriginal parties for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation must be collated and provided to the consent authority upon request.
2. The proponent must update the existing Aboriginal Cultural Heritage Management Plan for the project area in consultation with the registered Aboriginal parties to detail procedures for managing all Aboriginal cultural heritage values associated with the project area. This process must be undertaken prior to commencing any ground disturbance or development works subject to the development.
3. In the event that ground disturbance locates previously unidentified Aboriginal object/s within the project area, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and representatives of the local Aboriginal community must be contacted to determine the nature, extent and significance of the finds. The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) and the management outcome for the site included in the information provided to AHIMS. The proponent must consult with representatives of the local Aboriginal community, and the archaeologist to develop an appropriate management strategy for all objects/sites which complies with the requirements of the *National Parks and Wildlife Act 1974*.



4. If any human remains are located, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are to be contacted immediately. No action is to be undertaken until the NSW Police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works are to continue until OEH provides written notification to the proponent.
5. All Aboriginal sites impacted by the project must have an Aboriginal Site Impact Recording form completed and be submitted to OEH's AHIMS Register within three months of being impacted.
6. An Aboriginal Cultural Education Induction Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the registered Aboriginal parties.
7. The nine (9) AHIMS registered sites in the project area must remain in-situ unless any mine impact is unavoidable. Each site must be clearly marked and fenced to ensure such sites are protected from any unintended harm.
8. Aboriginal sites within the existing Aboriginal Heritage Impact Permit (AHIP) # 2222 boundary continue to be managed in accordance with the terms and conditions of that AHIP, and that such works must be undertaken in consultation with the registered Aboriginal parties.

#### **FLOODING AND FLOODPLAIN ASSESSMENT**

The proposal involves three additional longwall panels which will be located beneath existing approved longwall panels.

The Surface Water Assessment (SWA) prepared by Advisian Pty Ltd (2015) has been reviewed to assess flooding impacts of the proposal. The SWA indicates that there is likely to be a marginal increase in subsidence which may affect the North Wambo Creek Diversion and Stony Creek together with other minor watercourses above the proposed works.

The SWA indicates the potential for increased cracking of the creek beds, potential for increased erosion as the result of short sections of increased bed slope and the potential for increased instability of bed and bank of the watercourses. The majority of the impacts are due to the original approved longwall mines with incremental changes only predicted as a result of the proposed additional mines. It is noted that minor increases in depth of ponding (0.1 metre) post additional mining are predicted. It is assumed that direct impacts on the watercourses will be reviewed by other agencies, particularly the NSW Office of Water.

There are no additional offsite flooding affects indicated by the SWA as no further creek diversions are noted. The predicted increased ponding in the watercourses is minor and is contained within the site boundaries. OEH therefore does not recommend any additional conditions of consent in relation to flooding on top of any that may be proposed by the Office of Water or the Australian Government Department of the Environment.

#### **IMPACT ON WORLD HERITAGE AREAS AND NATIONAL PARK ESTATE**

The proposal to extend the Wambo mine has potential to cause subsidence impacts on Wollemi National Park, which is part of the Greater Blue Mountains World Heritage Area. Any subsidence in the World Heritage Area has potential to impact on its outstanding universal values. Subsidence also has potential for adverse impacts on other significant natural and cultural values of the park, including biological, geological, landscape, and Aboriginal heritage values. As such, the National Parks and Wildlife Service considers any risk of subsidence in the Wollemi National Park to be unacceptable.

The proposed mining footprint extends to just 300 metres east of the boundary of Wollemi National Park. The EA report states that the activity is likely to cause subsidence, cliff cracking and rock falls in the national park,



but considers such impacts to be of low significance. The EA acknowledges that the Wollemi escarpment is the major topographical feature in the area.

Policies for the conservation of nature in the park, as stated in the Wollemi National Park Plan of Management (NPWS, 2001: p. 11), include the protection of the outstanding scenery and natural features of the park, and the protection of features and sites of geological, geomorphic and/or pedological significance against damage from human activities.

The Greater Blue Mountains World Heritage Area was inscribed on the World Heritage List because it satisfies the following criteria for natural values of outstanding universal significance. It contains:

1. outstanding examples of significant ongoing ecological and biological processes in the evolution and development of ecosystems and communities of plants and animals (criterion II), particularly eucalypt-dominated ecosystems
2. important and significant natural habitats for in-situ conservation of biological diversity (criterion IV), including the eucalypts and eucalypt-dominated communities, primitive species with Gondwanan affinities such as the Wollemi Pine, and a diversity of rare or threatened plants and animals of conservation significance.

The description of the greater Blue Mountains World Heritage Area UNESCO (2002-2015) states that: *"The geology and geomorphology of the property, which includes 300 metre cliffs, slot canyons and waterfalls, provides the physical conditions and visual backdrop to support these outstanding biological values. The property includes large areas of accessible wilderness in close proximity to 4.5 million people. Its exceptional biodiversity values are complemented by numerous others, including indigenous and post-European-settlement cultural values, geodiversity, water production, wilderness, recreation and natural beauty."*

An action that is likely to have significant harm to World Heritage Areas may require approval under the Australian Government *Environment Protection and Biodiversity Conservation Act 1999*. Therefore, given this project is likely to impact the adjacent World Heritage Area it is recommended that the proponent refer this action to the Department of the Environment for assessment. This process is discussed in more details in the 'Significant impact guidelines 1.2' (Department of the Environment, 2013).

## **THREATENED BIODIVERSITY ASSESSMENT**

OEH has reviewed the EA in relation likely impacts on threatened biodiversity by this project, particularly the flora assessment by FloraSeach (2015) and fauna assessment by EcoLogical Australia (2015), both of which comprise Appendices E and F of the EA respectively. In conducting this review OEH noticed a number of existing local records or reports of threatened species were not included in the threatened species assessment, and that there was no commitment to provide any biodiversity offset in the event that impacts from the proposed modification caused damage to threatened biodiversity. In addition, the EA did not fully describe targeted survey effort for biodiversity or the timing of all surveys so it is not possible to ascertain how total survey effort compares with required coverage. These matters are discussed below.

### **Consideration of Additional Threatened Species and Threatened Species Records**

OEH notes that the environmental assessments of flora and fauna only considered some of the locally known are reported occurrences of threatened species. In the case of the flora assessment the endangered population of *Leionema lamprophyllum* subsp. *obovatum* was not considered even though this population occurs about 30 kilometres (km) south east of the project area in very similar rocky cliff line with dry eucalypt forest habitat as found in parts of the Study Area. Similarly the fauna assessment appears to have overlooked threatened fauna records on and adjacent to the Study Area that are available in the NSW Wildlife Atlas, and records in Annual Environmental Management Reports for the Wambo Mine. EcoLogical Australia (2015: pp. 44 & 59) state that the Brush-tailed Rock-wallaby has been recorded within the Study Site during the annual monitoring program of the mine site, and yet these records are not shown on any map associated with the EA. Subsequently, the Brush-tailed Rock-wallaby was then considered to only have the 'potential' of



occurring in the Study Area (Appendix A of Appendix F (EcoLogical Australia, 2015: p. 44)) and was treated as such during the assessment despite being recorded on site. OEH considers Brush-tailed Rock-wallaby to be in the Study Area and thus likely to be affected by this proposal. On a related note, the Brush-tailed Rock-wallaby records, and those of other threatened species from the Annual Environmental Management Reports and surveys for environmental assessments are required to be submitted to the NSW Wildlife Atlas as per consent conditions attached to Scientific Licences issued under 132C of the *National Parks and Wildlife Act 1974*. OEH looks forward to those data being submitted shortly.

Further details are required on two flora records. The first is whether the report of *Grevillea parviflora* subsp. *parviflora* from the Study Area has been confirmed by taxonomists working at the NSW National Herbarium? *Grevillea parviflora* subsp. *parviflora* is very similar to *G. humilis*, and both Grevilleas occur in the lower Hunter Valley and exhibit morphological variation which makes their identification challenging. If the record is *G. parviflora* subsp. *parviflora* then it represents both a range extension of about 45 km and an unusual habitat for this taxon. However, there are records of *G. humilis* from footslopes of the Broken Back Range about 30 km south east of the Study Area. The second record that warrants further discussion is that of the Greenhood Orchid (*Pterostylis* sp.) detected during survey work in the Study Area. This taxon was not identified to species level, which could be due to the time of year that flora surveys were conducted. It was not considered to be the Illawarra Greenhood (*Pterostylis gibbosa*) for which there is a population about 15 km due south of the Study Area. From the information provided in the EA it is not clear why the greenhood orchids on site were not considered to be the Illawarra Greenhood.

### Impact of Mine Subsidence

OEH acknowledges that the proposed development is for three longwall panels for which there are no surface works or surface clearing proposed. The proponent has considered the project is unlikely to have a significant impact on threatened biodiversity and has not provided biodiversity offsets. OEH acknowledges that the Study Area is covered by an active consent that already covers planned longwall panels in the overlying Whybrow Coal Seam for which the consent required no consideration of biodiversity offsets. However, OEH understands that the earlier consent (DA 305-7-2003) was issued on 4 February 2004 when biodiversity offsets were not yet routinely considered or required.

OEH has two areas of concern in relation to the potential impacts of longwall mining on threatened biodiversity in this area. That is: 1. Potential damage to endangered ecological community (EEC) vegetation due to changed surface hydrology, and 2. Potential damage to cliffs and rock outcrops that provide habitat for cave-roosting threatened microbats and for the Brush-tailed Rock-wallaby. OEH understands that the combined subsidence of mining the Whybrow and Wambo Coal Seams in the study area will up to about four metres, which will result in areas of either ponding (impeded drainage) or with surface cracking (with enhanced drainage). Both changes to the ground surface have the potential to adversely affect plants in the 'Central Hunter Grey Box – Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions' EEC. This is particularly so as this EEC occurs in the northern part of the Study Area where the depth-of-cover to the coal seams is the smallest and thus the extent of mine subsidence will be the greatest. This was discussed in more detail in OEH's letter dated 17 October 2014 in relation to the then-proposed Longwall panel 10A where similar mine subsidence impacts on threatened biodiversity were likely.

The fauna assessment (EcoBiological, 2015: p. 18) concluded that mine subsidence may cause 'some impacts' on escarpments and cliffs and therefore to cave-roosting microbats. Any such impacts were considered unlikely to be significant and thus no offsets were considered. Biodiversity offsets are required where any harm occurs to threatened biodiversity outside of any consent conditions, and this is irrespective of whether the harm is 'significant' or not. While threatened biodiversity is not expected to be harmed by this project OEH is aware that unexpected mine subsidence events can and do happen, such as where unrecorded faults or shear zones are intersected by mining, and also where steep slopes are undermined. Therefore, OEH recommends that where mine subsidence causes harm to threatened biodiversity then that harm is offset in accordance with the 'NSW Biodiversity Offsets Policy for Major Projects' (OEH, 2014). If no harm is caused then no offset is required (as per consolidated consent condition 22 in Schedule 4. OEH considers changes in vegetation structure, composition and the provision of shelter and habitat resources for



threatened biodiversity to be beyond the 'negligible' impact threshold allowed by mine subsidence under the current consent.

### **Threatened Species Survey Effort**

The threatened fauna assessment (EcoLogical Australia, 2015: p. 7) states that a reduced survey effort was applied "...due to the large body of detailed ecological assessments that have been performed in the modification area and surrounds to date". However, no details of where this effort has been applied and an assessment of the validity due to methods used and age of assessments has been provided. In addition EcoLogical Australia appear to have disregarded this information when determining the likelihood of occurrence for species recorded in previous assessments. As such it has not been adequately demonstrated that the survey effort conducted is sufficient against OEH's threatened biodiversity survey guidelines (DEC, 2004). This is particularly relevant in relation to the threatened cave-dwelling species that have been recorded, and have the potential to occur, within the site. Due to the potential impacts of the proposal a more comprehensive assessment would be expected.

OEH was unable to ascertain when all of the flora surveys had been conducted. It appears that no surveys were conducted in the Study Area in spring when a number of local threatened orchids flower, such as *Diuris pedunculata* and *Pterostylis gibbosa* and therefore it is not clear why such species were not fully considered in this assessment.

As a consequence of the problems identified by the threatened fauna assessment OEH applies the 'Precautionary Principle' (as per section 6(2)(a) of the *Protection of the Environment Administration Act 1991*) considers that the project is likely to adversely impact on a Brush-tailed Rock Wallaby population and habitat for several cave-roosting threatened microbats (Large-eared Pied Bat, Eastern Bentwing-bat, Little Bentwing-bat, Little Pied Bat, Southern Myotis, and the Eastern Cave Bat), and require that they are appropriately offset for this project. That is unless and until the Proponent can demonstrate that such harm is unlikely to occur by addressing the problems raised above.

### **Biodiversity Management and Monitoring**

OEH strongly supports the establishment of the Hunter Coalfield Flora and Fauna Advisory Committee, as mentioned in Condition 44 of Schedule 3 of the consolidated consent. This committee would be able to provide advice on flora and fauna management for this project at arm's length from regulatory agencies.

In conclusion, OEH acknowledges that the proposed modification does not plan to remove any native vegetation, and that the mining of the new longwall panels would be done using existing infrastructure. However, OEH notes that extraction of Longwall panels 14, 15 and 16 are predicted to subside the current surface by up to 2.5 metres. When combined with planned longwall mining of the overlying Whybrow Coal Seam coal mining from both projects is forecast to lower the local land surface by up to 4.1 metres, and this will also result in surface cracking, tilting and ponding. Given that the area above Longwall Panels 14, 15 and 16 includes one endangered ecological communities and one vulnerable ecological community and habitat for threatened fauna OEH recommends that any consent issued includes the requirement to adequately monitor impacts on local threatened biodiversity before and after undermining and that where any harm occurs to threatened biodiversity that it is offset appropriately and fully offset in accordance with NSW biodiversity offsetting policy (OEH, 2014a).

### **Recommended Conditions of Approval for Threatened Biodiversity**

1. That any vegetation clearing that impacts on threatened species, populations or communities, or their habitats, for this development outside any other existing consents must be offset in accordance with OEH offsetting policy. That is the '*NSW Biodiversity Offsets Policy for Major Projects*' (OEH, 2014);
2. That any monitoring programme to measure the impacts of mine impacts includes control sites in which data on vegetation composition and structure, soil surface features, and other variables as appropriate are collected in the same vegetation communities and in the same position in the landscape as the areas



to be undermined; that data collection in all sites commences more than 12 months prior to undermining of any sites; and that appropriate statistical analysis of the data is conducted; and

3. That the proponent provide an appropriate biodiversity offset to offset any impacts to Brush-tailed Rock Wallabies, threatened cave-roosting microbats (Large-eared Pied Bats, Eastern Bentwing-bats, Little Bentwing-bats, Little Pied Bat, Southern Myotis, and the Eastern Cave Bat) and the Illawarra Greenhood Orchid.

## References:

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