



Office of
Environment
& Heritage

Your reference: SSD 6300
Our reference: DOC15/435951-13
Contact: Ziggy Andersons 4927 3151

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

Dear Dr Aiken

RE: ENVIRONMENTAL IMPACT STATEMENT FOR THE RIX'S CREEK EXTENSION PROJECT

I refer to your email dated 2 November 2015 seeking comment on the above project. The Office of Environment and Heritage (OEH) understands that this project is a State Significant Development (SSD 6300) under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979*.

OEH has undertaken a review of the relevant sections of the Environmental Impact Statement (EIS) for the Rix's Creek Mine - Continuation of Mining Project, prepared by AECOM Australia Pty Ltd for Bloomfield Collieries Pty Limited (dated 26 October 2015). OEH's detailed comments are provided in **Attachment A**.

OEH has concerns with some sections of the EIS with respect to vegetation mapping, calculation of offset credits and flood assessment. OEH is of the opinion that the areas mapped as the Central Hunter Valley eucalypt forest and woodland is incorrect and will need to be rectified as it has an impact on the project's credit requirements. This issue and advice to clarify the Upper Hunter Strategic Assessment offsetting requirements, mitigation and mine site rehabilitation is discussed further in the attachment. As no flood assessment has been undertaken, it is recommended that a risk assessment is undertaken of the potential impact of a full range of flood event up to the Probable Maximum Flood, on the proposed water and sediment management dams. OEH requests that the concerns are appropriately addressed prior to project approval.

Please note that OEH has not provided recommended conditions of approval for this project but can provide input later in the assessment process if required.

If you require any further information regarding this matter please contact Ziggy Andersons, Regional Biodiversity Conservation Officer, on 4927 3151.

Yours sincerely



4 DEC 2015

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

Enclosure: Attachment A

ATTACHMENT A: OEH REVIEW OF ENVIRONMENTAL IMPACT STATEMENT FOR THE RIX'S CREEK EXTENSION PROJECT (SSD 6300)

THREATENED SPECIES

OEH has reviewed the ecological report titled 'Ecology Report for the Continuation of Rix's Creek Mine, Singleton LGA' (dated October 2015) and provides the following comments.

This application area occurs within an identified Project Area of the Upper Hunter Strategic Assessment (UHSA). Although the UHSA has not been finalised or publically exhibited, the project still has the option of being assessed as a 'Path 1' project under the UHSA Interim Policy (October 2012) as indicated in the EIS. This review has assumed that the UHSA will be applied and has therefore focused on the assessment of any revised calculations, any new listings under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Threatened Species Conservation Act 1995* and the suitability of avoidance, mitigation and offsetting considerations.

OEH acknowledges that re-referral under the EPBC Act is not required and the current 'not a controlled action' decision is consistent with the Path 1 requirements of the UHSA Interim Policy. The Interim Policy also requires that projects are consistent with the method (i.e. the Biodiversity Certification Assessment Methodology) and approach in the Draft Biodiversity Plan. In order to achieve consistency, the EIS must identify areas that conform to the recently listed Commonwealth Central Hunter Valley eucalypt forest and woodland critically endangered ecological community (CEEC).

This has been included in the EIS, however, after receiving advice from the Australian Government Department of the Environment, OEH is of the opinion that the areas mapped as the Central Hunter Valley eucalypt forest and woodland is incorrect. The Department of the Environment advice is provided below:

"A patch should be the largest area (as a whole), across which a projected canopy cover of trees of at least 10% (on average) applies (or across which a native tree density of at least 10 native tree stems per 0.5 ha [on average] (at least 20 native tree stems/ha on average) that are at least one metre in height applies), or a combination of the two. A patch should also have native understory. A patch is a discrete and mostly continuous area of the ecological community. Where there is a break in native vegetation cover from the edge of the tree canopy of 30 m or more, then the gap indicates that separate patches are present".

"Where native grassland/shrubland (whether derived from the ecological community or not) connects discrete patches of the ecological community in close proximity (up to 30 m apart) then it should be treated as part of a single patch. Also where native grassland/shrubland is within a gap in, or at the edge of a patch, (up to 30 m from the edge of the tree canopy/saplings) it should be considered to be part of the patch of the ecological community".

"Native means vegetation 'dominated by native species', i.e. that 50% or more of the perennial vegetation cover is native".

The patches of Central Hunter Valley eucalypt forest and woodland CEEC currently mapped in the EIS are within 30 metres of other smaller patches and therefore should be included with the currently mapped patch, in addition to areas of derived native grasslands within the gaps. OEH requires that updated mapping of the Central Hunter Valley eucalypt forest and woodland and subsequent areas are provided.

Requirements for mitigation and mine site rehabilitation under the UHSA

The EIS states that *"mitigation of impacts on biodiversity will be met through implementation of the UHSA and the associated purchase of ecosystem credits. Rehabilitation commitments will include the planting of tree species characteristic of the disturbed communities"*. Please note that purchase of credits or any other form of offsetting is not regarded as mitigation. The mitigation of impacts on biodiversity will be undertaken in accordance with the draft UHSA 'Guidelines for the mitigation of coal mining impacts on biodiversity'. Ecological rehabilitation will be undertaken in accordance with the draft UHSA 'Guidelines for the ecological rehabilitation of recognisable and self-sustaining plant community types' where possible. These documents are currently in preparation.

Requirements for offsetting under the UHSA

The EIS states that *"the Project Area has been assessed under the Upper Hunter Strategic Assessments bio-certification process being coordinated by OEH. Rix's Creek is a signatory to the UHSA and with approval of the Rix's Creek continuation project, offsets for the project will be provided in accordance with the Upper Hunter Biodiversity Plan, including contributing money to the Upper Hunter Offset Fund using the appropriate OEH calculators"*. OEH stresses that the UHSA uses the Biodiversity Certification Assessment Methodology (BCAM) to calculate credits. The project does not result in biodiversity certification of the assessment area. It is also noted that certain entities may first require that 'reasonable steps' are undertaken to source land-based offsets before a proponent can offset by paying into the Offset Fund (which is currently under development).

Credit Calculations.

The EIS appears to include incorrect ecosystem credit calculations. OEH has subsequently been provided with the calculator for the project application area. A review of the calculations and of the EIS has established that there are a number of incorrect entries in the calculator, which will need to be rectified as they have an impact on the project's credit requirements.

The calculation errors appear to have occurred in the Landscape Value Assessment component. Specifically the '% Native Vegetation Cover' entries do not correspond to the values provided in Table 14 of the EIS. Within the Connectivity Value tab 'Nil Biodiversity links' has been selected, this is incorrect due to the presence of 'Local Biodiversity Links' and based on the information provided within Table 14 the EIS. Under the 'Adjacent Remnant Area' tab, as per the methodology, the maximum value that can be entered is 501 hectares and as such the entry needs to be adjusted accordingly.

ABORIGINAL CULTURAL HERITAGE

OEH has reviewed the 'Rix's Creek Continuation of Mining Project, Aboriginal Archaeological and Cultural Heritage Impact Assessment, prepared for Rix's Creek Pty Ltd, prepared by AECOM, 23 September 2014' in relation to Aboriginal cultural heritage and potential impacts from the proposed mine extension and makes the following comments and recommendations.

The Aboriginal Archaeological Cultural Heritage Impact Assessment undertaken by AECOM Australia Pty Ltd was for two parcels of land located in close proximity to the existing Rix's Creek Mine. The Project Area for this assessment comprises two spatially discrete parcels of land within Bloomfield's existing CL352 Mine Lease boundary and proposed lease extension area. The first is located to the north/northwest of existing open cut Pits 2 and 3 on the western side of the New England Highway and covers an area of approximately 133 hectares (ha). The second is located to the southwest of the mine's existing Coal Handling and Preparation Plant complex on the eastern side of the New England Highway and covers an area of approximately 32 ha. Collectively, these parcels of land constitute the project's disturbance footprint and cover an area of 165 ha.

As a part of this assessment, an archaeological survey of the Project Area was undertaken over three days between 27 May and 29 May 2014. A total of 22 new sites were identified during survey, consisting of 15 artefact scatters and seven isolated artefacts. In addition, the six previously recorded sites were subject to updated recordings. The assessment concluded that the scientific significance of newly and previously recorded Aboriginal sites within the Project Area was moderate for six of the sites and low for the remaining 22 sites. Based on the assessment provided by AECOM, OEH concurs with the assessment of scientific significance.

An assessment of the potential impacts of the project on the known Aboriginal archaeological resource of the project area finds that 21 sites will, or have the potential to, be directly impacted by the proposed project activity. In total, 21 sites can be identified as having the potential to be directly impacted by the project through the proposed activity, including road development, spoil deposition and mining continuation activity. These comprise 16 artefact scatters and five isolated artefacts. Five sites have been assessed as being of moderate scientific significance and the remaining 16 as being of low scientific significance. In addition to identified surface sites, it is considered likely that a body of subsurface Aboriginal archaeological material will be impacted by the project.

OEH notes that to manage potential impacts to the known and potential Aboriginal archaeological resource of the Project Area, it is recommended that a detailed Aboriginal Cultural Heritage Management Plan (ACHMP) be prepared for the project. The ACHMP should be prepared in consultation with the registered Aboriginal parties and OEH, and to the satisfaction of the Department of Planning and Environment. The commitment for the development of this ACHMP should be addressed in the EIS. OEH strongly supports the development of an ACHMP for the project.

OEH further supports the proposed key components of the ACHMP for the project which will include:

- Archaeological Salvage Program
- Archaeological Excavation Program
- Protection of Non-Impacted Sites
- Annual Monitoring of Conserved Sites
- AHIMS Site Cards
- Previously Unrecorded Aboriginal Archaeological Evidence
- Human Skeletal Remains finds procedure
- Aboriginal Site Database
- Aboriginal Heritage Introduction & Cultural Awareness Training
- Reporting under the ACHMP
- Continuing Access to Non-Salvaged Sites for Archaeological Research
- Periodic Review of ACHMP.

FLOODING

The following comments are offered on the floodplain management components of the Rix's Creek Mine Extension Project

The site is an extension of existing mining operations that operate under current approvals and have previously disturbed the catchment of Rix's Creek and Station Creek. The proposed works would further exacerbate these disturbances, including re-routing of additional catchment areas of Stonequarry Gully which flows adjacent to the eastern boundary of the proposed works footprint.

There are numerous considerations for impacts on groundwater and surface water flows in non-flood times, and for discharge water quality from overflow of sediment and storage dams. It is assumed that these will be assessed by the Environment Protection Authority and /or NSW Office of Water, where appropriate, particularly with regard to the changes in flows indicated in the EIS. Sediment dams have been sized for the 85% rainfall, therefore some discharge from sediment basins can be expected on an annual basis.

There is no flood assessment included in the EIS. Statements are made to indicate that the proposed works footprint is not on an active floodplain, nor is it exposed to flooding, however, no flood study or flood mapping is provided in support of this statement. Rix's Creek passes through the site and crosses the New England Highway in the centre of the property footprint. Catchment analysis indicates that the total catchment to Rix's Creek is reduced by the mine works, however, catchment calculations indicate that flows to Rix's Creek are increased to approximately 140 per cent of predevelopment flows at a point upstream of the highway crossing. No data is provided at the highway crossing and the effect of the water diversion on the flood behaviour at the highway has not been included in the assessment. Similarly it is noted in the EIS that overflow of the North Pit sump has the potential to affect the neighbouring Integra Mine. Analysis of dam and sediment basin behaviour appears to be limited to water balance analysis not flood analysis.

With regard to flood impacts, any proposed works must ensure that any adverse impacts are maintained within the boundaries of the land owned by the proponent, up to and including the Probable Maximum Flood (PMF). Flood modelling of Rix's Creek and Station Creek will be required to demonstrate no adverse impacts. This includes peak water levels and velocities and impacts on roads and other evacuation routes. There must be no adverse flood impacts on properties owned by others as a result of the proposed works.

It is recommended that a risk assessment is undertaken in accordance with AS/NZS ISO 31000:2009 Risk Management - Principles and Guidelines, of the potential impact of full range of flood event up to the PMF, on the proposed water and sediment management dams. The risk assessment should consider the peak flood extents / heights and inundation durations of the PMF to assist in the management of any residual flood risk.

Hec-Ras model cross-sections have been provided for Rix's Creek. The model cross-sections provided relate to a design flow of 200 ML/day which is based on the water balance estimates and equates to a flow which has a probability of exceedance of four days per year. Rational method calculations have also been provided, however, these appear to have been used to calculate the potential for erosion of the creek line only, not for flood analysis. No flood model outputs have been provided.

Stream power calculations indicate that the thresholds for velocity, shear and stream power are exceeded in the upstream portions of Rix's Creek and that this is likely to result in erosion. It is also noted that existing erosion has occurred in Rix's Creek and that an existing erosion and sediment control plan is in place for the current approvals. The presence of existing unmitigated erosion indicates that the existing erosion and sediment control plan is not adequate to mitigate the effects of existing operations or is not being fully implemented. Review of this plan including mitigation of the increased flows in the upstream portions of Rix's Creek will be required.

It is not possible to determine the flood impact of the development from the provided report therefore it is recommended that flooding analysis be provided for review prior to consent. Flooding analysis should provide sufficient detail for impact assessment on the New England Highway which bisects the site and demonstrate no significant adverse impacts on properties/infrastructure owned by others. The Director General's environmental assessment requirements requested a flood assessment including identification of any necessary flood impact mitigation measures. The EIS has only considered the extent of Hunter River flooding and stated that the mine is outside of the floodplain of the Hunter River. No flooding impact assessment has been provided in support of previous or proposed diversion of water courses around the mine workings or impact of the proposed mine dams.

