



NSW GOVERNMENT
Department of Planning

ASSESSMENT REPORT

Wambo Coal Mine Section 96(2) Modification South Wambo Dam

1 BACKGROUND

The Wambo Coal Mine is located approximately 15 kilometres west of Singleton in the Hunter Valley, (see Figure 1). The mine is owned and operated by Wambo Coal Pty Limited (Wambo).



Figure 1: Regional Context of Wambo Coal Mine

The mine commenced operations in 1969 and currently operates under two Ministerial development consents, DA 305-7-2003 granted on 4 February 2004 and DA 177-8-2004 granted on 16 December 2004. Under these consents Wambo is permitted to:

- extract up to 8 million tonnes of run-of-mine (ROM) coal per year from its open cut mining operations;
- extract up to 7.5 million tonnes of ROM coal per year from its underground mining operations; and
- transport up to 15 million tonnes of product coal via rail each year.

2 PROPOSED MODIFICATION AND PROJECT NEED

On 20 May 2009, Wambo submitted an application and an associated Statement of Environmental Effects (SEE) to the Department to modify its development consent DA 305-7-2003 under Section 96(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The proposed modification principally involves construction of a new mine water management structure, referred to as the South Wambo Dam (see Figure 2). The overall storage capacity of the proposed dam would be 840 Megalitres (ML) with a surface footprint of 20 hectares (ha). The proposed dam would be located within an approved disturbance area and would overlie the Arrowfield and Bowfield coal seams which are to be mined by Wambo in 10 years time (see Figures 2 & 3).

The key reason to construct this mine water storage dam is to allow the dewatering of underground workings, which were part of the Homestead Underground Mine (now decommissioned), and are currently flooded (see Figure 2). The volume of water within these underground workings has been assessed to be approximately 1000 ML. The flooded underground workings overlie areas of active mining within the North Wambo Underground Mine (NWUM) and dewatering is required for safety reasons if mining of NWUM is to continue in these areas.

Dewatered groundwater would initially be stored within the approved 810 ML Chitter Dump Dam (under construction), however this would not provide the storage capacity required to completely dewater the flooded underground workings. The proposed South Wambo Dam would temporarily store the remaining groundwater dewatered from the flooded underground workings prior to its use in the existing site water management system, and would replace storage capacity lost due to the decommissioning of the existing 450 ML West Cut Dam (prior to undermining by Wambo), and the 480ML Area C dam (prior to undermining by United Colliery).

Water from the South Wambo Dam would be pumped directly for use in the Wambo Coal Handling and Preparation Plant (CHPP) or pumped elsewhere within the Wambo mine water management system. The proposal would give Wambo greater ability to manage its water balance and enable the continued safe mining of coal reserves in NWUM.

The modification also involves the construction and use of above ground small diameter poly pipelines to transfer water from two approved and existing groundwater bores (Nos 2 and 2A) above the abandoned Homestead mine workings to the South Wambo Dam and to connect the dam with other elements of the water management system.

3 STATUTORY CONTEXT

3.1 Consent Authority

The Minister was the consent authority for the original development application, and is consequently the consent authority for this modification application. However, the Executive Director Major DA Assessments may determine the application under the Minister's delegation of 4 March 2009.

3.2 Section 96(2)

Under section 96(2) of the EP&A Act, a consent authority may modify a development consent if "it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all)."

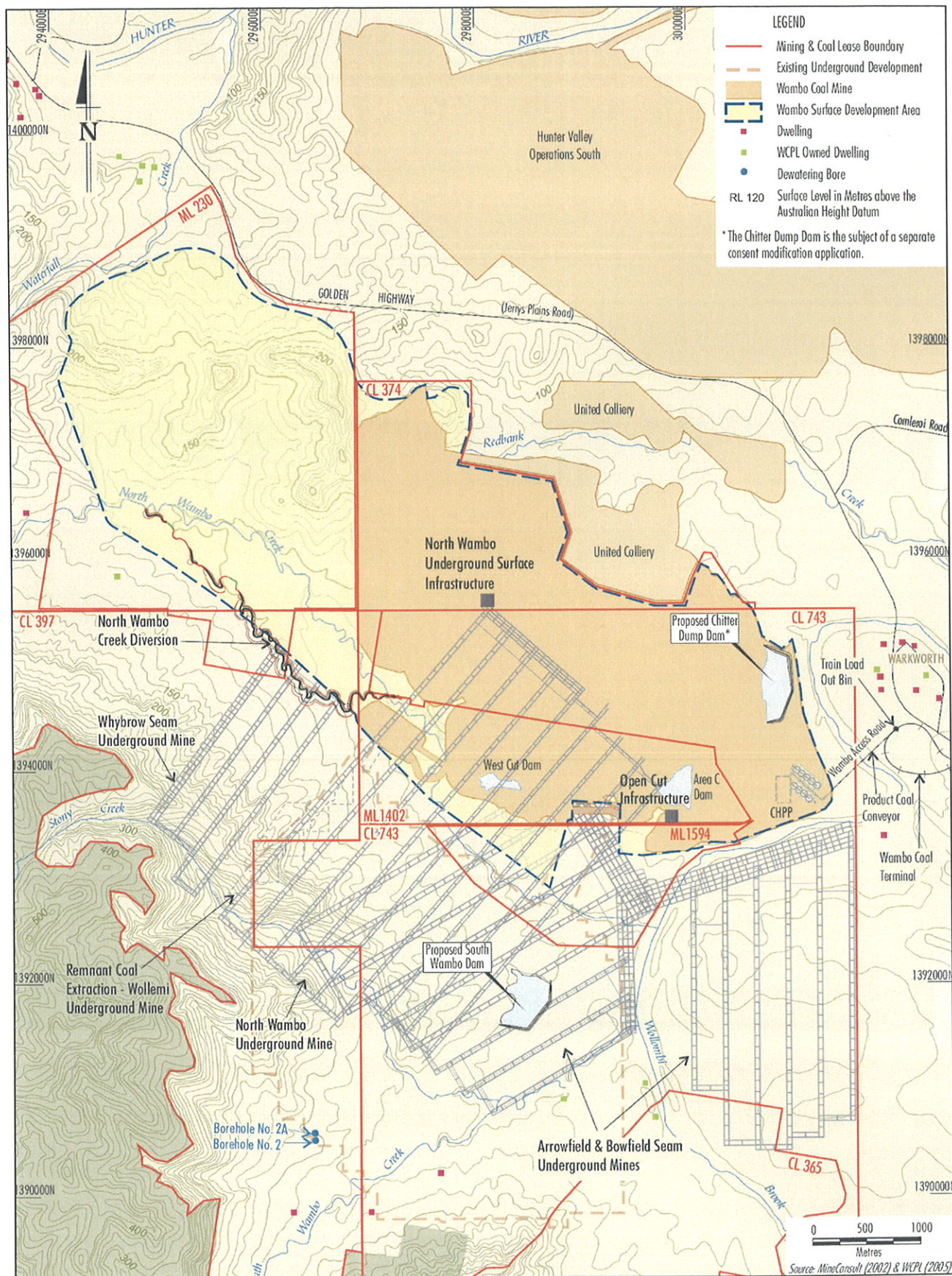


Figure 2: Wambo Coal Mine Footprint and Proposed Modification Area

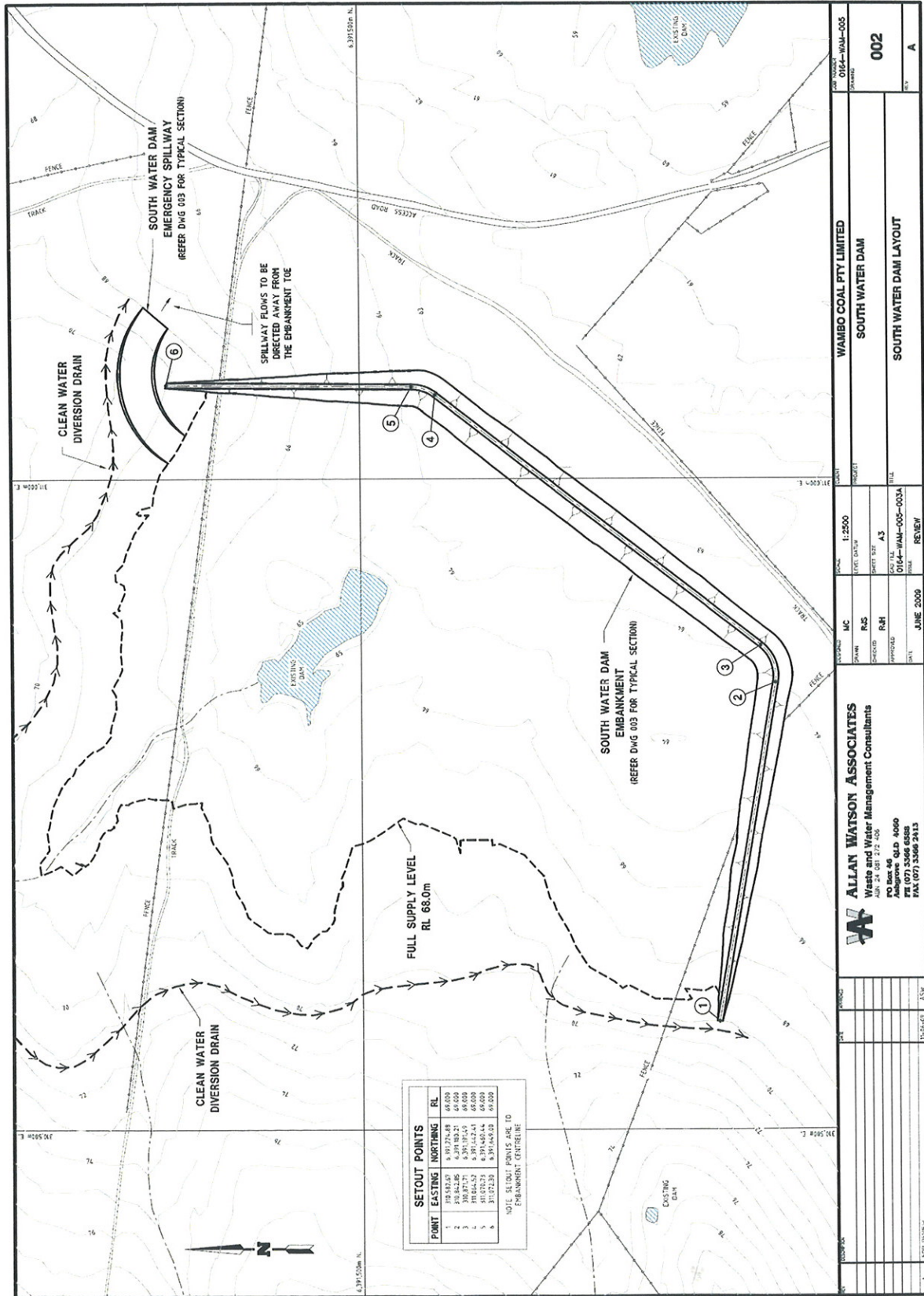


Figure 3: Preliminary South Wambo Dam Design

The Department is of the view that the development consent as modified would be substantially the same as the consent that was originally granted. In this respect the Department notes that:

- the proposed modification is located within the existing development consent boundary;
- the proposed modification relates only to water management associated with the approved mine;
- neither the approved mining area nor the existing infrastructure would need to be modified;
- there would be no changes to the approved extraction rate, approved operating hours, coal handling techniques or coal transportation; and
- the approved mine life would not be lengthened.

On this basis, the Department is satisfied that the Minister may modify the development consent under Section 96(2) of the EP&A Act.

3.3 Consultation

Section 96(2) of the EP&A Act requires a consent authority to notify the application in accordance with the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). Notice of the application is to be published in a local newspaper and a further opportunity for comment must be given to each person who lodged an objection in respect to the original development application.

The SEE was publicly exhibited for a 16 day period from 26 June 2009 to 13 July 2009. A public notice was placed in the Singleton Argus advertising details of the exhibition period. All persons who lodged a submission in respect of the original development application were written to and invited to comment on the modification. This satisfies the requirements of the EP&A Regulation.

A number of potentially-affected public authorities were also consulted.

4 ISSUES RAISED IN SUBMISSIONS

4.1 Submissions

The Department received a total of 10 submissions, comprising:

- 5 from public authorities; and
- 5 from the community and special interest groups;

A summary of the issues raised in these submissions is provided below.

4.2 Public Authorities

The Department of Primary Industries – now part of the **Department of Industry and Investment** (DII) supported the proposed modification but provided the following comments:

- Wambo would need to modify its Mining Operations Plan (MOP) to the satisfaction of DII;
- use of impermeable construction materials for the dam is necessary to mitigate potential seepage and thereby protect surface and underground water quality;
- because the proposed dam overlies proposed longwall mining in the Arrowfield and Bowfield Seams, Wambo must commit to risk management, monitoring and dewatering of the dam in accordance with any requirements expressed in future Subsidence Management Plans (SMPs); and
- Wambo would need to decommission and remove the dam and rehabilitate the site post-mining.

DII acknowledged the proposal can be undertaken in accordance with Wambo's existing environmental management strategy, and recommended a number of conditions of approval.

The Department of Environment and Climate Change - now part of the **Department of Environment, Climate Change and Water** (DECCW) did not object to the proposal but commented on potential biodiversity impacts. DECCW recommended conditions that Wambo provide adequate offset areas to offset impacts to biodiversity values.

The Department of Water and Energy – **now the Office of Water within DECCW** (OoW) did not object to the proposed modification, but raised concerns that the source of groundwater into the Homestead mine workings remains unknown. OoW recommended conditions requiring Wambo to

conduct an annual review of the site water balance and sources of groundwater entering mine workings.

The **Dams Safety Committee** (DSC) requested that the proposed dam be designed to withstand predicted subsidence impacts and that the final dam design be submitted for its approval.

The **Department of Education and Training** (DET) requested the health and safety risks from the proposed modification on staff and students at the nearby Jerrys Plains Public School be assessed.

4.3 Community and Special Interest Groups

Of the 5 submissions from the general public, 1 supported the modification application, 1 did not object and 3 objected to the proposal. The grounds for objection included:

- *non-compliance*, with aspects of the existing development consent including rehabilitation, visual, noise, dust, property access and compliance monitoring requirements;
- *surface and groundwater*, particularly potential water loss from aquifers due to continued dewatering of groundwater inflow into the completed underground workings;
- *integrity of the dam*, particularly the potential for failure of the dam due to potential subsidence impacts and resulting impacts to nearby surface water bodies, land and infrastructure;
- *noise and lighting*, particularly construction noise impacts and lighting impacts from the dewatering bores;
- *potential impact to a right of way access*; and
- *lack of consultation* with the community regarding the proposed modification.

4.4 Response to Submissions

Wambo has provided a response to the issues raised in submissions. The Department has considered the issues raised, and Wambo's response to these issues in its assessment below.

5 ASSESSMENT

Structural Integrity of the South Wambo Dam

The proposed modification has the potential to fail if it is not designed and built in accordance with relevant standards. The preliminary dam design has been completed by Allan Watson & Associates (see Figure 3). The proposed location of the South Wambo Dam is above the abandoned Homestead mine workings and Wambo's Arrowfield and Bowfield coal seams which are to be mined by Wambo in approximately 10 years time. A subsidence assessment conducted by GE Holt & Associates found that the maximum predicted subsidence would be approximately 3.4 metres.

DSC requested that the proposed dam be designed to withstand predicted subsidence impacts and that the final dam design be submitted for its approval. DII stated that Wambo would need to commit to risk management, monitoring and dewatering of the South Wambo Dam. Concerns were also expressed by members of the general public in relation to the integrity of the dam, particularly the potential for failure of the dam due to potential subsidence impacts and resulting impacts to nearby surface water bodies, land and infrastructure.

To address these concerns, Wambo would complete a final detailed design report for the dam, and has committed to:

- designing the proposed South Wambo Dam to comply with the relevant DSC safety criteria;
- submitting the final design report to DSC for approval; and
- including the potential interactions between the dam and underground workings in the risk assessment component of the Mining Operations Plan submitted to DII.

The Department is satisfied that the proposed dam can be designed to comply with DSC's safety criteria and has recommended a condition requiring the proposed design to be approved by DSC prior to commencement of construction.

Water Resources

The proposed dam has the potential to impact on surface water and groundwater resources, including potential to overflow during high rainfall events. It would also result in secondary changes to the site water balance, through potential additional groundwater inflow.

Wambo's assessment indicates that potential surface water impacts as a result of the proposal would remain unchanged from those assessed in the original EIS for the mine. Wambo currently undertakes surface water monitoring in accordance with its Surface Water Monitoring Program, which includes monitoring and annual reporting of water quality in Wollombi Brook. In addition, Wambo has an Erosion and Sediment Control Plan (ESCP) for the site, which would be updated to include the proposed South Wambo Dam area.

Submissions from nearby landowners raised concerns regarding the potential for overflow of saline mine water stored in the dam during high rainfall events to cause erosion and to discharge into the nearby Wollombi Brook. Wambo has committed to operating the dam in a way that would minimise the potential for a spill by maintaining freeboard to store a 1 in 100 year 72 hour rainfall event. In the event that the dam was nearing capacity, it would pump water from the dam to other mine water storages. The proposed pipeline between the South Wambo Dam and the dewatering bores would be located on disturbed land, would not require vegetation clearance and would be fitted with an automatic shut-off system in the event of a pipeline failure or leak to minimise potential for spills.

Wambo's assessment indicates that the proposed modification would not have a significant impact on local groundwater resources. OoW recommended conditions requiring Wambo to conduct an annual review of its site water balance and sources of groundwater entering mine workings for the development, due to concerns that connected alluvial groundwaters to North Wambo Creek may be entering the Homestead mine workings. Submissions from local residents also raised concerns regarding the potential for water loss from aquifers due to continued dewatering of groundwater inflow into the completed underground workings.

In response to these concerns, Wambo has committed to:

- maintaining the dam in accordance with the requirements of DSC;
- designing the dam to minimise seepage; and
- reviewing the sources of groundwater entering the mine workings as part of the annual Site Water Balance review, required under the existing conditions of consent.

Under the existing conditions of consent Wambo is required to update its existing Site Water Management Plan (including the Site Water Balance and Surface and Groundwater Response Plan) in consultation with DECCW, OoW and DII by the end of October 2009. This update would incorporate the proposed modification.

The Department is satisfied that the potential impact of the proposal on surface and groundwater resources can be effectively managed, subject to a condition requiring Wambo to investigate and monitor potential water loss from the South Wambo Dam, including potential migration of stored water toward Wollombi Brook.

Flora and Fauna

The South Wambo Dam would involve disturbance of remnant native vegetation. The proposal would remove up to 20 ha of existing habitat, comprising 5 ha of cleared grazing land, 5 ha of *Narrow-leaved Ironbark/Grey Box/Bulloak/Honeymyrtle* Woodland and 10 ha of *Slaty Gum/Narrow-leaved Ironbark/Bulloak ± Honeymyrtle* Woodland (see Figure 4). These two woodland vegetation communities have recently been subject to preliminary determinations as (respectively) an Endangered Ecological Community (EEC) and a Vulnerable Ecological Community, under the *Threatened Species Conservation Act 1995* (TSC Act).

No threatened flora species have been recorded in the vicinity of the South Wambo Dam site. However, the proposal has potential to impact on native fauna. Two threatened fauna species, the Grey-crowned Babbler (*Pomatostomus temporalis temporalis*) and the Speckled Warbler (*Pyrholaemus sagittatus*), have been recorded on the site, and 13 other threatened species have the potential to occur within the proposed dam site. Nonetheless, the SEE reports that the proposal is unlikely to result in a significant loss of flora or fauna species.

Biodiversity Offsets

The SEE includes a proposed biodiversity offset for the impacts of the proposed modification on remnant native vegetation. DECCW requested that Wambo provide adequate offset areas to offset the impacts to biodiversity values and that offset areas should be consistent with DECCW's "*Principles for the Use of Biodiversity Offsets in NSW*" (2008). Wambo subsequently provided further information detailing how the proposed offset met each principle within this guideline.

The proposed offset area amounts to an area of 46 ha, containing approximately 38 ha of woodland vegetation (see Figure 4). A summary of vegetation communities within the proposed offset area is provided in Table 1.

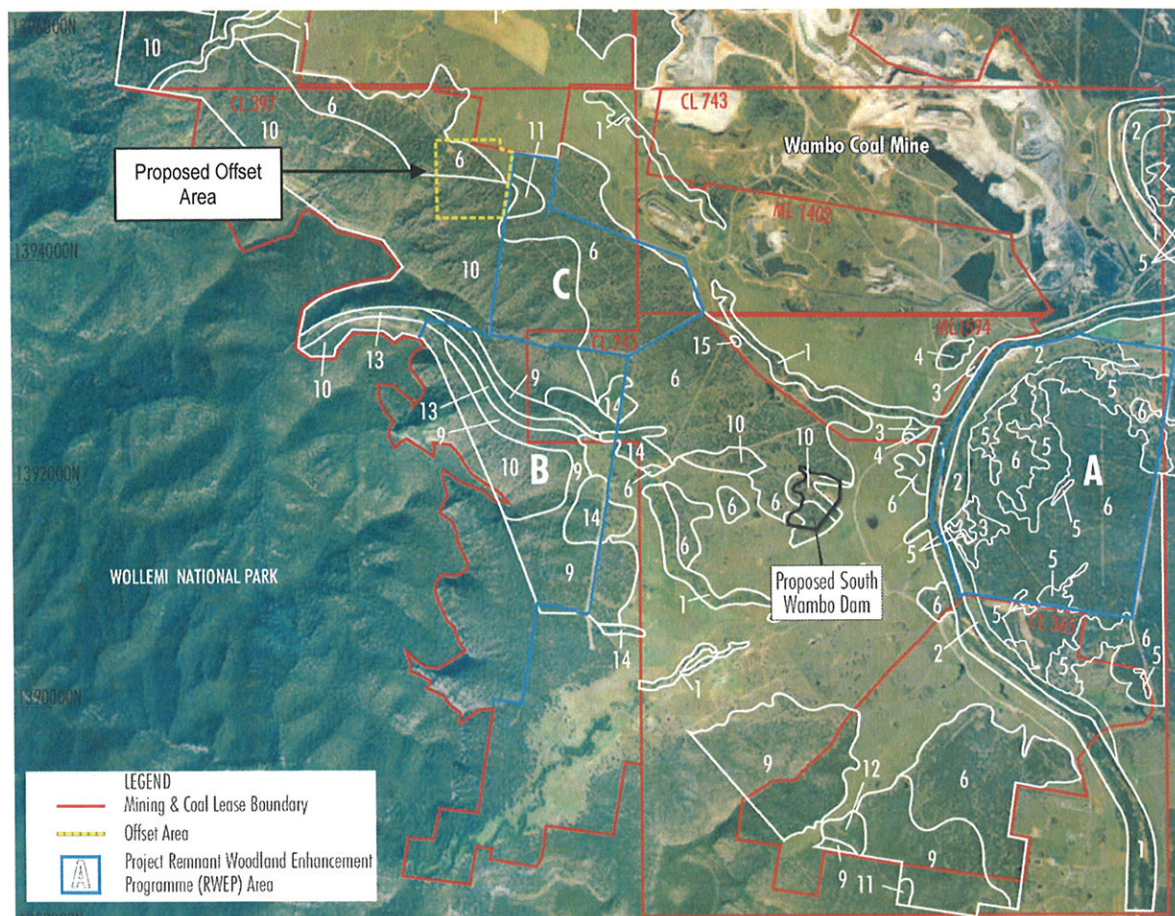


Figure 4: Proposed Biodiversity Offset Area

The proposed offset area would connect via Wambo's existing approved Remnant Woodland Enhancement Program (RWEP) area to the Wollemi National Park. The offset would increase the buffer zone adjacent to the national park and assist in creating vegetation corridor linkages to facilitate long term regional fauna movement. The assessment found that the vegetation within the proposed offset area was in better condition than the proposed South Wambo Dam site and that four threatened fauna species (commonly referred to as the Turquoise Parrot, Grey-crowned Babbler, Speckled Warbler and Little Lorikeet) have been recorded in the proposed offset area.

Table 1: - Biodiversity Impacts and Offsets - Summary of Vegetation Community Areas

Vegetation Community	Area to be Cleared by the Proposed South Wambo Dam (ha)	Proposed Offset Area (ha)	Ratio of Vegetation Cleared to Vegetation Offset
Cleared Grazing Land	5	8	1.6
Narrow-leaved Ironbark/Grey Box/Bulloak/Honeymyrtle	5	15	3.0
Slaty Gum/Narrow-leaved Ironbark/Bulloak ± Honeymyrtle	10	23	2.3
Total	20	46	2.3

The Department is satisfied that the proposed offset is consistent with DECCW's "Principles for the Use of Biodiversity Offsets in NSW" (2008) and that the proposed offset area would sufficiently compensate for the vegetation removed as a result of the proposal. The Department has

recommended conditions requiring Wambo to integrate the proposed offset area into the RWEPP, to ensure its long term conservation.

The Department is satisfied that other flora and fauna impacts of the proposal (such as short term impacts associated with vegetation clearing) can be adequately managed through Wambo's existing Flora and Fauna Management Plan. However, the Department has recommended a condition requiring Wambo to update this plan to include management measures for the proposed offset area. Overall, the Department is satisfied that the proposal is unlikely to have any significant impact on flora and fauna values in the area, subject to implementing the proposed biodiversity offset.

Other Issues

Other environmental issues associated with the proposal are considered in the table below:

Table 2: - Assessment of other issues

Issue	Potential Impacts	Consideration
Noise	Noise impacts due to construction activities	- Construction works would be completed within three months and would be undertaken during daylight hours (7:00am - 6:00pm). Wambo's assessment indicates that noise impacts would be minimal, given the temporary nature of construction activities and scale of the proposal relative to existing open cut mining operations. Wambo has committed to monitoring noise emissions in order to ensure compliance with existing approved noise limits. - The Department is satisfied that the overall noise level from construction activities would not be significant and that noise emissions can be managed in accordance with the existing Noise Monitoring Program for the mine.
Air Quality	Air quality impacts due to construction activities	- Wambo's assessment indicates that air quality impacts would be minimal, given the temporary nature of construction activities and scale of the proposal relative to existing open cut mining operations. - Wambo has committed to conducting air quality monitoring in order to ensure compliance with existing approved air quality limits. - The Department is satisfied that air quality impacts would be minimal, beyond those associated with the approved mine, and that dust emissions can be managed in accordance with the existing Air Quality Monitoring Program for the mine.
Rehabilitation	Potential impacts on final landform of the overall development	- DII stated that Wambo would need to decommission and remove the dam and rehabilitate the site post-mining. Wambo has committed to decommissioning the dam as part of mine closure, and rehabilitating the site in accordance with the approved concepts for final rehabilitation for the mine site. - The Department is satisfied the proposal can be successfully rehabilitated in accordance with existing rehabilitation conditions and other requirements for the mine.
Aboriginal Cultural Heritage	Potential impacts to Aboriginal heritage sites	- The assessment found that one item of Aboriginal cultural heritage significance (Item 62 – <i>Piece of glass with a worked edge</i>), as identified within the original EIS for the mine, had been located on the proposed site. However, Wambo has since salvaged this item after obtaining the appropriate permit and consent. Wambo has also committed to conducting an additional pre-clearance survey prior to construction, in accordance with its existing approved Salvage Program. - The Department is satisfied that any additional impacts on Aboriginal cultural heritage as a result of the proposal would be minimal.
Non-Aboriginal Heritage	Potential impacts to non-Aboriginal heritage sites	- The assessment found that the proposal would avoid non-Aboriginal heritage sites, as identified within the original EIS for the mine. - The Department is satisfied that the proposed modification would not impact on items of non-Aboriginal cultural heritage.
Visual Impacts	Potential visual impacts	The assessment found that the proposed modification would not be visually prominent. Visual impacts are expected to be substantially the same as for the existing development.
Jerrys Plains Public School	Potential impact on the school's learning environment	Jerrys Plains Public School is located approximately 10 kilometres from the proposed location of the South Wambo Dam. DET raised concerns over the potential impact of the proposal on the school's learning environment due to noise, dust and vibration impacts. In its response, Wambo stated that blasting would not be required for the proposal and potential noise and dust impacts from construction would not be discernable above the existing approved dust and noise impacts.

Issue	Potential Impacts	Consideration
		The Department is satisfied that impacts on Jerrys Plains Public School would be minimal.
<i>Right of Way Access</i>	Potential impact on local Right of Way access to Warkworth Village	- One public submission raised concerns that the proposal had the potential to erode areas downslope of the dam and thereby impact on a Right of Way access. In its response, Wambo stated that: - construction activities would be undertaken in accordance with the approved Erosion and Sediment Control Plan (ESCP) for the site; - surface water runoff collected in the clean water diversion drain would be released at the northern and southern ends of the drain (see Figure 3) and would flow across Wambo owned land into Wollombi Brook; and - there is no evidence of a legally enforceable Right of Way access across Lot 83 in DP 548749 in the vicinity of the proposed dam. - The Department is satisfied that potential erosion impacts can be effectively managed in accordance with the existing erosion control conditions for the site and considers the Right of Way issue to be a matter for private negotiation between the two parties.

6 SECTION 79C

Under Section 96 of the EP&A Act, a consent authority is required to consider the relevant matters listed under Section 79C of the Act when determining an application to modify a development consent. The Department has assessed the proposal against these matters, and is satisfied that:

- the proposal is consistent with the provisions of the relevant planning instruments;
- the potential impacts of the proposal can be minimised, mitigated and/or managed;
- the site is suitable for the development;
- the proposal is in the public interest; and
- the proposal can be carried out in a manner that is consistent with the objects of the EP&A Act, including the principles of ecologically sustainable development.

7 RECOMMENDED CONDITIONS

The Department is satisfied that the existing conditions of consent for the Wambo mine are generally adequate to manage the development as modified by the application. The Department has recommended additional conditions to minimise and manage the risks associated with the South Wambo Dam, including requiring Wambo to:

- design and construct the dam to the satisfaction of DSC and DII;
- update its water management plans in consultation with DECCW (including its OoW) and DII;
- update its rehabilitation and Flora and Fauna Management Plans in consultation with DECCW; and
- incorporate a biodiversity offset of 46 ha into its existing Remnant Woodland Enhancement Program.

Wambo does not object to the proposed conditions.

8 CONCLUSION

The Department has assessed the application, the SEE and submissions regarding the proposed modification in accordance with the relevant requirements of the EP&A Act. The Department is satisfied that the modification can be carried out without significant impacts on the local and regional environment, and that the development as modified would be substantially the same as the originally approved development.

The Department considers that the proposed modification is appropriate to allow for the continued safe mining of coal reserves within the NWUM and would provide Wambo with an increased site water storage capacity and an improved ability to manage its water balance. On this basis, the Department is satisfied that the benefits of the proposal outweigh any residual costs, and that it is in the public interest and should be approved, subject to conditions.

9 RECOMMENDATION

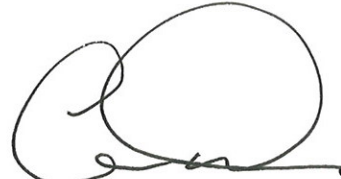
It is recommended that the Executive Director, Major DA Assessments, as delegate for the Minister:

- consider the findings and recommendations of this report;
- determine that the development to which the consent, as modified, relates is substantially the same development for which consent was originally granted;
- approve the application under section 96(2) of the EP&A Act; and
- sign the attached notice of modification (Tag A).


Howard Reed
A/Manager, Mining 26.8.09

 26/8/09

David Kitto
Director, Major Development Assessment

 27.8.09

Chris Wilson
Executive Director, Major DA Assessments