

29 April 2016

## Moolarben Coal Complex Underground Optimisation Modification 2 & 12

### 1. BACKGROUND

The Moolarben Coal Mine is an open cut and underground coal mining operation located 40 kilometres northeast of Mudgee. Moolarben Coal Operations Pty Ltd (the Proponent) operates the mine on behalf of the Moolarben Joint Venture (Moolarben Coal Mines Pty Ltd (MCM), Sojitz Moolarben Resources Pty Ltd and a consortium of Korean power companies). The mine forms part of a larger coal mining complex in the region along with the Ulan and Wilpinjong Coal Mines.

#### 1.1. Existing Approvals

The Proponent holds approvals for two stages, the Stage 1 Project (05\_0117) approved by the Minister for Planning in September 2007; and the Stage 2 Project (08\_0135) approved by the Planning Assessment Commission (the Commission) in January 2015. Both stages were approved under the now repealed Part 3A of the *Environmental Planning & Assessment Act 1979 (EP&A Act)*.

Stage 1 consists of three open cut pits (OC1, OC2 and OC3) and an underground mining operation (UG4). To date, the Proponent has constructed surface infrastructure as currently approved and is operating in OC1 and OC2. Underground mining operations have not commenced. This project approval has been modified a number of times.

Stage 2 involves expanding mining operations to the east of the Stage 1 operations, and includes the development of two new underground mining operations (UG1 and UG2) and another large open cut pit (OC4).

Stages 1 and 2 will be operated concurrently as a single integrated mining complex. Construction of the Stage 2 project is yet to commence and this approval has been modified once.

### 2. CURRENT MODIFICATION APPLICATION

The Proponent is seeking further modifications to its Stage 1 project approval (05\_0117 MOD 12) and Stage 2 project approval (08\_0135 MOD 2) with the primary aims to increase the coal recovery of UG 1, increase the coal extraction rate and improve the operational efficiency of underground mining operations across the whole mine complex.

The main components to the modifications are:

- revisions to the layout of UG1 to extract a further 3.7 million tonnes of coal;
- increase the maximum extraction rates of the underground mining operations (UG1, UG2 & UG4) from 4 to 8 million tonnes of coal a year, and consequential increases to the total extraction rates of the mine complex from 17 to 21 million tonnes of coal a year and total production rates from 14 to 18 million tonnes of coal a year;
- changes and upgrades to the approved Stage 1 and Stage 2 surface infrastructure to facilitate these increases.

### **3. DELEGATION TO THE COMMISSION**

On 11 February 2016, the Moolarben Coal Complex Project modifications were referred to the Planning Assessment Commission (the Commission) for determination in accordance with the Minister's delegation to the Commission dated 14 September 2011.

For these determinations, Gordon Kirkby (Chair), David Johnson and Dr Maurice Evans constituted the Commission.

### **4. SECRETARY'S ENVIRONMENTAL ASSESSMENT REPORT**

The Department's assessment of the modifications applications, including its consideration of the issues raised in submissions, and the Proponent's response are detailed in the Secretary's Environmental Assessment Report (Assessment Report). The Assessment Report identifies and addresses key issues including the level of the assessments undertaken by the Proponent, mining related subsidence on the natural and built assets, ground and surface water impact, impacts on the Paleochannel, biodiversity, economic and social impacts, and other issues.

The Assessment Report concludes that the Department considers *'the proposed modification can be carried out with limited impact, and that any increases in impacts can be suitably regulated with minor changes to the existing conditions of approval.'*

### **5. SITE VISIT, MEETINGS AND CORRESPONDENCE**

#### **5.1. Briefing with the Department of Planning and Environment**

On 15 March 2016, the Commission was briefed by the Department and sought further clarification in regards to the proximity to the paleochannel and the associated water impacts and extraction licenses. A summary of the meeting and further clarifying correspondence from the Department, received on 08 and 26 April 2016 are attached in **Appendices 3 & 4** respectively.

#### **5.2. Meeting with Mid-Western Council**

On 16 March the Commission met with representatives of the Mid-Western Council which did not object to the modification; however stated that cumulative impacts need to be further and adequately considered for future modifications. Council also elaborated on its concerns about the ability to adequately provide community services (such as housing, education and health services) for future population growth associated with mine projects. A summary of the meeting is attached at **Appendix 3**.

#### **5.3. Site Visit and Briefing from the Proponent**

On 16 March 2016, the Commission met with the Proponent at its office at the Moolarben Coal Complex and undertook a site inspection of the mining facilities. The Commission was briefed on the context of the application and the history of the workings. A summary of the site inspection is attached in **Appendix 3**.

#### **5.4. Public Meeting**

On 17 March 2016, the Commission held a public meeting at the Mudgee Town Hall which commenced at 9:00 am. Individual speakers and community groups who addressed the Commission were opposed to the modifications for a number of reasons, raising concerns or queries about: the potential impacts to The Drip – a protected natural feature located to the

north of the mine complex, impacts on groundwater and the Paleochannel, noise impacts from the proposed increased train movement, and the Proponent's perceived failure to adequately address the issues raised in submissions in its response. (See **Appendix 1** for a list of speakers and a summary of the issues raised at the public meeting is provided in **Appendix 2.**)

## **6. COMMISSION'S CONSIDERATION**

The Commission has given careful consideration to all submissions and comments from the public and agencies, and the responses from the Proponent and the Department in this determination.

Key considerations are addressed below:

### **6.1. Subsidence Impacts**

#### *Layout changes to the UG1 area*

The Commission notes that the proponent seeks to increase the length of the UG1 longwall panels by between 150 and 500 metres to the north-east and also extend two longwall panels to the south-west by 75 metres. The modification also seeks to increase extraction heights (from 3.2 to 3.5 metres), increase longwall panel widths, reduce chain pillar widths and remove the central mains thus increasing the mining void and creating a change in subsidence impacts.

Issues raised in submissions included the potential for subsidence-associated cracking and damage to cliffs, steep slopes and water courses as well as the adequacy of the updated subsidence assessment. The Department's Assessment Report states that there are very few significant natural features above the proposed extension area, apart from a small stand of Ecological Endangered Communities and a few isolated aboriginal heritage sites which are said to have low archaeological heritage significance. The Commission is satisfied the proposed changes to UG1 can be adequately managed through the Department's standard conditions relating to subsidence.

#### *Increased extraction rate*

The proposal also seeks to increase the extraction rate from each underground area, UG1, UG2 and UG4. In this regard the Community raised specific concerns in relation to The Drip, a significant and iconic natural feature located to the north of the mining complex UG4 area. The updated Subsidence Impact Assessment concluded that subsidence impacts above UG2 and UG4 do not require reassessing as there would be no change in impacts. However, the Commission notes that while the increased rate of mining does not necessarily represent an increased subsidence impact or risk, it would lead to subsidence impacts occurring sooner than previously approved, with potential implications for monitoring and response timeframes.

The Drip has been the subject of significant concern and consideration throughout the history of the Stage 1 project application and subsequent modifications. This included an Independent Hearing and Assessment Panel Report on the matter in 2007, prior to the Minister's original determination of the project. More recently, the Planning Assessment Commission has considered potential impacts to The Drip in previous modifications to the Stage 1 project.

In its January 2015 Stage 2 and Stage 1 Mod 3 Determination Report, the Planning Assessment Commission considered a revised suite of subsidence conditions proposed by the Department, which would have replaced the subsidence conditions originally imposed in 2007. Rather than replace the conditions, the Commission took a conservative approach by retaining the existing subsidence conditions as well as adding the Department's recommended conditions relating to the management of subsidence and water impacts. The final conditions in relation to the protection of The Drip were Condition 26 Subsidence – Natural Features, Condition 27 Subsidence Management Plan and Condition 28 End-of-Panel Report as well as the new conditions 73 to 80. The Commission notes that in the current modification proposal, the Department has again recommended deleting conditions 26 to 28, and this time also amending condition 73 and 77. The Commission sought further advice from the Department on the reasons that led to its proposed deletion of these conditions.

The Department responded on 8 April 2016 and stated that the Stage 1 2007 Approval was under a regulatory regime that at the time was managed by the Division of Resources and Energy; it required proponents to prepare an End of Panel Report upon the completion of each longwall panel while other aspects of the mine's performance were reported annually.

Since that time, the Department has replaced the regime with the introduction of a new Extraction Plan regime that integrates subsidence reporting with regular reporting on environmental performance, annual reviews of performance and independent audits. Consequently, conditions 26 to 28 were said to duplicate many of the requirements of conditions 73 to 80. A streamlined approach with a single decision maker responsible for regulating the subsidence related impacts is proposed by the Department, in accordance with its standard or model instrument of conditions for mining across the state.

The Commission agrees it is logical to have a consistent regime in place to manage standard issues and impacts. Nonetheless, in this instance, the Commission considers that the proposed increased production rate, in close proximity to significant natural features (The Drip and Drip Gorge) warrant an additional level of monitoring, reporting and government oversight. Consequently, while the Commission has agreed to the deletion of conditions 26 to 28 it has also amended the recommended conditions of approval with the inclusion of condition 78A that requires additional reports to be provided prior to the commencement of longwall mining in each of panels 9 to 14 in UG4 (those closest to The Drip). The report will need to consider the available monitoring data and science at the time the longwall panels are proposed to be mined, be reviewed by relevant experts and also provided to the Division of Resources and Energy, the Office of Environment and Heritage and the NSW Office of Water, prior to being approved by the Secretary of the Department of Planning and Environment, if satisfied that there will be no impacts on The Drip. This would ensure that the relevant agencies are regularly updated on the progress of mining and associated monitoring results and impacts, and have an opportunity to intervene should unexpected any results or impacts occur prior to mining progressing to the final panels in close proximity to The Drip.

The Commission has also added a condition specifying that the longwall panels LW9 to LW14 are to be mined in numbered sequence – so mining would not reach those panels closest to The Drip until the results of mining earlier panels are known and understood.

## **6.2. Groundwater and Paleochannel interaction**

The Commission notes that submissions raised concerns in relation to the level of assessments that the Proponent provided, in particular to the adequacy of the groundwater impact assessment.

Although there are no significant watercourses in the vicinity of UG 1, the mine would come closer to an unconsolidated paleochannel, and mine under further reaches of two drainage lines. The Department commissioned Dr Franz Kalf to undertake a peer review of the groundwater impacts. Dr Kalf concluded that the hydrological model was adequate and should be updated as mining activity occurs. Similarly, Dundon Consulting and Hydrosimulations updated Aquaterra's original assessment to identify the likely impacts of the proposed modifications. The updated assessment predicted that the proposed modifications would result in increased drawdown within the Ulan Coal Seam or Permian aquifer by up to 6.5 metres which is considered to be negligible both from a local and regional perspective, as there has been extensive dewatering of this aquifer by mining operations in the region (Ulan, Moolarben and Wilpinjong mines), and the water is said to have little productive value for other water users in the region.

The Commission notes that the Proponent will increase its water intake by up to 69ML/year which is within its current UG1 water licence. Drawdown in the alluvial aquifer associated with Wilpinjong Creek is predicted to be below the minimal harm threshold specified in the *Aquifer Interference Policy* (2 metres). The Commission is satisfied with this.

The Proponent has agreed to carry out further work to define the depth; extent and saturation of the Paleochannel after the Office of Water questioned the assumption that the revised layout of UG1 would not pass under any water-bearing sediments of the unconsolidated paleochannel. The Proponent would also adjust the length of the longwall panels ensuring they did not underlie any saturated section of the paleochannel. The Office of Water was satisfied with the Proponent's commitment, and the Department has incorporated this commitment into the recommended conditions for the proposed modification. The Commission is satisfied with the approach recommended by the Department on this issue.

#### *Salinity trigger levels*

At the Public Meeting, the Commission heard concerns in relation to information contained in the Proponent's Groundwater Management Plan 2015. One speaker presented extracts of the Proponent's plan showing various monitoring bores located above UG4 and near Goulburn River with salinity trigger level values that were not adequately justified.

At the Commission's request, the Department sought further clarification from the Proponent in relation to this concern. The Department subsequently responded on 8 April 2016, advising that although the Groundwater Management Plan was approved by the Secretary on 31 July 2015, including the salinity trigger levels, the Proponent is now undertaking a review of its groundwater monitoring data which is expected to be lodged by mid of 2016.

The Proponent also responded that works at UG4 will not take place until UG1 and UG2 are completed and that both approvals (05\_0117 and 08\_0135) allow them to review and revise environmental management plans (among other triggers) following the annual review report that is submitted to the Department.

While the Commission acknowledges that the plan will be updated and mining is not expected to commence in this area for some time, it was particularly concerned as not just one but various trigger levels are in question. Consequently, the Commission has strengthened the conditions relating to the Groundwater Management Plan. In particular the Commission has specified that the Water Management Plan needs to be revised and resubmitted for approval of the Secretary by 31 October 2016, and also that the proposed revised trigger levels need to be justified within the revised plan.

### **6.3. Biodiversity**

The Commission notes that the biodiversity impacts of the proposed modifications would be restricted to indirect subsidence-related impacts of the revised layout of UG1 (607 hectares) on the vegetation communities and flora and fauna habitat above these operations; and the direct clearing required (8.4 hectares) for the new Remote Services Facilities and new air shaft and associated fans.

At the Public Meeting, concerns were expressed that the updated version of the assessment of biodiversity impacts was limited in terms of its scope and coverage, and that it did not contain sufficient data as it based its conclusions on survey work carried out in past years.

In considering the issue, the Commission is mindful that the Proponent has already carried out extensive biodiversity surveys and is satisfied that the current updated assessment of the biodiversity impacts provided a sound basis of the potential risks that might arise from the project. In this context the Commission does not consider that this application triggers the need for further assessment of the biodiversity impacts at this stage, other than what is currently required in the conditions. It is noted that Office of Environment and Heritage and the Department considered the updated assessment to be fit for purpose.

The Commission notes that the subsidence-related impacts of the revised layout of UG1 are expected to remain negligible. Both the Office of Environment and Heritage and the Department of Planning and Environment have indicated that overall the direct clearing and other subsidence related impacts would have a negligible impact on biodiversity. Consequently the Commission is satisfied the biodiversity impact is acceptable.

### **6.4. High-Wall Collapse**

Concerns were raised at the Public Meeting in relation to an incident in which a high-wall collapsed, in June 2015. The incident affected transit activity as a result of the closure of Ulan-Wollar Road. It was argued that the incident reflects incompetence in managing unforeseen incidents and risks and that the issue should be considered prior determining the modification proposal. The Commission notes that the modifications do not relate to the open cut mine OC1 but to the underground mines UG1, UG2 and UG4.

The Proponent had previously briefed the Commission into the reasons that lead to the collapse of a high-wall and the response action it had engaged. The Proponent stated that, although the collapse was in close proximity of Ulan-Wollar Road, it had closed the road for a number of days as a precautionary measure to ensure the integrity of the road and the safety of road users and employees. Council also acknowledged the incident and noted that the Proponent is required to take responsibility for damages.

The Commission notes that table 19 in Condition 3 of Schedule 4 of the conditions (08\_0135 MOD3) provides a requirement to ensure that Ulan-Wollar Road is fully repaired if damages occurs as a result of the mine's activity. The issue of the high-wall collapse is not the subject of the modifications before the Commission and any further issues in relation to this incident should be forwarded to Department of Planning and Environment, the agency responsible for enforcing compliance with the conditions of approval.

### **6.5. Other issues**

At the Public Meeting, the Commission heard a number of concerns in relation to the other environmental impacts associated with the project, in particular the noise impacts from increase rail transport. The Commission acknowledges the increased rate of coal production

will increase traffic and transport impacts including the number of rail movements and associated rail noise. The Department's assessment indicates that the modification would not cause any significant change in traffic or transport impacts, noise or greenhouse gas emissions. The Commission accepts the Department's assessment on these issues.


## **7. COMMISSION'S FINDINGS AND DETERMINATION**

The Commission has carefully considered the Proponent's proposal, the Department's Assessment Report and the relevant considerations under Section 75W of the *Environmental Planning and Assessment Act 1979*. The Commission heard from the Proponent, the Department, Mid-Western Council, and members of the public during its various meetings, inspections and the public meeting.

The Commission notes that the merits of the broader projects were assessed as part of the original project applications, including the recent approval of Stage 2 by the Commission in January 2015. These modification applications now before the Commission make minor physical changes to the project, within the mine site and increase the rate of extraction and associated volume of coal to be processed and transported from the site each year. There will be minor changes to surface activities and the increased environmental impacts associated with the modifications are predicted to be small and acceptable.

The Commission further notes that the Department supported all of the agencies' recommended conditions and amended the draft modification instrument accordingly.

The Commission has determined to accept the recommendation that approval be given to these modification applications, with some further amendments to the conditions, as explained in this report. Consequently, approval is granted subject to conditions.



**Gordon Kirkby (Chair)**  
**Member of the Commission**



**David Johnson**  
**Member of the Commission**



**Dr. Maurice Evans**  
**Member of the Commission**

### **List of Appendices**

1. List of Speakers at the Public Meeting
2. Issues raised at the Public Meeting
3. Summary of other Meetings
  - a. Department of Planning and Environment
  - b. Mid-Western Regional Council
  - c. Proponent and site inspection
4. Key Correspondence
  - a. The Commission's letter to the Department of Planning and Environment
  - b. The Department's response of 8 April 2016
  - c. The Department's memo of 26 April 2016

## **APPENDIX 1: List of Speakers**

### **Planning Assessment Commission Meeting**

Moolarben Coal Complex UG1 Optimisation Modification Stage 1 Project Approval Mod 12 &  
Stage 2 Project Approval Mod 2

Date & Time: Thursday 17 March 2016, 9 am

Place: Mudgee Town Hall, Market Street Mudgee NSW 2850

#### **List of Speakers**

1. Bruce Hughes (Wollar Progress Association)
2. Veronica Burns
3. Marie Hensley (Mudgee District Environment Group)
4. Diane O'Mara
5. Beverley Smiles (Hunter Communities Network)
6. Kay Binns
7. Sally Novak
8. Chris Pavich (Central West Environment Council)
9. Jolieske Lips (Running Stream Water Users Association Inc)
10. Colin Imrie
11. Mark Jacobs (Yan Coal)
12. David Maynard



## **APPENDIX 2: Summary of issues presented at the public meeting**

- **Subsidence**

- Concerns regarding subsidence impacts that may affect The Drip which is a protected natural feature.
- Concerns regarding the adequacy of the assessment of the mine's impacts as data used are out of date.
- Concerns about the technical competence of the Proponent, following the collapse incident near Yulan road, and whether this should discount them from being able to mine near The Drip.
- Complaints about the closure of Ulan Wollar Road as a result of a high-wall collapse of the open cut mine.

- **Environmental**

- Concerns were expressed that assessment of biodiversity impacts was limited in terms of its scope and coverage.
- Assessment did not contain sufficient data as it based its conclusions on survey work carried out in past years.
- Noise impacts resulting from the increase train movements and traffic are ignored by the Department.
- Current noise impacts cause sleep disturbance.
- The Department has failed to include temperature inversions scenarios of the noise impacts.
- Concerns regarding the assessment of the groundwater impacts and effects associated with the Paleochannel and salinity trigger level values.

- **Other issues**

- Concerns were raised that the mine has sought numerous modification to the mine, thus reflecting lack of planning for the mine.
- Concerns were raised in relation to the Department's Assessment Report. It was criticised for failing to address issues ie Greenhouse Gas emissions.
- OEH's submission was also considered deficient by one speaker.

**APPENDIX 3:**  
Records of Commission Meetings

<b>Briefing from the Department of Planning and Environment</b>		
<b>Meeting note taken by:</b> Jorge Van Den Brande	<b>Date:</b> Tuesday, 15 March 2016	<b>Time:</b> 10:30am
<b>Project:</b> Moolarben Coal Complex Underground Mines Optimisation Modification 2 & 12		
<b>Meeting place:</b> PAC Offices		
<p><b>Attendees:</b></p> <p>Commission Members: Mr Gordon Kirkby, Mr David Johnson &amp; Dr Maurice Evans</p> <p>Commission Secretariat: Jorge Van Den Brande &amp; David McNamara</p> <p>DPE: David Kitto – ED Resource Assessments &amp; Business Syst Nicole Brewer – Team Leader</p>		
<b>The purpose of the briefing</b> is for the Department to outline the proposed modification and an opportunity to discuss significant issues.		
<p>A summary of the key issues are provided below.</p> <ul style="list-style-type: none"> <li>• Department notes it's a relatively minor modification and minor impacts are manageable.</li> <li>• The overall aim of the modification apart from the production increase is to have the two mines further integrate their operations.</li> <li>• The Proponent seeks a production increase from 4 to 8 million tonnes of coal.</li> <li>• No works proposed as part of the modification have started, however UG1 works have commenced as part the currently approved project.</li> <li>• Noise impacts are still an issue of concern for locals.</li> <li>• The Department states that although the Proponent holds enough licences for water extraction, if the underground Paleochannel is affected, the Proponent must obtain a water licence prior to commencement of the works.</li> </ul>		
<b>Documents tabled at meeting/to be provided:</b> NIL		
<b>Meeting closed at</b> 11:30am		

<b>Meeting with Mid-Western Regional Council</b>		
<b>Meeting note taken by:</b> Jorge Van Den Brande	<b>Date:</b> Wednesday, 16 March 2016	<b>Time:</b> 1:30pm
<b>Project:</b> Moolarben Coal Complex Underground Mines Optimisation Modification 2 & 12		
<b>Meeting place:</b> Council offices		
<b>Attendees:</b> Commission Members: Mr Gordon Kirkby, Mr David Johnson & Dr Maurice Evans Commission Secretariat: Jorge Van Den Brande & Aaron Brown  Mid-Western Regional Council Julie Robertson - Director of Development Lindsay Dunstan - Manager Planning Mark Lyndon - Statutory/Strategic Planner		
<b>The purpose of the briefing</b> is for Council to brief the Commission on its submission and an opportunity to discuss significant issues.		
Generally Council does not have any major concerns with the proposal. Council did however raise a number of matters that it feels should be addressed in future assessments of mining projects: <ul style="list-style-type: none"> <li>• Cumulative impacts are a broader issue in terms of mining in the region.</li> <li>• Council's capacity to manage new jobs creation from mining activity in relation to services and housing.</li> <li>• Council stated that the workforce increase for the Moolarben modification is manageable however if workforce increase from other mines occur at the same time, Council is not capable in providing full services immediately.</li> <li>• Council was satisfied with Proponent's response actions toward the high-wall collapse.</li> </ul>		
<b>Documents tabled at/to be provided after the meeting:</b> NIL		
<b>Meeting closed at</b> 2:00pm		

<b>Briefing by Yancoal and site visit</b>		
<b>Meeting note taken by:</b> Jorge Van Den Brande	<b>Date:</b> Wednesday, 16 March 2016	<b>Time:</b> 3:00pm
<b>Project:</b> Moolarben Coal Complex Underground Mines Optimisation Modification 2 & 12		
<b>Meeting place:</b> Moolarben Mine Operations Building		
<p><b>Attendees:</b></p> <p>Commission Members: Mr Gordon Kirkby, Mr David Johnson &amp; Dr Maurice Evans Commission Secretariat: Jorge Van Den Brande &amp; Aaron Brown</p> <p>Proponent:</p> <p>Mark Jacobs - General Manager, Environment &amp; Community Charlie Spence - Regional General Manager, Underground Steve Archinal - General Manager, Moolarben Graham Chase - Environment &amp; Community Manager, Moolarben Michael Moore - Manager, Environmental Standards Josh Hunt – Principal Resource Strategies</p>		
<p><b>The purpose of the briefing</b> is for the proponent to outline the proposed modifications and an opportunity to discuss significant issues.</p>		
<p>Yancoal provided the Commission with a site tour and a brief presentation and discussion outlining the following key topics:</p> <ul style="list-style-type: none"> <li>• Current operations of the Moolarben Mine and the broader complex;</li> <li>• Works that have been started as part of the current approval;</li> <li>• Site description under UG 1 and surface infrastructure facility;</li> <li>• The proposal for the continued operations at the Moolarben Mine;</li> <li>• Extension of longwall panels and location of the Paleochannel;</li> <li>• The biodiversity offsets and regeneration works that have been currently undertaken, as part of previous consents;</li> <li>• Longwall collapse incident; and</li> <li>• Contributions to Council in relation to the increase employment force.</li> </ul>		
<b>Documents tabled at meeting/to be provided:</b>		
<b>Meeting closed at 5:30pm</b>		

**APPENDIX 4: Key Correspondence**

1. The Commission's letter to the Department of Planning and Environment
2. The Department's response of 8 April 2016
3. The Department's memo of 26 April 2016