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Dear Jack

**Bloomfield Colliery Life of Mine Extension - Modification 4 (MP 07\_0087 MOD 4)  
Environmental Assessment**

I refer to your email dated 1 February 2018 inviting the Division of Resources & Geoscience (the Division) to provide comments on the Bloomfield Colliery Life of Mine Extension Modification 4 (the Project) Environmental Assessment (EA) submitted by Bloomfield Collieries Pty Ltd (the Proponent).

The Division has reviewed the adequacy of information supplied in relation to the abovementioned Project and provides the following advice:

The Division has undertaken a Resource and Economic Assessment of the Project, details of which can be found **in Addendum A**. Also provided are recommended inclusions for the conditions of consent if the project is approved (**Addendum B**).

The Division however, has identified inadequacies with respect to the Secretary's Environmental Assessment Requirements for Rehabilitation in the Environmental Assessment for the Project, dated 17 January 2018.

Additional information is required to demonstrate that sustainable rehabilitation outcomes can be achieved as a result of the Project. The required additional information is as follows:

- i. Further specific detail regarding the post mining land use and domains, should no future residential/mixed use/industrial land uses as described within the Environmental Assessment be approved by future development applications;
- ii. Rehabilitation objectives and completion criteria that clearly define the outcomes required to achieve the post mining land use for each domain identified in requirement (i).

It should be noted that this review does not represent the Division's endorsement of the proposed rehabilitation methodologies as presented in the EA. Under the conditions of a mining authority granted under the Mining Act 1992, the Division requires an authority holder to adopt a risk-based approach to achieving the required rehabilitation outcomes. The applicability of the controls to achieve effective and sustainable rehabilitation is to be determined based on the site specific risk assessments conducted by an authority holder. This risk assessment should be used to not only establish a basis

for managing risk when planning an activity, but it should also be used and updated (as required) to continuously evaluate risk and the effectiveness of controls used to prevent or minimise impacts. An authority holder may also be directed by the Division to implement further measures, where it is considered that a risk assessment and associated controls are unlikely to result in effective rehabilitation outcomes.

The Division requires a review of the draft development consent conditions prior to finalisation and any granting of development consent. This will assist in ensuring rehabilitation objectives are met and the conditions of any relevant Mining Lease, either existing or where a new lease is required, are substantially consistent with the consent.

Further enquiries regarding this matter please contact:  
Adam Banister, Senior Advisor (Resources Development & Operations)  
(02) 4931 6439 or [industry.coordination@industry.nsw.gov.au](mailto:industry.coordination@industry.nsw.gov.au)

Yours sincerely

A handwritten signature in black ink, appearing to read 'Kevin Ruming', written in a cursive style.

Kevin Ruming  
**Director Strategic Release Assessment and Advice**  
5 March 2018

## **Addendum A**

### **Resource and Economic Assessment – Bloomfield Life of Mine Extension (Modification 4)**

#### **Introduction**

State significant development is regulated under the Environmental Planning and Assessment Act 1979 and requires a proponent to apply to the Department of Planning and Environment for development consent, supported by an Environmental Assessment (EA).

This Resource and Economic Assessment conducted for the Bloomfield Life of Mine Extension Modification 4 (the Modification or Project) by the Division of Resources and Geoscience (the Division) is designed to:

1. review the resource/reserve estimates stated in a proponent's Environmental Assessment
2. assess whether the Modification will deliver significant social and economic benefits to NSW from the efficient development of the resource and that resource recovery is optimised and waste minimised
3. estimate the royalty and export revenue to be generated over the life of the Modification.

The objects of the *Mining Act 1992* are to encourage and facilitate the discovery and efficient development of coal resources in NSW. Of particular relevance to this resource assessment are:

#### Section 3A Objects:

- (a) to recognise and foster the significant social and economic benefits to New South Wales that result from the efficient development of coal resources,  
and
- (d) to ensure an appropriate return to the State from mineral resources.

The relevant section of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 is Part 3, Clause 15: Resource Recovery requires that resource recovery is efficient, optimised and minimises waste.

## **The Project**

The Project is operated by Bloomfield Collieries Pty Ltd (Bloomfield) and owned by the Bloomfield Group which is an Australian owned and operated group of private companies with interests in mining and engineering in the Hunter Valley of NSW.

The Project, if approved, will extend the life of the currently operating Bloomfield open cut coal mine by five years, until 2024. The Bloomfield open cut has been operating for many decades in the lower Hunter Valley and is one of the oldest continually operating mines in the Hunter Valley. The Bloomfield mine produced around 1.1 million tonnes of ROM coal in 2016-17. It is a small open cut mine in comparison to the majority of open cut coal mines in NSW. Product coal from the Bloomfield mine is railed to the Port of Newcastle where some blending occurs with product from the Rixs Creek mine which is also owned by the Bloomfield Group prior to export.

## **Size and quality of the resource**

The Division has verified that the Project will provide approximately 4.8 million tonnes (Mt) of Run-of-Mine (ROM) coal and approximately 2.9Mt of product coal. The Proponent has completed the coal resource and reserve estimations for the Project in accordance with the *Australasian Code for Reporting Exploration results, Mineral Resources and Ore Reserves* (JORC Code). The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of minerals exploration results, mineral resources and ore reserves.

The Project will be a continuation of open cut coal mining at Bloomfield and will utilise existing surface operations and mine infrastructure (rail loop and coal handling and preparation plant). The Project would add five years to the mine life at Bloomfield. There is no proposed change to the approved maximum production rate of 1.3Mtpa of ROM coal.

There is a long history of mining the Tomago coal measures at Bloomfield using open cut extraction techniques. The seam sequence typically produces medium to high ash, high sulphur content coal product. Bloomfield expects the majority of product to be sold into export thermal coal markets, with a small percentage (approximately 10%) to be sold into metallurgical export markets. Bloomfield has long standing thermal and semi-soft coking coal contracts with customers in Asian markets.

A review of available coal quality information suggests the proposed product quality, market split and yield is achievable. ROM coal will be processed at the existing coal handling and preparation plant to improve product characteristics for export markets.

The Division considers that 2.9Mt of product (saleable) coal from the Project is feasible.

### **Resource Recovery**

Many factors constrain the mine plan, extraction methodology and therefore the resource recovery at the Project. These include geological features, mining conditions and equipment constraints. Areas of high strip ratio are the primary constraint to pit design, however the pit design facilitates maximising coal recovery within economic limits.

The Proponent is transitioning to the use of smaller excavators that allows for the increased recovery of thin coal seams whilst limiting mining loss and dilution. All coal seams that can be extracted within the equipment constraints will be recovered.

Given the constraints outlined in the proponent's EIS, the Strategic Resource Assessment & Advice unit in the Division considers the Project mine plan for open cut mining operations to adequately recover coal resources and provide an appropriate return to the State, within the mine footprint, giving due consideration to the particular constraints of the location.

### **Economic benefits of the resource**

Over the life of the Project, assuming production is sold on the export thermal market, the value of the coal produced would be nearly \$300 million in current dollars. The net present value of this revenue stream has been estimated by the Division at approximately \$218 million.

Export income is vital for the health of both the NSW and Australian economy. This income contributes to the Nation's balance of trade which provides benefits to both the NSW and Australian credit rating. This additional export income will contribute to significant coal export revenue (\$18.2 billion 2016-17) generated from coal exports annually. Coal exports are the largest value export from NSW, representing around 40% of total NSW exports (both goods and services combined).

The modification if approved would not provide any additional employment at Bloomfield, however it would provide the existing 70+ employees with ongoing employment for another five years. There will be no additional capital investment as a result of this Modification.

### **Coal royalty calculation**

A royalty rate of 8.2% applies to all saleable production and this rate is applicable to the net disposal value. Net disposal value is the price received per tonne minus any allowable deductions. The main allowable deduction is for coal processing which is

either \$3.50 per tonne for coal subjected to a full washing cycle, or \$2.00 per tonne for coal subjected to a simple washing process, or \$0.50 per tonne for coal that is washed and screened.

All ROM coal from the Bloomfield mine is subject to the full washing process therefore a deduction of \$3.50 per tonne from the value of coal produced applies. A deduction for levies also applies which amounts to less than \$1.00 per tonne. The total allowable deductions for royalty for the Modification would amount to \$4.50 per tonne.

One of the most important assumptions in the calculation of future Royalty for a coal proposal is the estimate of a future coal price over the life of a project. Coal from the Project is expected to be sold mainly into the export thermal market with a small percentage (usually less than 10%) sold into the export metallurgical market. A review of coal quality information by the Division suggests this is achievable. Some blending of coal from Bloomfield takes places with coal from the Rix's Creek operation also owned by the Bloomfield Group. Blending is required at the port with coal from the Bloomfield Group's Rix's Creek operation near Singleton for the Asian export market. The Rix's Creek coal is generally of a better quality, but blending with the Bloomfield Mine coal enables the company to meet the required specifications and also prolongs the life of the Rix's Creek Mine.

Coal price forecasting is inherently difficult and over the project life there will likely be variations in coal prices. As this Modification is for five year life these variations are potentially not as great as with longer term projects. Average prices of between A\$90 and A\$110 per tonne for the thermal coal from the Project have been used by the Division. Marginally higher prices were estimated for the small percentage of metallurgical coal to be sold from the Modification.

Another important aspect of future royalty calculation for a proposed coal project is estimation of future annual production. The Division has estimated that if the Modification is approved, around 2.9 million tonnes of additional product coal would be able to be mined from the Modification.

Using the above parameters the Division has calculated that in a typical full production year the State will receive around \$5 million per annum of additional royalty and \$23 million over the life of the Modification. The net present value of this royalty stream would be around \$17 million using a 7% real discount rate.

## Addendum B

### RECOMMENDED CONDITIONS OF APPROVAL

#### Rehabilitation Objectives and Commitments

The Proponent must rehabilitate the site to the satisfaction of DRG. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the documents listed in condition 2 of Schedule 2 and comply with the objectives in Table X. [Note: DPE to insert relevant references in the Consent]

Table X Rehabilitation Objectives

Rehabilitation Feature	Objective
Mine site (as a whole of the disturbed land and water)	<ul style="list-style-type: none"> <li>• Safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s).</li> <li>• Final landforms (including final voids) to integrate with surrounding natural landforms.</li> <li>• Constructed landforms maximise surface water drainage to the natural environment (excluding final void catchments).</li> <li>• Minimise long term groundwater seepage zones.</li> <li>• Minimise visual impact of final landforms as far as is reasonable and feasible.</li> <li>• Final landforms designed in consideration of water licensing requirements, as calculated through consultation with DPI Water.</li> </ul>
Final voids	<ul style="list-style-type: none"> <li>• Designed as to ensure sufficient freeboard at all times to minimise the risk of discharge to surface waters.</li> <li>• Minimise to the greatest extent practicable: <ul style="list-style-type: none"> <li>- The size and depth of final voids;</li> <li>- The drainage catchment of final voids;</li> <li>- Any high wall instability risk; and</li> <li>- The risk of flood interaction for all flood events up to and including the Probable Maximum Flood.</li> </ul> </li> </ul>
Rehabilitation materials	Materials (including topsoils, substrates and seeds of the disturbed areas) are recovered, appropriately managed and used effectively as resources in the rehabilitation.
Surface Infrastructure	<ul style="list-style-type: none"> <li>• To be decommissioned and removed, unless DRG agrees otherwise.</li> </ul>
Water Quality	<p>Water retained on site is fit for the intended land use(s) for the post-mining domain(s).</p> <p>Water discharged from site is consistent with the baseline ecological, hydrological and geomorphic conditions of the creeks prior to mining disturbance.</p> <p>Water management is consistent with the regional catchment management strategy.</p>
Community	<ul style="list-style-type: none"> <li>• Ensure public safety.</li> <li>• Minimise the adverse socio-economic effected associated with mine closure.</li> </ul>

## **Progressive Rehabilitation**

The Proponent must rehabilitate the site progressively as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation cannot be permanently rehabilitated.

*Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.*

## **Rehabilitation Management Plan**

The Proponent must prepare a Rehabilitation Management Plan for the project to the satisfaction of the Division. This plan must:

- (a) be prepared in consultation with the Department, DPI Water, OEH, DPI, Council and the CCC, and submitted to DRG for approval prior to the commencement of mining operations under this consent, unless the Secretary agrees otherwise;
- (b) be prepared in accordance with any relevant DRG guideline;
- (c) describe how the rehabilitation of the site would achieve the objectives identified in *Table X*, the outcomes described in the Rehabilitation Strategy in *condition X* and be integrated with the Biodiversity Offset Strategy described in *condition X*;
- (d) include a detailed Tailings Management Plan for the development;
- (e) include a detailed soil and growing medium balance for the development;
- (f) include a detailed plan for the reinstatement and review of the proposed:
  - agricultural land capability of grassland areas in the final landform, including a protocol for periodic trials to demonstrate that the land capability is being achieved; and
  - rehabilitated woodland areas and fauna habitat, including a protocol for periodic trials to demonstrate that the target vegetation community is being achieved;
- (g) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and for triggering remedial action (if necessary);
- (h) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform (including final voids), final land uses and water management in the final landform;
- (i) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable and feasible to minimise the area exposed for dust generation;
- (j) include a program to monitor, independently audit and report on the effectiveness of the measures in paragraph (h) above, and progress against the detailed performance and completion criteria in paragraph (g) above (at a minimum these reporting requirements must be included as part of the annual review referred to in condition 5 of Schedule 5); and
- (k) build on and integrate with the other management plans required under this consent. The Applicant must implement the approved Rehabilitation Management Plan as approved from time to time to the satisfaction of DRG.