

# BLOOMFIELD

# MINING OPERATIONS (BLOOMFIELD)

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## Blast Monitoring Program

Ver	Date	Description	By	Chk	App
1	240210	Final Draft	KH	SD	SD
2	090811	Revised Final Draft - incorporating Project Area as approved by Section 75W Modification	KH	GL	SG
3	31/5/12	Revised Final – incorporating DP&I consultation	GL		SG
4	25/7/17	Revised Final – Revised and Updated	GL		BC
5	3/11/17	Revised Final – incorporating DPE consultation	GL		BC
6	25/09/18	Revised Final – incorporating Modification 4	GL		CK
7	17/03/20	Final Reviewed	GL		CK
8	15/05/20	Revised Final – incorporating DPI&E consultation	GL		CK

# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

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**INTRODUCTION** This Blast Monitoring Program (BMP) has been prepared in response to Project Approval (Approval) 07\_0087 granted under section 75J of the Environmental Planning and Assessment Act (EP&A) and the Modifications to the Approval granted in accordance with Section 75W of the Environmental Planning and Assessment Act 1979.

Condition 14 of Schedule 3 requires the Proponent to *prepare and implement a blast monitoring program for the project to the satisfaction of the Secretary. The Program must:*

- be submitted to the Secretary for approval within 6 months of the date of this approval; and*
- include a protocol for evaluating blasting impacts on, and demonstrating compliance with, the blasting criteria in this approval for all privately owned residences and other structures.*

The blast monitoring program takes into consideration the Environmental Management Strategy (EMS) for the site, commitments stated in the Part 3A Environmental Assessment, and the various conditions outlined in schedules 2 to 5 of the Project Approval granted under Section 75 J of the Environmental Planning and Assessment Act 1979. In addition, conditions outlined in the Notice of Modifications issued under Section 75W of the Environmental Planning and Assessment Act 1979.

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# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

### SCOPE

The Program applies to all blasting activities associated with Bloomfield’s mining operations. The purpose of the BMP is to ensure the relevant conditions of the Approval are addressed, commitments made within the EA are followed and the various legislative and guidelines are followed. The primary objective is to monitor blasting impacts from the project. The BMP takes into account issues raised during the Environmental Assessment.

### RELATIONSHIP WITH OTHER PLANS

The Environmental Management Strategy for the site establishes a frame work for environmental monitoring. The BMP is an integral component of the EMS and supports the overall environmental objectives for the site.

The System is integrated with the Bloomfield Collieries Safety Management System and operates in conjunction with other appropriate Bloomfield Mine Site and Group Management Systems.

### PROJECT APPROVAL CONDITIONS

Table 1 provides a summary of the relevant conditions of the Approval in relation to blasting and associated monitoring.

**Table 1 RELEVANT PROJECT APPROVAL CONDITIONS (EXTRACT FROM SCHEDULE 3)**

No	Category	Requirements	BMP Reference
5	Airblast overpressure limits	The Proponent must ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 2 at any residence on privately-owned land.	Blast Criteria
6	Ground vibration and impact assessment criteria	The Proponent must ensure that the ground vibration level from blasting at the project does not exceed the levels in Table 3 at any residence on privately-owned land.	Blast Criteria
7	Blasting hours and frequency	The Proponent must carry out blasting on site only between 9 am and 5 pm Monday to Saturday. No blasting is allowed on Sundays and Public Holidays.	Hours and Frequency of Blasting
8	Blasting hours and frequency (cont)	The Proponent may carry out on the site a maximum of: (a) 2 blasts a day; and (b) 5 blasts a week, averaged over a 12 month period.	Hours and Frequency of Blasting
9	Operating conditions	During mining operations on site, the Proponent must implement best blasting practice to: (a) protect the safety of people, property, public infrastructure, and livestock; and (b) minimise the dust and fume emissions from blasting at the project, to the satisfaction of the Secretary.	Blast Management

# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

**Table 1 RELEVANT PROJECT APPROVAL CONDITIONS (EXTRACT FROM SCHEDULE 3)**

No	Category	Requirements	BMP Reference
10		The Proponent must not undertake blasting within 500 metres of any privately-owned land, unless suitable arrangements have been made with the landowner and any tenants to minimise the risk of flyrock-related impact to the property to the satisfaction of the Secretary.	Blast Management
11	Public notice	The Proponent must: (a) notify the landowner/occupier of any residence within 2 kilometres of the mining area who registers an interest in being notified about the blasting schedule at the mine, or any other landowner nominated by the Secretary; (b) operate a blasting hotline, or alternate system agreed to by the Secretary, to enable the public to get up-to-date information on the blasting schedule at the project; (c) advertise the blasting hotline number in a local newspaper at least 4 times each year; and (d) publish an up-to-date blasting schedule on its website.	Public Notices
12	Property inspections	The Proponent must advise the owners of privately-owned land that they are entitled to a structural property inspection to establish the baseline condition of buildings and other structures on the property: (a) within 2 months of the date of this approval, for properties within 2 kilometres of blasting operations occurring at the date of this approval; and (b) at least 2 months prior to blasting within 2 kilometres of additional properties. If the Proponent receives a written request for a structural property inspection from any such landowner, the Proponent must: <ul style="list-style-type: none"> <li>• within 2 months of receiving this request commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary to inspect the condition of any building or structure on the land (prior to blasting taking place within 2 km of the property, if possible), and recommend measures to mitigate any potential blasting impacts; and</li> <li>• give the landowner a copy of the property inspection report.</li> </ul>	Property Inspections
13	Property investigations	If any landowner of privately-owned land within 2 kilometres of blasting operations, or any other landowner nominated by the Secretary, claims that buildings and/or other structures on his/her land have been damaged as a result of blasting at the project after the date of this approval, the Proponent shall within 3 months of receiving this claim: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to investigate the claim; and (b) give the landowner a copy of the property investigation report. If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent must repair the damages to the satisfaction of the Secretary.	Property Investigations
14	Blast monitoring program	The Proponent must prepare and implement a Blast Monitoring Program for the project to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary for approval within 6 months of the date of this approval; and (b) include a protocol for evaluating blasting impacts on, and demonstrating compliance with, the blasting criteria in this approval for all privately-owned residences and other structures. The proponent must implement the Blast Monitoring Program as approved by the Secretary.	Blast Management, Evaluation of Blasting

# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

### ROLES AND RESPONSIBILITIES

The company directors are responsible for the overall environmental performance of Bloomfield Colliery. Senior operational managers have direct responsibility for their areas of control while the environmental officer provides direction and advice to ensure that site environmental conformance is maintained. The principal environmental and operational managers are shown in Table 2.

Table 2 OPERATIONAL SITE MANAGEMENT TEAM

Position	Name
CEO	Brett Lewis
Manager of Mining Development	Geoff Moore
General Manager Technical Services	Simon Grassby
Mine Manager	Brad Donoghoe
Blasting Supervisor	Scott Dark
Environmental Advisor	Greg Lamb

### METEOROLOGICAL MONITORING

In accordance with the Project Approval, a meteorological station was installed on site. The station is located near the active mining areas adjacent to an existing communications tower. The meteorological station monitors:

- rainfall;
- temperature;
- relative humidity;
- wind speed; and
- wind direction.

Meteorological conditions are taken into account when scheduling and undertaking blasting.

### BLASTING CRITERIA

The blasting and vibration criteria specified in the Approval and EPL 396 are provided in Table 2 and 3.

Table 3 Airblast overpressure impact assessment criteria

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts in a 12 month period
120	0%

Table 4 Ground vibration impact assessment criteria

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts in a 12 month period
10	0%

### HOURS AND FREQUENCY OF BLASTING

Blasting will only occur between 9 am and 5 pm Monday to Saturday. No blasting is permitted on Sundays and Public Holidays.

Blasts are restricted to a maximum of:

- (a) 2 blasts a day; and
- (b) 5 blasts a week, averaged over a 12 month period.

# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

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### BLAST PREDICTIONS

The levels of airblast and ground vibration have been predicted using the developed site laws for the mine. The approach of the modelling was to determine the limiting factors to the blast design with the aim of achieving the relevant criteria at all locations. Calculations were conducted using the respective 5% site law equations in order to determine the Maximum Instantaneous Charge (MIC). Blast modeling results are contained in Appendix A. The MIC values used would depend on the location of the area being mined and its relation to the nearest affected receiver.

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### BLAST MANAGEMENT

The Explosives Management Plan for the site details the specific requirements of blasting and protocols followed by the blasting supervisor.

Each blast is planned and implemented to ensure compliance with regulatory requirements and approval conditions. A 500m exclusion zone is evacuated around all blasts and each monitored for airblast overpressure and ground vibration. Each blast is designed so that there is no damage to people, property or livestock. Bloomfield utilises independent technical advice with regards to initiation techniques and timing as well as blast hole loading profiles to control the airblast and ground vibration impacts from mine blasting.

A predictive meteorological modeling software program is utilised on the day of a blast to assist in planning blast operations. The software incorporates regional weather station data to predict daily weather events that may exacerbate overpressure impacts from blasting operations. Where predictions determine increased potential impacts then blast times are delayed to more favourable conditions or postponed. In addition, an automated weather station on site provides real time online data. This data is utilised to assist in determining whether a blast proceeds or is postponed. Factors such as wind speed and direction, cloud cover, blast location and blast size are all taken into consideration.

Any complaints are recorded and responded to in a timely and professional manner.

Residents who have requested to be notified about blasting will be contacted prior to each blast. Notices regarding contact details for blasting information are advertised in local newspapers on a quarterly basis in addition to blasting information provided on the company website.

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### *Blast Protocol*

A protocol has been established for designing, drilling, loading and firing each blast:

- 3D geological modeling used to determine likely depths to be shot;
  - Determine suitable blast pattern;
  - Determine suitable product (slurry or anfo) depending on ground conditions, strata conditions and expected weather;
  - Standard Depth Of Cover (SDOC) calculations used to determine suitable stemming height to contain air blast;
  - Determine sequence of blasting (ie order of firing);
  - Drill and load the pattern;
  - Determine time to fire shot based on predictive meteorological modeling and local weather conditions as described above; and
  - Shot fired in accordance with 'MinOp Blasting Checklist' for Bloomfield Colliery.
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# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

### *Blast Monitoring*

To monitor the impacts of blasting, Bloomfield operate four blast monitors. The locations (Site N, M, G and H) are shown on Figure 1. The monitors record air blast overpressure and peak particle velocity.

Table 5: Blast Monitor Locations

<b>Blast Monitor Site</b>	<b>Location</b>
M	John Renshaw Drive, Buttai
N	Lings Road, Buttai
G	Buchana Road, Buchanan
H	Mt Vincent Road, Louth Park

Exceedances of blasting criteria outlined in Table 3 and 4 will be reported and investigated in accordance with Condition 6 Schedule 5 of PA 07\_0087 and Condition R2 of EPL 396.

The blast monitoring results will be reported in the Annual Review in accordance with Condition 3 Schedule 5 of PA 07\_0087.

### **PUBLIC NOTICES**

In accordance with the requirements of the Approval (Condition 11 of Schedule 3), residences within 2 kilometres have been offered the option of being notified about the blasting schedule.

A blasting hotline contact phone number and an up-to-date blasting schedule is published on the Bloomfield Group website ([www.bloomcoll.com.au](http://www.bloomcoll.com.au)). The blasting hotline contact phone number is also advertised in Maitland Mercury and Cessnock Advertiser at least four times per year.

### **PROPERTY INSPECTIONS**

In accordance with the requirements of the Approval (Condition 12 of Schedule 3), landholders within 2 kilometers of blasting operations have been advised that they are entitled to a structural property inspection to establish baseline conditions.

Bloomfield has commissioned an independent expert who has been approved by the Secretary to undertake structural inspections of properties as required by this condition of approval.

All landholders who have requested an inspection be made will be provided with a copy of the inspection report.

### **PROPERTY INVESTIGATIONS**

In accordance with the requirements of the Approval (Condition 13 of Schedule 3), if a landowner makes a complaint about blasting and is located within 2 kilometres (or any other landowner nominated by the Secretary) of the blasting operations who had not previously requested a structural inspection, Bloomfield will commission an independent expert to investigate the claim.

The landowner will be given a copy of the report. If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damages to the satisfaction of the Secretary.

# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

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### COMPLAINTS

Bloomfield's Environmental Management Strategy details the procedures for addressing any complaints including blasting issues that may be raised by the community. All complaints that are raised by the community and/or government agencies are recorded. Details for each are kept including:

- date and time of complaint;
- method by which the complaint was made;
- personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- nature of the complaint;
- the action(s) taken in relation to the complaint, including any follow up contact with the complainant; and
- if no action was taken, the reason why no action was taken.

The complainant will be followed up to explain the outcome of the investigations. All complaints will be reported in the Annual Review.

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### EVALUATION OF BLASTING

Each blast is monitored and records kept by the blasting supervisor including the location, number of holes, and conditions etc. The blasting supervisor is also responsible for ensuring that blasting is scheduled between permissible hours and the allowable number of shots is not exceeded.

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#### *Post Blasting Protocol*

A protocol has been established to ensure that records for each blast are kept and the results for each compared against the set criteria.

- Monitor and record results of each blast;
  - Review results and compare against approved criteria;
    - ◆ if an exceedance is recorded a review of the blast is initiated immediately; or
    - ◆ if a community complaint received then review is initiated.
  - If required, remedial action such as the appointment of an independent expert to assess as required by Condition 13 of Schedule 3 of the Approval is initiated.
- 

#### *Exceedance of Criteria*

In the event that the vibration and/or overpressure criteria specified in Tables 3 and 4 are exceeded, a full investigation will be undertaken in accordance with Condition 6 Schedule 5 of PA 07\_0087 and Condition R2 of EPL 396.

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#### *Investigation and Reporting of Exceedances*

Within 7 days of detecting an exceedance of the blasting criteria specified in the Approval (Tables 3 and 4 above) a report will be provided to the Department of Planning and Environment and NSW EPA

The report will:

- (a) describe the date, time and nature of the exceedance/ incident;
- (b) identify the cause (or likely cause) of the exceedance/ incident;
- (c) describe what action has been taken to date; and
- (d) describe the proposed measures to address the exceedance/incident.

Bloomfield will follow recommendations of the investigation in order to address possible future occurrences.

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# BLOOMFIELD MINING OPERATIONS

## Blast Monitoring Program

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### EMERGENCY MANAGEMENT

Potential hazards, relating to or resulting from the drill and blast operations, which could trigger an emergency, have been identified. Their methods of control are based primarily on prevention. Emergencies are managed through the MinOp Emergency Management System.

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### SYSTEMS REVIEW AND IMPROVEMENT

The ongoing effectiveness and efficiency of this Management System is monitored as part of the operation's day-to-day management. Feedback from this and other more formal reviews and/ or following special occurrences, form the basis for System improvement and re-design.

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#### *General Conditions of Review*

In general Management Systems are reviewed and up-dated conditional as follows:

- Every three years; or
  - Following any modification to the project approval; or
  - Whenever there is a significant change to relevant legislation; or
  - If required to do so by the Regulations; or
  - Whenever there is a significant change to the operations; or
  - If required (in writing) to do so by the Chief Inspector; or
  - Whenever control measures are found to be ineffective either through:
    - ◆ changes to the working environment; or
    - ◆ changes to operating systems; or
    - ◆ subsequent risk assessments; or
    - ◆ the findings of an audit; or
    - ◆ following a fatality or dangerous incident that could reasonably have been expected to result in a fatality; or
    - ◆ following an assessment of a related safety alert.
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#### *Continual Improvement*

Operational activities will be subject to regular review to ensure conformance with commitment made in the EMS and subordinate plans and strategies. The blast monitoring program will be reviewed every three years or more frequently if required to identify areas that may require improvement.

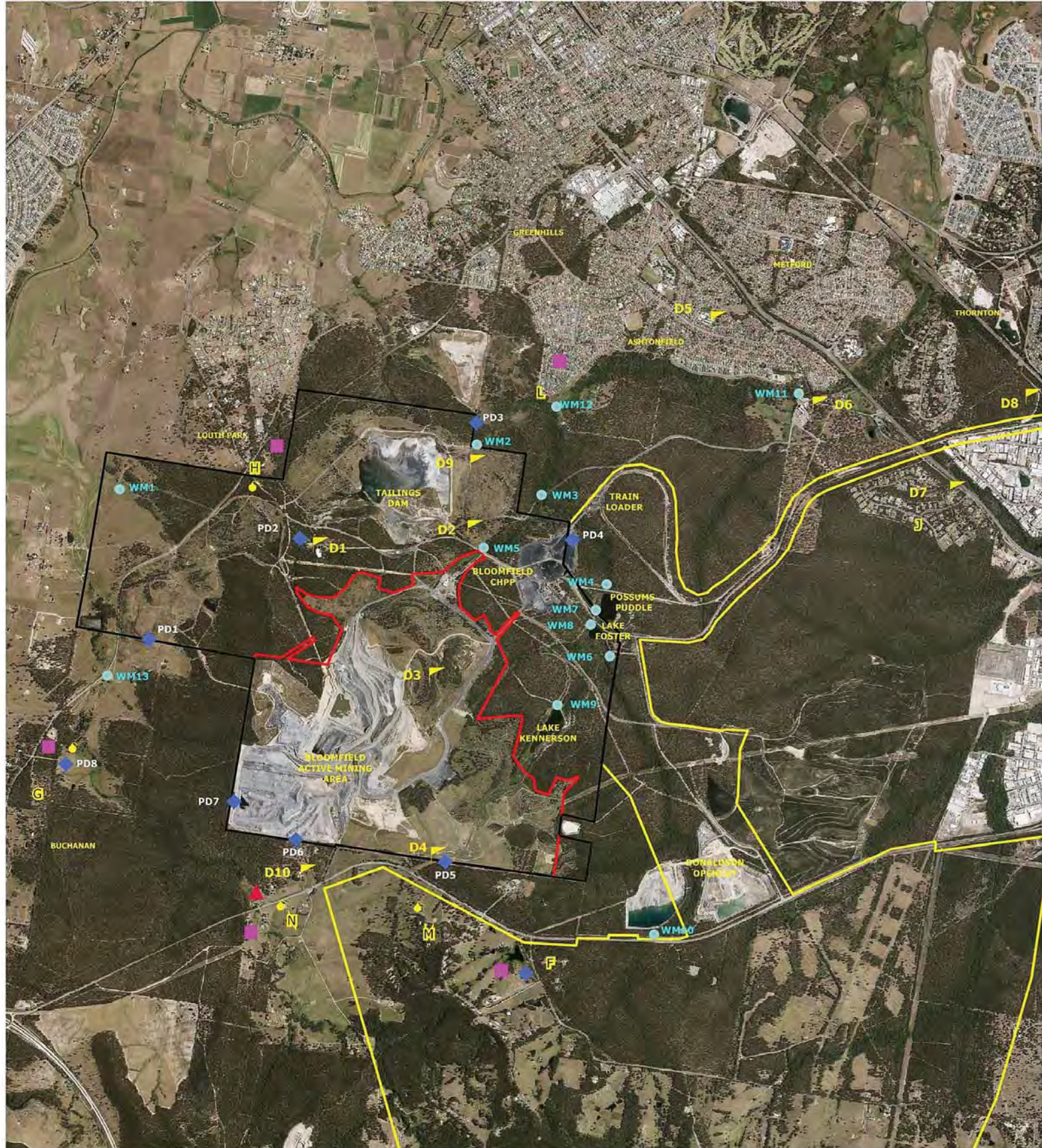
The review process may include formalised procedures such as internal and external audits or feedback from consultation.

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### DOCUMENT MANAGEMENT

Copies of this document are managed under the Group Document Management, Management System. This document and other relevant documents are kept on site and are available to all employees.

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## LEGEND

0 1 km



	Bloomfield Project Area		High Volume Air Sampler
	Abel Mine Project Area		Noise Monitor
	Bloomfield Mining Lease		Peizometers
	Blast Monitor		Water Monitoring
	Dust Monitor		



## Bloomfield Colliery

Blast Monitoring Program

### Figure 1 Environmental Monitoring Sites

Scale: 1:33,333

Date: August 2018  
Photo: January 2018

Drawing: A3

# **BLOOMFIELD MINING OPERATIONS**

## **Blast Monitoring Program**

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### **APPENDIX A**

#### **BLAST PREDICTIONS**

(Source: Noise and Vibration Impact Assessment – SLR 2017)



Noise from Bloomfield coal haulage operations (i.e. Scenario 1 and Scenario 2) are predicted to exceed the relevant LAeq(period) amenity criteria on more than 25 percent of Lot 30/DP1113350, however no exceedance is predicted during overburden operations (Scenario 3). Given the land is within 40 m of the existing haul route, mitigation of noise across Lot 30/DP1113350 would not be considered reasonable and feasible. Furthermore, it is noted that the Project does not seek to modify operations of the existing haul routes in the vicinity of Lot 30/DP1113350, and as such noise levels from Bloomfield Colliery on Lot 30/DP1113350 would not increase due to the Project.

## **7 BLASTING IMPACT ASSESSMENT**

### **7.1 Blasting Assessment Criteria**

#### **7.1.1 Australian Standard Criteria**

Australian Standard (AS) 2187: Part 2-2006 *Explosives - Storage and Use - Part 2: Use of Explosives*, provides guidance in assessing blast-induced ground (and structural) vibration and airblast effects on buildings and their occupants, with details are presented in Appendix J of AS 2187.

Recommended vibration limits are based on international standards (or studies) as presented in Appendix J, Tables J4.5(A) and J4.5(B) of AS 2187, for human comfort and structural building damage respectively. Similarly, recommended human comfort and structural damage airblast limits are presented in Appendix J, Tables J5.4(A) and J5.4(B) AS 2187, respectively.

The guideline *Assessing Vibration: A Technical Guideline* (DEC, 2006) specifically does not consider blasting-induced vibration and, therefore, this guideline is not discussed further.

#### **7.1.2 Human Comfort Airblast and Vibration Criteria**

Ground vibration and airblast levels which cause human discomfort are lower than recommended structural damage limits. Therefore, compliance with the lowest applicable human comfort criteria generally ensures that the potential to cause structural damage is negligible. The EPA currently adopts the ANZEC *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration* dated September 1990 for assessing potential annoyance from blasting during daytime hours, as follows:

- The recommended maximum level for airblast is 115dB Linear.
- The level of 115dB Linear may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level should not exceed 120dB Linear at any time.
- The recommended maximum for ground vibration is 5mm/s, Peak Vector Sum (PVS) vibration velocity. It is recommended however, that 2mm/s PVS be considered the long-term regulatory goal for the control of ground vibration.
- The PVS level of 5mm/s may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level should not exceed 10mm/s at any time.

The ANZEC criteria are generally consistent with AS 2187: Part 2-2006 Appendix J, Tables J4.5(A) and J5.4(A) with respect to vibration and airblast human comfort respectively.

### **7.2 Assessment of Blasting Impacts**

In order to predict the levels of blast emissions (ground vibration and airblast) at the surrounding receivers from the Project, the measured ground vibration and airblast levels from blasting operations conducted in 2014 to 2016 were used to develop blast emissions site laws.

### 7.3 Blast Emission Site Laws

For each site law, using statistical analysis of the measured data and assuming a log-normal distribution of data, a 95% confidence line and 50% confidence levels were determined. The ground vibration and airblast criteria advocated by the EPA and ANZECC (refer to **Section 7.1.2**), cater for the inherent variation in emission levels from a given blast design by allowing a five percent exceedance of a general criterion up to a (never to be exceeded) maximum. Correspondingly, the "5% exceedance" (95% confidence) levels have been used in the blast emission site laws.

The 5% site laws for ground vibration and airblast are:

#### Ground Vibration

$$PVS (5\%) = 2275 (SD_1)^{-1.6}$$

#### Airblast

$$SPL(5\%) = 174 - 25 \log (SD_2)$$

where PVS (5%) and SPL (5%) are the levels of ground vibration (Peak Vector Sum - mm/s) and airblast (dB Linear) respectively, above which 5% of the total population (of data points) will lie, assuming that the population has the same statistical distribution as the underlying measured sample.

SD<sub>1</sub> and SD<sub>2</sub> are the ground vibration and airblast scaled distances, where:

$$SD_1 = \frac{\text{Distance}}{\sqrt{\text{MIC}}} \quad (\text{m.kg}^{-0.5})$$

and,

$$SD_2 = \frac{\text{Distance}}{3\sqrt{\text{MIC}}} \quad (\text{m.kg}^{-0.33})$$

where MIC is maximum instantaneous explosive charge in kg.

### 7.4 95% MIC and Blast Emissions Predictions

The approach of this assessment was to determine the limiting factors to the blast design for the Modification with the aim of achieving the relevant criteria at all locations. Calculations were conducted using the respective 5% site law equations in order to determine the Maximum Instantaneous Charge (MIC).

**Table 25 5% MIC and Blast Emissions Predictions**

Year	Approximate Distance to Nearest Receiver (m)	MIC Based on Ground Vibration or Airblast (kg)	Blast Emission Prediction Based on MIC	
			Predicted PVS Ground Vibration (mm/s)	Predicted Airblast Level (dB Linear)
2018	1500	280	1.7	115
2021	1200	145	1.4	115
2025	1500	280	1.7	115

The levels of airblast and ground vibration have been predicted using the developed site laws for Bloomfield Colliery. The maximum instantaneous charge (MIC) may exceed (or be less than) the values in **Table 25**, depending on the location of the area being mined and its relation to the nearest affected receiver. Bloomfield will continue to utilise independent technical advice with regards to initiation techniques and timing as well as blast hole loading profiles to control the airblast and ground vibration impacts from mine blasting.

Bloomfield Colliery currently has a network of blast monitors within the surrounding residential areas which are used to provide feedback on ground vibration and airblast levels for each blast. Data collected from the monitors is correlated with blast parameters such as charge weight and location and used to ensure future blasts are adequately designed to avoid exceedances of appropriate noise and vibration criteria. This feedback and design process will continue to be appropriate for future blasts within the Project disturbance boundary.

## **8 CONCLUSION**

SLR Consulting has conducted a NVIA for the proposed Project.

### **Operational Noise Modelling**

A computer model was used to predict noise emissions from the operation of the Project.

Operational noise levels are predicted to meet the relevant project specific and PA 07\_0087 noise levels at all receiver locations under calm and prevailing weather conditions provided existing noise management practices as described in **Section 6.4** are implemented as appropriate.

### **Sleep Disturbance Assessment**

The predicted  $L_{Amax}$  noise levels meet the sleep disturbance criteria at all locations and therefore, are not likely to cause sleep disturbance at any assessed residential location.

### **Cumulative Impact Assessment**

The cumulative impact of mining in the area surrounding the Project, including the Abel Underground Mine, is predicted to comply with the relevant amenity criteria set in accordance with the INP and PA 07\_0087, at relevant receiver locations or on more than 25 percent of, any privately owned land, with the exception of Lot 30/DP1113350 (vacant land within the mining lease).

### **Blasting**

Calculations were conducted in order to estimate the 5% exceedance MICs for compliance with the relevant vibration and airblast criteria at the nearest sensitive receivers. The maximum instantaneous charge (MIC) may exceed (or be less than) the predicted values depending on the location of the area being mined and its relation to the nearest affected receiver.

Data collected from blasts within the Project disturbance boundary will be monitored and managed to ensure future blasts are adequately designed to avoid exceedances of appropriate noise and vibration criteria. This feedback and design process will continue to be appropriate for future blasts within the Project disturbance boundary.

# **BLOOMFIELD MINING OPERATIONS**

## **Blast Monitoring Program**

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### **APPENDIX B**

#### **APPROVAL CORRESPONDENCE**

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Greg Lamb  
Environmental Advisor  
The Bloomfield Group  
PO Box 4  
EAST MAITLAND NSW 2323

13/07/2020

Dear Greg

**Bloomfield Coal Project (PA07\_0087)  
Blast Monitoring Program**

I refer to the Blast Monitoring Program submitted in accordance with Condition 14 of Schedule 3 of the Project Approval for the Bloomfield Coal Project (PA07\_0087).

The Department has carefully reviewed the document and is generally satisfied it meets the requirements of the relevant Conditions of Consent.

Accordingly, the Planning Secretary has approved the Blast Monitoring Program (Version 8, dated 15 May 2020). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Wayne Jones on 6575 34065.

Yours sincerely

A handwritten signature in black ink, appearing to read 'M Spratt'.

Matthew Spratt  
Director  
Resource Assessments (Coal & Quarries)

As nominee of the Planning Secretary