

Compliance priority report

Blasting (explosives safety) – small mines

January 2024 to June 2024



Published by the Department of Primary Industries and Regional Development

Title: Compliance priority report – blasting (explosives safety) – small mines

Subtitle: January 2024 to June 2024

First published: August 2024

Department reference number: RDOC24/112775

More information

Amendment schedule		
Date	Version	Amendment
August 2024	1	First published

© State of New South Wales through the Department of Primary Industries and Regional Development [2024]. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute the Department of Primary Industries and Regional Development as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a departmental website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (August 2024) and may not be accurate, current or complete. The State of New South Wales (including the Department of Primary Industries and Regional Development), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Table of Contents

Executive summary.....	4
Assessment criteria for all assessments.....	5
Assessment findings for small mines.....	5
Assessment overall ratings for small mines.....	7
Notices issued to small mines.....	8
Recommendations for small mines.....	9
Further information.....	10
Appendix A – Assessment criteria rating.....	11

Executive summary

A crucial part of the Resources Regulator’s incident prevention strategy for mines and petroleum sites involves:

- targeted assessments and planned inspection programs – focusing on assessing an operation’s control of critical risks by evaluating the effectiveness of control measures in the mine’s safety management system.
- priority programs – proactively assessing a topic that is an emerging risk throughout the industry, which is determined primarily from incident data as well as evolving industry trends. Although these topics may also be contained within the Regulator’s planned inspection programs, the aim of compliance priority programs is to gather further information and knowledge about how the industry is managing and controlling a specific issue.

This compliance priority program blasting (explosives safety) assessed small mines where blasting is undertaken.

The assessment reviewed the development and implementation of the explosives control plan, including storage, handling, blast design, exclusion zones and misfire procedures.

This compliance priority program blasting (explosives safety) targeted small mines during the first 6 months of 2024. The report will provide information on assessment findings and recommendations for small mine operators.

In summary, of the 46 small mine site assessments (extractives sites- 43 construction material sites, 2 industrial mineral sites and 1 metalliferous mine site) there were 66 compliance notices issued in total during the assessment program.

35 of the compliance notices related specifically to blasting (explosives safety) at 30 of the 46 small mine sites assessed.

Explanatory notes on the assessment system are listed in Appendix A.

Assessment criteria for all assessments

Assessment criteria were identified by the Regulator to review mine operator compliance with the requirements of the regulations.

A tabulation of the assessment criteria for ‘blasting (explosives safety)’ at small mines is provided in Table 1.

Table 1. Criteria for blasting (explosives safety) - small mines

Criteria number	Criteria
1	Is blasting managed in house or by a contractor?
2	Does the mine have an explosives control plan?
3	Has the mine operator obtained a copy of the contractor's blast management plan?
4	What are the contractor management arrangements?
5	Does the Quarry Manager have input into decisions around blast design?
6	How are free faces surveyed?
7	What drilling audit work is undertaken prior to finalisation of loading plan?
8	Does the mine have a procedure for exclusion zones?

Assessment findings for small mines

Overall, the assessment findings for small mines were:

- 46 assessments conducted at small mine sites, the small mine types were:
 - 43 construction material sites
 - 2 industrial mineral sites
 - 1 metalliferous mine site
- 368 individual assessment findings
- 66 compliance notices were issued in total during the assessment program
- 35 of the compliance notices issued to 30 of the 46 small mine sites related to blasting (explosives safety) issues

In summary the overall assessment findings by criteria were assessed in total as 86%.

The lowest assessment finding was 73% (orange colour category) for criteria number 04 – What are the contractor management arrangements?

One other criteria number 02 was assessed as 77% (orange colour category) – Does the mine have an explosives control plan?

The highest assessment finding was 98% (yellow colour category) for criteria 01 – Is blasting managed in-house or by a contractor?

Figure 1 provides a summary assessment of the overall results by criteria.

Figure 1. Summary assessment findings overall results by criteria

1	Is blasting managed in house or by a contractor?	98%
2	Does the mine have an explosives control plan?	77%
3	Has the mine operator obtained a copy of the contractor's blast management plan?	81%
4	What are the contractor management arrangements?	73%
5	Does the Quarry Manager have input into decisions around blast design?	92%
6	How are free faces surveyed?	94%
7	What drilling audit work is undertaken prior to finalisation of loading plan?	93%
8	Does the mine have a procedure for exclusion zones?	82%
Grand Total		86%

- Green (=100%)
- Yellow (>= 80% and <100%)
- Orange (>= 65% and <80%)
- Red (<65%)

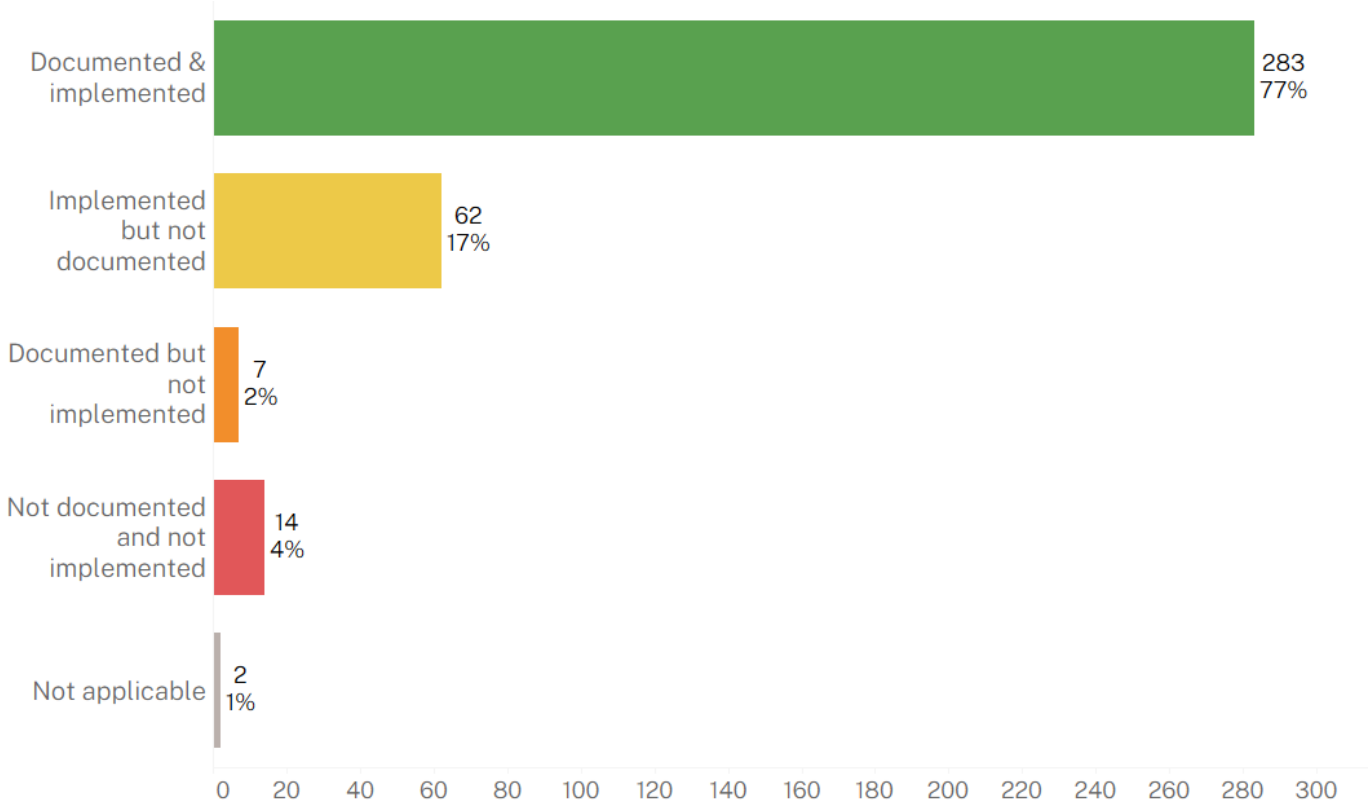
Assessment overall ratings for small mines

In summary the overall assessment ratings for small mines were:

- 77% rating for documented and implemented finding,
- 17% rating for implemented but not documented finding,
- 2% rating for documented but not implemented finding,
- 4% rating for not documented and not implemented finding.

The overall assessment findings ratings for small mines is shown in Figure 2.

Figure 2. Overall assessment findings ratings for small mines



The overall assessment findings ratings by criteria for small mines is shown in Figure 3.

Figure 3. Overall assessment findings ratings by criteria for small mines



Notices issued to small mines

In total there were 46 assessments conducted at small mines.

During the entire program 66 compliance notices were issued at small mine sites. However, not all of the compliance notices issued were related to the topic of blasting (explosives safety) at the site.

In summary, of the compliance notices that were issued in relation to blasting (explosives safety) there were 35 compliance notices issued to 30 of the 46 mines assessed.

- 1 x section 195 prohibition notice issued to 1 small mine
- 29 x section 191 improvement notices issued to 27 small mines
- 5 x section 23 cause for concern notices issued to 5 small mines

The compliance notices issued in relation to blasting (explosives safety) issues at the 30 small mines assessed were reviewed and Table 2 lists the notices issued by type and number.

Table 2: Notices issued related to blasting (explosives safety) at small mines

NOTICE TYPE	TOTAL ISSUED	NUMBER OF SITES
s.195 prohibition notice	1	1
s.191 improvement notice	29	27
s.23 notice of concern	5	5
Total	35	30

Note: some small mines were issued multiple notices

Recommendations for small mines

Based on the findings outlined in this report, and with respect to the numbers and types of compliance notices issued during the assessment of blasting (explosives safety) at small mines it is recommended that the following information should be reviewed by operators of small mines:

- Small mine operators must have documented management systems in place that is required by legislation and industry guidance information including:
 - NSW Explosives Act 2003 and the Explosives Regulation 2013
 - WHS(MPS) Reg-2022 Section 30(6) and Schedule 2: Principal Control Plans – 4: Explosives Control Plan
 - Australian Standard AS:2187 – Explosives storage, transport and use
 - Australian Standard AS:4326 – The storage and handling of oxidizing agents
 - SafeWork NSW guide (October 2016) – Security plan for storage and handling of explosives and/or security sensitive dangerous substances
- Small mine operators must assess the risks associated with blasting (explosives safety) at the site and put in place adequate risk controls to reduce the likelihood of an unwanted event occurring.
- Small mine operators must keep up to date explosives management records for all explosives and explosive pre-cursors stored at the site.
- Small mine operators’ explosives control plan must include the management of contractors on site in relation to all blasting activities, including if the blasting activity is under the direct control of a contractor.
- Small mine operators must provide workers involved in blasting activities on site with training and information and ensure workers and contractors are registered and hold a current:
 - Safework NSW security clearance for all persons having unsupervised access to explosives, explosive precursors or concentrated ammonium nitrate.
 - SafeWork NSW blasting explosives user licence (BUEL) to purchase, use and dispose of explosives and /or security of sensitive dangerous substances as well as storage if authorised to do so.

- Small mines operators must comply with Regulator notification requirements by licence holders under the Explosives Act 2003 and Explosives Regulation 2013. Specifically:
 - notification of loss or theft of explosives or explosive precursors, or
 - notification of serious incidents involving explosives or explosive precursors
- Small mines operators must comply with the requirement to notify other relevant authorities, including NSW Police and SafeWork NSW. As required under clause 102 of the Explosives Regulation 2013.
- Small mine operators must comply with WHS(MPS) Act 2013 notification requirements and report to the Regulator any serious incident relating to the handling of any explosive or explosive precursor at a mining workplace. Serious incident means:
 - an uncontrolled explosion or fire, or
 - an incident resulting in the death of, or serious injury to, a person, or
 - an incident resulting in substantial damage to property, or
 - any other incident involving risk of an uncontrolled explosion or fire or any such death, injury or damage.
- If a serious incident occurs outside a mining workplace, notification must be given if the incident arises out of the handling of any explosives or explosive precursors at the mine. For example, fumes from blasting causing injury to a person adjacent to the mine, or a chemical spill at the mine exposes nearby residents to health and safety risks.

Further information

For more information on safety assessment programs, the findings outlined in this report, or other mine safety information, please contact the Regulator.

CONTACT TYPE	CONTACT DETAILS
Email	cau@regional.nsw.gov.au
Incident reporting	To report an incident or injury call 1300 814 609 or log in to the Regulator Portal
Website	www.resourcesregulator.nsw.gov.au
Address	NSW Resources Regulator 516 High Street Maitland NSW 2320

Appendix A – Assessment criteria rating

Each assessed criteria is rated from one to 4 based on evidence supporting the expected control supports identified at the mine site.

Evidence supporting expected control supports

Expected control supports	Rating	Evidence supporting rating / comments				
	<table border="1"> <tr> <td>4</td> <td>3</td> </tr> <tr> <td>2</td> <td>1</td> </tr> </table>	4	3	2	1	
4	3					
2	1					

Assessment findings results are calculated based on the total points allocated to the assessed ratings as a percentage of the maximum possible points for each criteria group, and any findings rated as ‘Not applicable’ were excluded from the calculation.

Criteria assessed ratings and points

Assessed as	Rating	Points
Documented & implemented Compliant	4	4
Implemented but not documented Improvement needed	3	2
Documented but not implemented Significant improvement needed	2	1
Not documented and not implemented Non compliant	1	0
Not applicable (N/A)		

Findings results (points) with colours assigned as follows:

- Green (=100%)
- Yellow (>= 80% and <100%)
- Orange (>= 65% and <80%)
- Red (<65%)
- Not applicable