

## **Consolidated report**

Small mines- air quality or dust or other airborne contaminants

**September 2023 to May 2024**



**Published by the Department of Primary Industries and Regional Development**

Title: Consolidated report – small mines – air quality or dust or other airborne contaminants

First published: September 2024

Department reference number: RDOC24/176912

More information

Amendment schedule		
Date	Version	Amendment
September 2024	1.0	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 (September 2024) and may not be accurate, current or complete. The State of New South Wales (including 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 controls and criteria questions .....	5
Assessment findings.....	5
Assessment ratings.....	7
Compliance notices issued .....	8
Recommendations for small mine sites.....	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.

The Regulator has developed a bowtie hazard management framework and standardised assessment checklist for each program plan. Under each program plan, the effectiveness of the safety management system at each mine site is assessed against a standard set of control supports and critical controls.

Exposures to poor air quality or dust or other airborne contaminants can lead to severe health impairment for workers. The control topics reviewed in this planned inspection program include:

- minimise airborne contaminants
- separate workers from hazardous atmospheres
- dust containment and extraction
- hygiene monitoring.

This report will consolidate assessment findings and provide analysis and recommendations for operators of small mines.

In total for this consolidated report there were 36 small mine sites and 6 large quarries assessed including:

- 6 large construction material open cut sites
- 1 small construction material dredging site
- 32 small construction materials open cut sites
- 2 small industrial minerals open cut sites
- 1 small metalliferous open cut site.

In summary, there were 336 individual assessment findings and of those 125 assessment findings required enforcement action to be taken at the site. The assessment program was conducted between September 2023 and May 2024.

In summary, there were 64 compliance notices issued in total during the program of these 45 compliance notices were issued at 41 mine sites related to air quality or dust or other airborne contaminants.

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

## Assessment controls and criteria questions

Controls were identified by the Regulator and criteria questions were assigned to each Control for the assessment program.

A tabulation of the control and criteria question for the review of air quality or dust or other airborne contaminants at small mine sites is provided in Table 1.

Table 1. Controls and criteria questions for the small mines planned inspection program air quality or dust or other airborne contaminants

Controls	Criteria number	Criteria
PC1.1 Minimise airborne contaminants	1	Has the mine identified dust and airborne contaminants as a principal hazard?
PC1.3 Separate workers from hazardous atmospheres	2	Has the mine developed a PHMP - air quality or dust or other airborne contaminants?
PC2.3 Dust containment and extraction	3	Has the mine developed a health control plan (HCP)?
	4	What controls are in place to manage worker exposures?
	5	Has the mine identified respirable crystalline silica as a hazard?
	7	Have documented controls been implemented?
	8	Are controls maintained?
MC1.2 Hygiene monitoring	6	Has the mine commenced compliance sampling and analysis (as per Schedule 6)?

## Assessment findings

In summary the assessment criteria findings were:

- 336 individual findings
- 125 findings with enforcement action recorded
- 9 findings related to other matters with enforcement action
- A total of 64 WHSA compliance notices were issued in total and of those notices 45 notices were issued to 41 small mines specific to air quality or dust or airborne contaminants issues.

The overall assessment finding for the critical controls is 79%

- the lowest ranked finding of 74% was question 8 – are controls maintained?

- the highest ranked finding of 87% was question 6 – has the mine commenced compliance sampling and analysis (as per Schedule 6)?

Figure 1 provides the overall assessment findings for each criteria question.

Figure 1. Summary of assessment findings by criteria question

Controls	Criteria number	Question	
PC1.1 Minimise airborne contaminants PC1.3 Separate workers from hazardous atmospheres PC2.3 Dust containment and extraction	1	Has the mine identified dust and airborne contaminants as a principal hazard?	78%
	2	Has the mine developed a PHMP- Air Quality or Dust or Other Airborne Contaminants?	77%
	3	Has the mine developed a Health Control Plan (HCP)?	75%
	4	What controls are in place to manage worker exposures?	79%
	5	Has the mine identified respirable crystalline silica as a hazard?	85%
	7	Have documented controls been implemented?	78%
	8	Are controls maintained?	74%
MC1.2 Hygiene monitoring	6	Has the mine commenced compliance sampling and analysis (as per Schedule 6)?	87%
Grand Total			79%

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

# Assessment ratings

The overall assessment finding ratings were:

- 64% rating of documented and implemented
- 24% rating of implemented by not documented
- 6% rating of documented but not implemented
- 4% rating of not documented and not implemented
- 2% rating of not applicable

Figure 2 provides a summary of the overall assessment findings ratings.

Figure 2. Overall assessment findings ratings

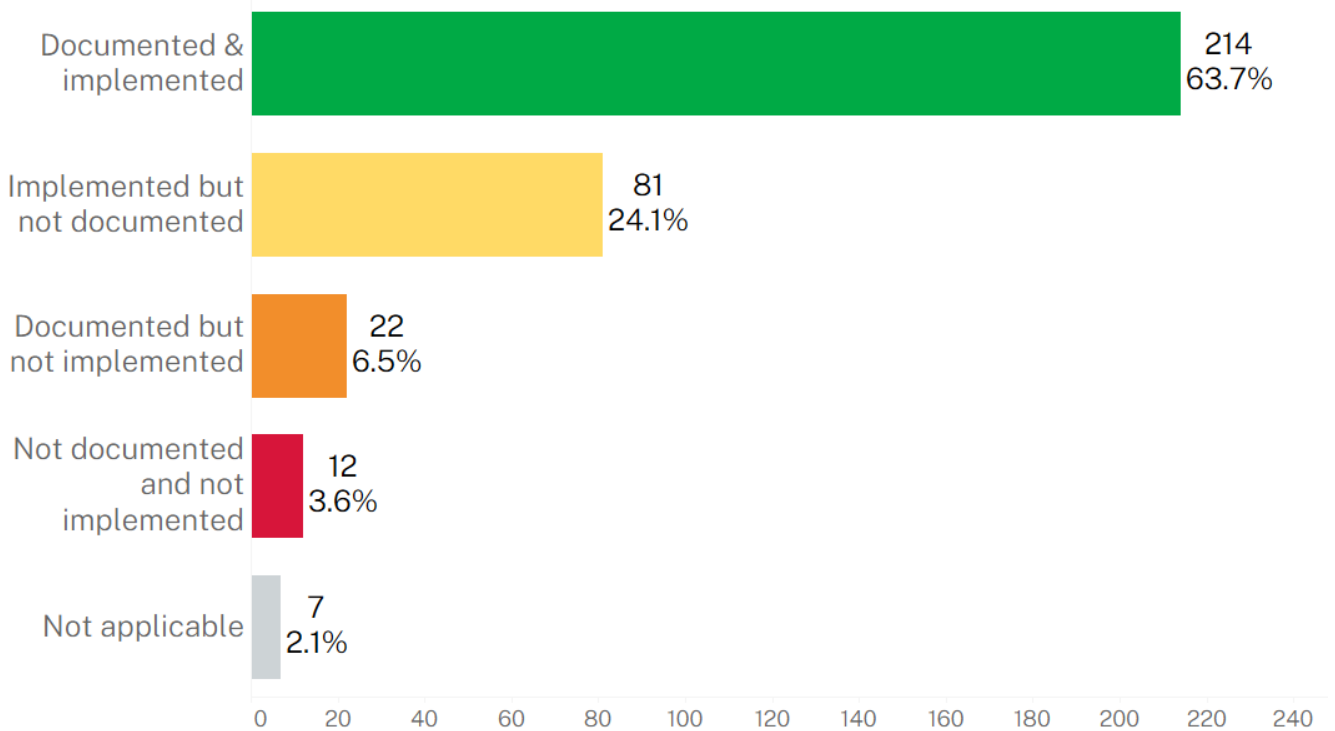


Figure 3 provides a summary of the overall assessment findings ratings by each criteria question.

Figure 3. Overall assessment findings ratings by each criteria question



## Compliance notices issued

In summary, there were 64 WHSA compliance notices issued in total and of those notices 45 notices were issued to 41 small mines specific to air quality or dust or airborne contaminants issues. Some sites were issued more than one compliance notice.

Table 2 details the compliance notices issued by type and number to small mines sites specific to air quality or dust or airborne contaminants issues:



Table 2: WHSA compliance notices issued by type and number for small mine sites specific to air quality or dust or airborne contaminants.

NOTICE TYPE	TOTAL ISSUED	NUMBER OF MINES
s.191 improvement notice	29	25
s.23 notice of concern	16	16
<b>Total</b>	<b>45</b>	<b>41</b>

**Note: some mine sites were issued multiple notices**

**Note:** Some compliance notices issued concerned items not directly related to the assessment topic. Some notices issued covered more than one topic.

## Recommendations for small mine sites

Based on the findings outlined in this report and with respect to the numbers and types of compliance notices issued during the assessment of air quality or dust or airborne contaminants at small mine sites, it is recommended that the following should be reviewed by mine operators:

- review the site principal hazard management plan for air quality or dust or other airborne contaminants and the site principal health control plan to ensure the risks at the site are controlled by:
  - identification of the worker exposure risks on site
  - ongoing maintenance of site risk controls to eliminate or reduce worker exposures
  - exposure testing of workers undertaken on a regular basis
  - exposure report feedback is provided to workers
  - monitoring actions taken to reduce ongoing worker exposures
  - training and information provided to workers and site managers
- review the site principal hazard management plan for air quality or dust or other airborne contaminants and the site principal health control plan to ensure the site plans are up to date with current industry advice and compliance is maintained with updated regulations and published exposure standards.
- the site review should include information resources and advice to mine operators provided on the Regulators website found at:
  - [www.resourcesregulator.nsw.gov.au/safety/health-and-safety-management/airborne-contaminants-and-dust](http://www.resourcesregulator.nsw.gov.au/safety/health-and-safety-management/airborne-contaminants-and-dust)
  - [www.resourcesregulator.nsw.gov.au/safety/health-and-safety-management/dust-diseases](http://www.resourcesregulator.nsw.gov.au/safety/health-and-safety-management/dust-diseases)

## Further information

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

CONTACT TYPE	CONTACT DETAILS
Email	<a href="mailto:cau@regional.nsw.gov.au">cau@regional.nsw.gov.au</a>
Incident reporting	To report an incident or injury call 1300 814 609 or log in to the <a href="#">Regulator Portal</a>
Website	<a href="http://www.resourcesregulator.nsw.gov.au">www.resourcesregulator.nsw.gov.au</a>
Address	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 <b>Compliant</b>	4	4
Implemented but not documented <b>Improvement needed</b>	3	2
Documented but not implemented <b>Significant improvement needed</b>	2	1
Not documented and not implemented <b>Non compliant</b>	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