

Consolidated report

Roads or other vehicle operating areas- surface vehicle interaction – stage 2 – surface coal mines

October 2023 to June 2024



Published by the Department of Primary Industries and Regional Development

Title: Consolidated report – roads or other vehicle operating areas – surface vehicle interaction – stage 2 – surface coal mines

Subtitle: October 2023 to June 2024

First published: March 2025

Department reference number: RDOC25/25263

More information

Amendment schedule		
Date	Version	Amendment
March 2025	1	First published

© State of New South Wales through the Department of Primary Industries and Regional Development 2025. 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 (February 2025) 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	4
Assessment findings for surface coal mines	6
Assessment overall ratings for surface coal mines	7
Notices issued to surface coal mines	9
Recommendations for surface coal 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.

The planned inspection program in surface coal mines for the principal hazard of roads and other vehicle operating areas – surface vehicle interaction – stage 2 was conducted between October 2023 and June 2024.

A bowtie identified for the threat of vehicles operating in non-production areas a critical control of road standards for the material unwanted event (MUE) of human exposure to surface vehicle interactions.

As part of the planned assessment activities, Regulator inspectors attended 22 surface coal mines with a focus on assessing the identified critical control supports for the critical control.

This planned inspection program was part of an ongoing effort by the Regulator to reduce the potential risks associated with human exposure to surface vehicle interactions.

This report provides information on assessment findings and recommendations for surface coal mine operators.

In summary, of the 22 surface coal mines assessed, 5 compliance notices were issued to 5 of the 22 surface coal mines.

Three of the 5 compliance notices issued related specifically to the assessment of human exposure to surface vehicle interactions.

Two of the 5 compliance notices issued related to other types of non-compliance issues.

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

Assessment criteria for all assessments

The Regulators bowtie (PC1.1) reviewed the threat of vehicles operating in non-productions areas and the critical control of road standards identified 19 control supports that were criteria to assess how mine operators manage the material unwanted event (MUE) of human exposure to surface vehicle interactions.

A tabulation of the threat and critical control for the MUE is provided in Table 1.

Table 1. Threat and critical control for the MUE human exposure to surface vehicle interactions

Threat	Critical control
Vehicles operating in non-production areas	Road standards (PC1.1)

A tabulation of the control supports for the critical control of road standards is provided in Table 2.

Table 2. Control supports for the critical control of road standards

Control supports	
01	Supervisors are familiar with the road standards and have access to the documented road standards.
02	People building and using roads have received road standards information training and instruction, and roads are constructed using the materials specified in the road standards.
03	Roads are built to the specifications contained in the road standards. <ul style="list-style-type: none"> • construction methodology • maximum grades • camber requirements • drainage requirements • minimum width • minimum arc radius
04	Intersection layout is as specified in the road standards, including specified distances between adjacent intersections. Intersection layout: <ul style="list-style-type: none"> • maximises visibility • minimises vehicle interaction
05	Minimum windrow dimensions and material used are as specified in the road standards. <ul style="list-style-type: none"> • Minimum windrow height is half the wheel height of the vehicles using the road.
06	Road delineation requirements are a specified in the road standards. Road delineation is: <ul style="list-style-type: none"> • visible from the vehicle operators' position • visible – clean • visible – variable light conditions.
07	Area lighting requirements are installed as specified in road standards
08	Vehicle speed limits are established as specified in the road standards. <ul style="list-style-type: none"> • Operators are observed driving to conditions and speed limits.
09	Areas of roads and vehicle operating areas that do not meet standards are demarcated to prevent use.
10	Areas of substandard road conditions are communicated to vehicle operators
11	Two-way radios are used appropriately. <ul style="list-style-type: none"> • Positive communication is made. • Vehicle operators obtain supervisors permission to access areas.
12	Separation is achieved. <ul style="list-style-type: none"> • bunding • traffic management

Control supports

- centre bunds
- light vehicle roadways
- park-up areas
- signs.

13 Safe parking is observed through:

- flow traffic park-ups
- designated light vehicle park areas
- vehicles parked safely.

14 Traffic rules are available.

- crest speed limit
- separation distances
- road watering procedures
- windrow height
- use of personal mobile devices.

15 Verify that operators have been assessed as competent before operating solo in a product.

16 Confirm the vehicle operator has conducted the required hazard identification process.

- Discuss hazards identified.
 - Verify they are appropriate for the task being completed.
- Discuss the controls identified.
 - Verify the effectiveness of implemented controls.
- Confirm the operator has completed the required prestart inspections.
 - Have the operator walk you through the prestart inspection.
- Challenge safety critical items that are not as they should be.

17 Confirm vehicle operators can explain the emergency response actions:

- emergency vehicle egress
- how to activate the site emergency system
- action to take if the vehicle catches fire
- activate fire suppression system. ask if the operator has checked it today?
- emergency braking procedures

18 Confirm vehicle operators can explain who has right of way in each number of circumstances.

19 Confirm vehicle operators can explain previous incidents, lessons learnt and how systems have been updated.

Assessment findings for surface coal mines

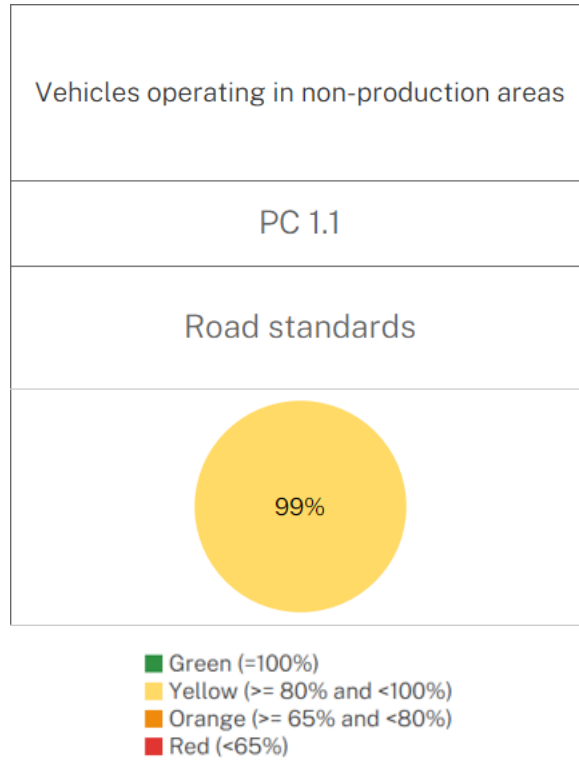
Overall, the assessment findings for surface coal mines were:

- 22 surface coal mines were assessed
- 418 individual findings for the assessed criteria,

- 7 assessment findings with enforcement action recorded,
- 5 compliance notices were issued to 5 of the 22 surface coal mines assessed

Figure 1 provides a summary assessment findings of the overall result for the critical control.

Figure 1. Summary assessment findings of the overall result for the critical control



In summary, the overall assessment finding for the critical control of road standards was assessed as 99%.

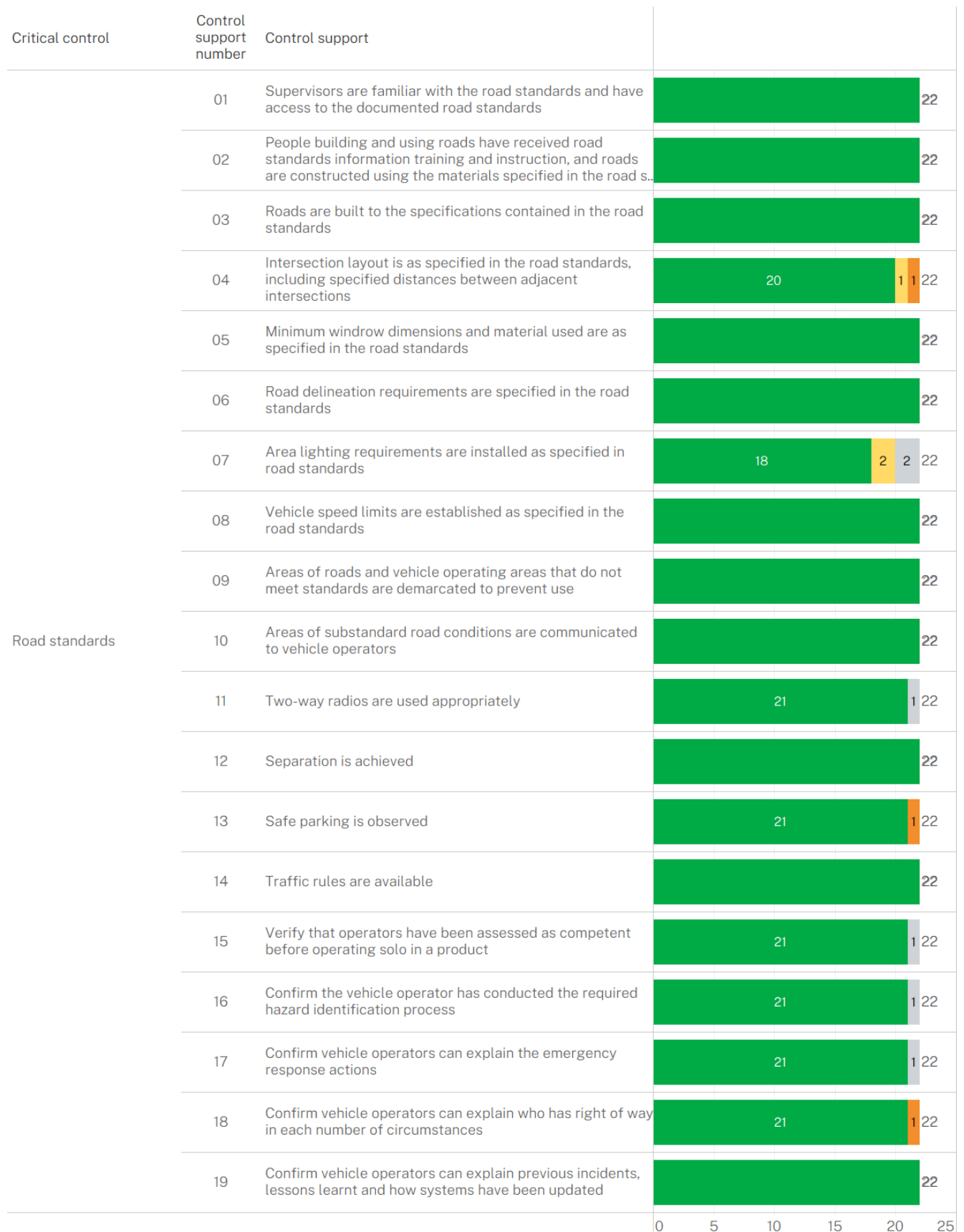
Assessment overall ratings for surface coal mines

In summary the overall assessment ratings for surface coal mines were:

- 97.1% rating for documented and implemented finding
- 0.7% rating for implemented but not documented finding
- 0.7% rating for documented but not implemented finding
- 1.4 % rating for not applicable

The overall assessment findings ratings by critical control and control support for surface coal mines is shown in Figure 2.

Figure 2. Overall assessment findings ratings by critical control and control support for surface coal mines



Notices issued to surface coal mines

In total, 22 assessments were conducted at surface coal mines.

In summary, there were 5 compliance notices issued to 5 of the 22 surface coal mines assessed comprising:

- 3 x section 191 improvement notices
- 2 x section 23 cause for concern notices.

Note: 3 of the 5 compliance notices issued related specifically to human exposure to surface vehicle interactions.

2 of the 5 compliance notices issued related to other types of non-compliance issues.

The compliance notices issued for surface coal mines were reviewed and Table 3 lists the notices issued by type and number.

Table 3: Notices issued for surface coal mines

NOTICE TYPE	TOTAL ISSUED	NUMBER OF SITES
s.191 improvement notice	3	3
s.23 notice of concern	2	2
Total	5	5

Recommendations for surface coal mines

Based on the findings outlined in this report and in relation to the numbers and types of compliance notices issued during the assessment of human exposures to surface vehicle interactions in surface coal mines it is recommended that the following topics should be reviewed by operators of surface coal mines:

Review of the site principal hazard management plan for roads and other vehicle operating areas, in particular:

- windrow heights approaching intersections suitable for all vehicle types using the intersection
- change management risk assessment controls are implemented for all applicable surface roadways in particular for road signage control modifications
- training and information of all workers for change management actions related to applicable surface roadways and in particular road signage control modifications
- traffic interaction control devices such as radio communication devices and vehicle segregation devices must be maintained and implemented to reduce the risk of human exposure to surface vehicle interactions
- supervisors must monitor, report and apply effective corrective actions for identified non-compliances with the site traffic management procedures and roadway operating systems of work.

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.resources.nsw.gov.au
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 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