

Compliance priority report

Fire on mobile plant– surface coal mines and METEX
surface and underground mines

January 2024 to June 2024



Published by the Department of Primary Industries and Regional Development

Title: Compliance priority report-fire on mobile plant- surface coal mines and METEX mines
Subtitle: January 2024 to June 2024
First published: July 2024
Department reference number: RDOC24/87329

More information

Amendment schedule		
Date	Version	Amendment
July 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 (July 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 surface coal mines	5
Assessment overall ratings for surface coal mines	6
Notices issued to surface coal mines	8
Recommendations for surface coal mines	8
Assessment findings for METEX mines	9
Assessment overall ratings for METEX mines.....	10
Notices issued to METEX mines	12
Recommendations for METEX mines.....	12
Further information	13
Appendix A – Assessment criteria rating.....	14

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 compliance priority ‘Fires on mobile plant’ targeted the sectors of open cut coal mines and metalliferous surface and underground mines during the first six months of 2024.

Fires on mobile plant continue to be one of the highest reported incidents in open cut coal mines with an increasing trend in the metalliferous mines.

As part of a targeted assessment activities, inspectors attended mines with a focus on defect management, maintenance and the competency of workers performing those activities on mobile plant.

This compliance priority is part of an ongoing effort by the Regulator to decrease the number of fires on mobile plant.

This report will provide information on assessment findings and recommendations for surface coal mine operators and METEX surface and underground mine operators.

In summary for surface coal mines there were 22 assessments resulting in 17 compliance notices issued to 11 of the 22 surface coal mines assessed.

In summary for METEX surface sites (15 quarries, 2 dredging sites and 1 processing site) there were 18 assessments resulting in 29 compliance notices issued to all 18 surface METEX sites assessed.

In summary for METEX underground mines there were 12 assessments resulting in 20 compliance notices issued to 11 of the 12 METEX underground mines assessed.

The fire on mobile plant assessment program was conducted between January 2024 and June 2024.

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

Assessment criteria for all assessments

Critical control supports were identified by the Regulator and assessment criteria were assigned to each potential threat.

A tabulation of the criteria for the assessment of fires on mobile plant for surface coal mines and METEX mines is provided in Table 1.

Table 1. Criteria for the planned inspection program fire on mobile plant for surface coal and METEX mines

Criteria number	Criteria
1	Managers Interview - Standards of Engineering Practice
2	Managers Interview – Training of workers for a fire emergency
3	Managers Interview – Training of Maintenance Personnel w.r.t fire prevention
4	Supervisor Interviews – Workshop and field service supervisors
5	Mechanical Trade Interviews – Fire focussed maintenance
6	Electrical Trade Interviews – Fire focussed maintenance
7	Operator Interviews – Fire prevention and emergency response
8	Plant # 1 - Inspection
9	Plant #2 Inspection
10	Plant #3 Inspection
11	METEX Underground mine - plant inspection

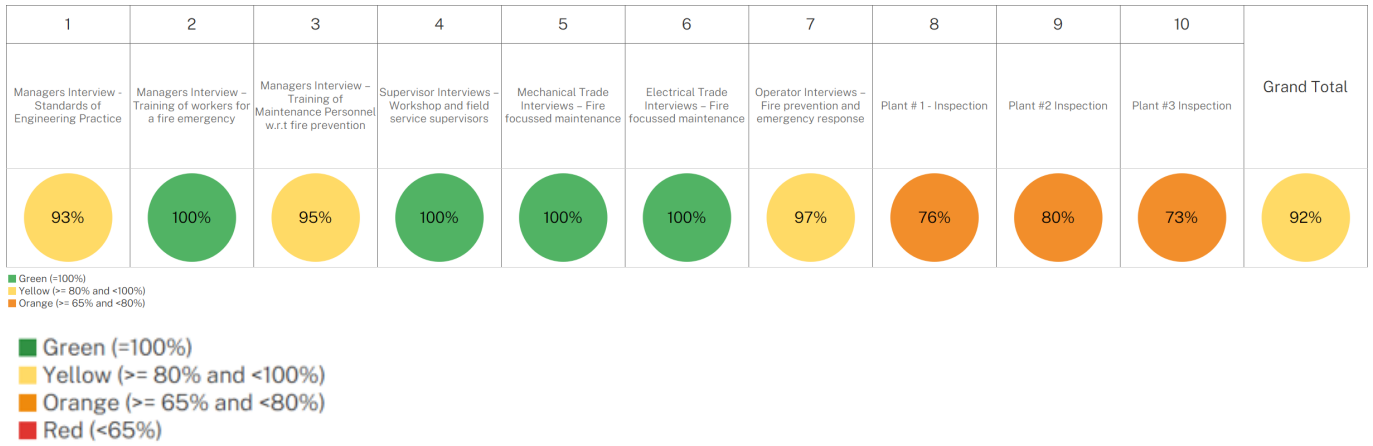
Assessment findings for surface coal mines

Overall, the assessment findings for surface coal mines were:

- 22 surface coal mines were assessed during January 2024 to June 2024,
- 220 individual findings for the assessed criteria,
- 24 assessment findings with enforcement action recorded,
- 17 compliance notices were issued to 11 of the 22 surface coal mines assessed.

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

Figure 1. Summary assessment findings of overall results by criteria for surface coal mines



In summary the overall assessment findings by criteria were assessed in total as 92%. The lowest assessment finding was 73% (orange colour category) for criteria 10 – Plant inspection. All the other criteria from 1 to 9 were assessed ranging from 76% to 100% (orange to green colour category).

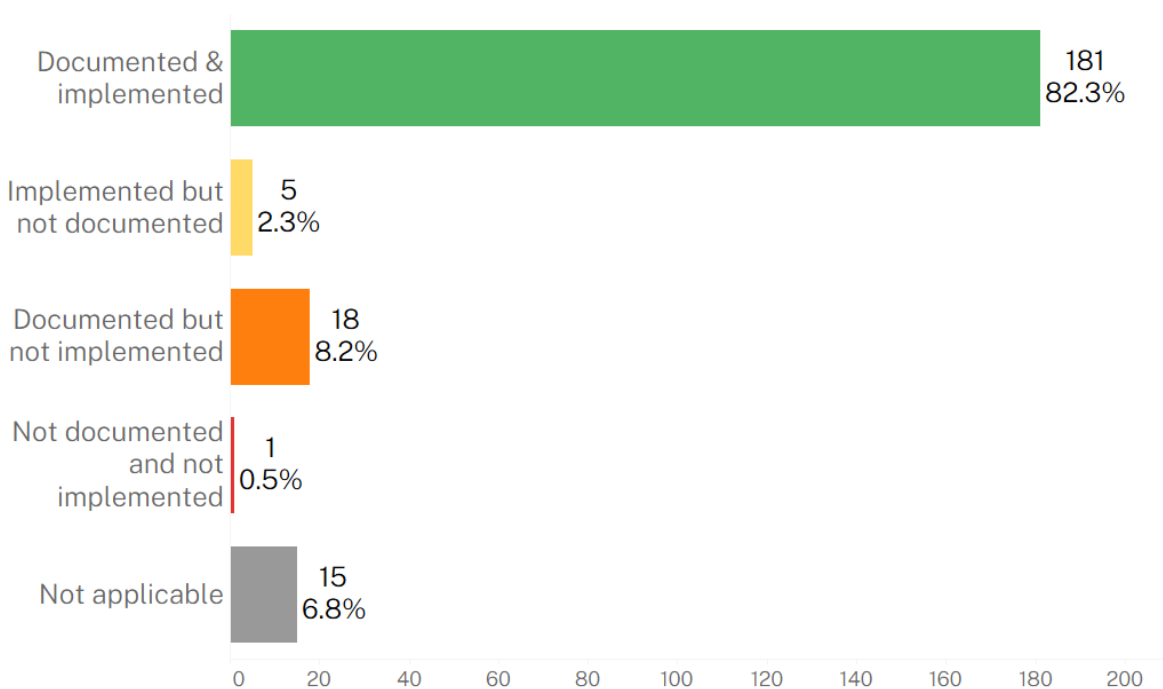
Assessment overall ratings for surface coal mines

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

- 82% rating for documented and implemented finding,
- 2% rating for implemented but not documented finding,
- 8% rating for documented but not implemented finding,
- 0.5% rating for not documented and not implemented finding.

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

Figure 2. Overall assessment findings ratings for surface coal mines



The overall assessment ratings by criteria for surface coal mines is shown in Figure 3.

Figure 3. Overall assessment ratings by criteria for surface coal mines



Notices issued to surface coal mines

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

In summary, there were 220 individual assessment findings and of those 24 assessment findings required enforcement action to be taken at the surface coal mine.

In summary, there were 17 compliance notices issued in total at 11 of the 22 surface coal mines assessed comprising of:

- 1 x section 195 prohibition notice issued to 1 surface coal mine
- 5 x section 191 improvement notices issued to 3 surface coal mines
- 11 x section 23 cause for concern notices issued to 10 surface coal mines

Note some notices issued were related to other identified non-compliance issues.

The compliance notices issued for surface coal mines were reviewed and Table 2 lists the notices issued by type and number.

Table 2: Notices issued for surface coal mines

NOTICE TYPE	TOTAL ISSUED	NUMBER OF SITES
s.195 prohibition notice	1	1
s.191 improvement notice	5	3
s.23 notice of concern	11	10
Total	17	11

Note: some mine sites were issued multiple notices

Recommendations for surface coal 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 fire on mobile plant at surface coal mines it is recommended that the following topics should be reviewed by operators of surface coal mines:

- Fires on mobile plant risk assessments should identify hazards and the implementation and maintenance of risk controls to prevent a mobile plant fire. In particular hazards associated with plant maintenance, plant returning to operation after maintenance and refuelling.
- Fires on mobile plant risk assessments should include workers with mechanical, electrical and fire-fighting competencies.
- Mobile plant maintenance workers to be provided refresher training in best practice assessment and management of fire risks associated with hydraulic hoses and fuel lines, heat sources such as exhaust manifolds, turbo-chargers and exhaust pipes.
- The mine operator is to ensure adequate fire on mobile plant risk control procedures are developed and implemented for contractors operating mobile plant at the site.
- The mine operator is to ensure that adequate numbers of workers are trained and assessed as competent in site mobile plant fire-fighting procedures to cover all operational shifts.

Assessment findings for METEX mines

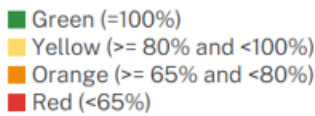
Overall, the assessment findings for METEX mines were:

- 2 METEX surface dredging sites assessed.
- 15 METEX quarries assessed.
- 1 METEX processing site assessed.
- 12 METEX underground mines assessed.
- 330 individual findings for the assessed criteria.
- 74 assessment findings with enforcement action recorded.
- 29 compliance notices were issued to all 18 METEX surface sites assessed.
- 20 compliance notices were issued to 11 of the 12 METEX underground mines assessed.

Figure 4 provides a summary assessment of the overall results by criteria.

Figure 4. Summary assessment findings of overall results by METEX operation type and criteria

Sector operation type	1	2	3	4	5	6	7	8	9	10	11	Grand Total
	Managers Interview - Standards of Engineering Practice	Managers Interview - Training of workers for a fire emergency	Managers Interview - Training of Maintenance Personnel w.r.t fire prevention	Supervisor Interviews - Workshop and field service supervisors	Mechanical Trade Interviews - Fire focussed maintenance	Electrical Trade Interviews - Fire focussed maintenance	Operator Interviews - Fire prevention and emergency response	Plant # 1 - Inspection	Plant #2 Inspection	Plant #3 Inspection	Underground Mine Site Inspection (METEX sites only)	
Surface	85%	92%	93%	96%	97%	100%	95%	96%	81%	67%		91%
Underground	100%	100%	100%	100%	100%	100%	100%	93%	80%	92%	75%	95%
Grand Total	91%	95%	96%	98%	98%	100%	97%	95%	81%	82%	75%	93%



In summary the overall assessment findings for both sector operation types by criteria were assessed in total as 93%.

The lowest assessment finding for METEX surface sites was 67% (orange colour category) for criteria 10 – Plant inspection.

The lowest assessment finding for METEX underground mines was 75% (orange colour category) for criteria 11 – Underground mine plant inspection.

For both sector operation types all other criteria from 1 to 9 were assessed ranging from 80% to 100% (orange to green colour category).

Assessment overall ratings for METEX mines

In summary the overall assessment ratings for METEX mines were:

METEX surface site operation types:

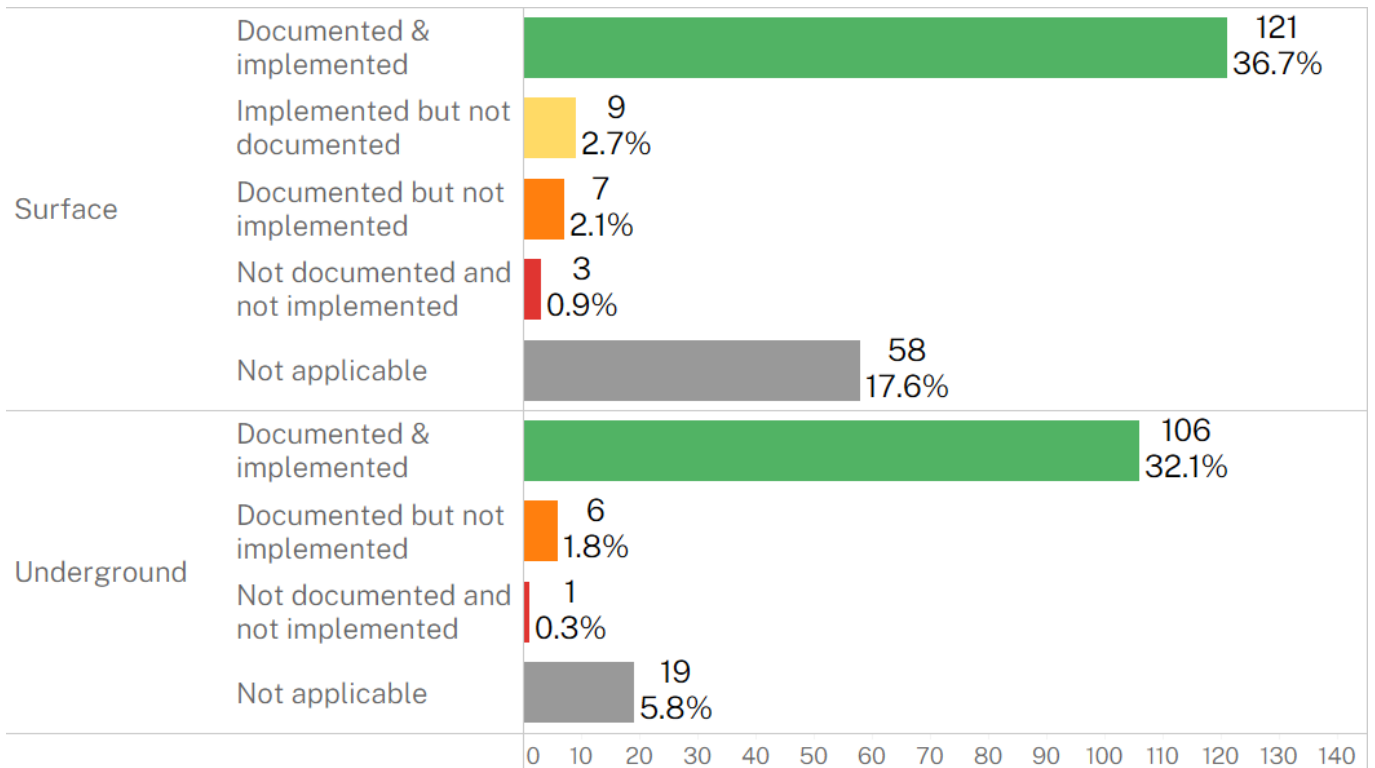
- 37% rating for documented and implemented finding,
- 3% rating for implemented but not documented finding,
- 2% rating for documented but not implemented finding,
- 1% rating for not documented and not implemented finding.

METEX underground mine operation type:

- 32% rating for documented and implemented finding,
- 2% rating for documented but not implemented finding,
- 0.3% rating for not documented and not implemented finding.

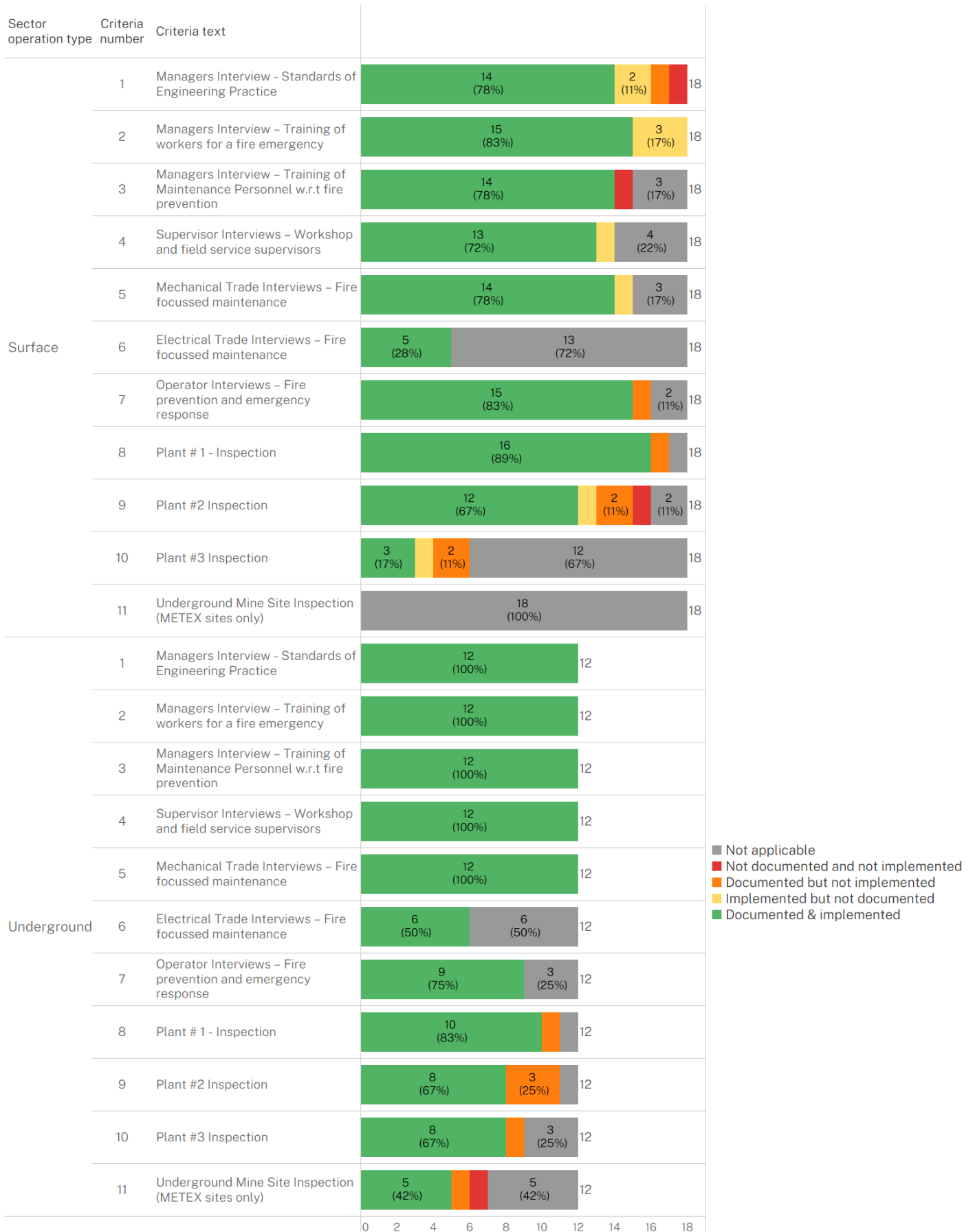
The overall assessment findings ratings for METEX mines by sector type is shown in Figure 5.

Figure 5. Overall assessment findings ratings for METEX mines by sector operation type



The overall assessment ratings by criteria for METEX mines by sector operation type is shown in Figure 6.

Figure 6. Overall assessment ratings by criteria for METEX mines by sector operation type



Notices issued to METEX mines

In summary for METEX surface sites (15 quarries, 2 dredging sites and 1 processing site) there were 18 assessments resulting in 29 compliance notices issued to all 18 surface METEX sites assessed.

In summary for METEX underground mines there were 12 assessments resulting in 20 compliance notices issued to 11 of the 12 METEX underground mines assessed.

In summary, there were 330 individual assessment findings and of those 74 assessment findings required enforcement action to be taken at the surface coal mine.

In summary, there were 49 compliance notices issued in total at 29 of the 30 METEX mines assessed comprising of:

- 10 x section 191 improvement notices issued to 9 METEX surface sites,
- 8 x section 191 improvement notices issued to 4 METEX underground mines,
- 19 x section 23 cause for concern notices issued to 18 METEX surface sites,
- 12 x section 23 cause for concern notices issued to 11 METEX underground mines.

Note some notices issued were related to other identified non-compliance issues.

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

Table 3: Notices issued for METEX mines

NOTICE TYPE	TOTAL ISSUED	NUMBER OF SITES
s.191 improvement notice	18	13
s.23 notice of concern	31	29
Total	49	29

Note: some mine sites were issued multiple notices

Recommendations for METEX 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 fire on mobile plant at METEX mines it is recommended that the following topics should be reviewed by operators of METEX mines:

- Fires on mobile plant risk assessments should identify hazards and the implementation and maintenance of risk controls to prevent a mobile plant fire. In particular hazards associated with plant maintenance, plant returning to operation after maintenance and refuelling.
- Develop trigger action response plans (TARPS) to assist workers with inspection and maintenance assessments for replacement of hydraulic hoses on mobile plant.
- Mobile plant maintenance workers to be provided refresher training in best practice assessment and management of fire risks associated with hydraulic hoses and fuel lines, heat sources such as exhaust manifolds, turbochargers and exhaust pipes.
- Fires on mobile plant risk assessments should include workers with mechanical, electrical and fire-fighting competencies.

- The mine operator is to ensure adequate fire on mobile plant risk control procedures are developed and implemented for contractors operating mobile plant at the site.
- The mine operator is to ensure adequate provision of mobile plant firefighting equipment and firefighting suppression systems are inspected and maintained to meet with OEM recommended standards.
- The mine operator is to ensure that adequate numbers of workers are trained and assessed as competent in site mobile plant fire-fighting procedures to cover all operational shifts.

Further information

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