



# Standing Dust Committee Bulletin

## 2015 Airborne Dust results summary

### Respirable Dust

- 2817 results collected – 27 exceeded occupational exposure limit (2.5 mg/m<sup>3</sup>)
- 63% of exceedances on longwall
- 100% longwall exceedances using Bi-Directional extraction
- 71% of all exceedances in Singleton district

### Inhalable Dust

- 1764 results collected – 183 exceeded occupational exposure limit (10 mg/m<sup>3</sup>)
- 65% of exceedances on longwall
- 90% of longwall exceedances using Bi-Directional extraction
- 16% of longwall exceedances were recorded by Statutory Official. Two of the 18 Deputies that exceeded were not wearing respiratory protection
- 21% of exceedances from continuous miner panels were not wearing respiratory protection
- For further information on respirable and inhalable dust, please refer to page 4.

### Respirable Crystalline Silica\*

- 677 results collected – 90 exceeded occupational exposure limit (0.1 mg/m<sup>3</sup>)
- 70% of exceedances on longwall
- 98% of longwall exceedances using Bi-Directional extraction
- 16% of longwall exceedances were recorded by Statutory Official
- 28% exceedances in continuous miner panels
- 33% of exceedances in continuous miner panels were not wearing respiratory protection
- #International Agency for Research on Cancer (IARC) Group 1 Carcinogen for lung cancer, chronic obstructive pulmonary disease.

### Comments

1. Bi-directional operation in longwalls increases risk of exposure to all dust classifications
2. Respiratory protection is worn less often in continuous miner panels and other tasks
3. Statutory officials are exceeding the occupational exposure limit, some without any respiratory protection
4. Singleton district underground operations have elevated risk exposure factors (cutting stone, coal type, seam thickness)

The Standing Dust Committee recommends that officials and workers review this data and consider if improvements are required in their airborne dust management system.

Mines in the Singleton District or mines using Bi-Directional operation should consider additional dust control measures. Effective utilisation of automation capabilities is key to removing operators from areas of high exposure, particularly on Bi-Directional longwall faces.

Statutory officials in particular should ensure that they provide the appropriate leadership example required.



## Average Respirable Dust Exposure Trends

Longwall SEG Exposure Profiles 2012-2015  
(Mean/MVUE and UCL1,95%)

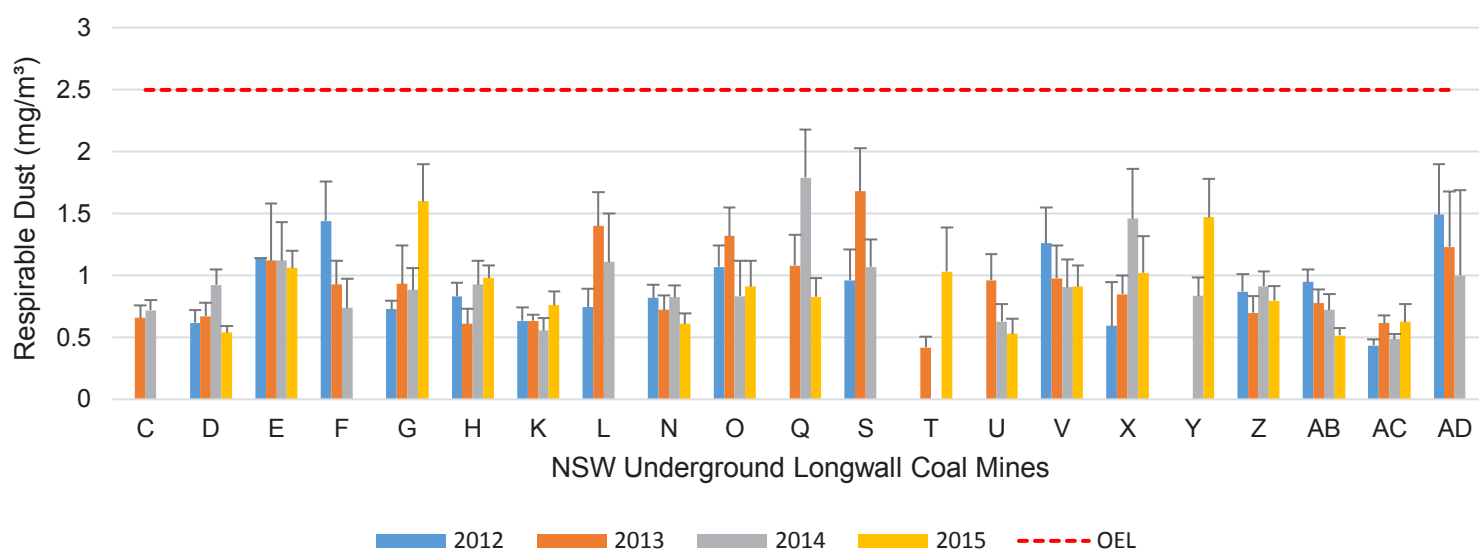


Figure 1. Longwall respirable dust exposure profile trends

Continuous Mining/Development SEG Exposure Profiles 2012-2015  
(Mean/MVUE and UCL1,95%)

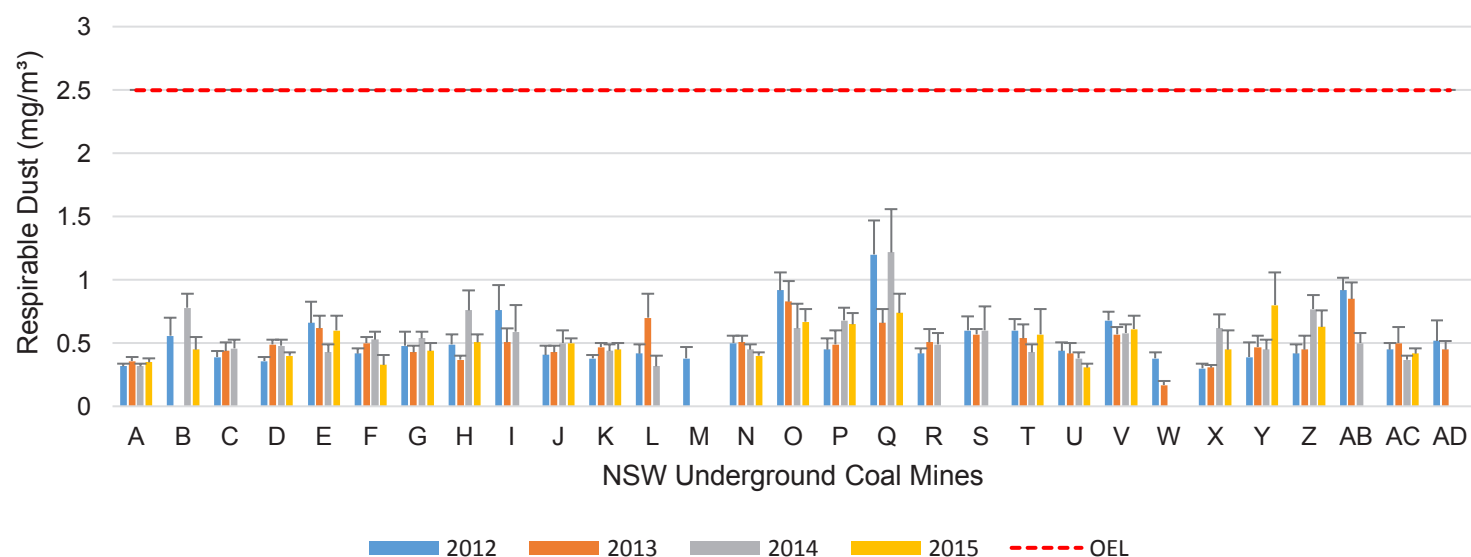
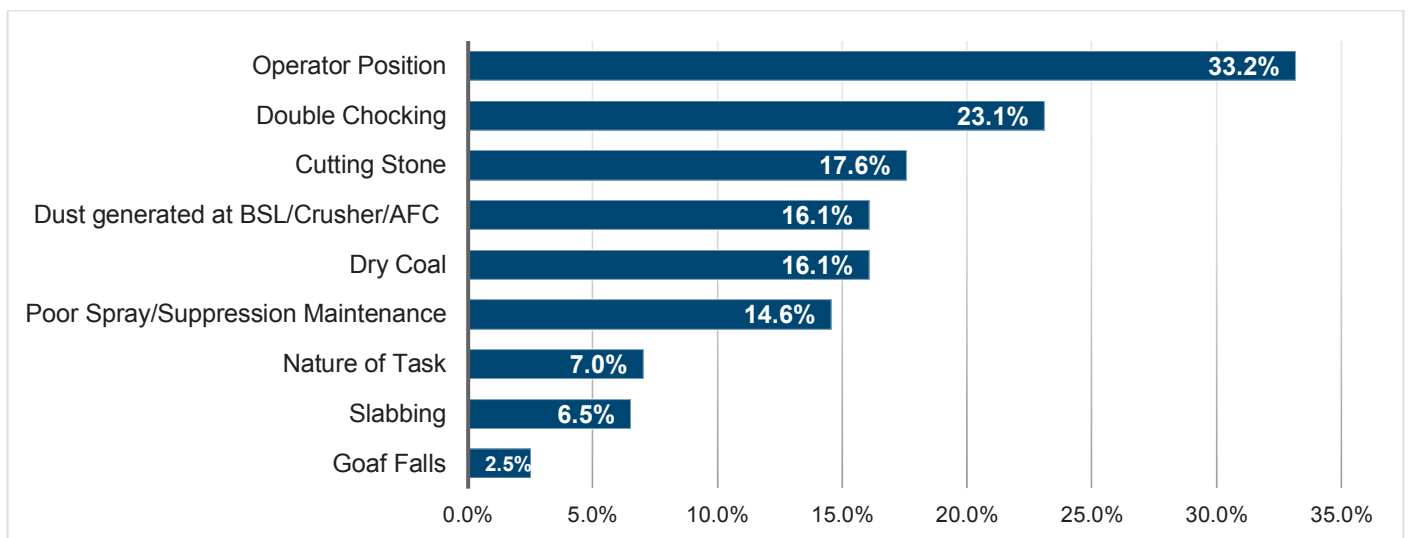


Figure 2. Development respirable dust exposure profile trends

If the arithmetic mean's 95% upper confidence limit (UCL1,95%) is below the occupational exposure limit, one would be at least 95% sure that the exposure profile's arithmetic mean is below the occupational exposure limit.

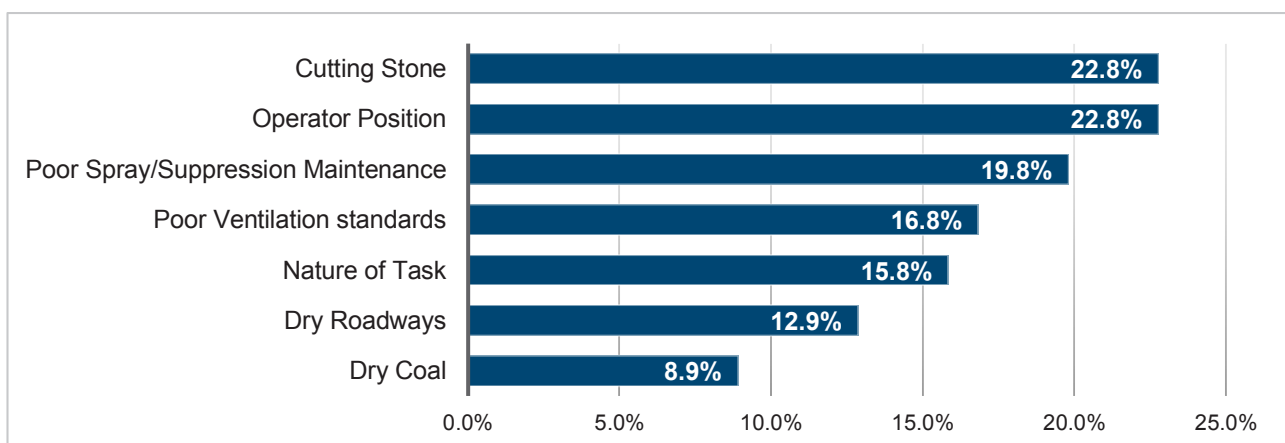


### What factors contribute to airborne dust exposure limit exceedances?



**Figure 3.** Contributing factors identified in Longwall airborne dust exposure limit exceedances 2015

LW operator positioning continues to be the most significant contributing factor to results exceeding the airborne dust exposure limits. LW mines should conduct a review of their procedures and identify all tasks that have the potential to place any operator on the return side of shearer and/or advancing supports. Mines that have undertaken such a review and implemented effective controls and training, have seen significant improvements in their exposure results. Coal Services can assist with this review.



**Figure 4.** Contributing factors identified in Non-Longwall airborne dust exposure limit exceedances 2015

Cutting stone in development panels can potentially place operators at significant risk of inhaling crystalline silica dust. Operators on the vent side of the CM are at higher risk if dust generated from the discharge is not controlled adequately. The cutting/loading cycle should be interrogated to identify the parts of the cycle that have the potential to expose face operators to unacceptable levels of airborne dust e.g. loading while cutting stone.



## Respiratory Protection Equipment (RPE) Use

Respiratory Protective Equipment (RPE) is the last line of defence in the control of airborne dust inhalation.

Coal Services observations indicate a high level of RPE use by longwall operators.

Other high risk exposure tasks such as continuous miner operation, service installations/retractions and open cut shot firers require improvements in RPE use. Numerous workers found to have exceeded dust exposure limits were observed working without some form of RPE.

Site Respiratory Protection Equipment Programs should include:

- Regular training of workers in the correct selection, use and maintenance of RPE.
- Identification of high risk tasks and areas (such as cutting stone in development) which may require compulsory use of RPE.
- Regular audits of RPE use during identified high risk tasks
- Regular 'Fit Testing' and consideration of Clean Shaven Policies for high risk exposure groups.

### More information

[Prevention of pneumoconiosis in NSW - information for workers in the NSW coal mining industry](#)

(or visit [www.coalservices.com.au](http://www.coalservices.com.au))

[Dust disease and you](#)

(or visit [www.coalserviceshealth.com.au](http://www.coalserviceshealth.com.au))

■ Respirator not worn ■ Respirator Worn

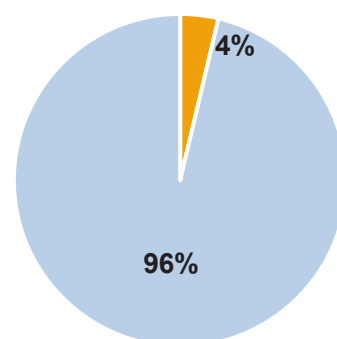


Figure 5. Respiratory Protection - Respirable Dust Exceedances

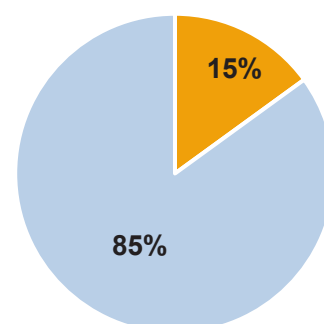


Figure 6. Respiratory Protection - Respirable Crystalline Silica Exceedances

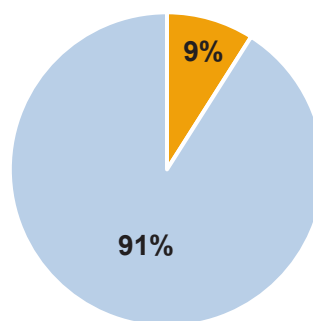


Figure 7. Respiratory Protection - Inhalable Dust Exceedances