Managing the risks of respirable crystalline silica at work

Submission to Safe Work Australia's Consultation Regulatory Impact Statement

Date: 15 August 2022

On behalf of: Daniel Walton, AWU National Secretary

THE AUSTRALIAN WORKERS' UNION

Overview

Thank you for the opportunity to make this submission on the issues raised in the Consultation Regulatory Impact Statement (CRIS) on regulatory options for managing the risks of respirable crystalline silica at work.

The Australian Workers' Union (AWU) represents over 70,000 members nationally in a diverse range of industries: mining, energy, manufacturing, civil construction and agriculture, along with many others. Respirable crystalline silica (RCS) is a significant health hazard for many of our members – not just those dealing with engineered stone, but also in industries such as tunnelling, quarrying, cement work, asphalt, mining, construction, glass and more.

In 2022, the AWU conducted a survey of 373 members across the range of industries exposed to RCS in our membership. The results confirmed that current regulations are not adequate enough to protect workers from RCS and that employers are not doing enough.

The AWU has also conducted site visits with dust monitoring technology which provides real-time aerosol mass readings. Trained officials utilise the dust monitor in order to inspect quantity of respirable dust particles. Selected results presented below indicate that workers are exposed to respirable dust, with a likely high percentage being RCS well in excess of workplace exposure standards.

The AWU has called for national regulatory action on RCS for some time. We welcome Safe Work Australia's interest in proposing additional regulatory action to encourage better compliance with model WHS laws and to aid understanding of regulatory requirements.

We support the adoption of the following options outlined in the CRIS in combination:

- Option 2: Awareness and behaviour change initiatives
- Option 4: National licensing framework for PCBUs working with engineered stone
- Option 5a: Additional regulation of defined high risk crystalline silica processes, including engineered stone

We would welcome the opportunity to meet with Safe Work Australia to discuss any of the issues raised in this submission or the CRIS.

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1 Background

Crystalline silica dust is a significant health hazard for workers. Respirable crystalline silica (RCS) refers to particles of crystalline silica that are released when materials containing silica such as granite, slate, sandstone, engineered stone, concrete, bricks, tiles and more are processed, particularly with power tools. Workers in industries such as tunnelling, quarrying, cement work, asphalt, mining, construction, glass and more are at risk.

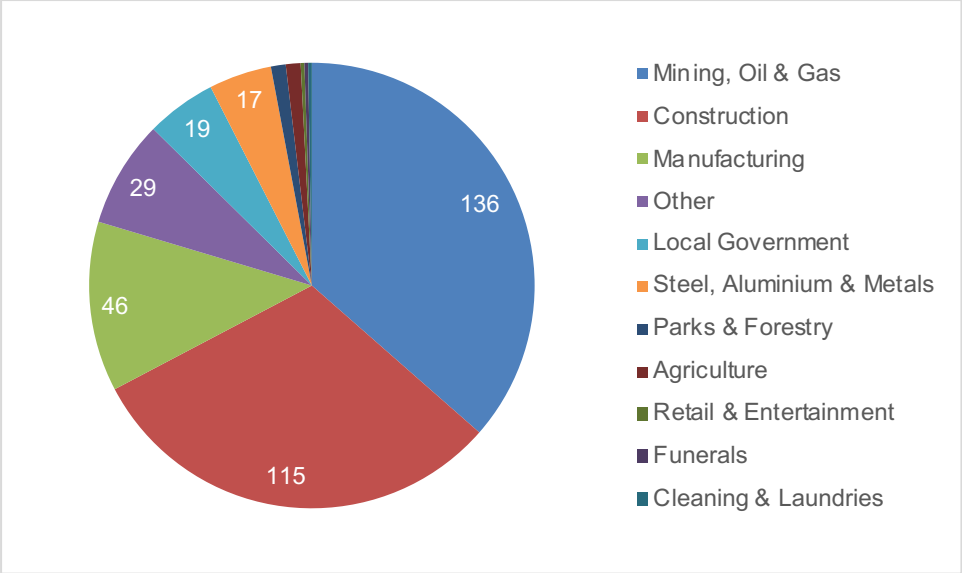
When airborne, workers can easily inhale RCS deep into their lungs where it can lead to a range of respiratory diseases, including silicosis, progressive massive fibrosis, chronic obstructive pulmonary disease, chronic bronchitis, lung cancer, chronic kidney disease, autoimmune disorders (such as scleroderma and systemic lupus erythematosus), and other adverse health effects, including eye irritation, eye damage and an increased risk of activating latent tuberculosis. The long diagnosis process, followed by a lifetime of uncertainty of the consequences, has created significant distress for those who suffer silicosis and its consequences.

2 Our survey

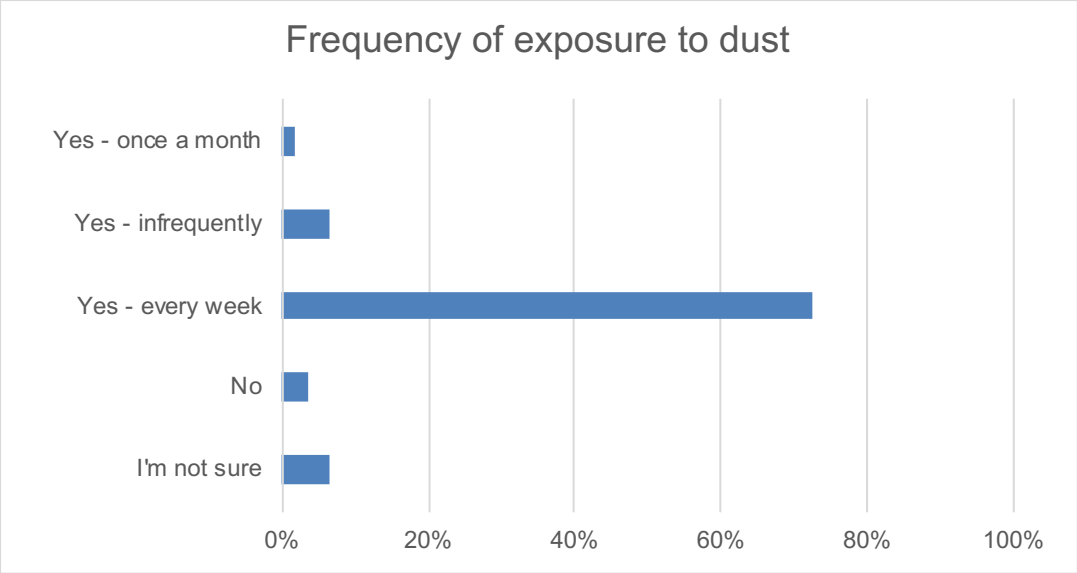
Alarmingly, this known risk is not leading to action. In 2022, the AWU conducted a survey of 373 members across the following range of industries exposed to RCS in our membership:

- Mining, oil and gas (136 respondents)
- Construction (115 respondents)
- Manufacturing (46 respondents)
- Local government (19 respondents)
- Steel, aluminium and metals (17 respondents)
- Other industries (including parks & forestry, agriculture local government, cleaning and laundries) (36 respondents)

Survey respondents were not required to answer every question. Any percentages below are from the total response.



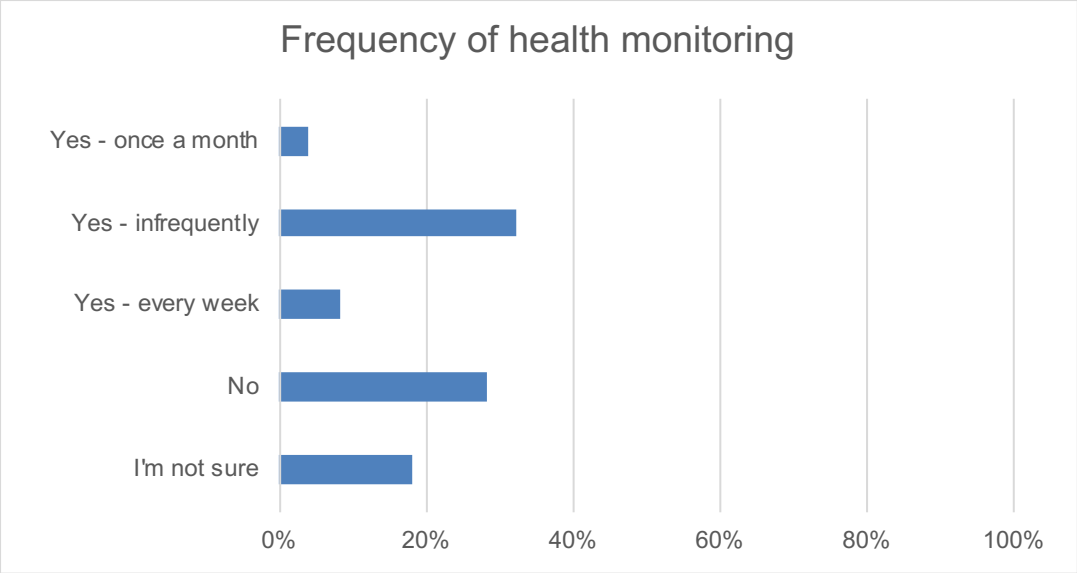
Of these members, 83% reported exposure to silica or other dust on their worksite – from stone, cement, cement products, roads, rocks or other sources – at least some of the time; nearly 75% reported frequent dust exposure (once a week or more).



The industries with the greatest frequent exposure to silica dust[1] were mining, oil & gas (79%) and construction (76%).

Yet exposure monitoring for workers exposed to dust dramatically differs – with just 45% reporting any health monitoring, and 12.5% reporting regular dust monitoring (once a month or more). Indeed, a concerning 27% of respondents reported that their employer did not even inform them of safety risks of working with dust.

[1] Excluding industries with less than 20 respondents.



Concerns were also raised with mitigation and prevention measures on sites:

- Only 40% confirming that their site was properly ventilated to avoid dust build-up.
- Only 23% reporting the use of water suppression of dust.
- 19% were not provided with an appropriate face mask. Where workers were provided with a face mask, only half were fit-tested.

Among those workers who received health monitoring, the most common form was respiratory function testing (21%). A limited number had occupational history exposure records (8%) or received CT scans (6.4%).

Alarmingly:

- 12.1% of respondents were aware of silicosis cases in their workplace
- 10.5% were aware of at least one other respiratory or lung disease in their workplace (including, but not limited to, chronic obstructive pulmonary disorder – COPD, lung cancer, scleroderma and rheumatoid arthritis).

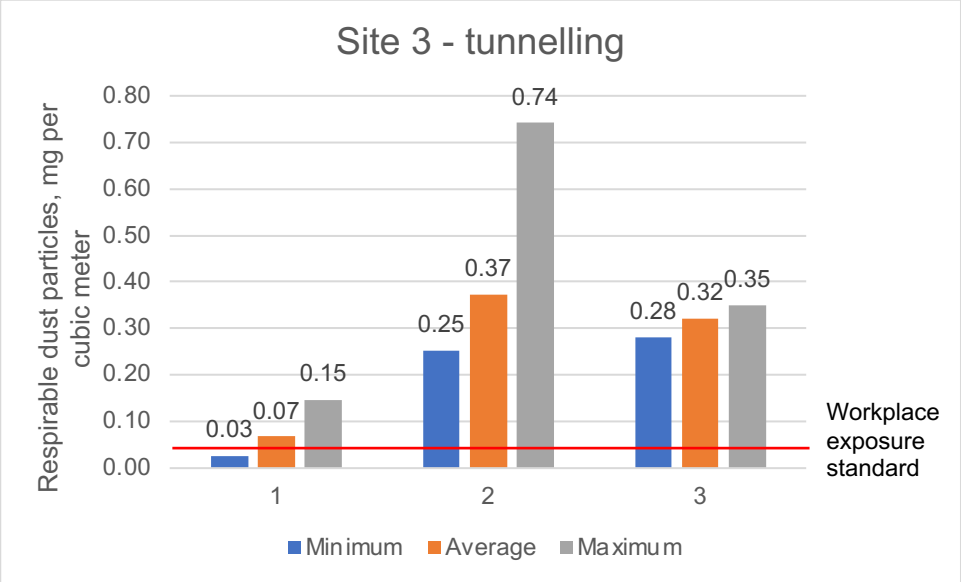
3 On-site dust monitoring

The AWU has also conducted site visits with the DustTrak II Aerosol Monitor 8532 (Dust Monitor) with a four-micron filter attached which provides real-time aerosol mass readings. Trained officials utilise the dust monitor in order to inspect quantity of respirable dust particles. The device does not identify the type of particle but rather if the particle is respirable. Trained officials have utilised the dust monitor in workplaces that contain high levels of silica such as sandstone tunnelling projects and quarries. It is reasonable to assume that a high percentage

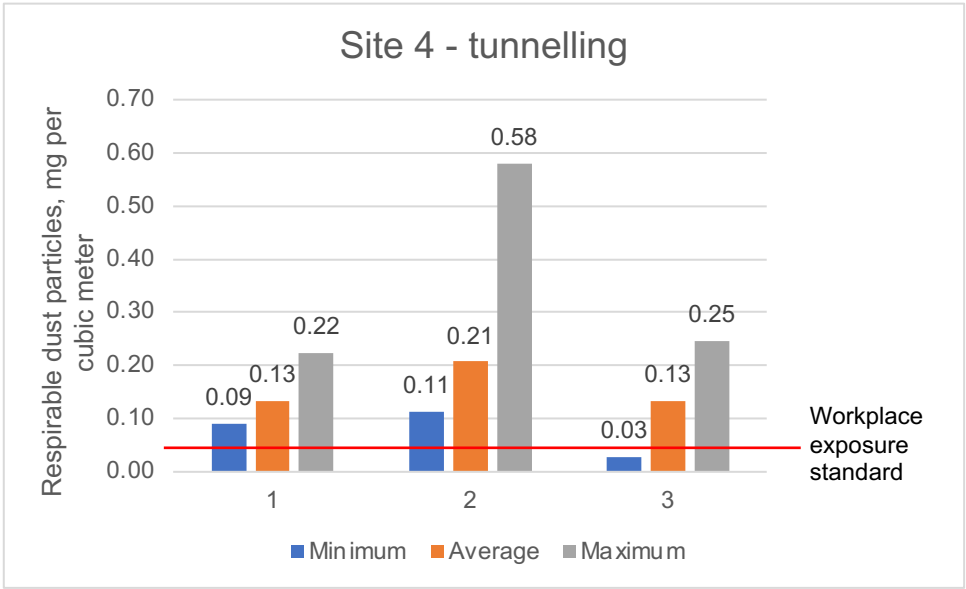
of the data recorded is RCS.

On all sites, recorded measures of aerosols (including RCS) were well in excess of workplace exposure standards (indicated in red on the charts below). Noting that the workplace exposure standard is a time-weighted average for an 8-hour shift.

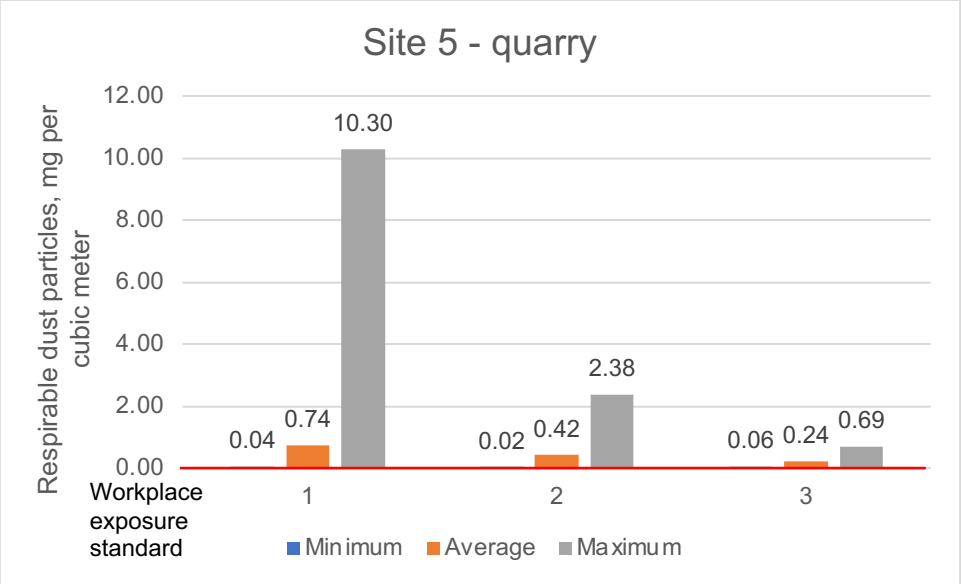
The below chart shows the results from three separate readings (of 1 minute each) at a regional tunnelling site, with averages and maximums all above the workplace exposure standard of 0.05 mg/m^3.



The below chart shows the results from three separate readings (of 15 minutes each) at a metro tunnelling site in New South Wales, with averages and maximums all above the workplace exposure standard of 0.05 mg/m^3. In two out of three readings, the minimum was also above the workplace exposure standard.



The below chart shows the results from three separate readings (of 1 minute each) at a quarrying site, with averages all above the workplace exposure standard of 0.05 mg/m^3 and extremely high maximum readings during significant dust events. In one out of three readings, the minimum was also above the workplace exposure standard.



4 Case studies

In further support of our preferred options and additional regulatory options outlined in our answer to CRIS question 4.2, the AWU provides three case studies from our members who have contracted silicosis at work.

Allan

Allan worked at a Brisbane company for 13 years before contracting silicosis. The company made and distributed fibre-reinforced pipes and fittings. It was yet another example of management treating workplace safety flippantly, with no proper dust extraction systems, little or no protective equipment, and no training on dust avoidance. “At the end of each shift, my entire body and car would be covered in silica dust,” Allan says. “Workers could taste silica dust, coughed it up, and their entire body would be covered with it.” Official safety inspections were a farce, and workers’ complaints ignored. “When inspections were performed, my employer minimised activity that increased silica dust levels, so high readings were not recorded,” Allan says. “In some instances when the readings were in the red zone retests were conducted and results magically changed to OK.”

Allan began to experience diminishing taste and smell, shortness of breath and an inability to

sleep due to coughing. He consulted his GP, and a scan revealed he had silicosis. His health has been significantly affected, and at times he has trouble walking. Having left the dusty site, he says he has stopped coughing and vomiting, has put weight back on and is breathing better, “But this does not mean that I will be able to recover, as silicosis is incurable and can progress rapidly.”

Allan’s situation was made all the worse by management. “When I informed them of my diagnosis, they didn’t accept it. I was threatened that I would face disciplinary action if I informed other workers about my condition. I was framed as a liar and the company began circulating rumours and misinformation about my diagnosis by stating things like, ‘it’s not from here’ and ‘it’s just like asthma.’”

Allan has since found it impossible to find full time work and struggles to support his family.

“Until the government regulates and enforces laws surrounding silica dust, the health and safety of workers will continue to be compromised. Reforms must apply to all industries and all workers must be protected equally.”

Joanna

After returning from maternity leave, Joanna was asked to undergo a fit for work test. The test result changed her life in an instant when the 34-year-old mother of two girls was diagnosed with silicosis.

Joanna said: “It’s the unknown which is so terrifying. What I have since learnt about silicosis is that there is no cure and you just don’t know how it will progress. At the moment I am feeling healthy, but I don’t know if that will be the case in one year, let alone five or ten years and as a mum of two young daughters that terrifies me.”

Joanna contracted silicosis whilst working at a quarry in Montrose, Victoria. She was initially employed in an admin role but it also involved hands-on work, and for her to visit all parts of the site. “No matter where you were in the plant you would be exposed to dust. It would be all over your clothes and skin.”

“I fear this will affect my life and my family’s life and I am angry. I should never have been exposed to this disease.”

“There is no information in my employer’s induction packs about exposure to silica dust, despite being a large multinational company. There are still no signs and warnings around the plant to warn workers. People need to be aware of this.”

Kevin

In 2019 Kevin received a phone call that changed his life. The quarry worker was told he had silicosis but not to panic but he should get his affairs in order.

Kevin, 53, said: “I’d been working with the company for almost 28 years. Everyday walking around the site, thinking we were ok and safe. But we weren’t. I wasn’t aware that I could get silicosis from what I was doing. But there was dust, you could see it in the air.”

“It was picked up in an x-ray that there were white spots in my lungs. It was tough to come home and tell my wife and explain it all to my kids as well. It could be 12 months, it could be five years, nobody knows.”

Kevin also had to deal with his employment ending as he was declared medically unfit for work. “Day to day it slowly creeps upon you, it’s not a big change. You might feel all right, but in the back of your mind you know it’s there and it’s wearing you down.”

Kevin says the company failed to protect him and other workers. “For years we had inappropriate PPE, safety rules and regulations, I was even offered second-hand safety equipment. This should have never happened.”

“I shouldn’t have contracted silicosis, it was preventable, but my employer failed me. Things need to change across workplaces in Australia, employers must be held accountable and pay for the damage they cause to workers.”

5 Options proposed in the CRIS

Examining the range of options proposed, the AWU supports the following options in combination:

- Option 2: Awareness and behaviour change initiatives
- Option 4: National licensing framework for PCBUs working with engineered stone
- Option 5a: Additional regulation of defined high risk crystalline silica processes, including engineered stone

The AWU believes that a strong focus on prevention of silicosis at the workplace must be a major consideration of an awareness initiative. As such, the AWU is supportive of Option 2, an awareness and behaviour change initiative, in conjunction with Options 4 and 5a.

The AWU supports Option 4 and notes the CRIS itself states: ‘*as this option is only limited to engineered stone, it will not address the risks of silicosis and silica related diseases for workers in other industries outside of the engineered stone sector*.’ As such, the AWU further supports

Option 5a however a licencing scheme for employers and self-employed workers across the supply chain with each supplier of engineered stone being required to record the name and address of other persons to whom engineered stone is provided together with information regarding the nature and quantity of the engineered stone supplied is an important factor in order for these products to be tracked and located as they circulate through the industry.

Option 5a provides the best protections for workers of the options provided, together with the suggestions in the AWU's answers to 4.2 of the CRIS as stated below. The AWU's survey results and results from real-time dust monitoring demonstrate clearly that employers are not meeting their obligations – the status quo is not protecting workers. As a result, additional regulation of the type proposed in Option 5a is required.

6 Further answers to questions in the CRIS

Further responses to the specific questions in the CRIS are outlined below.

2.1 Do you agree with the identified problem? Has the entirety of the problem been identified? Please provide evidence to support your position.

The AWU generally agrees with the identified problem stated in the CRIS. However, the AWU has concern as to the extent of the problem being underestimated. Extended exposure to RCS is well known to cause diseases other than silicosis, in particular chronic kidney disease, autoimmune disorders (such as scleroderma and systemic lupus erythematosus), and other adverse health effects, including eye irritation, eye damage and an increased risk of activating latent tuberculosis. [2] Not all workers may show symptoms at the point of initial diagnosis. [3] While the CRIS identifies that '*Safe Work Australia is not aware of other estimates of the number of cases of the other silica related diseases that could be attributed to exposure to RCS*', the AWU contends that estimates widely differ, and that Safe Work's estimates are likely underestimates.

The AWU also notes the scope of the CRIS does not include quarrying or mining workers as they are not regulated under the model WHS laws. The AWU warns that if considerable effort is not made to provide legislative protections to workers in all industries, particularly for mining and quarrying workers, then we will see hundreds of these workers contract silicosis and die from it.

[2] Alif, S et al. 2020, *Occupational lung diseases in Australia 2006 – _2019*, viewed 30 June 2022, <https://www.safeworkaustralia.gov.au/doc/occupational-lung-diseases-australia-2006-2019>.
[3] Nicol, LM et al. 2015, 'Six cases of silicosis: implications for health surveillance of stonemasons', Occupational Medicine, vol. 65, no. 3, pp. 220–225.

2.2 Do you have further information, analysis or data that will help measure the impact of the problem identified?

The provided AWU Survey results in the introduction of this report have already been noted along with data collected from site visits and case studies as presented above.

Further, the AWU is aware of a recent study undertaken by Curtin University which was not released prior to the release of the CRIS. As a result, Safe Work Australia was not able to incorporate findings of the Curtin University report into the CRIS. Nevertheless, the study conducted by Curtin University estimated that between 83,000 to 103,000 cases of silicosis are likely to eventuate based on 2016 exposures. Further the report estimated that 10,300 cases of lung cancer would occur due to silica exposure.[4]

3.1 Do you agree with the case for government intervention? Please provide evidence to support your position.

The AWU strongly supports the case for government intervention and has been calling for government intervention for several years. In particular, the AWU has been calling on government to implement laws that protect workers across all industries, not just the engineered stone industry.

The National Dust Diseases Taskforce's Final Report to Minister for Health and Aged Care, published in June 2021, expressly accepted the AWU's submission that risks associated with exposure to silica dust are not confined to the engineered stone industry.

The Final Report includes the following in its 'Final Recommendations':

> *The evidence presented also shows that the risk to workers of developing dust disease is not confined to the engineered stone industry which includes small business and domestic settings, but spans other industrial settings such as mining, sandblasting and construction. Systemic change is required to improve protection for all people who work in dust generating industries.*[5]

The Australian Institute of Occupational Hygienists (AIOH) has confirmed that common tasks in the manufacturing, demolition, construction, tunnelling and quarrying industries can result in exposure to RCS in excess of the WES.[6] Further, as detailed by Safe Work Australia itself

[4] https://about.curtin.edu.au/wp-content/uploads/sites/5/2022/07/FEFreport_formatted.pdf
[5] National Dust Disease Taskforce, Final Report to Minister for Health and Aged Care, June 2021, p 10
[6] AIOH 2021, AIOH Submission to the 2021 NSW Dust Diseases Scheme, <https://www.aioh.org.au/media/2014/06/AIOH_SUB_NSWDustDiseasesReview_2021.pdf>.

in the CRIS,[7] exposure to RCS extends to workers not directly involved in tasks that produce RCS including administrative staff, cleaning staff and other support staff who are located near sites where RCS is produced. The AWU points to our case studies outlined in the beginning of this report, in particular, the case of Joanna, who was predominately working in administrative function at a quarry in Victoria where she contracted silicosis.

3.2 Do you agree with the objectives of government intervention? Please provide evidence to support your position.

The AWU notes that the stated objective in the report is inconsistent with the hierarchy of control. The highest level of protection under the hierarchy of control is elimination of a hazard. All jurisdictional safety regulations have requirements to eliminate risks as far as reasonably practicable, as the first step. The All of Governments' Response to the Final Report of the National Dust Disease Taskforce notes the following:

> *"Joint deliberate action is required from all levels of government, industry, unions, and workers to drive change. Our shared objective is the elimination of silicosis amongst workers and increased quality of life for those already impacted, and their families."*[8]

The AWU's view is that elimination of silicosis should be the stated primary objective of government. It is disappointing that a ban on engineered stone has been assessed by the CRIS as being 'infeasible'[9] despite calls from government and continued cases.

4.2 Are there any other non-regulatory or regulatory options you think should be considered to address the problem?

Increased Entry Permit Holder Capacity

Allowing increased functions for WHS entry permit holders to monitor suspected contraventions of the Act will assist employers, regulators and workers. The AWU notes the *Occupational Health and Safety Act 2004* (Vic), s. 58(1)(ab) permits an authorised representatives of registered employee organisations the right to '*take photographs or measurements or make sketches or recordings at any part of a workplace*'.[10] These provisions make the right clear when that is not necessarily the case under the Model Act and consequentially the harmonised jurisdictional Acts.

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[7] Page 20 of CRIS
[8] Australian Government 2022, All of Governments' Response to the Final Report of the National Dust Disease Taskforce
[9] CRIS, page 35
[10] The Occupational Health and Safety Act 2004

The objectives listed in Clause 3(c) of the Model WHS Act state: '*The main object of this Act is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces by … encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices, and assisting persons conducting businesses or undertakings and workers to achieve a healthier and safer working environment…*'. The AWU believes there is a role for unions to play in order to adequately identify suspected breaches of the Act and to protect workers particularly when it comes to identification of microscopic dust including RCS.

Increased Penalties for PCBU non-compliance with the WHS Act and Regulations

Most importantly, even if guidelines, codes, regulations and laws change in order to adequately protect workers going forward, they will have no effect unless they are enforced with tough penalties imposed for non-compliance. There must be clear and severe penalties for breaches of the minimum benchmarks.

High-Resolution Computed Tomography

Lung Function Tests and chest x-rays are now firmly considered insufficient as a monitoring and screening tool. The implementation of High-Resolution Computed Tomography (HRCT) screening for silicosis has been identified as superior in identifying silicosis.[11] This should be reflected in the regulations.

Frequency of monitoring of airborne contaminants

Airbourne monitoring laws are not being used in a way that can provide meaningful health outcomes to workers. The AWU is aware of companies that undertake mandatory testing for airborne contaminants to technically meet their obligations under section 50 of the Model Regulations but are not practically useful. The regulations require monitoring of airborne contaminants, however it does not prescribe the frequency or method of testing to best deal with changing conditions. The AWU has provided a redacted interaction with a company in relation to this matter (available in appendix A). What we found in this case was a large tunnelling company was conducting airborne monitoring just once per month in order to meet their obligations. The type of monitoring was gravimetric testing, the results of which take approximately two weeks to be returned. This type of monitoring, while technically meeting

[11] Austin EK, James C and Tessier J, Early Detection Methods for Silicosis and Internationally: A Review of the Literature, International Journal of Environmental Research and Public Health, 18(15), August 2021, p 8 and123.

the requirements of the Act, is of no practical use to the workers in the event exposure standards are breached.

6.4 Are the cost and other estimates (including worker wage assumptions) listed in Appendix D accurate and appropriate? If not, please provide additional data to support a more accurate estimate of costs.

In larger civil construction projects such as tunnelling or in construction material sites such as larger quarries and mining, companies tend to directly hire a WHS Officer or equivalent for the purpose of conducting risk assessments and other such plans in order to meeting existing provisions. As such, this is an expense that is already carried by the company and should not be noted as an additional cost.

Further, indirectly, the cost of increasing insurance premiums resulting from increased cases of silicosis and silicosis related diseases has not been considered when looking at the proposed options.

Appendix A – employer correspondence

Thursday, May 5, 2022 at 10:10:42 Australian Eastern Standard Time

Subject: [redacted] response to meeting held on 6th April
Date: Wednesday, 13 April 2022 at 12:57:35 pm Australian Eastern Standard Time
From: [redacted]
To: [redacted]
CC: [redacted]
Attachments: image003.jpg, image005.png, image004.wmz, image009.png, image011.jpg, [redacted]

Good afternoon [redacted]

Thank you for your attendance at the meeting on Wednesday, 6 April. As has always been the case, [redacted] remains committed to best practice management of air quality and will work collaboratively with any party who wishes to take constructive steps towards the same outcome.

Please find below information that [redacted] agreed to provide in good faith at the meeting in response to the Notice of Entry under section 120. In addition to what was agreed, I've included some further detail to confirm the framework within which the monitoring of airborne contaminants is undertaken.

- Site exposure monitoring has taken place at locations across the tunnel network since 2019.
- The January 2022 round of tunnel exposure monitoring was undertaken on the 21st of January 2022 from approximately 06:00 to 15:00 across multiple locations throughout the tunnel network. This monitoring round involved personal samples from Similar Exposure Groups (SEGs) including Roadheader Operator, Tunneller, Underground Heavy Plant Operator, FRP Crew and Pit and Pipe Installer. None of the results exceeded the protection provided by the mandatory P2 RPE (Respiratory Protective Equipment).
- The February 2022 round of tunnel exposure monitoring was undertaken on the 28th of February 2022 from approximately 06:00 to 15:00 across multiple locations throughout the tunnel network. This monitoring round involved personal samples from SEGs including Roadheader Operator, Bolter Operators, Spoil Shed Plant Operator, Spoil Shed Ground Worker, Underground Heavy Plant Operator, Supervisor and Electrician. None of the results exceeded the protection provided by the mandatory P2 RPE (Respiratory Protective Equipment).

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<u>Framework for monitoring of airborne contaminants</u>

- Procedure for determining workers to receive monitoring.
  - Workers have been grouped into SEGs based on them having the same general exposure profile because of the similarity and frequency of the tasks they perform, the materials and processes with which they work, and the similarity of the way they perform the task. Basic characterisation activities including project phase, job classification and anticipated health hazards were used to identify and allocate workers to each of the SEGs. SEGs may be amended based on the results of risk assessments, to enable each SEG to become better characterised and exposures better defined.
- What type of air monitoring is carried out to determine the airborne concentration of a substance or mixture at the workplace to which an exposure standard applies?
  - The sampling and analysis for respirable dust and respirable crystalline silica (RD & RCS) is performed in accordance with the Australian Standard "AS2985-2009 Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust".
  - The RD/RCS samples collected are analysed by a NATA accredited laboratory.
- All monitoring results are readily accessible to personnel on the site notice boards as confirmed by [redacted] during the meeting. There are monthly HSR committee meetings that include consultation on air quality monitoring results.

Attached you will see information provided to employees on respirable crystalline silica.