

Black lung

white lies

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

The first priority and concern of all in the coal mining industry must be the health and safety of its most precious resource – the miner.

Section 2(a), *Federal Coal Mine Safety and Health Act of 1969* U.S. Public Law 91-173 (USA)

Report No. 2, 55th Parliament

Coal Workers' Pneumoconiosis Select Committee

May 2017

Coal Workers' Pneumoconiosis Select Committee

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Abbreviations

ABC	Australian Broadcasting Corporation
ACARP	Australian Coal Association Research Program
AIOH	Australian Institute of Occupational Hygienists
ALARP	'As low as reasonably practicable'
AMA	Australian Medical Association
AMA-R	Approved Medical Advisor – Respiratory
Amendment Regulation	Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016
AMWU	Australian Manufacturing Workers' Union
APESMA	Association of Professional Engineers, Scientists and Managers Australia
Authority	Mine Safety and Health Authority (proposed)
BMA	BHP Billiton Mitsubishi Alliance
CDC	Centers for Disease Control (US)
CEO	Chief Executive Officer
CFMEU	Construction, Forestry, Mining and Energy Union
CMDLD	Coal Mine Dust Lung Disease
CMSHA	<i>Coal Mining Safety and Health Act 1999</i> (Qld)
CMSHAC	Coal Mining Safety and Health Advisory Committee
CMSHR	Coal Mining Safety and Health Regulation 2001 (Qld)
Commissioner	Commissioner for Mine Safety and Health
Coal Services	Coal Services Pty Ltd
committee	Coal Workers' Pneumoconiosis Select Committee
COPD	Chronic Obstructive Pulmonary Disease
CSOA	Collieries' Staff and Officials Association (Division of APESMA)
CSRC	Committee System Review Committee
CWHSP	Coal Workers' Health Surveillance Program, National Institute for Occupational Safety and Health (USA)

CWP	Coal workers' pneumoconiosis
DEEDI	Department of Employment, Economic Development and Innovation (former Queensland department, predecessor to DNRM)
DNRM	Department of Natural Resources and Mines
DRDS	Division of Respiratory Disease Studies (USA)
ECWHSP	Enhanced Coal Workers' Health Surveillance Program, National Institute for Occupational Safety and Health (USA)
EMO	Examining Medical Officer
FIFO	Fly in, fly out
Final Rule	Mine Safety and Health Administration, <i>Final Rule: Lowering Mines' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors</i> , 2014 (USA)
FEV	Forced expiratory volume
Fitzgerald Inquiry report	GE Fitzgerald, <i>Commission of Inquiry into Possible Illegal Activities and Associated Police Misconduct</i> , 1989
FTE	Full-time equivalent
FVC	Forced vital capacity
GAO	Government Accountability Office (USA)
GCG	GCG Consulting Pty Ltd (GCG Health, Safety and Hygiene)
health scheme	Coal Mine Workers' Health Scheme
HEPA	High efficiency particulate air
HIAC	Health Improvement Awareness Committee
HSU	Health Surveillance Unit, DNRM
IECEx	International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres
ILO	International Labour Organisation
ISHR	Industry Safety and Health Representative
LFA	Lung Foundation Australia
MASC	Mining and Surface Certification (South Africa)

Monash Review	Monash Centre for Occupational and Environmental Health, <i>Review of Respiratory Component of the Coal Mine Workers' Health Scheme, 2016</i>
MOU	Memorandum of Understanding
MSHA	Mine Safety and Health Authority (USA)
MUA	Maritime Union of Australia
MVSA	Mine Ventilation Society of Australia
NATA	National Association of Testing Authorities
NERZ	Negligible Explosion Risk Zones
NIOSH	National Institute for Occupational Safety and Health (USA)
NMA	Nominated Medical Advisor
NMHSA	National Mine Health and Safety Academy (USA)
NPPTL	National Personal Protective Technology Laboratory (USA)
NSW	New South Wales
OCE	Open-Cut Examiner
OEL	Occupational Exposure Limit
OIR	Office of Industrial Relations
QRS	Queensland Resources Council
OSHA	Occupational Safety and Health Administration (USA)
PEL	Prescribed Exposure Limit (USA)
PHMP	Principal hazard management plan
PMF	Progressive Massive Fibrosis
PPE	Personal protective equipment
PSHTC	Pittsburgh Safety and Health Technology Center (USA)
RANZCR	Royal Australian and New Zealand College of Radiologists
RIS	Regulatory Impact Statement
RPE	Respiratory protective equipment
RS14	Recognised Standard 14: Monitoring of respirable coal dust
RS15	Recognised Standard 15: Underground dust control

Senate Committee	Federal Senate Select Committee on Health
Senate Committee report	Senate Select Committee on Health, <i>Fifth Interim Report: Black Lung: "it has bugged my life"</i> , Commonwealth of Australia, April 2016
SHMS	Safety and health management system
SIMTARS	Safety in Mines Testing and Research Station, DNRM
SPIROLA	Spirometry Longitudinal Data Analysis
SSE	Site Senior Executive
SSHR	Site Safety and Health Representative
TARP	Trigger action response plan
TEOM	Tapered element oscillating microbalance
TSANZ	The Thoracic Society of Australia and New Zealand (TSANZ)
UK	United Kingdom
USA	United States of America
WHO	World Health Organisation
WCRA	<i>Workers' Compensation and Rehabilitation Act 2003 (Qld)</i>

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Foreword

This report is an anatomy of yet another disaster in Queensland's coal mining industry.

'Black lung' is not quick, like a mine explosion, but an insidious disease that develops over many years.

However, like mine explosions, black lung is preventable. The results are no different – death, illness and enormous changes in working and family lives. Miners and their families are never the same again.

The committee received harrowing evidence from workers and their families resulting in tears from some of the toughest of coal miners and their partners, workmates, neighbours and friends. As a committee, we too shed tears of sorrow, disbelief and anger, because the system let down these men and women of The Deep.

Our bipartisan pursuit of the truth was dogged and we crashed through numerous obstacles to expose what have been catastrophic failings in public administration in Queensland.

We thank all individuals and organisations who assisted us, especially the coal miners and their families who courageously shared their personal stories, their medical histories and their dedication as coal cutters.

We also thank our committee staff and counsel assisting, who devoted these last few months to helping us forensically examine the evidence and make sense of the system failures, so that we could best aid and support our coal miners.

Together, we are very experienced Members of the Queensland Legislative Assembly. Working together on the black lung inquiry has been a journey of shared humanity; deeply humbling and a sincere honour for us all.

For the coal workers of Queensland.



Jo-Ann Miller MP

Chair



Hon Lawrence Springborg MP

Deputy Chair

Executive Summary

Introduction

This report contains the findings and recommendations of the Coal Workers' Pneumoconiosis (CWP) Select Committee (committee) of the Queensland Parliament on its inquiry into the re-identification of CWP in Queensland. The committee found that there has been a catastrophic failure, at almost every level, of the regulatory system intended to protect the health and safety of coal workers in Queensland. As a result of that failure, 21 Queensland coal miners have now been diagnosed with CWP – an insidious but entirely preventable disease. Many more coal miners are likely to be diagnosed with this latent onset disease in future. Significant reform of the regulatory framework for coal mining in Queensland is urgently needed.

The committee inquiry and its process

The committee was established by the Queensland Parliament on 15 September 2016 to conduct an inquiry and report on the 're-emergence' of CWP amongst coal mine workers in Queensland.

The committee tabled an interim report on 22 March 2017.

On 23 March 2017, the parliament provided the committee with additional terms of reference in relation to other workforce cohorts and occupational respirable dust issues. The parliament also extended the reporting date for the committee's initial terms of reference from 12 April 2017 to 29 May 2017. This report follows on from the interim report and is the final report of the committee on the initial terms of reference.

This report sets out the committee's findings on its initial terms of reference and makes recommendations for wide-ranging and substantial changes to the regulation of coal mining in Queensland and the protection of the mining industry's most precious resource – its workers.

The committee received 47 submissions addressing its initial terms of reference.

To date, the committee has held 27 public, 15 private hearings and one departmental briefing. Over the course of these hearings, the committee has taken evidence from 190 witnesses.

The committee held 13 of these public hearings in Brisbane, during which it received evidence from government departments and agencies, medical specialists, occupational safety and health professionals, union representatives, academics, mining engineers, mine operators, retired and former coal miners, and coal mine workers presently employed in the industry. The committee also heard testimony from a number of individual coal mine workers who have been diagnosed with CWP, and their families.

The committee's 14 regional public hearings were held in regional centres and mining towns, including: Ipswich, Mackay, Rockhampton, Collinsville, Moranbah, Dysart, Middlemount, Tieri, Blackwater, and Emerald.

The Queensland coal industry

Queensland is rich in natural resources of coal deposits, metallic and non-metallic minerals, and petroleum. An estimated 35 billion tonnes of high quality coal resources has been identified in reserves across the state.

Currently, there are 51 operating coal mines in Queensland, of which 11 are underground and 40 are open-cut mines.

Australia is the world's fourth largest producer, accounting for 7.2 per cent of global coal production in 2015. Queensland accounts for 52 per cent of Australia's black coal production, positioning the state as a significant regional producer. Ninety per cent of the 244 million tonnes of coal produced in Queensland in 2015-16 was sourced from the Bowen Basin.

Coal is our leading export, generating \$21.4 billion in export revenue in 2015-16. The coal industry contributed \$1.6 billion in royalties, out of a Queensland total of \$2.2 billion from the resources industry, in 2015-16. This represents over 10 per cent of the state's total taxation and royalty revenue.

The coal mining industry in Queensland employed 29,428 workers as at September 2016. Of these, 24,146 worked in open-cut or exploration coal mines and an additional 5,282 were employed in underground coal mines.

During the coal mining boom, mine operators and workers often appear to have focused on increased production targets, with sometimes inadequate regard for health and safety. In the same period, the number of contract employees working across the industry increased.

The committee heard from a number of sources that labour hire or contract mine workers are less likely to raise concerns about safety issues or to challenge decisions, due to the insecurity or lack of permanency in their employment arrangements – a perception that persists throughout Queensland's mining industry.

Coal workers' pneumoconiosis and coal mine dust lung diseases

CWP is a type of pneumoconiosis solely caused by prolonged exposure to coal mine dust. It is one of a broad group of coal mine dust lung diseases (CMDLD) caused by exposure to respirable coal mine dust over several years. Disease develops from the deposit of dust particles and the reaction of the lung tissue to the dust.

There are three primary types of lung disease that are classified as pneumoconiosis:

- asbestosis, cause by the inhalation of asbestos dust particles
- silicosis, caused by the inhalation of silica dust particles, and
- CWP, caused by the inhalation of fine coal dust particles.

Emphysema, chronic bronchitis, lung function impairment, and diffuse dust-related fibrosis are other manifestations of CMDLD.

Numerous coal mine workers and their families informed the committee of significant dust on their bodies and their clothing after working a shift in a mine. Some reported coughing up black mucus for years after working in the coal industry.

Early detection of asymptomatic CWP is vital so that those still in the workforce can be removed from exposure and the possibility of their developing complex CWP reduced. Tragically, many sufferers of CWP continued to work in dusty conditions while their condition remained unidentified.

A diagnosis may be easily missed, or assumptions made that the loss of function associated with CWP is due to reduced fitness, age, or lifestyle factors such smoking. It remains unknown how many deaths have been wrongly attributed to lung diseases other than CWP.

As at 29 May 2017, 21 current and former coal mine workers in Queensland have been diagnosed with CWP or 'black lung' disease. In summary:

- all cases have been formally confirmed through the DNRM process
- two cases were described as 'complex', presenting with multiple conditions
- 17 cases involved miners who were actively working in the Queensland coal industry at the time of their diagnosis
- three were retired or former coal miners at the time of diagnosis
- current ages ranged from 38 to 74, with an average age of 56
- two cases involved open-cut coal mine workers with no underground experience
- four had substantial overseas coal mine experience (UK and USA)

- two had worked in New South Wales (NSW) coal mines as well as in Queensland
- two had worked in the Ipswich coal fields
- all had worked in Bowen Basin coal fields at some point in their careers, and
- all had previously undertaken Coal Mine Workers' Health Scheme (health scheme) assessments and been certified as fit for work in coal mines.

A detailed schedule of confirmed cases of CWP in Queensland, de-identified to protect the privacy of these miners and former miners, appears at Appendix G to this report.

The re-identification of this entirely preventable disease has, quite properly, shocked and dismayed all involved in the coal industry and the public generally.

The committee considers that the overwhelming weight of evidence gathered in the course of this inquiry suggests it is likely that many more Queensland miners and former miners will be diagnosed with CWP or a related CMDLD as a result of what has been a catastrophic failure of the regulatory and health surveillance systems intended to ensure the protection of coal industry workers.

The re-identification of the disease was first formally publicised in September 2015, when the then Commissioner for Mine Safety and Health reported that the 'first case of coal workers' pneumoconiosis in a Queensland coal miner in 30 years was reported this year'. That worker was diagnosed in May 2015.

Prior to this, it was widely accepted by coal mine operators, managers, workers and regulators that Australia had effectively eradicated CWP. This pre-conditioned most in the industry to under-estimate the extent of the potential risk that respirable coal mine dust still posed.

The committee noted the tragic irony that Queensland, with no apparent diagnosed cases of CWP for many years, had attracted the interest of occupational health experts in the United State of America (USA), who sought to study why a region with a similar coal mining industry to their own had no reported cases of CWP, while the USA had many thousands of cases per year.

Prior to 2015, coal miners in Queensland were routinely told that CWP had been eradicated.

Until the re-identification of CWP in 2015, the entire coal mining industry in Queensland (and NSW) seemed to believe that CWP had been eradicated in Australia, with the last cases reported in Queensland in the 1980s. This view was accepted by DNRM, Queensland Health, the Department of Industrial Relations, coal mine operators, the Queensland Resources Council (QRC), trade unions, and coal workers. This is particularly concerning given the continuing high rates of CWP diagnoses in the USA over the same period. However, it seems that all stakeholders accepted at face value that the health scheme had not identified any cases of CWP in Queensland since 1984, and therefore, that it must have been eradicated here.

However, the evidence gathered by the committee overwhelmingly suggests otherwise. It is highly unlikely CWP was ever eradicated in Queensland.

An improved regulatory framework

There has been a catastrophic failure of the regulatory system that was intended to preserve and protect the health of coal miners. An improved regulatory system, including a truly independent regulator and fully functional health scheme, is clearly needed. Elements of the current system are working and should be maintained, but substantial structural change is necessary.

Queensland's coal mining industry needs a more effective system of oversight and compliance, including greater levels of transparency and accountability surrounding the roles and responsibility of all industry players.

Given the nature of the system breakdown in relation to CWP, it is clear that DNRM's attempts to amend or improve the system within the limits of the current regulatory structure have been

inadequate, resulting in a superficial treatment of some issues. This piecemeal approach will not be sufficient to restore workers' trust in the system or in the adequacy of the protection it affords them.

Importantly, it is clear that the responsibility for overseeing the health and safety of workers should not rest with the body also charged with promoting and supporting the industry; namely DNRM. While the objectives of a productive coal industry and a safe and healthy workforce are not altogether incongruous, this split focus is not in the best interest of either goal.

A dedicated and independent statutory mining safety and health body would be best positioned and most trusted by workers and the wider industry to address these aims without dilution. The committee notes the demonstrated benefits of such bodies in NSW and the USA.

The Commissioner for Mine Safety and Health must also be given proper statutory independence, free from administrative or political control by the department or Minister.

Currently, under part 5A, section 73A of the *Coal Mining Safety and Health Act 1999* (Qld) (CMSHA), a person may hold both the office of Commissioner and another position under the *Public Service Act 2008* (Qld). Until the appointment of the current Commissioner, all previous occupants of that role have simultaneously held senior roles within DNRM, including as Director-General or Deputy Director-General.

The committee considers this lack of statutory independence of the Commissioner has the potential to adversely impact on the extent to which a Commissioner is able to fully discharge her or his responsibilities to undertake compliance activities (including prosecutions), review the implementation of the legislation, and provide advice to the Minister on safety and health matters. The lack of statutory independence of the Commissioner compromises the perception of independence from DNRM and undermines the confidence of the mining industry and the public generally in the ability of the Commissioner to act independently of the department or the Minister.

In forming its structural recommendations, the committee has looked to other jurisdictions, including NSW and the USA, for guidance and examples of elements that could best apply in Queensland.

Only a truly independent regulatory body, charged with responsibility for ensuring the safety and health of Queensland's mine and resource industry workers, can restore public faith in the system.

Therefore, there should be a Mine Safety and Health Authority, established as a statutory authority and body corporate, with responsibility for ensuring the safety and health of mining and resource industry workers in Queensland. **(Recommendation 1)**

The Mine Safety and Health Authority should be established under its own legislation as a 'unit of public administration' for the purposes of the *Crime and Corruption Act 2001* (Qld) and a 'public authority' for the purposes of the *Right to Information Act 2009* (Qld). **(Recommendation 2)**

The Mine Safety and Health Authority should be governed by a board of directors, chaired by the Commissioner for Mine Safety and Health, and including representation of:

- coal mine operators
- metalliferous mine operators
- unions
- resources transportation and ports, and
- persons independent of the mining industry (including resources transportation and ports).

(Recommendation 3)

A parliamentary committee should oversee and monitor the operation of the Mine Safety and Health Authority. The Minister should be required to consult with the parliamentary committee regarding the appointment of the Commissioner and board. **(Recommendation 4)**

The Mine Safety and Health Authority should be established in Mackay, ensuring the Commissioner, senior management, the Mines Inspectorate, and the Coal Workers' Health Scheme and mobile units are all based in central Queensland. **(Recommendation 5)**

The Commissioner for Mine Safety and Health should be a senior officer of the Mine Safety and Health Authority and given proper statutory independence, with the Commissioner not subject to the direction of the Minister. **(Recommendation 6)**

The Mines Inspectorate, currently within DNRM, should be administratively relocated within the Mine Safety and Health Authority, ensuring statutory and administrative independence from DNRM. **(Recommendation 7)**

The Commissioner should have an express power to direct inspectors, including the chief inspector, inspection officers and authorised officers, in relation to the investigation of a possible offence or offences against the mining safety and health Acts. **(Recommendation 8)**

The Safety in Mines Testing and Research Station (SIMTARS) should be dissolved as an entity within DNRM.

The research, testing and certification, and training functions of SIMTARS should be administratively relocated within the Mine Safety and Health Authority.

The occupational hygiene services currently offered by SIMTARS on a fee for service basis should be discontinued. The officers who currently provide those services should be redeployed to the Mine Safety and Health Authority to undertake research and/or occupational hygiene inspection activities within the inspectorates. **(Recommendation 9)**

The Mine Safety and Health Authority should encompass and have responsibility for administering a new Coal Workers' Health Scheme, supported by a Memorandum of Understanding (MOU) with Queensland Health and the Office of Industrial Relations to ensure full and complete cooperation and appropriate data-sharing between those entities. **(Recommendation 10)**

The Mine Safety and Health Authority, including the Coal Workers' Health Scheme, should be supported by an expert Medical Advisory Panel (as recommended by the 2002 review of the Health Surveillance Unit) of suitably experienced and qualified medical specialists and internationally recognised experts, including at least two respiratory physicians (one of whom has internationally recognised experience and expertise in the prevention, identification, and treatment of CWP) and at least one specialist in occupational medicine. **(Recommendation 11)**

The Mine Safety and Health Authority should appoint a suitably qualified and experienced specialist physician, registered as such with the Australian Health Practitioners' Regulation Agency (AHPRA), as Executive Director – Medical Services to lead the Coal Workers' Health Scheme. The Executive Director – Medical Services should advise and assist the Commissioner and board of directors on medical matters, provide clinical guidance and leadership in relation to the health and health-related safety activities of the Authority, oversee the approval of health service providers under the Coal Workers' Health Scheme, and provide clinical oversight and guidance to Approved Medical Advisors and others performing assessments under the Coal Workers' Health Scheme. **(Recommendation 12)**

The Executive Director – Medical Services should be engaged by the Authority on a full-time basis and remunerated at a rate that is equivalent to a specialist of similar standing and responsibility employed by Queensland Health or a Queensland Hospital and Health Service. **(Recommendation 13)**

The Mine Safety and Health Authority should have a properly resourced and dedicated health research function, including epidemiological research into health conditions experienced by mine workers. These research functions should be undertaken in a collaborative way drawing upon and sharing research with leading international research bodies such as the National Institute for Occupational Safety and Health (NIOSH) in the USA. **(Recommendation 14)**

The Mine Safety and Health Authority should appoint a suitably qualified and experienced legal practitioner as General Counsel to provide general legal advice to the authority and board, and advise the Commissioner for Mine Safety and Health as to the exercise of statutory powers including in relation to prosecutions and other compliance activity. **(Recommendation 15)**

A proposed organisational chart for the Mine Safety and Health Authority appears at Appendix F to this report.

Much of the current regulatory framework for mine safety and health in Queensland, including the Mines Inspectorate, the health scheme, and part of SIMTARS is funded by a statutory safety and health fee (levy) established under the CMSHR.

The levy was introduced in 2008 to establish a framework to recover the costs of safety and health activities by the state government for the coal mining, quarrying, and explosives industries. The levy is charged to industry annually and is based on the number of workers in the industry and the budgeted cost of services. The number of workers is calculated from census forms which are required to be submitted by the responsible person for a coal mine at the end of each quarter. If the chief executive reasonably believes that the responsible person has given an incomplete or incorrect safety and health census, the mine can be called to account and the chief executive may invoice the responsible person for an amount they reasonably believe to be payable, on the basis of available facts and circumstances.

The levy is indexed to the Queensland Government's Customer Price Index rate (3.5 per cent per annum), and has not been otherwise adjusted in the decade since its establishment. In 2015-16, levy fees collected from the mining industry totalled \$38.96 million. In 2012-13, during the mining boom, total revenue reached \$44.93 million.

Mining and petroleum royalties, on the other hand, are payments made to the owner of resources for the right to extract them. As the State owns all petroleum and gas and most minerals, resource permit holders generally pay royalties to the Office of State Revenue, within Treasury. These payments are not a tax, but part of the cost of leasing the land – effectively, compensation to the State for the resource value extracted from their land. In setting royalty rates, governments aim to deliver an appropriate return for the sale of State mineral assets, while not unduly impeding the efficiency and competitiveness of the resources sector. Coal and mineral processing businesses, including those engaged in leaching, refining, smelting and other processing operations, are liable to pay royalties at a discounted rate.

A comparative review of revenue raised through mining royalties and by the levy from 2010-11 through to 2015-16 indicates that levy revenue has generally been equivalent to between one and two percent of revenue raised through royalties, at an average of 1.7 per cent for the six-year period.

The safety and health fee is not an appropriate method of funding a truly independent safety and health regulator with a fully functional mines inspectorate. The funding mechanism for these vital government functions should not be so closely tied to the number of workers employed in the mining industry at any given time.

The safety and health fee currently provided for by part 2A of chapter 2 of the Coal Mining Safety and Health Regulation 2001 (CMSHR) should be abolished. **(Recommendation 16)**

A designated proportion of coal and mineral royalties paid to the Queensland Government would be a more appropriate and robust funding mechanism than the current levy, to support the full-funding of safety and health activities within the mining industry.

The Mine Safety and Health Authority should be funded by a dedicated proportion of coal and mineral royalties paid to the Queensland Government, to be determined in consultation with industry and unions after an assessment of the operating costs of the Authority is undertaken. The dedicated proportion of the royalties should be fixed by regulation and reviewed periodically by the parliamentary committee responsible for the Mine Safety and Health Authority. **(Recommendation 17)**

Any surplus income derived from the dedicated proportion of royalties that is not allocated to or expended by the annual budget of the Authority should be invested with the Queensland Investment Corporation for the future research and operational needs of the Authority. **(Recommendation 18)**

Occupational exposure limit for coal mine dust

The current occupational exposure limit (OEL) for respirable coal mine dust is set by the CMSHR. It requires a shift-adjusted average concentration of coal dust of not more than 3.0 milligrams per cubic metre (mg/m^3) for the equivalent of an eight hour shift. The OEL for coal dust in Queensland is nominally the highest of any Australian jurisdiction. In NSW, it is $2.5 \text{ mg}/\text{m}^3$. In the USA, the legislated OEL is $1.5 \text{ mg}/\text{m}^3$. There is strong evidence that the limit should be $1.0 \text{ mg}/\text{m}^3$.

Although these various standards are not directly comparable due to a range of differences in sampling methodology and calculation, the *Monash Review of Respiratory Component of the Coal Mine Workers' Health Scheme* (the Monash Review) noted that on the face of it, Australia and New Zealand generally seem to have 'the highest value listed for respirable dust', and Queensland especially so.

In late 2016, Safe Work Australia (SWA) commenced a review of workplace OELs, including respirable coal dust and respirable silica. The committee understands SWA aims to release a consultation Regulatory Impact Statement (RIS) for public comment in October 2017. DNRM submitted that outcomes of this scientific evaluation and the SWA finding will inform any changes to the exposure standards in Queensland for respirable coal dust.

These issues of timing were also noted by the federal Senate Select Committee on Health (Senate Committee) in its fifth interim report, *Black Lung: 'It buggered my life'* (Senate Committee report), which proposed an interim OEL of $2.5 \text{ mg}/\text{m}^3$ be imposed until the SWA review process could be completed. The QRC endorsed this position, suggesting that 'in the short-term, coal mining companies adopt the lowest Australian level ($2.5 \text{ mg}/\text{m}^3$) for coal dust exposure'.

There is ample scientific evidence that the current OEL for respirable coal mine dust in Queensland is exposing coal mine workers to excessive risk of developing CWP, CMDLD and other respiratory disease. It is intolerable for Queensland coal mine workers to be expected to await the outcome of the SWA review before the Queensland OEL is reduced to meet international standards.

The Queensland OEL for respirable coal dust (including mixed mineral coal mine dust) should immediately be reduced such that it requires duty holders to ensure a 'coal worker' is not exposed to atmosphere containing respirable dust exceeding an average concentration, calculated under Australian Standard AS 2985, equivalent to the following for an eight hour period:

- for coal mine dust (including mixed mineral coal mine dust) – $1.5 \text{ mg}/\text{m}^3$ air
- for silica – $0.05 \text{ mg}/\text{m}^3$ air.

Section 89 of the CMSHR should immediately be amended to give effect to this recommendation.

Consideration should then be given to relocating the OEL provisions within the CMSHR. **(Recommendation 19)**

Coal dust management

Over the last 30 years, advances in mining equipment technology and methodology have contributed to a significant increase in coal production in Queensland. This increased productivity has meant that more dust is being produced. While there has been limited publication or analysis of resulting respirable dust exposure levels, the available evidence points to the inevitable conclusion that exposure levels have similarly increased.

Stakeholders submitted that a wide range of suitable and effective mitigation technologies and dust control methods have been developed and can be used by industry to address these dust concerns. Professor David Cliff noted that the Australian Coal Association Research Program (ACARP) 'has spent probably \$20 million over the past 20 years investigating the various mechanisms for controlling

longwall dust'. The committee heard evidence that mining companies have also invested significantly in controls, particularly in recent years.

Submissions from equipment suppliers also highlighted emerging technologies which offer further opportunities to reduce dust and exposure levels. However, even proactive mine operators face difficulties in adapting to changing conditions and balancing more immediate safety concerns, including poor strata (roof) stability and gas risks (inhalation or ignition/explosion).

These challenges aside, dust control evidently was not prioritised nor made a significant focus of attention for many operators prior to the re-identification of CWP.

The Senate Committee found that operators and the QRC had generally displayed a 'cavalier attitude... towards dust monitoring and mitigation' and placed a 'low priority on their statutory responsibility to provide satisfactory personal protective equipment (PPE) and to ensure workers wear PPE and remove themselves from hazards'.

This committee's findings are consistent with the Senate Committee's findings. Operators apparently felt comfortable that the controls in place were sufficient and they engaged in limited review of their efficiency in the absence of health-based indicators to re-affirm the dangers of the respirable dust hazard and highlight shortcomings in mitigation efforts.

Workers suggested that the success of controls has been limited by multiple factors including:

- poor design or ineffectual implementation
- prioritisation of production over safety concerns
- a reported reluctance of workers to raise safety concerns, and
- inadequate procedures and worker training.

Mine entry records and directives issued by the Mines Inspectorate over the last five years suggest that dust engineering controls are 'either turned off or used sporadically, depending on a whole pile of concerns'. In underground settings poor positioning and maintenance of sprays, a lack of water pressure, and a failure to regularly change cutter picks were among several such cited factors. Regarding open-cut settings, the committee heard repeated testimony of insufficient use of suppression sprays on dusty roadways and the ongoing use of damaged vehicle cabins on operating equipment that do not provide an effective barrier or protection from respirable coal dust.

In open-cut environments, dust risks appear to have been especially neglected because of a false assumption that only underground workers could contract CWP.

A pro-active system of regulatory approval for dust mitigation and abatement plans, similar to that used in NSW, is preferable to the current reactive regulatory approach, which requires inspectors to discover incidents of dust exceedances after they have occurred and then consider coercive action such as the use of directives.

The CMSHA and CMSHR, as necessary, should be amended to provide that:

- a) An underground mine operator is required to submit to the authority a dust abatement plan and ventilation plan for approval by the Commissioner for Mine Safety and Health before any underground coal mining operations are commenced; and again, with appropriate amendment as necessary, before mining operations are commenced on any new longwall block.
- b) An above-ground (surface) mine operator is required to submit to the authority a dust abatement plan for approval by the Commissioner for Mine Safety and Health before any mining operations are commenced.
- c) The Commissioner for Mine Safety and Health must take into account the mine operator's compliance history and record of respirable dust monitoring results in deciding whether to approve, reject, or require amendments to the dust abatement and/or ventilation plans.

(Recommendation 20)

It should be an offence for a mine operator to commence or continue mining operations, without the prior approval by the Commissioner for Mine Safety and Health of the required dust abatement plan and, where applicable, the required ventilation plan for the relevant mining operation. **(Recommendation 21)**

Many of the workers who gave evidence to the committee expressed a view that an emphasis on production volumes and profits across the industry had contributed to a tendency for safety concerns to be overlooked and corrective actions postponed. Submitters and witnesses particularly highlighted the role of production targets and bonuses in discouraging action on safety concerns.

However, the committee notes that there is also recognition amongst stakeholders that occupational health and safety and high levels of production need not be competing aims, but rather can be mutually supportive when part of a sustainable production approach that recognises the long-term benefits of minimising health and safety-related productivity loss and compensation costs.

The committee notes that some high-producing mines have demonstrated a strong commitment to addressing respirable dust and establishing a culture of health and safety reporting. This is in keeping with recent USA coal industry research which has found that after controlling for other variables, a 10 per cent increase in real total revenue per hour worked was associated with decreases in the incidence rates of reported injuries (0.9 per cent), reported injuries with lost workdays (1.1 per cent), and the most serious injuries reported (1.6 per cent).

There appears to be a considerable gap in perception between senior managers and mine workers as to the degree to which workers feel comfortable reporting their concerns in relation to respirable dust levels. A number of workers expressed a view that individuals who raise their concerns tend to be 'punished' by way of relegation to lesser duties, or less favourable working conditions. The vulnerability of labour hire workers especially was a recurring theme in worker testimony. Despite reports from some site senior executives (SSEs) that they were confident that these workers can and often do raise issues on site, few workers appear to perceive this as the case.

Clearly, there is some disconnect between mine operators and their senior staff – who have repeatedly assured the committee that all workers are encouraged to report safety and health concerns – and mine workers who do not believe they can make such reports without being subject to adverse consequences.

Coal mine operators have not done enough to encourage all workers, including labour hire workers, to report safety and health concerns and assure them that such reports will not result in adverse consequences or reprisal action.

The Commissioner for Mine Safety and Health should actively promote awareness in the mining industry that it is an offence for any person to cause a detriment to another person because, or in the belief that, the other person made a complaint or has in any other way raised a coal mine safety issue. The Commissioner should also give special attention to the investigation of any complaints of such conduct and should consider prosecuting offences of this nature if there is sufficient evidence and it is in the public interest to do so. **(Recommendation 22)**

The industry currently has a number of avenues through which it can identify and share emerging developments in dust mitigation. However, the committee heard evidence suggesting that collaborative efforts across industry have at times been characterised by a lack of open information exchange and by general inertia. The committee found that other jurisdictions have more robust mechanisms for the sharing of information around emerging dust suppression technologies and related occupational health and safety research.

In the USA, the NIOSH Office of Mine Safety and Health and the Mine Safety and Health Administration (MSHA): Dust Division in Pittsburgh widely promote the findings of their extensive programs of research into dust mitigation and monitoring technologies and developments. The MSHA Dust Division in Pittsburgh utilises a full-scale above-ground longwall and continuous miner facilities to test and assess various dust mitigation techniques and technologies.

By comparison, DNRM's SIMTARS has a relatively constrained budget and focuses more on its established research expertise areas of explosive risks, management and emergency response, and mine rescue.

A centralised dust abatement database should be established in Queensland, similar to that recently implemented in NSW. Many operators already maintain such records for internal auditing purposes. Further, there should be a more comprehensive and well-funded research focus from SIMTARS researchers (to be undertaken within the new Research Division of the Authority), which would extend their world-leading expertise in explosions and mine rescue to incorporate a broader focus on occupational health issues.

Queensland's Mine Safety and Health Authority should establish a database of dust mitigation techniques and technologies used in Queensland coal mines to be used for auditing purposes and to inform research and analysis into the efficacy of engineering dust controls. **(Recommendation 23)**

The Mine Safety and Health Authority should research and review new dust mitigation techniques and technologies being used in jurisdictions such as NSW and the USA and publish its findings to ensure all those involved in coal mining in Queensland may be aware of world-leading dust mitigation practices. **(Recommendation 24)**

Monitoring of respirable coal dust exposure

A systematic, transparent and auditable exposure monitoring program is an essential part of best practice dust management in coal mines, offering a means by which to assess exposure and consequently health risk, and to also evaluate the effectiveness of the system of controls in place.

Prior to the regulatory changes that commenced on 1 January 2017 (introduced in response to the re-identification of CWP in Queensland), mine operators were not required to report dust monitoring results to the Mines Inspectorate. When the results exceeded the time-weighted OEL, mine operators were required under the risk-based regulatory framework to review and refine their systems to ensure risk to workers was at an 'acceptable level'.

However, the evidence gathered by the committee clearly indicates that often exceedances were not investigated and did not result in any changes to work practices or operations.

The absence of any regulated oversight of respirable dust monitoring or mandatory reporting of exceedances prior to 1 January 2017 allowed a culture of complacency and disregard for the serious risk posed by respirable dust exposure to develop across industry. Risk-based self-regulation of respirable dust as a hazard has failed to protect coal mine workers from repeated and significant exceedances of the OEL for respirable coal mine dust.

Real-time personal dust monitoring devices are an essential tool in the ongoing effort to mitigate the production and dissemination of respirable dust in coal mines. Their use by coal mine workers promotes worker confidence in the dust monitoring data gathered for compliance purposes and empowers coal mine workers to take charge of their own respirable dust exposure.

It is most concerning that despite senior officers from DNRM and SIMTARS making regular visits to the United States (USA) for meetings and consultation with MSHA and NIOSH over at least the past decade, it does not appear that any of them sought out information about the extensive research being conducted in the USA into the use of real-time personal dust monitoring devices including the PDM3700 (and its predecessors). Had those officers brought such information back to Queensland following any of those international visits, the implementation of these devices in Queensland mines might have been much further advanced than it is now.

Real time personal dust monitors, such as the Thermo Scientific PDM3700, should be assessed having regard to the scientific information already available world-wide, and if possible, certified for use in underground coal mines as soon as possible. **(Recommendation 25)**

An industry working group including coal mine operators, unions and government should be tasked with exploring the use of real time personal dust monitors as a compliance tool, including canvassing amendments to *Recognised Standard 14: Monitoring of respirable coal dust (RS14)*, to enable the use of real time personal dust monitors for compliance monitoring and reporting. **(Recommendation 26)**

The definition of 'further sample' in section 89A(5) of the CMSHR should be amended to allow the use of real time personal dust monitors, such as the Thermo Scientific PDM3700, for resampling after a trigger event. **(Recommendation 27)**

The inadequacy of the provisions for self-monitoring and management of dust exposures in Queensland mines was a central theme in evidence to the inquiry. Without sufficient guidance or oversight from the Mines Inspectorate and the Commissioner for Mine Safety and Health, these internal processes were vulnerable to deterioration over time, effectively enabling the deficient practices highlighted in evidence from coal mine workers. A wide range of submitters called for expert independent monitoring or third party review of monitoring data. Some noted that under the current system, questions about the quality and reliability of monitoring have persisted, due largely to the potential for service providers to be conflicted or constrained in their operations by the instructions they receive and their financial reliance on mining operators.

Some of these conflicts have been addressed through the recent regulatory amendments requiring companies to provide all dust monitoring results to the Mines Inspectorate, and to provide details of any exceedances to the Inspectorate, the Industry Safety and Health Representative (ISHR) and the Site Safety and Health Representative (SSHR). The development of a dust monitoring database for collation and recording of results will also address issues surrounding shortcomings in record-keeping, and support analysis of exposure data and trends over time.

Additionally, the establishment from 1 January 2017 of RS14 provides for the setting out of clear minimum standards of practice in relation to monitoring, helping to address concerns about sometimes 'patchy' services and variability in the diligence of private sector service provision in the occupational hygiene sector.

The committee notes that there is significant faith in the monitoring services provided by SIMTARS. A number of submitters considered SIMTARS might appropriately take charge of all monitoring in the state, noting that it already provides training to other service providers on best practice in dust monitoring. However, the committee also considers that our state's research body on mining safety and health should be more appropriately focused on the identification and dissemination of research and technological breakthroughs, to support a responsive and cutting edge industry. In addition, the committee considers that SIMTARS' current fee-for-service offerings sit uncomfortably with these aims, and notes that there is a significant body of professional expertise within the private sector.

Accordingly, the committee considers that Queensland would be best served by requiring companies to engage licensed and qualified private providers to conduct monitoring, and incorporating additional safeguards to ensure the integrity of monitoring in Queensland. In particular, in order to ensure the independence of sampling actions, it is important that there is a complete separation between mining operators and private occupational hygiene service providers. Mining companies must not have a commercial or any other interest in the providers they engage or in an associated third party entity.

All commercial providers of atmospheric dust monitoring for the purposes of compliance with the regulation should be required to be approved by the Commissioner for Mine Safety and Health, having regard to the expertise and qualifications of the person or entity conducting the monitoring. **(Recommendation 28)**

Results of all atmospheric dust monitoring undertaken in compliance with the regulation should be provided directly by the approved entity engaged to undertake the tests to each of the following: the Mine Safety and Health Authority, the coal mine operator (or person conducting the business at which the testing was undertaken), the miner who wore the device from which the test sample was taken,

and the relevant ISHR, district workers' representative, or union delegate for the business at which the testing was undertaken. **(Recommendation 29)**

Enforcement and oversight of coal dust management

It is important that the instances of inadequate mitigation and monitoring practices reported to this committee are recognised as failures not only of compliance with legislation, but also of enforcement of the legislation. Regulations are only effective if the responsibilities and requirements encompassed within them are clearly articulated to relevant parties, and reinforced through appropriate oversight and guidance around the measures necessary for statutory obligations to be met.

In the field of occupational health and safety, there is often a distinction between efforts to address safety issues, which involve more immediate risks of physical danger, and health issues, which typically involve longer term or chronic risks and effects. The committee heard evidence that the history of coal mining incidents and multiple fatalities in Queensland, including the explosions at the Kianga and Moura mines that underpinned the development of the current legislation, has meant safety has often been at the forefront of enforcement efforts in Queensland. It was submitted that the skills, resources and inspection culture of the Inspectorate reflects this historical emphasis.

The primary focus of DRNM inspectors and SIMTARS on mine safety, rather than miners' health and the risks posed to it by exposure to respirable dust, was also evident in the travel reports obtained by the committee under summons. The documents produced included proposal memoranda, travel reports, itineraries and correspondence. The content of the documents clearly demonstrates a focus on international cooperation and knowledge sharing around mine safety, explosion risks and strata management. Unfortunately, there did not appear to be any focus on the part of Queensland public servants on respirable dust mitigation or monitoring technologies. On review of the documents produced by DNRM there was only one cursory mention of respirable dust, and not a single reference to CWP or its prevalence in the USA mining workforce.

No person or entity has ever been prosecuted in Queensland for failing to meet a safety and health obligation in relation to respirable dust.

The use of compliance powers by the Mines Inspectorate to enforce respirable dust exposure standards has been inconsistent and undermined by imprecise and ineffective language in directives. Non-compliance with directives has not been met with any real regulatory response by the mines inspectorate or Commissioner for Mine Safety and Health.

The current proportion of unannounced inspections undertaken by the mines inspectorate is totally inadequate. There must be an immediate, sustained, and significant expansion in the use of unannounced inspections by the Mines Inspectorate. The Mines Inspectorate should increase the proportion of unannounced inspections to a rate of at least 50 per cent of total inspections. **(Recommendation 30)**

Further, inspection activities by ISHR, and their equivalents under the other mining safety and health Acts, are integral to a robust and reliable risk-based approach to the regulation of safety and health in the mining industry. Industry and public confidence in this system would be significantly improved if ISHRs (and their equivalents) were empowered to undertake unannounced inspections without the requirement to give the mine operator 'reasonable notice' of the proposed inspection.

As such, section 119(1)(b) of the CMSHA and section 116 of the *Mining and Quarrying Safety and Health Act 1999* should be amended to remove the requirement for ISHRs to give 'reasonable notice' to the mine operator before the power to enter a mine site is exercised. **(Recommendation 31)**

One of the risks associated with formal and ongoing engagement between a regulator and the industry it regulates is regulatory capture. This occurs where an officer involved in administering a regulatory regime develops a relationship with the industry and may be influenced to represent their interest in advance of the interests of the regulator. The influence need not be overt, but may lead to a situation

where necessary compliance action is not taken, or when taken, is less severe than the circumstances warrant.

The Senate Committee identified that the state's 'light touch regulatory model' allows for close relationships between the Mines Inspectorate and the companies whose activities are being regulated – a situation that 'has the potential to be fertile ground for regulatory capture', particularly given the influence of the mining industry in Queensland.

The committee did not find any evidence that regulatory capture had impacted upon the inspection or compliance activities of the Mines Inspectorate in relation to respirable coal mine dust. However, current integrity policies of the inspectorate should be enshrined in regulation so that mine workers and the public may have greater faith in the independence of the mines inspectorate.

Mines inspectors should be prohibited for a limited period – perhaps six months – from inspecting mines at which they had worked within the past two years. Regulation should prohibit a person from being appointed to a statutory role at a mine (for example as SSE, underground mine manager, OCE) within six months of the person having conducted inspection activities as an inspector at that mine.

(Recommendation 32)

The Mines Inspectorate's role is to ensure that acceptable safety and health standards are established and practiced within the mining and quarrying industries. Appointed inspectors possess a range of vocational and tertiary qualifications, dependent on the inspectorate's need at the time they were recruited. Qualifications held by inspectors include; first or second class certificates of competency, underground mine managers certificate, open-cut examiner certificates, mining engineering degrees, electrical engineering degrees or diplomas, mechanical engineering degrees or diplomas, post graduate studies and professional certification in occupational hygiene or ergonomist qualifications. To ensure inspectors develop their skills and understanding of the issues facing the industry, an ongoing program of continuous professional development is undertaken. However, there is no general overall training program or course of education required for mining inspectors in Queensland.

During its visit to the USA, the committee delegation learned about the recruitment, education and training of Authorised Representatives (mine safety and health inspectors) in the USA. The National Mine Health and Safety Academy, in West Virginia, is the world's largest institution devoted to health and safety in mining. It is a central training facility for federal mine safety and health inspectors, mine safety professionals, other government agencies, and the mining industry.

The Academy is led by the Superintendent of the Academy and consists of five major units:

- Department of Instructional Services
- Department of Mining Technology
- Department of Instructional Materials
- Facilities Maintenance Branch
- Printing and Training Materials Distribution.

Entry to the Academy is open to anyone with five years' experience in the mining industry. The Academy program is an intensive residential education and training course, run over eight months. On completion of the program, inspectors become Authorised Representatives of the federal Secretary of Labor, with statutory powers under the Federal Code.

Once appointed, Authorised Representatives are generally long-term mines inspectors. The delegation was advised that there is little movement between the role of Authorised Representative and positions within industry as mine operator officials. This suggests the Academy program, coupled with a dedicated career path for inspectors, may be a useful and effective tool in avoiding regulatory capture.

The Academy accepts candidates from international mining regulators and had trained students from Peru, China, Ukraine and Columbia. However, the Superintendent was not aware of any Queensland

mine inspectors having undertaken training at the Academy, although he did recall visits from senior officials of the Mine Inspectorate and DNRM over the years.

The Mines Inspectorate should consider making training and education at the National Mine Health and Safety Academy in the USA available to current or future mines inspectors. **(Recommendation 33)**

Dust compliance auditing

While the establishment of a central dust database has been identified as having the potential to significantly increase transparency and accountability in relation to industry dust management, submitters emphasised the need for mining inspectors to carry out some degree of quality assurance of dust results. Noting that inspectors have powers of entry, the scope for unannounced testing – as is being explored by Coal Services in NSW – might more effectively address concerns that companies may 'schedule' or in some other way reduce the degree of independence of monitoring processes.

The extent to which the mines inspectorate currently undertakes atmospheric dust monitoring inspections and audits the dust sampling results obtained by mine operators is inadequate to ensure public and worker confidence in the integrity of that system.

The use of accompanied inspections by inspectors with appropriate qualifications and experience in occupational hygiene significantly improves the quality and reliability of dust exposure sampling data and is an essential part of the inspection regime.

The Mines Inspectorate should significantly increase the frequency and extent of its atmospheric dust monitoring inspections, including by undertaking accompanied inspections where inspectors with appropriate qualifications and experience in occupational hygiene observe coal workers during the period of atmospheric monitoring. **(Recommendation 34)**

A comprehensive database of dust monitoring results should be established and maintained by the Mine Safety and Health Authority. **(Recommendation 35)**

The establishment of a Standing Dust Committee, similar to that established in NSW, is a critical reform to ensure ongoing industry engagement and vigilance in addressing respirable dust issues.

A Standing Dust Committee should be established to periodically review atmospheric dust monitoring results and trends and report to the board of the Mine Safety and Health Authority. The committee should be chaired by the Commissioner of Mine Safety and Health or a delegate, and include representatives of underground mine operators, above-ground coal mine operators, metalliferous mine operators, coal ports, unions, and persons independent of the current mining industry. **(Recommendation 36)**

The Standing Dust Committee should have power to refer particular dust exceedances or trends in dust monitoring results to the Commissioner for Mine Safety and Health for consideration as to whether further investigation or enforcement action, including prosecution, is required. **(Recommendation 37)**

Health arrangements for coal workers

All Queensland coal mine workers are required under the CMSHA and CMSHR to undergo a Coal Mine Workers' Health Scheme medical assessment prior to the start of their employment at a coal mine, and then at least once every five years during their employment.

The health scheme was established in 1983 by the then Queensland Coal Board to protect the health of coal miners by requiring that all coal mine workers undergo periodic health assessments. The health scheme is prescribed under Division 6, part 2 of the CMSHR.

In April 1984, the Queensland Coal Board published a report highlighting 75 cases or suspected cases of CWP among Queensland coal miners. In the intervening years to 2015, there were no cases of CWP reported in Queensland, with the incidence of the disease appearing to all but vanish. During this

period, those tasked with monitoring the health of Queensland coal workers were not actively looking for the disease, and in many cases were insufficiently informed and ill-equipped to enable its diagnosis.

The health scheme in its current form (and prior to significant changes effective from January 2017) was introduced in 2001. Key features of the scheme from 2001 until the most recent amendments commencing on 1 January 2017 were:

- Chest x-rays were not a compulsory component of the health assessment for every worker.
- The Nominated Medical Advisor (NMA) made the decision regarding a requirement for a chest x-ray, based on a risk of dust exposure to the worker as determined by the employer.
- An ILO classification field was not required on the form, and an abnormal x-ray reading field was to be completed by the NMA, not a specialist radiologist. The form simply required a 'yes/no' response to whether an x-ray was taken, and an 'abnormal/normal' notation regarding the results of the x-ray.
- NMAs were appointed by mine employers, under direct contract between the employer and the NMA.
- An examining medical officer (EMO) could conduct the health assessment under the supervision of the NMA.
- A worker's 'fitness for duty' was signed off by the NMA.
- Periodic health assessments were to occur at least every five years.

The department's responsibilities for the scheme included:

- storage of health assessment records, including the health assessment form, chest x-ray and x-ray report
- storage of records of NMAs appointed by mine employers
- appointment of a medical specialist to review conflicting health assessments, where necessary.

The committee discovered that efforts to improve the efficiency and purpose of the so-called Health Surveillance Unit (HSU) during this period (firstly following a review in 2002 and again during the development of a proposed RIS on mine safety in 2013) became indefinitely delayed due to:

- the prioritisation of other perceived higher and more immediate risks, and
- a lack of agreement among tripartite advisory committees.

During the course of this inquiry it became apparent that CWP is not a disease that affects only underground coal mine workers. Although there have not yet been any confirmed cases of CWP identified in non-mine coal workers in Queensland, the committee heard evidence of significant dust exposure among coal mining communities, coal port terminal workers, rail workers and tunnel construction workers.

The committee considers that the current Coal Mine Workers' Health Scheme should be renamed the Coal Workers' Health Scheme, recognising the important inclusion of all workers involved in the mining, handling, processing and transportation of coal. **(Recommendation 38)**

Following the re-identification of CWP in Queensland in 2015, the Minister for Natural Resources and Mines, the Hon. Dr Anthony Lynham MP, commissioned an independent review of the respiratory component of the Coal Mine Workers' Health Scheme by the Monash Centre for Occupational and Environmental Health in collaboration with the University of Illinois, Chicago (the Monash Review).

Regrettably, the approach taken by DRNM to engaging a team of recognised experts to conduct this independent review was seriously flawed. Notwithstanding that Dr Robert Cohen and his team from the University of Illinois had initially proposed the review of the health scheme following the first cases of CWP in Queensland being reported in late 2015, DNRM's preferred approach at the time was that Monash University would be the primary contractor for the review, with the university undertaking a subcontract with Dr Cohen. The committee cannot understand why DNRM determined that it should

not contract directly with Dr Cohen and his team in the USA, especially given the Monash team had no specific experience in coal mining occupational health research and no experience with CWP or CMDLD. Dr Cohen attested to a delay of approximately 'eight to ten months' to complete the contract process, during which time his team worked unpaid on the review.

The committee is dismayed that DNRM failed to accept the proposal initially offered by Dr Cohen, the world's leading expert on CWP, and his team to review the respiratory component of the Coal Mine Workers' Health Scheme. There does not appear to have been any proper basis for DNRM to insist on contracting with an Australian university in circumstances where the necessary skills were readily available and being generously offered by the world-leading expert in the field. The failure to do so ignored their recognised status as world leaders in the respiratory health of coal mine workers and unnecessarily delayed what was a critical review of a failing system. The suggestion that DNRM could not contract directly with an international university is clearly specious, as proven by the fact DNRM now contracts directly with Dr Cohen's team at the University of Illinois to provide B-reader x-ray assessments.

The Monash Review reported in July 2016 that it had discovered 'major system failures at virtually all levels of the design and operation of the respiratory component of the current health assessment scheme'. The report included 18 major recommendations for reform of the health scheme.

The Monash Review was a thorough and professional review of the respiratory component of the Coal Mine Workers' Health Scheme. Its findings and recommendations have been universally endorsed by those witnesses and organisations who gave evidence or made submissions to this inquiry relevant to that review.

The committee has adopted all but two of those recommendations, and adapted them as necessary to give effect to its own recommendations elsewhere in this report. (See **Recommendation 39**)

From 1 January 2017 the Queensland Government substantially amended the CMSHR to give effect to some of the Monash recommendations.

New features of the current scheme include:

- All new coal mine workers are to undergo a health assessment, including respiratory function test and x-ray, upon entry into the coal mining industry.
- Respiratory function tests and chest x-rays for above-ground coal mine workers are to occur at least every 10 years.
- Respiratory function tests and chest x-rays for underground coal mine workers are to occur at least once every five years.
- All medical examinations are to be performed by a person qualified and competent to conduct the examination.
- All x-rays are to be performed in accordance with the ILO Guidelines.

In addition, retiring coal mine workers may upon request voluntarily undergo a retirement examination at the expense of the employer.

Department of Natural Resources and Mines and the Coal Mine Workers' Health Scheme

The evidence gathered in the course of this inquiry has clearly demonstrated that DNRM did not adequately administer the CMSHA to ensure coal mine workers were not exposed to the serious health hazard of respirable coal mine dust. In doing so, DNRM failed to protect the health of coal mine workers with respect to respirable coal mine dust.

The Health Surveillance Unit, DNRM (HSU) was established in 1998 to administer the health scheme after the Queensland Coal Board was abolished. The HSU reports to the Executive Director of Mine Safety and Health within DNRM. The department's occupational physician works within the HSU.

The committee was deeply disturbed by the evidence uncovered in relation to the HSU. From its establishment, the HSU failed to undertake any actual health surveillance. It served as nothing more than a storage unit for miners' chest x-rays and health records.

Senior executives of DNRM gave evidence that the role of the HSU in relation to the health scheme has been purely administrative, with no meaningful data analysis or clinical review of the health assessment records received. As a consequence of this view that the HSU, despite its name, had no more than a records storage function, the responsibility for identifying problems, errors or trends in coal miners' health assessments was left entirely to the relevant mine operator, its NMA, and the individual mine worker.

This approach completely failed to meet the policy objectives of the health scheme, namely to monitor and ensure the health of coal mine workers.

Even data entry and basic administration was hopelessly under-resourced - to the point where at times the HSU was staffed by only one part-time administration officer at the lowest classification level available. In 2005, HSU operated with only one full-time equivalent (FTE) employee. While the staff level fluctuated to some extent, the highest level of resourcing for the HSU between 2005 and 2010 was three FTE staff.

As a result of this chronic and significant under-resourcing, a large backlog of data processing developed, so that by 2015 the department had 10 years of health records to process. The HSU became overwhelmed with health assessment records during the mining boom, and the committee heard that many health records of the HSU were 'stored in a janitor's cupboard next to the female toilets, and in shipping containers at the SIMTARS site at Redbank'. Environmental conditions meant that when efforts were finally made to retrieve and review those records, many were destroyed or unreadable.

In 2002 DNRM undertook a review of the HSU. This review identified a vast number of short-comings in the then system, including that there were no available records for mine workers who had either retired from the mining industry early, or changed work tasks as a result of workplace injury or illness. The review made 21 substantive recommendations for reform of the health surveillance scheme, many of which were never implemented and ultimately became the subject of similar recommendations in the Monash Review in 2016, some 14 year later.

The failure to fully implement the recommendations of the 2002 *Review of the Health Surveillance Unit* was a significant lost opportunity to improve the functioning of the Coal Mine Workers' Health Scheme and ensure the HSU actually undertook meaningful health surveillance. Had this been done, DNRM may have been alerted to cases of CWP and been in a position to take action much sooner than it ultimately did in 2015.

One of the recommendations of the 2002 review was for DNRM to appoint an occupational physician, on a part-time basis, for a period of up to two years to oversee the implementation of a 'full health surveillance program'. It was intended that the HSU be supported in the long term by a Medical Advisory Panel, consisting of up to four medical practitioners who were experienced in the mining and/or quarrying industries and including at least two persons holding a specialist registration in occupational medicine. However, that recommendation was never implemented.

The Occupational Physician's role is to provide expert medical advice and assist in the identification and assessment of occupational health hazards at mine sites.

The department appointed Dr David Smith, who was a member of the review team, as Occupational Physician. Dr Smith was Occupational Physician from 2004 until his retirement early in 2017. He was employed at 0.6 FTE.

When DNRM commenced a recruitment program to replace Dr Smith as Occupational Physician for the HSU, senior executives prepared a list of duties for the role. No one involved in the formulation of the list discussed it with Dr Smith or sought his advice as to what duties should be expected of his replacement. That is particularly galling since over the course of Dr Smith's 12 years in the role no

senior executive of DRNM ever had a discussion with him about his key duties and accountabilities. Nor had he ever participated in any form of performance review. Nevertheless, DNRM was satisfied that upon Dr Smith's retirement the role only needed to be filled on a part-time basis.

Ultimately, DNRM experienced significant difficulties in identifying and appointing a suitable candidate as Dr Smith's successor. The committee received evidence in private hearings regarding the process adopted by DNRM to appoint Dr Smith's replacement. The committee has serious concerns about the process adopted and considers that it fell well short of what the public would reasonably expect of a process to fill such an important role in the regulatory scheme intended to protect coal workers' health.

The Public Service Commissioner should review the process adopted by DNRM for the appointment of the current Occupational Physician and consider whether there was any breach of the *Public Service Act 2008* or other statutory instrument. **(Recommendation 40)**

The committee considers that the person charged with responsibility for leading and overseeing the Coal Workers' Health Scheme must be a senior medical practitioner, with qualifications and experience as a specialist physician. Nothing less can be accepted for such an important role.

The committee is gravely concerned that at present this key position within the health scheme remains filled only on a part-time status and is not remunerated at a rate equivalent to a specialist of similar standing employed within the public health sector.

The current position described as 'Occupational Physician' within DNRM should be abolished and the current functions of that role should be incorporated into the functions of the new Executive Director – Medical Services within the Mine Safety and Health Authority. **(Recommendation 41)**

As a result of under-resourcing of the HSU during the mining boom, it became overwhelmed by a large number of health assessment records and a massive backlog developed. The department estimated it holds 395,478 health records of 135,382 workers for the period from January 1983 to October 2016. As at May 2016 the department estimated 170,000 records were in a backlog of unprocessed records. The committee heard that the backlog mostly represented approximately 10 years of records from 2006, with the earliest un-entered record found to be from 2000.

As at February 2017, the department informed the committee that 111,319 records had been processed, leaving a backlog of approximately 60,000 records still to be processed. An estimated 3,500 records from the backlog are being processed per week. Thankfully, in processing the backlog of records and entering new records from 2016, the department has not discovered any previously unidentified cases of suspected or confirmed CWP.

The committee remains concerned that there are records from the backlog that may have notations indicating a suspected case of CWP and that these are not being identified as they are processed. The department is clearing the backlog, but acknowledges that it is not looking for missed cases of CWP, as 'that has not been the focus'. This is a significant missed opportunity.

DNRM did not adequately administer the CMSHA to ensure coal mine workers were not exposed to the serious health hazard of respirable coal mine dust. In so doing, DNRM failed to protect the health of coal mine workers with respect to respirable coal mine dust.

Health assessment data should be captured and stored digitally in a health assessment database in a manner that allows regular and meaningful surveillance, so that it may be used to identify trends in disease, inform policy decisions and identify regional areas or individual mines for potential scrutiny. **(Recommendation 42)**

Coal workers' health assessments

From 1993, the Coal Industry Employees' Health Scheme required coal mine managers to instruct the NMA to undertake a health assessment of a new employee. A chest x-ray was required of those entrants whose proposed duties included working in an underground mine or working in an

environment which, in the opinion of the NMA, was likely to involve exposure to dust. A key feature of the health scheme from 2001 was that the NMA made the decision regarding a requirement for a chest x-ray, based on a 'risk of dust exposure' to the worker as determined by the employer. This 'risk of dust exposure' assessment was part of the wider regulatory framework that has been described as risk based.

The committee heard that under the scheme prior to 2017, a health assessment was required every five years and a chest x-ray was required in consultation with the NMA to determine the level of risk in the mine, in terms of level of exposure to dust, in order for a worker to receive a chest x-ray. This meant that not every coal mine worker was x-rayed. Only those workers deemed to be at risk from dust exposure were required, necessarily, to be x-rayed under the scheme. In practice, it was the employer who determined whether or not a worker was at risk of dust exposure.

This arrangement is unacceptable in light of the re-identification of CWP. Health assessments under the Coal Workers' Health Scheme should be required for all coal workers, removing the current exception for workers employed for a 'low risk task'. **(Recommendation 43)**

Under the current health scheme, coal mine workers are required to undertake a health assessment upon commencing work in a coal mine for the first time, and then periodically - every 5 years for underground miners and every 10 years for above-ground miners.

The committee is satisfied there is a sufficient basis to require underground coal mine workers to undertake full health assessments including spirometry and chest x-ray or other approved imaging every three years. This recognises the overwhelming prevalence of CWP cases amongst underground coal miners.

The committee considers that all other coal workers, including above-ground mine workers, coal handling and transport workers, and coal-fired power station workers, should be required to undertake full health assessments, including spirometry and chest x-ray or other approved imaging, at least every six years.

All coal workers should be required to undertake a health assessment prior to commencing work in the coal industry, including coal transportation and handling outside coal mines. **(Recommendation 44)**

All underground coal mine workers should be required to undertake a health assessment every three years. **(Recommendation 45)**

All other coal workers (above-ground workers) should be required to undertake a health assessment at least every six years. **(Recommendation 46)**

During the course of this inquiry the committee noted Queensland Health's BreastScreen Queensland program as an example of a best practice public health screening program.

In addition to the program's network of screening and assessment service sites, BreastScreen Queensland provides mobile and relocatable screening services across Queensland. They publish a screening schedule to regional areas six months in advance on their website.

NIOSH operates a fleet of mobile screening vans to coal mine workers in coal mining regions in the USA. At no cost to the worker, the screening includes a work history questionnaire, chest x-ray, spirometry testing and blood pressure testing. NIOSH provides this service to approximately one thousand mine workers per year.

The Coal Workers' Health Scheme should obtain and utilise at least one Coal Workers' Health Scheme mobile unit, similar to those used by NIOSH, capable of delivering chest x-ray, spirometry, and general health assessments for coal workers and former coal workers in regional Queensland. **(Recommendation 47)**

The Coal Workers' Health mobile units should be properly staffed and maintained under the Coal Workers' Health Scheme. **(Recommendation 48)**

The cost of health assessments undertaken at the Coal Workers' Health Scheme mobile units should be met by the Coal Workers' Health Scheme. **(Recommendation 49)**

The committee notes that since the identification of CWP in 2015, DNRM has made information and factsheets about CWP and coal miners' health assessments available on its website. The department has also published a factsheet specifically for retired miners. However, throughout the course of this inquiry the committee secretariat has continued to field queries from mine workers and former mine workers concerned for their respiratory health on how they may obtain a respiratory health assessment and who is responsible for paying for such assessments. As at May 2017, there is no dedicated helpline service providing free and confidential advice to miners and their families concerning CWP and the health assessment process.

The entity responsible for the Coal Workers' Health Scheme should provide a public information service, consisting of a toll-free telephone helpline and online service, to give free and confidential advice to mine workers, former mine workers and their families who have concerns about their respiratory health **(Recommendation 50)**

Under the current Health Scheme, coal mine worker health assessments can be undertaken by, or under the supervision of, an NMA. NMAs are appointed by employers, including mining operators and contractors who employ coal mine workers. There is currently no requirement for the Commissioner for Mine Safety and Health, or any other regulator, to formally approve the appointment of medical practitioners as NMAs. Nor is there any formal system for vetting the addition of NMAs to the list held by DNRM. Selection and appointment of NMAs is entirely at the discretion of the mine operator, contractor or labour hire firm. The evidence obtained by the committee during this inquiry confirms the findings of the Monash Review and demonstrates the serious failings of the current health scheme.

An NMA must be a medical practitioner, but there are currently no other prescribed minimum qualifications or professional requirements, including having experience in occupational medicine or knowledge of coal mine operations.

The committee was troubled by evidence that the regulation allows for registered nurses and other non-doctors, who are designated as EMOs, to perform health assessment examinations that are later certified by a medical doctor as NMA without the doctor ever actually seeing the patient. This appears to be common practice because 'that is how the system is set up'.

None of the dozens of coal mine workers and former coal mine workers who gave evidence to the committee could recall being asked during a coal mine workers' health scheme health assessment for a detailed occupational history or history of occupational exposure to dust.

Tragically, several of the 21 Queensland coal workers now diagnosed with CWP recalled having health assessments and x-rays where they were certified as fit to work with no discussion of their occupational exposure to dust or the possibility they might have CMDLD.

The current regulatory regime fails to provide sufficient safeguards to ensure that medical practitioners engaged to perform health assessments under the health scheme possess the necessary skills and experience to properly perform those assessments.

There are far too many NMAs currently registered with DNRM to ensure they have sufficient exposure to and experience of coal mine workers to properly perform health assessments under the health scheme.

The absence of any requirement for NMAs to be approved by a regulatory body has allowed significant failures in the health scheme to develop and persist.

'Nominated Medical Advisors' should be renamed and redefined as 'Approved Medical Advisors'. **(Recommendation 51)**

Approved Medical Advisors must be approved as such by the Commissioner for Mine Safety and Health. **(Recommendation 52)**

A subset of Approved Medical Advisors with appropriate qualifications and experience in diagnosing occupational respiratory diseases should be approved by the Commissioner for Mine Safety and Health to conduct respiratory health assessments and designated as Approved Medical Advisor – Respiratory (AMA-R). **(Recommendation 53)**

The committee heard that high quality chest x-rays and spirometry (lung function testing) are vital components of a successful respiratory health surveillance program. The Monash Review found grave deficiencies in the standard of x-rays taken for the health scheme and in the competence of medical professionals interpreting the scans. Similar deficiencies in spirometry quality were apparent. The committee was shocked to hear evidence in March 2017 that around 20 per cent of new x-rays taken under the health scheme and sent from Queensland to the USA for reading by accredited B-readers continue to be of such poor quality they are unreadable.

The committee considers that comprehensive and specific training is essential to ensure those who are engaged to read and assess chest x-rays under the health scheme are able to do so properly. However, it is not necessary for Queensland to 're-invent the wheel', expending limited resources on providing training that is already available elsewhere.

It is clear there has been widespread systemic failure across all aspects of the health scheme. Significant further reform is immediately needed.

All health assessments under the health scheme should include spirometry testing undertaken by an appropriately qualified and experienced person or provider, approved by the Commissioner for Mine Safety and Health. **(Recommendation 54)**

All health assessments under the Coal Workers' Health Scheme should include a chest x-ray taken by an appropriately qualified and experienced person or provider, approved by the Commissioner for Mine Safety and Health. **(Recommendation 55)**

All coal workers' chest x-rays taken for the purposes of the Coal Workers' Health Scheme should be read and interpreted by an appropriately qualified and experienced radiologist approved by the Commissioner of Mine Safety and Health. **(Recommendation 56)**

All coal workers' chest x-rays taken for the purposes of the Coal Workers' Health Scheme should be assessed and classified for pneumoconioses using the International Labour Organisation (ILO) system for classification of radiographs by appropriately qualified persons approved for such purpose by the Commissioner for Mine Safety and Health. **(Recommendation 57)**

It is essential that, in establishing the improved Coal Workers' Health Scheme, and giving effect to these recommendations, precious time is not wasted re-inventing systems, processes and policies that have already been established elsewhere and may be usefully adapted to the Queensland context. The committee is mindful that to every extent, the Coal Workers' Health Scheme must be designed and implemented to achieve the best possible health outcomes for our coal workers.

Dr Robert Cohen has indicated his desire and willingness to help establish a world's best practice Coal Workers' Health Scheme here in Queensland. His involvement, or that of an equivalent world-leading expert in coal worker health, would help ensure industry, worker, and community confidence in the new Scheme.

Dr Robert Cohen, or another internationally recognised expert on the surveillance and management of coal workers' health, should be engaged to consult with and advise government on the establishment of the improved Coal Workers' Health Scheme and the implementation of these recommendations as soon as practicable. **(Recommendation 58)**

Queensland Health

The committee considers there is also an important role in the reforms to the Coal Workers' Health Scheme for the Chief Health Officer, Queensland.

Cases of CWP/CMDLD identified or diagnosed by medical professionals should be compulsorily reported to the Chief Health Officer, Queensland, as a notifiable disease under the *Public Health Act 2005*. **(Recommendation 59)**

The legislative framework should require the Chief Health Officer to report on an annual basis to the Mine Safety and Health Authority and to the parliamentary committee with responsibility for the authority on Queensland Health's activities in relation to CMDLD, including CWP. **(Recommendation 60)**

Industry stakeholders

The Coal Mining Safety and Health Advisory Committee (CMSHAC) was established in 2001. It is a statutory committee made up of representatives from industry, unions and government, with its primary role being to give advice and make recommendations to the Minister about promoting and protecting the safety and health of persons at mines. Between 2002 and 2015, any changes to content and requirements of the health assessment form were the subject of consultation with the CMSHAC.

The committee heard evidence that a number of key reforms to the Coal Workers' Health Scheme have failed to be implemented because they did not enjoy tripartite support within the CMSHAC. Whether or not there is merit in that suggestion, it is apparent that the CMSHAC (and similar committees established under the other mining safety and health Acts) would no longer serve a useful purpose under the new regulatory framework proposed by the committee. The statutory functions of these committees could easily be transferred to the board of the Mining Safety and Health Authority, which includes widespread industry representation including mine operators and unions.

The CMSHAC and similar committees established under the mining safety and health Acts should be abolished and their statutory functions transferred to the board of the Mine Safety and Health Authority. **(Recommendation 61)**

Workers' compensation

The *Workers' Compensation and Rehabilitation Act 2003* (Qld) (WCRA) and associated regulation establishes Queensland's system of workers' compensation. The WCRA requires an employer to insure or self-insure against work-related injury sustained by a worker, where the work is a significant contributing factor to the injury. Statutory benefits (including lost wages, medical expenses, and a lump sum in cases of permanent impairment) are available under the WCRA where a worker can show that his or her employment was a significant contributing factor to their disease. The scheme is a no fault scheme, which means that an injured worker does not have to prove any negligence by their employer or other party for the injured party to be entitled to statutory benefits.

CWP and the other CMDLD are defined as 'latent onset injuries' under s36A of the WCRA. As such, an entitlement to workers' compensation arises when a doctor first diagnoses the condition.

A worker can seek common law damages where they can show negligence on the part of the employer (or a third party). Should the worker be able to establish negligence, they can pursue common law damages against their employer or other party responsible for causing their disease. Damages may be for pain and suffering, loss of income and future loss of earning capacity. There are no time limits within which a worker must bring a common law claim for a 'dust disease'. However, a worker who is assessed as having less than 20 per cent permanent impairment must choose between a statutory lump sum and common law damages.

The Queensland Office of Industrial Relations (OIR) advised in April 2017 that there had been 41 claims lodged for CMDLD among Queensland coal mine workers. Of these, six were lodged with self-insurers and the remainder with WorkCover Queensland (WorkCover). As at April 2017, WorkCover had accepted eight claims with a diagnosis of CWP. An additional 14 claims were pending. Of the six claims made to self-insurers, three had been accepted as CWP, two had been accepted with an alternative diagnosis, and one was pending a decision.

The committee heard evidence that there are some significant failings of the workers' compensation scheme affecting coal mine workers diagnosed with or concerned about CWP and CMDLD.

There are significant costs associated with screening and diagnosis for CWP. Some miners have experienced difficulties having these costs met through workers' compensation.

Workers who have made a claim and received some form of compensation, either in lump sum or as common law damages, are not able to reopen their claim should their CWP progress or symptoms deteriorate.

There is currently no mechanism for workers diagnosed with CWP or CMDLD to access any lump sum compensation payment if they are not assessed as having any permanent incapacity for work, regardless of the fact that a CWP diagnosis permanently precludes the worker from working in a dusty mining environment.

The Industrial Relations Minister, the Hon. Grace Grace MP, convened a workers' compensation stakeholder reference group to address the issues and make recommendations for reform of the current workers' compensation scheme. The group recommended:

- the introduction of a medical examination process for former or retired coal mine workers who have concerns that they may have CWP who retired or left the mining industry prior to 1 January 2017, with costs to be borne by insurers
- statutory clarification that a worker with simple CWP who experiences disease progression can apply to reopen their claim to access further benefits under the workers' compensation scheme
- enhanced rehabilitation and return to work programs for those diagnosed with simple CWP, to assist them back into suitable alternative employment
- the alignment of the workers' compensation scheme with arrangements for the health scheme.

The committee is satisfied that the legislative arrangements of the current workers' compensation scheme in Queensland are not adequate to provide for the needs of retired coal miners, the needs of miners who may not be entitled to a lump sum payment due to the absence of permanent impairment, or the needs of miners who have already accepted some form of compensation but whose lung disease has since progressed.

The committee considers that these proposed reforms to the current workers' compensation scheme, rather than the establishment of a 'victims fund' or other new compensation scheme for coal workers, are the best response to the current deficiencies in the workers' compensation scheme to meet the needs of those diagnosed with CWP or CMDLD.

On that basis, the committee adopts the recommendations of the workers' compensation stakeholder reference group, adapted as follows:

The *Workers' Compensation and Rehabilitation Act 2003* and *Workers' Compensation and Rehabilitation Regulation 2014* should be amended as necessary to provide for:

- a) the introduction of a medical examination process, with costs to be borne by insurers, for former or retired coal workers who have concerns that they may have CWP or CMDLD and who retired or left the mining industry prior to the commencement of the proposed new provisions of the Coal Workers' Health Scheme for retired miners
- b) statutory clarification that a worker with CWP or CMDLD who experiences disease progression can apply to reopen their workers' compensation claim to access further benefits under the workers' compensation scheme
- c) enhanced rehabilitation (including, where appropriate, pulmonary rehabilitation) and return to work programs for those diagnosed with CWP or CMDLD, to assist them back into suitable alternative employment
- d) the alignment of the workers' compensation scheme with proposed new arrangements for the Coal Workers' Health Scheme. **(Recommendation 62)**

Retired and former miners

During the course of this inquiry the committee heard of the importance to the mining workforce of mining communities, including their families and friends, where the shared knowledge of mining safety and health is valued and where people support and assist each other. Mining communities have collectively felt the strain during the mining boom and in the current economic climate. The committee acknowledges the important role of the CFMEU Mining and Energy Division in maintaining contact with retired and former miners and ensuring their collective experience and knowledge is not lost to the industry.

In terms of access to the health scheme by retired and former miners, there is currently no regulated requirement for coal mine workers who leave the industry (either to work in another industry or to retire) to be assessed on their departure or subsequently monitored in terms of their respiratory health. At present, it is the responsibility of the individual to seek further monitoring.

From 1 January 2017, retired and former mine workers can access health assessments after their employment has ended. Coal workers can have a 'retirement examination' within three months of their retirement. The option is available to workers who have worked in the coal mining industry for at least three years.

The committee considers that it is crucial that these initiatives are enshrined in legislation, through appropriate statutory amendments to the CMSHA, CMSHR and related instruments and scheme documentation.

The Coal Workers' Health Scheme should be extended to provide for continuing health assessments of retired and former coal workers, on a voluntary basis, under the scheme. These assessments should include the same elements and criteria as routine assessments under the scheme, and be provided for in addition to the retirement examinations provided for by the current scheme. **(Recommendation 63)**

In recommending the statutory extension of the Coal Workers' Health Scheme, the committee recognises that there can be difficulties in locating and therefore communicating with retired and former coal mine workers. DNRM advised the committee that it commenced targeted advertising campaigns to raise awareness of CWP amongst retired workers and to encourage them to obtain medical advice if they have any concerns.

Noting these challenges, the committee considers that it is crucial that DNRM continues to actively promote the availability of free health assessments to retired and former mine workers until the Mine Safety and Health Authority is established.

The entity responsible for the Coal Workers' Health Scheme should take all reasonable steps to ensure that free health assessments are promoted to, and accessible for, retired and former miners. **(Recommendation 64)**

Other coal workers and communities

Whilst the main focus of the inquiry so far has been on coal mine workers, the committee heard of coal dust exposure among coal mining communities, coal port terminal workers, and rail workers involved in the transportation of coal. The evidence raises major cause for concern for these other occupational groups.

Consequently, on the committee's urging, the terms of reference for the committee's inquiry were extended on 23 March 2017 to include occupational respirable dust exposure for coal rail workers, coal port workers, coal-fired power station workers and other workers. As noted earlier, these aspects will be the subject of a further report by the committee to be delivered by 29 September 2017.

However, based on the evidence already considered in this inquiry, the committee considers that the requirements of the CMSHA and CMSHR relating to respirable coal dust monitoring and reporting, and health surveillance, should apply to all coal workers.

An expanded or additional category of workers, defined as 'coal worker', should be established to include workers involved in the transportation and handling of coal outside a 'coal mine' including rail workers (e.g.: coal train loaders and drivers), port workers (eg: dozer, stacker/reclaimer, and ship loader operators), power station workers, and maritime workers (eg: tug and line boat crew). **(Recommendation 65)**

The definition of 'coal worker' for these purposes should ensure these workers are protected by the legislated OEL, their working environments are subject to mandatory atmospheric monitoring of respirable dust and mandatory reporting of the results of that monitoring, and by the Coal Workers' Health Scheme. **(Recommendation 66)**

Fact finding by a select committee

Select committees of the parliament are rare. It is rarer still for a select committee to be charged by the parliament with terms of reference requiring the committee to inquire into facts and events that have led to serious failures of public policy resulting in serious illness or death. Such tasks are usually left to Commissions of Inquiry with significantly greater time and resources than are afforded to a select committee. The initial terms of reference for this inquiry required the committee to undertake a process of fact-finding – akin to the process that would ordinarily be undertaken by a Commission of Inquiry – to determine:

- the adequacy of arrangements to prevent and eliminate CWP in Queensland
- the roles and actions of government departments and agencies, mine operators, nominated medical advisers, radiologists, industry safety and health representatives and unions in those arrangements
- the efficacy of methodologies and processes used in the coal mining industry for dust measurement and mitigation.

In light of the special nature of this inquiry, it is necessary and appropriate to make comment regarding those who have participated in the inquiry and contributed to the evidence upon which the committee's findings and recommendations are based.

Miners

Much of the evidence given to the committee by current and retired coal workers was taken during hearings conducted in regional Queensland in November and December 2016. By travelling to key mining communities for these hearings, the committee aimed to minimise geographical barriers to participation and to better ensure miners and other coal workers, and their families, were able to tell their stories. The committee recognises that many workers nevertheless travelled significant distances and made various personal or professional sacrifices in order to appear. Many witnesses attended public hearings to give evidence immediately before or after a 12 hour shift.

The committee was particularly moved by the evidence given by CWP sufferers and their families. The committee is greatly indebted to these witnesses, who bravely shared very personal accounts of their declining health and their experiences of (mis)treatment by medical professionals, insurers and government officials, prior to and following their diagnosis. The physical and emotional toll of travelling to hearings and recounting these experiences was not lost on the committee. The testimony of the wives and partners of miners – like Mrs Sue Byron, Mrs Daphne Verrall and Mrs Kim Smyth – especially provided crucial insights into the devastating and wide-ranging effects of CWP not only on the person diagnosed, but on their family and wider community.

The committee expresses its admiration and gratitude to all coal workers and their families who gave evidence, in both public and private hearings, for their vital contribution to this inquiry. Without their willingness to come forward and tell their stories, the committee could never have fulfilled its terms of reference.

Unions

The CFMEU Mining and Energy Division particularly played an important role in promoting the committee's inquiry activities and public hearings, and supporting mine workers and other expert witnesses to participate in these hearings and help inform the committee's deliberations.

Mine operators

The committee received submissions from current Queensland mine operators including Vale Australia Pty Ltd, Caledon Coal, Peabody Energy, Anglo American, BHP Billiton, and Glencore. The committee also received two submissions from the representative body of mine operators, the QRC. The submissions received from mine operators, while understandably keen to protect their own interests and present their responses to CWP in the best light, were nonetheless of great assistance to the committee in fulfilling its terms of reference.

The committee invited senior executives from five major coal mine operators to attend and give evidence in person before the committee. Initially, all five companies agreed to do so voluntarily. However, the committee was most disappointed that BHP Billiton - Australia's largest coal mine operator - after initially indicating its willingness to cooperate fully with the committee, subsequently declined to voluntarily provide further evidence relevant to its operations at Broadmeadow mine. Instead, the committee exercised its power to require the attendance of those executives by summons. [The committee notes, but does not accept, the explanation subsequently provided by BHP Billiton that 'it appears the source of the issue was a misunderstanding with the committee secretariat in relation to the nature of the invitation to appear... ']

Department of Natural Resources and Mines

From the commencement of this inquiry, there has been a substantial divergence between the pledges of DNRM officials to provide ready assistance to the committee's inquiry, and the degree to which such assistance or information was in fact forthcoming.

The committee was appalled by the level of disregard for its work demonstrated by some senior officers of DNRM. Despite repeated assurances from DNRM that it would work expeditiously to assist the committee in any way possible, the committee has been met with resistance and obstruction by some officers of DNRM. Key departmental witnesses, vital to understanding the system failure at HSU were not advised they would be required to give evidence, were then produced only under threat of summons, and were not properly prepared by DNRM prior to their appearances before the committee. Frequently senior officers have been unprepared and unable to answer important questions relevant to the committee's inquiry and where answers were given, often the officers were argumentative and resistant to acknowledging the wide-ranging failures of their department.

This appears to be a reflection of a culture and attitude that has built up over 30 years.

In addition, the committee was disappointed on some occasions to discover new or updated information in relation to DNRM's response to committee enquiries or questions in a second-hand manner, including through media releases, new publications on the department's website, or informal advice from stakeholders, rather than through direct communication from DNRM. Further, the committee's delegation to the USA learned about interactions between DNRM and NIOSH, MSHA and the University of Illinois Black Lung Center of Excellence, that should properly have been reported to the committee by departmental officers. During the inquiry this information was of extraordinary assistance to the committee. Had it not been disclosed to the committee's delegation in the USA, it is likely the committee would never have learned it and this report would have been deficient.

These inconsistencies were a source of significant frustration for committee members, given the seriousness of the inquiry and its effects on Queensland mine workers and their families. The issues at hand required a dedicated commitment to uncovering the factors and events contributing to the systemic failures in addressing CWP, regardless of where or with whom fault may lie. The committee

is concerned that efforts to avoid blame and delays associated with message management within DNRM may have hindered an appropriately transparent and open inquiry process.

The committee is extremely concerned that public service officers were not properly prepared or aware of their obligations under the Code of Practice to assist the committee's inquiry by providing full and honest answers to questions wherever possible.

The cooperation of DNRM, and some of its senior executive officers, with the work of this committee fell well below the standard required of public service officers assisting a parliamentary committee.

The committee recommends that the Public Service Commissioner review the transcripts of public and private hearings of the committee involving Queensland public servants and consider the extent to which those officers cooperated with and assisted the committee, including whether or not any public servant misled the committee or otherwise breached the *Code of Practice for Public Service Employees Assisting or Appearing Before Parliamentary Committees*. **(Recommendation 67)**

The committee has uncovered widespread administrative failings. As with all select committees, the committee was established to examine particular terms of reference and only for a limited time. From its establishment to the date of this report the committee was given a period of a little over eight months. Had a commission of inquiry been established to examine the issues addressed by the committee, the timeframe would no doubt have been considerably longer. Experience demonstrates that commissions of inquiry can easily cost government upwards of \$10 million. This committee has been resourced in part from general resources of the parliament, and extra costs to the present time of perhaps one-twentieth of that figure. This inquiry demonstrates the efficiency and effectiveness of the use of parliamentary committees for inquiries of this nature.

Parliamentary committee inquiries of the nature of this inquiry are very rare, indeed almost without precedent. This committee believes there is a need for a stand-alone committee to investigate incidents and events in public administration.

The committee recommends that there be established, as a statutory committee of the parliament, a Committee on Public Administration. The committee is to have the power to investigate matters of public administration, on its own motion or on reference from the Assembly. The committee is to consist of three members nominated by the Leader of the House and three members nominated by the Leader of the Opposition. The committee is to have the power to call for persons, documents and other items. **(Recommendation 68)**

Key Findings

Page Number

Since May 2015, 21 current and former coal mine workers in Queensland have been diagnosed with CWP or 'black lung' disease – an entirely preventable disease that is caused exclusively by excessive and prolonged exposure to respirable coal mine dust.	64
Two confirmed cases of CWP involve coal miners who worked exclusively in open-cut coal mines, proving that CWP does not occur solely in underground coal mine workers.	64
There will almost certainly be many more cases of CWP identified amongst current and former Queensland coal mine workers.	64
It is highly unlikely that CWP was ever eradicated in Queensland. It did not 're-emerge' in 2015 but was merely re-identified, after responsible Queensland authorities failed to look for it or properly identify it for more than 30 years.	66
Only a truly independent regulatory body, charged with responsibility for ensuring the safety and health of Queensland's mine and resource industry workers, can restore public faith in the system.	72
The safety and health fee is not an appropriate method of funding a truly independent mine safety and health regulator with a fully functional mines inspectorate.	77
The funding mechanism for these vital government functions should not be so closely tied to the number of workers employed in the mining industry at any given time.	77
There is ample scientific evidence that the current occupational exposure limit (OEL) for respirable coal mine dust in Queensland is exposing coal mine workers to excessive risk of developing CWP, CMDLD and other respiratory disease.	92
Many coal mine workers do not believe they can freely report health or safety concerns without risking adverse consequences or reprisal action. Coal mine operators have not done enough to encourage all workers, including labour hire workers, to report safety and health concerns and assure them that such reports will not result in adverse consequences or reprisal action.	111
The absence of any regulated oversight of respirable dust monitoring or mandatory reporting of exceedances prior to 1 January 2017 allowed a culture of complacency and disregard for the serious risk posed by respirable dust exposure to develop across industry. Risk-based self-regulation of respirable dust as a hazard has failed to protect coal mine workers from repeated and significant exceedances of the OEL for respirable coal mine dust.	122
Real-time personal dust monitoring devices are an essential tool in the ongoing effort to mitigate the production and dissemination of respirable dust in coal mines. Their use by coal mine workers promotes worker confidence in the dust monitoring data gathered for compliance purposes and empowers coal mine workers to take charge of their own respirable dust exposure.	137
The use of compliance powers by the mines inspectorate to enforce respirable dust exposure standards has been inconsistent and undermined by imprecise and ineffective language in directives.	149
Non-compliance with directives has not been met with any real regulatory response by the Mines Inspectorate or Commissioner for Mine Safety and Health.	149
The current proportion of unannounced inspections undertaken by the mines inspectorate is totally inadequate. There must be an immediate, sustained, and significant expansion in the use of unannounced inspections by the mines inspectorate.	152

Inspection activities by Industry Safety and Health Representatives, and their equivalents under the other mining safety and health Acts, are integral to a robust and reliable risk-based approach to the regulation of safety and health in the mining industry. Industry and public confidence in this system would be significantly improved if ISHRs (and their equivalents) were empowered to undertake unannounced inspections without the requirement to give the mine operator 'reasonable notice' of the proposed inspection.	153
There is no evidence that regulatory capture has impacted upon the inspection or compliance activities of the mines inspectorate in relation to respirable coal mine dust. However, current integrity policies of the inspectorate should be enshrined in regulation so that mine workers and the public may have greater faith in the independence of the Mines Inspectorate.	155
The extent to which the Mines Inspectorate currently undertakes atmospheric dust monitoring inspections and audits the dust sampling results obtained by mine operators is inadequate to ensure public and worker confidence in the integrity of that system.	161
The use of accompanied inspections by inspectors with appropriate qualifications and experience in occupational hygiene significantly improves the quality and reliability of dust exposure sampling data and is an essential part of the inspection regime.	161
The establishment of a Standing Dust Committee in Queensland is a critical reform to ensure ongoing industry engagement and vigilance in addressing respirable dust issues.	162
There was no proper basis for DNRM not to accept the proposal from Dr Cohen and the University of Illinois to review the respiratory components of the Coal Mine Workers' Health Scheme. The failure to do so ignored their recognised status as world leaders in the respiratory health of coal mine workers and unnecessarily delayed what was a critical review of a failing system.	182
The Monash Review was a thorough and professional review of the respiratory component of the Coal Workers' Health Scheme. Its findings and recommendations have been universally endorsed by those witnesses and organisations who have given evidence or made submissions to this inquiry in reference to that Review.	183
The failure to fully implement the recommendations of the 2002 <i>Review of the Health Surveillance Unit</i> was a significant lost opportunity to improve the functioning of the Coal Workers' Health Scheme and ensure the HSU actually undertook meaningful health surveillance. Had this been done, DNRM may have been alerted to cases of CWP and been in a position to take action much sooner than it ultimately did in 2015.	187
DNRM did not adequately administer the <i>Coal Mining Safety and Health Act 1999</i> to ensure coal mine workers were not exposed to the serious health hazard of respirable coal mine dust. In so doing, DNRM failed to protect the health of coal mine workers with respect to respirable coal mine dust.	192
The allowance for some coal mine workers to be excluded from routine chest x-ray screening if not considered to be 'at risk' of dust exposure is unacceptable in light of the re-identification of CWP.	193
There is a sufficient basis to require underground coal mine workers to undertake full health assessments including spirometry and chest x-rays or other approved imaging every three years. This recognises the overwhelming prevalence of CWP cases amongst underground coal miners.	195
All other coal workers, including above-ground coal mine workers, coal handling, port, and transport workers, and coal-fired power station workers, should be required to undertake full health assessments, including spirometry and chest x-rays or other approved imaging, at least every six years.	195

The current regulatory regime fails to provide sufficient safeguards to ensure that medical practitioners engaged to perform health assessments under the Coal Mine Workers' Health Scheme possess the necessary skills and experience to properly perform those assessments.	204
There are far too many Nominated Medical Advisors currently registered with DNRM to ensure they have sufficient exposure to and experience of coal mine workers to properly perform health assessments under the health scheme.	204
The absence of any requirement for NMAs to be approved by a regulatory body has allowed significant failures in the health scheme to develop and persist.	204
There has been widespread systemic failure across all aspects of the Coal Mine Workers' Health Scheme. Significant further reform is immediately needed.	214
The Coal Mining Safety and Health Advisory Committee (and similar committees established under the other mining safety and health Acts) would no longer serve a useful purpose under the new regulatory framework proposed by the committee. The statutory functions of these committees could easily be transferred to the Board of the Mining Safety and Health Authority, which includes widespread industry representation including mine operators and unions.	220
The legislative arrangements of the current workers' compensation scheme in Queensland are not adequate to provide for the needs of retired coal miners, the needs of miners who may not be entitled to lump sum payment due to the absence of permanent impairment, or the needs of miners who have already accepted some form of compensation but whose lung disease has since progressed.	233
The cooperation of DNRM, and some of its senior executive officers, with the work of this committee fell well below the standard required of public service officers assisting a parliamentary committee.	254
Despite repeated assurances from DNRM that it would work expeditiously to assist the committee in any way possible, the committee has been met with resistance and obstruction by some officers of DNRM. Documents requested have not been produced in a timely manner, requiring the issue of a summons. Key departmental witnesses, vital to understanding the failure of the health scheme, were not advised they would be required to give evidence, were then produced only under threat of summon, and were not properly prepared by DNRM prior to their appearances before the committee. Frequently senior officers of DNRM have been unprepared and unable to answer important questions relevant to the committee's inquiry and where answers were given, often the officers were argumentative and resistant to acknowledging the wide-ranging failures of their department.	254
There is a need for a stand-alone statutory committee of the Queensland parliament to investigate incidents and events in public administration.	255

Recommendations

Recommendation 1 **72**

There should be a truly independent Mine Safety and Health Authority, established as a statutory authority and body corporate, with responsibility for ensuring the safety and health of mining and resource industry workers in Queensland.

Recommendation 2 **72**

The Mine Safety and Health Authority should be established under its own legislation as a 'unit of public administration' for the purposes of the *Crime and Corruption Act 2001* and a 'public authority' for the purposes of the *Right to Information Act 2009*.

Recommendation 3 **72**

The Mine Safety and Health Authority should be governed by a Board of Directors, chaired by the Commissioner for Mine Safety and Health, and including representation of:

- coal mine operators
- metalliferous mine operators
- unions
- resources transportation and ports, and
- persons independent of the mining industry (including resources transportation and ports).

Recommendation 4 **73**

A parliamentary committee should oversee and monitor the operation of the Mine Safety and Health Authority. The Minister should be required to consult with the parliamentary committee regarding the appointment of the Commissioner and Board.

Recommendation 5 **73**

The Mine Safety and Health Authority should be established in Mackay, ensuring the Commissioner, senior management, Mines Inspectorate, Coal Workers' Health Scheme, and mobile units are all based in central Queensland.

Recommendation 6 **73**

The Commissioner for Mine Safety and Health should be a senior officer of the Mine Safety and Health Authority and given proper statutory independence, with the Commissioner not subject to the direction of the Minister.

Recommendation 7 **73**

The Mines Inspectorate, currently within DNRM should be administratively relocated within the Mine Safety and Health Authority, ensuring statutory and administrative independence from DNRM.

Recommendation 8 **73**

The Commissioner should have an express power to direct inspectors, including the chief inspector, inspection officers and authorised officers, in relation to the investigation of a possible offence or offences against the mining safety and health Acts.

Recommendation 9 **73**

The occupational hygiene services currently offered by SIMTARS on a fee for service basis should be discontinued. The officers who currently provide those services should be redeployed to the Mine Safety and Health Authority to undertake research and/or occupational hygiene inspection activities within the inspectorates.

Recommendation 10 **73**

The Mine Safety and Health Authority should encompass and have responsibility for administering the Coal Workers' Health Scheme, supported by a Memorandum of Understanding with Queensland Health and the Office of Industrial Relations, to ensure full and complete cooperation and appropriate data sharing between those entities.

Recommendation 11 **73**

The Mine Safety and Health Authority, including the Coal Workers' Health Scheme, should be supported by an expert Medical Advisory Panel (as per recommendation 17 of the 2002 review of the Health Surveillance Unit) of suitably experienced and qualified medical specialists and internationally recognised experts, including at least two respiratory physicians (one of whom has internationally recognised experience and expertise in the prevention, identification, and treatment of CWP) and at least one specialist in occupational medicine.

Recommendation 12 **74**

The Mine Safety and Health Authority should appoint a suitably qualified and experienced specialist physician, registered as such with the Australian Health Practitioners' Regulation Agency, as Executive Director – Medical Services to lead the Coal Workers' Health Scheme. The Executive Director – Medical Services should: advise and assist the Commissioner and Board of Directors on medical matters, provide clinical guidance and leadership in relation to the safety and healthy activities of the Authority, oversee the approval of health service providers under the Coal Workers' Health Scheme, and provide clinical oversight and guidance to Approved Medical Advisors and others performing health assessments under the Coal Workers' Health Scheme.

Recommendation 13 **74**

The Executive Director – Medical Services should be engaged by the Mine Safety and Health Authority on a full-time basis and remunerated at a rate that is equivalent to a specialist of similar standing and responsibility employed by Queensland Health or a Queensland Hospital and Health Service.

Recommendation 14 **74**

The Mine Safety and Health Authority should have a properly resourced and dedicated health research function, including epidemiological research into health conditions experienced by mine workers. These research functions should be undertaken in a collaborative way, drawing upon and sharing research with leading international research bodies such as NIOSH.

Recommendation 15 **74**

The Mine Safety and Health Authority should appoint a suitably qualified and experienced legal practitioner as General Counsel to provide general legal advice to the Authority and Board, and advise the Commissioner for Mine Safety and Health on the exercise of statutory powers including in relation to prosecutions and other compliance activity.

Recommendation 16 **79**

The safety and health fee currently provided for by part 2A of chapter 2 of the Coal Mining Safety and Health Regulation 2001 should be abolished.

Recommendation 17 **79**

The Mine Safety and Health Authority should be funded by a dedicated proportion of coal and mineral royalties paid to the Queensland Government, to be determined in consultation with industry and unions after an assessment of the operating costs of the Authority is undertaken.

The dedicated proportion of the royalties should be fixed by regulation and reviewed periodically by the parliamentary committee responsible for the Mine Safety and Health Authority.

Recommendation 18 **79**

Any surplus income derived from the dedicated proportion of royalties that is not allocated to, or expended from, the annual budget of the Authority should be invested with the Queensland Investment Corporation for the future research and the operational needs of the Authority.

Recommendation 19 **93**

An Occupational Exposure Limit (OEL) for respirable coal dust (including mixed mineral coal mine dust) should be set requiring duty holders to ensure a 'coal worker' is not exposed to atmosphere containing respirable dust exceeding an average concentration, calculated under AS 2985, equivalent to the following for an 8-hour period—

- for coal dust – 1.5mg/ m³ air, and
- for silica – 0.05mg/m³ air.

Section 89 of the Coal Mining Safety and Health Regulation 2001 should immediately be amended to give effect to this recommendation.

Consideration should then be given to relocating the OEL provisions within the *Coal Mining Safety and Health Act 1999*.

Recommendation 20 **106**

- a) An underground mine operator should be required to submit to the Authority a dust abatement plan and ventilation plan for approval by the Commissioner for Mine Safety and Health before any underground coal mining operations are commenced; and again, with appropriate amendment as necessary, before mining operations are commenced on any new longwall block.
- b) An above-ground (surface) mine operator should be required to submit to the Authority a dust abatement plan for approval by the Commissioner for Mine Safety and Health before any mining operations are commenced.
- c) The Commissioner for Mine Safety and Health should take into account the mine operator's compliance history and record of respirable dust monitoring results in deciding whether to approve, reject, or require amendments to the dust abatement and/or ventilation plans.

Recommendation 21 **106**

It should be an offence for a mine operator to commence or continue mining operations, without prior approval by the Commissioner for Mine Safety and Health of the required dust abatement plan and, where applicable, the required ventilation plan for the relevant mining operation.

Recommendation 22 **111**

The Commissioner for Mine Safety and Health should actively promote awareness in the mining industry that it is an offence for any person to cause a detriment to another person because, or in the belief that, the other person has made a complaint or has in any other way raised a coal mine safety issue.

The Commissioner should give special attention to the investigation of any complaints of such conduct and consider prosecuting offences of this nature if there is sufficient evidence and it is in the public interest to do so.

Recommendation 23 **118**

The Mine Safety and Health Authority should establish and maintain a database of dust techniques and technologies used in Queensland coal mines to be used for auditing purposes and to inform research and analysis into the efficacy of engineering dust controls.

- Recommendation 24** **119**
- The Mine Safety and Health Authority should research and review new dust techniques and technologies being used in jurisdictions such as New South Wales and the United States and publish its findings to ensure all those involved in coal mining in Queensland may be aware of world-leading dust mitigation practices.
- Recommendation 25** **137**
- Real time personal dust monitors, such as the Thermo Scientific PDM3700, should be assessed having regard to the scientific information already available world-wide, and if possible certified for use in underground coal mines as soon as possible.
- Recommendation 26** **139**
- An industry working group including coal mine operators, unions and government should be tasked with exploring the use of real time personal dust monitors as a compliance tool, including canvassing amendments to Recognised Standard 14 on monitoring respirable dust in coal mines, to enable the use of real time personal dust monitors for compliance monitoring and reporting.
- Recommendation 27** **139**
- The definition of 'further sample' in section 89A(5) of the Coal Mining Safety and Health Regulation 2001 should be amended to allow the use of real time personal dust monitors, such as the Thermo Scientific PDM3700, for resampling after a trigger event.
- Recommendation 28** **142**
- All commercial providers of atmospheric dust monitoring for the purposes of compliance with the regulation should be required to be approved by the Commissioner for Mine Safety and Health, having regard to the expertise and qualifications of the person or entity conducting the monitoring.
- Recommendation 29** **142**
- Results of all atmospheric dust monitoring undertaken in compliance with the regulation should be provided directly by the approved entity engaged to undertake the tests to each of the following; the Mine Safety and Health Authority; the coal mine operator (or person conducting the business at which the testing was undertaken); the miner who wore the device from which the test sample was taken; and the relevant Industry Safety and Health Representative, district workers' representative, or union delegate for the business at which the testing was undertaken.
- Recommendation 30** **152**
- The Mines Inspectorate should increase the proportion of unannounced inspections to a rate of at least 50 per cent of total inspections.
- Recommendation 31** **153**
- Section 119(1)(b) of the *Coal Mining Safety and Health Act 1999* and section 116 of the *Mining and Quarrying Safety and Health Act 1999* should be amended to remove the requirement for industry safety and health representatives to give 'reasonable notice' to the mine operator before the power to enter a mine site is exercised.
- Recommendation 32** **156**
- Mines inspectors should be prohibited for a limited period – perhaps six months – from inspecting mines at which they worked within the past two years.
- Regulation should prohibit a person from being appointed to a statutory role at a mine (e.g. SSE, Underground Mine Manager, OCE) within six months of the person having conducted inspection activities as an inspector at that mine.

- Recommendation 33** **157**
- The Mines Inspectorate should consider making training and education at the National Mine Health and Safety Academy in the USA available to current or future mines inspectors.
- Recommendation 34** **161**
- The Mines Inspectorate should significantly increase the frequency and extent of its atmospheric dust monitoring inspections, including by undertaking accompanied inspections where inspectors with appropriate qualifications and experience in occupational hygiene observe coal workers during the period of atmospheric monitoring.
- Recommendation 35** **162**
- A comprehensive database of dust monitoring results should be established and maintained by the Mine Safety and Health Authority.
- Recommendation 36** **162**
- A Standing Dust Committee, similar to that established in New South Wales, should be established to periodically review atmospheric dust monitoring results and trends and report to the Board of the Mine Safety and Health Authority.
- The committee should be chaired by the Commissioner of Mine Safety and Health or a delegate, and include representatives of underground mine operators; above-ground coal mine operators; metalliferous mine operators; coal ports; unions; and persons independent of the current mining industry.
- Recommendation 37** **163**
- The Standing Dust Committee should have power to refer particular dust exceedances or trends in dust monitoring results to the Commissioner for Mine Safety and Health for consideration as to whether further investigation or enforcement action, including prosecution, is required.
- Recommendation 38** **180**
- The current Coal Mine Workers' Health Scheme should be renamed the Coal Workers' Health Scheme, recognising the important inclusion of all workers involved in the mining, handling, processing and transportation of coal.
- Recommendation 39** **183**
- The recommendations of the Monash Review, adapted as necessary to give effect to the recommendations of the committee set out in this report, should be adopted and implemented into the Coal Mine Workers' Health Scheme as follows:
- a) The main purpose of the respiratory component of the scheme should explicitly focus on the early detection of CMDLD among current and former coal workers. (Monash recommendation 1)
 - b) Clinical guidelines for follow-up investigation and referral to an appropriately trained respiratory or other relevant specialist of suspected CMDLD cases identified among current and former coal workers should be developed and incorporated into the scheme. (Monash recommendation 2)
 - c) CWP and other CMDLDs identified by the scheme in current and former coal workers should be reported to the Mine Safety and Health Authority. (Monash recommendation 3)
 - d) There should be a separate respiratory section of the health assessment form which includes all respiratory components, including the radiology report using the ILO format and the spirogram tracings and results. (Monash recommendation 4)
 - e) The form should include a comprehensive respiratory medical history and respiratory symptom questionnaire. (Monash recommendation 5)

- f) There should be a much smaller pool of approved doctors undertaking the respiratory component of health assessments under the scheme, taking into account geographical considerations and other workforce needs. (Monash recommendation 7)
- g) Doctors should undergo a formal training program, including visits to mine sites, prior to being approved by the Mine Safety and Health Authority, to ensure they reach a suitable standard of competence and have the necessary experience to undertake respiratory health assessments under the scheme. (Monash recommendation 8)
- h) The approval of doctors to undertake the respiratory health assessments for the early detection of CMDLD under the scheme should become the sole responsibility of the Mine Safety and Health Authority. (Monash recommendation 9)
- i) Doctors approved to undertake respiratory health assessments should have a different designation from 'NMA', namely AMA-R (Approved Medical Advisor – Respiratory) reflecting their specific responsibility for respiratory health assessments under the new scheme. (Monash recommendation 10)
- j) Chest x-rays should be performed by appropriately trained staff to a suitable standard of quality and performed and interpreted according to the current ILO classification by radiologists and other medical specialists classifying chest x-rays for the scheme. (Monash recommendation 11 – *See also Recommendations 43 to 46 of this report below*)
- k) Spirometry should be conducted by appropriately trained staff and performed and interpreted according to current ATS/ERS standards. (Monash recommendation 12)
- l) The Coal Workers' Health Scheme should transition to an electronic system of data entry and storage (health assessments database), whereby doctors undertaking these respiratory assessments enter the data for their assessment and can access previously collected data for the coal worker and to facilitate auditing. (Monash recommendation 13)
- m) All coal workers, including contractors, subcontractors and labour hire employees should be registered in the Coal Workers' Health Scheme health assessments database on entry into the industry for the purposes of ongoing medical surveillance. (Monash recommendation 14)
- n) The Coal Workers' Health Scheme should conduct ongoing individual and group surveillance of health data collected under the scheme, to detect early CMDLD and analyse trends to disseminate to employers, unions and coal mine workers. (Monash recommendation 15)
- o) Coal workers should have exit respiratory health assessments (retirement examination) regardless of whether they leave the industry due to ill-health, retirement or other reasons. (Monash recommendation 16)
- p) An implementation group, including representatives of stakeholders and relevant medical bodies, should be established to ensure that the necessary changes to correct the identified deficiencies with the respiratory component of the current scheme are implemented in a timely manner. (Monash recommendation 17)
- q) There should be a further review of the revised respiratory component of the scheme within 3 years to ensure that it is designed and performing according to best practice. (Monash recommendation 18)

Recommendation 40

189

The Public Service Commissioner should review the process adopted by DNRM for the appointment of the current 'Occupational Physician' and consider whether there was any breach of the *Public Service Act 2008* or other statutory instrument.

Recommendation 41	189
The current position described as 'Occupational Physician' within DNRM should be abolished and the current functions of that role should be incorporated into the functions of the new Executive Director – Medical Services within the Mine Safety and Health Authority.	
Recommendation 42	192
Health assessment data should be captured and stored digitally in a health assessment database in a manner that allows regular and meaningful surveillance, so that it may be used to identify trends in disease, inform policy decisions and identify regional areas or individual mines for potential scrutiny. (See also Recommendation 39(I))	
Recommendation 43	193
Health Assessments under the Coal Workers' Health Scheme should be required for all coal workers, removing the current exception for workers employed for a 'low risk task'.	
Recommendation 44	195
All coal workers should be required to undertake a health assessment prior to commencing work in the coal industry, including coal transportation and handling outside coal mines.	
Recommendation 45	195
All underground coal mine workers should be required to undertake a health assessment every three years.	
Recommendation 46	195
All other coal workers should be required to undertake a health assessment at least every six years.	
Recommendation 47	196
The Coal Workers' Health Scheme should obtain and utilise at least one Coal Workers' Health Mobile Unit, similar to those used by NIOSH, capable of delivering chest x-ray, spirometry, and general health assessments for coal workers and former coal workers in regional Queensland.	
Recommendation 48	196
The Coal Workers' Health Mobile Units should be properly staffed and maintained under the Coal Workers' Health Scheme, and operate out of the Scheme's headquarters in Mackay.	
Recommendation 49	196
The cost of health assessments undertaken at the Coal Workers' Health Mobile Units should be met by the Coal Workers' Health Scheme.	
Recommendation 50	197
The entity responsible for the Coal Workers' Health Scheme should provide a public information service, consisting of a toll-free telephone helpline and online service, to give free and confidential advice to mine workers, former mine workers and their families who have concerns about their respiratory health.	
Recommendation 51	204
'Nominated Medical Advisors' should be renamed and redefined as 'Approved Medical Advisors'.	
Recommendation 52	204
Approved Medical Advisors should be approved as such by the Commissioner for Mine Safety and Health.	

Recommendation 53 **204**

A subset of Approved Medical Advisors with appropriate qualifications and experience in diagnosing occupational respiratory diseases should be approved by the Commissioner for Mine Safety and Health to conduct respiratory health assessments and designated 'Approved Medical Advisor – Respiratory (AMA-R)'. (See also Recommendation 39(i)).

Recommendation 54 **214**

All health assessments under the Coal Workers' Health Scheme should include spirometry testing undertaken by an appropriately qualified and experienced person or provider, approved by the Commissioner for Mine Safety and Health.

Recommendation 55 **215**

All health assessments under the Coal Workers' Health Scheme should include a chest x-ray or other medical image taken by an appropriately qualified and experienced person or provider, approved by the Commissioner for Mine Safety and Health.

Recommendation 56 **215**

All coal workers' chest x-rays or other medical images taken for the purposes of the Coal Workers' Health Scheme should be read and interpreted by an appropriately qualified and experienced radiologist approved by the Commissioner of Mine Safety and Health.

Recommendation 57 **215**

All coal workers' chest x-rays or other medical images taken for the purposes of the Coal Workers' Health Scheme should be assessed and classified for pneumoconioses using the International Labour Organisation (ILO) system for Classification of Radiographs by appropriately qualified persons approved for such purpose by the Commissioner for Mine Safety and Health.

Recommendation 58 **215**

Dr Robert Cohen, or another internationally recognised expert on the surveillance and management of coal workers' health, should be engaged to consult with and advise government on the establishment of the improved Coal Workers' Health Scheme and the implementation of these recommendations as soon as practicable.

Recommendation 59 **217**

Cases of CWP/CMDLD identified or diagnosed by medical professionals should be compulsorily reported to the Chief Health Officer, Queensland, as a 'Notifiable Disease' under the *Public Health Act 2005*.

Recommendation 60 **217**

The legislative framework should require the Queensland Chief Health Officer to report to the Mine Safety and Health Authority and the parliamentary committee with responsibility for the Authority on an annual basis on Queensland Health's activities in relation to CMDLD, including CWP.

Recommendation 61 **220**

The Coal Mining Safety and Health Advisory Committee and similar committees established under the mining safety and health Acts should be abolished and their statutory functions transferred to the Board of the Mine Safety and Health Authority.

Recommendation 62

233

The *Workers' Compensation and Rehabilitation Act 2003* and *Workers' Compensation and Rehabilitation Regulation 2014* should be amended as necessary to provide for:

- a) the introduction of a medical examination process, with costs to be borne by insurers, for former or retired coal workers who have concerns that they may have CWP or CMDLD and who retired or left the mining industry prior to the commencement of the proposed new provisions of the Coal Workers' Health Scheme for retired miners
- b) statutory clarification that a worker with CWP or CMDLD who experiences disease progression can apply to reopen their workers' compensation claim to access further benefits under the workers' compensation scheme
- c) enhanced rehabilitation (including, where appropriate, pulmonary rehabilitation) and return to work programs for those diagnosed with CWP or CMDLD, to assist them back into suitable alternative employment
- d) the alignment of the workers' compensation scheme with proposed new arrangements for the Coal Workers' Health Scheme.

Recommendation 63

240

The Coal Workers' Health Scheme should be extended to provide for continuing health assessments of retired and former coal workers, on a voluntary basis, under the scheme. These assessments should include the same elements and criteria as routine assessments under the scheme, and be provided for in addition to the 'retirement examinations' provided for by the current scheme.

Recommendation 64

241

The entity responsible for the Coal Workers' Health Scheme should take all reasonable steps to ensure that free health assessments are promoted to, and accessible for, retired and former miners.

Recommendation 65

245

An expanded or additional category of workers, defined as 'coal worker', should be established to include workers involved in the transportation and handling of coal outside a 'coal mine' including rail workers (e.g.: coal train loaders and drivers), port workers (e.g.: dozer, stacker/reclaimer, and ship loader operators), power station workers, and maritime workers (e.g.: tug and line boat crew).

Recommendation 66

245

The definition of 'coal worker' for these purposes should ensure these workers are protected by the legislated OEL; their working environments are subject to mandatory atmospheric monitoring of respirable dust and mandatory reporting of the results of that monitoring; and the Coal Workers' Health Scheme.

Recommendation 67

254

The committee recommends that the Public Service Commissioner review the transcripts of public and private hearings of the committee involving Queensland public servants and consider the extent to which those officers cooperated with and assisted the committee, including whether or not any public servant misled the committee or otherwise breached the *Code of Practice for Public Service Employees Assisting or Appearing Before Parliamentary Committees*.

Recommendation 68

256

The committee recommends that there be established, as a statutory committee of the parliament, a Committee on Public Administration. The committee is to have the power to investigate matters of public administration, on its own motion or on reference from the Assembly. The committee is to consist of three members nominated by the Leader of the House and three members nominated by the Leader of the Opposition. The committee is to have the power to call for persons, documents and other items.

1. Introduction

1.1 The committee and its role

In September 2015, the then Commissioner for Mine Safety and Health (Commissioner) reported that the 'first case of coal workers' pneumoconiosis in a Queensland coal miner in 30 years was reported this year'. That worker was diagnosed in May 2015.¹ Two years on and 21 cases have been confirmed amongst Queensland coal miners. The re-identification of this entirely preventable disease has, quite properly, shocked and dismayed all involved in the coal industry.

The Coal Workers' Pneumoconiosis (CWP) Select Committee was established by the Queensland Parliament on 15 September 2016 to conduct an inquiry and report on the 're-emergence' of CWP amongst coal mine workers in Queensland. The committee tabled an interim report on 22 March 2017.²

On 23 March 2017, the Parliament provided the committee with additional terms of reference in relation to other workforce cohorts and occupational respirable dust issues. The Parliament also extended the reporting date for the committee's initial terms of reference from 12 April 2017 to 29 May 2017. This report follows on from the interim report and is the final report of the committee on the initial terms of reference.³

This report sets out the committee's findings on its initial terms of reference and makes recommendations for wide-ranging and substantial changes to the regulation of coal mining in Queensland and the protection of the mining industry's most precious resource – the miners.

The committee is due to report on its extended terms of reference by 29 September 2017.

Committee members, counsel assisting and some of the supporting staff



¹ Queensland Government, Commissioner for Mine Safety and Health, *Queensland Mines Inspectorate Annual Performance Report 2014-2015*, 2015, p 3.

² The interim report can be accessed here:
<http://www.parliament.qld.gov.au/Documents/TableOffice/TabledPapers/2017/5517T467.pdf>, all web references in this report were accessed on 25 May 2017.

³ Where appropriate for ease of reference, this report includes some content from the interim report.

1.1.1 The initial inquiry terms of reference

Under the initial terms of reference, the committee was asked to consider the following:

- (a) the legislative and other regulatory arrangements of government and industry which have existed in Queensland to eliminate and prevent CWP
- (b) whether these arrangements were adequate, and have been adequately and effectively maintained over time
- (c) the roles of government departments and agencies, mine operators, nominated medical advisers, radiologists, industry safety and health representatives (ISHRs) and unions representing coal mine workers in these arrangements
- (d) the study into CWP undertaken by Monash University and the findings of the federal Senate Select Committee on Health (Senate Committee report) and other relevant reports and studies
- (e) the efficacy and efficiency of adopting methodologies and processes for coal mine dust measurement and mitigation, including monitoring regimes, engineering measures, personal protective equipment (PPE), statutory requirements, and mine policies and practices, including practices in jurisdictions with similar coal mining industries
- (f) other matters the committee determines are relevant, including other respiratory diseases associated with underground mining.

1.1.2 The extended terms of reference

The further terms of reference established on 23 March 2017 extended the committee's remit to include inquiry (and report by 29 September 2017) on:

- (a) occupational respirable dust exposure for:
 - (i) coal port workers
 - (ii) coal rail workers
 - (iii) coal-fired power station workers
 - (iv) other workers
- (b) the legislative and other regulatory arrangements of government and industry which have existed in Queensland to prevent or reduce the harm caused by occupational respirable dust exposure to port, rail, power station, and other workers
- (c) whether these arrangements were adequate, and have been adequately and effectively maintained over time
- (d) the roles of government departments and agencies, industry, health professionals and unions in these arrangements
- (e) the efficacy and efficiency of adopting methodologies and processes for respirable dust measurement and mitigation, including monitoring regimes, engineering measures, PPE, statutory requirements, and industry policies and practices, including practices in jurisdictions with similar industries
- (f) other matters the committee determines are relevant to occupational respirable coal or silica dust exposure.

Monitor and review role

The committee's extended terms of reference also include monitoring and reviewing the implementation of recommendations made by the committee in its reports on both the initial and the extended terms of reference, including, importantly, the development of a draft Bill for the consideration of the Parliament.

1.2 The inquiry process – the initial terms of reference

The committee received 47 submissions addressing its initial terms of reference.⁴

To date, the committee has held 27 public hearings, 15 private hearings, and one departmental briefing. Over the course of these hearings, the committee has taken evidence from 190 witnesses.⁵

The committee held 13 of these public hearings in Brisbane, during which it received evidence from government departments and agencies, medical specialists, occupational safety and health professionals, union representatives, academics, mining engineers, mine operators, retired and former coal miners, and coal mine workers presently employed in the industry. The committee also heard testimony from a number of individual coal mine workers who have been diagnosed with CWP, and their families.

The committee acknowledges the participation in the inquiry by other Members of the Parliament, including Mr Lachlan Millar MP, Member for Gregory, and Mr Jim Pearce MP, Member for Mirani.

Most witnesses willingly gave evidence to the committee. However, on occasion, the committee was required to compel the attendance of some witnesses under summons, including officers of Queensland's largest coal mine operator, BHP Billiton Mitsubishi Alliance (BMA).

The committee also considered it essential to hear directly from coal workers and miners in Queensland's mining communities. The committee conducted public hearings in 14 regional centres and mining towns, including:

- Ipswich
- Mackay
- Rockhampton
- Collinsville
- Moranbah
- Dysart
- Middlemount
- Tieri
- Blackwater, and
- Emerald.

⁴ A list of accepted submissions is provided at Appendix A.

⁵ A list of witnesses is provided at Appendix B.

Image 1 Public hearing held in Middlemount on 24 November 2016



Source: CWP select committee image.

In order for the committee to hear from current miners, these hearings were timed to coincide with the conclusion of either a day shift or night shift. Consequently, the hearings took place from 6.00am in the morning or until 9.00pm at night.

The committee was overwhelmed by the numbers of miners and members of mining communities who attended and wanted to speak about their experiences – often before or immediately after working a 12-hour shift.

In November 2016, the committee visited Vale Australia's Carborough Downs⁶ underground mine, located 20 kilometres east of Moranbah, to better understand the operation of a longwall mine and the approach that Vale Australia and Carborough Downs management had taken to dust management and worker health following the diagnosis of CWP in three of its workers.

In December 2016, the committee visited Anglo American's Grasree underground mine, 25 kilometres south-west of Middlemount, and went underground to view a longwall in operation. During the site visit, the committee held discussions with senior executives and technical experts about the measures that Anglo had undertaken to mitigate and control dust at its Queensland underground coal mines.

Paragraph (e) of the committee's initial terms of reference required it to inquire into and consider the practices for coal mine dust measurement and mitigation, including monitoring regimes, engineering measures, PPE, etc., in jurisdictions with similar coal mining industries to Queensland.

In order to fulfil that requirement and to assist the committee with its assessment of the adequacy of arrangements in Queensland, in February 2017, a delegation including the committee's chair and deputy chair travelled to the United States of America (USA) to investigate how the USA regulates its coal mining industry.

Further, the committee considered that a proper inquiry into the adequacy of arrangements which have existed in Queensland to eliminate and prevent CWP (paragraph (a) of the terms of reference) required the committee to consider the nature and extent of those arrangements in other jurisdictions in Australia and overseas.

The USA is now recognised internationally as the world's best practice jurisdiction in relation to coal mine dust regulation and health surveillance of coal workers.

⁶ Since the committee's visit, Carborough Downs underground mine was sold by Vale Australia to Fitzroy Australia Resources.

The purpose of this delegation was to investigate:

- how the USA regulates the coal mining industry, and in particular, arrangements for the regulation of coal mine dust
- how the USA identifies and manages CWP and CMDLD, including arrangements for coal miners' health surveillance and workers' compensation.

The delegation undertook a busy schedule of site visits, briefings and meetings with a range of USA government agencies and officials, and world-leading medical professionals at the forefront of CWP identification and management, at the following locations:

- National Institute for Occupational Safety and Health (NIOSH): Center for Dust Control Research in Pittsburgh
- Mine Safety and Health Administration (MSHA): Dust Division in Pittsburgh
- NIOSH: Division of Respiratory Disease Studies in Morgantown
- Black Lung Clinic: Northwestern Medicine, Northwestern University in Chicago, and
- Black Lung Center of Excellence: University of Illinois in Chicago.

Over the course of these briefings, tours, and visits, the delegation gathered critical evidence relevant to the committee's terms of reference, including:

- how the USA regulates control and monitoring of respirable coal mine dust
- the extensive research into personal real-time dust monitoring undertaken by NIOSH and MSHA
- the training and education of mines inspectors, including in relation to the use and calibration of real-time personal dust monitoring equipment
- the value of a dedicated independent mine regulator
- the value of dedicated occupational health research and epidemiology
- the extensive research already done to justify a lower Occupational Exposure Limit (OEL) for coal mine dust than currently exists in Queensland
- the world's best practice for coal worker health surveillance, including chest x-ray and spirometry;
- the B-reader training and accreditation process
- the world's best practice for CWP identification, diagnosis, and treatment (including the opportunity to observe a full CWP patient assessment at the Black Lung Clinic: Northwestern Medicine)
- the extensive training and educational resources available for medical professionals involved in the identification, diagnosis, and treatment of CWP and CMDLD.

Further details of the delegation's visit to the USA are set out in the report on travel which appears at Appendix C.

In February 2017, the committee travelled to Sydney and met with representatives from Coal Services Pty Ltd and the NSW Resources Regulator to discuss the collaborative model approach taken in NSW to the monitoring and management of coal dust exposure and worker health, and workers' compensation for coal industry workers.

In March 2017, the committee inspected the Wiggins Island Coal Export Terminal at the Port of Gladstone and the Dalrymple Bay Coal Terminal at the Port of Hay Point, south of Mackay.

In March 2017, the committee visited DNRM's Safety in Mines Testing and Research Station (SIMTARS) at Redbank.

During the course of the inquiry to date the committee has issued over 60 summonses for the production of documents including from DNRM, the Construction, Forestry, Mining and Energy Union (CFMEU), and all operators of Queensland coal mines. The summons required the production of Safety and Health Management System (SHMS) documents, dust monitoring results, directives and compliance notices, Mine Record Entries, minutes of meetings, correspondence, policies and procedures. This resulted in the provision to the committee of many thousands of documents.

The committee notes the very significant effort and resources applied by recipients of the summonses to achieve compliance within the limited time necessary for the committee to do its work.

1.3 Coal industry in Queensland

Queensland is rich in natural resources of coal deposits, metallic and non-metallic minerals, and petroleum. An estimated 35 billion tonnes of high quality coal resources has been identified in reserves across the state.⁷

Currently, there are 51 operating coal mines in Queensland, of which 11 are underground and 40 are open-cut mines.⁸ Ninety per cent of the 244 million tonnes of coal produced in Queensland coal in 2015-16 was sourced from the Bowen Basin.⁹

Australia is the world's fourth largest producer,¹⁰ accounting for 7.2 per cent of global coal production in 2015. Queensland in turn accounts for 52 per cent of Australia's black coal production, positioning the state as a significant regional producer.¹¹

Coal is our leading export, generating \$21.4 billion in export revenue in 2015-16.¹² The coal industry contributed \$1.6 billion in royalties, out of a Queensland total of \$2.2 billion from the resources industry, in 2015-16.¹³ This represents over 10 per cent of the state's total taxation and royalty revenue.¹⁴

The industry employed 24,146 workers in open-cut or exploration coal mines as at September 2016. An additional 5,282 workers were employed in underground coal mines.¹⁵

The total number of employees doubled in the six-year period from 2006-07 to 2011-12, before declining steadily. In the same period, the number of contracted employees increased.

⁷ Queensland Government, *Coal resources*, <https://www.business.qld.gov.au/industries/invest/mining/resources-potential/mineral-resources/coal-resources>

⁸ Department of Natural Resources and Mines (DNRM), correspondence dated 10 April 2017.

⁹ DNRM, *Queensland's mining and petroleum industry overview*, https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0004/238072/queensland-mining-petroleum-overview.pdf

¹⁰ International Energy Agency, *Key Coal Trends: Excerpt from Coal Information*, 2016 edition, 2016, p 4, <http://www.iea.org/publications/freepublications/publication/KeyCoalTrends.pdf>

¹¹ British Petroleum, *BP Statistical Review of World Energy June 2016*, p 32, <https://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2016/bp-statistical-review-of-world-energy-2016-full-report.pdf>

¹² Queensland Government Data, *Total value of exports per year*, 7 December 2016, https://www.dnrm.qld.gov.au/_data/assets/excel_doc/0005/238730/table-11-total-value-exports.xlsx; export value includes coking and thermal coal.

¹³ Queensland Resources Council (QRC), *What is Queensland's coal industry worth to Queensland?*, 2015-16

¹⁴ DNRM, submission 35, p 4.

¹⁵ DNRM, *Quarterly worker numbers*, 31 December 2016, https://www.dnrm.qld.gov.au/_data/assets/excel_doc/0009/235449/quarterly-worker-numbers.xls

As at 2015, approximately 10.6 per cent of total mining industry workers were labour hire or contractor labour.¹⁶ Within the coal industry, it is estimated that more than a third of total industry workers are now engaged as contractors employed by labour hire firms, rather than as permanent employees of the mines,¹⁷ with contract labour making up more than two-thirds of the workforce at some sites.¹⁸

1.4 Historical context

Coal was discovered in southeast Queensland in 1825. The first coal mine operated at Redbank near Ipswich from 1845. Coal mining quickly expanded in the Ipswich and West Moreton districts due to the region's proximity to the residential population in south east Queensland. Coal was discovered near Blackwater in the Bowen Basin in 1845. The total annual coal production in Queensland reached 1 million tonnes in 1913.¹⁹

Image 2 Miners working with picks and shovels



Source: (left) John Oxley Library, State Library of Queensland; (right) Dr Deborah Yates, Paper tabled at the public hearing on 11 November 2016 (Leonard HT Go, Silpa D Krefft, Robert A Cohen and Cecile S Rose, 'Lung disease and coal mining: what pulmonologists need to know', *Current Opinion in Pulmonary Medicine*, vol. 22, no. 2, 2016, p 172).

¹⁶ Queensland Treasury, Inquiry into the practices of the Labour Hire Industry in Queensland: Paper 2 – Workplace Health and Safety Queensland Labour hire Industry Trends, 18 February 2016, p 5, <http://www.parliament.qld.gov.au/documents/committees/FAC/2015/I5-LabourHire/I5-bp-25Feb2016.pdf>

¹⁷ Mr Andrew Vickers, General Secretary, Construction, Forestry, Mining and Energy Union (CFMEU), public hearing transcript, Ipswich, 4 November 2016, p 38. See also: Mr Darren Nicholls, Director of Underground Operations Queensland, Glencore Coal Assets Australia, public hearing transcript, Brisbane, 1 March 2017, p 18; A Vickers cited in C Latimer, 'Rio Tinto contractor conundrum: The new normal in the Pilbara', *Australian Mining* (online), 6 August 2016, <https://www.australianmining.com.au/features/rio-tinto-contractor-conundrum-the-new-normal-in-the-pilbara/>; 'CFMEU calls to end casualisation in mining industry', *Queensland Mining and Energy Bulletin*, 30 May 2016, <http://www.qmeb.com.au/cfmeu-calls-to-end-casualisation-in-mining-industry/>.

¹⁸ See Ms Liz Sanderson, Coal Australia Occupational Health and Rehabilitation Specialist, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 19; Mr Nick Tanner, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 21; Mr Shaun Isaacs, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 14; Mr Gavin Adams, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 8. See also: Wesfarmers, *Resources*, <http://sustainability.wesfarmers.com.au/our-businesses/industrials/resources/>.

¹⁹ DNRM, submission 35, p 132.

In 1950, coal production in Queensland amounted to 2.3 million tonnes, sourced from more than 80 underground mines.²⁰ Virtually all of these mines were worked by hand, with coal blasted from the coal face, and hand-loaded into skips for haulage to the surface.²¹ During the 1960s the Queensland coal industry underwent a period of major growth, with the establishment of new export mines in the south-east Bowen Basin at Moura, and Kianga in central Queensland. Over the next 15 years numerous large scale open-cut mining operations were developed in the Bowen Basin.²²

Underground mines commenced operation in the Blackwater district in the late 1960s.²³

Large scale open-cut mining in the Bowen Basin commenced in the 1960s firstly at Moura, then at Blackwater (in 1969), with the first introduction of electric walking draglines for removal of coal, supported by large truck fleets for the transportation of raw mined coal to the coal preparation facility and railhead.²⁴

Image 3 Gregory open cut mine, 1980s



Source: Queensland Coal Board, *35th Annual Report, 1985-86*, 1986, p 16.

The 1950s and 1960s also saw the introduction of continuous miners (large mining machines) which cut coal and loaded it into shuttle cars on a conveyor system.²⁵

*I started in the mines when I was 14. I am 75 now. I was working on the surface at the time, at Abermain No. 1. It was all contract in those days, just pick-and-shovel mining. The dust then was nowhere near as bad as it was when conveyor belts and machinery came in.*²⁶

²⁰ DNRM, submission 35, p 134.

²¹ Bruce Ham, submission 5.2, p 1.

²² DNRM, submission 35, p 132.

²³ DNRM, submission 35, p 134.

²⁴ DNRM, submission 35, p 134.

²⁵ Bruce Ham, submission 5.2, p 1.

²⁶ Mr Ray Powell, retired miner, public hearing transcript, Ipswich, 4 November 2016, p 14.

Image 4 The first continuous miner entering underground at German Creek Central



Source: Queensland Coal Board, *32nd Annual Report, 1982-83*, 1983, p 16.

From 1986, longwall mining was introduced into Queensland. Longwall mining is a form of underground mining where a wall of coal is mined in a single slice. It is a very productive mining system, however it is much harder to control dust and dust exposure of coal miners.²⁷ Currently, there are nine active longwall operations in Queensland.²⁸

Image 5 Longwall unit, German Creek Central Colliery, 1980s



Source: Queensland Coal Board, *35th Annual Report, 1985-86*, p 48.

²⁷ Bruce Ham, submission 5.2, p 1.

²⁸ DNRM, submission 35, p 134.

Mining is a dangerous occupation. There have been fatalities recorded in Queensland's mines every year from 1900 to 2015. The committee notes that 2015-16 is the first and only year to date in which there were no recorded fatalities.²⁹

Tragically, Queensland has had its share of mine disasters, with associated loss of life. Major disasters at coal mines resulting in multiple loss of life include Mount Mulligan on 19 September 1921 (75 lives lost), Box Flat No.7 on 31 July 1972 (17 lives lost³⁰), and Kianga on 20 September 1975 (13 lives lost). More recently underground explosions at Moura No. 4 mine on 16 July 1986 and at Moura No. 2 mine on 7 August 1994 resulted in 12 lives lost and 11 lives lost respectively.³¹

The disasters at Moura No. 4 and Moura No. 2 mines led to a revision of coal mining safety and health legislation in the late 1990s, through the *Coal Mining Safety and Health Act 1999* (Qld) and the Coal Mining Safety and Health Regulation 2001 (Qld).³²

At that time, Queensland adopted a new approach, largely based on self-regulation which provided for more proactive engagement and consultation of industry stakeholders.³³ This legislative framework, which remains in place today, puts greater safety and health obligations on those persons whose decisions affect the safety and health of others. The obligations are actioned through a systematic, risk-based approach to managing hazards in the workplace.³⁴

Safety issues generally have outcomes that are acute or immediate, while health issues are generally chronic. Following Queensland's mining disasters, there was a greater push to improve the safety record of industry – perhaps justifiably at the time, but with the result that there has been a lesser emphasis on evidence-based occupational hygiene over time.³⁵

Accordingly, mine operators, who under the regulatory framework are charged with identifying and implementing necessary preventative and protective measures, have generally tended to have more robust systems and measures in place to minimise or address possible explosions, roof collapse or physical injuries. In contrast, dust mitigation systems and the use of PPE to protect workers' health have been implemented in a less consistent fashion, if at all, and monitoring of worker dust exposures has been similarly irregular or piecemeal, in the absence of a highly visible threat or hazard.³⁶

²⁹ DNRM, *Queensland Mines and Quarries – Safety Performance and Health Report 2015-16*, State of Queensland, 2016, p 9.

³⁰ With one further life lost 18 months later as a result of this disaster.

³¹ DNRM, *Queensland Mines and Quarries – Safety Performance and Health Report 2015-16*, State of Queensland, 2016, p 9.

³² The *Mining and Quarrying Safety and Health Act 1999* (Qld) and Mining and Quarrying Safety and Health Regulation 2001 were established in concert with this legislation as part of a consistent framework applying also to quarries and metalliferous and other non-metalliferous mines.

³³ Maurice Blackburn, submission 26, p 3.

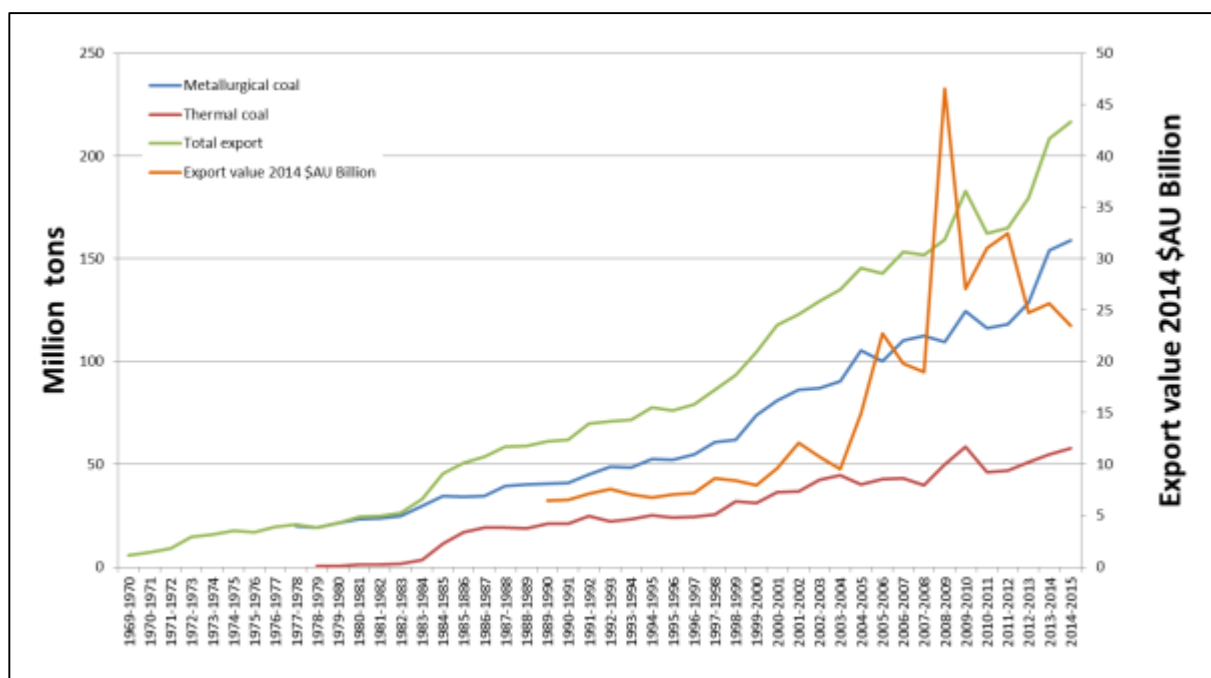
³⁴ Andrew Clough, *Mining legislation – the Queensland perspective*, 15th Coal Operators Conference, University of Wollongong, The Australasian Institute of Mining and Metallurgy and Mine Managers Association of Australia, 2015, p 24.

³⁵ Australian Institute of Occupational Hygienists (AIOH), response to question taken on notice during a hearing, 1 February 2017, pp 3-4; Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 6.

³⁶ Ting Ren, Brian Plush and Najdat I Aziz, *Dust controls and monitoring practices on Australian longwalls*, 1st International Symposium on Mine Safety Science and Engineering, Netherlands, 2011, p 1420; Mr Tim Hobson, Senior Site Executive and General Manager, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2016, p 22; Department of Employment, Economic Development and Innovation (DEEDI), *Dust Self Assessment Feedback Report: Part A*, Queensland Government, 2010.

Queensland coal production and exports were boosted from 2006 when a number of open-cut and underground mines commenced production. In 2007-08, coal exports from Queensland increased to 153.3 million tonnes. This coal mining boom reached a peak in 2009-2010 when Queensland's coal exports reached a record 183 million tonnes.³⁷ The industry experienced a decrease in coal exports thereafter, as a result of major flooding and damage to infrastructure in 2010-11, and wider global economic trends.³⁸

Figure 1 Queensland coal production and exports, 1969 – 2015



Source: DNRM, submission 35, p 5.

During the coal mining boom, mine operators and workers often appear to have focused on increased production targets, with sometimes inadequate regard for health and safety.³⁹ Mr Allan Berlin, a retired miner with many years of experience underground, stated:

*We had bonus systems. The more coal you got out, the more you earned. It probably was not a good system because you rushed things. If your shearer went down and the sprays were not working, half of them would be working and you would still keep cutting. There is no use saying the miners did not like it because they loved the bonuses. Even the people in the office, the people on the surface, were still getting the bonus.*⁴⁰

In the same period, the number of contract employees increased. The committee heard from a number of sources that labour hire or contract mine workers are less likely to raise concerns about safety issues or challenge decisions, due to the insecurity or lack of permanency in their employment arrangements – a perception that persists throughout Queensland's mining industry.⁴¹

³⁷ DNRM, submission 35, p 134.

³⁸ DNRM, submission 35, p 134.

³⁹ Dr Bevan Kathage, retired miner, Ipswich Retired Coal Miners' Association, public hearing transcript, Ipswich, 4 November 2016, p 19.

⁴⁰ Public hearing transcript, Ipswich, 4 November 2016, p 18.

⁴¹ Association of Professional Engineers, Scientists and Managers Australia (APESMA), submission 31, p 7; private hearing, Brisbane, 2 February 2017. See also Mr Russell Herdman, private capacity, public hearing

People are too fearful for their jobs, being labour hire, to speak up. It is as simple as that. When you have a permanent shirt, you have a little bit more protection. The reason is that most of the people join a union and they then have someone supporting them. The guys who are labour hire are not even joining the unions for the simple reason that they believe the unions cannot do anything for them. Is that right or wrong? It is not for me to say in this forum, but these people have no protection.⁴²

In 2013, the top coal caving methodology was introduced for the first time in a Queensland mine, enabling operations with thicker seams to increase their recovery of coal.⁴³ The extraction method can present significantly greater challenges for dust control than conventional longwalls.⁴⁴

A summary table of relevant events and changes to the regulatory framework governing the Queensland mining industry, as they relate to this inquiry, is provided at Appendix D.

1.5 What is coal workers' pneumoconiosis?

CWP is a type of pneumoconiosis solely caused by prolonged exposure to coal mine dust.⁴⁵ It is one of a broad group of coal mine dust lung diseases (CMDLD) caused by exposure to respirable coal mine dust over several years.⁴⁶ Disease develops from the deposit of dust particles and the reaction of the lung tissue to the dust.

There are three primary types of lung disease that are classified as pneumoconiosis:

- asbestosis, cause by the inhalation of asbestos dust particles
- silicosis, caused by the inhalation of silica dust particles, and
- CWP, caused by the inhalation of fine coal dust particles.⁴⁷

Emphysema, chronic bronchitis, lung function impairment, and diffuse dust-related fibrosis are other manifestations of CMDLD.⁴⁸

transcript, Middlemount, 24 November 2016, p 29; and public hearing transcript, Moranbah, 23 November 2016, pp 15, 18-19, 22, 30.

⁴² Mr Jason Meikle, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 29.

⁴³ DNRM, submission 35, p 14.

⁴⁴ Mr Nick Tanner, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 25; Mr Mike Carter, Site Senior Executive and General Manager, North Goonyella Mine, Peabody Energy Australia, public hearing transcript, Brisbane, 3 March 2017, p 16; Mr Matt Cooper, Site Senior Executive and General Manager, Broadmeadow Mine, BHP Billiton Mitsubishi Alliance, public hearing transcript, Brisbane, 3 March 2017, p 40.

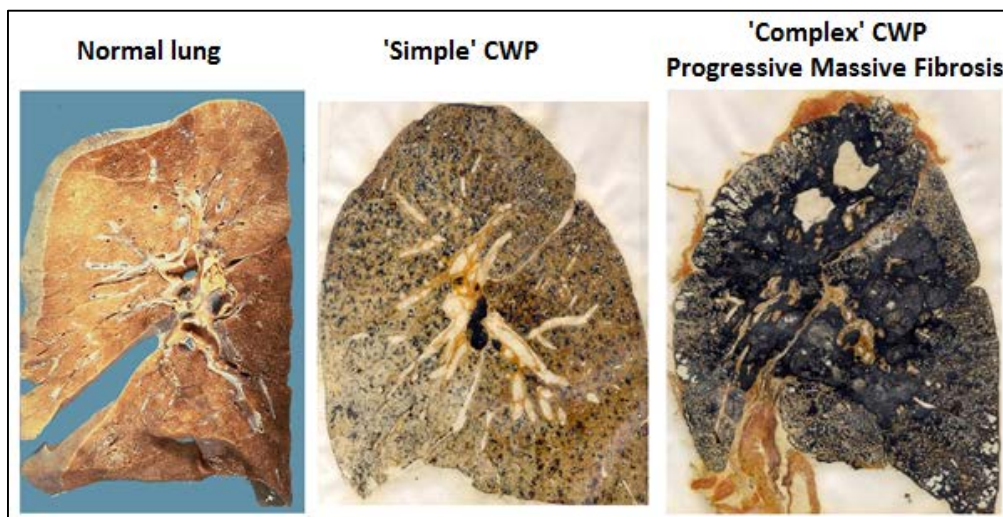
⁴⁵ The Thoracic Society of Australia and New Zealand (TSANZ) and Lung Foundation Australia (LFA), submission 6, p 2.

⁴⁶ Dr Bob Edwards, correspondence dated 18 February 2017.

⁴⁷ AIOH, submission 14, p 4; and CFMEU, submission 27, p 5.

⁴⁸ Monash Centre for Occupational and Environmental Health, *Coal mine dust lung disease – fact sheet for GPs*, 2016, https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0009/352287/coal-mine-dust-lung-disease-info-gps.pdf

Image 6 Lung comparison



Source: CWP select committee image collection.

In 2013, pneumoconiosis resulted in 260,000 deaths globally. Of these deaths, 46,000 were due to silicosis, 24,000 to asbestosis, and 25,000 to CWP. Most of these cases occurred in a setting of poor occupational hygiene and limited systems for dust control.⁴⁹

In the USA, CWP has been the underlying cause or a contributing cause of death for more than 75,000 coal miners since 1968, according to NIOSH (within the Department of Human Services), the federal agency responsible for conducting research on work-related diseases and injuries and recommending occupational safety and health standards.⁵⁰

1.5.1 Symptoms

CWP may take several years to develop and there are often no symptoms in the early stages of the disease.

There are two forms of the disease:

- simple CWP: a form of the disease where coal macules are surrounded by fibrosis or scarring in the lung. Chest x-rays indicate small scars of less than 10mm. Symptoms may be none at all, or cough or some shortness of breath. Often associated with emphysema, simple CWP may stabilise with removal from further exposure to dust.
- complicated CWP or Progressive Massive Fibrosis (PMF). Symptoms include shortness of breath, black sputum, chronic cough, pulmonary hypertension, frequent pneumonia and heart problems. PMF is associated with fibrosis or scarring in the lung of 10mm or greater, associated with progressive symptoms and disease without further exposure to dust.⁵¹

The committee heard evidence from a number of former coal mine workers diagnosed with CWP. Those diagnosed with complicated CWP reported gross physical impairment and fatigue, frequent

⁴⁹ TSANZ and LFA, submission 6, p 2.

⁵⁰ United States Government Accountability Office, MINE SAFETY: Reports and Key Studies Support the Scientific Conclusions Underlying the Proposed Exposure Limit for Respirable Coal Mine Dust, GAO-12-832R, Washington, DC, 17 August 2012, p 1, <http://www.gao.gov/assets/600/593780.pdf>

⁵¹ Coal Services NSW, NSW CS Health, *Dust disease and you*, https://www.coalserviceshealth.com.au/MessageForceWebsite/Sites/338/Files/CO043%20Lung%20Disease%20Fact%20Sheet_P1.pdf; CFMEU, submission 27, p 5; and TSANZ and LFA, submission 6, p 3.

bouts of pneumonia, and bleeding. Mr Percy Verrall, a retired miner with extensive experience in Queensland mines, experienced respiratory problems from 2003. He said of his general health: 'It has got that way that I cannot do anything. Some days I cannot even walk around my house'.⁵² He stated:

*I would do anything and I wished I could do it now. I would love to go out with my grandkids and that, but I cannot do anything with them. I used to be a sportsman. I cannot do that anymore. I try to kick a soccer ball with the grandkids and I cannot.*⁵³

Image 7 Mr Percy Verrall



Source: Essential Media Communications, Carlton, Victoria, 2016.

Mr Chris Byron was an underground miner for approximately 40 years. He was diagnosed in 2016, but a chest x-ray from 2006 had indications of the disease. He described the adverse physical effects of suffering from complicated CWP, coupled with the mental stress of knowing he has the disease:

*I no longer can do a lot of things. I have always been into sports, into gardening and generally led an active life. In the last 10 years, due to my restricted breathing, my health has very much declined, because what I used to be able to do in a day doing general activities now takes days to complete. When I get pneumonia, it is frightening because I think, 'This time it could kill me', and I have to live with this constantly. You can imagine living with wondering if the medication will stop the bleeding and waiting for medication to clear up the blood. I get very worried and depressed whilst this is happening. I have panic attacks when I cannot breathe. My wife and I swing from worry, being cranky and shocked at my diagnosis, when it could have been prevented, as we were given the run around for 10 years.*⁵⁴

⁵² Public hearing transcript, Ipswich, 4 November 2016, p 4.

⁵³ Public hearing transcript, Ipswich, 4 November 2016, p 8.

⁵⁴ Public hearing transcript, Mackay, 25 November 2016, pp 33-34.

Image 8 CWP sufferers giving evidence to the committee in Mackay on 24 November 2016



Source: CWP select committee image.

1.5.2 Obtaining a clinical diagnosis of CWP

Numerous coal mine workers and their families informed the committee of significant dust on their bodies and their clothing after working a shift in a mine. Some reported coughing up black mucus for years after working in the coal industry.⁵⁵

*After I left [the underground mine], I coughed up heaps of black phlegm for about two years. I just kept coughing it up. I thought that I must have got a good gutful of dust down there.*⁵⁶

Early detection of asymptomatic CWP is vital so that those still in the workforce can be removed from exposure and the possibility of their developing complex CWP is reduced.⁵⁷ Tragically, many sufferers of CWP continued to work in dusty conditions while their condition remained unidentified.⁵⁸

The interstitial responses or inflammation and fibrosis in the lung are features that indicate CWP, but they are also the same features that can be produced by a myriad of other diseases, including the other types of pneumoconiosis, as well as pneumonia. The committee heard that there are difficulties diagnosing both simple CWP and end-stage CWP. Symptoms are highly variable and there may be no respiratory complaints at all.⁵⁹ Signs of complicated CWP or PMF may be difficult to distinguish from those of other CMDLDs such as emphysema, and fibrosis.⁶⁰

⁵⁵ Public hearing transcripts – Mackay, 25 November 2016, p 37; Moranbah, 22 November 2016, p 15; Dysart, 23 November 2016, pp 1-3, 5; Middlemount, 23 November 2016, p 2; Collinsville, 21 November 2016, p 17; Rockhampton, 12 December 2016, p 26.

⁵⁶ Mr Peter Lyon, private capacity, public hearing transcript, Rockhampton, 12 December 2016, p 26.

⁵⁷ TSANZ and LFA, submission 6, p 3.

⁵⁸ Mr Chris Byron, private capacity, public hearing transcript, Mackay, 25 November 2016, pp 32-33; Mr Brad Rogers, private capacity, public hearing transcript, Tieri, 14 December 2016, p 14.

⁵⁹ TSANZ and LFA, submission 6, p 3.

⁶⁰ Dr Nigel Sommerfield, Fellow, Royal Australian and New Zealand College of Radiologists (RANZCR), public hearing transcript, Brisbane, 11 November 2016, p 32.

Mr Brad Rogers has worked in the mining industry since 1985. He was diagnosed with CWP in 2016. He is still working, but has been restricted to surface activities. He spoke of the misdiagnosis of his CWP in 2009:

The local doctor here said he thought I had shadow on my lung, so he sent me for a CT to Rockhampton. I went the next day and had it done. When the results came back they asked if I had ever had pneumonia and I had as a child. They wrote it off and said that it was just scarring from the pneumonia.⁶¹

A diagnosis may be easily missed, or assumptions made that loss of function associated with CWP is due to reduced fitness:

In terms of this [occupational dust] exposure if you do not look for it, people think they are just getting older. They think they are ageing.⁶²

It remains unknown how many deaths have been wrongly attributed to lung diseases other than CWP. American-based CWP expert Dr Robert Cohen informed the committee:

... I think many physicians and the community do not realise... that coalmine dust causes obstructive lung disease. It causes emphysema, chronic bronchitis and lung function impairment in many ways very similar to tobacco smoke. If you had a miner who died of any of these diseases, they would not have taken into account the contribution of coalmine dust exposure to their lung disease and, therefore, again underestimated the proportion of the disease.⁶³

1.5.3 Development and treatment of CWP

The development of CWP usually requires lengthy exposure to coal dust and generally develops slowly.⁶⁴

A significant problem in diagnosing respiratory diseases such as CWP is that there is a long latency period before symptoms emerge.⁶⁵ Sufferers often will not present with symptoms until many years after retirement from coal-mining, so that the relationship between the development of lung disease and workplace exposure may not be identified.⁶⁶

There is a 'very significant' incidence of under-reporting of occupational diseases such as CWP in workers' compensation databases.⁶⁷ The long latency period for the disease makes it difficult to ascertain the true number of cases in Australia as currently available data is incomplete and unreliable.⁶⁸ According to the Australian Institute of Occupational Hygienists (AIOH), it would not be possible to ascertain the true incidence of pneumoconiosis in Australia for a specific period, as the current incidence of CWP in the industry is a result of exposures that occurred in the past.⁶⁹

⁶¹ Public hearing transcript, Tieri, 14 December 2016, p 14.

⁶² Dr Robert Cohen, Director of Occupational Lung Disease, Division of Pulmonary and Critical Care Medicine, Feinberg School of Medicine, Northwestern University, public hearing transcript, Brisbane, 15 March 2017, p 10.

⁶³ Public hearing transcript, Brisbane, 15 March 2017, p 4.

⁶⁴ Private briefing, Brisbane, 7 November 2016.

⁶⁵ Mr Bruce Ham, retired Mining Health and Safety Adviser, former Coordinator of the Queensland Coal Board Coal Industry Employees' Health Scheme, public hearing transcript, Ipswich, 4 November 2016, p 45.

⁶⁶ TSANZ and LFA, submission 6, p 2.

⁶⁷ AIOH, submission 14, p 4.

⁶⁸ TSANZ and LFA, submission 6, p 2; and AIOH, submission 14, p 4.

⁶⁹ AIOH, submission 14, p 4.

The committee heard that the long latency period of the disease has been detrimental in regards to government decision-making and policy-setting, such that many significant decisions affecting occupational health in mines have been made with insufficient data.⁷⁰ The AIOH 'strongly cautions' against reactive responses without proper consultation with relevant experts.⁷¹

There is no cure for CWP, and treatment consists of managing the symptoms.⁷² However, as a number of submissions to this inquiry noted, CWP is completely preventable through avoiding or limiting exposure to coal dust.⁷³ The risk of developing CWP is directly related to the magnitude and duration of exposure to coal mine dust.⁷⁴ The Thoracic Society of Australia and New Zealand (TSANZ) and the Lung Foundation Australia (LFA) have identified that the latency period between exposure and development of CWP may be prolonged, but decreases with increases in dust inhalation levels.⁷⁵

Dr Robert Cohen informed the committee that, whilst the damage to the lungs caused by coal dust inhalation cannot be reversed, in the USA there are tertiary preventions and treatment funded by the government for people who already have disease. Treatments include:

- inhaled medications, antibiotics, pneumococcal vaccinations
- physiotherapy and pulmonary rehabilitation, consisting of special exercises and education, and
- smoking cessation and elimination of any other respiratory hazards.⁷⁶

1.6 Silica and other respirable dusts leading to coal mine dust lung diseases

Long term occupational dust exposure to many dusts, including coal dust and crystalline silica dust, can cause serious lung disease other than CWP. The committee heard from a number of former coal mine workers diagnosed with silicosis and other respiratory illnesses.⁷⁷

1.6.1 Silicosis

Silicosis is a lung disease that causes scarring to the lungs. Silicosis is caused by prologued exposure to respirable crystalline silica or quartz dust.

Silica is considered more likely to be harmful to the lung than is respirable coal dust.⁷⁸ This is in part due to the macrophages in the lung releasing a toxic substance when they engulf silica particles, causing reactive fibrous or scar tissue to form. Again if the volume of fine silica is excessive, lung function becomes permanently damaged, giving rise to the progressive disease known as silicosis.⁷⁹

⁷⁰ Mr James Purtill, Director-General, DNRM, public briefing transcript, Brisbane, 14 October 2016, pp 2-3.

⁷¹ AIOH, submission 14, p 4.

⁷² CFMEU, submission 27, p 6.

⁷³ See CFMEU, submission 27, p 6; AMA Queensland, submission 23, p 1; AIOH, submission 14, p 2.

⁷⁴ TSANZ and LFA, submission 6, p 2.

⁷⁵ TSANZ and LFA, submission 6, p 3.

⁷⁶ Public hearing transcript, 15 March 2017, pp 1, 12, 17, 19.

⁷⁷ Mr Jason Bing, private capacity, submission 47, p 1; Mr Gary Suhle, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 13; Mr Peter Lyon, private capacity, public hearing transcript, Rockhampton, 12 December 2016, p 31; and Mr Ray Kirkwood, private capacity, public hearing transcript, Emerald, 16 December 2016, p 1.

⁷⁸ NSW CSHealth, Coal workers pneumoconiosis and Silicosis, www.cshealth.com.au, March 2016.

⁷⁹ Emeritus Professor Odwyn Jones, submission 4, p 3.

As with CWP, silicosis may take several years to develop, with little or no symptoms in the early stages of the disease. There is no cure, but early detection is vital as progression of the disease can be slowed if exposure to respirable crystalline silica is avoided.⁸⁰

1.6.2 Other inhalable toxins

The inhalation of cigarette smoke adversely affects the functioning of the cilia, weakening the body's cleansing system in smokers.⁸¹ A history of smoking may mask the cause of respiratory problems. A number of current and former mine workers attested to receiving medical advice that their respiratory problems were likely due to smoking.⁸²

Dr Cohen acknowledged that while it may be difficult to isolate a specific cause of lung damage, both a long history of smoking and workplace dust exposure are certainly significant contributing causes of chronic obstructive pulmonary disease.⁸³ It has been accepted internationally that coal dust exposure causes emphysema independent of smoking history.⁸⁴

1.7 The re-identification of CWP in Queensland

CMDLD was identified early in Queensland's mining history as a serious and adverse effect of working in coal mines. In December 1910, a Royal Commission was appointed to inquire into the 'evil' of occupational silicosis and miners' phthisis, or pneumoconiosis.⁸⁵

In 1949, a report to the Queensland Government by Powell Duffryn Technical Services identified that while the exact incidence of phthisis or pneumoconiosis in coal mine workers was unknown, it may be approximated at 15 coal miners per annum.⁸⁶

On 11 December 1982, the Queensland Coal Board issued an order for the conduct of a medical examination of all current coal mining employees in Queensland.⁸⁷ Medical consultants Dr E.M. Rathus and Dr E.W. Abrahams were appointed to perform the survey. Rathus and Abrahams identified 75 cases of pneumoconiosis or suspected pneumoconiosis.⁸⁸

In May 2015, the ISHR of the CFMEU Mining and Energy Division sent an alert to all Queensland coal mines that two cases of CWP had been diagnosed.⁸⁹

⁸⁰ NSW CSHealth, Coal workers pneumoconiosis and Silicosis, www.cshealth.com.au, March 2016.

⁸¹ Emeritus Professor Odwyn Jones, submission 4, p 4.

⁸² See, for example: Mr Ray Powell, retired miner, public hearing transcript, Ipswich, 4 November 2016, p 23; Councillor Peter Ramage, Whitsunday Regional Council, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 5; Mr Paul Head, private capacity, public hearing transcript, Mackay, 25 November 2016, p 43.

⁸³ Public hearing transcript, Brisbane, 15 March 2017, pp 35-36.

⁸⁴ Private briefing, Brisbane, 7 November 2016. See also: Santo Tomas, 'Emphysema and chronic obstructive pulmonary disease in coal miners, *Current Opinion in Pulmonary Medicine*, vol 17, no. 2, 2011, p 123.

⁸⁵ The Royal Commission's 2011 report on occupational health matters relating to the mining industry used the term 'phthisis' to describe pneumoconiosis.

⁸⁶ Powell Duffryn Technical Services, Report to the Queensland Government by Powell Duffryn Technical Services Ltd on the Coal Industry of Queensland, 1949, p 89.

⁸⁷ Queensland Government Gazette, 11 December 1982, vol CCLXXI, no.81, pp 1676-1677.

⁸⁸ Dr E.M. Rathus and Dr E.W. Abrahams, *Report on the Queensland Coal Board Coal Miners' Health Scheme*, Queensland Coal Board, May 1984, p 14.

⁸⁹ CFMEU, submission 27, p 7.

The Commissioner's 2014–15 annual performance report on the Queensland Mines Inspectorate reported the first case of CWP identified in a Queensland coal miner in 30 years.⁹⁰

On 1 December 2015, the re-identification of CWP featured on the ABC's *7.30 Report*. The program also reported thousands of unprocessed medical records haphazardly stored by DNRM. The Minister for Natural Resources and Mines, the Hon Dr Anthony Lynham MP, announced a review of the government's health scheme.⁹¹

The review was conducted by the Monash Centre for Occupational and Environmental Health, in collaboration with the School of Public Health, University of Illinois at Chicago, and considered the respiratory components of the health scheme (the Monash Review). The Monash team reported in July 2016.

On 14 January 2016, Minister Lynham released an action plan to address the CWP crisis.⁹²

The action plan consisted of five points:

- a review to improve the existing screening program
- taking action on coal mines exceeding regulated limits on dust levels
- improving how information is collected and used to ensure cases of CWP are not missed
- investigating regulatory changes as part of mine safety legislation review
- placing the issue on the agenda for the National Council of Mining Ministers.⁹³

The committee commends Minister Lynham for this timely response to the re-identification of the disease commenced in early 2016.

On 12 February 2016, the federal Senate Select Committee on Health (Senate Committee) announced an inquiry into 'black lung'. The Senate Committee reported its findings and recommendations on 28 April 2016.⁹⁴

1.7.1 Confirmed cases of CWP in Queensland

As at 29 May 2017, 21 current and former coal mine workers in Queensland have been diagnosed with CWP or 'black lung' disease. In summary:

- all have been formally confirmed through the DNRM process
- two cases were described as 'complex', presenting with multiple conditions
- 17 involved miners who were actively working in the Queensland coal industry at the time of their diagnosis, and three were retired or former coal miners at the time of diagnosis
- current ages ranged from 38 to 74, with an average age of 56
- two involved open-cut coal mine workers with no underground experience
- four had substantial overseas coal mine experience (UK and USA)
- two had worked in NSW coal mines, as well as in Queensland

⁹⁰ Commissioner for Mine Safety and Health, *Queensland Mines Inspectorate Annual Performance Report 2014-15*, State of Queensland, 2016, p 3.

⁹¹ Australian Broadcasting Corporation (ABC), 'Four Queensland miners diagnosed with Black Lung', *7.30 Report*, 1 December 2015.

⁹² Hon Dr Anthony Lynham MP, Minister for Natural Resources and Mines, 'Action plan revealed on coal miners' health issue', media release, 14 January 2016.

⁹³ Hon Dr Anthony Lynham MP, Minister for Natural Resources and Mines, 'Black lung protections outlined in Parliament', media release, 23 March 2017.

⁹⁴ Senate Select Committee on Health, *Fifth interim report: Black lung: "it has buggered my life"*, April 2016.

- two had worked in the Ipswich coal fields
- all had worked in Bowen Basin coal fields at some point in their careers, and
- all had previously undertaken coal mine workers' health assessments and been certified as fit for work in coal mines.⁹⁵

A detailed schedule of confirmed cases of CWP in Queensland, de-identified to protect the privacy of those miners and former miners, appears at Appendix G to this report.

The committee considers that the overwhelming weight of evidence gathered in the course of this inquiry suggests it is likely that many more Queensland miners and former miners will be diagnosed with CWP or related CMDLDs as a result of what has been a catastrophic failure of the regulatory and health surveillance systems intended to ensure the protection of coal industry workers.

By the end of 2016, experts advised:

...the CWP cases being identified now are a small indicator of what is to come. This will be an epidemic. The Australian coal mining industry as a whole, will see many more cases of this totally preventable disease in the very near future.⁹⁶

Key findings

Since May 2015, 21 current and former coal mine workers in Queensland have been diagnosed with CWP or 'black lung' disease – an entirely preventable disease that is caused exclusively by excessive and prolonged exposure to respirable coal mine dust.

Two confirmed cases of CWP involve coal miners who worked exclusively in open-cut coal mines, proving that CWP does not occur solely in underground coal mine workers.

There will almost certainly be many more cases of CWP identified amongst current and former Queensland coal mine workers.

1.8 Widespread belief that CWP had been eradicated

The Monash Review found a general belief held by most stakeholders that, as the health scheme had not identified any new cases of CWP for many years, the disease had been eradicated in Queensland.⁹⁷

Prior to the re-identification of CWP in 2015 it was widely accepted by coal mine operators, managers, workers and regulators that Australia had effectively eradicated CWP. This pre-conditioned most in the industry to underestimate the extent of the potential risk that respirable coal mine dust still posed. According to the QRC, there was a progression towards 'risk normalisation' in regards to coal mine dust, and a resulting 'drift to failure' of the health scheme.⁹⁸

⁹⁵ DNRM, submission 35, p 7.

⁹⁶ Dr Brian Plush, submission 15, p 1.

⁹⁷ Monash Centre for Occupational and Environmental Health, *Review of Respiratory Component of the Coal Mine Workers' Health Scheme*, 2016, p 19.

⁹⁸ QRC, submission 18, p 4.

The committee heard from a number of sources that CWP was never eradicated:

*... black lung has not re-emerged. It has always been here but has been misdiagnosed as emphysema or some other lung complaint.*⁹⁹

The committee noted the tragic irony that Queensland, with no diagnosed cases of CWP for many years, had attracted the interest of occupational health experts in the USA.¹⁰⁰ According to Dr Cohen:

This actually was a major topic of conversation during the rule making and efforts that were going on in the United States to lower our dust standards ... when we talked to many of our mining engineering colleagues and others, they pointed out the experience here in Australia. They said that the standards here, in Queensland, were higher than our standards; they were three milligrams per metre cubed, yet the disease had been eliminated in Australia and there were no cases. That was when I first became aware of the Australian experience and I was fascinated and somewhat intrigued in trying to figure how that could be possible.

*I must say that we really did not have an explanation. Then it became a little bit more clear when I became involved with [Queensland's emerging black lung cases] that perhaps black lung had not been eliminated—I would say that is the most likely scenario—but in fact rediscovered and that people maybe were not as vigilant in looking for this disease. If you do not look for something, you may not actually find it.*¹⁰¹

Professor Sim observed the change in focus of the health scheme from respiratory disease identification to a 'fitness for work' assessment was directly influenced by:

*... the belief that coal workers' pneumoconiosis had been eliminated and was of historical interest only which led to a degree of complacency in controlling and screening for this disease.*¹⁰²

The committee heard that coal miners were told CWP had been eradicated.¹⁰³ In Moranbah, Mr Nick Tanner gave evidence that he had worked on a longwall underground mine for 10 years. He was aware the mine was dusty, 'but we were told that black lung no longer existed'.¹⁰⁴ Another mine worker, Mr Shane Rolls, said that CWP was never discussed at the mine as a possible risk:

*There was nothing emphasised about it, until later on... back then there was nothing to really emphasise or let you know about the black lung. Unless you knew the history of the coalmines and the industry from past beings, as a few of us older blokes do, that is the only time we ever heard about it from back in the day dot, when it first started.*¹⁰⁵

Mr Bill Drysdale recalled being shown a video about dust being 'the invisible killer' in mines, and while his induction training was otherwise thorough, it had only a 'five minute section on coal dust'.¹⁰⁶

⁹⁹ Dr Brian Plush, submission 15, p 1; and Mr Kerrod Slatter, Coal mine worker, Oaky North Mine, public hearing transcript, Tieri, 14 December 2016, p 8.

¹⁰⁰ GJ Joy, JF Colinet and DD Landen, *Coal workers' pneumoconiosis prevalence disparity between Australia and the United States*, NIOSH, July 2012, <https://www.cdc.gov/niosh/mining/UserFiles/Works/pdfs/cwppd.pdf>

¹⁰¹ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 3.

¹⁰² Public hearing transcript, Brisbane, 9 November 2016, p 2.

¹⁰³ Public hearing transcript, Moranbah, 22 November 2016, pp 5, 6, 14, 23.

¹⁰⁴ Public hearing transcript, Moranbah, 22 November 2016, p 14.

¹⁰⁵ Mr Shane Rolls, public hearing transcript, Middlemount, 24 November 2016, p 18.

¹⁰⁶ Public hearing transcript, Ipswich, 4 November 2016, p 17; and NSW Joint Coal Board, *Coal dust: the invisible killer*, VHS video, 1989.

Mr Andrew Vella, General Manager and Site Senior Executive (SSE) at Carborough Downs Mine, said that the long period of time during which there were no cases of CWP identified, 'resulted in a bit of false confidence in the industry'.

He stated:

Maybe when you have procedures and policies in place that say if you identify dust as a hazard you should put your PPE on, quite possibly the workers at the face are not fully appreciative of that and in terms of all levels up the chain of command in realising the significance of long terms of exposure, just from that false sense of confidence.¹⁰⁷

Medical professionals were not immune from this complacency, as Dr Cohen acknowledged:

If physicians and the communities believe that this disease was eradicated and somebody dies of a respiratory death they would not likely certify that or think about black lung as part of that. If imaging for black lung and knowledge about the disease also declined as the number of cases declined, they would not think about that as well.¹⁰⁸

Respiratory concerns raised by some miners were met with denial from medical professionals, as mine worker Mr Stuart McConnell attested:

The attitude towards [CWP] was that it was eradicated to the point where you would go to the doctor and try to talk to the doctor about what you are coughing up and they would say, 'Don't worry about that.' In my opinion, if you are not looking for something there is no way you are going to find it. I could take you out into the scrub and say, 'Let's go looking for ants.' If you are looking up in the air, you are never going to find them. You have to get your head down in the grass and actually look for them, and that has not been happening. It had not happened for the 20 years plus that I was in the mines.¹⁰⁹

Key finding

It is highly unlikely that CWP was ever eradicated in Queensland. It did not 're-emerge' in 2015 but was merely re-identified, after responsible Queensland authorities failed to look for it or properly identify it for more than 30 years.

¹⁰⁷ Public hearing transcript, Mackay, 25 November 2016, p 27.

¹⁰⁸ Public hearing transcript, Brisbane, 15 March 2017, p 4.

¹⁰⁹ Public hearing transcript, Moranbah, 22 November 2016, p 2.

2. An improved regulatory system

2.1 Introduction

There is no doubt that between the late 1980s and 2015 the entire coal mining industry in Queensland, including miners and their families, unions, mine operators, government regulators, and the medical professionals that service these communities, laboured under the false belief that CWP had been eradicated in Queensland. There has been a catastrophic failure of the regulatory system that was intended to preserve and protect the health of coal miners. An improved regulatory system, including a properly independent regulator and fully functional health scheme, is clearly needed. Elements of the current system work and should be maintained, but substantial structural change is necessary.

The following recommendations for an improved regulatory system are underpinned by the committee's findings about the mitigation and monitoring of dust levels, the Coal Workers' Health Scheme, and the broader regulatory system. Those findings are set out in detail in later chapters of this report, along with the evidence that supports those findings.

2.2 Findings of the committee

2.2.1 Dust mitigation, monitoring and self-regulation

During the course of this inquiry, a number of witnesses and submitters voiced concerns about the risk-based approach in Queensland's coal mining legislation, criticising the overreliance on 'self-regulation' in monitoring and mitigating coal dust.¹¹⁰

Councillor Peter Ramage spoke of the mining community in Collinsville:

*I believe one of the biggest things that has happened to our industry, rightly or wrongly, is self-regulation. I think that is a huge problem within the mining industry as a whole. We could get in touch with government-funded EPAs and the like, and they rely on reports from the self-funded mining companies' inspectors or environmental people. To be quite honest, I think I can speak on behalf of my community here that we have lost all faith in the system.*¹¹¹

The QRC emphasised that 'risk-based regulation does not equate to self-regulation', but rather 'means that mine sites must assess all their risks in order to determine how best to manage those risks'.¹¹² In addition, the QRC submitted:

*Nor does the legislative framework for Queensland mining provide an entirely risk-based model. There are many instances where a specific limit or other statutory requirement is set by legislation; generally this occurs where it is considered that there is only one 'right' answer that should apply across all possible situations.*¹¹³

Together with a number of other submitters, the QRC cautioned against a return to the prescriptive approach employed in legislation prior to 2001, noting that principles of risk-based management are now recognised as best practice approach to the regulation of occupational safety and health legislation.

¹¹⁰ Mr John Hempseed, public hearing transcript, Rockhampton, 12 December 2016, p 25.

¹¹¹ Public hearing transcript, Collinsville, 21 Nov 2016, pp 1-2.

¹¹² QRC, submission 18.2, p 5.

¹¹³ QRC, submission 18.2, p 5.

In this regard, the QRC stated:

*There is an extensive body of scholarly discussion about the regulation of hazards in high risk work... The overwhelming consensus is that empowering those who bear the burden of a risk to assess and manage that risk is the best way to achieve good health and safety outcomes. Simply setting all requirements prescriptively in regulation encourages the mentality that risk management is 'someone else's business' and stops people searching for their own best practice solution. It stifles innovation.*¹¹⁴

...

*The potential for prescription to unintentionally stifle innovation is demonstrated by the current exclusion of newer personal dust monitoring technology through the relevant standards. This constitutes an unnecessary hurdle, over and above the crucial requirement of ensuring that adequate levels of explosion protection are achieved.*¹¹⁵

In the final report of the warden's inquiry into the 1994 Moura disaster, which prompted the move to risk-based legislation, the warden identified no inherent objection to allowing self-management of risks within the legislative framework. However, the warden noted that self-management within legislative frameworks requires the establishment of minimum requirements or sufficient guidance as to the expected standard or methods of risk management with respect to safety and health, and must necessarily be audited by a compliance body.¹¹⁶

In Queensland, there has been a particular focus over the past three decades on mine safety and the immediate dangers of explosion, strata collapse, and physical injury rather than the health risks of exposing workers to respirable dust. In the absence of any identified cases of CWP between 1984 and 2015 the industry appears to have become complacent when it comes to the mitigation, control and monitoring of respirable dust.¹¹⁷ The crucial minimum standards, guidance and compliance auditing referred to by the mining warden in his inquiry report were never established and there was little regulatory focus on dust in general before the first new cases of CWP were identified in 2015.¹¹⁸

Given the very gradual and delayed onset of dust disease and the tendency to focus upon more immediate threats under a risk-based regulatory model, the committee finds that greater regulatory oversight of dust mitigation, monitoring, and associated planning and controls is required.

2.2.2 The Coal Mine Workers' Health Scheme and the Health Surveillance Unit

The Coal Mine Workers' Health Scheme (health scheme) was established to protect the health of Queensland coal mine workers by ensuring that all coal mine workers undergo periodic health assessments. The committee has found that the scheme has failed in its purpose, as evidenced by 21 diagnosed cases of CWP to date among coal mine workers in Queensland.

Periodic health assessments were often missed, or inadequately performed, with little regard given to the levels of coal dust that coal mine workers, both underground and above-ground, were exposed to, or considered to be at risk.

¹¹⁴ QRC, submission 18.2, p 5.

¹¹⁵ QRC, submission 18.2, p 1.

¹¹⁶ F W Windridge, *Wardens Inquiry: report on an accident at Moura no 2 underground mine on Sunday, 7 August 1994*, Queensland, Wardens Court, 1996, p 75.

¹¹⁷ During this period there was at least one case of CWP known to the Queensland workers' compensation scheme. However, there were no identified cases of CWP known to the wider coal mining industry.

¹¹⁸ As highlighted in chapter 3.3, new Recognised Standard 14: Monitoring respirable dust in coal mines, and Recognised Standard 15: Underground respirable dust control commenced on 1 January 2017 and 1 May 2017 respectively.

Medical professionals, operating under the false belief that CWP had been eradicated, or simply being unaware of the condition, performed assessments that failed to detect early indications of CMDLD. In some cases, workers were cleared to return to work and continued working in dusty environments for years after they should have been removed from dust.

The so-called 'Health Surveillance Unit' within DNRM (HSU) did not actually carry out any surveillance of workers' health. It was merely a storage unit where medical records collected under the Health Scheme were stored, sometimes improperly. Professor Malcolm Sim observed:

*It is fair to say that there is no surveillance as I know it occurring at the moment.*¹¹⁹

Even in operating a purely administrative and storage function, the HSU failed to adequately deal with the influx of health assessments during the mining boom, storing a backlog of thousands of unprocessed personal medical files in unacceptable environmental conditions.

The Monash Review of the health scheme made 18 recommendations for reform of the current health scheme. All of those recommendations are adopted or given effect by the recommendations of this report.

2.2.3 Loss of confidence in the system

Not surprisingly, the committee has found that Queensland coal mine workers have lost confidence in the ability of government authorities, and the mining industry in general, to adequately protect the health of coal mine workers.

DNRM senior executives accepted the observation:

*... we have definitely lost some confidence among the workforce.*¹²⁰

The loss of confidence in medical assessments performed under the health scheme was keenly felt.¹²¹ As noted by Professor Sim:

*I think any person consulting a doctor, whether it be under the scheme or for any other reason, needs to have confidence in the advice they receive about their health, and the [coal workers] scheme is no exception to that.*¹²²

According to WorkCover, the 'perceived lack of faith in the ability for the Queensland medical profession to accurately diagnose CWP' was a primary reason for utilising the services of Dr Robert Cohen and his team in the USA to review Queensland coal mine workers' chest x-rays for CWP.¹²³ The CFMEU and DNRM also employed the services of Dr Cohen for the same purpose.

The Senate Committee concluded that, in the medium term, an overhaul of the health scheme 'will be the only way that Queensland miners' confidence in the screening process can be restored'.¹²⁴ The Senate Committee urged the Queensland Government to 'do all it can to ensure the independence of its regulatory regime and officials'.¹²⁵

¹¹⁹ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 13.

¹²⁰ Mrs Kate du Preez, public hearing transcript, Brisbane, 2 November 2016, p 5; Mr Mark Stone, public hearing transcript, Brisbane, 2 Feb 2017, p 16.

¹²¹ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 3

¹²² Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 3.

¹²³ Mr Bruce Watson, Brisbane, 22 March 2017 (morning), p 28.

¹²⁴ Senate Select Committee on Health, *Fifth interim report*, p 72.

¹²⁵ Senate Select Committee on Health, *Fifth interim report*, p 74.

2.2.4 System mistrust and the need for change

Too often in mining it takes a tragedy before action is taken. To date, 21 Queensland coal mine workers have been diagnosed with CWP. One miner gave this assessment:

*I think it is fair to say ... that the [mine operators] behave in a way that is reactive. They are not proactive. If an incident happens, they do not do anything the first time. There are numerous incidents before anything is done.*¹²⁶

According to the CFMEU, multiple failings on the part of industry, the department and the medical profession have led to a dramatic loss of trust and confidence in the regulatory system on the part of coal mine workers, their families and the community. They no longer have trust and confidence in a risk-based system of regulation that has led to thousands of workers being exposed to risk of deadly but entirely preventable disease that they were assured had been eradicated. There is a pervading perception among workers that production and profits have been prioritised over their health and safety.¹²⁷

Coal mine worker Mr Stuart McConnell reflected:

*I feel like I have been lied to. The network of professionals that were put in place to act as a safety net for me and my fellow work mates has not worked. The hole has been far too big. Secondly, I do not think awareness has moved with the industry. Like I said, mining methods have changed. We changed the nature of coal when we started draining it. When we made those changes we never took appropriate steps to protect ourselves and protect the people we were working with. The companies never took the steps to protect people that were working for them. As I said, the big net was there with the holes in it that everyone fell through.*¹²⁸

Further, industry operators have emphasised that the disappointment and frustration extends across the industry:

*This inquiry has attracted a broad spectrum of stakeholders that have come forward to provide comment ... The Queensland coal industry believes that the health surveillance system had failed. The radiologists' view is that without the employee work history it is not possible to properly screen x-rays or diagnose accurately. The Thoracic Society believe that if there is no dust in the workplace there is no disease. Regulators held the view that the safety management system was the responsibility of the sites. The union described a lack of enforcement and the pitfalls of self-regulation. Safety and health specialists are advocating to establish meaningful monitoring programs preferably using real-time monitoring. It has shown that the issue we are now facing is not a result of a failure of one part of our health system, rather that there have been multiple failures over an extended period of time.*¹²⁹

The committee notes that sometimes the culture within the mining industry has worked against health and safety reforms:

*We are not supposed to be wimps, do you know what I mean ... Coal dust is part of what we do. We are not expected to have a great long life, living until we are 80. You said about blokes dying. When I was in Collinsville, it was expected that you had two years to live after you were 55. That is the way you grow up. That is the way it is.*¹³⁰

¹²⁶ Public hearing transcript, Middlemount, 24 November 2016, p 27.

¹²⁷ CFMEU, submission 27, p 2.

¹²⁸ Mr Stuart McConnell, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 7.

¹²⁹ Mr Ian Cribb, Chief Operating Officer, Glencore, public hearing transcript, Brisbane, 1 March 2017, p 2.

¹³⁰ Private hearing, Dysart, 23 November 2016.

Particularly in light of these challenges, it is clear that Queensland's coal mining industry needs a more effective system of oversight and compliance, including greater levels of transparency and accountability surrounding the roles and responsibilities of all industry players.

Given the nature of the system breakdown in relation to CWP, it is also clear that DNRM's attempts to amend or improve the system within the limits of the current regulatory structure have been inadequate, resulting in a superficial treatment of some issues. This piecemeal approach will not be sufficient to restore workers' trust in the system or in the adequacy of the protection it affords them.

Importantly, it is clear that responsibility for overseeing the health and safety of workers should not rest with the body also charged with promoting and supporting the industry, namely DNRM. While the objectives of a productive coal industry and a safe and healthy workforce are not altogether incompatible, this split focus is not in the best interest of either goal.

A dedicated and independent mining safety and health body would be best positioned and best trusted by workers and the industry more broadly to address these aims without dilution. The committee notes the demonstrated benefits of such bodies in place in NSW and in the USA.

The Commissioner of Mine Safety and Health must also be given proper statutory independence, free from administrative or political control by the department or Minister.

The role of Commissioner for Mine Safety and Health was created in 2009 following a recommendation from the Queensland Ombudsman, as part of a review of the Queensland Mines Inspectorate.¹³¹ While the recommendations of the Ombudsman did not explicitly call for the statutory independence of the Commissioner, they proposed that the responsibility for instituting prosecutions be removed from the Director-General of DNRM and rest instead solely with the Commissioner.

Currently, a person may hold both the office of commissioner and another position under the *Public Service Act 2008* (Qld).¹³² Until the appointment of the current Commissioner, all previous occupants of that role have simultaneously held senior roles within DNRM, including as Director-General or Deputy Director-General.

The committee considers that this lack of statutory independence of the Commissioner has the potential to adversely impact on the extent to which a Commissioner is able to fully discharge their responsibilities to:

- undertake compliance activities including prosecutions
- review the implementation of the legislation
- provide advice to the Minister on safety and health matters.

Certainly, the lack of statutory independence of the Commissioner compromises the *perception* of independence from DNRM and undermines the confidence of the mining industry and the public generally in the ability of the Commissioner to act independently of the department and the Minister.

The committee also notes that currently the Commissioner is employed only part-time (0.5 FTE) and there is only one full-time officer supporting the Commissioner.¹³³ This means the Commissioner is reliant on the DNRM for all administrative, legal, financial and logistical support. As discussed later in Chapter 5, DNRM's only health officer – the Occupational Physician¹³⁴ – is also employed only part-

¹³¹ Refer to Appendix E for an overview of the Report of the Queensland Ombudsman, *The Regulation of Mine Safety in Queensland: a review of the Queensland Mines Inspectorate*, June 2008.

¹³² See s 73A(4) of the CMSHA.

¹³³ Mrs Kate du Preez, public hearing transcript, Brisbane, 2 November 2017, p 3.

¹³⁴ Currently the role of Occupational Physician is occupied by a doctor who is not a registered specialist Occupational Physician.

time (at 0.6 FTE), with neither a statutory nor a clinical role, nor any formal oversight role in health surveillance of coal mine workers.¹³⁵

2.3 The way forward

In forming its structural recommendations, the committee has looked to other jurisdictions, including NSW and the USA, for guidance and examples of elements that could best apply in Queensland.

Key finding

Only a truly independent regulatory body, charged with responsibility for ensuring the safety and health of Queensland's mine and resource industry workers, can restore public faith in the system.

2.4 A Mine Safety and Health Authority

The following recommendations have been considered and adapted to the specific Queensland experience and context, as informed by the extensive submissions, testimony and other material provided to the committee, and the committee's observations of the regulatory environment in jurisdictions such as NSW and the USA, with mining industries similar to Queensland.

Recommendation 1

There should be a truly independent Mine Safety and Health Authority, established as a statutory authority and body corporate, with responsibility for ensuring the safety and health of mining and resource industry workers in Queensland.

Recommendation 2

The Mine Safety and Health Authority should be established under its own legislation as a 'unit of public administration' for the purposes of the *Crime and Corruption Act 2001* and a 'public authority' for the purposes of the *Right to Information Act 2009*.

Recommendation 3

The Mine Safety and Health Authority should be governed by a Board of Directors, chaired by the Commissioner for Mine Safety and Health, and including representation of:

- coal mine operators
- metalliferous mine operators
- unions
- resources transportation and ports, and
- persons independent of the mining industry (including resources transportation and ports).

¹³⁵ DNRM, submission 35, p 43.

Recommendation 4

A parliamentary committee should oversee and monitor the operation of the Mine Safety and Health Authority. The Minister should be required to consult with the parliamentary committee regarding the appointment of the Commissioner and Board.

Recommendation 5

The Mine Safety and Health Authority should be established in Mackay, ensuring the Commissioner, senior management, Mines Inspectorate, Coal Workers' Health Scheme, and mobile units are all based in central Queensland.

Recommendation 6

The Commissioner for Mine Safety and Health should be a senior officer of the Mine Safety and Health Authority and given proper statutory independence, with the Commissioner not subject to the direction of the Minister.

Recommendation 7

The Mines Inspectorate, currently within DNRM should be administratively relocated within the Mine Safety and Health Authority, ensuring statutory and administrative independence from DNRM.

Recommendation 8

The Commissioner should have an express power to direct inspectors, including the chief inspector, inspection officers and authorised officers, in relation to the investigation of a possible offence or offences against the mining safety and health Acts.

Recommendation 9

The occupational hygiene services currently offered by SIMTARS on a fee for service basis should be discontinued. The officers who currently provide those services should be redeployed to the Mine Safety and Health Authority to undertake research and/or occupational hygiene inspection activities within the inspectorates.

Recommendation 10

The Mine Safety and Health Authority should encompass and have responsibility for administering the Coal Workers' Health Scheme, supported by a Memorandum of Understanding with Queensland Health and the Office of Industrial Relations, to ensure full and complete cooperation and appropriate data sharing between those entities.

Recommendation 11

The Mine Safety and Health Authority, including the Coal Workers' Health Scheme, should be supported by an expert Medical Advisory Panel (as per recommendation 17 of the 2002 review of the Health Surveillance Unit) of suitably experienced and qualified medical specialists and internationally recognised experts, including at least two respiratory physicians (one of whom has internationally recognised experience and expertise in the prevention, identification, and treatment of CWP) and at least one specialist in occupational medicine.

Recommendation 12

The Mine Safety and Health Authority should appoint a suitably qualified and experienced specialist physician, registered as such with the Australian Health Practitioners' Regulation Agency, as Executive Director – Medical Services to lead the Coal Workers' Health Scheme. The Executive Director – Medical Services should: advise and assist the Commissioner and Board of Directors on medical matters, provide clinical guidance and leadership in relation to the safety and healthy activities of the Authority, oversee the approval of health service providers under the Coal Workers' Health Scheme, and provide clinical oversight and guidance to Approved Medical Advisors and others performing health assessments under the Coal Workers' Health Scheme.

Recommendation 13

The Executive Director – Medical Services should be engaged by the Mine Safety and Health Authority on a full-time basis and remunerated at a rate that is equivalent to a specialist of similar standing and responsibility employed by Queensland Health or a Queensland Hospital and Health Service.

Recommendation 14

The Mine Safety and Health Authority should have a properly resourced and dedicated health research function, including epidemiological research into health conditions experienced by mine workers. These research functions should be undertaken in a collaborative way, drawing upon and sharing research with leading international research bodies such as NIOSH.

Recommendation 15

The Mine Safety and Health Authority should appoint a suitably qualified and experienced legal practitioner as General Counsel to provide general legal advice to the Authority and Board, and advise the Commissioner for Mine Safety and Health on the exercise of statutory powers including in relation to prosecutions and other compliance activity.

A proposed organisational chart for the Mine Safety and Health Authority appears at Appendix F to this report.

2.4.1 Resourcing of oversight activities

DNRM is currently responsible for resourcing across mine safety and health and the inspectorates. There are currently 21 mines inspectors for the coal sector across four offices in central and southern Queensland. This includes staff members qualified in electrical engineering (5 persons), mechanical engineering (4 persons) and occupational hygiene (1 person).¹³⁶ The number of personnel has remained 'relatively flat over the last several years'.¹³⁷ The committee was told:

*... we are looking pretty closely at making increases around occupational hygiene, but we also keep a very mindful view of all of the other hazards present at mines.*¹³⁸

Comparisons with other national jurisdictions are difficult, due to differences in the way a 'mine' is defined in legislation. However, Queensland has generally had a higher inspectorate presence than Western Australia, but a lower level of inspectorate staffing than NSW, relative to the number of workers and mine sites in each state. For example, in 2014-15, for each inspector in Queensland there were 2.1 mine sites, compared to 3.2 mine sites per inspector in WA and 1.2 mines per inspector in NSW.¹³⁹

¹³⁶ DNRM, submission 35, p 11.

¹³⁷ Mr Mark Stone, DNRM, public hearing transcript, Mackay, 25 November 2016, p 16.

¹³⁸ Mr Mark Stone, DNRM, public hearing transcript, Mackay, 25 November 2016, p 16.

¹³⁹ Deloitte, 2016 Mines Safety Branch resourcing and funding independent assessment, 2016, p 18.

Figure 2 Staffing of mines inspectorates in Australia and New Zealand, 2014-15

	WA	QLD	NSW	New Zealand
Workers: Inspectors 2014-15 ratio	1,753:1 <i>103,411:59</i>	1,160:1 <i>45,249:39</i>	402:1 <i>28,924:72</i>	127:1 <i>1,015:8</i>
Mine sites: Inspectors 2014-15 ratio	7.3:1 <i>432:59</i>	5.9:1 <i>229:39</i>	38.5:1 <i>2,722:72</i>	5:1 <i>40:8</i>
Operating mine sites: Inspectors 2014-15 ratio	3.2:1 <i>188:59</i>	2.1:1 <i>82:39</i>	1.2:1 <i>85:72</i>	-

Source: Deloitte, 2016 Mines Safety Branch resourcing and funding independent assessment, 2016, p 18.

Much of the current regulatory framework for mine safety and health in Queensland, including the mines inspectorate, the health scheme, and part of SIMTARS, is funded by a statutory safety and health fee established under the CMSHR.¹⁴⁰

The safety and health fee or levy was introduced in 2008 to establish a framework to recover the costs of safety and health activities by the State government for coal mining, quarrying and explosives activities. In introducing the enabling legislation to Parliament, the then Minister for Mines and Energy the Hon Geoff Wilson MP explained:

*The revenue generated from the levy will fund existing operations of the mines and explosives inspectorates and the expansion of safety and health services to the industry as follows: the appointment of seven new specialist mines inspectors, two investigators, an occupational hygienist, statistician and health surveillance manager; improvements to the safety and health performance reporting as recommended by a recent independent review; five additional scientific staff for the Safety in Mines Testing and Research Station or SIMTARS, which will allow this important safety unit to maintain and extend its world-class efforts in improving mine safety and health.*¹⁴¹

The levy is charged to industry annually and is based on the number of workers in the industry and the budgeted cost of services.¹⁴² The number of workers is calculated from census forms which are required to be submitted by the responsible person for a coal mine at the end of each quarter.¹⁴³ If the chief executive reasonably believes that the responsible person has provided an incomplete or incorrect safety and health census return, the mine can be called to account and the chief executive may invoice the responsible person for an amount they reasonably believe to be payable, on the basis of available facts and circumstances.¹⁴⁴

The levy is indexed to the Queensland Government's Customer Price Index rate (3.5 per cent per annum), and has not been otherwise adjusted in the decade since its establishment. This has been a consistent policy regarding the levy since its introduction.¹⁴⁵ The levy rates in 2016-17 were \$107.10

¹⁴⁰ CMSHA, ss 282(3), (4); CMSHR, s 12E.

¹⁴¹ Hon Geoff Wilson (Minister for Mines and Energy), Mining and Other Legislation (Safety and Health Fee) Amendment Bill, Second Reading, *Record of Proceedings (Hansard)*, 3 June 2008, p 1845.

¹⁴² CMSHR, s 12E.

¹⁴³ CMSHA, s 12F.

¹⁴⁴ CMSHA, s 12G.

¹⁴⁵ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, p 1.

per worker for mines with 6 to 10 workers, and \$850.00 per worker for mines with 11 or more workers.¹⁴⁶

Additionally, where previously capital expenditure relating to safety and health has been funded from within the DNRM capital allocation, from 2013-14 the pool of relatively fixed levy funds has also been used for capital expenses.¹⁴⁷

Clearly, the amount of available revenue from the levy depends on the total number of employees in the mining industry. This number is in turn dependent on the economic health of the mining industry at any time. In 2015-16, fees collected from the industry totalled \$38.96 million. In 2012-13, during the mining boom, total revenue reached \$44.93 million.¹⁴⁸

This basis for determining the levy may not be the most appropriate or sustainable, as Commissioner Mrs Kate du Preez acknowledged:

*The ... risk that might occur is due to changes in the mining—for example, with automation—which is one of the things that we are looking at, which is ideal to try to move the people out of the risk zone. Currently, the levy that forms the budget for the inspectorate is worked on people working underground. If we reduce the people working underground, we reduce the levy, which might reduce the resources, but not necessarily reduce the risk.*¹⁴⁹

In addition to funding the Mines Inspectorate, this levy also contributes to a mix of funding sources for the Mine Safety and Health division of DNRM (including SIMTARS), and for the Commissioner for Mine Safety and Health. The division of Mine Safety and Health includes the Mines Inspectorate, the HSU and the policy and coordination functions of DNRM. The Commissioner for Mine Safety and Health and the salaries of executive directors and associated administrative functions are also 100 per cent levy funded.

SIMTARS draws only 50 per cent of its funding from the levy, and the remaining 50 per cent from fee-for-service offerings.¹⁵⁰ Some additional SIMTARS funding is also attracted from research bodies, such as ACARP, for collaborative research projects.¹⁵¹

The committee notes that levy funds have been insufficient to support the government's response to the re-identification of CWP to date, with levy funds having to be supplemented with additional funding from the government's Cabinet Budget Review Committee.¹⁵² In anticipation of the future costs arising from the re-identification of CWP, the department has stated:

*To fund coal workers' pneumoconiosis going forward, it is likely that the levy will be re-evaluated to ensure that it is sufficient to meet the needs of a reformed coal workers' pneumoconiosis scheme, improved health surveillance and provide support for retired workers.*¹⁵³

The committee considers that such review must necessarily include a re-examination of the funding approach in relation to SIMTARS. The committee notes that while SIMTARS' fee-for-service offerings have been identified as a beneficial and fiscally responsible approach to service provision, the Chief

¹⁴⁶ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, attachment 1.

¹⁴⁷ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, attachment 1.

¹⁴⁸ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, attachment 1.

¹⁴⁹ Mrs Kate du Preez, Commissioner for Mine Safety and Health, public hearing transcript, Brisbane, 2 November 2016, p 11.

¹⁵⁰ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, attachment 3.

¹⁵¹ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, p 2.

¹⁵² DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, pp 2-3.

¹⁵³ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 1, attachment 1.

Scientist also noted in a departmental science capability audit that 'a fee for service focus does pose risks of directing resources to short and medium term client needs'.¹⁵⁴

As noted at chapter 2.4.1, the committee has concerns about the degree to which these commercial offerings may detract from or influence the strategic focus of SIMTARS operations.

The committee notes that reviews of levy funding mechanisms have recently been conducted in both NSW (2013) and Western Australia (2016).¹⁵⁵ In Queensland, a 2009-10 review of the Petroleum and Gas Safety and Health Fee led to a revision in the way this audit and inspection levy was collected, to support a shift to a full cost recovery approach that 'keeps pace with growth in the petroleum and gas industry'.¹⁵⁶ In relation to coal and other metalliferous and non-metalliferous mines, the Ombudsman's 2008 review of the mines inspectorate identified that the massive value of mining royalties presented a 'superficially attractive' opportunity for a direct levy which could fund expanded inspectorate activities – though the Ombudsman emphasised that this 'would need to be carefully managed'.¹⁵⁷

Key findings

The safety and health fee is not an appropriate method of funding a truly independent mine safety and health regulator with a fully functional mines inspectorate.

The funding mechanism for these vital government functions should not be so closely tied to the number of workers employed in the mining industry at any given time.

Mining and petroleum royalties are payments made to the owner of resources for the right to extract them. As the State owns all petroleum and gas and most minerals, resource permit holders generally pay royalties to the Office of State Revenue, within Treasury.¹⁵⁸ These payments are not a tax, but part of the cost of leasing the land – effectively, compensation to the State for the resource value extracted from the land. In setting royalty rates, governments aim to deliver an appropriate return for the sale of State mineral assets, while not unduly impeding the efficiency and competitiveness of the resources sector.¹⁵⁹ Coal and mineral processing businesses, including those engaged in leaching, refining, smelting and other processing operations, are liable to pay royalties at a discounted rate.¹⁶⁰

¹⁵⁴ Chief Scientist, *Science Capability Audit: Geological Survey of Queensland and Safety in Mines Testing and Research Station: Final Report*, DNRM, 2014, p 27, http://www.dmp.wa.gov.au/Documents/Safety/MSH_R_DeloitteReport_DMPResponse.pdf

¹⁵⁵ Deloitte, *2016 Mines Safety Branch resourcing and funding independent assessment*, Government of Western Australia Department of Mines and Petroleum: Resource Safety, January 2017, p 1, http://www.dmp.wa.gov.au/Documents/Safety/MSH_R_DeloitteReport_DMPResponse.pdf

¹⁵⁶ DNRM, *Petroleum and Gas safety and Health Fee: Post Implementation Review and Regulatory Impact Statement*, State of Queensland, 2013, p 10, <https://cabinet.qld.gov.au/documents/2013/may/petrolgas%20safety%20review/Attachments/petroleum-and-gas-fee-consultation.pdf>

¹⁵⁷ Report of the Queensland Ombudsman, *The Regulation of Mine Safety in Queensland: A review of the Queensland Mines Inspectorate*, Queensland Ombudsman, June 2008, p 141.

¹⁵⁸ Queensland Government, Queensland Treasury, *Royalties*, <https://www.treasury.qld.gov.au/taxes-royalties-grants/royalties/>

¹⁵⁹ Department of State Development and Department of Mines and Petroleum, Government of Western Australia, *Mineral Royalty Rate Analysis, Final Report 2015*, March 2015, p 9, http://www.dmp.wa.gov.au/Documents/Minerals/Mineral_Royalty_Rate_Analysis_Report.pdf

¹⁶⁰ Queensland Government, Business Queensland, *Processing discount*, <https://www.business.qld.gov.au/industries/mining-energy-water/resources/applications-compliance/royalties/calculating/processing-discount>

A comparative review of revenue raised through mining royalties and by the levy from 2010-11 through to 2015-16 (see Figure 3) indicates that levy revenue has generally been between one and two percent of the revenue amount raised through royalties, at an average of 1.7% for the six-year period.

Figure 3 Revenue from mining royalties and from the Safety and Health Fee, 2010-11 to 2015-16

Year ¹	Coal (\$ million)	Base & precious metals (\$ million)	Petroleum (\$ million)	Other minerals (\$ million)	Total ² (\$ million)	Total ² excluding petroleum royalties ³ (\$ million)	Safety & Health Fee (Levy) (\$ million)	Levy as a proportion of royalty revenue (excluding petroleum) ³
2015-16	\$1,592.70	\$228.30	\$35.70	\$123.90	\$1,980.60	\$1,944.90	\$38.96	1.97%
2014-15	\$1,613.70	\$231.30	\$51.00	\$102.60	\$2,006.70	\$1,955.70	\$39.42	1.96%
2013-14	\$1,946.60	\$231.10	\$69.20	\$99.10	\$2,346.20	\$2,277.00	\$37.72	1.61%
2012-13	\$1,737.30	\$234.50	\$58.80	\$77.30	\$2,108.00	\$2,049.20	\$44.93	2.13%
2011-12	\$2,385.70	\$256.20	\$53.20	\$70.80	\$2,765.90	\$2,712.70	\$37.56	1.36%
2010-11	\$2,356.90	\$236.30	\$52.10	\$53.00	\$2,698.30	\$2,646.20	\$31.99	1.19%

¹ Year ending 30 June. ² Total amounts are based on rounded figures. ³ Safety and health activities within the petroleum and gas industry are funded by a separate Petroleum and Gas safety and health fee, which was introduced in 2010.

Source: Queensland Treasury, *Royalty Statistics*, <https://www.treasury.qld.gov.au/taxes-royalties-grants/royalties/royalty-statistics.pdf>, DNRM, response to a question taken on notice in a private hearing on 22 March 2017, Attachment 1 (QoN 1 and QoN 3).

A designated proportion of coal and mineral royalties paid to the Queensland Government would be a more appropriate and robust funding mechanism than the current levy, to support the full-funding of safety and health activities within the mining industry. This proposed change is consistent with the philosophical aim of the royalty regime – that is, to hold resource permit holders accountable for the costs of their extraction activities, including the often hidden costs associated with safety and health impacts. After all, as the mining workforce plays a crucial role in generating value from the State’s resources, the funds required to safeguard the safety and health of that workforce should appropriately be drawn from the proceeds that result.

Additional benefits would likely also be gained through the decrease in the administrative burden associated with eliminating the separate requirements for quarterly reporting of employees used to determine the levy amount due (using the head count method).¹⁶¹ The committee notes that the WA Chamber of Mineral and Energy submitted to the 2016 WA review of the resourcing and funding of the WA Mines Safety Branch that ‘the administrative costs of complying with the levy regulations ... in some cases exceed the cost of the levy itself’. Further, in addition to these direct compliance costs, ‘the resources required for the levy audit process are also significant’.¹⁶²

The figures outlined in Figure 3 suggest that an allocation of up to two and a half per cent of revenue collected from coal and mineral royalties – equivalent to \$48.62 million for 2015-16 – may support the appropriate establishment and funding of the proposed Mine Safety and Health Authority, including providing for an expansion of staffing and for increased compliance, education and research activities.

¹⁶¹ DNRM, *Petroleum and Gas Safety and Health Fee: Decision Regulatory Impact Statement*, State of Queensland, 2013, p 18, <http://www.qca.org.au/getattachment/70f749ee-01ca-4287-a400-c0fd9312a071/DNRM-Petroleum-and-Gas-Safety-and-Health-Fee-%E2%80%93-Pos.aspx>

¹⁶² Government of Western Australia Department of Mines and Petroleum, Resources Safety, *2016 Mines Safety Branch resourcing and funding independent assessment*, 9 November 2016, p 44, http://www.dmp.wa.gov.au/Documents/Safety/MSH_R_DeloitteReport_DMPResponse.pdf

However, such a determination must necessarily be informed by an assessment of the budgeted operating costs of the authority, requisite economic modelling and revenue forecasting, and consultation with industry and unions, so as to ensure any adjustments to the royalty scheme do not unfairly undermine the competitiveness of the industry in Queensland.

To ensure efficient administration of the new Authority, the royalty revenue allocation should be expended in keeping with a proposed budget and funding priorities for the Authority, and in turn informed by a strategic plan and objectives. Any surplus revenue that is not allocated to the annual budget of the Authority should be invested with the Queensland Investment Corporation, to support future research and the operational needs of the Authority. Such funds would serve to position the Authority to finance the development and promotion of new epidemiological insights and technological innovations, to support a more proactive and effective preventive approach to safety and health issues.

Transparency in reporting will be particularly important in this regard, and should be taken into account in the establishment of any statutory or other requirements in relation to the administration of the designated royalty allocation. Further, it is crucial that the adequacy of the funding mechanism be reviewed within two years of its establishment.

In making these recommendations, the committee recognised that royalties are only payable in relation to the value of coal and mineral production output, with the effect that safety and health costs are not directly borne by commercial operators engaged in resource exploration or development works, or in the transport and handling of coal for domestic or overseas consumption.

The committee acknowledges that NSW's recovery of its mine safety levy as an earmarked percentage of workers' compensation premiums poses a distributive advantage in this regard. However, the mix of private and public providers of workers' compensation in Queensland presents an obstacle to the establishment of such a collection and funding approach in Queensland. Further, the committee considers that associated liabilities for the safety and health of workers may appropriately be distributed internally between commercial operators, through certain contractual fees or deductions.

Recommendation 16

The safety and health fee currently provided for by part 2A of chapter 2 of the Coal Mining Safety and Health Regulation 2001 should be abolished.

Recommendation 17

The Mine Safety and Health Authority should be funded by a dedicated proportion of coal and mineral royalties paid to the Queensland Government, to be determined in consultation with industry and unions after an assessment of the operating costs of the Authority is undertaken.

The dedicated proportion of the royalties should be fixed by regulation and reviewed periodically by the parliamentary committee responsible for the Mine Safety and Health Authority.

Recommendation 18

Any surplus income derived from the dedicated proportion of royalties that is not allocated to, or expended from, the annual budget of the Authority should be invested with the Queensland Investment Corporation for the future research and the operational needs of the Authority.

3. Regulatory framework

The state's key pieces of legislation in relation to safety and health in coal mines are the *Coal Mining Safety and Health Act 1999* (Qld) (CMSHA) and the Coal Mining Safety and Health Regulation 2001 (CMSHR). For workers involved in the transportation and handling of coal beyond the environment of the 'coal mine' (as defined in the CMSHA),¹⁶³ the relevant legislation is the *Work Health and Safety Act 2011* and the Work Health and Safety Regulation 2011.

The CMSHA was the outcome of an extensive tripartite process between government, industry and unions over the six years following the 1994 disaster at Moura No. 2 mine, after which it was agreed that the best legislative framework for mine safety and health was one that places responsibility and accountability for safety and health on 'the people in the best position to ensure that this is achieved – the mining industry itself'.¹⁶⁴

Recognising the limits and inflexibility of the previous prescriptive approach, Queensland moved towards a risk management model that requires the parties with 'skin in the game' to take ownership of on-site safety and health issues and to anticipate and control risks before incidents arise.¹⁶⁵

Under this framework, the legislation generally does not prescribe the means by which safety and health issues are to be addressed, except in certain specific circumstances.¹⁶⁶ Rather, each mine must have a system in place to address the specific risks and conditions of their site.

The key instrument is a safety and health management system (SHMS). An SHMS:

*... incorporates risk management elements and practices to ensure the safety and health of persons at mine sites affected by coalmining operations. It must be auditable, documented and form part of an overall management structure with responsibilities, practices and procedures.*¹⁶⁷

The framework also provides for officers such as the mine's Site Senior Executive¹⁶⁸ (SSE), Site Safety and Health Representative¹⁶⁹ (SSHR), Industry Safety and Health Representative¹⁷⁰ (ISHR), mines inspectors, authorised officers and mine workers to play a role in reviewing, inspecting or auditing the SHMS.

¹⁶³ See s 9 of the Act.

¹⁶⁴ Hon Tony McGrady, Minister for Mines and Energy and Minister Assisting the Deputy Premier on Regional Development, Second Reading Speech, Coal Mining and Quarrying Safety and Health Bill, Cognate Debate, 24 March 2016, p 733. See also: DNRM, submission 35, p 9. ; Maurice Blackburn, submission 26, p 6.

¹⁶⁵ Mr Mark Stone, Acting Chief Mine Safety and Health Officer, DNRM, public briefing transcript, Brisbane, 14 October 2016, p 4. From 4 November 2016, Mr Stone provided evidence as Executive Director, Mine Safety and Health, DNRM.

¹⁶⁶ An example of this is the required application of stone dusting as a mitigation for dust explosions. See Mr Mark Stone, DNRM public briefing transcript, 14 October 2016, p 4.

¹⁶⁷ Mr Mark Stone, DNRM, public briefing transcript, Brisbane, 14 October 2016, p 4.

¹⁶⁸ The site senior executive is the mine manager or senior officer responsible for the mine's operations, including the implementation of the safety and health management system.

¹⁶⁹ The SSHR is an employee of the mine, selected by other employees to inspect and review safety matters, and investigate certain complaints about safety.

¹⁷⁰ Industry safety and health representatives are district workers' representatives who are elected by unions and appointed by the Minister to inspect and review safety matters and to investigate certain complaints about mine safety.

DNRM submitted:

*This proactive review by a wide range of people with differing expertise and perspectives strengthens the integrity of the safety management system and safeguards against potential risk exposure not being addressed.*¹⁷¹

To support effective discharge of these responsibilities, the CMSHA requires individuals in various positions within a mine's management structure to have certain competencies. These are assessed by an appropriately qualified and experienced board of examiners.¹⁷²

In addition to this industry-specific legislation, other important requirements and responsibilities in relation to the reporting and management of CWP are set out in general legislation dealing with workplace safety and health and with workers' compensation.¹⁷³

3.1 Coal Mining Safety and Health Act 1999

The objects of the CMSHA are to:

- protect the safety and health of persons at coal mines and persons who may be affected by coal mining operations
- require that the risk of injury or illness to any person resulting from coal mining operations be at an acceptable level
- provide a way of monitoring the effectiveness and administration of provisions relating to safety and health under the Act and other mining legislation.¹⁷⁴

The CMSHA establishes numerous obligations for mine operators under its risk-based approach to managing coal mine safety and health hazards. In support of each mine site's specific, auditable and documented SHMS, mine SSEs are responsible for overseeing the development and implementation of a range of other related safety and health and training plans and procedures. This includes the use of Principal Hazard Management Plans (PHMPs) to address hazards that have the potential to cause multiple fatalities.¹⁷⁵

The CMSHA provides for inspectors and other officers to monitor the effectiveness of these risk management plans and associated controls at coal mines, and to take appropriate action to ensure adequate risk management, including evacuation of persons to a safe location if required, to reduce a risk to an acceptable level.¹⁷⁶ Other appropriate actions may include the issuing of a directive pursuant to section 167 of the CMSHA and, in some cases, suspension of operations.¹⁷⁷ Failure to comply with a directive may result in a fine of 800 penalty units or two years imprisonment.¹⁷⁸ An inspector, ISHR or SSE may recommend to the Commissioner that there be a prosecution for an offence against the CMSHA.¹⁷⁹

¹⁷¹ DNRM, submission 35, p 9.

¹⁷² Mr Mark Stone, DNRM, public briefing transcript, Brisbane, 14 October 2016, p 4. See: CMSHA, ss 7(h), 185.

¹⁷³ *Workers' Compensation and Rehabilitation Act 2003*.

¹⁷⁴ CMSHA, ss 6(a)-(c).

¹⁷⁵ CMSHA, ss 7(b), 62-64.

¹⁷⁶ CMSHA, s 7(f); CMSHA, s 31

¹⁷⁷ CMSHA, ss 167 and 169.

¹⁷⁸ CMSHA, s 174(2).

¹⁷⁹ CMSHA, s 256.

All directives issued under the CMSHA to a coal mine operator must be kept as a record.¹⁸⁰ In addition, a coal mine operator must keep a mine record that includes:

- reports of, and findings and recommendations resulting from, inspections
- investigations and audits carried out at the mine
- remedial action taken as a result of a directive
- records and reports of serious accidents and high potential incidents, and
- other reports and information that may be prescribed under regulation for this section.¹⁸¹

The matter must be kept in the mine record for seven years¹⁸² from being included in the record and a copy must be available for inspection at all reasonable times.¹⁸³

Additionally, the CMSHA establishes the office of the Commissioner for Mine Safety and Health to monitor and report on the implementation of the legislation, including chairing industry committees and advising the Minister generally on matters of mine safety and health.¹⁸⁴

The oversight activities are funded by fees charged to all operations regulated by the CMSHA and the CMSHR.¹⁸⁵ The fee is based on the number of workers in the industry and the budgeted cost of services.¹⁸⁶ Further detail on this funding mechanism is provided in chapter 2.4.1.

The requirements set out in the CMSHA form a legislative framework aimed at achieving an 'acceptable level of risk'.¹⁸⁷ For risk to a person from coal mining operations to be at an acceptable level, the operations must be carried out so that the level of risk from the operations is:

- within acceptable limits
- as low as reasonably achievable.

To decide whether risk is within acceptable limits and as low as reasonably achievable, regard must be had to:

- the likelihood of injury or illness to a *person arising out of the risk*
- the severity of the injury or illness.

Further detail about achieving an 'acceptable level of risk' is set out in the CMSHR and various standards, codes of practice and guidelines.¹⁸⁸

¹⁸⁰ CMSHA, s 68(1)(b).

¹⁸¹ CMSHA, ss 68(1)(a)-(e).

¹⁸² CMSHA, s 68(2).

¹⁸³ CMSHA, s 68(4).

¹⁸⁴ CMSHA, s 7(l) and part 5A.

¹⁸⁵ CMSHA, ss 282(3), (4); CMSHR, s 12E.

¹⁸⁶ CMSHR, s 12E.

¹⁸⁷ CMSHA, s 29

¹⁸⁸ Section 282 and schedule 2 of the CMSHA provide for regulations to be made under the Act to be made to give further specificity to the legislative requirements of the Act and how they may be discharged. Section 72 of the CMSHA specifies that the Minister may make recognised standards.

3.2 Coal Mining Safety and Health Regulation 2001

The CMSHR elaborates on the provisions of the CMSHA by setting out in a number of sections more specific detail on ways of achieving an acceptable level of risk with respect to coal dust and its effects.¹⁸⁹

In relation to the protection of workers from coal dust exposure, the CMSHR provides:¹⁹⁰

A coal mine's safety and health management system must provide ways of ensuring—

- (a) each coal mine worker's exposure to respirable dust at the mine is kept to an acceptable level*
- (b) the worker does not breathe an atmosphere at the mine containing respirable dust exceeding an average concentration, calculated under AS 2985, equivalent to the following for an 8-hour period -*
 - (i) for coal dust—3mg/m³ air*
 - (ii) for free silica—0.1mg/m³ air.*

This must include:

- providing ways of suppressing excessive airborne dust
- providing for the monitoring and recording of concentrations of respirable dust and free silica
- reviewing dust controls and taking action where average concentrations exceed the specified levels.¹⁹¹

Requirements for the provision of PPE and relevant operating procedures for its use are set out in sections 64 and 65, as one part of an overall plan to achieve an acceptable level of risk. This includes requirements for the provision of training for workers in selecting appropriate PPE for a task, using the equipment, and maintaining and disposing of the equipment.¹⁹²

Section 149 of the CMSHR provides that an underground mine must have various PHMPs to cover a range of principal hazards including gas management, mine ventilation and spontaneous combustion. There is no express requirement for PHMPs to provide for mitigation of respirable coal mine dust. However, it is noted that in some instances, underground mine operators make provision for respirable dust abatement in their ventilation plans. As well, new Recognised Standard 15: Underground respirable dust control (RS15) (see chapter 3.5) states that 'the SSE shall consider developing a Dust Management Plan similar to principal hazard management plans'.¹⁹³

As previously noted, compliance with the CMSHR is monitored, in part, by the Mines Inspectorate within DNRM. A mines inspector can issue a legal directive to a mine operator if mines are non-compliant with regulations on dust levels. Continued non-compliance may result in penalties such as the suspension of production.¹⁹⁴ The committee comments on the operation and issuing of these directives in Chapter 4.5.

¹⁸⁹ CMSHR, s 5. Most relevant to the committee's terms of reference are provisions regarding dust under section 89 and 89A of the CMSHR; personal protective equipment (PPE) under part 9; and the Health Scheme, regulated under Chapter 2, Part 6, Division 2

¹⁹⁰ CMSHR, s 89(1).

¹⁹¹ CMSHR, ss 89(1)(3)-(5)

¹⁹² CMSHR, s 65(2)

¹⁹³ Queensland Government, Recognised standard 15: Underground respirable dust control, Coal Mining Safety and Health Act 1999, State of Queensland, 1 May 2017, p 6.

¹⁹⁴ CMSHA, ss 167 and 169.

The CMSHR also establishes requirements for ongoing occupational health screening and monitoring under a Coal Mine Workers' Health Scheme. The Coal Mine Workers' Health Scheme includes:¹⁹⁵

- provision for the appointment of nominated medical advisors (NMAs)
- requirements for pre-employment and periodic health assessments, and
- monitoring for coal mine workers who are (to be) engaged in tasks other than low risk tasks.

The health assessment includes a requirement for chest x-rays and respiratory function tests to detect respiratory diseases.¹⁹⁶ Records of monitoring for workers' exposure to hazards, including in relation to coal dust, must be kept for 30 years.¹⁹⁷ The scheme is discussed further in Chapter 5 of this report.

3.3 Recognised standards, codes of practice and guidelines

In addition to the regulatory guidance provided in the CMSHR, the CMSHA provides that the Minister may make recognised standards to attempt to achieve an acceptable level of risk for people working in coal mines. Operators can manage the risk in a different way, but are required to show that the method utilised is at least equivalent to the method in the recognised standard.¹⁹⁸

There are currently fifteen recognised standards and nine guidance notes pertaining to coal mines in Queensland. This includes new standards for 'Monitoring respirable dust in coal mines' and 'Underground respirable dust control' which took effect on 1 January 2017 and 1 May 2017, respectively (see chapter 3.5).¹⁹⁹

3.4 Workers' compensation

The *Workers' Compensation and Rehabilitation Act 2003* (Qld) (WCRA) and the associated *Workers' Compensation and Rehabilitation Regulation 2014* provide the framework for managing workers' compensation and rehabilitation in Queensland, including establishing WorkCover as a statutory agency to provide workers' compensation insurance for employers.²⁰⁰

Under the legislation, all employers must be insured for work-related injuries sustained by an employee either under a WorkCover policy or under a licence as a self-insurer.

Where employees (or certain other individuals) sustain an injury in relation to their work, the legislation sets out entitlements to compensation and access to damages, as well as providing for:

- management of compensation claims by insurers
- injury management, emphasising rehabilitation of workers particularly for return to work
- procedures for assessment of injuries by appropriately qualified persons or by independent medical assessment tribunals, and
- rights of review of, and appeal against, decisions made under the Act.²⁰¹

¹⁹⁵ CMSHR, ss 45, 46 and 49.

¹⁹⁶ CMSHR, s 46A, schedule 9 (definitions), chest x-ray examination (a)...indications of pneumoconiosis...

¹⁹⁷ CMSHR, s 53.

¹⁹⁸ CMSR, S 72(1).

¹⁹⁹ Queensland Government Business Queensland, Mining, Safety and Health, *Recognised standards, guidelines and guidance notes*, <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/legislation-standards/recognised-standards>

²⁰⁰ WorkCover Queensland, *Workers' Compensation and Rehabilitation Act 2003*, updated 29 June 2015, <https://www.worksafe.qld.gov.au/laws-and-compliance/workers-compensation-laws/laws-and-legislation/workers-compensation-and-rehabilitation-act-2003>

²⁰¹ WorkCover Queensland, *Laws and Legislation*, updated 27 January 2016, <https://www.worksafe.qld.gov.au/laws-and-compliance/workers-compensation-laws/laws-and-legislation>

The Workers' Compensation Regulator is responsible for undertaking reviews of decisions and managing appeals under chapter 13 of the WCRA.²⁰²

3.5 Recent changes to industry legislation – from 1 January 2017

In response to the re-identification of CWP in Queensland, the CMSHR was amended, effective from 1 January 2017.²⁰³ These amendments imposed additional obligations relating to:

- a) mandatory reporting of certain notifiable occupational diseases, including CWP, to the Mines Inspectorate²⁰⁴
- b) clarifying coal mine worker health assessment requirements:²⁰⁵
 - All pre-employment health assessments to include respiratory function and chest x-ray examinations to establish a suitable medical baseline for comparison with future results.²⁰⁶
 - respiratory function and chest x-ray examinations to occur at least once every 10 years for above-ground coal mine workers and at least once every five years for current (and former) underground coal mine workers.²⁰⁷
 - respiratory function examinations undertaken as part of periodic health assessments to also include a comparative assessment with previous respiratory function results (as available) so any changes may be identified as early as possible.²⁰⁸
 - all medical examinations to be performed by persons qualified and competent to conduct the examinations.²⁰⁹
 - x-ray examinations to be performed in accordance with the International Labour Organisation's *Guidelines for the use of the ILO International Classification of Radiographs of Pneumoconiosis*²¹⁰
 - introducing voluntary respiratory and chest x-ray examinations for retiring coal mine workers (arranged and paid for by the employer)²¹¹
- c) strengthening respirable dust management requirements:
 - regular reporting of respirable dust monitoring records, including at least once every three months for development and longwall operations and as required under a recognised standard for all other areas at a coal mine²¹²
 - notification if respirable dust concentrations exceed prescribed levels²¹³

²⁰² WorkCover Queensland, *Reviews and appeals*, updated 4 April 2017, <https://www.worksafe.qld.gov.au/rehab-and-claims/reviews-and-appeals>

²⁰³ By the Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016 (Amendment Regulation).

²⁰⁴ CMSHR, s 13A.

²⁰⁵ CMSHR, ss 46A and 46B.

²⁰⁶ CMSHR, ss 46A(1)(b),(c).

²⁰⁷ CMSHR, s 46A(1)(b).

²⁰⁸ CMSHR, s 46A(1)(c).

²⁰⁹ CMSHR, s 46A(2).

²¹⁰ CMSHR, schedule 9 (Dictionary) *chest x-ray examination*; Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, ss 7, 8 and 17; Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, explanatory notes, p 6-7.

²¹¹ CMSHR, ss 49A and 49B; Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, s 9.

²¹² CMSHR, s 89(5)(c).

²¹³ CMSHR, ss 89A(2)(c), (4).

- review of dust control measures and SHMS changes to ensure elevated dust levels are reduced to within prescribed levels²¹⁴
- re-sampling within two weeks to check the effectiveness of the revised dust control measures (and notification of any continuing elevated respirable dust concentrations).²¹⁵

RS14 *Monitoring respirable dust in coal mines* notes that:

*Workers exposed to respirable coal mine dust that exceeds exposure limits are potentially at risk of developing simple coal worker's pneumoconiosis, progressive massive fibrosis, silicosis, lung cancer and chronic obstructive pulmonary disease.*²¹⁶

Its purpose is:

*To state ways to achieve an acceptable level of risk to persons arising out of coal mining operations by providing the minimum requirements that shall be included in a coal mine's safety and health management system for monitoring, preparing records and reporting concentrations of respirable dust levels as required under sections 49, 89 and 89A of the Coal Mining Safety and Health Regulation 2001.*²¹⁷

RS15 *Underground respirable dust control* is intended to provide specific guidance to coal mine SSEs on how they might 'meet their safety and health obligations, and develop their mine's SHMS, for the control of respirable dust in an underground coal mine'.²¹⁸

In the following chapters of this report, the committee considers whether this risk-based regulatory framework has achieved its purpose in relation to the health of Queensland coal mine workers given the re-identification of CWP.

²¹⁴ CMSHR, s 89(3)(a).

²¹⁵ CMSHR, s 89A(2)(e); Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, ss 12 and 13; Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, explanatory notes, p 7.

²¹⁶ Queensland Government, Recognised standard 14: Monitoring respirable dust in coal mines, Coal Mining Safety and Health Act 1999, State of Queensland, 1 January 2017, p 4.

²¹⁷ Queensland Government, Recognised standard 14: Monitoring respirable dust in coal mines, Coal Mining Safety and Health Act 1999, State of Queensland, 1 January 2017, p 4.

²¹⁸ Queensland Government, Recognised standard 15: Underground respirable dust control, Coal Mining Safety and Health Act 1999, State of Queensland, 1 May 2017, p 6.

4. Coal dust management

The basic requirement for prevention of the disease is the suppression of dust, preferably at source, combined with adequate ventilation.

A G Heppleton, MA, 'A review of Pneumoconiosis and Dust Suppression in Mines', *Queensland Government Mining Journal*, August 20, 1949.

As the only cause of CWP is coal dust, prevention is straightforward – preventing exposure to coal dust prevents disease. Medical screening and health surveillance are crucial adjuncts to dust control which can support early diagnoses and can also help educate and inform workplace behaviour. However, as the CFMEU Mining and Energy Division noted in its submission:

*...relying on health surveillance to identify coal workers' pneumoconiosis in the absence of robust controls and an exposure monitoring program to determine their effectiveness is akin to shutting the gate after the horse has bolted.*²¹⁹

The management and abatement of dust represents the frontline in action to protect coal mine workers from CWP and other CMDLDs.²²⁰

4.1 Respirable dust

Most dust clouds contain particles of widely varying sizes. The impact of any individual particle after entering the human respiratory system, and the response the particle elicits, depend on the size and nature of the particle.²²¹

Larger inhalable particles which may be visible to the naked eye are deposited in the nose, throat and upper respiratory tract.²²² These particles can be cleared from the body or removed naturally by the special defences of the lungs. While potentially harmful if in sufficient concentration or where toxic impurities are present, they are generally considered to be a nuisance dust.²²³ Highly visible dust clouds and fall-out dust therefore may not present a significant health risk (see further discussion in chapter 8).²²⁴

However, the smallest of inhalable particles, known as 'respirable' dust particles (<10 microns), are very slow to settle or dissipate and can pass through the body's natural respiratory filters to be taken deep into the lungs.²²⁵ These fine particles are invisible to the naked eye, measuring just a fraction of the width of a human hair.²²⁶

²¹⁹ Mr Phillip Hibbs, President, AIOH, public hearing transcript, Brisbane, 1 February 2017, p 31.

²²⁰ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 17; See also Bernard Corden, submission 3, p 1.

²²¹ Queensland Government, *Health and safety effects of dust*, last reviewed 13 July 2016, <https://www.business.qld.gov.au/industry/mining/safety-health/mining-safety-health/mining-hazards/dust/health-safety>; AIOH, submission 14, p 3; and Breathe Safe Pty Ltd, submission 24, p 3.

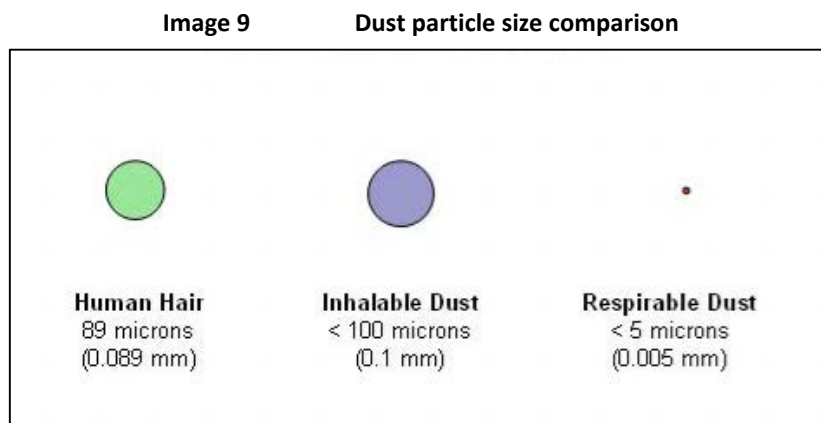
²²² Emeritus Professor Odwyn Jones, submission 4, p 2; and AIOH, submission 14, p 3.

²²³ Martin Jennings and Martyn Flahive, *Review of Health Effects Associated with Exposure to Inhalable Coal Dust*, Coal Services Pty Ltd, 1 October 2005, pp 7-8; Coal Services Pty Ltd, *Protecting against airborne dust exposure in coal mines*, revised edition, 2016, p 10.

²²⁴ Bruce Ham, submission 5, p 5 (citing the work of Jennings and Flahive, 2005); and AIOH, submission 14, p 3.

²²⁵ Queensland Government, 'Health and safety effects of dust', webpage, last reviewed 13 July 2016, <https://www.business.qld.gov.au/industry/mining/safety-health/mining-safety-health/mining-hazards/dust/health-safety>; AIOH, submission 14, p 3; and Breathe Safe Pty Ltd, submission 24, p 3.

²²⁶ Coal Services Pty Ltd, *Protecting against airborne dust exposure in coal mines*, revised edition, 2016, p 10.



Source: Coal Services Pty Ltd, *Airborne Dust in Coal Mines*, 2008, p 20.

It is primarily exposure to invisible respirable dust that is responsible for various adverse health effects ranging from mild symptoms - such as eye, nose, throat irritation and shortness of breath - to more severe effects such as CWP, chronic obstructive pulmonary disease (COPD), emphysema and silicosis.²²⁷

4.1 Occupational exposure limits

As noted in chapter 3, section 89 of the CMSHR requires that:

A coal mine's safety and health management system must provide ways of ensuring—

- (a) each coal mine worker's exposure to respirable dust at the mine is kept to an acceptable level*
- (b) the worker does not breathe an atmosphere at the mine containing respirable dust exceeding an average concentration, calculated under AS 2985, equivalent to the following for an 8-hour period —*
 - (i) for coal dust—3 mg/m³ air*
 - (ii) for free silica—0.1 mg/m³ air.*

These measures are commonly referred to as the OEL. Under the CMSHR, the onus is on the mine operator to implement mitigation measures and to monitor exposure levels under their SHMS.

The OEL for coal dust in Queensland is nominally the highest of any Australian jurisdiction. In NSW, it is 2.5 milligrams per cubic metre (mg/m³). In the USA, the legislated OEL is 1.5 mg/m³.

There is strong evidence that the limit should be 1.0 mg/m³.

In setting a regulated OEL, regard should be had to available evidence quantifying the relationship between worker exposure levels – the ‘dose’ – and adverse health effects – the ‘response’. By correlating exposure with health in terms of a dose-response relationship, a threshold may be determined below which no detectable adverse impact is able to be identified.²²⁸ This dose-threshold level may then be used as the exposure standard, sometimes with a margin of safety built into it.²²⁹

²²⁷ Queensland Government, *Laboratory Test Report OM11613F*, 23 January 2017, p 7.

²²⁸ Safe Work Australia defines workplace exposure standards as ‘airborne concentrations of a particular chemical or substance in the workers’ breathing zone that should not cause adverse health effects or cause undue discomfort to nearly all workers’. See: DNRM, submission 35, p 19.

²²⁹ Professor David Cliff, submission 1, p 6.

Essentially, as Dr Bharath Belle explained:

*... if you are looking for the trigger for the early stages of CWP in this case, it is if you are exposed to X years and this is the dose ...It is X milligrams of dust for X years that there is the potential for you to get the disease.*²³⁰

In Australia we currently do not have a dose-response curve to understand the health risks for different levels of exposure.²³¹ However, such research has been undertaken internationally – specifically, in the USA and UK.²³²

Early exposure standards in these countries were based on British data from pneumoconiosis field studies in the 1950s and 1960s, which predicted that no cases as severe as category two CWP would develop among mine workers who worked for 35 years at 2.0 mg/m³, and that the progressive massive fibrosis (PMF) was very unlikely to develop.²³³ Since that time, however, a host of studies have disproved the assumptions inherent in the adoption of the 2.0 mg/m³ standard, and concluded that lifetime exposure at this level may put workers at 'excess risk' of developing CWP and various other respiratory conditions.²³⁴

As early as 1995, the World Health Organisation (WHO) recommended an exposure standard of 1.0 mg/m³,²³⁵ and in the same year, NIOSH recommended a new uniform national exposure standard of 1.0 mg/m³, noting that even at this level some occupational effect on respiratory function could be expected.²³⁶

In 2012 the Government Accountability Office (GAO) in the USA undertook an audit and review of scientific reports and studies used by MSHA to support its proposal that the Prescribed Exposure Limit (PEL) under United States law should be lowered from 2.0 mg/m³ to 1.0 mg/m³. The audit concluded that the key scientific studies on which the MSHA reports were based supported the conclusion that lowering the PEL from 2.0 mg/m³ to 1.0 mg/m³ would reduce miners' risks of disease. The reports and key studies determined that miners' cumulative exposure to coal mine dust over their working lives at the then PEL of 2.0 mg/m³ placed them at an increased risk of developing CWP, PMF and decreased lung function, among other adverse health outcomes.

The audit found that in order to mitigate the limitations and biases in the data, the researchers took reasonable steps, such as using multiple x-ray specialists, to reduce the risk of misclassifying disease and to make adjustments to coal mine dust samples where bias was suspected. In addition to addressing the limitations and biases in the data, researchers used appropriate analytical methods to conclude that lowering the existing PEL would decrease the risk of miners developing black lung disease. For example, in addition to taking steps to precisely estimate a miner's cumulative exposure, the researchers accounted for several factors in their analyses—such as the age of the miners, the carbon content of the coal (coal rank), and other factors known to be associated with the disease—to better estimate the effect of cumulative exposure to coal mine dust. Further, other studies identified

²³⁰ Public hearing transcript, Brisbane, 31 January 2017, p 42.

²³¹ Anglo Coal, confidential response to question taken on notice at a hearing, 31 January 2017, attachment 8.

²³² Dr Robert McDonald, Vice President, Health and hygiene, BHP Billiton, public hearing transcript, Brisbane, 11 November 2016, p 17; Dr Bharath Belle, Coal Ventilation Engineering Manager, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 42.

²³³ United States Centers for Disease Control and Prevention, NIOSH, *Coal mine dust exposures and associated health outcomes*, Bulletin 64, 2011, <https://www.cdc.gov/niosh/docs/2011-172/pdfs/2011-172.pdf>, p 2.

²³⁴ The USA Supreme Court has recognised that risks of over 1 in 1000 may constitute excess risk.

²³⁵ Dr Brian Plush, public hearing transcript, Rockhampton, p 5.

²³⁶ R Cohen, A Patel and F Green, 'Lung disease caused by exposure to coal mine and silica dust', *Seminars in Respiratory and Critical Care Medicine*, vol 29, no. 6, 2008, p 652.

by the GAO audit generally supported the conclusion that reducing the PEL would reduce the risk of miners developing the disease.²³⁷

It ultimately took almost two decades for the USA's standard to be lowered. However, after a compromise was eventually struck 'between industry and science and labour' in 2014,²³⁸ MSHA imposed a new national standard of 1.5mg/m³ in the USA.²³⁹

In the UK, similarly, in the early 2000s the UK Advisory Committee on Toxic Substances expressed concern that the 2.0 mg/ m³ standard may not adequately protect health 'because of doubts that the limit was not soundly-based'.²⁴⁰ Souter et al (2005) subsequently calculated estimates based on British research data that for underground coal miners who work for 40 years, risks of PMF range from 0.8 per cent at 1.5mg/ m³ to about 5.0 per cent at 6 mg/m³, while risks of category two or greater CWP range from about 1.5 per cent at 1.5mg/ m³ to about 9 percent at 6mg/ m³.²⁴¹ In 2011, the UK listed three OEL values for an eight-hour shift respectively for: coal dust (respirable fraction) 1.6 mg/ m³, anthracite coal 0.4mg/ m³, and bituminous coal 0.9mg/ m³.²⁴²

In Queensland, the regulatory OEL remains at 3.0mg/m³, while NSW operates under an OEL of 2.5mg/m³. Both are based on Safe Work Australia's (SWA) AS2985, Workplace Exposure Standards for Airborne Contaminants of 3.0mg/ m³ for coal dust. However, when the standard was amended in 2004 to increase the required sampling flow rate, DNRM advised:

*It is understood Coal Services NSW concluded that this increase in flow rate would result in a change to the measured dust concentration and potentially result in an underestimation of the actual airborne exposure. This prompted NSW mines inspectorate to reduce their coal dust exposure standard down to 2.5 mg/m³. Unlike Queensland, NSW does not require the exposure limit to be shift adjusted.*²⁴³

Although these various standards are not directly comparable due to a range of differences in sampling methodology and calculation,²⁴⁴ the Monash Review noted that on the face of it, Australia and New Zealand generally seem to have 'the highest value listed for respirable dust', and Queensland especially so.²⁴⁵

²³⁷ United States Government Accountability Office, MINE SAFETY: Reports and Key Studies Support the Scientific Conclusions Underlying the Proposed Exposure Limit for Respirable Coal Mine Dust, GAO-12-832R, Washington, DC, 17 August 2012, p 3, <http://www.gao.gov/assets/600/593780.pdf>

²³⁸ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 15.

²³⁹ Mine Safety and Health Administration (MSHA), 'Final Rule: Lowering Mines' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors', *Federal Register*, vol. 79, no. 81, May 2014, pp 24814 – 24994, <https://arlweb.msha.gov/regs/fedreg/final/2014finl/2014-09084.asp>

²⁴⁰ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 81.

²⁴¹ United States Centers for Disease Control and Prevention, NIOSH, *Coal mine dust exposures and associated health outcomes*, Bulletin 64, 2011, <https://www.cdc.gov/niosh/docs/2011-172/pdfs/2011-172.pdf>, p 21.

²⁴² AIOH, submission 14, p 9.

²⁴³ DNRM, submission 35, p 21.

²⁴⁴ DNRM submitted that differences in sampling methods include 'the proportion of the shift for which the sampling device must be worn, the location where the sampling device is worn on the worker and the locations in the mine where sampling is to occur'. Due to these differences and other differences in the approach to calculation 'direct comparisons between New South Wales and Queensland are misleading'. The AIOH also noted that 'Parallels with the overseas industries such as the US, while providing some insight are not exact in their application in Queensland'. See: DNRM, submission 35, p 21; AIOH, submission 14, p 9.

²⁴⁵ Monash Centre for Occupational and Environmental Health, *Review*, 2016, pp 81-82.

This sentiment was also expressed by a range of inquiry stakeholders. The CFMEU, for example, submitted:

*The USA has tens of thousands of cases of CWP, but it is in the process of imposing a dust standard that is far more stringent than the Queensland standard. Do we think that Australian coal dust is healthier than US coal dust? Why is Queensland applying a standard that is weaker than that of another major developed nation that has a large coal industry and a widespread CWP problem?*²⁴⁶

In addition, the AIOH noted that although 'excellent technical guidance on compliance assessment is available', it is poorly understood by many stakeholders. The CFMEU also noted in this regard:

*It has been established that the mine operators are using a system to adjust the exposure standard based on a roster cycle, not on the number of hours a person works per shift as required by Section 89 (2) of CSMHR 2001. For example as indicated above it is common to have a shift adjusted average of 2.8mg/m³. If they complied with the legislation and applied Section B9 (2) of CSMHR 2001 applying the Brief & Scala formula the adjusted exposure standard for a 12 hour shift is 1.5mg/m³ for coal dust ... On the 31st October 2016 Site Senior Executives were made aware of this noncompliance by a Mine Record Entry which was issued to all coal mines in Queensland by the ISHR's. As of 16th November 2016 we are still waiting for a response as to their intended position on this matter...By taking the liberty [of] the adjustment of the exposure standard for extended shifts and not applying Section 89 (2) CSMHR 2001, has increased the Coal Mine Workers' exposure to respirable dust while working shifts in excess of B hours.*²⁴⁷

These issues have prompted stakeholders to call for a review of OELs informed by international evidence and best practice (albeit relevant to the Australian mining context), and an elimination of the inconsistencies between national jurisdictions.²⁴⁸

Such a review was also recommended by the Senate Committee, which called on Safe Work Australia (SWA) to review exposure levels and available literature with a view to developing a best practice maximum exposure level for adoption by all states and territories.²⁴⁹ The Senate Committee recommended that the Commonwealth Government establish a National Coal Dust Monitoring Group to undertake broader analysis of dust issues and mitigation, and to which SWA should report its findings.²⁵⁰

In late 2016, SWA commenced a review of workplace OELs, including respirable coal dust and respirable silica. The committee understands SWA aims to release a consultation Regulatory Impact Statement (RIS) for public comment in October 2017.²⁵¹ DNRM advised:

*Golder Associates Pty Ltd (Golder) were the successful tenderer for the review and have developed a methodology after consulting with organisations including the National Industrial Chemicals Notification and Assessment Scheme and the Australian Institute of Occupational Hygiene. Workplace Exposure Standards are being reviewed using health-based data from US, UK, and Europe.*²⁵²

²⁴⁶ CFMEU, submission 27, pp 16-17.

²⁴⁷ CFMEU, submission 27, p 16.

²⁴⁸ TSANZ and LFA, submission 6, p 6; CFMEU, submission 27, pp 16-17; Dr Deborah Yates, public hearing transcript, Brisbane, 11 November 2016, p 24; AIOH, submission 14, p 9; QRC, submission 18, p 30; and Mr Mike Carter, Peabody, public hearing transcript, Brisbane, 3 March 2017, p 14.

²⁴⁹ Senate Select Committee on Health, *Fifth interim report*, recommendations 4.13 and 4.14.

²⁵⁰ Senate Select Committee on Health, *Fifth interim report*, recommendations 4.12 to 4.14.14.

²⁵¹ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 4, p 1.

²⁵² DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 4, p 1.

Golder will review the currently available scientific data for each chemical and, where necessary, recommend a new level for the exposure standard.

The outcomes of the scientific evaluation and the SWA finding will inform any changes to the exposure standards in Queensland for respirable coal dust.²⁵³

This review process aside, the committee notes that in recent times, a number of Queensland mine sites have moved pre-emptively to set lower OELs that are consistent with international exposure standards.²⁵⁴ Having reviewed emerging evidence on the risks of CWP, COPD, and other lung dysfunction, Dr Robert McDonald of BHP Billiton testified that his company concluded such actions were necessary on precautionary grounds.²⁵⁵

In this regard, the committee also notes the QRC's submission that:

*...the process of improving dust control and mitigation measures should not have to wait for a National group, which is likely to be subject to bureaucratic process delaying its establishment and to political considerations in the delivery of its outcomes.*²⁵⁶

These issues of timing were also noted by the Senate Committee, which proposed an interim OEL of 2.5mg mg/m³ be imposed until the SWA review process could be completed. The QRC endorsed this position, suggesting that 'in the short-term, coal mining companies adopt the lowest Australian level (2.5 mg/m³) for coal dust exposure'.²⁵⁷

The committee notes that the AIOH has previously recommended that the limit be reduced to 1.0 mg/m³, as has also long been recommended by the WHO.²⁵⁸ Citing the AIOH position, the AMWU argued that Queensland 'should at least adopt...in the short term', a 1.0mg/m³ limit;²⁵⁹ while the CFMEU submitted that the USA PEL of 1.5mg/m³ should be adopted to ensure that Queensland's regulation is consistent with 'world's best practice'.²⁶⁰

It is intolerable for Queensland coal mine workers to be expected to await the outcome of the SWA review before the Queensland OEL is reduced to meet international standards.

Key finding

There is ample scientific evidence that the current occupational exposure limit (OEL) for respirable coal mine dust in Queensland is exposing coal mine workers to excessive risk of developing CWP, CMDLD and other respiratory disease.

Importantly, while the primary focus has been on reducing the OEL in relation to coal dust, the committee notes that any such change should necessarily also ensure sufficient protection from silica exposure. Testimony from medical experts highlighted that silica can in fact be more dangerous than

²⁵³ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 4, p 1.

²⁵⁴ Dr Robert McDonald, BHP, public hearing transcript, Brisbane, 11 November 2016, p 17.

²⁵⁵ Dr Robert McDonald, BHP, public hearing transcript, Brisbane, 11 November 2016, p 17.

²⁵⁶ QRC, submission 18, p 31.

²⁵⁷ QRC, submission 18, p 30; see also: BHP Billiton, submission 28, p 5.

²⁵⁸ AIOH Exposure Standards Committee, *Dusts not otherwise specified (dust NOS) and occupational health issues: position paper*, Melbourne: AIOH, 2014, p 5.

²⁵⁹ AMWU, submission 36, p 6.

²⁶⁰ CFMEU, response to question taken on notice during a hearing, 14 December 2016, no. 3; see also Helen Gibson, submission 9, p 13.

coal dust, and has been identified in international research as potentially accelerating the onset and progression of CWP.²⁶¹ In this regard, US-based black lung expert Dr Robert Cohen advised:

*We just lowered our exposure level to silica from 0.1 milligram per metre cubed to 50 micrograms or 0.05 milligrams per metre cubed because of the horrendous diseases that occur from silica. Aside from the diseases we have already talked about for coalmine dust, silica is actually a lung carcinogen. It is an International Agency for Research on Cancer, IRAC, class 1 human carcinogen. It causes renal disease and causes other autoimmune diseases like rheumatoid arthritis and other things...Our new law also mandates surveillance for silica.*²⁶²

In weighing these submissions, the committee was conscious of evidence indicating that for long-term industry workers, 'every decimal point of exposure matters', and reducing coal dust exposure by even 0.5mg/m³ can significantly reduce the prevalence of simple CWP and PMF over a 35 year working lifetime.²⁶³ Accordingly, the committee considers that section 89 of the CMSHR should be immediately amended to reduce the OEL for coal dust to 1.5 mg/m³ and for silica to 0.05mg/m³, bridging the gap to USA standards and other professional recommendations and establishing clear and immediate obligations for operators, irrespective of ongoing review processes.

Importantly, all other current requirements in the section should be retained, including the new provisions for re-sampling, investigation and reporting which commenced in January 2017.

The committee also considers that the provisions of section 89 of the CMSHR should ultimately be relocated in to the CMSHA, giving them the added weight of legislation.

Recommendation 19

An Occupational Exposure Limit (OEL) for respirable coal dust (including mixed mineral coal mine dust) should be set requiring duty holders to ensure a 'coal worker' is not exposed to atmosphere containing respirable dust exceeding an average concentration, calculated under AS 2985, equivalent to the following for an 8-hour period—

- for coal dust – 1.5mg/ m³ air, and
- for silica – 0.05mg/m³ air.

Section 89 of the Coal Mining Safety and Health Regulation 2001 should immediately be amended to give effect to this recommendation.

Consideration should then be given to relocating the OEL provisions within the *Coal Mining Safety and Health Act 1999*.

Further recommendations regarding the extension of this section to apply also to other coal workers, outside mines, are detailed in chapter 8.

The committee also notes with interest the opinion of Dr Bharath Belle that there is opportunity for a dedicated study and the establishment of a statistical data-set towards the development of an Australian dose-response curve for CWP.²⁶⁴ Dr Belle stated that this would mean 'we can come up with

²⁶¹ Coal Services Pty Ltd, private briefing, Sydney, 23 February 2017; Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 18.

²⁶² Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 20.

²⁶³ United States Centers for Disease Control and Prevention, NIOSH, *Coal mine dust exposures and associated health outcomes*, Bulletin 64, 2011, <https://www.cdc.gov/niosh/docs/2011-172/pdfs/2011-172.pdf>; Anglo Coal, confidential response to question taken on notice at a hearing, 31 January 2017, attachment 9.

²⁶⁴ Anglo Coal, response to question taken on notice during a hearing, 31 January 2017, attachment 8, p 6.

the ideal limit for us'.²⁶⁵ The committee considers that this type of research could appropriately be conducted by the dedicated health research division of the Mine Safety and Health Authority.

4.2 Trends in coal dust management

Over the last 30 years, advances in mining equipment technology and methodology have contributed to a significant increase in coal production in Queensland. This increased productivity has meant that more dust is being produced.²⁶⁶ While there has been limited publication or analysis of resulting respirable dust exposure levels, the available evidence points to the inevitable conclusion that exposure levels have similarly increased.

In 1986, two years on from the Rathus and Abrahams report, the first mechanised longwall unit to operate in Queensland was installed underground at German Creek's central colliery.²⁶⁷ Mr Bruce Ham, a former coordinator of the Coal Industry's Employee Health Scheme (1993 to 2002), testified to the committee that in his observational study of the respiratory function of coal mine workers during the 1990s, he noted 'little evidence' of CWP, and no difference in the respiratory health of underground mine workers compared to open-cut mine workers. However, at the longwall at German Creek – the 'one exception' – Mr Ham observed the respiratory function of workers to be 'significantly worse' than the rest of the coal industry. This was a result that he noted 'should have been a flag to the mining industry'.²⁶⁸

In 1995, Cliff, Bofinger and Tiernan found that 20 per cent of measurements at the then four producing longwall mines in Queensland exceeded the exposure standard, based on personal and static monitoring over the preceding three years.²⁶⁹ Cliff and Kizil (2002) subsequently analysed personal respirable coal dust measurements recorded by each mine and DNRM between mid-1999 and mid-2001²⁷⁰ for the 11 longwall mines in Queensland. They found that measurements exceeded the statutory eight-hour equivalent exposure standard in 15.6 per cent of cases, compared to just 6.9 per cent of cases in NSW.²⁷¹

While various authors subsequently issued timely warnings about the 'severe problem in the control of airborne dust' posed by longwall mining²⁷² and the need to review the management of risks

²⁶⁵ Dr Bharath Belle, public hearing transcript, Brisbane, 31 January 2017, p 42.

²⁶⁶ Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, p 9; Helen Gibson, submission 9, p 13. See also: Hsin Wei Wu, Stewart Gillies and Muhammad Usman Khan, 'Real-time Respirable Dust Monitoring', Conference Paper, Queensland Mining Industry Health and Safety Conference, Gold Coast, 14-16 August 2016, p 1.

²⁶⁷ DNRM, submission 35, p 5.

²⁶⁸ Bruce Ham, retired Mining Health and Safety Adviser and former Coordinator of the Queensland Coal Board Coal Industry Employees' Health Scheme, public briefing transcript, Ipswich, 4 November 2016, p 48.

²⁶⁹ Emeritus Professor Odwyn Jones, submission 4, p 3.

²⁷⁰ Cliff and Kizil note that some data was collected prior to this two-year period. See: David Cliff and Guldidar V Kizil, *An estimation of the exposure of Queensland underground coal longwall workers to respirable dust*, Queensland Mining Industry Health and Safety Conference, Townsville, 4-7 August 2002, p 13.

²⁷¹ David Cliff and Guldidar V Kizil, *An estimation of the exposure of Queensland underground coal longwall workers to respirable dust*, Queensland Mining Industry Health and Safety Conference, Townsville, 4-7 August 2002, p 13; and David Cliff, Jill Harris, Carmel Bofinger and Danielle Lynas, *Managing Occupational Health in the Mining Industry*, 17th Coal Operators Conference, University of Wollongong, 8-10 February 2017, p 296.

²⁷² Emeritus Professor Odwyn Jones, submission 4, p 3. See also Brian Lyne, *Hazard Management in Longwall Installations*, 3rd Coal Operators' Conference, University of Wollongong and the Australasian Institute of Mining and Metallurgy, 2003, p 19.

associated with coal dust exposure,²⁷³ the next public reporting of dust exposure levels came only after the first CWP diagnosis in 2015.²⁷⁴ The *Commissioner for Mine Safety and Health, Queensland Mines Inspectorate Annual Report 2014-15* reported:

*Sixty per cent of mines exposed longwall operators to levels equal to or greater than the adjusted regulatory exposure limit during 2014 compared with 10 per cent in 2012. The average dust exposure for longwall operators at one mine was found to exceed twice the adjusted regulatory exposure limit. The average dust exposure for development operators has risen sharply at a number of mines. In 2012 the average exposure at all mines was below the adjusted regulatory exposure limit compared with 25 per cent rising well above this limit in 2014. Where exceedances in development activities have occurred they have been significant and average exposures have increased by 250 to 450 per cent between 2012 and 2014.*²⁷⁵

Most recently, in a presentation at the 2016 Queensland Mining Health and Safety Conference, Djukic and Gill reported that respirable dust exposure levels were exceeded across a number of mine sites measured between 2000 and 2015 (see Figure 1, over page).²⁷⁶ Importantly, these results were reported as an average value for the longwall similar exposure group (SEG) at each mine – that is, for the monitored group of workers engaged on the longwall in tasks with the same general level of dust exposure risk.²⁷⁷ This means that it is likely there were higher exposure levels for some longwall workers within these groups.

Evidence obtained by the committee suggests that the degree to which exceedances have been appropriately captured and reflected in this analysis is also limited by shortcomings in dust monitoring frequency and practices across industry. Some of the issues that have been raised with the committee were also highlighted in a 2010 Queensland Government report, which outlined the results of a self-assessment study completed by 54 of the state's then 55 operating coal mines. The report revealed that 'the personal monitoring programs that are in place at most mines (60 per cent) are not considered to be in line with good occupational hygiene practice', and highlighted various methodological issues and considerable variability in the frequency with which monitoring was carried out.²⁷⁸

Further, while mines reported use of a wide range of dust controls, 15 per cent reported that they did not review monitoring data in order to investigate the reason for exceedances and assess the efficacy of these controls.²⁷⁹ In keeping with these self-report results, submitters to this inquiry raised a range of concerns about inadequate or ineffective use of controls over time, including flawed setup and maintenance of mitigation equipment and inconsistent implementation of procedures.

²⁷³ B Ham, *Methodology in assessing long-term respiratory risk in longwall miners*, Queensland Mining Health and Safety Conference, Townsville, 6-9 August 2006, p 1.

²⁷⁴ Professor David Cliff, submission 1, p 4.

²⁷⁵ Commissioner for Mine Safety and Health, *Queensland Mines Inspectorate Annual Report 2014-15*, State of Queensland September 2015, p 4.

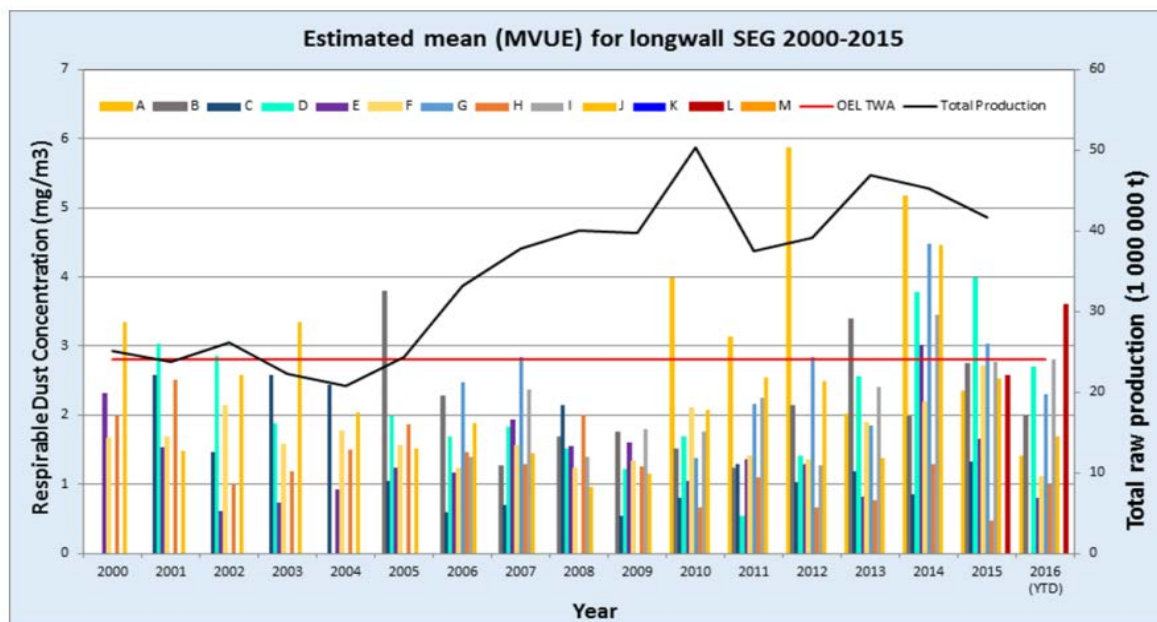
²⁷⁶ Fritz Djukic and Eliza Gill, *Risk based legislation and dust exposures on Queensland longwalls – Does it work?*, Queensland Mining Industry Health and Safety Conference 2016, Gold Coast, 14-16 August 2016.

²⁷⁷ DNRM, *Similar Exposure Groups (SEGs)*, Factsheet, February 2017, https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0008/977498/similar-exposure-groups.pdf

²⁷⁸ DEEDI, *Dust Self Assessment Feedback Report: Part A*, Queensland Government, 2010, p 18.

²⁷⁹ DEEDI, *Dust Self Assessment Feedback Report: Part A*, Queensland Government, 2010, p 11.

Figure 4 Mean respirable dust concentration for workers in the longwall production area similar exposure group (SEG), Queensland longwall underground mines, 2000-2015.



Source: DNRM, submission 35, p 15.

In summary, these developments point to a significantly decreased focus or process of ‘risk normalisation’ around the coal mine dust hazard over time,²⁸⁰ whereby exceedances provoked lower levels of concern, and education around respirable dust exposure risks was overlooked in worker training and education. Witnesses and submitters suggested these trends may have been exacerbated by:

- the widespread use of extended shifts and rosters, increasing cumulative exposure risks
- a heightened emphasis on production and associated financial incentives for employees, and
- the increasing casualisation of the mining workforce, which has been linked with poorer occupational health and safety outcomes.²⁸¹

...I heard one of the guys say this morning—and he really hit it on the head—that you accept working in dust. I look at it from a risk management perspective. We had the boom come on, and we had coal production increase, thicker seams and bigger equipment. We did everything to increase our production but nothing ever popped into anyone’s head—and hindsight is a great thing—to say, ‘Hang on a minute, we are doing this but we are not increasing the monitoring or the screening of workers.’ Focus went into getting the end result out. At the same time we had

²⁸⁰ QRC, submission 18, p 4.

²⁸¹ See, for example: Elsa Underhill and Michael Quinlan, ‘How Precarious Employment Affects Health and Safety at Work: The Case of Temporary Agency Workers’, *Industrial Relations*, vol 66, no. 3, 2011; Rick Johnstone, *Regulating Occupational Health and Safety for Contingent and Precarious Workers: The Proposed Australian ‘Primary’ Duty of Care*, Working Paper no. 70, National Research Centre for Occupational Health and Safety Regulation, August 2009; Productivity Commission, *Workplace Relations Framework*, Productivity Commission Inquiry Report no. 76, 30 November 2015; and Finance and Administration Committee, *Inquiry into the practices of the labour hire industry in Queensland*, Report no. 25, 55th Parliament, Queensland Legislative Assembly, June 2016.

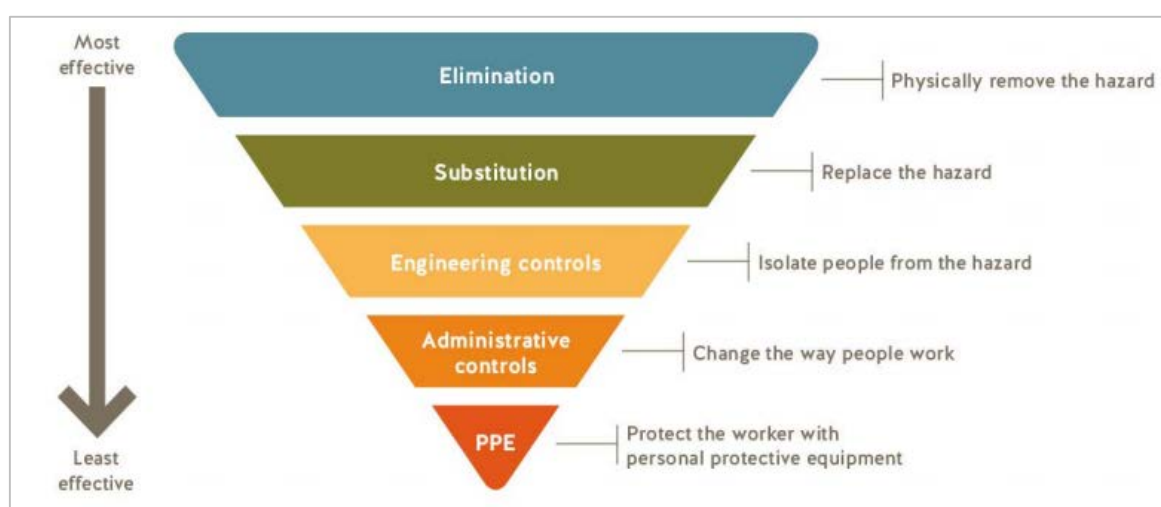
*new people coming in and we did not educate them or train them—all those things that as a third-generation miner you learnt, and I learnt when I first started in '88.*²⁸²

Whilst these risks were periodically acknowledged and highlighted by DNRM and the Mines Inspectorate during the past three decades, mine entry records and directives that were provided in response to summonses issued by the committee indicate that these emerging dust risks were not a significant focus of compliance actions until after the re-identification of CWP in 2015.

4.3 Coal dust mitigation

The acknowledged industry standard for achieving an acceptable level of risk is by working through the hierarchy of control. This stipulates that the best and most effective protection from harm is through elimination – that is, by preventing the hazard from occurring in the first place.²⁸³ Where elimination is not reasonably practicable, risk must be minimised by working through a series of alternative processes in order of declining rigour (see Figure 5).²⁸⁴

Figure 5 Hierarchy of control for achieving an acceptable level of risk



Source: Caledon Coal, submission 19, p 14 (from WorkSafeBC, 2016).

A combination of controls may be required to adequately control a hazard, and these controls must be maintained and adapted to ensure they remain effective and account for changes in environmental conditions.²⁸⁵

²⁸² Mr Stephen Smyth, CFMEU Mining and Energy Division, Queensland District, public hearing transcript, Blackwater, 14 December 2016, p 4.

²⁸³ Bruce Ham, submission 5.2, p 2; DNRM, submission 35, pp 9-10; Matt Cooper, General Manager, Broadmeadow Mine, BMA, public hearing transcript, Moranbah, 23 November 2016, p 6; Peabody, submission 22, p 7; Andrew Vella, General Manager and Site Senior Executive, Carborough Downs, public hearing transcript, Mackay, 25 November 2016, p 22.

²⁸⁴ Queensland Government, *Controlling the risk of dust exposure to workers in mines*, <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/hazards/dust/control>

²⁸⁵ Dr Brian Plush, public hearing transcript, Rockhampton, 12 December 2016, p 4. See also Anne Kelly, Craig Taylor and Greg Manthey (SIMTARS, DNRM), *Respirable Dust Monitoring for Underground Coal*, Queensland Mining Industry Safety and Health Conference, Gold Coast, 14-16 August 2016, p 9.

While PPE, including specific respiratory protective equipment (RPE), is an important tool in reducing exposure risks, it is ultimately the last line of defence and should not be solely relied upon.²⁸⁶ A mine operator's focus should be on ensuring respirable dust levels are kept below prescribed levels through the use of higher level controls.²⁸⁷

4.3.1 Engineering and administrative controls

Queensland mines have historically presented particular challenges in relation to dust control. A significant number of mines are regarded as 'gassy' mines. These mines drain their coal of moisture to expedite gas extraction, which leads to drier and more dispersible coal, and as a result, higher dust levels.²⁸⁸ Use of bi-directional shearing and the top coal caving method on Queensland longwalls has also been associated with significantly increased and 'excessive' dust levels.²⁸⁹

Stakeholders submitted that a wide range of suitable and effective mitigation technologies and dust control methods have been developed and can be used by industry to address these dust concerns.²⁹⁰ Professor David Cliff noted that the Australian Coal Association Research Program (ACARP) 'has spent probably \$20 million over the past 20 years investigating the various mechanisms for controlling longwall dust',²⁹¹ and the committee heard evidence that mining companies have also invested significantly in controls, particularly in recent years.²⁹² Submissions from equipment suppliers also highlighted emerging technologies which offer further opportunities to reduce dust and exposure levels.²⁹³

The committee notes that Queensland mining operators by and large appear to have demonstrated an earnest commitment to strengthening their controls since the re-identification of CWP, engaging specialist expertise to assist them in characterising dust risk profiles across the mine site and using monitoring data to support the evidence-based modification and consolidation of controls. In addition, training and education around dust issues have been ramped up at some sites across the state.²⁹⁴

Engineering controls currently utilised in Queensland, as outlined in written and oral submissions and witnessed during site visits conducted by the committee, include:

- automation and remote equipment operation (offering the opportunity to remove the operator from the source of the dust)
- ventilation controls (pumping of clean air through the mine)
- enclosure of dust sources (for example, dust curtains around certain equipment)

²⁸⁶ Mr Fritz Djukic, Inspector of Mines, Occupational Hygiene, Mines Inspectorate, DNRM, public hearing transcript, Mackay, 25 November 2016, p 17; AIOH, submission 14, p 5; DRNM, submission 35, p 10; and Anne Kelly, Craig Tayler and Greg Manthey (SIMTARS, DNRM), *Respirable Dust Monitoring for Underground Coal*, Queensland Mining Industry Safety and Health Conference, Gold Coast, 14-16 August 2016, p 9.

²⁸⁷ DRNM, submission 35, p 10.

²⁸⁸ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 7.

²⁸⁹ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, pp 7-8; Dr Brian Plush, public hearing transcript, Rockhampton, 12 December 2016, p 6; Coal Services Pty Ltd, private briefing, Sydney, 23 February 2017; Monash Centre for Occupational and Environmental Health, *Review*, p 21; Mr Paul Harrison, public hearing transcript, Brisbane, 22 March 2017, p 19.

²⁹⁰ See, for example: Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 41; AIOH, submission 14, p 5; Helen Gibson, submission 9, p 13.

²⁹¹ Public hearing transcript, Brisbane, 11 November 2016, p 41.

²⁹² Anglo American, submission 25, pp 8, 10; Dr Brian Plush, public hearing transcript, Rockhampton, 12 December 2016, p 5; Pump Investments submission 45; private briefing, Sydney, 23 February 2017.

²⁹³ Pump Investments Pty Ltd, submission 45, p 1; and BreatheSafe, submission 24, p 5.

²⁹⁴ Peabody Energy, submission 22, p 5; and Anglo American, submission 25, p 7.

- use of water sprays and other wetting agents to suppress dust (including at the cutting face and on conveyor belts)
- use of scrubbers and dust extraction drums
- modified cutting sequences
- enclosed air-conditioned (filtered) and positive pressure cabins on mobile equipment such as trucks, shovels and dozers, and
- maintenance of roadways through grading, watering and the application of salt granules to prevent the accumulation of dust.²⁹⁵

Image 10 Shield canopy sprays and ranging arm sprays



Source: DNRM, Recognised Standard 15: Underground respirable dust control, Coal Mining Safety and Health Act 1999, 1 May 2017, pp 27, 32.

²⁹⁵ Caledon Coal, submission 19, pp 15-16; Peabody Energy, submission 22, pp 4-5; Anglo American, submission 25, pp 7-8; BHP Billiton, submission 28, pp 5-6; Glencore, submission 32, p 5; Mr Matt Cooper, General Manager, Broadmeadow Mine, public hearing transcript, Moranbah, 23 November 2016, p 6-7; Mr Andrew Vella, Carborough Downs, public hearing transcript, Mackay, 25 November 2016, p 28; and Coal Services Pty Ltd, private briefing, Sydney, 23 February 2017.

Image 11 **Watering trucks**



Source: Queensland Coal Board, *30th Annual Report, 1980-81*, 1981, p 75.

Key administrative controls engaged by Queensland mines include:

- the use of trigger action response plans (TARPs)
- the use of 'toolbox talks' or pre-shift safety meetings and the establishment of dust committees comprising a mix of workers (employees, contractors, management and SSHRs), to identify and implement opportunities for improvement and monitor progress
- the use of pre-start checklists to ensure that controls are operational
- positioning workers away from sources of dust generation, including through the use of both 'no go zones' and of designated 'safe zones' (identified as affording the best protection to workers during coal cutting operations), and
- task rotation to minimise individual exposure to sources of dust generation.²⁹⁶

Many of these measures have been in place in mines for some time. Mr Fritz Djukic of the Mines Inspectorate noted that it 'should be recognised' that some operators have been proactive in embracing principles of risk management in relation to dust and have 'demonstrated sustained control over time'.²⁹⁷

²⁹⁶ Caledon Coal, submission 19, pp 15-16; Peabody Energy, submission 22, pp 4-5; Anglo American, submission 25, pp 7-8; BHP Billiton, submission 28, pp 5-6; Glencore, submission 32, p 5; Mr Matt Cooper, General Manager, Broadmeadow Mine, public hearing transcript, Moranbah, 23 November 2016, p 6-7; Mr Andrew Vella, Carborough Downs, public hearing transcript, Mackay, 25 November 2016, p 28; and Coal Services Pty Ltd, private briefing, Sydney, 23 February 2017.

²⁹⁷ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, p 17.

However, even proactive mine operators face difficulties in adapting to changing conditions and balancing more immediate safety concerns, including poor strata (roof) stability or gas risks (inhalation or ignition/explosion).²⁹⁸ One SSE explained:

If we encountered strata conditions which do not allow us to fully utilise the level of automation then potentially it is putting operators in a zone where they could be more exposed to other hazards—obviously dust is one of those in that regard... Because strata [fall] can kill you now, respirable dust is something that may get to you in 30 or 40 years from now...

From a managing gas perspective, it would be nice to have as much air as we could in there but if you have too much ventilation then you create dust as well. There is always this balancing of several balls in the air to make sure that you get the best outcome overall...²⁹⁹

Additionally, particulate matter scientist Dr Brian Plush noted:

The simple fact is that in most mines there is float dust, there is a lot of dust coming in if they crush the roof out and there are variables that change constantly. They may have controls in place that have worked really well for 90 per cent of the time, and then they may have a great big stone band through the face and that just throws all of that out the window and a new set of controls are going to be required to control the dust. ...Variables in mining do not stay as they should.³⁰⁰

These challenges aside, dust control evidently was not prioritised nor a significant focus of attention for many operators prior to the re-identification of CWP.

The Senate Committee found that operators and the QRC had generally displayed a 'cavalier attitude... towards dust monitoring and mitigation' and placed a 'low priority on their statutory responsibility to provide satisfactory PPE and to ensure workers wear PPE and remove themselves from hazards'.³⁰¹

This committee's conclusions were consistent with the Senate Committee's findings. Operators apparently felt comfortable that the controls in place were sufficient and engaged in limited review of their efficiency in the absence of health-based indicators to re-affirm the dangers of the respirable dust hazard and highlight shortcomings in mitigation efforts.

Workers suggested that the success of controls has been limited by multiple factors, including:

- poor design or ineffectual implementation
- prioritisation of production over safety concerns
- a reported reluctance of workers to raise safety concerns, and
- inadequate procedures and worker training.

In keeping with this worker testimony, Professor David Cliff advised the committee:

The technology exists and has existed for a long time to keep dust levels at an adequate level. It requires people to maintain those devices and those systems and monitor them. Some of those systems will impact upon productivity, because they may make it more difficult to see the coal that the shear is cutting, for example. Water sprays may interfere with field of view. People may

²⁹⁸ Mr Mike Oswell, Health, Safety and Environment Manager, Anglo Coal, public hearing transcript, 31 January 2017, p 14. See also: BHP Billiton, submission 28, p 6.

²⁹⁹ Mr Tim Hobson, Site Senior Executive, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2017, p 28.

³⁰⁰ Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, p 4.

³⁰¹ Senate Select Committee on Health, *Fifth interim report*, p 39.

*want to stand in the wrong place to get a better view of where the machine is cutting. Some of the control devices may be seen to count against productivity.*³⁰²

4.3.2 Design and implementation of controls

Mine entry records and directives issued by the Mines Inspectorate over the last five years generally support the testimony of Professor David Cliff that controls that are in place may be 'either turned off or used sporadically, depending on a whole pile of concerns'.³⁰³ In underground settings, poor positioning and maintenance of sprays, a lack of water pressure and a failure to regularly change cutter picks were among several such cited factors. In open-cut settings, the committee heard repeated testimony regarding insufficient use of suppression sprays on dusty roadways, and the ongoing use of damaged vehicle cabins on operating equipment that do not provide an effective barrier or protection from respirable coal dust.

For example, underground workers testified:

*At a mine where I worked at one stage they brought in something called orange peel. It was some additive that they put into the water... to make it stick to the coal dust to knock it down... They started using that additive, but in the end it just got too expensive and too hard and it never got used anymore.*³⁰⁴

*If you are driving a [continuous] miner and the sprays are not working, you would either turn the miner off and fix it or you wore it. It depends on who you are working for, what deputy you had, or what superintendents you had at the time as to how much pressure you got on you whether to keep going or if you were game enough to say, 'We're going to stop for half an hour to fix this.'*³⁰⁵

*Nearly every shift we would sit up there and we would say to our undermanager, 'Look, these outbye roads need to be done,' because the visibility some days would only be 30 or 40 metres it would be that dusty. Every day you would be fobbed off. It was like 'The grader is broken', or 'We haven't got enough blokes. How about one of you fellows out of the panels go and do the jobs,' which therefore leaves the crew short... Every shift we would ask every morning 'Is there any chance of getting the road salted or graded', and it would be the same thing: we would get fobbed off.*³⁰⁶

Mr McMILLAN: *You particularly remember having levels that you—even though you do not remember the number—knew were too high?*

Mr Laidlaw: *Yes.*

Mr McMILLAN: *What was the action if any that was taken by the company as a result of those high readings?*

³⁰² Public hearing transcript, Brisbane, 11 November 2016, p 41.

³⁰³ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

³⁰⁴ Mr Roderick Macdonald, private capacity, public hearing transcript, Collinsville 21 November 2016, p 17.

³⁰⁵ Mr Jason Hill, Industry Safety and Health Representative, CFMEU, public hearing transcript, Ipswich, 4 November 2016, p 34.

³⁰⁶ Mr Alistair Warren, private capacity, public hearing transcript, Tieri, 14 December 2017, pp 22-23.

Mr Laidlaw: *Nothing. We would complain to them and they would say that they were monitoring it. I hate the word monitoring. They do nothing. We put forward what we thought would help with the dust, but it was too dear....*³⁰⁷

*I have been asked to go in as a representative for a longwall crew on one block where they were continually asking about the dust. It got to the stage where one bloke fell over or tripped over because he could not see where he was walking. He tripped over and it happened to be the ERZ controller and he pulled the place up. That was when they went [above-ground] and asked me to go up as a representative for them, and they still did not act on it quick enough. They did act on it by changing the style of drums to ones that are less dusty, but they didn't want to.*³⁰⁸

Image 12 Dust generated by machinery in an open-cut environment



Source: Paper tabled by Mr Nick Johnstone, Breathe Safe, at the public hearing on 1 February 2017.

Representatives from the Collieries Staff Officials Association (CSOA), a division of the Association of Professional Engineers, Scientists and Managers Australia (APESMA), especially highlighted a concern about a 'recent increase in work being performed in 'returns'' – 'traditionally the area of a mine with the greatest levels of dust'.³⁰⁹ CSOA Director Ms Catherine Bolger explained that this area is the mine's ventilation exit point:

*The air that comes out via the return is much more contaminated than the fresh air going in... The return air can get worse depending on what work is being done at the face, whether they are cutting through stone, whatever is happening. Some time ago—and I still do not have a final answer on this—a lot of the mine dust management plans used to say that there should be no work in the returns once production is happening. That has changed in recent times and work is allowed there, but that is an area where we think there should be a really good look at it and where there should be some prohibitions on working in that return area.*³¹⁰

This concern was echoed by Mr Stephen Smyth of the CFMEU Mining and Energy Division, who highlighted a rise in complaints to the inspectorate in this regard.³¹¹

³⁰⁷ Mr Steve Laidlaw, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 29.

³⁰⁸ Mr Kerrod Slatter, coal mine worker, Oaky North Mine, public hearing transcript, Tieri, 14 December 2016, p 7.

³⁰⁹ APESMA, submission 31, p 5.

³¹⁰ Ms Catherine Bolger, Director, Collieries' Staff and Officials Association, APESMA, public hearing transcript, Rockhampton, 12 December 2016, p 21

³¹¹ CFMEU, response to question taken on notice on 14 December 2016, p 18.

Workers also testified that dust issues in coal preparation and handling plants (wash plants) tend to be overlooked:

*We have seen a lot of dust sprays taken off. We have seen the coal that we put on the belt increased. The way we handle coal is different. We handle it a lot more now... We put that much water on the belt to try to control the dust that we ended up blocking up the coal chutes, so we get instructed to take the dust sprays off... There is just case after case of guys going down the ROM tunnel who cannot see, coming out covered in black. You just cannot speak out. You cannot say anything.*³¹²

In open-cut environments, dust risks appear to have been especially neglected because of a false assumption that only underground workers could contract CWP. The committee heard evidence from several open-cut coal mine workers about the absence of adequate dust mitigation.

*... Anglo turned around and took it off their ruling that if the air-conditioning system does not work properly the machine is not unfit to operate. They were still putting blokes in machinery where the air conditioning was not working properly and a lot of the time it was contractors because they will not actually say anything and they will drive around the circuits with the windows down. I have had the same ... where the air-conditioner has packed it in on the loader, and with the loaders out there it is like sitting in a glass stone to start with. Because I will turn around and refuse to drive anymore because you are sitting there swimming in your own sweat, they will turn around and send a contractor up there to do it and give them a five-litre bottle of water and say, 'Stay hydrated.'*³¹³

*... a permanent employee called me and said, 'Jason, go and have a look at that excavator. There are problems.' I went up and had a look and ... I found: paper towel jammed in the window seals to manage the dust. That excavator would be approximately four years or five years old. It is not an old machine. The door seals, rusted out. Rubber seals connecting to a rusted out doorframe does not give a good door seal. Holes down through the cab, in the floor to the room underneath and outside. This is continuously what we are finding. I have put this through to the mine record at our mine... Even to this day, there is still no action on this. That is continuously what we have.*³¹⁴

*Talking about the sprinkler system, the sprinkler system is not there to suppress dust. It is when it gets that bad that they cannot see what they are digging; it is so they can dig more coal. It is not about suppressing dust. I have been there 20 years and I have seen maybe only a dozen times they have turned the sprinklers on. Like I said, that is so they can dig the dirt. It is not about worrying about us. The cabs leak like a sieve.*³¹⁵

*We still have it now where the supervisor will contact the shift supervisor and tell him we need the water cart or we need the road salted, and it could be two or three days before it gets done.*³¹⁶

³¹² Mr Zac Harper, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 27.

³¹³ Private hearing, Middlemount, 24 November 2016.

³¹⁴ Mr Jason Meikle, private capacity, public hearing transcript, Moranbah, 23 November 2016, pp 18-19.

³¹⁵ Private hearing, Dysart, 23 November 2016.

³¹⁶ Mr Kerrod Slatter, coal mine worker, Oaky North Mine, public hearing transcript, Tieri, 14 December 2016, pp 1-2.

In the 2010 self-report study of Queensland's coal mines, 14 per cent of the 54 participating mines (of 55) indicated they did not use air-conditioned cabins, and only 31 per cent stipulated the use of positive pressure, filtered air-conditioned cabins on their sites.³¹⁷

As submitter Breathe Safe Pty Ltd emphasised, most standard fitted air-conditioning systems are not designed to filter out respirable-sized dust. To provide adequate protection in dusty environments, mobile equipment cabins should be tightly sealed, operate under positive pressure, and be fitted with a high efficiency particulate air (HEPA) grade filter.³¹⁸

Submitters stated that too often the dust suppression systems that are employed are incorporated on an ad hoc basis, rather than being considered at the design stage, in the mine plan.³¹⁹ Mr Daniel O'Connor submitted that such up-front consideration of dust mitigation could help ensure ventilation flows are factored into system design, and 'avoid any areas that would be difficult to adequately ventilate.'³²⁰ Mr Neil Whittaker submitted:

It never gets seriously addressed, despite being discussed in the design risk assessments ... because the main design had already happened when these risk assessments were taking place. Only a holistic approach to dust reduction in the mining of coal will fix this issue...

*It needs to be in the design, from scratch, integrated into the system, not fitted as an optional extra, and not be readily bypassed (turned off).'*³²¹

The AIOH recommended that the regulation should require operators to develop and implement an evidence-based dust management plan to control dust exposure in mines at the outset, citing the legislative approach employed in Order 40 of the NSW regulation.³²²

Under this order ('Abatement of dust on longwalls'), the manager or owner of a coal mine must submit an application to the Board of statutory entity Coal Services Pty Ltd (Coal Services), outlining in detail all planned dust mitigation measures. Written approval must be received from the Board before they may proceed with the installation of a longwall block or shortwall pillar or panel. Representatives from Coal Services advised that in reviewing applications under Order 40, the Board scrutinises the proposed measures for any potential issues or shortcomings, including examining past exposure monitoring results for the mine. Informed by this review process, the Board may impose conditions on any approval.³²³ In addition to mine-specific conditions:

*Every Order 40 approval comes with a condition that, within 14 days of start-up, that mine must do an audit on everything that they said that they were going to have in place, to make sure that all those dust abatement measures not only are in place but also are fully operational. Longwall mining has a very bad habit of kicking off commissioning to get the tons out and get started—'We want to pay the bills. We've had this thing down for the last four weeks doing a long-wall change-out and we have to start getting coal out'—so things like dust suppression occasionally get left behind. That was the reason that we put that in.'*³²⁴

³¹⁷ DEEDI, *Dust Self Assessment Feedback Report: Part A*, 2010, p 12.

³¹⁸ BreatheSafe, submission 24, p 3.

³¹⁹ Neil Whittaker, submission 8, p 2; Daniel O'Connor, submission 12, p 2; AIOH, submission 14, p 5; and Mr Jason Hill, Industry Safety and Health Representative, CFMEU, public hearing transcript, Ipswich, 4 November 2016, p 31.

³²⁰ Daniel O'Connor, submission 12, p 2.

³²¹ Neil Whittaker, submission 8, p 2.

³²² AIOH, submission 14, pp 2, 5.

³²³ Coal Services Pty Ltd, *Order No. 40: Abatement of Dust on Longwalls*, 5 July 1990, https://www.coalservices.com.au/MessageForceWebsite/Sites/320/Files/ORDER_NO_40_Abatement_of_Dust_on_Longwalls.pdf

³²⁴ Private briefing, Sydney, 23 February 2017.

There is no equivalent requirement in Queensland for mine operators to gain approval for dust mitigation or abatement plans before mining commences. However, mines inspectors do have the power to give directives under the CMSHA requiring the mine operator to take remedial action to mitigate dust once exceedances of the regulated OEL are discovered.

The committee considers that a pro-active system of regulatory approval for dust mitigation and abatement plans is preferable to the current reactive regulatory approach, which requires inspectors to discover incidents of dust exceedances after they have occurred and then consider coercive action such as the use of directives.

Recommendation 20

- a) An underground mine operator should be required to submit to the Authority a dust abatement plan and ventilation plan for approval by the Commissioner for Mine Safety and Health before any underground coal mining operations are commenced; and again, with appropriate amendment as necessary, before mining operations are commenced on any new longwall block.
- b) An above-ground (surface) mine operator should be required to submit to the Authority a dust abatement plan for approval by the Commissioner for Mine Safety and Health before any mining operations are commenced.
- c) The Commissioner for Mine Safety and Health should take into account the mine operator's compliance history and record of respirable dust monitoring results in deciding whether to approve, reject, or require amendments to the dust abatement and/or ventilation plans.

Recommendation 21

It should be an offence for a mine operator to commence or continue mining operations, without prior approval by the Commissioner for Mine Safety and Health of the required dust abatement plan and, where applicable, the required ventilation plan for the relevant mining operation.

4.3.3 Perceived prioritisation of production over safety concerns

Many of the workers who gave evidence to the committee or made submissions expressed a view that an emphasis on production volumes and profits across the industry had contributed to a tendency for safety concerns to be overlooked and corrective actions postponed.

For example, at the public hearing in Moranbah on 22 November 2016, workers testified:

*... probably up until 12 or 18 months ago, no, I do not think they put our best intentions first. Production over safety throughout the Bowen Basin: I have worked at a few pits where that was the main goal.*³²⁵

Four years ago we brought in this top coal caving wall at Broadmeadow Mine. ... When that wall kicked off there was no dust suppression. We were told, 'BHP has invested \$1.6 billion into this new wall. You need to make it happen or we will shut the mine.' ...

... We threw a spray here and we threw a spray there and we were told to cut. As you know, the price of coal went through the bottom. We had monthly meetings at our mine and told that if we do not produce the coal the mine will shut. The pressure was put on the coalmine worker to produce.

³²⁵ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 8.

*I have had management tell me, 'We are not here to worry about dust. We are here to cut coal. If you have issues with dust, you should think about another career.' My response was, 'Why don't we correct this dust.'*³²⁶

*We formed a dust committee out at that mine to control the dust. On any ideas that came out of that dust committee we were told, 'No. It is logistically impossible.' An example was the foam suppression which they use in quarries to suppress dust. That was brought to them three years ago by me and I was told, 'No. It is never going to happen. It was logistically impossible.' Now that black lung has emerged they come up with this great idea of foam suppression. They have installed it and beaten their chests over this great innovation for dust suppression.*³²⁷

Submitters and witnesses particularly highlighted the role of production targets and bonuses in discouraging action on safety concerns. For example, it was stated:

*Not hitting the targets the operators—don't get crucified, but when you miss targets we need to do something else so we change tactics about trying to do things to get out there quicker, you know. We have areas where they are trying to cut corners, trying to get the workers out there quicker instead of doing the full safety brief and all that. If they have a yellow line that you have got to stand in front of and you have the timer that the supervisor has to get there to give you just the basic information and then you are sent out, you know.*³²⁸

*... When you have money attached to safety it has a negative effect in my experience in the industry. You cannot say, 'Here is a \$20,000 bonus and these are the targets you have to meet on production,' because every time you know what will take first place. It is not the safety and wellbeing of me and my colleagues.*³²⁹

*If you pay somebody a lot of money as a bonus to produce a lot of coal, that is what they will do. It does not matter how dusty it is, they will produce coal. If you look at the size of the bonuses that have been paid in the Bowen Basin in the past few years, they are quite significant. I am not talking about small amounts of money. I am basing this on the experience we had at Pike River where, 49 times before that mine blew up, 49 times there was a gas alarm and they kept mining, because there was a \$10,000 bonus and they wanted to get it. I know miners are intelligent people, but they commit themselves to all sorts of debts with all the money they earn. If they are in a situation where their bonus is going to be shortened by slowing the long wall down, not spending time fixing up the ventilation and not using more dust control, they will not do it. It is human nature, unfortunately.*³³⁰

Mr Bernard Corden noted that this scenario is cited in literature as a 'production versus protection dichotomy', noting that the linking of performance bonuses for SSEs to production targets tends to increase the scope for complaints raised by subordinates, safety advisors and hygienists regarding excessive dust to be summarily dismissed or ignored.³³¹

³²⁶ Private hearing, Moranbah, 22 November 2016.

³²⁷ Private hearing, Moranbah, 22 November 2016.

³²⁸ Mr Shane Rolls, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 24.

³²⁹ Mr Jason Meikle, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 18.

³³⁰ Mr Stewart Bell, former Commissioner of Mine Safety and Health, public hearing transcript, 2 February 2017, pp 28-29.

³³¹ Bernard Corden, submission 3, p 1.

The CSOA expressed its concern about the weight of these competing pressures on deputies and under-managers or senior shift supervisors in particular:

*...often deputies and Under-managers/Senior Shift Supervisors are finding that when they stop their shifts due to dust considerations, they are met with strong opposition and criticism from senior levels of management. An example of this is where, in spite of the significant dust risk to those working, production managers will direct Under-managers/Senior Shift Supervisors to continue to instruct a work team to work in the immediate longwall return.*³³²

The committee heard that such instances have contributed to significant tensions on site in some instances, with implications for the working atmosphere and on-site culture.³³³

However, the committee notes that there is also recognition amongst stakeholders that occupational health and safety and high levels of production need not be competing aims, but rather can be mutually supportive when part of a sustainable production approach that recognises the long-term benefits of minimising health and safety-related productivity loss and compensation costs.³³⁴ The committee notes that some high-producing mines have demonstrated a strong commitment to addressing respirable dust and establishing a culture of health and safety reporting. This is in keeping with recent USA coal industry research which has found that after controlling for other variables, a 10 per cent increase in real total revenue per hour worked was associated with decreases in the incidence rates of reported injuries (0.9 per cent), reported injuries with lost workdays (1.1 per cent), and the most serious injuries reported (1.6 per cent).³³⁵ Cliff, Harris and Bofinger (2016) have also highlighted a range of studies indicating that working on productivity and safety cooperatively improves both, minimising a range of injury and illness-related productivity losses and compensation costs and supporting more proactive and engaged workplaces.³³⁶

4.3.4 Reported reluctance of workers to raise safety concerns

Throughout the committee's inquiry it became clear that there are significant differences in workplace safety cultures across Queensland mine sites, and often considerable gaps in perception between senior managers and mine workers as to the degree to which workers feel comfortable reporting their safety concerns.

The mining industry continues to struggle with traditional norms which discourage reporting, as was highlighted by current mine worker and open-cut examiner (OCE), Mr Michael Eastment:

*...That was raised, as I said, with the mine manager's meeting just recently that I had, mine management superintendent. They had a couple of people and they mentioned their names and said, 'They're just whingers.' I said that they need to embrace these people, that they are giving them notice that something is not right. I said that they should be listening to them, not just putting them aside and thinking, 'We'll sort these guys out.' ...If they are brought on board and they start to think, 'The company is listening to what I'm saying,' then maybe there will be a turnaround of attitude but at the moment, no, it is not happening.*³³⁷

³³² APESMA, submission 31, p 6.

³³³ Private hearing, Rockhampton, 12 December 2016.

³³⁴ Mr Tim Hobson, Site Senior Executive, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2017, p 19; and Jason Mathewson, submission 10, p 7.

³³⁵ Abay Asfaw, Christopher Mark and Regina Pana-Cryan, 'Profitability and occupational injuries in U.S. underground coal mines', *Accident Analysis & Prevention*, vol. 50, 2013, p 778.

³³⁶ David Cliff, Jill Harris and Carmel Bofinger, 'Ensuring health and safety through the entire mining cycle', *AusIMM Bulletin*, August 2016, pp 70-71.

³³⁷ Public hearing transcript, Moranbah, 23 November 2016, p 29.

In Middlemount and Blackwater respectively, the committee similarly heard:

*Anybody that speaks out at a pre-shift meeting is frowned upon, basically. It got to a stage there where our safety record was—and probably still remains—appalling and two fatalities. People just did not raise concerns at pre-start meetings, for how big or little the issue was. They just did not say a word. It got to the point where management were actually coming out and asking people to open their mouths and talk. It was too little too late.*³³⁸

*We brought a lot of new supervisors in that did not have a lot of experience understanding what their roles and responsibilities are. It is a real issue and you continue to see that. You will continue to see that they do not believe they have a voice. We have permanent members of ours who are still frightened to say stuff. As much as you tell them that they need to stand up because the buck stops with them, they will not do it. It is a real issue...*³³⁹

A number of workers expressed a view that individuals who raise their concerns tend to be 'punished' by way of relegation to lesser duties, or less favourable working conditions. For example, the committee heard:

*I was probably one of the most vocal men ... in relation to dust. In that time it has seen me suffer workplace harassment. It has seen me booted from crew to crew. It has seen me move from longwall to outbye. It has seen me being threatened with going to the development ball gang, because apparently that is hell on earth according to management.*³⁴⁰

*... if you speak up or if you stir the pot, you are off the development, bull gang, straight out, nothing to do with production whatsoever, you would be out on a loader doing roadworks for the rest of your days...Personally, I have been on the receiving end of that.*³⁴¹

*...over the years I have watched people being victimised because the two trucks up there are absolutely piled full of dust... and it was punishment for people on site. Supervisors would purposely put them on the ROM so that they get covered in dust and have absolute crappy work conditions. The trucks were very rough to drive in...I remember one day I pulled the supervisor up and said, 'Look, the loader's absolutely tanked full of dust,' to the stage where he sat on the seat and he could not see inside the cab. I spent the next week scrubbing trucks out... It is accepted by the workforce that that is a punishment.*³⁴²

The vulnerability of labour hire workers especially was a recurring theme in worker testimony. Despite reports from some SSEs and operator representatives that they were confident that these workers can and often do raise issues on site,³⁴³ few workers appear to perceive this as the case.

³³⁸ Mr Grant Hedley, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 5.

³³⁹ Mr Stephen Smyth, CFMEU Mining and Energy Division, Queensland District, public hearing transcript, Blackwater, 14 December 2016, p 4.

³⁴⁰ Private hearing, Moranbah, 22 November 2016.

³⁴¹ Private hearing, Moranbah, 22 November 2016.

³⁴² Private hearing, Middlemount, 24 November 2016.

³⁴³ Mr Damien Wynn, Senior Site Executive and General Manager, Oaky North mine, public hearing transcript, Brisbane, 1 March 2017, p 30; Mr Matt Cooper, public hearing transcript, Brisbane, 3 March 2017, pp 51-52. See also Mr Mike Oswell, public hearing transcript, Brisbane, 31 January 2017 p 40; Mr Jordan Taylor, public hearing transcript, Brisbane, 31 January 2017 p 40. See also Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, p 8.

For example, the committee heard:

*... whether real or perceived, they are worried about their jobs so they try to fly below the radar. I had to close down ramp 14, a coalmining ramp, yesterday because it was just too dusty... It was just ridiculous. As far as I am aware, they are all temporaries on that circuit.*³⁴⁴

Mr KNUTH: *If there are high levels of dust, does the labour hire workforce raise this or is it the permanent staff?*

Mr Isaacs: *Generally not. They do come and see us from time to time to get our opinion on what they should and should not do and what they are allowed to do. Again, we try and direct them to our SSHRs but, as people have probably already said at these types of meetings, they do not really want to stir the pot too much because a lot of those labour hire employees are on a week-to-week or a month-to-month contract basis with their employer. Peabody will issue a month-long purchase order for a contract company to come in and support the tailgate, so to speak, so they will not know if they have a job next month until the end of the month where they will get another purchase order. They are a little bit scared to speak up because they will get a text message saying that he is no longer required on site and could you please find other employment for him elsewhere.*³⁴⁵

*... Like you were saying about labour hire, they just ditch them poor buggers straightaway. They know the rules. If you want to push safety or some problem out there, you are not getting a start Monday. ... They do not need an excuse, a reason or anything.*³⁴⁶

*There have been contract groups of people who do raise issues, [and] they mightn't necessarily be laid off straightaway. It could be a week or two later, but the real reason was because of that reason two weeks prior. They are not going to raise an issue and then just lay them off straightaway. They will let it go for a week or two and then say, 'Your services are no longer required,' and they ask why and then the next week there is a new guy there to fill his spot.*³⁴⁷

*Even during the initial investigation of the CWP cases contractors were being instructed to work on the return side of the longwall while it was cutting so as to maintain production rates. One example was at an underground mine when two ISHRs announced they were going to conduct a mine inspection and the contractors were taken out of the area only to be ordered back in after the ISHRs left the mine.*³⁴⁸

³⁴⁴ Mr Michael Eastment, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 22.

³⁴⁵ Mr Shaun Isaacs, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 15.

³⁴⁶ Private hearing, Dysart, 23 November 2016.

³⁴⁷ Mr Matthew Earl, private capacity, public hearing transcript, Tieri, 14 December 2016, p 25.

³⁴⁸ CFMEU, response to question taken on notice, 14 December 2016, p 18.

At the public hearing in Moranbah it was highlighted that 'a good percentage' of supervisors in statutory positions are labour hire workers.³⁴⁹ The CSOA submitted that staff who fill statutory positions on a contract basis are more vulnerable to coercive action by the mine operator, and suggested that further consideration be given to:

*... mandating that all staff fulfilling statutory roles such as Deputies and Under-managers/Senior Site Supervisors should be a permanent employee of the mine, not independent contractors.*³⁵⁰

The committee notes that it is an offence under the CMSHA for any person to cause a detriment to another person because, or in the belief that, the other person made a complaint or has in any other way raised a coal mine safety issue. However, there has never been a prosecution of any person under that provision.

Clearly, there is some disconnect between on the one hand mine operators and their senior staff - who have repeatedly assured the committee that all workers are encouraged to report safety and health concerns – and on the other hand mine workers who do not believe they could make such reports without being subject to adverse consequences.

Key finding

Many coal mine workers do not believe they can freely report health or safety concerns without risking adverse consequences or reprisal action. Coal mine operators have not done enough to encourage all workers, including labour hire workers, to report safety and health concerns and assure them that such reports will not result in adverse consequences or reprisal action.

Recommendation 22

The Commissioner for Mine Safety and Health should actively promote awareness in the mining industry that it is an offence for any person to cause a detriment to another person because, or in the belief that, the other person has made a complaint or has in any other way raised a coal mine safety issue.

The Commissioner should give special attention to the investigation of any complaints of such conduct and consider prosecuting offences of this nature if there is sufficient evidence and it is in the public interest to do so.

4.3.5 Training and awareness – site education, responsibility for training

Occupational *health* training and engagement poses a particular challenge for operators and authorities, as compared to *safety* training, due to the often less immediate or measurable nature of its ill-effects. This can contribute to a sense of distance between individual adverse health events and their cumulative consequences, which can erode training messages and adherence to procedures over time.³⁵¹ These challenges were recognised by submitters to the inquiry.

Mr Joe Barber, SSHR, Oaky North mine, noted:

...if you see a hotplate and you put your hand on it, you know it is hot because it burns your hand. If you do not see it in the flesh, you can discard it. You don't believe it. It is when you see people

³⁴⁹ Mr Michael Eastment, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 18.

³⁵⁰ APESMA, submission 31, p 7.

³⁵¹ David Cliff, Jill Harris, Carmel Bofinger and Danielle Lynas, *Managing occupational health in the mining industry*, 17th Coal Operators' Conference, Mining Engineering, University of Wollongong, 8-10 February 2017, p 296.

*or friends suffering from it. Because it is not a massive epidemic—like one is too many, is it not? I am afraid that we are going to have more than just one. We have got one at Oaky North.*³⁵²

Evidence to the committee indicated that education and training on dust exposure at Queensland coal mines was not comprehensive prior to the re-identification of CWP. This was particularly the case for newer entrants to the industry and for younger contractors, some of whom reported hearing only cursory mention of CWP. Mr Nathan Leotta, a miner at Carbough Downs, gave evidence that:

*In 2008 I had my induction to go underground. I started with Minova so they paid for the induction. That was in the boom. I had never been underground in my life. The teacher delivered the information and went through the packages and said, 'This is what we used to have. We used to have black lung, but it has been eradicated. We no longer have it.' It is a bit of a funny story, but apart from the movie Zoolander when he came out from underground working with his family members, black lung was never mentioned.*³⁵³

Other workers still received no education on dust issues in their site inductions or training. The 2010 self-report study of Queensland coal mines revealed that only 85 per cent of mines reported providing some form of training or information on dust exposure. The report noted that where training was provided, it included training on dust control (78 per cent) and on the health effects of dust exposure (65 per cent). The report noted:

*It is essential that training identifies what is hazardous in the dust on their mines and the health effects that may be associated with exposure to this dust. It is clear from the responses to the self assessment tool that a substantial number of sites have not identified all the hazards that may be present in airborne dust on their sites. Training and information on the details of personal exposure monitoring and health surveillance programs is not widespread (38 per cent). The involvement of coal mine workers in the personal exposure monitoring program is fundamental to its success.*³⁵⁴

The committee notes that unions have played a crucial role in addressing this paucity of information for workers in recent years. A number of workers submitted that unions were their primary source of information about CWP, and a driving force in improving awareness across the industry.³⁵⁵

*Mainly our unions really helped us with understanding it, getting the information out and getting people aware of it. It was not until the unions started doing that that the companies started getting on board.*³⁵⁶

4.3.6 Respiratory protective equipment

The mining industry traditionally has struggled with a workplace culture that can at times glorify as 'tough', the tendency to battle through conditions without regard for personal safety. This was acknowledged by workers and mine operators alike at numerous regional hearings.³⁵⁷

³⁵² Public hearing transcript, Tieri, 14 December 2016, p 15.

³⁵³ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 7. See also Ms Kayla Heke, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 27.

³⁵⁴ DEEDI, *Dust Self Assessment Feedback Report: Part A*, 2010, pp 18-19.

³⁵⁵ See, for example: Mr Shane Rolls, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 19. See also: Mr Percy Verrall, private capacity, public hearing transcript, Ipswich, 4 November 2016, p 12.

³⁵⁶ Mr Shane Rolls, private capacity, public hearing transcript, Middlemount, 24 November 2016, pp 19.

³⁵⁷ Mr Stuart McConnell, public hearing transcript, Moranbah, 22 November 2016, p 7; private hearing, Dysart, 23 November 2016. See also Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 41.

*What do you need that dust mask for, Stuart, there is no such thing as pneumoconiosis anymore? Look at the panda'... If you are prepared to go a little bit further and wear your PPE you are a sook, you are soft. They will say, 'Go upstairs and go to the grout shed and get a couple of teaspoons of grout and put it in your coffee. Stir that in and harden up a bit.'*³⁵⁸

*... I raised concerns and ... was quite often ridiculed for wearing my dust masks and for asking for better PPE and asking for better dust masks to the point where I would wear a silicon dust mask back in '97.*³⁵⁹

Since the re-identification of CWP, some mine operators have moved quickly to train and educate workers about the hazard of respirable dust and to institute mandatory use of respiratory protective equipment (RPE) on underground longwalls. This has included the implementation of clean shaven policies, which are required to ensure an effective seal on RPE apparatus. However, prior to this, across the industry the use of RPE was generally not compulsory (although usually prescribed as standard), and there have been long-running inconsistencies between mine operators and across mine sites as to the degree to which its correct use has been supported and reinforced through training over time.

The committee heard from Mr Percy Verrall that throughout the late 1980s and early 1990s, RPE provision and use was often negligible and generally woefully inadequate:

Mr Verrall: *We never had a mask offered to us at all—at any time, all the time I was in the mines. The only ones we used to have was, like I said, the little paper one I would take to work on a Friday night when it was my turn to do the stone dust. I put it on. Within a minute I had to throw it away because you could not breathe through it.*

Mr McMILLAN: *And did you buy that yourself?*

Mr Verrall: *Yes ...*

Mr McMILLAN: *Did anyone suggest to you that you should do that, or was that just from discussion amongst your colleagues?*

Mr Verrall: *Just myself. ...I used to take one down with me. You used to get them in a little pack of five in a packet. I would just take one with me.*

Mr McMILLAN: *And how long would that last?*

Mr Verrall: *Within a minute I had to throw it off because it was no good...You could not breathe through it. The only thing we could do was just take it off and breathe normally, try to breathe.*³⁶⁰

His story was echoed by a number of other retired and current mine workers, who recounted their reliance on self-bought paper dust masks for much of their careers.³⁶¹

The committee notes that in the absence of appropriate training and education and of any mandatory requirement or policy, workers have tended to use RPE in a haphazard fashion. This has included use of ineffective paper masks in dusty environments where full negative pressure respirators are required,³⁶² limited maintenance of equipment, and a tendency for workers to remove helmets when

³⁵⁸ Mr Stuart McConnell, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 7.

³⁵⁹ Public hearing transcript, Moranbah, 22 November 2016, p 2.

³⁶⁰ Public hearing transcript, Ipswich, 4 November 2016, p 11.

³⁶¹ Mr Bill Drysdale, public hearing transcript, Ipswich, 4 November 2016, p 17; Mr Steve Laidlaw, private capacity, public hearing transcript, 21 November 2016, p 30.

³⁶² Mr Steve Laidlaw, private capacity, public hearing transcript, Collinsville, 21 November 2016, pp 29-30.

machines are broken down or at rest, due to hot underground conditions and the cumbersome nature of many helmets. For example:

*Six years ago, when we got there, you either wore glasses or you wore a dust mask, because you could not wear both. If you wore both, you could not see. Your glasses would fog up.... Then the next focus was on gloves. Everywhere you went you had to have glasses and gloves...*³⁶³

*As the technology has advanced, they have gone to these new style respirators now. Some are bulk, some are not easy to wear. As miners do, they take them off when they [the machines] are broken down and leave them off for a bit. That is a time when there is probably dust still around, but ... it is not visible.*³⁶⁴

*When I was at Central Colliery in 1996 there were brand new air streams hanging on the wall. Personally I did not use them there because they were quite uncomfortable to use because we had a low seam. I was doing quite a lot of stone dusting on the weekends so I took ...one of those helmets and put my nickname on it. I used that helmet for the nine or 10 years I was at Central Colliery. I had a small break from the industry. When I came back and went to Grasstree that same helmet was hanging on the wall at Grasstree for the Grasstree personnel to use...I do not know the service life of that piece of equipment, but I know that the shell had over 15 years of service.*³⁶⁵

Testimony provided by some workers indicated that many of these practices continued across the Bowen Basin right up until the identification of CWP,³⁶⁶ and indeed, the committee noted persistent scepticism among some workers and union representatives as to the need for a clean shaven policy, and whether a beard in fact poses any problems. In fact:

*The presence of facial hair does not allow for a perfect seal and will provide a pathway for respirable dust to enter around the edges of the respirator. The human hair is up to approximately 150 micron in diameter. Respirable dust generated during mining process can be as fine as 0.5 micron. For this reason all personnel required to wear negative pressure respiratory protection should be clean shaven.*³⁶⁷

These reported shortcomings in RPE education and training are consistent with the results of the 2010 self-report survey of Queensland mines with regard to the use of RPE. The study found that while all underground mines and 83 percent of open-cut mines reported using RPE as part of their overall dust control strategy, only 67 per cent of underground mines and 54 per cent of open-cut operations had RPE training programs in place. Further, only 19 per cent of coal mines overall reported providing individual fit testing for workers required to use negative pressure respirators.³⁶⁸ The report expressed concern about these shortcomings, noting that PPE is an active control, which requires active involvement by the wearer in understanding and following procedure, in order to ensure its effectiveness.³⁶⁹

³⁶³ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 3.

³⁶⁴ Mr Stephen Woods, Industry Safety and Health Representative, CFMEU Mining and Energy Queensland, public hearing transcript, Ipswich, 4 November 2016, p 39.

³⁶⁵ Mr Stuart McConnell, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 2.

³⁶⁶ See, for example: public hearing transcript, Moranbah, 22 November 2016, p 3.

³⁶⁷ DEEDI, *Dust Self Assessment Feedback Report: Part A*, 2010, p 16.

³⁶⁸ DEEDI, *Dust Self Assessment Feedback Report: Part A*, 2010, p 16.

³⁶⁹ DNRM, submission 35, p 50.

Accordingly, the report noted that:

It is important that the use of RPE is supported by a program that addresses the selection, use and maintenance of these devices. The program should include individual fit testing, donning and doffing procedures and a clean shaven policy if the program incorporates negative pressure respirators ... The purpose of fit testing is to ensure the coal mine worker is provided with a respirator that fits to their facial features and will provide adequate protection. Fit testing should be performed during the respirator selection process or whenever there is a change in respirator supply.³⁷⁰

Even with these many and varied shortcomings in RPE practice, the Mines Inspectorate in 2014-15 undertook an independent review of dust monitoring which revealed an over-reliance on the use of RPE for controlling workers' exposure to respirable dust at some mine sites.³⁷¹ The review pointed to an ambiguity in the CMSHR surrounding the use of PPE, which was removed by the amendments which commenced on 1 January 2017.

Previously, the regulation provided that if average concentrations could not be reduced to prescribed levels following a review of controls, then 'personal protective equipment must be supplied for use by persons in the work environment'.³⁷² The explanatory notes accompanying the amending regulation identified that this could be taken to mean that using PPE is an acceptable control measure, or that it could be used as a possible substitute for engineering and administrative controls. In fact, as the explanatory notes acknowledged, PPE 'should not be relied upon as a long-term control' and should only be used to 'supplement higher-level control measures', or 'as a short-term control during unforeseen circumstances/events (e.g. for safe recovery of personnel/equipment)'.³⁷³

Consistent with this concern, and identified need for reform of the legislation, the committee heard from mine operators and workers:

If you got exceedances and you were not able to reduce the dust exposure at that particular time, then you could fall back to personal protective equipment, and indeed that is what we did. This is not only an Anglo thing but, I would suggest, the whole focus from an industry perspective and everyone—every player in the industry—was not on dust until these cases started to appear.³⁷⁴

When I started off in 2006 before we got automation, we had to do it manually, and the tailgate operator was the dustiest bloke. He is in the dust, but those readings would come back and fail, you would get a piece of paper to tell you what it was and they would say, 'No.' We would say, 'Hold on, it failed.' They would say, 'No, you're right. As long as you're wearing that 3M [PPE] that you said you were wearing, it passed. You're right. You're safe.' It was the same over at Carborough, the same thing... You would ask them where the results were, and we would be told, 'We don't know. You're right. You were wearing your dust mask. It's all good.'³⁷⁵

³⁷⁰ DEEDI, *Dust Self Assessment Feedback Report: Part A*, 2010, p 16.

³⁷¹ Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, Explanatory Notes, p 4.

³⁷² Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, Explanatory Notes, p 5.

³⁷³ Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016, Explanatory Notes, p 5.

³⁷⁴ Mr Mike Oswell, Health, Safety and Environment Manager, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 35.

³⁷⁵ Mr John Morris, private capacity, public hearing transcript, Middlemount, 24 November 2017, pp 31- 32.

Mr McMILLAN: *Do you ever remember there being any kind of remedial action taken by the company as a result of that high reading?*

Mr Macdonald: *Yes: 'Put your dust masks on, boys.'*

Mr McMILLAN: *That was the only—*

Mr Macdonald: *Like I said, they tried that orange peel stuff for a while mixing it with the water, but then it just got too hard and too expensive. Given natural attrition, it just fell by the wayside.³⁷⁶*

Now it is all PPEs just thrown at us. They think that is a fix. It is just a soft fix. You have to put hard barriers in to stop the dust. You cannot put little band-aids on it.³⁷⁷

Given the outlined shortcomings in RPE use, this reliance on PPEs as a 'fallback' or substitute control measure in these instances may have offered a false sense of security to both workers and management.³⁷⁸

4.3.7 Best practice in mitigation

The industry currently has a number of avenues through which they can identify and share emerging developments in dust mitigation. However, the committee heard evidence suggesting collaborative efforts across industry have at times been characterised by a lack of open information exchange and general inertia.

While there has been some information sharing within companies,³⁷⁹ Mr Andrew Vella, General Manager and SSE at Carborough Downs, acknowledged that traditionally operators 'have probably worked in silos to a degree' and 'have not referenced each other's practices' as well as they might have.³⁸⁰ Mr Mike Carter, SSE at Peabody's North Goonyella mine, also noted that in seeking feedback about other dust control methods from the inspectorate:

... I know that the inspectorate actually brought up the issue of speaking to other neighbouring mine sites and the work that they do, because they are obviously not in a position to be able to hand over their information.³⁸¹

However, Mr Vella and Mr Carter also highlighted promising efforts to address these issues. Mr Carter noted that discussions with the inspectorate had triggered a joint meeting between dust committee representatives from Peabody's North Goonyella mine and BMA's Broadmeadow mine.³⁸² Mr Vella noted:

I have seen a step change in that recently with the reinvigoration of the SSE forums and the dust workshops that the QRC went through. We need to do more of that. Also, we had representatives from Carborough Downs that were on the dust regulation boards where they were developing

³⁷⁶ Mr Roderick Macdonald, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 26.

³⁷⁷ Mr Joe Barber, SSHR, Oaky North Mine, public hearing transcript, Tieri, 14 December 2016, p 5.

³⁷⁸ AIOH, submission 14, p 5.

³⁷⁹ Mr Ian Cribb, Chief Operating Officer, Glencore, public hearing transcript, Brisbane, 1 March 2017, p 33.

³⁸⁰ Mr Andrew Vella, Carborough Downs, public hearing transcript, Mackay, 25 November 2015, p 25.

³⁸¹ Mr Mike Carter, Site Senior Executive and General Manager, North Goonyella Mine, Peabody Energy Australia, public hearing transcript, Brisbane, 3 March 2017, p 17.

³⁸² Mr Mike Carter, Site Senior Executive and General Manager, North Goonyella Mine, Peabody Energy Australia, public hearing transcript, Brisbane, 3 March 2017, p 17.

*the recognised standard for dust mitigation. There was a lot of information transferred between pits at this forum.*³⁸³

Dr Brian Plush stated that equipment suppliers are also now taking a much more active role in seeking and sharing information, as they have become more engaged in the mitigation process.³⁸⁴

The committee found that other jurisdictions have more robust mechanisms for the sharing of information around emerging dust suppression technologies and related occupational health and safety research.

In the USA, the NIOSH Office of Mine Safety and Health and the Mine Safety and Health Administration (MSHA) Dust Division in Pittsburgh widely promote the findings of their extensive programs of research into dust mitigation and monitoring technologies and developments.

The MSHA Dust Division in Pittsburgh features a full-scale above-ground longwall coal mining laboratory, where scientists develop and test dust mitigation methods and technologies. The Pittsburgh Research laboratory also includes a Full Scale Continuous Miner Dust Laboratory. The facility provides the opportunity to test technologies to control respirable dust and gas levels against parameters such as face ventilation, water spray, machine-operated dust controller operation, mining height and mining machine position.

Image 13 CWPSC delegation members inspecting the full-scale longwall facility at the NIOSH Center of Dust Control Research, Pittsburgh USA.



Source: CWP select committee image.

In Queensland, comparatively, DNRM's SIMTARS has a relatively constrained budget and focuses more on its established research expertise areas of explosive risks, management and emergency response, and mines rescue.³⁸⁵ This is in keeping with the focus of SIMTARS' objectives from its establishment – that is, 'to improve the health and safety of the miners in general, but particularly due to principal hazards'.³⁸⁶ As reflected in the legislation, these principal hazards are essentially more immediate,

³⁸³ Mr Andrew Vella, Carborough Downs, public hearing transcript, Mackay, 25 November 2015, p 25.

³⁸⁴ Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, p 5.

³⁸⁵ Queensland Government, SIMTARS, *Research and Development*, <https://www.dnrm.qld.gov.au/simtars/research/development>

³⁸⁶ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 41.

safety concerns rather than longer term health issues – emergency response, gas and explosion risks, roof collapse, and workplace injury:

*We have to bear in mind that in the late 1990s we were in the post-Moura era... It may sound a bit glib, but with finite resources they devoted them to what they thought were the most important things at the time. They dealt more with principal hazards: fires, explosions, strata control, fatigue was a big issue in 2001. It is understandable, I think, that they devoted the resources they had to other areas.*³⁸⁷

ACARP projects, which are funded by industry producers, similarly cover a broad range of industry topics of which health and safety issues are but one component.³⁸⁸

Plush et al (2012) have noted:

*It has been suggested that there is a need to establish a database of best practice dust suppression techniques used by longwalls for the operators to peruse and use along with the management of sampling data. Currently the operators invest significant money in the sampling conducted by the regulatory regime but receive very little useful information on how to mitigate airborne contaminants.*³⁸⁹

The committee understands that NSW authority Coal Services has recently implemented a state-wide dust abatement database, which will list in detail the controls implemented by particular mines, as informed by the dust abatement plans they are required to submit for approval under Order 40. The database will be of significant assistance to inspectors, enabling them to use database reports to audit the implementation of the listed measures in place at each mine.³⁹⁰ Aggregation of this information may in time be presented at regular meetings of the state's Standing Dust Committee, which comprises representatives of the colliery proprietors, mining unions, industry specialists, government departments and Coal Services medical and engineering personnel.³⁹¹

The committee considers that there is opportunity for the establishment of a similar database in Queensland, noting that many operators already engage such records for internal auditing purposes. Further, a more comprehensive and well-funded research focus from SIMTARS, which would extend its world-leading expertise in explosions and mine rescue to incorporate a broader focus on occupational health issues, would be of significant assistance.

Recommendation 23

The Mine Safety and Health Authority should establish and maintain a database of dust techniques and technologies used in Queensland coal mines to be used for auditing purposes and to inform research and analysis into the efficacy of engineering dust controls.

³⁸⁷ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 41.

³⁸⁸ Australia Coal Association Research Program (ACARP), *What is ACARP? The Australian Coal Industry's Research Program*, <http://www.acarp.com.au/index.aspx>

³⁸⁹ Brian Plush, Ting Ren and Nadjat I Aziz, *A critical evaluation of dust sampling methodologies in longwall*, 12th Coal Operators' Conference, University of Wollongong and the Australasian Institute of Mining and Metallurgy, 2012, p 198.

³⁹⁰ Private briefing, Sydney, 23 Feb 2017.

³⁹¹ Coal Services, *Standing Committee on Dust Research and Control*, <http://www.coalservices.com.au/standingdustcommittee.aspx?oid=cjsggmeridejb0qrmhffjo45>

Recommendation 24

The Mine Safety and Health Authority should research and review new dust techniques and technologies being used in jurisdictions such as New South Wales and the United States and publish its findings to ensure all those involved in coal mining in Queensland may be aware of world-leading dust mitigation practices.

4.4 Monitoring of respirable coal dust

A systematic, transparent and auditable exposure monitoring program is an essential part of best practice dust management in coal mines, offering a means by which to assess exposure and consequently health risk, and to also evaluate the effectiveness of the system of controls in place.³⁹²

In Queensland, mining operators are required to measure personal exposure to respirable dust in accordance with Australian Standard AS2985. This standard stipulates the use of gravimetric³⁹³ sampling with a size-selective cyclone, which captures only the respirable dust fraction (less than 10 microns in diameter) and calculates the concentration of this dust based on the mass of its particles. Workers being sampled are required to wear a gravimetric sampling device in their breathing zone for an extended period of their work shift – ideally a full shift, to ensure that a representative sample of their exposure during all activities is collected.³⁹⁴ The filters from sampling devices are then weighed in a National Association of Testing Authorities (NATA) accredited laboratory, the results of which may take up to two weeks to be received by the mine.³⁹⁵

Mines engage a number of different occupational hygiene service providers to conduct their monitoring, including DNRM's SIMTARS, which operates as a commercial entity contracting with mine operating companies to perform these services – separate and independent from the Mines Inspectorate.³⁹⁶ The largest provider of respirable coal dust sampling, however, is GCG Health Safety and Hygiene (GCG), which estimates that it services in excess of 70 percent of Queensland coal mines.³⁹⁷

Results of sampling are assessed against the OEL established in section 89 of the CMSHR – currently, an average concentration of 3 mg/m³ air and 0.1mg/m³ air respectively for coal and silica dust over an eight-hour shift period. Where shifts exceed eight hours in duration, operators must calculate their OEL as a time-weighted average, to account for the cumulative effect of additional exposure time. Accordingly, for Queensland mines which operate on 12-hour shift rosters, the applicable average OEL may be lower than standard 3mg/m³ level – oftentimes, between 2.5 and 2.8mg/m³.³⁹⁸

Prior to the regulatory changes that commenced on 1 January 2017 (introduced in response to the re-identification of CWP in Queensland), mine operators were not required to report dust monitoring results to the mines inspectorate. When the results exceeded the time-weighted OEL, mine operators were required under the risk-based regulatory framework to review and refine their systems to ensure risk to workers was at an 'acceptable level'.

³⁹² AIOH, submission 14, p 6.

³⁹³ Gravimetric sampling methods determine the concentration of respirable dust based on the mass of dust particles.

³⁹⁴ Anne Kelly, Craig Tayler and Greg Manthey (SIMTARS, DNRM), *Respirable Dust Monitoring for Underground Coal*, Queensland Mining Industry Safety and Health Conference, Gold Coast, 14-16 August 2016, p 2.

³⁹⁵ DNRM, submission 35, p 20.

³⁹⁶ DNRM, submission 35, p 11.

³⁹⁷ Green Consulting Group Pty Ltd (GCG), submission 43, p 5.

³⁹⁸ Mr Philip Hibbs, public hearing transcript, Brisbane, 1 February 2017, p 32; public hearing transcript, Brisbane, 3 March 2017.

However, the evidence gathered by the committee clearly indicates that often exceedances were not investigated and did not result in any changes to work practices or operations.

Following the re-identification of CWP, mine operators in Queensland have taken significant steps to improve their dust monitoring regimes, including through:

- engaging the expertise of occupational hygienists to conduct baseline dust surveys and characterisations, enabling the identification of primary dust sources and supporting continuous improvement of controls
- grouping workers into SEGs and establishing exposure profiles for SEGs
- developing respirable dust monitoring plans with an increased frequency of sampling and which are representative of worker numbers, shift work, tasks performed and conditions at the mine
- conducting additional real-time and static dust monitoring
- ongoing analysis of dust results, and
- improved engagement and communication with workers around the exposure assessment program and its results, including opportunities to contribute to improvements through on-site dust committees.³⁹⁹

As noted at chapter 4.4, these efforts have been further reinforced by recent amendments to the CMSHR and the establishment of a Recognised Standard for monitoring respirable dust in coal mines. Together these initiatives set out minimum requirements and provide greater direction to mine operators in relation to the collecting and reporting of dust monitoring results, and responding to OEL exceedances.

While mines continue to use a risk-based approach to determine sampling frequency, from 1 January 2017, mine operators were required to conduct sampling *at least* once every three months for SEGs in the longwall and development production areas.⁴⁰⁰ Where there is an exceedance recorded (a 'trigger event'), the amendments also established explicit requirements for operators to notify the Mines Inspectorate, ISHR, SSHR, and all coal mine workers in the SEG for which the exceedance was detected, and to:

- investigate the cause of the exceedance
- resample within two weeks to check the effectiveness of revised measures, including a follow-up investigation and sampling for a further exceedance
- review dust controls and change the system to ensure elevated dust levels are reduced to within prescribed levels, and
- record all investigations and analysis and any system changes that result.⁴⁰¹

These efforts and reforms have helped to address a range of identified shortcomings in industry monitoring practices that were allowed to develop over time in the absence of any explicit regulatory requirements for dust monitoring or reporting.

In keeping with evidence provided to the Senate Committee, worker testimony to this inquiry indicated that, when trusted to monitor and manage dust 'in house' without any specific legislative requirement to report exceedances or whether they had taken action to address them, mining operators' efforts to monitor or act on respirable dust exposure were often minimal and woefully inadequate. As Mr Jason

³⁹⁹ Vale, submission 16, pp 3-4; and Peabody Energy, submission 22, p 4.

⁴⁰⁰ DNRM, submission 35, pp 19-20.

⁴⁰¹ CMSHR, s 89A.

Hill, ISHR, stated:

*Dust sampling is undertaken by the companies. It is not an independent process. When you put the fox in charge of the hen house, eventually it fails.*⁴⁰²

In addition to a general belief that mining operators did not act on exceedance results to improve mitigation measures, workers reported a range of tokenistic and non-representative sampling techniques and trivialisation or poor engagement of workers around monitoring. This included:

- high rates of voiding of samples
- infrequent monitoring, and sampling during maintenance and/or on day shifts only, and
- a failure to communicate results to workers.

The committee also heard from Mr Fritz Djukic of the Mines Inspectorate:

*There are requirements on mines to manage health records. I could see that that was not being done well by the fact that they were not able to easily supply this information [dust sampling data]. There is a requirement to keep these records for 30 years. That was a very early observation. In some cases, I had to go back to sites and ask, saying, 'I've seen gaps in your data.' I was able to understand that very clearly, because at some of those sites I had actually done the monitoring in a previous life when I worked for SIMTARS. I knew I had been there in those years and there was a shortage of what I could see of data.*⁴⁰³

This testimony was consistent with the findings of the department's 2010 self-assessment feedback report, which included that:

- while all underground mines reported they were conducting personal monitoring at least three-monthly, 24 per cent of mines conducted personal monitoring only on an annual basis, with sampling frequency ranging from fortnightly to three-yearly
- a further 11 per cent of mines (all of which were open-cut operators), reported they were not conducting any personal monitoring
- only 39 per cent of mines had implemented monitoring programs where dust exposures had been characterised and SEGs established, to allow for differentiated monitoring for workers in high-risk and low risk SEGs
- 25 percent of mines did not compare personal exposures to a shift-adjusted limit to account for the additional exposure effects of longer shifts, despite the majority of mines working to altered shift arrangements (i.e. longer than eight-hour shifts)
- 15 per cent of mines were not using personal exposure data to review the efficacy of controls
- only 38 per cent of mines were applying statistical analysis to monitoring data to identify trends and issues, and
- 15 per cent of mines were not providing results to individuals who participated in personal exposure monitoring.⁴⁰⁴

The overall effect of these deficiencies was aptly summarised by one inquiry submitter:

If you asked a farmer to place a rain gauge out only two or three times a year then forecast his livelihood off these measurements what do you think his or her response would be?...⁴⁰⁵

⁴⁰² Mr Jason Hill, CFMEU, public hearing transcript, Ipswich, 4 November 2016, p 31.

⁴⁰³ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, p 4.

⁴⁰⁴ DEEDI, *Dust Self Assessment Feedback Report: Part A*, 2010, p 6.

⁴⁰⁵ Confidential submission 39

Disturbingly, even with the limited data provided by sometimes infrequent and flawed sampling practices, evidence of exceedances was clear.

Accordingly, this committee affirms the Senate Committee's findings that flawed dust monitoring methods, 'coupled with the propensity for mining companies to put self-interest above safety' under Queensland's risk-based regulatory model, 'created the conditions in which CWP has returned to Australian coal mines'.⁴⁰⁶

It should be noted that some workers expressed scepticism about the extent to which these practices have been adequately addressed, suggesting that deficiencies in sampling practice have persisted in pockets of industry – particularly in the open-cut sector, where exposure levels are generally lower and the effects of entrenched beliefs surrounding the invulnerability of open-cut workers to CWP can be difficult to shake.

This testimony highlighted the importance of engaging cooperatively with workers around monitoring, and of engaging qualified, trusted expertise in the design and operation of sampling regimes, in keeping with the new Standard (RS14) for the monitoring of coal dust.

Further opportunities for strengthening exposure monitoring and assessment were also recognised by individuals and organisations from all parts of the industry with regard to:

- the use of static monitoring devices in conjunction with personal dust monitors, to assist with identifying primary sources of dust and addressing dust at its source
- the use of real-time monitoring devices, which may inform more immediate and effective analysis and management of exposures, and
- review of the current occupational exposure level and its adequacy.

Additionally, given the level of sustained distrust and disenchantment around monitoring within parts of the workforce, the committee considers that further steps to ensure the transparency and accountability of dust monitoring in Queensland mines are required. Such measures are necessary to ensure the integrity of the monitoring system.

Key findings

The absence of any regulated oversight of respirable dust monitoring or mandatory reporting of exceedances prior to 1 January 2017 allowed a culture of complacency and disregard for the serious risk posed by respirable dust exposure to develop across industry. Risk-based self-regulation of respirable dust as a hazard has failed to protect coal mine workers from repeated and significant exceedances of the OEL for respirable coal mine dust.

4.4.1 Issues surrounding sampling practices and worker engagement

Several retired miners testified to the inquiry that during lengthy careers in industry, they had worn a personal dust monitor only a handful of times, and were generally unaware of the results of the monitoring.⁴⁰⁷

While many current mine workers acknowledged the increased sampling frequency and profile of monitoring within the work environment in recent years, they also expressed misgivings as to the robustness of sampling regimes, and the validity of results recorded at some sites.

⁴⁰⁶ Senate Select Committee on Health, *Fifth interim report*, p 32.

⁴⁰⁷ Public hearing transcript, Ipswich, 4 November 2016, pp 15, 17, 24; private hearing, Dysart, 23 November 2017.

Invalid sampling

The committee notes that there is a perception among some workers that high respirable dust results may be too readily dismissed as 'void' or contaminated, potentially skewing dust monitoring results. The committee heard:

Mr Macdonald: ... It would come back saying they suspect the sample is 'contaminated'.

Mr SPRINGBORG: A contaminated sample?

Mr Macdonald: Yes.

Mr SPRINGBORG: You would hear that over and over and over again.

Mr Macdonald: Yes. I had one sample that came back and the under manager came out the next morning and congratulated me on still being alive, but on the bottom of it it said, 'We suspect this sample has been contaminated.'

Mr SPRINGBORG: You never saw the results of the milligrams per cubic metre?

Mr Macdonald: Yes. If they were good, there was nothing. If they were bad, on the bottom of the results it said, 'We suspect this sample has been contaminated'.⁴⁰⁸

... Back when we were getting levels of 15 and 16, nine times out of ten your result would come back as invalid, because they were telling us that the filters were getting clogged. I said, 'That just tells you there's too much dust.' They said, 'No, it's getting clogged with the thicker particles, not the respirable particles. They are blocking it.' Everyone just threw their hands in the air—like, 'This is ridiculous' because we are failing. These filters are getting that clogged because there is so much dust and they are saying, 'No, it's the thicker particles that are blocking them.' Now that we have our dust levels a little bit lower than those 15s and 16s, I do not think that there are many invalid readings coming back anymore. On that board, they are consistently around the fives and sixes.⁴⁰⁹

Mr McConnell: I have had several samples in the time that I have been at Carborough voided and basically the insinuation is that you have done something to contaminate or adversely affect the reading. Did you put it on the shearer and let it ride up and down with the shearer for the full shift or were you carrying a stone dust bag, that sort of thing. My answer to them has been the same every time: I wore it as per instructions. Once they are voided that is it, they are voided.⁴¹⁰

Mr Fritz Djukic of the Mines Inspectorate noted in response to these concerns:

Mr Djukic: ...It is possible that in field there might be samples that are not valid because a pump stops working, so it is a battery issue, or when you calibrate a pump at the start of a shift and at the end of the shift the flow rate has dropped significantly and if it is outside tolerance you cannot count that. It is not a quantifiable sample... When we see results come back to the mine—like I and other inspectors—that are marked as invalid, we request the reason those samples were marked invalid.

Mr McMILLAN: Without going into minute detail, have you generally been satisfied with those explanations?

⁴⁰⁸ Mr Roderick Macdonald, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 26.

⁴⁰⁹ Mr Nick Tanner, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 18.

⁴¹⁰ Mr Stuart McConnell, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 11.

Mr Djukic: *Generally, if it is around in-field invalidations, for reasons that I have mentioned, then that does not raise any suspicion or concern to me.*⁴¹¹

The committee understands that there have been some instances in which companies engaged by operators to provide monitoring have failed to stipulate the reasons for void samples.⁴¹² Transparency in this regard is important for ensuring worker trust in the reliability of monitoring programs.

Selective monitoring practices

Some workers also reported the use of selective monitoring practices, including a tendency to select individuals engaging in lower risk tasks for monitoring, and to conduct monitoring only on certain shifts. For example, Mr Jason Mathewson submitted:

*...monitoring was scheduled for the shift where we were always on maintenance. At other mines I have worked at, this has also occurred, but this was not done regularly, at these mines. I have even seen it once, at one mine, where senior management forced one person to wear a dust monitor, even though that person told them, that he would be on the surface for most of the shift, as he was participating in a complex risk assessment. These senior management personnel knew what this person would be doing during this shift. So in my opinion these dust monitoring results are not realistic.*⁴¹³

In addition, the committee heard:

*... the trend is to put it on the grader driver who is doing the haul road down the other end of the mine. If you really wanted to capture something and get some good data, you would put it on the dozer driver who is ripping the coal, or the loader driver who is loading it out, or the stockpile dozer who is pushing the stuff around—the real fine stuff. It just seems to be a pick and choose.*⁴¹⁴

*They will give it to me if I am swinging a dragline, where I am sitting in a room like this. I would be lucky to pick up the smell of a fart let alone get a dust sample. They seem to pick and choose where they go. They do not put it on the blast crew when they are on the coal shot, but they will get them to wear it when they are up on the surface where there is lots of circulation, lots of air and away from the coal.*⁴¹⁵

My issue which I have raised out there in the past is that we seem to monitor dust on day shifts. We predominantly cut coal on night shifts and over weekends. We do not monitor dust over weekends because no-one is employed to monitor the dust over the weekends. If they went out there and monitored dust on a night shift from a Friday through to a Sunday, those levels of fives and sixes I believe would be more in the eights and nines.

Mr SPRINGBORG: *We are talking five to six milligrams per cubic metre or metre cubed, so that is around double what the recommended exposure level or maximum level is for any 80-hour period which is three milligrams?*

⁴¹¹ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, p 10.

⁴¹² Commissioner for Mine Safety and Health, confidential response to a question taken on notice during a hearing, 2 November 2016.

⁴¹³ Jason Mathewson, submission 10, p 3.

⁴¹⁴ Mr Scott Leggett, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 20.

⁴¹⁵ Private hearing, Moranbah, 22 November 2016.

[Worker]: Yes.⁴¹⁶

During the inquiry, some of these accounts were countered by mining operators, who provided documentation establishing that the overwhelming majority of sampling activities are conducted during production shifts rather than at times of scheduled or unscheduled maintenance.⁴¹⁷

Investigation of exceedances

The committee also heard that the approach of some mines to the investigation of exceedances has tended to focus on how the conduct of the mine employee may have caused the dust issue, rather than looking to environmental factors, or using the incident as an opportunity to improve safety standards.⁴¹⁸ This appears to have reinforced the perception amongst members of the workforce that they are being investigated for their actions, rather than the system being investigated for its failures. For example, union representatives and workers testified to the committee:

*Some of the blokes are a bit worried about the investigations, because there seems to be a bit of finger-pointing activity. The investigation process has probably started to happen, but it probably needs to be refined a little bit more in some instances.*⁴¹⁹

Mr McMILLAN: *The committee has heard evidence from a worker at another underground mine that when an exceedance is recorded the approach, first of all, is to ask what the worker did wrong...to cause him to fail the test.*

Mr Adams: *Absolutely.*

Mr McMILLAN: *There is an approach that, if there is an exceedance of the dust standard, it must be because the worker has somehow failed to meet his safety obligations or put himself in a position where he exposed himself to that risk.*

Mr Adams: *I couldn't agree more.*

Mr Hedley: Yes.⁴²⁰

...When blokes were failing their samples, they go back through the playback for the night's production and they can see on those playbacks. If you are in a no-go zone and would operate a shield, it comes up as a button pressed. There were guys who had failed their samples who were in no-go zones during those shifts....I raised the concern then, 'Why are we only scrutinising shifts that you have monitored where guys have failed?' We had a record production shift one night ... but there was no monitoring that night. I asked, 'Wouldn't best practice be that we would scrutinise that shift to see if bad practices were done during that shift?' I was told, 'No. There's no need for it.' I said, 'If they are cutting .. [many thousands of] tonnes in a night and there was nothing wrong with that shift, all guys were out of the no-go zones, that would be a prime time to highlight that is how it is done.' No. They only scrutinise the shifts where someone has failed and they go over it then. You were shown, 'This is why you failed.'

*... A lot of workers out there would just take it on the chin and walk out of there with the shifts.*⁴²¹

⁴¹⁶ Private hearing, Moranbah, 22 November 2016.

⁴¹⁷ See for example: Anglo American, submission 25, p 11.

⁴¹⁸ APESMA, submission 11, p 5.

⁴¹⁹ Mr Jason Hill, ISHR, CFMEU, public hearing transcript, Ipswich, 4 November 2016, p 35.

⁴²⁰ Public hearing transcript, Middlemount, 24 November 2016, p 12.

⁴²¹ Private hearing, Moranbah, 22 November 2016.

The committee recognises that personal accountability and adherence to administrative controls, including operator positioning requirements, are important components of dust managements in most mining operations.⁴²² However, when poorly handled, this investigation process may displace the focus from addressing dust sources, and may not encourage workers to highlight other administrative or engineering control failures which may have contributed to their excess personal exposure.⁴²³

In this respect, Mr Bernard Corden noted that there is a well-established body of research highlighting that an undue focus on human error or actions can lead to a tendency to apportion blame, creating fear in the workforce, and potentially compromising investigations and alienating workers.⁴²⁴

Engagement of workers

As highlighted in worker commentary surrounding sampling practices and exceedance investigations, portions of the workforce evidently feel disconnected from and disenchanted about the exposure monitoring and assessment processes, and may lack faith in the accuracy of monitoring data.⁴²⁵ In this regard, the committee also heard in Collinsville:

*I have seen us deliberately take the dust sampler up and leave it up on the tailgate. We know that is where the dust is, but they come back and say there is no dust. We are thinking, 'We have to get a bad report here.' We deliberately left the sampler up there in the dust all day and no bad reports come back.*⁴²⁶

In addition, Professor David Cliff testified to the committee:

*Anecdotally, I am sure you have heard stories of people leaving the devices behind because they are too heavy or too cumbersome, holding them in front of a chute to see if they get a higher level or whatever else.*⁴²⁷

Kelly, Tayler and Manthey (2016) have identified that these issues and problem behaviours, which can 'undermine the reliability of the sampling regime,⁴²⁸ may stem from a lack of education and engagement with workers regarding the intent of the program, workers' roles in its success, and key actions arising from the sampling.⁴²⁹ They argue:

*Workers need to be provided with awareness regarding the goals of an exposure assessment program, how it will be conducted and the site expectations. They should also be informed of the limitations of the program, time restraints and expected feedback. Experience shows that workers who understand the need behind sampling and are aware of the goals of management and site health and safety representatives are more likely to comply with instructions and contribute positively towards the overall success of the program. This is particularly evident at sites where the workers are part of the process to identify control deficiencies and recommend improvements. When workers are not aware of the process, or their role to play, and subsequently don't provide the necessary information, it is near impossible to draw valid conclusions from the exposure data.*⁴³⁰

⁴²² Mr Tim Hobson, Site Senior Executive, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2017, p 20.

⁴²³ Bernard Corden, submission 3(2), p 8.

⁴²⁴ Bernard Corden, submission 3(2), p 2.

⁴²⁵ Private hearing, Moranbah, 22 November 2016.

⁴²⁶ Mr Bob Sawyer, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 15.

⁴²⁷ Professor David Cliff, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁴²⁸ Professor David Cliff, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁴²⁹ Anne Kelly, Craig Tayler and Greg Manthey (SIMTARS, DNRM), *Respirable Dust Monitoring for Underground Coal*, Queensland Mining Industry Safety and Health Conference, Gold Coast, 14-16 August 2016, p 5.

⁴³⁰ Anne Kelly, Craig Tayler and Greg Manthey (SIMTARS, DNRM), *Respirable Dust Monitoring for Underground Coal*, Queensland Mining Industry Safety and Health Conference, Gold Coast, 14-16 August 2016, p 5.

The committee notes the significant steps taken at some mines to develop a positive workforce culture that supports the active involvement of workers at all levels in addressing dust and other hazards. Ongoing work in this area may help to resolve some of these identified issues.

4.4.2 Sampling methodology

As previously noted, statutory respirable dust monitoring in Queensland is based on whole-of-shift personal sampling using devices which measure the concentrations of airborne contaminants such as respirable coal dust and crystalline silica by weight.

In this method, respirable dust is collected from the breathing air very close to the nose and mouth of a mine worker by a cyclone pump attached to the worker's clothing. The pump is connected with a piece of plastic hosing to a sampling unit and a steady stream of air is drawn through the sampling unit where the coarse dust is first removed and only respirable dust particles are collected on a filter. At the end of the mine worker's shift, this filter must be carefully removed, packaged and sent to a certified laboratory where it is analysed and weighed. The results of that analysis are then returned to the mine operator, along with the time and date of the sample and details of the mine worker wearing the device at the time of the sample.⁴³¹

The sampling technology used in gravimetric personal dust monitors has remain largely unchanged since the 1960s. The image below depicts the same coal miner in 1973 and 2008, wearing the same type of respirable dust monitoring device in each photograph.

Image 14 Gravimetric dust sampling technology, 1973 and 2008
Same USA miner depicted wearing sampling devices



Source: Anglo Coal, confidential response to question taken on notice during a hearing, 31 January 2017, Attachment 8.

The process involved in the current sampling regime means that often it will be days or weeks after a sample is taken before the mine operator or worker is informed of the results. This makes useful investigation of the circumstances of any exceedances of the OEL difficult.

The committee heard a wide range of views in relation to the efficacy and appropriateness of this sampling regime, including ways in which other sampling methods and technologies may offer more helpful or additional insights into the control of dust and exposure risks in Queensland mines. The two key focal points of discussion were the use of static monitoring and possible benefits associated with using real-time monitoring devices.

⁴³¹ Coal Services Pty Ltd, *Airborne Dust in Coal Mines: Respirable Dust and Quartz*, 2008, p 15, <https://www.coalservices.com.au/messageforcewebsite/sites/320/files/airborndustincoalminesbookletfinal.pdf>

4.4.3 Static monitoring

A number of witnesses and submitters suggested that the use of static or 'fixed position' monitoring may be preferable to personal sampling of workers' exposure to respirable dust.⁴³²

Personal sampling, it was noted, only provides information relating to the exposure levels of the person sampled over the course of their normal work day. As Mr BJ Davison testified, this 'gives you some confidence if you are continuously getting those reports back and they are under the limit', and in that sense, it provides insights into the effectiveness of the overall system of controls.⁴³³ However, Mr Davison argued that this 'can be perhaps a false confidence', noting that it does not provide any indication of the high risk areas or provide a picture of the work environment as such:

His exposure during the day means also running off to the crib room to have a couple of smoko breaks, he might be driving around Brisbane - inspecting the plant in a car where he is perfectly safe and he might spend an hour in the vault. He might get a reading, but it is below what your cut-off is and it does not cause you any concern. You are quite happy and you have checked and verified that you are not exposing that worker in his regular duties to an excessive limit. You are not then able to say, 'We know for a fact that if you're down in the vault for six hours you're going to cop it,' or, 'We know for a fact that if you work around these transfer points continuously you're going to cop it.'

*...That is why I would be more inclined to have the dust monitor that is not necessarily attached to a person, but it is put in an area.*⁴³⁴

A long-time industry worker submitted confidentially to the committee that the lack of targeted monitoring of conditions was a point of ongoing contention among some workers, who feel that some dust hot spots in tunnels and returns are overlooked due to the emphasis on personal sampling.⁴³⁵ This appears to have prompted some workers to remove devices during personal sampling and leave the devices in these areas of concern, 'to make sure we register what kind of levels we have'.⁴³⁶

With the use of static monitoring, in contrast, stakeholders noted that you are in fact 'doing an assessment of that work area rather than an assessment of what that worker was exposed to'.⁴³⁷ Further, by placing fixed devices at the source of dust generation and key transfer points, operators can gain specific feedback on the efficacy of individual controls and dust movements, which can allow the mine site to implement improvements in mitigation procedures should an exceedance event

⁴³² See, for example: Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, pp 10-11; Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 3; Mr William (BJ) Davison, Independent Coal Industry Safety, Health and Management Consultant, public hearing transcript, Brisbane, 1 February 2017, pp 7-8; Bruce Ham, submission 5.2, p 3; and Professor David Cliff, submission 1, pp 1, 3 .

⁴³³ Mr BJ Davison, Independent Coal Industry Safety, Health and Management Consultant, public hearing transcript, Brisbane, 1 February 2017, p 7.

⁴³⁴ Mr BJ Davison, Independent Coal Industry Safety, Health and Management Consultant, public hearing transcript, Brisbane, 1 February 2017, pp 7-8.

⁴³⁵ Confidential submission 39.

⁴³⁶ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 9.

⁴³⁷ Mr BJ Davison, Independent Coal Industry Safety, Health and Management Consultant, public hearing transcript, Brisbane, 1 February 2017, pp 7-8.

occur.⁴³⁸ Similar approaches, it was noted, are engaged in relation to noise mapping, and could 'improve current industry practice'.⁴³⁹

In this respect, particulate matter scientist Dr Brian Plush proposed a 'scientifically robust, peer reviewed, industry accepted, workable model', which 'utilises a testing methodology that measures the amount of respirable dust produced at individual sources of dust generation not only during the mining cycle but also on transport, roads and belt roads where significant dust is also produced that enters the mine atmospheres':⁴⁴⁰

*The particles are collected as per AS2985, however, they are analysed as a raw particle weight and not a time weighted average. The raw particle weight is then divided into the tonnes cut during the measurement cycle, giving the milligrams per tonne of respirable dust produced. This measurement is taken to establish a benchmark respirable dust production during the cutting cycle with all dust controls turned off and repeated with all dust controls turned on. The difference between the two tests will tell how much respirable dust the installed controls remove. This measures the effectiveness of the dust controls. The test can be repeated as often as the mine requires to fully understand the behaviour of their dust production and to ensure that they are removing as much dust as they possibly can from the mining environment. Exposure level testing is unable to identify this occurrence.*⁴⁴¹

Professor David Cliff submitted that further benefits can be gained through the use of static monitoring systems which engage real time sampling devices, which are discussed in the next section of this report. Professor Cliff stated:

... if you look at the stresses that the mining companies are under, personal monitoring is a very indirect reporting process. You do the monitoring, you compile a report, the consultant gives the report back to the company, someone looks at it and it goes away or they try to reconcile what has happened to the dust exposure.

I would suggest that a more effective way of doing it would be to have continuous real-time monitoring of dust—the same as we do for gas in our underground coalmines—which is connected to a control room, like the gases are, and it alarms in real time. That would allow you to monitor effectively whether controls are in place or something has failed or it is no longer working. It is not directly tied, obviously, to individual personal exposure, but it would be a valuable routine monitoring tool. The technology exists. It is not certified for use. It would require some modification. The analogy would be that we have been monitoring real-time dust in the environment for the last 15 years, and if you go on various department websites you can see the dust levels in various locations around Australia in real time. There is no technological reason it cannot be done.

The advantage would also be that we are not dependent on the ever-reducing number of people within our mines and the ever-increasing levels of responsibility they have and the diversity of tasks they have to undertake. The potential for something to be overlooked or not taken as

⁴³⁸ Brian Plush, Ting Ren and Nadjat I Aziz, *A critical evaluation of dust sampling methodologies in longwall*, 12th Coal Operators' Conference, University of Wollongong and the Australasian Institute of Mining and Metallurgy, 2012, p 194.

⁴³⁹ Confidential submission 39.

⁴⁴⁰ Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, p 2.

⁴⁴¹ Dr Brian Plush, particulate matter scientist, public hearing transcript, Rockhampton, 12 December 2016, p 3.

*seriously as other issues because they have other things to do would be reduced if we had such systems in place.*⁴⁴²

In response to commentary surrounding the use of static devices, AIOH submitted:

*We draw to the committee's attention that the collection of personal breathing zone air samples from workers while they perform their routine tasks is the only means to determine personal exposure of workers. The results obtained from static sampling can either underestimate or overestimate exposures and cannot be compared with exposure standards to determine regulatory compliance. While fixed or static position instruments have their place in the assessment of general dust levels, they should be used in conjunction with, rather than as a replacement for, personal monitoring devices.*⁴⁴³

Dr Bharath Belle similarly noted that personal sampling has been shown in international literature to provide more consistent and accurate exposure results, as well as providing information to allow researchers to better model the links between exposure levels and the development of CWP with respect to medical surveillance.⁴⁴⁴

RS14 on monitoring respirable dust in coal mines provides that measurements collected at static sampling points 'are not representative of actual worker exposure', but can play an important role within monitoring programs, as 'a valuable tool for assessing the effectiveness of process controls.'⁴⁴⁵ In other nations – for example, in South Africa – the complementary roles of personal sampling and static or 'engineering' sampling are recognised through separate compliance requirements with respect to both.⁴⁴⁶

4.4.4 Real time monitoring

Due to the delay between collecting samples and the issuing of results using traditional gravimetric sampling in accordance with AS2985, there is heightened interest across industry in the use of real-time personal dust monitoring devices to measure instantaneous exposure of workers to respirable dust.

The committee heard from workers that the 'lag' effect associated with laboratory processing of samples means it can take two to three weeks in some instances before the results of sampling are received and workers are informed as to any exceedance.⁴⁴⁷ In this respect, Mr Shaun Isaacs

⁴⁴² Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 39.

⁴⁴³ Mr Phillip Hibbs, President, AIOH, public hearing transcript, Brisbane, 1 Feb 2017, p 32.

⁴⁴⁴ Anglo Coal, confidential response to question taken on notice during a hearing, 31 January 2017, Attachment 8.

⁴⁴⁵ Queensland Government, Recognised Standard 14: Monitoring respirable dust in coal mines, Coal Mine Safety and Health Act 1999, 1 January 2017, pp 7-8.

⁴⁴⁶ Currently South African coal mines must perform two types of dust sampling. In terms of the DME guideline for the assessment of personal exposure to airborne pollutants (August 2002), the results of the personal exposure sampling programme are to be submitted to the inspectorate quarterly. In terms of the Department of Minerals and Energy Affairs Guideline for a Code of Practice for the Ventilating of Mechanical Miner Sections in Coal Mines in terms of Section 34(1) of the Minerals Act 1991 (Reference GME 16/2/1/20 dated October 1994), also known as 'Directive B7' or the '12 m rule', the results of gravimetric sampling performed daily at all operating CM sites, termed 'environmental samples' in the directive, but commonly referred to as 'engineering sampling' must be submitted to the Directorate within four days. See: B Belle, *How relevant are engineering samples in the management of personal dust exposure*, 17th Coal Operators' Conference, Mining Engineering, University of Wollongong, 8-10 February 2017, p 397.

⁴⁴⁷ Public hearing transcript, Moranbah, 23 November 2016, pp 14-16, 24; Mr Stephen Smyth, CFMEU Mining and Energy Division, Queensland District, public hearing transcript, Blackwater, 14 December 2016, p 14.

stated: 'to me that does not build confidence in the fact that you have to wait to actually see the limit before you find out you have exceeded the limit'.⁴⁴⁸

Operators, similarly, noted that the delay in obtaining results can impact on their ability to effectively investigate exceedances. For example, Carborough Downs SSE Mr Andrew Vella testified:

*... when you would do an investigation you would sit with the employee and ask a variety of questions and two weeks later a lot was obviously forgotten as such and the conditions change. As I explained the other day, an underground mine is very dynamic and complex in regards to dust generation and how it occurs. It could be there one second, it could be gone the next. It doesn't just remain there for the whole time. Obviously trying to understand and pinpoint that is very complex, especially when you don't get the results until two weeks later.*⁴⁴⁹

Mr Tim Hobson, SSE at Grasstree Mine, stated:

*... because the guys are on a seven-seven roster and may also be on leave as well it could be three or four weeks between the event and it doesn't matter how good your memory is, to know some of the specifics—a lot of it is around operator positioning. Four weeks later, with my memory, I can't tell you where I stood four weeks ago, I will be honest.*⁴⁵⁰

In contrast to traditional sampling technology, real-time sampling uses a direct-reading device that provides a 'real-time'⁴⁵¹ indication of respirable dust exposure. There are two main types of direct-reading devices – light scattering (laser photometry) devices and tapered element oscillating microbalance (TEOM) devices.⁴⁵²

Light scattering devices work by illuminating an aerosol (a group of particles suspended in air) as it passes through a defined volume, and detecting the total light scattered by all the particles in that volume. The mass of these particles is then calculated based on the properties of a calibration aerosol sample, and converted to a dust concentration measurement based on the volume of air sampled.⁴⁵³

TEOM devices, which are now commonly used internationally as real-time personal dust monitors, use gravimetric methods that calculate the mass of aerosol particles by monitoring frequency changes in a vibrating tapered element (a filter resting on an oscillating hollow tube). This mass, again, is converted to a dust concentration measurement based on the volume of air sampled.⁴⁵⁴

Occupational hygiene service provider GCG noted that the most commonly used real-time units in the Queensland coal mining sector are:

- Thermo Fisher PDM3700 (TEOM) – a personal device worn by the worker (the only gravimetric real-time personal dust monitoring device presently on the market)
- TSI AM510/AM520 (light scattering) – a personal device worn by the worker, or as a hand held survey tool, and
- Hund TM Data II (light scattering) – a handheld device used as a survey tool.⁴⁵⁵

⁴⁴⁸ Public hearing transcript, Moranbah, 23 November 2016, pp 15-16.

⁴⁴⁹ Mr Andrew Vella, Carborough Downs, public hearing transcript, Mackay, 25 November 2016, p 21.

⁴⁵⁰ Public hearing transcript, Brisbane, 1 February 2017, p 20.

⁴⁵¹ PDM3700 is not strictly real-time, it provides a concentration display averaging time of 30 minutes; ThermoFisher Scientific, 'PDM3700 Personal Dust Monitor', <https://www.thermofisher.com/order/catalog/product/PDM3700>.

⁴⁵² DNRM, submission 35, p 20.

⁴⁵³ DNRM, submission 35, p 20.

⁴⁵⁴ DNRM, submission 35, p 20.

⁴⁵⁵ GCG, submission 42, p 9.

Recognising the need to act swiftly to address dust levels in the wake of the re-identification of CWP, some Queensland mine operators have increasingly used these devices to bolster the information garnered from their compliance sampling regimes. While light scattering real time devices like the Hund and the AM510/AM520 have a longer history of use, there are some concerns about their reliability in underground mining environments, because they can be unable to differentiate between water particles and respirable dust particles of the same size and are thus easily effected by environmental variables.

There has been a wider uptake in Queensland of the PDM3700 due to its greater accuracy and widespread use in the USA following the issuing by MSHA of a 'Final Rule' in 2014, which mandated the use of gravimetric real-time personal dust monitoring devices for all official USA compliance monitoring from August 2016.⁴⁵⁶

Feedback from Queensland mining operators on the use of these devices has been overwhelmingly positive. Mr Jordan Taylor, Safety, Health and Environment Manager at Anglo American, described the use of PDM3700 units as 'empowering' for Anglo workers, allowing them to identify emerging issues and intervene to prevent an exceedance event occurring.⁴⁵⁷ Mr Matt Cooper, General Manager and BMA's Broadmeadow mine explained:

*It gives them the information live where they can do a couple of things. They can either remove themselves to a different position or they can ultimately task rotate out of the area.*⁴⁵⁸

Mr Ian Cribb, Chief Operations Officer at Glencore, stated:

*... we see it as an advantage because when there are periods of not normal situations on a longwall—where you may have roof trouble or something like that—and you cannot operate in the automatic mode then it would give us an additional tool for monitoring people's exposure to dust when, for instance, you are operating in the manual mode and moving supports forward over the broken roof. We can ensure that we rotate people on the right frequencies.*⁴⁵⁹

In addition, it was noted that data collected by devices like the PDM3700 can be immediately downloaded after a shift to support improved analysis capabilities.⁴⁶⁰ In the US, this data is automatically transmitted securely to MSHA inspectors for compliance purposes at the end of every shift. This helps to eliminate the possibility of interference with or manipulation of the data by the worker or mine operator.

From a worker perspective, the CFMEU noted that 'the potential for dust sampling fraud is reduced ... and workers and management receive earlier notice of high dust levels'.⁴⁶¹ Additionally, the CSOA submitted that the use of real-time devices could provide shift supervisors and deputies with easily accessible and verifiable data that would help them substantiate any decisions to halt or slow production, and ensure proper corrective action is taken. The CSOA suggested that the devices should

⁴⁵⁶ Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 31.

⁴⁵⁷ Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 31.

⁴⁵⁸ Mr Matt Cooper, General Manager, Broadmeadow Mine, BMA, public hearing transcript, Moranbah, 23 November 2016, p 6.

⁴⁵⁹ Public hearing transcript, Brisbane, 1 March 2017, p 14.

⁴⁶⁰ Anglo Coal, confidential response to question taken on notice during a hearing, 31 January 2017, attachment 9.

⁴⁶¹ CFMEU, submission 27, pp 16-17.

be installed to operate in the same way gas detectors do currently, emphasising the potential to reduce uncertainty for all workers and minimise scope for disagreements over the extent of dust levels.⁴⁶²

However, it was also recognised that the devices have a number of limitations which have implications for the ways and extent to which they may currently be used in Queensland mines.

From a technical standpoint, light scattering devices do not directly report actual coal dust concentrations because they calculate measurements with respect to the size of particles rather than their weight (i.e. not using gravimetric sampling). This means that a light scattering device would be unable to differentiate between two particles of the same size and diameter – for example, a golf ball and a table tennis ball – and must therefore be calibrated using a representative particle sample.⁴⁶³ Operators noted that this makes the devices vulnerable to atmospheric contaminants such as large amounts of water, which can influence the accuracy of results.⁴⁶⁴ Additionally, as they do not measure mass gravimetrically in accordance with AS2985, light scattering devices cannot be used for personal exposure sampling for statutory compliance purposes.⁴⁶⁵

PDM3700 devices equally require specialist calibration and maintenance to ensure their accuracy, though these devices are favoured by operators due to their potential use for both static, engineering sampling and for personal exposure sampling.⁴⁶⁶ The devices present both a cumulative reading from the start of the shift to the current time, and a reading of the percentage of the allowable limit that has been reached.⁴⁶⁷ Their measurements are gravimetric measurements, as is required under AS2985 and indeed for regulatory exposure monitoring internationally. However, the Australian standard refers specifically to the current technology of gravimetric devices, which precludes the use of the PDM3700 for assessment of personal exposure.⁴⁶⁸

Notwithstanding these issues, the primary obstacle to the broader use of real-time personal dust monitoring devices in Queensland underground coal mines involves requirements for electrical certification of monitoring equipment. While there is currently no restriction on the use of real-time monitoring devices for surface coal mining and other coal related operations, Recognised Standard 01 under the legislation requires portable electrical equipment that is to be used in an underground coal mine in Queensland to be certified as 'intrinsically safe' – that is, a certification that it will not be a source of ignition either through creating a spark or a hot surface in an environment where the presence of methane can create an explosive atmosphere.⁴⁶⁹

⁴⁶² APESMA, submission 31, p 6.

⁴⁶³ Mr Mark Stone, Executive Director, Mine Safety and Health, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 22; Anglo Coal, confidential response to question taken on notice during a hearing, 31 January 2017.

⁴⁶⁴ Mr Darren Nicholls, Director of Underground Operations Queensland, Glencore Coal Assets Australia, public hearing transcript, Brisbane, 1 March 2017, p 13.

⁴⁶⁵ DNRM, submission 35, p 20.

⁴⁶⁶ See, for example: Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 41; Mr Tim Hobson, Site Senior Executive, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2017, p 19. Mr Hobson said of the device: 'That is the pinnacle of sampling. Where we have been able to use that it has probably been one of the biggest effective tools that we have had for the operators so that they personally understand where the right place is to stand and operate'.

⁴⁶⁷ Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 41.

⁴⁶⁸ Mr Mark Stone, Executive Director, Mine Safety and Health, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 22.

⁴⁶⁹ DNRM, submission 35, p 20.

As previously noted, many of the coal seams in Queensland's Bowen Basin contain relatively high levels of methane gas which must be removed through de-watering (pumping water out of the coal seams) – one of the processes that tends to make our coal drier and more prone to dust generation.⁴⁷⁰

In Australia, the process of intrinsic safety certification is achieved through the International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx).⁴⁷¹ Where devices do not have IECEx approval, their use is permitted only in Negligible Explosion Risk Zones (NERZ), where the concentration of methane is known to be or likely to be less than 0.5 per cent.⁴⁷²

No real-time devices currently meet IECEx certification requirements. As a result, mine operators electing to use the devices in Queensland must use continuous gas monitoring during their operation, and must retreat/withdraw the device from use when a methane level of 0.5 per cent is detected. Mr Jordan Taylor of Anglo American explained the implications of this restriction:

*It is really about getting an understanding of the dust profiles and the dust concentrations at the working face. For instance, several longwalls in Queensland in the Bowen Basin will have methane levels that are above 0.5 per cent at some point along the face. It might be midface to the tailgate or somewhere around the tailgate area. Let's say we have the monitor on the shearer operator. That shearer operator will be wearing this device, and if he gets to shield 75 and the methane levels are 0.6, then he has to stop and he has to remove that device from that area; therefore, he is not getting a representative picture of the dust across the face because he cannot take that unit with him any further.*⁴⁷³

The QRC similarly submitted that as 'methane concentrations on longwall faces typically range up to 1.0%', the PDM3700 currently cannot be used on the production faces of many Queensland mines – a 'significant impediment to improved monitoring of respirable dust levels' given 'this is the area where coal mine workers are at the greatest risk of exposure to respirable dust'.⁴⁷⁴

Whilst not certified under the IECEx scheme, the PDM3700's explosion protection has been verified and the unit approved for use in underground coal mines by in the USA by MSHA and in South Africa by that country's legislative Mining and Surface Certification (MASC) system.⁴⁷⁵ MSHA has carried out testing of each of the various iterations of the device from the development of its prototype 13 years ago through to the PDM3700 in use today, including 8,000 hours of field testing of predecessor unit the PDM3600.⁴⁷⁶ Additionally, there has been extensive use of the device without restriction and without incident internationally – including in South Africa, China, and parts of South America.⁴⁷⁷

SIMTARS is accredited to undertake IECEx product and equipment certification in Australia. At the committee's public hearing in Brisbane on 2 February 2017, Mr David Turner, Director of SIMTARS' Engineering, Testing and Certification Centre, explained that there are a range of differences in the practical specifications and requirements for IECEx accreditation as opposed to the approval processes

⁴⁷⁰ DNRM, submission 35, p 20.

⁴⁷¹ DNRM, submission 35, p 20.

⁴⁷² Anglo American, submission 25, p 6.

⁴⁷³ Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 30.

⁴⁷⁴ QRC, submission 18, p 32; and QRC, submission 18.2, p 12.

⁴⁷⁵ QRC, submission 18.2, p 11.

⁴⁷⁶ QRC, submission 18.2, p 11; Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 18.

⁴⁷⁷ Anglo Coal, confidential response to question taken on notice during hearing, 31 January 2017, attachment 9.

employed in the USA and South Africa.⁴⁷⁸ In basic terms, the USA and South African approval processes have a slightly higher threshold of risk acceptance in relation to explosion potential:

... when you are testing for intrinsic safety it is not only the equipment in its normal operating condition but under various fault conditions; it has to be seen to be safe as well or demonstrated to be safe. The actual number and the types of faults that can be applied can be different in the standards.

In fact, with the level of protection—intrinsic safety protection—that is required where they want to use this equipment, it is at that level of protection which we call IA where you make provision for two faults to actually occur in the equipment before it will cause an explosion. We want to be absolutely certain that even under two fault conditions it does not cause an explosion, so the fact that it has never caused an explosion at this point of time does not mean to say that it necessarily will not cause an explosion under the circumstances.

... The certificate issued in South Africa was not an IECEx certificate... It was certified only at the level of protection IBThat level of protection allows for only one internal fault within the equipment.⁴⁷⁹

While the next model of the PDM3700 is being designed to meet IECEx requirements, the delivery of this unit is expected to be two to three years away.⁴⁸⁰

There is broad agreement across industry that this is too long to wait.

A range of industry players submitted that the extensive, unrestricted use of the PDM3700 without incident in international settings, including the mandated use of the device or statutory monitoring in the USA, would suggest that the explosion risk is in fact within acceptable bounds, and that a more pragmatic approach to certification is required in this instance. The approvals process in Queensland, it was submitted, appears to be 'painstakingly slow',⁴⁸¹ and currently presents what may be an unnecessary barrier to the implementation of 21st century technology with significant benefits for industry.⁴⁸² Further, former Commissioner of Mine Safety and Health Mr Stewart Bell noted that it is not insignificant that mines are willing to invest in the PDM3700 despite the substantial cost of the equipment, and that devices are already being deployed as far as possible.⁴⁸³

Anglo American has led Australian efforts to get the PDM3700 IECEx certified, including working with manufacturer Thermo Fisher and Australian distributor Lear Siegler Australasia Pty Ltd and obtaining critical information from the MSHA surrounding the tests underpinning their approval process, to support SIMTARS' completion of a gap analysis between the respective international certification processes.⁴⁸⁴ While the MASC in South Africa is now working on a conversion to an IECEx test report for certification, the committee understands that this process may take up to 12 months.⁴⁸⁵

⁴⁷⁸ Mr David Turner, Director, Engineering Testing and Certification Centre, SIMTARS, public hearing transcript, Brisbane, 2 February 2017, p 26.

⁴⁷⁹ Mr David Turner, SIMTARS, public hearing transcript, Brisbane, 2 February 2017, p 26.

⁴⁸⁰ DNRM, submission 35, p 20; and Mr David Turner, SIMTARS, public hearing transcript, Brisbane, 2 February 2017, p 33.

⁴⁸¹ Anglo American, submission 25, p 6.

⁴⁸² Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, pp 39-40; and CFMEU, submission 27, pp 16-17.

⁴⁸³ Private hearing, Brisbane, 2 February 2017.

⁴⁸⁴ Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal, public hearing transcript, Brisbane, 31 January 2017, p 30.

⁴⁸⁵ Anglo American, submission 25, p 10.

Accordingly, mining operators have proposed a short-term regulatory solution until the PDM3700 is certified, which would see a variation to Recognised Standard 01 to allow the use of the PDM3700 in atmospheres that contain less than 1.25 percent methane. Once certified, the reference to the PDM3700 in Recognised Standard 01 would be removed.⁴⁸⁶

The committee acknowledges that there was a high level of resistance within the Mines Inspectorate to support this workaround solution. The committee heard from Chief Inspector of Coal Mines, Mr Russell Albury:

*The question is do you change one standard to bring the other in? Which is the more hazardous or the more risky situation? I agree that the technology is encouraging and would be good to have, but if you were to ask me as chief inspector whether I would change the gas levels that the present equipment can be used in to bring it into the industry my answer to you would be no.*⁴⁸⁷

However, there is strong industry appetite for the proposal, which is underpinned by a 'failure mode and effect analysis' and risk assessment process being undertaken by a working group of representatives from Anglo American, Peabody, Glencore, Rio Tinto and BMA.⁴⁸⁸ Whilst noting that 'it is vital that coal mining operations do not compromise the explosion safety standards established by Recognised Standard 01', the QRC submitted that such comprehensive risk assessment processes, together with the endorsement of the tripartite Coal Mining Safety and Health Advisory Committee (CMSHAC), could ensure necessary oversight and consensus-building around the move.⁴⁸⁹

Acknowledging these commitments, the committee agrees with the view of former Commissioner of Mines Safety and Health, Mr Paul Harrison, that 'we should do whatever we can to get them in our underground coalmines'.⁴⁹⁰ The committee observed the use of the PDM3700 real-time dust monitor during its underground visit at Grasstree Mine and heard directly from mine workers using the device the level of confidence and empowerment they gain from being able to access information about the respirable dust exposure in real time. The committee delegation to NIOSH and MSHA in the USA also received extensive briefings and a practical demonstration of these devices in operation.

The committee considers that the continuous data provided by real-time personal dust monitors will help support proactive efforts to reduce worker exposure to respirable coal mine dust, and provide our coal miners with the information they need to play a leading role in their own health and safety.

It is most concerning that despite senior officers from DNRM and SIMTARS making regular visits to the USA for meetings and consultation with MSHA and NIOSH over at least the past decade, it does not appear that any of them sought out information about the extensive research being conducted in the USA into the use of real-time personal dust monitoring devices including the PDM3700 (and its predecessors). Had those officers brought such information back to Queensland following any of those international visits, the implementation of these devices in Queensland mines might have been much further advanced than it is now.

⁴⁸⁶ Anglo American, response to question taken on notice on 31 January 2017, confidential Attachment 9.

⁴⁸⁷ Mr Russell Albury, Chief Inspector of Coal Mines, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 23.

⁴⁸⁸ Anglo American, response to question taken on notice on 31 January 2017, confidential Attachment 9.

⁴⁸⁹ QRC, submission 18.2, p 3.

⁴⁹⁰ Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 22.

Key finding

Real-time personal dust monitoring devices are an essential tool in the ongoing effort to mitigate the production and dissemination of respirable dust in coal mines. Their use by coal mine workers promotes worker confidence in the dust monitoring data gathered for compliance purposes and empowers coal mine workers to take charge of their own respirable dust exposure.

Recommendation 25

Real time personal dust monitors, such as the Thermo Scientific PDM3700, should be assessed having regard to the scientific information already available world-wide, and if possible certified for use in underground coal mines as soon as possible.

4.4.5 Real time compliance sampling

There is also industry support for the use of the PDM3700 for compliance sampling under section 89 of the CMSHR. In this respect, it was submitted:

- the experience in the USA has demonstrated that it is an accurate compliance sampling device for determining the concentration of respirable dust in coal mine atmospheres
- in addition to providing immediate feedback to support proactive mitigation or corrective action, it can allow operators to provide conclusive respirable dust results to stakeholders in a matter of hours as opposed to days or weeks, and
- the PDM3700 generates significantly richer data than current gravimetric devices, and could therefore provide industry with a more comprehensive compliance reporting dataset, which could be used to gain further insight into respirable dust exposures and control effectiveness.⁴⁹¹

Traditionally, real-time devices have been unable to measure the actual composition of dusts, including silica, which has meant that silica must still be further measured and analysed by conventional personal sampling methods with laboratory analysis for reporting under section 89 of the CMSHR.⁴⁹² However, the committee understands that an alternative filter currently being manufactured might allow the determination of silica content from the same sample.⁴⁹³ As Dr Robert Cohen also noted of these devices, while 'the downside is that you do not have real-time silica, ... you have a lot of other information', and:

*...That would be a major disservice to use that as an excuse not to implement this technology now. We can certainly do whatever we can to monitor silica, but that device allows you to see what is going on and make those changes. It is becoming more compact and much more user-friendly.*⁴⁹⁴

The committee acknowledges that some stakeholders expressed reservations about following the USA approach of mandating the use of the PDM3700 for this purpose, arguing it would more appropriately be used in conjunction with and not as a replacement for, the current personal sampling methods.⁴⁹⁵

Whilst 'strongly advocating' the use of the device for performing detailed assessments of worker exposure and validating the effectiveness of controls, GCG noted that 'although real time monitoring

⁴⁹¹ Confidential response to question taken on notice during a hearing, 31 January 2016, attachment 9.

⁴⁹² GCG, submission 43, p 9; DNRM, submission 35, p 20.

⁴⁹³ Confidential response to question taken on notice during a hearing, 31 January 2016, attachment 9.

⁴⁹⁴ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 42.

⁴⁹⁵ GCG, submission 43, pp 3-4; See also Mr Russell Albury, Chief Inspector of Coal Mines, Mines Inspectorate, public hearing transcript, Brisbane, 2 February 2017, p 25.

for respirable dust has been long established, its use in a mature risk based and/or regulatory capacity is in its infancy':

... The USA has recently regulated the use of the PDM3700, although GCG are not yet aware of any formal review of the program post implementation and steady state use. GCG are also aware that numerous South African coal mines are voluntarily using real time monitoring devices, where we understand that one operator has started using the PDM3700 in 2016.

... GCG is of the opinion that mandating the use of real-time monitors to meet compliance requirements may potentially lead to an actual increase in average exposures to coal dust. An early indication from the USA scheme is that workers are generally managing their exposure marginally below 100% of the compliance level, in order to pursue higher production outputs. While this information is not yet validated and available in literature, GCG is concerned that this would also potentially be a foreseeable outcome in Australia. Workplace exposure standards do not represent a 'no effect' level, and as such, any successful regulatory approach should promote a risk based approach and ultimately as low as reasonably practicable (ALARP). The issue is that this approach essentially shifts the role of decision-maker on dust exposure down to the worker, which is not consistent with Australia's regulatory scheme and will not assist in ultimately managing the risk in a prudent and systematic manner.⁴⁹⁶

The committee notes that GCG was, however, supportive of a legislative amendment requiring that real-time monitoring be performed for any resampling of single point exceedances:

As currently drafted, retesting of single point exceedances must be performed using AS2985, where partnering it with real time monitoring would be powerful in confirming control effectiveness.⁴⁹⁷

The QRC submitted that determination of the way in which the device is used to demonstrate compliance 'will require tripartite consultation through the Coal Mining Safety and Health Advisory Committee'.⁴⁹⁸ QRC accordingly suggested:

- The new Recognised Standard 14 on monitoring respirable dust in coal mines could be amended to ensure it does not specifically exclude the use of TEOM technology as a means of gravimetric sampling to determine respirable dust concentrations.
- AS2985 could be amended to include TEOM as an accepted means of gravimetric sampling and to require new technologies to be considered in the future.
- CMSHAC could identify the remaining operational and technical issues around the use of real time dust monitors with a view to undertaking tripartite consultation on their use as a compliance tool.⁴⁹⁹

Importantly, the QRC noted:

While the issue of compliance monitoring will take some time to resolve, the QRC believes it is possible to move the measurement of control effectiveness forward more quickly. The two issues are not inextricably linked.⁵⁰⁰

⁴⁹⁶ GCG, submission 43, pp 9-10.

⁴⁹⁷ GCG, submission 43, p 10.

⁴⁹⁸ QRC, submission 18.2, p 3.

⁴⁹⁹ QRC, submission 18.2, p 3.

⁵⁰⁰ QRC, submission 18, attachment A.

Recommendation 26

An industry working group including coal mine operators, unions and government should be tasked with exploring the use of real time personal dust monitors as a compliance tool, including canvassing amendments to Recognised Standard 14 on monitoring respirable dust in coal mines, to enable the use of real time personal dust monitors for compliance monitoring and reporting.

Recommendation 27

The definition of 'further sample' in section 89A(5) of the Coal Mining Safety and Health Regulation 2001 should be amended to allow the use of real time personal dust monitors, such as the Thermo Scientific PDM3700, for resampling after a trigger event.

4.4.6 Self-monitoring and review of controls

As previously noted, the inadequacy of the provisions for self-monitoring and management of dust exposures in Queensland mines was a central theme in evidence to the inquiry. Without sufficient guidance or oversight from the Mines Inspectorate and the Commissioner, these internal processes were vulnerable to deterioration over time, effectively enabling the deficient practices highlighted in evidence from coal mine workers. As CFMEU General Secretary Mr Andrew Vickers testified:

One of the problems that we face in Queensland is that the responsibility for monitoring is itself regulation that is in the hands of the employers. Whilst I have been critical of employers in the coalmining industry for 50 years, I do not throw them all into the same basket. The facts of the matter are that there is enough evidence around the world that, if major corporations are exposed to or allowed to self-regulate, they will cut corners. Look at Volkswagen as a classic example. Look at Deepwater Horizon. They are massive issues. If it comes down to fudging figures, to putting the dust monitors on people on maintenance days at the mines as opposed to production days at the mine. If the recording is a bit high, then blame it on a faulty sample and take another one in another place at another time...⁵⁰¹

A wide range of submitters called for expert independent monitoring or third party review of monitoring data. Some noted that under the current system, questions about the quality and reliability of monitoring have persisted, due largely to the potential for service providers to be conflicted or constrained in their operations by the instructions they receive and their financial reliance on mining operators.⁵⁰²

Mr Jason Mathewson, for example, related that while he 'told the people supplying the dust sampling monitors that they should come back when we are actually producing' rather than monitoring maintenance shifts, 'they told us that the mines actually make the arrangements for when they come and do the monitoring'.⁵⁰³ Similarly, CSOA submitted that although private service providers have been engaged to implement a random sampling regime, 'mine operators are given total discretion over where the testing is conducted'.⁵⁰⁴

⁵⁰¹ Mr Andrew Vickers, General Secretary, CFMEU, public hearing transcript, Ipswich, 4 November 2016, p 33.

⁵⁰² See, for example: CFMEU; AMWU, submission 36, p 5; Mr John Hempseed, private capacity, public hearing transcript, Rockhampton, 12 December 2016, p 6.

⁵⁰³ Jason Mathewson, submission 10, p 3.

⁵⁰⁴ CSOA, submission p 5; see also Ian Nicholas, submission 29, p 2.

Professor David Cliff explained:

... It is a challenging thing to do, because ... If you generate revenue for clients, there is not automatically a confidential clause in there. However, then you get the ethical question: if you find something that is unacceptable what do you do? I am not sure how you resolve that issue...

*However, I suppose the question is, what do you do with the reports and who actions the reports when they make them to the company? I think that is a problem that any consultant has in doing any work for a company; they will do the work that they are hired to do. They may make recommendations in the report, but they have no capacity to do more than that.*⁵⁰⁵

Professor Cliff noted that under the pre-existing system, had SIMTARS or another service provider advised inspectors of outcomes directly, the mine operator could potentially have stopped using them and engaged another commercial supplier instead.⁵⁰⁶

Some of these conflicts have been addressed in Queensland through the recent amendments requiring companies to provide all dust monitoring results to the Mines Inspectorate, and to provide details of any exceedances to the Inspectorate, the ISHR and the SSHR.⁵⁰⁷ As Professor Cliff acknowledged, the key issue is one of visibility and transparency through central reporting of data, 'much more than the consultants doing the testing'.⁵⁰⁸ The development of a dust monitoring database for collation and recording of results will also address issues surrounding shortcomings in record-keeping, and support analysis of exposure data and trends over time.⁵⁰⁹ [See the further discussion regarding oversight of dust monitoring in chapter 4.5.]

Additionally, the establishment from January 2017 of RS14 provides for the setting out of clear minimum standards of practice in relation to monitoring, helping to address concerns about sometimes 'patchy' services and variability in the diligence of private sector service provision in the occupational hygiene sector.⁵¹⁰ Importantly, RS14 also clarifies that sampling programs must be developed and reviewed by a certified occupational hygienist, and that individuals carrying out sampling must have completed a training package that was developed and is now being delivered by SIMTARS⁵¹¹ (or a recognised equivalent competency).⁵¹²

The committee notes that this is in keeping with the AIOH submission that 'only independent, experienced, and Certified Occupational Hygienists should design, plan and report on the assessment of workplace dust exposures'.⁵¹³

Mr Hibbs: *Our view is that ... certified hygienists with a background in the mining industry... have the skills and the training and they understand the risk assessment process and the monitoring process so that they are...are ideally suited to the development of such a plan.*

Mr KELLY: *Do you think that is something that we should regulate and require via regulation?*

⁵⁰⁵ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁵⁰⁶ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁵⁰⁷ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, p 9.

⁵⁰⁸ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁵⁰⁹ DNRM, submission 35, p 49.

⁵¹⁰ Former Commissioner Paul Harrison stated: 'I would say that it was patchy, that some companies were very good. Some were not so diligent', public hearing transcript, Brisbane, 22 March 2017, p 4.

⁵¹¹ Private briefing, Brisbane, 14 March 2017.

⁵¹² Queensland Government, Recognised Standard 14: Monitoring respirable dust in coal mines, Coal Mining Safety and Health Act 1999, 1 January 2017, p 6.

⁵¹³ AIOH, submission 14, p 3.

*Mr Hibbs: I know there is often a reluctance to build that sort of thing into regulation but, in my view, yes.*⁵¹⁴

Some stakeholders, citing the degree of mistrust and scepticism around monitoring in some quarters, saw advantage in a more strictly independent monitoring process overseen by a government authority, rather than the third party review approach embraced in the recent reforms.⁵¹⁵ Submitters particularly pointed to the example of Coal Services in NSW, established as an independent organisation under the NSW *Coal Industry Act 2001*. Jointly owned by the NSW Minerals Council and the CFMEU, the organisation provides a dedicated service for the prevention of illness and injury in the workplace, including holding specific statutory responsibilities in relation to the review of dust mitigation measures, dust monitoring, health surveillance and workers' compensation.⁵¹⁶

Coal Services is required to undertake dust monitoring at all NSW coal mine operations to a prescribed standard, including location and frequency.⁵¹⁷ Coal mine operators can use another service provider if they are licensed by the NSW regulator to perform dust monitoring services. These private providers must submit monitoring data to Coal Services for inclusion on a comprehensive dust database of all NSW samples, which Coal Services maintains. Coal Services Managing Director and CEO Ms Lucy Flemming advised the committee that Coal Services has an obligation to ensure that the data submitted by licensed service providers is of high quality, and will re-test at mines to confirm the results of these tests.⁵¹⁸ Copies of the data are required to be distributed to the mine operator, the Chief Inspector of Coal Mines and the Industry Check Inspector – the equivalent of an ISHR in Queensland.⁵¹⁹

Many of Queensland's recent reforms were modelled on the NSW approach to monitoring, including the establishment of a Standing Dust Committee, as examined at chapter 4.5. However, a number of differences persist. In particular, in addition to the superior quality assurance of the NSW model, Coal Services' monitoring officers have powers of entry, and are able to conduct unannounced monitoring – a process the body is exploring further:

*We do not do a lot of unannounced monitoring, but we are working with the regulator at the moment... There are different types of unannounced. Our unannounced a lot of the time is we are not telling you where we are going, but there is also that unannounced where you just turn up on the doorstep.*⁵²⁰

The Committee notes that there is significant faith in the monitoring services provided by SIMTARS.⁵²¹ A number of submitters considered SIMTARS might appropriately take charge of all monitoring in the state, noting that it already provides training to other service providers on best practice in dust monitoring.⁵²² However, the committee also considers that our state's research body on mining safety and health should be more appropriately focused on the identification and dissemination of research and technological breakthroughs, to support a responsive and cutting edge industry. In addition, the committee considers that SIMTARS' fee-for-service offerings sit uncomfortably with these aims, and

⁵¹⁴ Mr Phillip Hibbs, President, AIOH, public hearing transcript, Brisbane, 1 February 2017, p 34.

⁵¹⁵ AMWU, submission 36, p 5; CFMEU, submission 27, pp 14, 15.

⁵¹⁶ Coal Services Pty Ltd, *Annual Report 2016*, October 2016, p 3.

⁵¹⁷ Coal Services, *Order 42 Explanatory Note*, http://www.coalservices.com.au/MessageForceWebsite/Sites/340/Files/20160307%20Order%2042%20Explanatory%20note_new%20legislation.pdf

⁵¹⁸ Private briefing, Sydney, 23 February 2017.

⁵¹⁹ Coal Services, *Background – Standing Dust Committee*, <http://www.coalservices.com.au/standingdust/background.aspx>

⁵²⁰ Private briefing, Sydney, 23 February 2017.

⁵²¹ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁵²² Private briefing, Brisbane, 14 March 2017.

note that there is a significant body of professional expertise within the private sector. As Chief Inspector of Coal Mines Mr Russell Albury stated:

Over this journey we have gone on, I have got to know some of the hygienists in the industry. I have to say that the hygienists themselves, even those who work for contractor companies, are very good at what they do and, to me, display a high degree of ethical behaviour. Of the hygienists themselves who do the analysis for the companies, I would have to suggest that I would be surprised if their behaviour was not as it should be when it comes to monitoring of respirable dust.⁵²³

Accordingly, the committee considers that Queensland would be best served by requiring companies to engage licensed and qualified private providers to conduct monitoring, and incorporating additional safeguards to ensure the integrity of monitoring in Queensland. In particular, in order to assure the independence of sampling actions, it is important that there is a complete separation between mining operators and private occupational hygiene service providers. Mining companies must not have a commercial interest in the providers they engage or in an associated third party entity.

Further options to strengthen oversight and auditing of dust monitoring are discussed in chapter 4.5.

Recommendation 28

All commercial providers of atmospheric dust monitoring for the purposes of compliance with the regulation should be required to be approved by the Commissioner for Mine Safety and Health, having regard to the expertise and qualifications of the person or entity conducting the monitoring.

Recommendation 29

Results of all atmospheric dust monitoring undertaken in compliance with the regulation should be provided directly by the approved entity engaged to undertake the tests to each of the following; the Mine Safety and Health Authority; the coal mine operator (or person conducting the business at which the testing was undertaken); the miner who wore the device from which the test sample was taken; and the relevant Industry Safety and Health Representative, district workers' representative, or union delegate for the business at which the testing was undertaken.

4.5 Enforcement and oversight

It is important that the instances of inadequate mitigation and monitoring practices reported to this committee are recognised as failures not only of compliance with legislation, but also of enforcement of the legislation. Regulations are only effective if the responsibilities and requirements encompassed within them are clearly articulated to relevant parties, and reinforced through appropriate oversight and guidance around the measures necessary for statutory obligations to be met.⁵²⁴ This is particularly the case where legislation affords statutory officers a degree of subjectivity and flexibility in performing their roles, as is the case with the state's risk based mining safety and health regime.

As Johnstone and Sarre (2004) have noted:

... regulatory flexibility enables regulatory regimes to induce firms to strive to go beyond minimum compliance with regulatory requirements, but also requires regulators to ensure that there is independent verification of the firm's management system and of its achievement of

⁵²³ Public hearing transcript, Mackay, 25 November 2016, p 14.

⁵²⁴ Andrew Clough, *Mining Legislation – The Queensland Perspective*, 15th Coal Operators' Conference, University of Wollongong, The Australasian Institute of Mining and Metallurgy and Mine Managers Association of Australia, 2015, p 24.

*regulatory goals; an ongoing dialogue with local communities concerning compliance goals and the ways of achieving them; and an underpinning of government intervention.*⁵²⁵

The CFMEU submitted that in Queensland, enforcement actions around dust management have tended to reflect a 'government practice that relies on self-regulation and a culture of encouraging compliance rather than requiring it'.⁵²⁶

The committee notes that proactive efforts to clarify compliance goals and engage with industry around dust issues appear to have been quite limited prior to the re-identification of CWP in 2015.

Key enforcement issues highlighted by submitters included:

- the prioritisation of other safety concerns by regulators
- limited statutory guidance and proactive engagement efforts around managing the dust hazard
- a lack of escalation in enforcement measures and inconsistent regulatory advice
- risks of regulatory capture, and
 - limited scrutiny or analysis of dust monitoring practices and results.

Many of these criticisms have been directed primarily at DNRM and particularly the Mines Inspectorate. However all key stakeholders must share some responsibility in this regard, given the collaborative approach to industry regulation embodied in the legislation, through the involvement of various authorities, statutory officers, and advisory bodies in the enforcement and oversight process.

4.5.1 Roles and responsibilities

The Mines Inspectorate, currently within DNRM, plays the leading role in Queensland's regulatory regime, charged with enforcing the provisions of mining safety and health legislation, as well as advising, mentoring, and educating the industry around safety and health matters.⁵²⁷

As part of its ongoing program of work in relation to respirable dust management and control, the Mines Inspectorate inspects and audits mine sites, their procedures and monitoring results, and presents to industry, workers and union representatives on the importance of dust control and monitoring.⁵²⁸ Inspectors can draw on a variety of different compliance tools, ranging from expressions of concern and the giving of notices, through to recommendations for prosecution. This includes issuing mines operators with statutory directives requiring them to rectify deficiencies identified through inspection and demonstrate those rectifications have achieved an acceptable level of risk.⁵²⁹

As outlined in chapter 3, SSHRS and ISHRS assist the Inspectorate in fulfilling its obligations in this regard. Employee SSHRs investigate complaints from workers, carry out internal review processes, and must notify the SSE of any concerns, and send a report to the Mines Inspectorate.⁵³⁰ Union-appointed ISHRS also review systems, carry out inspections and investigations, advise the SSE of any shortcomings in a mine's SHMS, and report to the Inspectorate if they are not satisfied with the actions of the SSE to

⁵²⁵ Richard Johnstone and Rick Sarre, *Regulation: Enforcement and Compliance*, Australian Institute of Criminology, Research and Public Policy Series, no. 57, 2004, p 6, http://www.aic.gov.au/media_library/publications/rpp/57/rpp057.pdf

⁵²⁶ CFMEU, submission 27, p 10.

⁵²⁷ Commissioner for Mine Safety and Health, *Queensland Mines Inspectorate Annual Performance Report, 2014-15*, State of Queensland, 2015, p V.

⁵²⁸ DNRM, submission 35, p 11.

⁵²⁹ Queensland Government, *Mines Inspectorate Compliance Policy*, March 2010, http://www.nost.edu.au/icms_docs/143941_Mines_Inspectorate_Compliance_Policy_Implementation_Guide.pdf

⁵³⁰ DNRM, submission 35, p 13.

rectify an issue. Both SSHRs and ISHRs have the power to order the suspension of operations. ISHRs also have broader powers, including the capacity to issue directives.⁵³¹

The Commissioner monitors and reports to the Minister on the performance of DNRM and the Inspectorate in regulating mine safety, as well as providing broader regulatory advice.⁵³² Within this remit, the Commissioner considers recommendations for prosecution from inspectors, ISHRs, SSEs and other officers, and may also self-initiate prosecutions as required.⁵³³ Additionally, the Commissioner chairs the CMSHAC, which provides a mechanism for industry oversight and collaboration regarding the application of the legislation.⁵³⁴

The CMSHAC is a tripartite committee drawing on representatives from industry, workers and government (including the Inspectorate). It is charged with providing advice and making recommendations to the Minister to promote and protect the safety and health of coal mine workers, including:

- developing recognised standards in relation to coal mining safety and health practices, and
- determining the required competencies for statutory coal mining positions.⁵³⁵

4.5.2 Enforcement activities

Focus on safety

In the field of occupational health and safety, there is often a distinction between efforts to address safety issues, which involve more immediate risks of physical danger, and health issues, which typically involve longer-term or chronic risks and effects.⁵³⁶

The committee heard evidence that the history of coal mining incidents and multiple fatalities in Queensland, including the explosions at the Kianga and Moura mines that underpinned the development of the current legislation, has meant safety has often been at the forefront of enforcement efforts in Queensland. It was submitted that the skills, resources and inspection culture of the Inspectorate reflects this historical emphasis.⁵³⁷

While occupational health and hygiene expertise has been consistently provided and issues addressed over time, the committee heard:

Speaking as an ex-public servant, I have to say that it is a case that other priorities came along. We have to bear in mind that in the late 1990s we were in the post-Moura era. We had new legislation being brought in. We went to management systems. We had other issues that occupied the department's focus at that stage. It may sound a bit glib, but with finite resources

⁵³¹ DNRM, submission 35, p 13; Mr Mark Stone, Executive Director Mine Safety and Health, DNRM, public briefing transcript, 14 October 2016, p 4.

⁵³² Commissioner for Mine Safety and Health, *Queensland Mines Inspectorate Annual Performance Report, 2014-15*, State of Queensland, 2015, p V.

⁵³³ Mrs Kate du Preez, Commissioner for Mine Safety and Health, public hearing transcript, 2 November 2016, pp 3-4.

⁵³⁴ Queensland Government, *Committees: Mining advisory committees*, <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/legislation-standards/committees>

⁵³⁵ Mr Mark Stone, Acting Chief Mine Safety and Health Officer, DNRM, Public briefing transcript, Brisbane, 14 October 2016, p 4; Queensland Government, *Coal mining competencies*, <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/competencies-certificates/coal>.

⁵³⁶ D Duncan, 'Regulating work that kills us slowly: the challenge of chronic work-related health problems', *New Zealand Journal of Employment Relations*, vol. 41, no. 2, 2016, p 87.

⁵³⁷ Mr Paul Harrison, public hearing transcript, 22 March 2017, p 6.

*they devoted them to what they thought were the most important things at the time. They dealt more with principal hazards: fires, explosions, strata control, fatigue was a big issue.*⁵³⁸

Mr Harrison: *Yes, I think it would be true to say that fires and explosions and the prevention thereof have been the major focus.*

Mr COSTIGAN: *Do you think it would be fair to say that that consumed regulators in the industry and anyone who was interested in safety on the mine site? That was almost the be-all and end-all?*

Mr Harrison: *I do not think I would go so far as to say the be-all and end-all, but it certainly was top of mind. A lot of the focus would have been on activities to prevent that.*⁵³⁹

No person or entity has ever been prosecuted in Queensland for failing to meet a health and safety obligation in relation to respirable dust.

This emphasis on safety over health enforcement has also been reflected in the recognition and treatment of hazards under legislation. In NSW, Professor David Cliff noted, respirable dust has long been recognised as a 'principal hazard' – a recognition that comes with a range of specific risk management and planning obligations. This tends to lend dust issues 'higher visibility':

*... Dust is not managed in Queensland as a principal hazard. You may have a dust management plan or you may have just managed it as part of a ventilation plan, for example... I think visibility is the key in many ways here. I am not saying the department here does not approve things, but it needs to have the visibility to see the things in the first place to not approve. That is like semantics, I suppose, in some ways, but that is the way most plans in Queensland work. I would suggest that the department here does not have the same visibility of dust management as maybe Coal Services does in coalmines in New South Wales.*⁵⁴⁰

Professor Cliff noted that the Mines Inspectorate can and does now issue directives and specific requirements for monitoring and control in plans as is required in relation to principal hazards, and that guidelines can be implemented with a similar regulatory effect.⁵⁴¹ However, the committee notes that the delay in establishing such planning processes as a systematic requirement of risk management has undoubtedly had deleterious effects.

The primary focus of DRNM inspectors and SIMTARS on mine safety, rather than miners' health and the risks posed to it by exposure to respirable dust, was also evident in the travel reports obtained by the committee under summons. During the committee delegation visit to the USA, it became apparent that senior officers of DNRM, including the mines inspectorate and SIMTARS, had regularly travelled to the USA over an extended period to meet and consult with counterparts at NIOSH and MSHA. Such travel is expected and entirely appropriate for international collaboration and benchmarking. However, the committee delegation was surprised that it had not, prior to its visit to the USA, been advised by DNRM of the extraordinary work being done by NIOSH and MSHA in relation to respirable coal mine dust and CWP.

The committee issued a summons requiring DNRM to produce all records relating to travel by DNRM officers, including staff of the mines inspectorate and SIMTARS, to the USA. The documents produced included proposal memoranda, travel reports, itineraries and correspondence. The content of the documents clearly demonstrates a focus on international cooperation and knowledge sharing around mine safety, explosion risks and strata management. Unfortunately, there did not appear to be any

⁵³⁸ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 41.

⁵³⁹ Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 6

⁵⁴⁰ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 43.

⁵⁴¹ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 43.

focus on the part of Queensland public servants on respirable dust mitigation or monitoring technologies. On review of the documents produced by DNRM there was only one cursory mention of respirable dust, and not a single reference to CWP or its prevalence in the American mining workforce.

Timely and appropriate interventions

By summonses, the committee called for the records of all relevant mine record entries and directives issued by inspectors in relation to respirable dust, dating back to 16 March 2001. The committee's examination of the records provided in response has revealed intermittent instances of enforcement activity or mention of dust concerns, interspersed with large periods of inactivity in this regard. Given the testimony of workers – and even acknowledgements from mine operators of shortcomings in their risk management processes and controls – it is clear that the risk of danger from dust was not appropriately recognised or monitored by the Inspectorate or other statutory office holders.

As former Commissioner of Mine Safety and Health Mr Stewart Bell noted, the picture reflected in inspectorate records was that 'during the period 2000 to 2010 there was generally a steady state of control' in relation to dust – a view reinforced by a lack of diagnosed cases of CWP.⁵⁴²

The Mines Inspectorate generally appears to have been active in identifying potential dust risks, taking note of developments and experiences in other jurisdictions. For example, when autopsies of 29 miners killed in an explosion in Upper Big Branch in the USA in 2010 revealed many of the workers had pneumoconiosis, the Commissioner and other officers sought to re-emphasise the need for vigilance in relation to dust.⁵⁴³

Further, members of the Mines Inspectorate moved early to review exposure data and work with mine operators to address dust issues associated with the introduction of top coal caving, cognisant of lessons from other jurisdictions in this regard.⁵⁴⁴ It was these efforts that prompted the Inspectorate to request exposure data from all underground mines in September 2014 (prior to the first CWP diagnosis), resulting in a comprehensive review of monitoring data from 2012 to 2014, and again in 2015.⁵⁴⁵

It was also clear that as these issues were being identified, inspectors did not shy away from issuing directives. However, what is of concern to the committee – and as also highlighted by the Senate Committee – was the lack of escalation of enforcement efforts in response to non-compliance with directives over a sustained period of time. As the Senate Committee noted in its analysis:

Of the 23 Directives provided to the committee:

- *only nine Directives complied with the due date. The due dates were exceeded in the remaining 14 Directives*
- *in those 14 Directives, the non-compliance periods ranged between 12 days to 12 months*
- *five of the Directives relating to dust control and dust prevention were issued after the first reported cases of CWP, being 13 May 2015*
- *one Directive issued to a mine which had no respirable dust monitoring took 12 days to comply with the requirement to implement a program.*⁵⁴⁶

⁵⁴² Mr Stewart Bell, private capacity, public hearing transcript, Brisbane, 2 February 2017, p 27.

⁵⁴³ Mr Stewart Bell, private capacity, public hearing transcript, Brisbane, 2 February 2017, p 27.

⁵⁴⁴ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, p 7.

⁵⁴⁵ Mr Fritz Djukic, DNRM, public hearing transcript, Mackay, 25 November 2016, pp 7-9.

⁵⁴⁶ Senate Select Committee on Health, *Fifth interim report*, p 30.

This information raised questions about an apparent lack of consequences for not complying with directives within a reasonable time.⁵⁴⁷ The committee notes that no coal mining company in Queensland has ever been prosecuted for persistent exceedances or failure to comply with directives in relation to respirable dust control and abatement.⁵⁴⁸

In response to concerns about the efficacy of the Inspectorate's use of directives, the committee heard:

*We do not do large numbers of prosecutions, because I regard prosecutions as we failed a bit, as well. We should have stopped them earlier on, rather than waiting until we bang them on the head in court. However, there are times when we have to do it. If somebody has been killed or badly injured, it is incumbent upon us to do the right thing by the families. They want to see something going on here and not just somebody getting away with it all the time.*⁵⁴⁹

It was also suggested that the use of directives could be more effective than prosecutions, as their implementation often has major costs and production impacts for operators:

*Implementing directives can have significant financial impact on the mine. Depending upon engineering modifications the mine may need to make to comply with directives, its expenditure could be in the millions. The impacts on cash flow and lost revenue where operations are slowed or suspended can also be significant. In some circumstances, it is not unreasonable to put a figure of \$6 million a day of lost revenue if we were to suspend the operation of a longwall. Compare that with the option of prosecuting. If we were to, for example, prosecute an SSE for breaching a safety and health obligation, the maximum penalty is currently \$91,425. That is the maximum, and it can take years to get there.*⁵⁵⁰

Further, the long latency period of CWP may favour the use of directives:

*It is true that, if we can demonstrate that the breach resulted in bodily harm, grievous bodily harm or death, that maximum penalty increases, and it is true that excessive and long-term exposure to respirable coal dust can cause those consequences—but, remember, coal workers' pneumoconiosis has a long latency period. By the time any of the consequences of exposure have manifested themselves, we are years, possibly decades, down the track. Again, that is why the inspectorate puts its attention on requiring the mine to focus its efforts on getting things right in the mine with immediate effect. I suspect that is why the parliament gave us those powers in the act to do those things. I would not say that we would never prosecute or that prosecution has no place, but I just wanted to give the committee a full explanation of our approach to this matter and the rationale.*⁵⁵¹

Clear and consistent directions

During the committee's thorough examination of the circumstances and timelines surrounding the department's issuing and administration of directives, a number of mine operators raised concerns about a lack of clear or consistent guidance from inspectors regarding the actions required to demonstrate compliance. In this regard, the committee heard:

CHAIR: *Generally you are saying there are different inspectors who come to different mines and they might have different ways or different views of doing things; is that correct?*

⁵⁴⁷ Private hearing, Brisbane, 2 November 2016.

⁵⁴⁸ Mr James Purtill, public briefing transcript, Brisbane, 14 October 2016, p 19.

⁵⁴⁹ Mr Stewart Bell, former Commissioner of Mine Safety and Health public hearing transcript, Brisbane, 2 February 2017, p 28.

⁵⁵⁰ Mr Russell Albury, DNRM, public hearing transcript, Mackay, 25 November 2016, p 2.

⁵⁵¹ Mr Russell Albury, DNRM, public hearing transcript, Mackay, 25 November 2016, p 2.

Mr Taylor: Absolutely.

CHAIR: That means that as an operator you never really know where the goalposts are, is that correct?

Mr Taylor: Absolutely.

Dr Belle: Compliance determination is one of them, that is what we alluded to earlier, the whole SEG exposure, and how do you determine it is non compliant. Initially it was four and then it is the remaining. I think what you are looking for is the transparency of how we determine failure or non-failure.

CHAIR: It is not only the transparency, it is because you are dealing with different people, different issues, different ways of doing things and as operators there is no one set of rules that you can refer to; is that correct?

Mr Taylor: That's right.

CHAIR: The inspectorate is in a mess, in other words.⁵⁵²

From a department perspective, at that time anyway, they certainly did not have what I would call firm guidelines as to what they were looking for. It was very much a learn-as-you-go type of thing. It was not clear as to what they were ultimately looking for. Yes, the regulation had the threshold limits of the three milligrams, but it was a case of who did that apply to? For example, what was the makeup of the long wall similar exposure group? We probably spent months trying to work out what that was. It was only by trial and error that we got to some sort of common understanding. It was probably not equally applied across all the mines at the same time. That was an example. The response time to some of the directives was variable. It was all of these things. Unfortunately, the department was caught in terms of, 'We don't have any guidelines ourselves' and the guidelines were being differentially applied to different operations. Even from an operations perspective, we would benchmark against other mines, saying, 'What are you guys doing?' We were fully aware of some of those issues that we have to deal with.

Ultimately, where did that lead us all up to? We ended up with a series of directives and compliance meetings that were really forcing the business to look into things. I refer back to the under 5s football, where everyone is running over and meanwhile, from my perspective and certainly that of some of the members of my team, we needed to be looking at this ball, that ball and the other balls, as well. I am not decrying anything in terms of the importance of respirable health. I lost my own grandfather to black lung, so it is something that I am personal and passionate about anyway, but we have to understand that there are many issues to deal with.⁵⁵³

CHAIR: That might be why there has never been a prosecution, because if there was a prosecution of any coalmining operator you could go back to the fact that you have been advised to do different things at different points of time which would potentially nullify a prosecution. Have you any comment to make on that?

Mr Oswell: Possibly so.⁵⁵⁴

⁵⁵² Public hearing transcript, Brisbane, 31 January 2017, p 37.

⁵⁵³ Mr Tim Hobson, Site Senior Executive, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2017, p 22.

⁵⁵⁴ Public hearing transcript, Brisbane, 31 January 2017, p 38.

The committee notes that some of the ambiguity surrounding the negotiation of compliance actions reflected a lack of guidelines on dust monitoring prior to the finalisation of RS14.⁵⁵⁵ This is discussed further at chapter 4.5.6. However, the committee also identified a degree of inconsistency in the terminology, detail and specificity of some mine record entries and directives.

This was consistent with the findings of the 2008 review of the Mines Inspectorate by the Queensland Ombudsman, which concluded that 'the extent of inconsistency in the use, format and terminology of mine record entries constitutes unreasonable administrative action within the meaning of s.49(2)(b) of the Ombudsman Act'.⁵⁵⁶

An additional consequence of such variance, as the Senate Committee found, is the potential for difficulties in categorising or analysing compliance actions over the longer term:

*There appears to be considerable variance in the language used to describe similar 'subjects', for example some Directives identify the subject as 'dust control', some as 'dust suppression', and others as 'dust prevention', and there is scant information on the face of the Directives to indicate the circumstances giving rise to its issuance. The committee considers that these deficiencies could lead to difficulties in auditing compliance or in collating data from the Directives as part of a future tracking, review or auditing process.*⁵⁵⁷

The Commissioner advised that the Inspectorate is committed to ongoing training and auditing of Inspectorate activities to address these issues, including through:

- November 2013 – a high level review of the mines inspection regime, assessing the compliance of mine inspection activities against inspection policies and procedures, including monitoring the implementation of the 2008 Ombudsman report recommendations
- June 2014 – a review of the effectiveness of the coal mine safety inspection systems, structure, processes and activities undertaken by the Inspectorate to better align with practices outlined in the Ombudsman publication *Tips and Traps for Regulators*
- March 2016 – a review of the policies and procedures framework and documentation (Mines Inspectorate Compliance Policy; Mines Inspectorate Compliance Policy Implementation Guide; Mines Inspectorate Inspection Process Protocol), and
- November 2016 – commencement of an audit of monitoring and reporting across the inspectorates with a focus on high potential incidents and directives and mine record entries within the mines inspectorate.⁵⁵⁸

Key findings

The use of compliance powers by the mines inspectorate to enforce respirable dust exposure standards has been inconsistent and undermined by imprecise and ineffective language in directives.

Non-compliance with directives has not been met with any real regulatory response by the Mines Inspectorate or Commissioner for Mine Safety and Health.

⁵⁵⁵ Mr Tim Hobson, Site Senior Executive, Grasstree Mine, public hearing transcript, Brisbane, 1 February 2017, p 22.

⁵⁵⁶ Report of the Queensland Ombudsman, *The Regulation of Mine Safety in Queensland: a review of the Queensland Mines Inspectorate*, June 2008, Opinion 7, p xiv.

⁵⁵⁷ Senate Select Committee on Health, *Fifth interim report*, p 31.

⁵⁵⁸ DNRM, response to question taken on notice during a hearing, 2 November 2016, no. 8.

4.5.3 Unannounced inspections

The committee heard consistent testimony from workers that when mines inspectors or ISHRs give advance warning of visits, there is a tendency for mine sites to stage a last minute clean up, and also to take inspectors on designated routes which avoid potential areas of concern.

*You know when someone is coming because you have to pretty everything up and make it look nice and clean it all down. It is either a mine inspector, a check inspector or a bigwig from Melbourne or Brisbane... When a mine inspector is on his way, we all know the day before. Things are done.*⁵⁵⁹

*... When the boys exercise their rights for entry, it happens all the time. It is like when you are going to sell a car and you have it on Gumtree. You have not washed it all week, but someone rings up and they are going to come around, what do you do? You go out and clean it up, don't you, and make it spick-and-span. You start it up and make sure that the battery is not flat, kick the tyres. That is what used to happen all the time. Like I said, things are getting better... but we are not the only pit in the Bowen Basin.*⁵⁶⁰

*Sometimes, depending on who they are, there seems to be a designated route that they travel. Instead of travelling the normal roads which other people are on they will be guided a certain way. Recently there was an inspector on site and I found out about that through the grapevine. I made myself known to him. He told me he was looking for something. We happened to go a different way and we found what he was looking for. Otherwise it would not have happened. In terms of dust issues, they will quite often keep them away from that part of the mine.*⁵⁶¹

*Dust would be coming off the roads and the boys would be whingeing ...as soon as the mine inspector was coming... we were going flat 24-7 salting the roads—putting salt on the road... I cannot say that they would not salt the road at any other time, but more prolifically when there is an inspector coming, yes.*⁵⁶²

Mine operators generally contested these accounts.⁵⁶³ DNRM, likewise, submitted that while it is possible such practices could occur, in reality it is difficult for mines to achieve this, especially given inspectors are trained to comprehensively identify risks, audit systems, interview workers regarding practices, and conduct investigations.⁵⁶⁴ In this regard, Chief Inspector of Coal Mines Mr Russell Albury stated:

I am confident in the ability and experience of mine inspectors to be aware of that when they go to a mine. It is pretty hard to hide some things in an underground coalmine. It may be that the

⁵⁵⁹ Private hearing, Moranbah, 22 November 2016, p 21.

⁵⁶⁰ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 9.

⁵⁶¹ Mr Jason Meikle, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 17.

⁵⁶² Mr Roderick Macdonald, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 22.

⁵⁶³ Mr Matt Cooper, General Manager, Broadmeadow Mine, BMA, public hearing transcript, Moranbah, 23 November 2016, p 3.

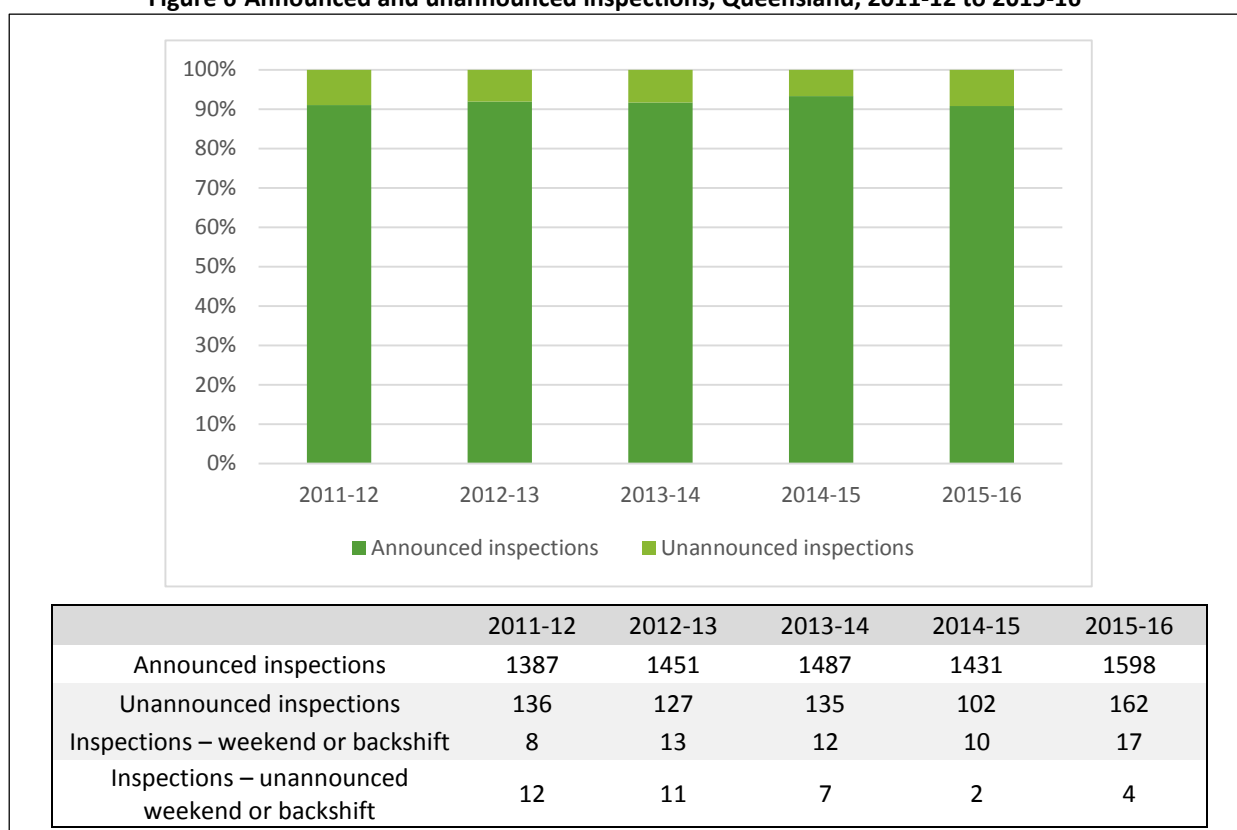
⁵⁶⁴ DNRM, submission 35, p 16.

*representative of the company tries to force the agenda on where they go to, but normally an inspector will go where he wants to go.*⁵⁶⁵

Workers submitted that while inspectors generally do their best, the compliance regime could be significantly strengthened through increased use of unannounced visits, to ensure accurate and effective scrutiny of practices and controls.⁵⁶⁶ A number of mine workers submitted that they could recall very few unannounced inspections over the years, with the exception of circumstances in which an incident had occurred, prompting a non-routine visit.⁵⁶⁷

Figures submitted by the Mines Inspectorate indicate that unannounced inspections have constituted between 7 and 9 percent of all inspections over the last five years.⁵⁶⁸ These figures are aggregate figures which also include metalliferous mines and quarries, but it is fair to assume that unannounced inspection rates for coal mines are roughly within this range.

Figure 6 Announced and unannounced inspections, Queensland, 2011-12 to 2015-16



Source: DNRM, submission 35, p 16-17; CWP select committee.

⁵⁶⁵ Mr Russell Albury, Acting Chief Inspector of Mines (Coal), DNRM, public briefing transcript, Brisbane, 14 October 2016, p 7. From 4 November 2016, Mr Albury provides evidence as Chief Inspector of Mines (Coal).

⁵⁶⁶ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 9; Mr Stephen Smyth, CFMEU Mining and Energy Division, Queensland District, public hearing transcript, Blackwater, 14 December 2016, pp 17-18; Mr Shaun Isaacs, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 15.

⁵⁶⁷ Public hearing transcript, Moranbah, 23 November 2016, pp 26-27.

⁵⁶⁸ DNRM, submission 35, p 16.

Unannounced back-shift inspections on weekends, particularly, were identified as an important tool, given there is a tendency for inspectors to visit in standard business hours during their working week. The committee heard:

*We have had a few people over the years who have done that, but if you have a family it is hard to organise and it doesn't happen as often as it should. But I agree with you that it should happen. If on a Sunday night at an underground longwall there is somebody standing there when the place is going, there is nothing funny going on, is there? They can't pull any tricks. We are here on a Sunday night. We can be here any time. That is how it has got to be.*⁵⁶⁹

Key finding

The current proportion of unannounced inspections undertaken by the mines inspectorate is totally inadequate. There must be an immediate, sustained, and significant expansion in the use of unannounced inspections by the mines inspectorate.

Recommendation 30

The Mines Inspectorate should increase the proportion of unannounced inspections to a rate of at least 50 per cent of total inspections.

Workers also saw a role for ISHRs in expanding unannounced inspections, noting that these officers are trusted by the workforce to pursue safety and health issues with vigour.

*If an inspector comes and they are concentrating on wash plant you can bet your balls that she has been cleaned up. By law I can't be present at all times as an SSHR with them. I can tell them that I want to talk to them. I try to get them on their own and say, 'You need to go and have a look at this, this is no good.' Quite often they will go there and have a look. Quite often they will not either. The only ones that will actually do it is the ISHRs which you have referred to as check inspectors.*⁵⁷⁰

*... If you are talking about the state checkies, I believe that they have got to give written notice... That is one of the rules or legislation or something that we need to change, that we can have guys turn up, we can have the inspector turn up, we can have the state check inspectors turn up at any given time at the drop of a hat to come down and have a look.*⁵⁷¹

*If we can relax those rules for other people like our state check inspectors to have unannounced visits at a drop of a hat, just turn up and come down, things will change.*⁵⁷²

*I think that it would benefit from a lot of unannounced visits from both the ISHRs and the inspectorate from time to time.*⁵⁷³

⁵⁶⁹ Private hearing, Brisbane, 2 February 2017.

⁵⁷⁰ Mr Jason Meikle, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 26.

⁵⁷¹ Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 11.

⁵⁷² Mr Nathan Leotta, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 9.

⁵⁷³ Mr Shaun Isaacs, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 15.

The CFMEU also submitted in this regard:

It has been witnessed on many occasions that by giving notice to the mine that an ISHR is attending the mine to conduct an inspection especially for dust related issue the mines take action to ensure that we cannot inspect the mine in the normal operating conditions. The company either stops normal operations, moves the CMW's [coal mine workers] from the dusty areas or conducts medial work to ensure that the mine is operating at an acceptable level of risk.⁵⁷⁴

To enable ISHRs to conduct unannounced inspections as proposed, the CFMEU and AMWU noted that it is necessary to amend existing legislation to remove a current requirement for ISHRs to give 'reasonable notice' before they exercise powers to enter a mine site.⁵⁷⁵

The committee considers that an audit of the use of unannounced inspections by the Queensland Audit Office could further serve to inform the balance of inspection methods currently employed by the Mines Inspectorate.

Key finding

Inspection activities by Industry Safety and Health Representatives, and their equivalents under the other mining safety and health Acts, are integral to a robust and reliable risk-based approach to the regulation of safety and health in the mining industry. Industry and public confidence in this system would be significantly improved if ISHRs (and their equivalents) were empowered to undertake unannounced inspections without the requirement to give the mine operator 'reasonable notice' of the proposed inspection.

Recommendation 31

Section 119(1)(b) of the *Coal Mining Safety and Health Act 1999* and section 116 of the *Mining and Quarrying Safety and Health Act 1999* should be amended to remove the requirement for industry safety and health representatives to give 'reasonable notice' to the mine operator before the power to enter a mine site is exercised.

4.5.4 Regulatory capture

One of the risks associated with formal and ongoing engagement between a regulator and the industry it regulates is regulatory capture. This occurs where an officer involved in administering a regulatory regime develops a relationship with the industry and may be influenced to represent their interest in advance of the interests of the regulator.⁵⁷⁶

⁵⁷⁴ CFMEU, submission 27, pp 14-15.

⁵⁷⁵ CFMEU, submission 27, pp 14-15; and AMWU, submission 36, p 6. See also: public hearing transcript, Moranbah, 22 November 2016, pp 9-11; Black Lung Victims Support Group, submission 21, p 1.

⁵⁷⁶ DNRM, submission 30, p 12; Australian National Audit Office, *Best Practice Guide: Administering Regulation – Achieving the Right Balance*, 10 June 2014, p 17.

The influence need not be overt, but may lead to a situation where necessary compliance action is not taken, or when taken, is less severe than the circumstances warrant:

To put it simply, once captured, a regulator goes easy on the industry. The issue is one of objectivity in making decisions to carry out enforcement action.⁵⁷⁷

The Senate Committee identified that in Queensland, the state's 'light touch regulatory model' allows for close relationships between the Mines Inspectorate and the companies whose activities are being regulated – a situation that 'has the potential to be fertile ground for regulatory capture', particularly giving the influence of the mining industry in Queensland.⁵⁷⁸

The Senate Committee did not receive enough evidence to make a firm judgement on this matter, but expressed caution about that proximity and lack of oversight of these relationships, and apparent insufficient consideration of the matter from DNRM.⁵⁷⁹ Accordingly, that committee recommended:

4.72 The Queensland Government direct relevant officials to undertake independent, high level, training on avoiding regulatory capture.

4.73 The committee recommends that in developing this training the Queensland Government have regard to the Better Practice Guides developed by the Australian National Audit Office in relation to regulatory capture.⁵⁸⁰

Similar concerns about regulatory capture were raised during this committee's inquiry. It was submitted:

... It appears to be that you roll into the inspectorate and then you roll out of the inspectorate into an SSE's role. It was not so long ago that we had an inspector who actually left the industry and then he appeared as a safety official at one of the mines for which he had been inspecting.⁵⁸¹

This movement of inspectors to and from industry was also acknowledged by current and former chief inspectors of coal mines Mr Russell Albury and Mr Andrew Clough. In response to concerns about possible conflicts of interest arising from these movements, Mr Clough explained:

... as mining is a fairly specialist area, industry is the pool where inspectors are drawn from. There is a strong connection between the inspectorate and industry by virtue of the fact that that is the training ground where inspectors come from. The other point I would make about safety is that, if you are serious about safety and it is a core value, it does not really matter whether you are with a regulator or whether you are with private industry because the objective is to make sure that coalmine workers all go home safe. Personally I do not see a conflict.⁵⁸²

DNRM Director-General Mr James Purtill stated:

I can understand the line of enquiry. I think it is always a very, very delicate balance between having people who do not know anything about an industry and those where you may have concern that there is capture. The issue is alive and not just for this but for any regulatory function of government across any sector.⁵⁸³

⁵⁷⁷ Report of the Queensland Ombudsman, *The Regulation of Mine Safety in Queensland: A review of the Queensland Mines Inspectorate*, Queensland Ombudsman, June 2008, p 123.

⁵⁷⁸ Senate Select Committee on Health, *Fifth interim report*, p 47.

⁵⁷⁹ Senate Select Committee on Health, *Fifth interim report*, p 47.

⁵⁸⁰ Senate Select Committee on Health, *Fifth interim report*, p 74.

⁵⁸¹ Mr Jason Meikle, private capacity, public briefing transcript, Moranbah, 23 November 2016, p 21.

⁵⁸² Public hearing transcript, Brisbane, 3 March 2017, p 4.

⁵⁸³ Public briefing transcript, Brisbane, 14 October 2016, p 16.

DNRM advised that the Mines Inspectorate provides training to inspectors to ensure awareness and mitigate the risk of regulatory capture, as part of an ongoing program for continuous professional development:

*In addition to training for technical skills, inspectors are required to undertake code of conduct, ethical decision making and ethical conduct training. The courses dealing with ethical conduct and decision making are provided by the Queensland Ombudsman.*⁵⁸⁴

In addition, the committee was advised that the Inspectorate has a policy that individuals recruited from industry are not permitted to inspect the mine at which they were most recently employed for a period of at least six months.⁵⁸⁵ Further, inspectors can be rotated throughout different regional areas, and:

*... we have, of course, peer related work practices to ensure that people are not working, if you like, in complete isolation with a particular operator, for example.*⁵⁸⁶

The committee understands that many of these measures were implemented or enhanced following a 2008 review of the Mines Inspectorate by the Queensland Ombudsman, which recommended changes including the establishment of the office of the Commissioner for Mine Safety and Health; further training; and a suite of other administrative changes to ensure greater consistency and transparency in relation to compliance actions.⁵⁸⁷

That review similarly did not reveal any evidence that the Mines Inspectorate was inappropriately influenced by the mining industry in the performance of its functions, but noted:

*... previous investigations I have conducted, as well as academic studies of regulatory capture, indicate strongly that the perception of regulatory capture can, in itself, significantly detract from a regulator's effectiveness, including by prejudicing its reputation.*⁵⁸⁸

The committee notes that the QRC and other operators strongly refuted suggestions of regulatory capture of the inspectorate by industry.⁵⁸⁹ However, these submitters were generally supportive of the provision of further training to inspectors regarding their duties, as per the Senate Committee recommendations.

The committee encourages DNRM to maintain its commitment in this regard.

Key finding

There is no evidence that regulatory capture has impacted upon the inspection or compliance activities of the mines inspectorate in relation to respirable coal mine dust. However, current integrity policies of the inspectorate should be enshrined in regulation so that mine workers and the public may have greater faith in the independence of the Mines Inspectorate.

⁵⁸⁴ DNRM, submission 35, p 82.

⁵⁸⁵ Public briefing transcript, Brisbane, 14 October 2016, p 16.

⁵⁸⁶ DNRM, submission 35, p 82.

⁵⁸⁷ Report of the Queensland Ombudsman, The Regulation of Mine Safety in Queensland: A review of the Queensland Mines Inspectorate, Queensland Ombudsman, June 2008.

⁵⁸⁸ Report of the Queensland Ombudsman, The Regulation of Mine Safety in Queensland: A review of the Queensland Mines Inspectorate, Queensland Ombudsman, June 2008, p 93.

⁵⁸⁹ QRC, submission 18, p 35; Peabody Energy, submission 22, p 6.

Recommendation 32

Mines inspectors should be prohibited for a limited period – perhaps six months – from inspecting mines at which they worked within the past two years.

Regulation should prohibit a person from being appointed to a statutory role at a mine (e.g. SSE, Underground Mine Manager, OCE) within six months of the person having conducted inspection activities as an inspector at that mine.

4.5.5 Training and education of mines inspectors

The Mines Inspectorate's role is to ensure that acceptable safety and health standards are established and practiced within the mining and quarrying industries.

Appointed inspectors possess a range of vocational and tertiary qualifications, dependent on the inspectorate's need at the time they were recruited. Qualifications held by inspectors include: first or second class certificates of competency, the underground mine managers certificate, OCE certificates, mining engineering degrees, electrical engineering degrees or diplomas, mechanical engineering degrees or diplomas, post graduate studies, and professional accreditation in occupational hygiene and ergonomics. To ensure inspectors develop their skills and understanding of the issues facing the industry, an ongoing program of continuous professional development is undertaken. During 2015-16, around 40 different training courses were delivered to inspectors.⁵⁹⁰

During the committee's travel to the USA, the committee delegation learned about the recruitment, education and training of Authorised Representatives (mine safety and health inspectors) in the USA. The National Mine Health and Safety Academy (Academy), in Beaver, West Virginia, is the world's largest institution devoted to health and safety in mining. It is a central training facility for federal mine safety and health inspectors, mine safety professionals, other government agencies, and the mining industry.

The Academy is led by the Superintendent of the Academy and consists of five major units:

- Department of Instructional Services
- Department of Mining Technology
- Department of Instructional Materials
- Facilities Maintenance Branch, and
- Printing and Training Materials Distribution

Entry to the Academy is open to anyone with five years' experience in the mining industry. The Academy program is an intensive residential education and training course, run over eight months. On completion of the program, inspectors become Authorised Representatives of the US Secretary of Labor, with statutory powers under the Federal Code.

Once appointed, Authorised Representatives are generally long-term mines inspectors and the committee delegation was advised that there is little movement between the role of Authorised Representative and positions within industry as a mine operator officials. This suggests the Academy program, coupled with a dedicated career path for inspectors, may be a useful and effective tool in avoiding regulatory capture.

It was of great interest to the committee delegation to learn that the Academy accepts candidates from international mining regulators and had trained students from Peru, China, Ukraine and Columbia. The Superintendent was not aware of any Queensland mine inspectors having undertaken

⁵⁹⁰ DNRM, submission 35, p 11.

training at the Academy, although he did recall visits from senior officials of the Mine Inspectorate and DNRM over the years.

Recommendation 33

The Mines Inspectorate should consider making training and education at the National Mine Health and Safety Academy in the USA available to current or future mines inspectors.

4.5.6 Standards and guidelines for compliance

On the establishment of Queensland's risk-based legislation, it was widely acknowledged that recognised standards and guidelines would be crucial to bringing certainty and clarity to operators around how they may go about achieving an acceptable level of risk. Submitters to this inquiry, similarly, noted the importance of providing such guidance to ensure operators have a clear understanding of what is expected of them:

You have to have a standard at least. We have TARPs [trigger action response plans] but everyone has to be on the same page. [Otherwise there] is complacency.⁵⁹¹

If you have a framework such as that, you should have minimum guidelines or expectations set on what is a minimum standard to be met based on industry research.⁵⁹²

However, the committee notes that it is only in the past few months – some 15 years after the introduction of the legislation – that recognised standards for the monitoring and control of respirable dust have been implemented.

The committee's inquiry has found that a lack of trust and cooperation between tripartite parties has significantly impeded progress towards improved safety and health actions in a range of areas (see further discussion in 5.12.1).

This experience stands in stark contrast to collaborative industry efforts in NSW, where cross-industry bodies have been recognised for their effective information sharing and coordinated action on industry issues.

As noted by Gunningham and Sinclair (2008):

...the communicative interactions that occur between all involved in the regulatory 'space' can be the basis of coordinated action [or] important sites of conflict and contestation. Unsurprisingly, a constructive relationship or conversation usually generates constructive outcomes, and vice versa...⁵⁹³

Scope for improved cross-industry co-ordination and leadership on safety and health is discussed further at chapter 4.5.9.

4.5.7 Proactive education and engagement

A central component of a regulator's compliance role is to educate and provide guidance to the regulated industry as to their legal requirements and factors impinging on them. Within the context of operators' obligations under legislative risk management frameworks, this extends to the circulation of information about safety and health risks and best practice approaches to evaluate and address

⁵⁹¹ Mr Joe Barber, Oaky North Mine, public hearing transcript, Tieri, 14 December 2016, p 6.

⁵⁹² Mr Johannes Holtzhausen, President, Mine Ventilation Society of Australia, public hearing transcript, Brisbane, 1 February 2017, pp 38-39.

⁵⁹³ Neil Gunningham and Darren Sinclair, *Regulation and the Role of Trust: Reflections from the Mining Industry*, National Centre for Occupational Health and Safety Regulation, Working Paper 59, October 2008, p 4.

them. In Queensland, a number of DNRM actors and agencies play a role in such 'awareness raising' activities, though the Commissioner and the Mines Inspectorate take the lead in this regard.

The QRC noted in its submission that while the DNRM website lists over 470 mining safety alerts, bulletins and significant incident reports released over the last 10 years:

... An audit of these documents has shown that ten are in some way related to respiratory health. Most of the earlier bulletins relate to hazardous chemicals and gases, however Mines Safety Bulletin no. 88 of 23 February 2010 dealt with the management of dust that contains crystalline silica. Respirable crystalline silica can cause silicosis, which is another form of pneumoconiosis involving scarring of the lungs, and an irreversible, progressive and potentially fatal condition.⁵⁹⁴

Further, the committee notes that when CWP was first re-identified, just one of the 10 safety alerts, three safety bulletins and two guidance notes published by the department in 2015-16 related to elevated dust levels – 'Safety bulletin 151 Preventing dust-related lung diseases', issued on 30 October 2015.⁵⁹⁵

The QRC submitted that this was the only comprehensive notification on the matter, noting that some earlier publications which flagged concerns about respirable dust risks and the adequacy of dust controls and monitoring – including the 2010 Self-Assessment report – do not appear to have been widely publicised or disseminated.⁵⁹⁶

The involvement of SIMTARS in occupational health education at mine sites across the state, similarly, appears to have dwindled until recently. The committee heard:

Mr Wynn: *I believe that Simtars still has a very good presence around the gas chromatographs and the gas monitoring. They still are present within our operation, certainly, and we have contact with them in regard to that.*

CHAIR: *But not about health and dust?*

...

Mr Wynn: *The only time I saw Simtars on site in regard to health was I recall them doing the personal monitoring of coalmine workers in the early days—2003 when I started as a graduate.*

Mr SPRINGBORG: *Nothing since then?*

Mr Wynn: *Not that I recall, no.⁵⁹⁷*

Mr COSTIGAN: *Would anyone else like to pass comment on Simtars and whether you have confidence in Simtars?*

Mr Nicholls: *Mr Costigan, I would rather say not lost confidence, more lost contact. They have not been a visible resource that we have used. I am really pleased to see that they are actively out there now as per recognised standard 14, which is for the monitoring of respirable dust. They are doing the training for it. I am really pleased to see that they are, if you like, re-engaging.*

...

CHAIR: *When was the last time that Simtars has been out and visited your mines? Can you remember?*

⁵⁹⁴ QRC, submission 18, p 16.

⁵⁹⁵ DNRM, response to question taken on notice no. 19, 2 November 2016.

⁵⁹⁶ RC, submission 18, p 16.

⁵⁹⁷ Public hearing transcript, Brisbane, 1 March 2017, pp 33-34.

Mr Nicholls *As I cannot remember, we would have to say that it has been some time.*⁵⁹⁸

As noted at chapter 4.3.7, was established primarily to provide for the testing and certification of equipment, for accident and emergency response, and for the investigation of accidents or identified safety and health issues.⁵⁹⁹ Within this remit, the focus on occupational health has been limited, and somewhat dependent on funding contributions from external bodies like ACARP, which can dictate research funding priorities. In this regard, the committee was made aware of a number instances in which occupational health research proposals were rejected by funding bodies.⁶⁰⁰

The committee understands that in 2006, a proposal was submitted to establish a mine safety and health centre of excellence at SIMTARS, which was to include research facilities for diesel particulate matter and nanoparticles. Former Commissioner for Mine Safety and Health Mr Paul Harrison advised the committee that following a 2007 visit to NIOSH in the USA, a rough proposal was developed to set up a longwall dust simulation facility in Queensland similar to one NIOSH has at its Pittsburgh facility. However, this proposal ultimately was not pursued, given that a similar facility had been included in the proposal for a mine safety and health centre of excellence, which was rejected.⁶⁰¹

Mr Harrison submitted that Queensland would benefit from the establishment of an institution closer in form and structure to NIOSH than the current SIMTARS model, or from closer ties to NIOSH; noting that the organisation is much larger and better resourced and has a more singular research focus, as it does not engage in any commercial or consulting work.⁶⁰²

Mr Harrison: *It is a different model completely. The Simtars model is much more like the Health and Safety Laboratory model in the UK, where the HSL runs under the Health and Safety Executive. NIOSH is fully funded. Their operating funds are significantly more than Simtars. Their staffing levels are significantly higher. They have a very large and impressive facility, I am sure you would agree, at Pittsburgh. They operate an underground mine—not operate, but they own a licensed authorised underground mine with a mine manager and so forth to do test work. They have a wide range of expertise that Simtars does not have. They have sociologists, they have psychologists, they have—*

CHAIR: *Epidemiologists.*

Mr Harrison: *Epidemiologists. They have a whole range of expertise that Simtars does not have and would find very difficult to obtain...*

*We are looking across the Pacific to the US for help with the coal workers' pneumoconiosis issue because we have lost the expertise here for that. One of the reasons Simtars got involved in a relationship with NIOSH in the mid-2000s was that they had a mine disaster at the Sago underground mine in 2006. They thought they had mine fires and explosions under control and had let their expertise die in that area. They looked across the Pacific in this direction, to Australia, to help them with that. I guess it is hands across the water in both directions.*⁶⁰³

⁵⁹⁸ Public hearing transcript, Brisbane, 1 March 2017, p 33.

⁵⁹⁹ Cabinet decision 22 March 1982, provided by DNRM via correspondence, 28 March 2017.

⁶⁰⁰ Mr Paul Harrison, correspondence via email, 24 March 2017.

⁶⁰¹ Mr Paul Harrison, correspondence via email, 24 March 2017.

⁶⁰² Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 21.

⁶⁰³ Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 21.

The committee notes that Queensland's chief scientist has similarly noted the potential benefits of such strategic alliances and exchanges of information. In the 2014 final report of science capability audit of SIMTARS and Geological Services Queensland, the chief scientist recommended:

*In the pursuit of excellence in science services delivery and advice, and to improve productivity and competitiveness, further develop strategic alliances between DNRM's groups, universities and the private sector to establish and/or enhance existing research institute(s) through collaborative alliances.*⁶⁰⁴

4.5.8 Auditing of dust exposure monitoring

Professor David Cliff submitted to the inquiry that dust monitoring, like 'any management process' needs an effective audit and oversight process.⁶⁰⁵

While the establishment of a central dust database has been identified as having the potential to significantly increase transparency and accountability in relation to industry dust management, submitters emphasised the need for mining inspectors to carry out some degree of quality assurance of dust results. As Professor Cliff noted:

*The department in Queensland, when it had extra resources, did have their own dust testing officers, who did do some check auditing. There is a danger, I think, when it is entirely left up to the companies to do the monitoring, unless there is sufficient oversight by a third party, that that monitoring may not be as effective as it could be...*⁶⁰⁶

Noting that inspectors have powers of entry, the scope for unannounced testing – as is being explored by Coal Services in NSW – might more effectively address concerns that companies may 'schedule' or in some other way reduce the degree of independence of monitoring processes.⁶⁰⁷

The committee notes that the benefits of such scrutiny are clear:

*Other things I have picked up in inspections are: when I look at the sampling results occasionally I am not happy at the cross-section of people who have been sampled. From my experience there are areas in open-cut mines where you could assume there is higher potential for dust, such as in a drill and blast area, working around stockpiles, working in a laboratory, those types of areas. I have picked up in some cases where the sampling has not included, say, someone in the blast crew or someone on overburden drills and it has all been captured in mine record entries and mines followed up on it. Another issue I picked up was a report given by a sampling company did not identify the pieces of equipment the samples were taken from so that did not allow the mine to go and investigate the individual samples. Once again I put that in a mine record entry and got a commitment from the site senior executive for that to be changed and it was. They got a new supplier to do their sampling. It was addressed.*⁶⁰⁸

In this respect, the CFMEU recommended:

*.. State coal mine safety regulators take responsibility for dust sampling in coal mines, or at least develop the capacity to supervise dust sampling in coal mines including regular spot-checks to ensure compliance. All dust monitoring must be independent of the coal operator.*⁶⁰⁹

⁶⁰⁴ Chief Scientist, *Final Report; Science Capability Audit: Geological Services Queensland & Safety in Mines Testing and Research Station*, November 2014, p 7, 31, <http://www.chiefscientist.qld.gov.au/images/documents/chiefscientist/pubs/reviews-audits/dnrm-science-audit.pdf>

⁶⁰⁵ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁶⁰⁶ Professor David Cliff, private capacity, public hearing transcript, Brisbane, 11 November 2016, p 42.

⁶⁰⁷ CFMEU, submission 27, p 10.

⁶⁰⁸ Ms Cres Bulger, private capacity, public hearing transcript, Mackay, 25 November 2016, p 12.

⁶⁰⁹ CFMEU, submission 27, p 3.

The importance of accompanied monitoring was also highlighted to the committee, as a means by which to further assure the integrity of results. The committee heard from Coal Services in NSW:

*.....we go down there with them... Not only does it provide integrity of results and we know that the guys are actually wearing those monitors and that they are in the breathing zone and the result that you do get is from the breathing zone of than mine worker; it allows us to give quality observations as well. When we are reporting, a lot of it is around the observations and the exceedance contributing factors. If there is an issue, we can provide some clarity around that rather than, for example, you may have a system where a monitoring technician would turn up at the start of a shift, put the monitors on and then take off and then at the end of the shift he comes and grabs them again. Maybe at best that guy might have filled out some sort of field sheet to give some indication of what he was doing on that day. For the mine, all that is is a number and not a very good number at that.*⁶¹⁰

As noted at 3.5.2, the Mines Inspectorate commenced an audit of monitoring and reporting in November 2016.⁶¹¹ The committee considers that such issues must necessarily be examined in the course of reviewing the adequacy of inspection activities in relation to respirable dust.

The committee also notes that in NSW, Coal Services engages both internal and external auditors to review work practices among its Coal Mine Technical Services staff and other organisational units.⁶¹² Given eight years have passed since the publication of the Ombudsman's 2008 review of the inspectorate, the committee considers that further external review would be timely. The Auditor-General may have a role to play in this regard.

Key findings

The extent to which the Mines Inspectorate currently undertakes atmospheric dust monitoring inspections and audits the dust sampling results obtained by mine operators is inadequate to ensure public and worker confidence in the integrity of that system.

The use of accompanied inspections by inspectors with appropriate qualifications and experience in occupational hygiene significantly improves the quality and reliability of dust exposure sampling data and is an essential part of the inspection regime.

Recommendation 34

The Mines Inspectorate should significantly increase the frequency and extent of its atmospheric dust monitoring inspections, including by undertaking accompanied inspections where inspectors with appropriate qualifications and experience in occupational hygiene observe coal workers during the period of atmospheric monitoring.

4.5.9 Central reporting of exposures and a Standing Dust Committee

As noted in other sections of this report, reporting of industry dust exposure results has generally been infrequent. Without any systematic reporting requirements, results have generally only been collated as part of retrospective reviews by key officers of DNRM.

A wide range of submitters highlighted that the establishment of a centralised dust database is essential for ensuring that dust exposure data can be 'routinely interrogated and analysed, and the

⁶¹⁰ Private briefing, Sydney, 23 February 2017.

⁶¹¹ DNRM, response to question taken on notice during a hearing, 2 November 2016, no. 8.

⁶¹² Coal Services Pty Ltd, *Annual Report 2016*, 2016, p 58.

results reported to all industry stakeholders'.⁶¹³ The AIOH submitted that 'this assists all stakeholders to focus on areas that require improvement'.⁶¹⁴

The committee considers that access to the database must be assured for mines inspectors, unions and ISHRs, the Queensland Resources Council (QRC) and ISHRS, all mine operators, and for researchers, subject to appropriate approval processes.

This is important, as not only is the information empowering for mines inspectors and other statutory officials discharging oversight responsibilities; but it can also serve as a basis for industry collaboration and discussion regarding effective dust mitigation techniques and ongoing challenges or areas for attention.

During the inquiry, submitters routinely commended the example of NSW's Standing Dust Committee, which has provided long-running 'strategic monitoring of dust levels' and supported industry dialogue and knowledge-sharing on emerging research and methods of dust suppression.⁶¹⁵ This cross industry group comprises representatives including colliery proprietors, mining unions, industry specialists, government departments and Coal Services medical and engineering personnel, and is responsible for:

- monitoring the results of respirable dust sampling
- evaluating dust hazards
- researching improved dust control methods
- disseminating information, and
- educating coal mine personnel in matters related to dust control.

The committee notes that this model, and its use of third party or peer review, has been recognised as a 'successful strategy to support conformance'.⁶¹⁶

Key finding

The establishment of a Standing Dust Committee in Queensland is a critical reform to ensure ongoing industry engagement and vigilance in addressing respirable dust issues.

Recommendation 35

A comprehensive database of dust monitoring results should be established and maintained by the Mine Safety and Health Authority.

Recommendation 36

A Standing Dust Committee, similar to that established in New South Wales, should be established to periodically review atmospheric dust monitoring results and trends and report to the Board of the Mine Safety and Health Authority.

The committee should be chaired by the Commissioner of Mine Safety and Health or a delegate, and include representatives of underground mine operators; above-ground coal mine operators; metalliferous mine operators; coal ports; unions; and persons independent of the current mining industry.

⁶¹³ AIOH, submission 14, p 7.

⁶¹⁴ AIOH, submission 14, p 7.

⁶¹⁵ Coal Services Pty Ltd, *Background – Standing Dust Committee*, <http://www.coalservices.com.au/standingdustbackground.aspx>

⁶¹⁶ AIOH, submission 14, p 6

Recommendation 37

The Standing Dust Committee should have power to refer particular dust exceedances or trends in dust monitoring results to the Commissioner for Mine Safety and Health for consideration as to whether further investigation or enforcement action, including prosecution, is required.

5. Health arrangements for coal workers

*We are big, tough, hard-as-nails men.*⁶¹⁷

*Since being diagnosed, the difficulties when dealing with the relevant departments have taken a toll on all of us [coal mine workers diagnosed with CWP] emotionally, physically and financially. From the initial diagnosis from the radiologists, the NMAs and the thoracic specialists we have all received conflicting assessments, inconsistent treatment and future health prognoses and differing advice regarding future employment.*⁶¹⁸

*I am suffering now with pains in my chest all the time and pressure because the lymph gland here is fighting to support the lung. That is what they said and I have got to put up with it and I can't. I can't do a thing at home. I get exhausted. Even the steps at the front of the building this morning, I was exhausted just walking up them. That is how bad I am with it.*⁶¹⁹

*It has been an absolute nightmare. We started out so hopeful that we could find out what was wrong with Chris. Each time Chris gets pneumonia... he coughs up blood. It starts in the early hours of the morning. He wakes up shaking. He has what they call rigors. He is cold and shaking and shivering but it is a fever. The only way I can fix that is I have two doonas at the ready and two hot-water bottles at the ready. The last thing I do every night before I go to bed is I boil the jug, so it is still just warm. I run out, turn on the kettle, throw the two hot-water bottles on to the bench. I race back and put two doonas over the top of the doona that Chris already has on. The only way then to try to stop him from shaking is I have to literally lie over the top of the doonas and crunch it all in. I go out when the little buzzer goes off and fill up the water bottles. I put one down near his feet and he hangs on to the other one. We could be like that for an hour until he stops shaking. Then the blood starts. I have the medication at the ready from my doctor at all times which I keep in the cupboard—I always have spares—so I start him off on medication. Then when daylight hits and I can ring the doctors I take him to the doctors and it gets confirmed... We bring him home and he is very, very sick for anything up to two weeks.*⁶²⁰

5.1 Introduction

Under the CMSHA and CMSHR, all Queensland coal mine workers are required to undergo a health scheme medical assessment prior to the start of their employment at a coal mine, and then at least once every five years during their employment.

The health scheme was established in 1983 by the then Queensland Coal Board to protect the health of Queensland coal miners by requiring that all coal mine workers undergo periodic health assessments.⁶²¹ The health scheme is prescribed under part 2 of division 6 of the CMSHR.

⁶¹⁷ Mr Gavin Adams, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 8.

⁶¹⁸ Mr Stephen Mellor, private capacity, public hearing transcript, Brisbane, 15 March 2017, p 43.

⁶¹⁹ Mr Percy Verrall, private capacity, public hearing transcript, Brisbane, 15 March 2017, p 58.

⁶²⁰ Mrs Sue Byron, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 12.

⁶²¹ During the course of this inquiry, many retired and more experienced coal mine workers referred to health assessments as 'Coal Board medicals'.

In April 1984, the Queensland Coal Board published a report highlighting 75 cases or suspected cases of CWP among Queensland coal miners.⁶²² In the intervening years to 2015, there were no cases of CWP reported in Queensland, with the incidence of the disease appearing to all but vanish. During this period, those tasked with monitoring the health of Queensland coal workers were not actively looking for the disease, and in many cases were insufficiently informed and ill-equipped to enable its diagnosis.

*I had the naïve belief that there was in fact some form of long-term health maintenance and monitoring of the mine worker, but obviously ... this was not the case.*⁶²³

Tragically, miners' concerns over their respiratory health were raised but met with denial, as worker Stuart McConnell testified:

*The attitude towards [CWP] was that it was eradicated to the point where you would go to the doctor and try to talk to the doctor about what you are coughing up and they would say, 'Don't worry about that.' In my opinion, if you are not looking for something there is no way you are going to find it. I could take you out into the scrub and say, 'Let's go looking for ants.' If you are looking up in the air, you are never going to find them. You have to get your head down in the grass and actually look for them, and that has not been happening. It had not happened for the 20 years plus that I was in the mines.*⁶²⁴

5.1.1 Historical context

In December 1982, the then Queensland Coal Board authorised the development of a coal miners' health scheme. The scheme commenced in 1983 when all current coal miners were required to participate in a one-off chest x-ray and lung function test survey, with participation voluntary for retired miners. A total of 7,784 Queensland coal miners were examined. The report of that study, authored by Drs Rathus and Abrahams⁶²⁵ revealed 75 cases of pneumoconiosis or suspected pneumoconiosis and other respiratory abnormalities. The report recommended the establishment of a permanent health scheme for coal miners and prompted the second Health Order.

Under the second Health Order, all new entrants to the coal mining industry were required to undergo chest x-ray and lung function tests to satisfy a pre-employment medical standard. A further Order was issued by the Queensland Coal Board in 1993 that provided for both pre-employment and ongoing health surveillance, periodically every five years. However, for periodic assessments after the pre-employment screening, a chest x-ray was required only when the employer advised that the coal mine worker was 'at risk from dust exposure'.

The Queensland coal mining industry and the health monitoring of its workforce was managed by the Queensland Coal Board until its abolition in 1997-98. Responsibility for administering the health scheme was then assigned to DNRM.⁶²⁶ The CMSHA and CMSHR came in to force in 2001, and continued the requirements for pre-employment screening and periodic review of coal mine workers' health under the health scheme.

⁶²² E.M. Rathus and E.W. Abrahams, *Report on the Queensland Coal Board Coal Miners' Health Scheme: chest x-ray and emphysema check survey of colliery employees in Queensland*, The Queensland Coal Board, May 1984, p 6.

⁶²³ Dr Ewen McPhee, Nominated Medical Advisor and former President, Rural Doctors Association of Australia, public hearing transcript, Emerald, 15 November 2016, p 5.

⁶²⁴ Mr Stuart Connell, private capacity, public hearing transcript, Moranbah, 22 November 2016, p 2.

⁶²⁵ E.M. Rathus and E.W. Abrahams, *Report on the Queensland Coal Board Coal Miners' Health Scheme: chest x-ray and emphysema check survey of colliery employees in Queensland*, The Queensland Coal Board, May 1984.

⁶²⁶ DNRM, submission 35, p.24.

Between 2002 and 2003, a tripartite working group was established, reporting to a steering committee of departmental executives, to investigate and make recommendations on future directions of health surveillance of mine workers.

This resulted in the preparation of a report⁶²⁷ which made various recommendations about the health scheme and the HSU. This report is discussed further below.

5.1.2 Overview of the current Queensland Coal Mine Workers' Health Scheme

Currently all Queensland coal mine workers are required to undergo a health assessment by an NMA prior to the commencement of their employment at a coal mine.

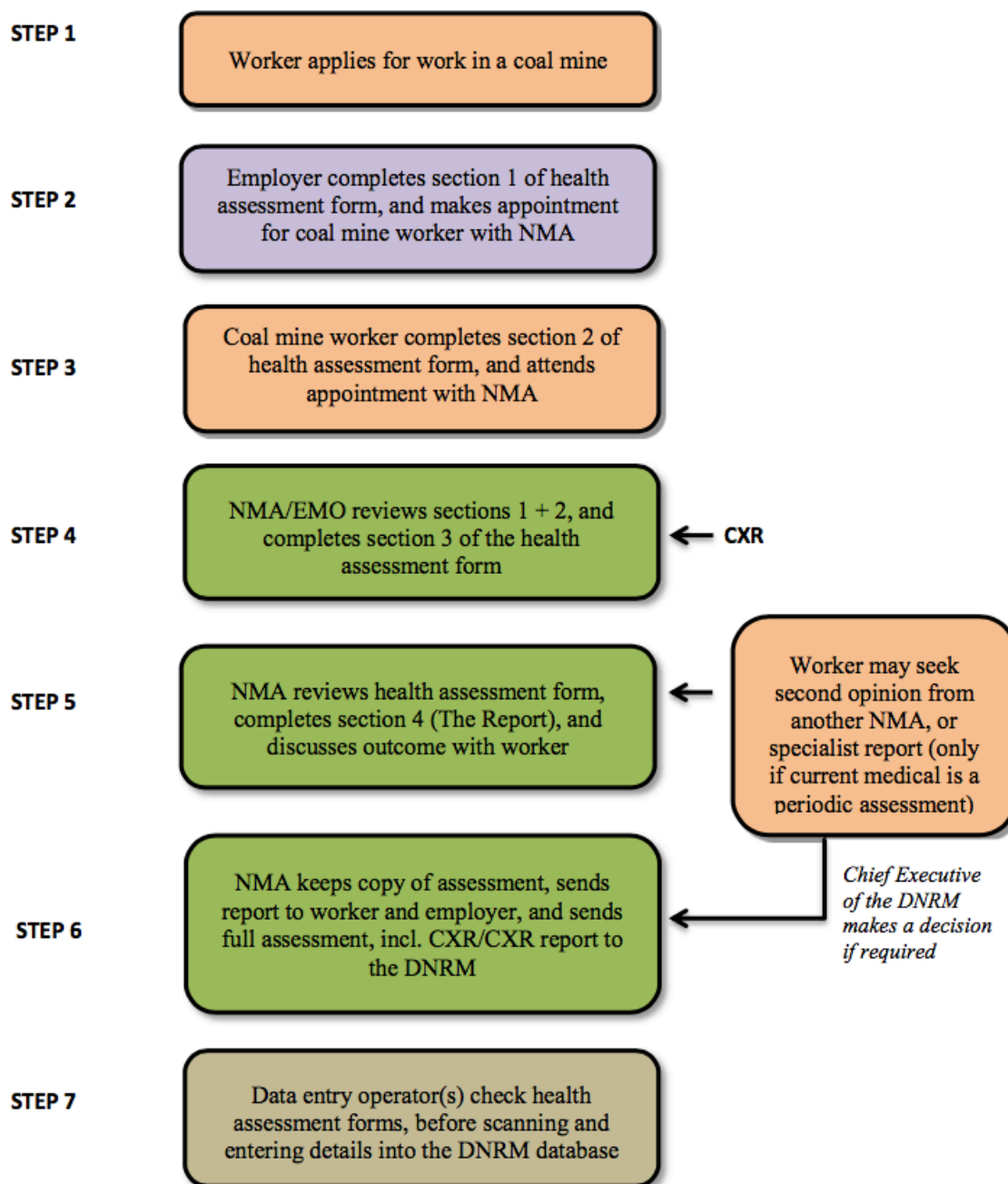
A senior DNRM executive described the health assessment process in these terms:

There is a health assessment form, which has four sections to it. The employer has to fill out a section and the employee has to fill out a section. The appointment is made with the NMA. The individual goes to the NMA and has his assessment and that will possibly involve chest x-ray, spirometry et cetera. That examination can either be done directly by an NMA or supervised by an NMA—in other words, [by] another GP—but the NMA has to review the report that comes from that GP. Once the NMA is satisfied with the medical and the report, he will send the form forward to the employer and have a discussion with the employee if there are any concerns. That is basically it.⁶²⁸

⁶²⁷ *Review of the Health Surveillance Unit*, 2003, attached to DNMR submission 35.

⁶²⁸ Mr Russell Albury, Acting Chief Inspector of Mines, Mines Inspectorate, DNRM, public briefing transcript, Brisbane, 14 October 2016, p 9.

Figure 7 Flowchart of the process of the current Coal Mine Workers’ Health Scheme



Source: Monash Review, p 29.

5.1.3 Health assessment form and respirable health survey

The health assessment form remained largely unchanged from 1993 to 2016. It required the input of the employer, the coal mine worker, the examining medical officer (EMO) and the NMA. Their roles are summarised below.

[A copy of the current Coal Mine Workers’ Health Scheme Health Assessment Form is Appendix H to this report].

Employer:

- arrange health assessment of coal mine workers

- complete Section 1, and
- meet the cost of the assessment.

Coal mine worker:

- complete Section 2
- answer a series of questions about work history and health, and
- request the NMA provide a copy of the report if necessary.

EMO or NMA:

- review Section 2
- complete Section 3
- take advice from the employer on the requirements of a chest x-ray, and
- if applicable, forward the form to the NMA.

NMA:

- review Sections 1, 2 and 3 and determine whether the assessment provides adequate information to make a report on the fitness for duty of the coal mine worker
- complete Section 4, the report on the health assessment⁶²⁹
- provide a copy of the report to the coal mine worker and the employer
- provide a copy of the assessment and the report to DNRM⁶³⁰
- maintain secure records of the assessment, report and associated documentation.⁶³¹

5.1.4 Chest x-rays

Prior to 2017, underground coal mine workers were required to have a health assessment at least once every five years during their employment, and open-cut miners a health assessment every 10 years.⁶³² As part of that periodic health assessment process, chest x-rays were routinely ordered for underground workers, unless they were classified by their employer as working in a 'low risk' occupational group. Above-ground coal mine workers were not required to undergo chest x-ray examination as part of the health assessment process, regardless of their potential occupational exposure to respirable dust.

From 1 January 2017, chest x-ray examinations as part of the health assessment must occur for underground coal mine workers at least once every five years, and for above-ground coal mine workers, an x-ray examination is required at least once every 10 years.⁶³³

Prior to these recent regulatory changes, there was no statutory or regulatory requirement for coal mine workers to undergo periodic chest x-ray examinations as part of the health assessment process. It was left to the NMA performing the health assessment to order a chest x-ray only if the worker was considered to be at risk of dust exposure, based on the classification by the employer of the occupational group of the worker.

⁶²⁹ CMSHR, s 46.

⁶³⁰ CMSHR, s 50.

⁶³¹ DNRM, response to request for additional information 14 October 2016, 28 October 2016.

⁶³² Queensland Government, <https://www.business.qld.gov.au/industry/mining/safety-health/mining-safety-health/medicals/pneumoconiosis/regulatory-changes>

⁶³³ DNRM, submission 35, p 26.

The committee heard that this section of the form often was not completed by the employer at the time of the worker's initial health assessment, so the NMA was not aware of the worker's potential risk of dust exposure when forming an opinion as to whether or not a chest x-ray was required.

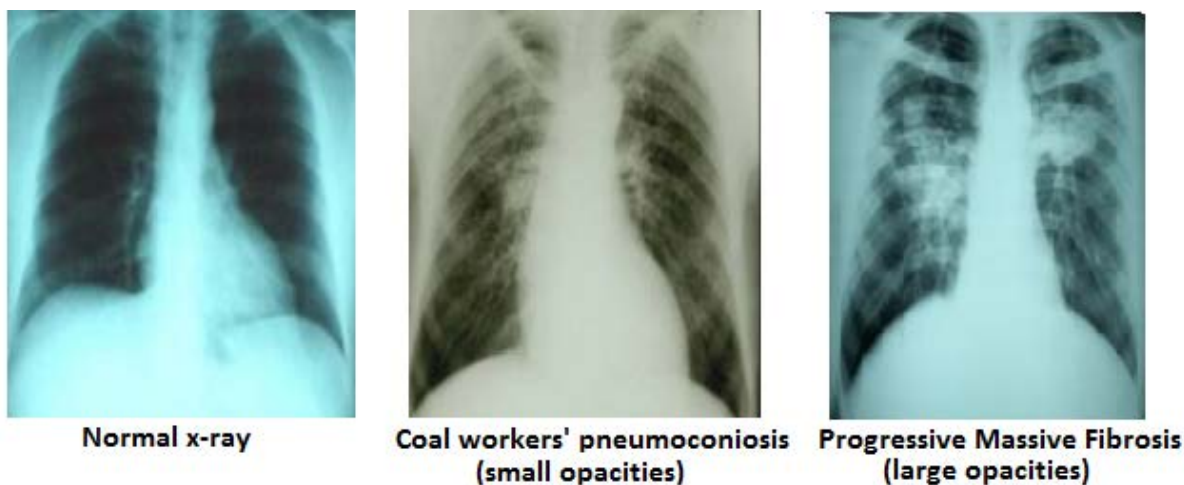
The committee heard from a number of current and former miners that x-rays were taken infrequently. This was especially the case for workers at open-cut mines.⁶³⁴ Mr Paul Head, a former open-cut mine worker diagnosed with CWP, gave evidence that he underwent a health assessment every five years while he was working. However, he 'only had two [x-rays] over the 30-odd years [he] was there'.⁶³⁵

The human respiratory system has its own cleansing mechanisms to filter inhaled air. Larger, inhalable dust particles are removed from the air by the hairs in the nose. Smaller particles are taken up by small microscopic hairs in the bronchial system, known as cilia. Particles caught by cilia are moistened by mucus and transported upward to the throat, where they are spat up or swallowed.⁶³⁶

Very fine, or respirable, particles remain in the inhaled air and travel through the bronchial tubes in the lungs until they reach the alveoli sacs. Here, a cleansing mechanism does occur: the particles are attacked by cells known as macrophages and, having engulfed them, they travel up to where the cilia take over to transmit the macrophages, containing the fine dust, to the throat.⁶³⁷

When the lungs are overloaded with respirable dust particles over long periods, the body's cleaning system breaks down. Respirable dust particles and macrophages build up in the lung tissue. This is often referred to as an interstitial response. Inflammation and fibrosis (or scarring) occurs in the alveoli.⁶³⁸ A chest x-ray may reveal fibrosis or small scars caused by the body's reaction to respirable coal mine dust.

Image 15 Examples of normal and abnormal chest x-rays



Source: USA Centre for Disease Control (NIOSH), 'Chest radiography', 2017, <https://www.cdc.gov/niosh/topics/chestradiography/ilo.html>

⁶³⁴ See, for example: Mr Paul Harwood, private capacity, public hearing transcript, Middlemount, 23 November 2016, p 9; Mr Michael Cocking, private capacity, public hearing transcript, Middlemount, 23 November 2016, p 15; Mr Michael Eastment, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 20; Mr Jason Meikle, private capacity, public hearing transcript, Moranbah, 23 November 2016, p 21; Mr Ken Ingrey, private capacity, public hearing transcript, Dysart, 23 November 2016, p 5.

⁶³⁵ Public hearing transcript, Mackay, 25 November 2016, p 40.

⁶³⁶ Emeritus Professor Odwyn Jones, submission 4, p 3.

⁶³⁷ Emeritus Professor Odwyn Jones, submission 4, p 3.

⁶³⁸ Emeritus Professor Odwyn Jones, submission 4, p 3.

Chest x-ray remains the most commonly used and least invasive tool for diagnosing CWP. However, the diagnostic process involves radiographic imaging, lung function testing (spirometry), consideration of the patient's personal and medical history and, importantly, thorough consideration of the patient's occupational history and exposure to coal mine dust.⁶³⁹

X-rays of pneumoconiosis-affected lungs may be classified according to the International Labour Office (ILO) Classification of Radiographs for Pneumoconiosis.⁶⁴⁰ This classification scheme is used to characterise opacities consistent with pneumoconiosis through the comparison of the chest radiograph under examination with standard radiographs issued by the ILO.⁶⁴¹

A radiologist compares a chest x-ray to the ILO comparable standards to indicate a gradation of severity in lung abnormalities. Abnormalities relate to the size and shape of nodules or opacities in the lung. Small opacities are described by their profusion (the number of opacities), affected zones of the lung, and their size and shape (rounded or irregular). Of these characteristics, the key item for the purpose of deciding whether pneumoconiosis is present is the profusion, which is rated on a 12-point scale. Digital radiographs from the worker are classified by comparison to the appropriate digital image from the ILO 2011 standards; analogue films are classified by comparison to the ILO 2000 analogue standards.⁶⁴²

The scale of ILO classification is illustrated below:

Figure 8 Scale of ILO classification

	Negative			Simple pneumoconiosis Increasing number of small abnormalities									Complicated pneumoconiosis Increasing size of large abnormalities		
Categories	0			1			2			3			A	B	C
Subcategories	0/-	0/0	0/1	1/0	1/1	1/2	2/1	2/2	2/3	3/2	3/3	3/+			

Source: DNRM, submission 35, p 8.

Currently there is no statutory or regulatory requirement in Queensland for chest x-rays taken for the purposes of coal mine workers' health assessments to be classified according to the ILO scale.

5.1.5 Spirometry

Spirometry is a common test used to assess how well a person's lungs work by measuring how much air can be inhaled, and how quickly it can be exhaled. It measures how effectively air can be moved in and out of the lungs. Spirometry is used as an aid to diagnose a range of respiratory conditions including CWP and CMDLD. Spirometry can also be used to distinguish between obstructive or restrictive patterns in lung disease.⁶⁴³

⁶³⁹ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 21. See also Thoracic Society and Lung Foundation, submission 6.

⁶⁴⁰ International Labour Office, Guidelines for the use of the ILO International Classification of Radiographs of Pneumoconioses, revised edition 2011, <http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_168260.pdf>

⁶⁴¹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 47.

⁶⁴² Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 47.

⁶⁴³ 'Spirometry', Lung Foundation, <http://lungfoundation.com.au/health-professionals/clinical-resources/copd/spirometry/>

The spirometry assessment measures airflow from the lungs. FEV₁, or forced expiratory volume in one second, is a measure of airflow limitation. FVC, or forced vital capacity, is a measure of the total lung volume.

The spirometry assessment will produce a ratio - FEV₁/FVC - as a measure of airway obstruction.⁶⁴⁴

This lung function assessment can identify respiratory disorders not visible on imaging and allow tracking of individual trajectories of lung decline.⁶⁴⁵

Image 16 Lung function assessment



Source: USA Center for Disease Control and Prevention (NIOSH), *OSHA – NIOSH Worker Info: Protect Yourself – Spirometry Breathing Test*, 2011-132.

Spirometry lung function testing has been a requirement of health assessments performed under the health scheme for all coal mine workers since its establishment.

Dr Cohen stressed the importance of spirometry and lung function testing:

*I think that spirometry and lung function testing is, if not the same, maybe even more important than chest imaging because spirometry and lung function is really what correlates with someone's impairment, whether or not they are short of breath.*⁶⁴⁶

The Monash Review found the majority of spirometry tests completed under the scheme were performed in GP clinics, with testing administered predominantly by registered nurses.⁶⁴⁷ The review also found a considerable proportion of spirometry tests were inadequately performed and inaccurately interpreted.⁶⁴⁸

Refer to 5.1.5 for discussion on spirometry training and equipment standards.

⁶⁴⁴ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 56.

⁶⁴⁵ GR Zosky et al, 'Coal workers' pneumoconiosis: an Australian perspective', *Medical Journal of Australia*, 204(1), 20 June 2016, p 415.

⁶⁴⁶ Public hearing transcript, Brisbane, 15 March 2017, p 7.

⁶⁴⁷ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 54.

⁶⁴⁸ Monash Centre for Occupational and Environmental Health, *Review*, 2016, pp 12-13.

5.1.6 Emphasis on fitness for work

Professor Malcolm Sim, who headed a review of the respiratory component of the health scheme in 2016, observed a significant fault in the scheme:

*While historically the scheme had a focus on the early detection of respiratory disease in coalminers, in recent years the purpose of the scheme had been lost and the scheme had become a fitness-for-work program instead of a medical surveillance scheme.*⁶⁴⁹

Dr David Smith, former Occupational Physician at DNRM, had recognised some years prior that the focus on 'fitness for work' would negatively impact on the respiratory health aspect of the scheme. In 2013 he sought amendment to the health scheme as part of the proposed RIS.⁶⁵⁰ He stated:

*The department does not see it as the role of the regulator to assess fitness for work. It is really the role of the employer to assess a worker's fitness to do the job, not a role of the regulator. We wanted to concentrate on that aspect and remove the fitness for work component, because most mines have a fitness-for-work assessment of their own that they fill out.*⁶⁵¹

5.2 History of the Coal Mine Workers' Health Scheme

CWP was considered endemic to coal mining throughout much of its history in Queensland.⁶⁵² The health scheme was originally designed to address the risk of pneumoconiosis, which had been identified as a significant problem prior to the 1980s.⁶⁵³ In 1949 Powell Duffryn Technical Services reported to the Queensland Government:

*It is now well known that the inhalation of excessive concentrations of certain types of dust of certain sizes gives rise to a group of diseases of the respiratory organs which are now collectively known ... as 'pneumoconiosis'.*⁶⁵⁴

Despite the known prevalence of pneumoconiosis among coal mine workers, the Queensland Government, through the auspices of the Queensland Coal Board, did not instigate an industry-wide health surveillance program of workers until the 1980s.

5.2.1 Coal Miners' Health Scheme 1982 to 1993

The health scheme was established in December 1982. The Queensland Coal Board made two orders in December 1982.⁶⁵⁵ Effective from 1 January 1983, the first order required new coal workers to meet a pre-entry medical standard.⁶⁵⁶

⁶⁴⁹ Professor Malcolm Sim, Director, Centre for Occupational and Environmental Health, Monash University, public hearing transcript, Brisbane, 9 November 2016, p 2.

⁶⁵⁰ Public hearing transcript, Brisbane, 30 November 2016 (morning), p 7. Refer to Appendix E for an outline of the RIS.

⁶⁵¹ Public hearing transcript, Brisbane, 30 November 2016 (morning), p 7.

⁶⁵² CFMEU, submission 27, p 3.

⁶⁵³ DNRM, Review of the Health Surveillance Unit, 2004, p 31.

⁶⁵⁴ Powell Duffryn Technical Services, Report to the Queensland Government by Powell Duffryn Technical Services Ltd on the Coal Industry of Queensland, 1949, p 88.

⁶⁵⁵ Under the Coal Industry (Control) Act 1948 (Qld).

⁶⁵⁶ Queensland Government Gazette, 11 December 1982, vol CCLXXI, no.81, pp 1659-1675.

At the same time, the Queensland Coal Board set up a program to survey, by chest x-ray and lung function test, all coal workers in Queensland.⁶⁵⁷ It appointed medical consultants Dr E.M. Rathus and Dr E.W. Abrahams to conduct a medical examination of all current coal mining employees in Queensland.⁶⁵⁸ The resultant report ('the Rathus and Abrahams report') on the scheme was published by the board in 1984.

The health scheme, in the years 1982 to 1993, operated with the following key features:

- Chest x-rays were required of new entrants to the industry prior to commencing work.
- New entrant assessment forms included a field for the medical examiner to record an ILO classification.
- Medical advisors were nominated by the mining company and approved by the Queensland Coal Board.⁶⁵⁹
- A periodic health assessment was not compulsory, however a health assessment could be done at any time if requested by the worker and the request was approved by the mine manager. A request for this type of examination could be made every five years.⁶⁶⁰

The Board administered the scheme by:

- defining the health assessment process and health assessment forms
- prescribing the qualifications and experience of medical practitioners and approved NMAs
- storing health assessment records and disclose personal records upon request of the worker
- sending chest x-rays exhibiting signs of abnormal lung function to the Queensland Department of Health for further investigation (no documentary evidence found of this practice occurring).⁶⁶¹

From evidence received from mineworkers of that era, ongoing medical examinations were not widely taken up by the mining industry. According to Mr Percy Verrall, retired miner and sufferer of CWP: 'I think I only ever had two [x-rays] when I started in the coalmines. They stopped doing that.'⁶⁶² Other retired miners gave similar evidence, stating that the medical assessments were either irregular or incomplete:

*They do a spirometry test. If it diminishes, the nominated medical advisor will note it, but you never got sent off for an x-ray, just for clarity. Going back to the mid-eighties, the culture then too was that you were there to cut coal... you went to work in what we perceived to be a safe industry.*⁶⁶³

⁶⁵⁷ Queensland Government Gazette, 11 December 1982, vol CCLXXI, no.81, pp 1676-1677; DNRM, response to question on notice 14 October 2016, *Chronology: Queensland coal mine workers' health scheme 1981 – 2016*, November 2016.

⁶⁵⁸ Queensland Government Gazette, 11 December 1982, vol CCLXXI, no.81, pp 1676-1677.

⁶⁵⁹ Queensland Government Gazette, 11 December 1982, vol CCLXXI, no.81, pp 1659-1675.

⁶⁶⁰ Order Coal Miners' Health Scheme pursuant to *Coal Industry (Control) Act 1948-1978 (Qld)*, s 6(a).

⁶⁶¹ DNRM, *High level overview of key elements within coal workers' health scheme from 1982-2015*, tabled paper, 4 November 2016, Ipswich public hearing.

⁶⁶² Public briefing transcript, Ipswich, 4 November 2016, p 2.

⁶⁶³ Mr Timothy White, CFMEU, public briefing transcript, Ipswich, 4 November 2016, p 6.

Some mining companies did organise regular chest x-rays. Mr Allan Berlin told of regular x-rays when he worked at the Box Flat mine prior to 1987:

*One day you would go to Brisbane to have the x-rays. Of course we never, ever got the results of those x-rays. You would just imagine that they were all clear because you did not see the results.*⁶⁶⁴

5.2.2 Coal Industry Employees' Health Scheme 1993 to 2001

The Coal Industry Employees' Health Scheme commenced on 1 May 1993.⁶⁶⁵ The health scheme covered both pre-employment and ongoing 'fitness for work', and also health surveillance monitoring of the workforce.

Key features of the scheme from 1993 included:

- A periodic health assessment was required at least every five years.
- Chest x-rays were required for new entrants to the industry prior to commencing work and every five years for existing underground workers.
- Forms included a field for the Queensland Coal Board to record an ILO classification.⁶⁶⁶
- Medical advisors were nominated by the mining company and approved by the Queensland Coal Board, and EMOs were instructed by the NMA to conduct a health assessment.
- A spirometry result of less than 70 per cent FEV₁/FVC was to be the trigger for reviewing employment duties.⁶⁶⁷

There was a requirement that underground workers undergo a health assessment at least every five years.⁶⁶⁸ Chest x-rays were not compulsory, except for those considered by a mine operator to be at increased risk. Retired miner Mr John Hempseed stated:

*I had x-rays at the start of it. When the Coal Board medicals came in the five years, yes, I had the first one. I possibly had the second one, but I do not remember having any more. I know that we asked for one once and the word came back that around the workshop we were not classed as in a dusty environment. They were going to give anybody who asked for one an x-ray, but there were a lot of people who asked and never, ever got them. They were told to go and get them at their own expense.*⁶⁶⁹

In this period and until 1998 the Coal Board continued to be responsible for:

- sending chest x-rays exhibiting signs of abnormal lung function to the Queensland Department of Health for further investigation (again, there is no evidence this ever happened)
- approving NMAs, and
- storing health assessment records.⁶⁷⁰

⁶⁶⁴ Public briefing transcript, Ipswich, 4 November 2016, p 18.

⁶⁶⁵ By an order of the Coal Board - Coal Industry Employees' Health Scheme Order 1993, issued under the *Coal Industry (Control) Act 1948*, *Queensland Government Gazette*, 19 March 1993, vol CCCII, no.61, pp 1355-1368.

⁶⁶⁶ DNRM, response to question taken on notice, 28 October 2016.

⁶⁶⁷ Confidential submission, attachment 1, p 96.

⁶⁶⁸ DNRM, response to question taken on notice, No.6, 14 October 2016, Provided by DNRM in response to question taken on notice, 28 October 2016.

⁶⁶⁹ Public hearing transcript, Rockhampton, 12 December 2016, p 28.

⁶⁷⁰ DNRM, response to question taken on notice, *High level overview of key elements within coal workers' health scheme from 1982-2015*.

The Coal Board was abolished in 1998. At this time the scheme became the responsibility of the Department of Natural Resources and Mines (the department or DNRM).⁶⁷¹ The health scheme was administered by the HSU, the safety and health division of the department.⁶⁷² The scheme has remained the responsibility of the department since that time, a situation unaffected by subsequent variations to the department's corporate identity and portfolios.

Mr Bruce Ham, former Coordinator of the Coal Industry Employee's Health Scheme from 1993 to 2002, noted that during this period:

*The policy of the Queensland Coal Board was that the x-rays should go up to the health department for pneumoconiosis assessment if they either showed any abnormality or if the miner had, from the spirometry, a reduced respiratory function or if there was some other issue that the nominated medical adviser saw.*⁶⁷³

According to Mr Ham, between 1993 and 1998 there were 15 cases of suspected CWP identified by the scheme and referred on to the department of Health for further investigation. Of these, Mr Ham noted that five workers had been identified in the Rathus and Abrahams report, while the others were identified as having other respiratory disorders.⁶⁷⁴

There was no statutory obligation at the time for DNRM to send on health records, such as x-rays and spirometry results, to the Department of Health (now Queensland Health) for further assessment. It is not known when this practice of sending health records ceased, though it appears to have ceased after transfer of the scheme from the Coal Board to DNRM in 1998.⁶⁷⁵

5.2.3 Coal Mine Workers' Health Scheme 2001 to 2015

The health scheme in its current form (and prior to significant changes effective from January 2017) was introduced in 2001.⁶⁷⁶

Prior to the introduction of the CMSHA, a working party comprised of coal industry employers, employee representatives and department officers was established to review the 1993 Coal Industry Employees' Health Scheme. In developing new legislation it was considered that modern safety management should focus on the creation of on-site ownership of safety and health issues. The CMSHA recast Queensland's approach to coalmining safety and health.⁶⁷⁷

The new health scheme ensured all coal mine workers were required to undergo medical assessment prior to employment at a coal mine, and then at least every five years during employment.⁶⁷⁸ There was an observed strengthening of the scheme's purpose to be an assessment of 'fitness for work'.⁶⁷⁹

Key features of the scheme from 2001 were:

- Chest x-rays were not a compulsory component of the health assessment for every worker.⁶⁸⁰

⁶⁷¹ DNRM, response to question taken on notice 14 October 2016.

⁶⁷² Under the Coal Mining Act 1925 (Qld).

⁶⁷³ Public briefing transcript, Ipswich, 4 November 2016, p 44.

⁶⁷⁴ Public briefing transcript, Ipswich, 4 November 2016, p 45.

⁶⁷⁵ DNRM, response to question taken on notice, 14 October 2016, 28 October 2016.

⁶⁷⁶ By the CMSHR under the CMSHA.

⁶⁷⁷ Public hearing transcript, Brisbane, 14 October 2016, p 4.

⁶⁷⁸ DNRM, response to question taken on notice 14 October 2016, Chronology: Queensland coal mine workers' health scheme 1981 – 2016.

⁶⁷⁹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 27.

⁶⁸⁰ DNRM, answer to question taken on notice, No.6, 14 October 2016.

- An NMA made the decision regarding a requirement for a chest x-ray, based on a 'risk of dust exposure' to the worker as determined by the employer.⁶⁸¹
- An ILO classification field was no longer to be noted on the form, and an abnormal x-ray reading field was to be completed by the NMA.⁶⁸² The form simply required noting a 'yes/no' response to whether an x-ray was taken, and an 'abnormal/normal' response regarding the results of the x-ray.⁶⁸³
- NMAs were appointed by mine employers, under direct contract between the employer and the NMA.
- An EMO could conduct the health assessment under the supervision of the NMA.
- A worker's 'fitness for duty' was signed off by the NMA.⁶⁸⁴
- Periodic health assessments were to occur at least every five years.

The department's responsibilities concerning the scheme included:

- storage of health assessment records, including the health assessment forms, chest x-rays and x-ray reports
- storage of records of NMAs appointed by mine employers
- appointment of a medical specialist to review conflicting health assessments, where necessary.⁶⁸⁵

The committee discovered that efforts to improve the efficiency and purpose of the HSU during this period (firstly following a review in 2002 and again during development of a proposed RIS on mine safety in 2013) became indefinitely delayed due to:

- the prioritisation of other perceived higher and more immediate risks, and
- a lack of agreement among tripartite advisory committees.

5.2.4 Coal Mine Workers' Health Scheme, 2015 to 2017

In May 2015 the first case of CWP in a Queensland coal mine worker in 30 years was identified. The case was reported by the then Commissioner in the Queensland Mines Inspectorate *Annual Performance Report*, published in September 2015 under the heading 'Hazardous Dust Exposures' as follows:

... Long term exposure to dust at these levels puts workers at a high risk of developing disabling lung diseases such as coal workers' pneumoconiosis (black lung).

The first case of coal workers' pneumoconiosis in a Queensland coal miner in 30 years was reported this year.

*Although I am not suggesting that this particular case is linked to the current dust levels, there has been a significant upward trend over the last two years in average dust exposures for longwall and development mining across most sites.*⁶⁸⁶

⁶⁸¹ DNRM, answer to question taken on notice, No.6, 14 October 2016.

⁶⁸² QRC, submission 18, p 5.

⁶⁸³ Form, Confidential Health Assessment Form, Coal Mine Workers' Health Scheme, as at 2002, s 3.12.

⁶⁸⁴ CMSHR, ss 46(2), (5).

⁶⁸⁵ DNRM, response to question taken on notice, *High level overview of key elements within coal workers' health scheme from 1982-2015*.

⁶⁸⁶ Queensland Commissioner for Mine Safety and Health, *Annual Performance Report 2014-15*, pp 3-4.

On 14 January 2016 the Minister for Natural Resources and Mines, Hon. Dr Anthony Lynham MP, announced a five point plan to respond to the recently discovered cases of CWP.⁶⁸⁷ The plan included an independent review of the respiratory component of the health scheme by the Monash Review, which had commenced in December 2015 shortly after the first cases of CWP were confirmed.

By February 2016 six cases of CWP had been confirmed in Queensland coal miners.

Also in February 2016 the Senate Committee, originally established in 2014 to inquire into and report on health policy, commenced a specific inquiry into what was described as the 're-emergence' of CWP.⁶⁸⁸

The Senate Committee reported in April 2016. It found:

*... a litany of regulator failure and regulatory capture, industry indifference and incompetence, inconsistent risk mitigation and patchy and sometimes compromised health monitoring throughout Australia.*⁶⁸⁹

The Monash Review reported in July 2016 that it had discovered 'major system failures at virtually all levels of the design and operation of the respiratory component of the current health assessment scheme.'⁶⁹⁰ The report included 18 major recommendations for reform of the health scheme.

The Monash Review report is discussed in detail below at Part 5.3 of this report.

Minister Lynham established a working group within DNRM to facilitate the implementation of the Monash Review recommendations.

In response to the identification of cases of CWP, the Queensland Government substantially amended the CMSHR in 2016, with additional reforms commencing from 1 January 2017. For an examination of the current regulatory framework refer to Chapter 3 of this report.

New features of the current scheme include:

- all new coal mine workers to undergo a health assessment, including respiratory function test and x-ray, upon entry into the coal mining industry
- respiratory function test and chest x-ray for above-ground coal mine workers to occur at least every 10 years
- respiratory function test and chest x-ray for underground coal mine workers at least once every five years
- all medical examinations to be performed by a person qualified and competent to conduct the examination, and
- all x-rays to be performed in accordance with the ILO Guidelines.

In addition, retiring coal mine workers may upon request voluntarily undergo a retirement examination at the expense of the employer.

DNRM informed the committee in March 2017 that the health assessment form had been amended, and Monash University contracted to provide an overall review of the health assessment form to ensure it captures appropriate information for health surveillance.⁶⁹¹

⁶⁸⁷ Hon Dr Lynham MP, Minister for Natural Resources and Mines, 'Action plan revealed on coal miners' health issue', media release, 14 January 2016. <http://statements.qld.gov.au/Statement/2016/1/14/action-plan-revealed-on-coal-miners-health-issue>

⁶⁸⁸ Senate Select Committee on Health, *Fifth interim report*, p xi.

⁶⁸⁹ Senate Select Committee on Health, *Fifth interim report*, p xii.

⁶⁹⁰ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 14.

⁶⁹¹ DNRM, response to question taken on notice, no.4, 22 March 2017, p 2.

According to the CFMEU, the current health scheme has failed to meet its objectives, in terms of identifying and caring for mine workers with CWP:

*The health scheme was specifically put in place to monitor the potential development of industry related diseases and see whether or not coalmine workers were fit to continue working in coalmines to start off with. That scheme has failed.*⁶⁹²

5.2.5 Application of the scheme beyond coal mine workers

During the course of this inquiry it became apparent that CWP is not a disease that affects only underground coal mine workers.

Mr Paul Head was diagnosed with CWP in September 2016. He worked in open-cut coal mines in Queensland for 31 years. He has never worked underground. For much of his working life Mr Head worked inside air-conditioned cabs operating machinery. He had only two chest x-rays during his working career.⁶⁹³

Although there have not yet been any confirmed cases of CWP identified in non-mine coal workers in Queensland, the committee heard evidence of significant dust exposure among coal mining communities, coal port terminal workers, rail workers and tunnel construction workers.⁶⁹⁴ [As noted earlier, the committee has commenced inquiry into these aspects, to be the subject of a further report by the committee.]

Dr Cohen told the committee there was reason to think that non-mine workers who are exposed to respirable coal dust at work are at risk for CWP or CMDLD and should be included in a comprehensive health surveillance program.

*I think that workers who transport and handle coal are at risk, and that includes, in our country, railroad workers. A lot of our coal is moved on barges on rivers, so that includes barge workers and river workers and then the workers at our ports who are exporting coal. They have these conveyor belts that are loading and pouring mountains of coal into the hold of a ship and when it is falling it generates huge amounts of dust and those workers would be at risk and I think that we would have to do surveillance. Very early on in this process we had a saying in medical school that if you do not take a temperature you will not find a fever. Mostly that was lazy medical students who did not want to take a temperature because then they would have to do blood tests and work, so it was like, 'We just don't take a temperature and we won't have to do any work. We can go back to sleep.' The equivalent of that in public health is not having a good medical surveillance program. If you do not take the temperature of the population you will not find disease and you do not have to worry about it. I think these workers are exposed to a dust that we know can cause respiratory illness and we need to look at them and see if they are sick or not and then we can make more appropriate decisions.*⁶⁹⁵

Mr McMILLAN: *Beyond the actual coalmine, should surveillance be extended to rail workers, port workers and power station workers who handle coal?*

⁶⁹² Public briefing transcript, Ipswich, 4 November 2016, p 28.

⁶⁹³ Mr Paul Head, private capacity, public hearing transcript, Mackay, 25 November 2016, pp 32, 40.

⁶⁹⁴ Councillor Peter Ramage, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 2; Mr Paul Harwood, private capacity, public hearing transcript, Middlemount, 23 November 2016, p 8; Mr Robert Barnes, private capacity, public hearing transcript, Mackay, 7 March 2017, p 2; Mr John Lee, private capacity, public hearing transcript, Mackay, 7 March 2017, p 6; and Mr Greg Dalliston, Industry Safety and Health Representative CFMEU, public hearing transcript, Brisbane, 15 March 2017, p 31.

⁶⁹⁵ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 10.

*Dr Cohen: I think so. Unless we can do that surveillance and get data to see how we are doing, it would be another case of just not taking your temperature. How can we say, 'Don't take a temperature of someone who has a risk'? If there is no risk, then that is fine. I think it would probably be helpful to get some dust sampling data to see a bit more about that. It would make sense to me.*⁶⁹⁶

The effects of coal mine (and other respirable) dusts on workers other than coal mine workers is considered briefly in Chapter 8 of this report and will be considered further by the committee under its extended terms of reference. The committee is required to report to the Parliament on those extended terms of reference by 29 September 2017.

Recommendation 38

The current Coal Mine Workers' Health Scheme should be renamed the Coal Workers' Health Scheme, recognising the important inclusion of all workers involved in the mining, handling, processing and transportation of coal.

5.3 The Monash Review of the respiratory component of the Coal Mine Workers' Health Scheme

5.3.1 Commissioning a review

Minister Lynham commissioned the Monash Centre for Occupational and Environmental Health to undertake a review to determine whether the respiratory component of the health scheme was adequately designed and implemented to effectively detect early stages of CMDLDs in Queensland coal workers.⁶⁹⁷ The review addressed one component of the Minister's action plan to address the re-identification of CWP in Queensland.⁶⁹⁸

The report on the *Review of Respiratory Component of the Coal Mine Workers' Health Scheme* ('the Monash Review') was published in July 2016. The review revealed 'major system failures at virtually all levels of design and operation'.⁶⁹⁹

The Monash Review team was led by Professor Malcolm Sim. The review was conducted in collaboration with the School of Public Health, University of Illinois in Chicago, led by respiratory physician Dr Robert Cohen.

There were delays late in 2015 as DNRM commissioned and then drew up contracts for appointment of the review team. According to Dr Cohen:

*Initially when we were contacted [about CWP in Queensland] I had proposed this review and outlined what we should do. It was very important to the department—I am not sure what the factors were—that we do it in partnership with an Australian group, which was Malcolm Sim and the group at Monash. They divided up the work. Because the Monash group had no B-readers and no-one who was really experienced in chest x-ray imaging, that was the main task that fell to us.*⁷⁰⁰

DNRM confirmed that the preferred approach at the time was that Monash University would be the primary contractor for the review, with the university undertaking a subcontract with Dr Cohen.

⁶⁹⁶ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 28.

⁶⁹⁷ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 25.

⁶⁹⁸ Hon Dr Anthony Lynham MP, Minister for Natural Resources and Mines, 'Action plan revealed on coal miners' health issue', media release, 14 January 2016.

⁶⁹⁹ Monash Centre for Occupational and Environmental Health, *Review*, p 16.

⁷⁰⁰ Public hearing transcript, Brisbane, 15 March 2017, p 24.

According to the department, contracting with an Australian university allowed for university to university collaboration.⁷⁰¹ The committee cannot understand why the department felt it needed to contract primarily with an Australian university and not contract directly with Dr Cohen and his team in the USA, especially given the Monash team had no specific experience in coal mining occupational health research and no experience with CWP or CMDLD.

The department noted that although the final terms of the contract for the engagement of the review team were finalised following a timeframe of a number of months, work commenced on the review in January 2016.⁷⁰²

Dr Cohen attested to a delay of approximately 'eight to 10 months' to complete the contract process, during which time his team worked unpaid on the review: 'We did the work for many, many months and then only at the very end did we get paid for that work because it took so long'.⁷⁰³

The committee is dismayed that DNRM failed to accept the proposal initially offered by Dr Cohen, the world's leading expert on CWP, and his team to review the respiratory component of the Coal Workers' Health Scheme. There does not appear to have been any proper basis for DNRM to insist on contracting with an Australian university in circumstances where the necessary skills were readily available and being generously offered by the world-leading expert in the field. The suggestion that DNRM could not contract directly with an international university is clearly specious, as proven by the fact DNRM now contracts directly with Dr Cohen's team at the University of Illinois to provide B-reader x-ray assessments.

CHAIR: *Dr Cohen, your group from the University of Illinois would have made an offer to the Department of Natural Resources and Mines to do this work yourselves. Was it the department that said it had to be done through Monash University? Can you walk us through that? You are obviously the world expert in relation to coal workers' pneumoconiosis. Can you walk us through what actually happened there? It would benefit the committee to understand why Monash got involved in it in the first place.*

Dr Cohen: *Shortly after finding out these first cases that the CFMEU brought to the mineworkers convention and then my work at Vale I wrote up a detailed proposal about how we could help review the health surveillance system. I sent it to the department...*

... The next thing I heard was that they were contracting—they wanted to have us work with them, but it had to be through Monash. They actually would not even contract with us directly.

CHAIR: *Why not? Did they say why not? Dr Cohen, it just seems ridiculous to me that the department would not contract you directly, that they have gone through this circumnavigated process to be able to have some sort of review.*

Dr Cohen: *In retrospect it seems a bit funny because they are now contracting with us directly.*

CHAIR: *Exactly.*⁷⁰⁴

⁷⁰¹ DNRM, response to CWP Select Committee request for information – Documentation regarding commissioning of the review by the Monash Centre for Occupational and Environmental Health, 13 April 2017.

⁷⁰² DNRM, response to CWP Select Committee request for information – Documentation regarding commissioning of the review by the Monash Centre for Occupational and Environmental Health, 13 April 2017.

⁷⁰³ Public hearing transcript, Brisbane, 15 March 2017, p 25.

⁷⁰⁴ Public hearing transcript, Brisbane, 15 March 2017, p 24.

Key finding

There was no proper basis for DNRM not to accept the proposal from Dr Cohen and the University of Illinois to review the respiratory components of the Coal Mine Workers' Health Scheme. The failure to do so ignored their recognised status as world leaders in the respiratory health of coal mine workers and unnecessarily delayed what was a critical review of a failing system.

5.3.2 Aims of the review

The aims of the review were to:

- a) determine whether the respiratory component of the health assessment performed under the Queensland health scheme is adequately designed and implemented, to most effectively detect the early stages of CMDLD among Queensland coal mine workers, estimating the extent and providing feedback and, if not,
- b) recommend necessary changes to correct deficiencies identified under Aim A, recommend measures to follow up cases that may have been missed as a result of these deficiencies, and identify what additional capacity is needed in Queensland to improve this scheme.⁷⁰⁵

The review considered the more general CMDLDs, a group of lung diseases that result from cumulative inhalation of respirable coal dust, including:

- classic fibrotic lung disease associated with CWP, including progressive massive fibrosis (PMF) - the most severe form of CWP
- mixed dust pneumoconiosis and silicosis
- chronic bronchitis
- emphysema, and
- diffuse dust-related fibrosis.

5.3.3 Findings of the Monash Review

The review discovered a general belief held by most stakeholders in the mining industry that, as there had been no new cases of CWP for many years, the disease had been eradicated in Queensland.⁷⁰⁶ This widespread but erroneous and unfounded belief has had tragic and fatal consequences.

The review identified ways to modify the current scheme to make it more effective in undertaking medical screening for CWP in the future. Further details on the findings of the review are provided in Appendix E

The review made 18 recommendations in the following areas:

- changes to the Coal Mine Workers' Health Scheme to explicitly focus on early detection
- clinical guidelines to be developed for medical assessments and follow-up investigation
- requirement for DNRM to report detected cases
- changes to the health assessment form to include all relevant respiratory components
- refinement of criteria to determine workers 'at risk from dust exposure'
- changes to the number, registration and training of NMAs

⁷⁰⁵ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 5.

⁷⁰⁶ Monash Centre for Occupational and Environmental Health, *Review of Respiratory Component of the Coal Mine Workers' Health Scheme*, 2016, p 19.

- changes to standards applied and examination of chest x-rays and spirometry, and
- a transition to electronic records management.⁷⁰⁷

Professor Malcolm summarised his findings to the committee:

While historically the scheme had a focus on the early detection of respiratory disease in coalminers, in recent years the purpose of the scheme had been lost and the scheme had become a fitness-for-work program instead of a medical surveillance scheme.

This change in focus was influenced by the belief that coal workers' pneumoconiosis had been eliminated and was of historical interest only which led to a degree of complacency in controlling and screening for this disease. A basic principle in occupational health is that the only way to permanently eliminate an occupational disease is to eliminate the hazard causing that disease which is not possible in the coal industry—you cannot get rid of coal.⁷⁰⁸

The committee strongly supports the findings of the Monash Review. All recommendations, with the exception of recommendation 6, are accepted by the committee and have been adapted as necessary to give effect to the further recommendations in this report.

Recommendation 6 of the Monash Review related to the criteria for determining whether a coal mine worker is 'at risk from dust exposure'. The committee found that this criteria should be removed from the health assessment process under the health scheme, making the recommendation redundant. (See Recommendation 39 below)

Key finding

The Monash Review was a thorough and professional review of the respiratory component of the Coal Workers' Health Scheme. Its findings and recommendations have been universally endorsed by those witnesses and organisations who have given evidence or made submissions to this inquiry in reference to that Review.

Recommendation 39

The recommendations of the Monash Review, adapted as necessary to give effect to the recommendations of the committee set out in this report, should be adopted and implemented into the Coal Mine Workers' Health Scheme as follows:

- a) The main purpose of the respiratory component of the scheme should explicitly focus on the early detection of CMDLD among current and former coal workers. (Monash recommendation 1)
- b) Clinical guidelines for follow-up investigation and referral to an appropriately trained respiratory or other relevant specialist of suspected CMDLD cases identified among current and former coal workers should be developed and incorporated into the scheme. (Monash recommendation 2)
- c) CWP and other CMDLDs identified by the scheme in current and former coal workers should be reported to the Mine Safety and Health Authority. (Monash recommendation 3)
- d) There should be a separate respiratory section of the health assessment form which includes all respiratory components, including the radiology report using the ILO format and the spirogram tracings and results. (Monash recommendation 4)
- e) The form should include a comprehensive respiratory medical history and respiratory symptom questionnaire. (Monash recommendation 5)

⁷⁰⁷ Monash Centre for Occupational and Environmental Health, *Review*, pp 7-15.

⁷⁰⁸ Public hearing transcript, Brisbane, 9 November 2016, p 2.

- f) There should be a much smaller pool of approved doctors undertaking the respiratory component of health assessments under the scheme, taking into account geographical considerations and other workforce needs. (Monash recommendation 7)
- g) Doctors should undergo a formal training program, including visits to mine sites, prior to being approved by the Mine Safety and Health Authority, to ensure they reach a suitable standard of competence and have the necessary experience to undertake respiratory health assessments under the scheme. (Monash recommendation 8)
- h) The approval of doctors to undertake the respiratory health assessments for the early detection of CMDLD under the scheme should become the sole responsibility of the Mine Safety and Health Authority. (Monash recommendation 9)
- i) Doctors approved to undertake respiratory health assessments should have a different designation from 'NMA', namely AMA-R (Approved Medical Advisor – Respiratory) reflecting their specific responsibility for respiratory health assessments under the new scheme. (Monash recommendation 10)
- j) Chest x-rays should be performed by appropriately trained staff to a suitable standard of quality and performed and interpreted according to the current ILO classification by radiologists and other medical specialists classifying chest x-rays for the scheme. (Monash recommendation 11 – *See also Recommendations 43 to 46 of this report below*)
- k) Spirometry should be conducted by appropriately trained staff and performed and interpreted according to current ATS/ERS standards. (Monash recommendation 12)
- l) The Coal Workers' Health Scheme should transition to an electronic system of data entry and storage (health assessments database), whereby doctors undertaking these respiratory assessments enter the data for their assessment and can access previously collected data for the coal worker and to facilitate auditing. (Monash recommendation 13)
- m) All coal workers, including contractors, subcontractors and labour hire employees should be registered in the Coal Workers' Health Scheme health assessments database on entry into the industry for the purposes of ongoing medical surveillance. (Monash recommendation 14)
- n) The Coal Workers' Health Scheme should conduct ongoing individual and group surveillance of health data collected under the scheme, to detect early CMDLD and analyse trends to disseminate to employers, unions and coal mine workers. (Monash recommendation 15)
- o) Coal workers should have exit respiratory health assessments (retirement examination) regardless of whether they leave the industry due to ill-health, retirement or other reasons. (Monash recommendation 16)
- p) An implementation group, including representatives of stakeholders and relevant medical bodies, should be established to ensure that the necessary changes to correct the identified deficiencies with the respiratory component of the current scheme are implemented in a timely manner. (Monash recommendation 17)
- q) There should be a further review of the revised respiratory component of the scheme within 3 years to ensure that it is designed and performing according to best practice. (Monash recommendation 18)

5.4 DNRM and the Coal Mine Workers' Health Scheme

The evidence gathered in the course of this inquiry has clearly demonstrated that DNRM did not adequately administer the CMSHA to ensure coal mine workers were not exposed to the serious health hazard of respirable coal mine dust. In so doing, DNRM failed to protect the health of coal mine workers with respect to respirable coal mine dust.

5.4.1 Health Surveillance Unit

The HSU was established in 1998 to administer the health scheme after the Queensland Coal Board was abolished. The HSU is responsible for collecting and maintaining the records for the scheme. The HSU reports to the Executive Director of Mine Safety and Health within DNRM. The department's occupational physician works within the HSU.⁷⁰⁹

Professor Sim observed that:

*The current scheme is not set up to provide worthwhile surveillance data to monitor patterns and trends of coalmine dust lung diseases over time and to identify problem areas requiring investigation of dust levels.*⁷¹⁰

The committee was deeply disturbed by the evidence uncovered in relation to the HSU. From its establishment, the HSU failed to undertake any actual health surveillance. It served as nothing more than a storage unit for miners' chest x-rays and health records.

Mr KELLY: ... Was it your perception when you were sending things off to the department that there was going to be another level of vigilance in terms of reviewing the x-rays or other tests that may have been done?

Dr McPhee: I think it was probably naïve of me to think that would be the case. When the title of the department was the Health Surveillance Unit, I thought that there would be some attempt to provide health surveillance because this is an insidious disease. The mechanisms that we have to diagnose it are not particularly reliable. Both spirometry and chest x-ray are really blunt instruments. This is a disease that evolves over time and, as I mentioned before, we often only may see this miner once in their career. I had the naïve belief that there was in fact some form of long-term health maintenance and monitoring of the mine worker, but obviously from my own reading this was not the case.⁷¹¹

Senior executives of DNRM gave evidence that the role of the HSU in relation to the health scheme has been purely administrative with no meaningful data analysis or clinical review of the health assessment records received.⁷¹² According to Ms Kate du Preez, Commissioner for Mines Safety and Health:

*... to my understanding, the HSU was only a storage facility in the past ... at no time did they ever assess any of the documentation or the medicals that came to them. Their whole role was to ensure that it was stored and that the people's confidentiality was maintained.*⁷¹³

As a consequence of this view that the HSU, despite its name, had no more than a records storage function, the responsibility for identifying problems, errors or trends in coal miners' health assessments was left entirely to the NMA, the mine operator and the individual mine worker.⁷¹⁴ This approach totally failed to meet the historical policy objectives of the health scheme, namely to monitor and ensure the health of coal mine workers. As noted above, there is no evidence that the HSU ever undertook any critical review of chest x-rays or x-ray reports for the purposes of alerting Queensland Health as to any incidence of disease, as originally intended when the Coal Board established the health scheme.

⁷⁰⁹ DNRM, submission 35, p 31.

⁷¹⁰ Public hearing transcript, Brisbane, 9 November 2016, p 3.

⁷¹¹ Dr Ewen McPhee, public hearing transcript, Emerald, 15 November 2016, p 5.

⁷¹² Monash Centre for Occupational and Environmental Health, *Review*, p 13; public hearing transcripts, Brisbane 14 October 2016, p 6 and Brisbane, 30 November 2016, p 5.

⁷¹³ Public hearings transcript, Brisbane, 2 November 2016, p 6.

⁷¹⁴ Public hearings transcripts, Brisbane, 15 October, p 6 and Brisbane, 30 November 2016, p 4.

Even data entry and basic administration was hopelessly under-resourced to the point where at times, the HSU was staffed by only one part-time administration officer at the lowest classification level available. In 2005, the HSU operated with only one full-time equivalent (FTE) employee. While the staff level fluctuated to some extent, between 2005 and 2010, the highest level of resourcing for the HSU was three FTE staff.⁷¹⁵

As a result of this chronic and significant under-resourcing, a large backlog of data processing developed, so that by 2015 the department had 10 years' of health records to process. Overwhelmed with health assessment records during the mining boom, the committee heard that many health records of the HSU were '...stored in a janitor's cupboard next to the female toilets'⁷¹⁶ and in shipping containers at the SIMTARS site at Redbank. Environmental conditions meant that when efforts were finally made to retrieve and review those records, many were destroyed or unreadable.

Former HSU occupational physician Dr David Smith testified that '... the x-rays were subjected to high temperatures and terrible storage conditions'.⁷¹⁷

Image 17 Shipping container used to store health assessment records, SIMTARS, Redbank



Source: CWP select committee image.

In 2002, DNRM undertook a review of the HSU. A tripartite working group was formed to undertake the review, consisting of representatives from government, mine operators and the CFMEU, Mines and Energy Division.⁷¹⁸ The review identified a vast number of short-comings in the then system, including that there were no available records for mine workers who had either retired from the mining industry early, or changed work tasks as a result of workplace injury or illness.⁷¹⁹

⁷¹⁵ See: DNRM, response to question taken on notice No 8 asked on 30 November 2016, Brisbane, p 15.

⁷¹⁶ Dr David Smith, Occupational Physician, DNRM, public hearing transcript, Brisbane, 30 November 2016, p 21.

⁷¹⁷ See: Public hearing transcript, Brisbane, 30 November 2016, p 15.

⁷¹⁸ Hon Dr Anthony Lynham MP, response to question on notice, no. 240, 24 February 2016.

⁷¹⁹ DNRM, Review of the Health Surveillance Unit, 2003, pp 6-7.

The steering committee and the working group were unanimous that, in the future, mine operators and the regulator would work in partnership to enhance mineworker health and safety, and that it was the 'collective responsibility' of all industry stakeholders to identify and address causes of illness and injury in the mining and quarrying industries.⁷²⁰

The *Review of the Health Surveillance Unit* was published in 2003. The review made 21 substantive recommendations for reform of the health surveillance scheme, including:

- Replacement of the existing Coal Mine Workers' Health Scheme with a new HSU that meets the needs of the coal mining, metalliferous mining and quarrying industries in Queensland.
- The HSU to be part of the Mines Inspectorate and be based in Brisbane.
- The principal role of the HSU to be the collection and analysis of adverse health assessment data, reporting the findings to industry for preventive action and to facilitate epidemiological and other research where appropriate.
- Provisions required to be included in both mining acts and subordinate legislation to permit the proper functioning of the health surveillance process.
- Identification of duties of key personnel including 'Site Senior Executives' and 'Employers', to ensure appropriate health surveillance of workers and the ongoing control of risk of disabling injury or disease.
- Appointment of medical practitioners to be known as 'Appointed Medical Officers' whose duties will be defined by regulation.
- Establishment of medical practitioner support for the new HSU, initially by a part-time occupational physician and, on a permanent part-time basis, a panel of medical practitioners with experience in the mining and quarrying industries.⁷²¹

This *Review* revealed significant failures of the health surveillance components of the health scheme, many of which remained unaddressed and were again identified as significant failures by the Monash Review in 2016, some 14 year later.

Key finding

The failure to fully implement the recommendations of the 2002 *Review of the Health Surveillance Unit* was a significant lost opportunity to improve the functioning of the Coal Workers' Health Scheme and ensure the HSU actually undertook meaningful health surveillance. Had this been done, DNRM may have been alerted to cases of CWP and been in a position to take action much sooner that it ultimately did in 2015.

5.4.2 The role of the Occupational Physician

One of the recommendations of the 2002 Review was for DNRM to appoint an occupational physician, on a part-time basis, for a period of up to two years to oversee the implementation of a 'full health surveillance program'.⁷²² It was intended that the HSU be supported in the long term by a Medical Advisory Panel consisting of up to four medical practitioners who were experienced in the mining and/or quarrying industries and including at least two persons holding a specialist registration in occupational medicine.⁷²³ However, that recommendation was never implemented.

⁷²⁰ DNRM, *Review of the Health Surveillance Unit*, 2003, p 8.

⁷²¹ DNRM, *Review of the Health Surveillance Unit*, 2003, p 7.

⁷²² DNRM, *Review of the Health Surveillance Unit*, 2003, p 84.

⁷²³ Recommendation 17, DNRM, *Review of the Health Surveillance Unit*, 2003, p 84.

The Occupational Physician's role is to provide expert medical advice and assist in the identification and assessment of occupational health hazards at mine sites.⁷²⁴

The department appointed Dr David Smith, who was a member of the Review team, as Occupational Physician. Dr Smith was Occupational Physician from 2004 until his retirement early in 2017. He was employed at 0.6 FTE. His successor to the role, Dr Clare Wood, is also employed at 0.6 FTE.⁷²⁵

Dr Smith described his role:

*During the last 12 years my primary role has been, one, to work with the Health Surveillance Unit of the department; two, to provide support to medical practitioners including nominated medical advisers who are the doctors who undertake the medical assessments of coal mine workers; and, in more recent times, my role has included the confirmation of cases of coal workers' pneumoconiosis.*⁷²⁶

The occupational physician is neither a statutory nor a clinical role, and the position does not involve diagnosis of diseases, or ongoing medical care or treatment of affected workers. The role does not review completed health assessments that are submitted to the department by NMAs.⁷²⁷

In seeking to replace Dr Smith upon his retirement from the role in 2016, DNRM advertised a list of duties the Occupational Physician was expected to perform. These duties included:

- provide training and technical advice to appointed nominated medical advisers and other medical practitioners conducting medical examinations and assessments.
- provide medical, technical, policy advice and support to the HSU conducted under the Coal Mine Workers' Health Scheme and other occupational health initiatives.
- identify and analyse emerging health issues and trends by monitoring Queensland and international mining industry health surveillance data.
- advise departmental officers, including the Director General, Deputy-Director General, Commissioner, Chief Inspectors of Mines and Executive Director of Mine Safety and Health on health issues.
- participate in monitoring and evaluating the adequacy and effectiveness of occupational health policies administered by the department.
- liaise with government agencies; specialist medical colleges and faculties; and other mining industry organisations and stakeholders involved in occupational health, clinical assessments or other support functions.⁷²⁸

No one involved in the formulation of this list of duties discussed it with Dr Smith or sought his advice as to what duties should be expected of his replacement.⁷²⁹ That is particularly galling since over the course of Dr Smith's 12 years in the role of Occupational Physician, no senior executive of DRNM ever had a discussion with Dr Smith about his key duties and accountabilities. Nor had he ever participated in any form of performance review.⁷³⁰

Nevertheless, DNRM was satisfied that the role only needed to be filled upon Dr Smith's retirement, on a part-time basis.

⁷²⁴ DNRM, submission 35, p 11.

⁷²⁵ DNRM, response to question taken on notice during a hearing, 2 February 2017.

⁷²⁶ Public hearing transcript, Brisbane, 30 November 2016, p 1.

⁷²⁷ DNRM, submission 35, p 45.

⁷²⁸ Public hearing transcript, Brisbane, 30 November 2016, p 19.

⁷²⁹ Public hearing transcript, Brisbane, 30 November 2016, p 18.

⁷³⁰ Public hearing transcript, Brisbane, 30 November 2016, p 18.

Ultimately, DNRM experienced significant difficulties in identifying and appointing a suitable candidate as Dr Smith's successor.

The committee received evidence in private hearings regarding the process adopted by DNRM to appoint Dr Smith's replacement. The committee has serious concerns about the process adopted and considers that it fell well short of what the public should reasonably expect of a process to fill such an important role in the regulatory scheme established to protect coal workers' health.

Recommendation 40

The Public Service Commissioner should review the process adopted by DNRM for the appointment of the current 'Occupational Physician' and consider whether there was any breach of the *Public Service Act 2008* or other statutory instrument.

Dr Clare Wood is currently appointed to the role of Occupational Physician within DNRM, on a part-time basis (0.6FTE). While Dr Wood clearly has relevant experience, she is not registered with the Australian Health Practitioner Regulation Agency as a specialist in occupational medicine.

The committee considers that the person charged with responsibility for leading and overseeing the Coal Workers' Health Scheme must be a senior medical practitioner, with qualifications and experience as a specialist physician. Nothing less can be accepted for such an important role.

Moving forward, the committee heard that DNRM intends the role of occupational physician to have a greater focus on health surveillance, and research and analysis of health scheme data.⁷³¹

The committee is gravely concerned that this key position within the health scheme remains filled only on a part-time status and is not remunerated at a rate equivalent to a specialist of similar standing employed within the public health sector.

Recommendation 41

The current position described as 'Occupational Physician' within DNRM should be abolished and the current functions of that role should be incorporated into the functions of the new Executive Director – Medical Services within the Mine Safety and Health Authority.

5.4.3 Records management of medical assessment forms

The HSU's ability to perform its role as record-keeper in the scheme was significantly challenged during the mining boom in Queensland from 2006 to 2011. According to Dr Smith:

I have seen the resources of the Health Surveillance Unit come under enormous pressure, particularly during the height of the mining boom, when the team would receive hundreds and sometimes thousands of completed assessments each week. With no additional resources for data entry, this simply meant that the team could not keep pace with the influx of records.⁷³²

The department estimated it holds 395,478 health records of 135,382 workers for the period from January 1983 to 14 October 2016.⁷³³

5.4.4 The backlog in data processing

The regulatory requirements of the scheme meant that many thousands of hard-copy documents were sent to the HSU, especially during the years of the mining boom. A large backlog in data processing developed. Mr Stewart Bell, former Mine Safety and Health Commissioner from 2009 to 2014, recalled:

⁷³¹ Private hearing, Brisbane, 2 February 2017.

⁷³² Public hearing transcript, Brisbane, 30 November 2016, p 2.

⁷³³ DNRM, submission 35, p 32.

*The problem we had with that was that it was not well organised. I am the first person to admit that. There were huge amounts of data coming into it. In one year alone 100,000 medical records turned up to go into the system... The point I make there is that when these 100,000 people had medicals that information had to go into the system. The entire population of the mining industry in Queensland at that time was 60,000. We had all of these people ambitiously looking for a job in the mining industry and running out and getting a medical and flooding the department with medicals ... It is not an excuse. We were snowed under by a huge number of medical records.*⁷³⁴

Accessing and retrieving individual records became more and more difficult during the mining boom years as Dr Smith attested:

*It has been an incredible chore to get some of them, to find some of them, because they have been stored all over Brisbane. There are so many records that we have had paper stacks throughout the department in different spots, even in broom cupboards. It has been an effort for the administrative officers to try to find records.*⁷³⁵

The Monash Review noted that prior to the mid-1990s all data from all health assessment forms were manually entered into a database. Since the late 2000s, the forms were scanned, with only selected variables manually entered into the DNRM database. Chest x-ray films were arranged alphabetically and in many cases stored separately from their corresponding health assessment files. X-ray files were previously assigned unique registration numbers, however this system ceased when scanning was introduced in the late 2000s.⁷³⁶

As at October 2016, health assessment records were stored by DNRM in a number of locations: Eagle Farm, Redbank, Stafford, Geebung and Acacia Ridge.⁷³⁷ Prior to 2016 many records were stored in shipping containers at the SIMTARS facility at Redbank.⁷³⁸

As at May 2016 the department estimated 170,000 records were in a backlog of unprocessed records. The committee heard that the backlog mostly represented approximately 10 years of records from 2006, with the earliest un-entered record found to be from 2000.⁷³⁹

In December 2016 the department reported it was 'well advanced' in clearing the backlog of health records. As at February 2017, the department informed the committee that 111,319 records had been processed, leaving a backlog of approximately 60,000 records.⁷⁴⁰

Currently, the HSU has 10.5 FTE staff including temporary staff employed to address the backlog of records for data entry.⁷⁴¹

⁷³⁴ Public hearing transcript, Brisbane, 2 February 2017, pp 28-29.

⁷³⁵ Public hearing transcript, Brisbane, 30 November 2016, p 14.

⁷³⁶ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 59.

⁷³⁷ DNRM, response to question taken on notice during a briefing, 14 October 2016, no. 4, attachment A.

⁷³⁸ Dr David Smith, public hearing transcript, Brisbane, 30 November 2016, p 15.

⁷³⁹ DNRM, response to question taken on notice during a briefing, 14 October 2016, no. 4, attachment A; public hearing transcript, Brisbane, 2 February 2017, p 12; DNRM, response to question taken on notice during a hearing, 2 February 2017, no. 9.

⁷⁴⁰ DNRM, submission 35, p 32.

⁷⁴¹ DNRM, submission 35, p 31.

As at February 2017, an estimated 3,500 records from the backlog were being processed per week.⁷⁴² The department stated that key identifiers and respiratory data for all records would be entered into the department's database by 30 June 2017.⁷⁴³

The HSU currently receives approximately 300 new records per week. Officers within the HSU check that all the requisite information is attached or included. The medical assessment is scanned and entered into the database. The record is then filed for later retrieval.⁷⁴⁴

5.4.5 Meaningful data capture

The committee noted that, in processing the backlog of records and entering new records from 2016, the department has not been alerted to any new cases of suspected or confirmed CWP.⁷⁴⁵

This is not surprising, considering the department attested that the officers conducting the scanning process are not actually reading the records or looking for notation of suspected CWP. The committee heard that neither the department officers attending to the backlog of records, nor those attending to new records, have training in the area of medical terminology or health sciences that could equip them with the capacity to read clinical information.⁷⁴⁶ According to a department official:

*I would not say they do an analysis. They scan the records and then they enter it within the database. They link the records on the database.*⁷⁴⁷

Additionally, the department confirmed that records in the database entered prior to the re-identification of CWP in 2015 are not the subject of any current scrutiny. (Given the backlog went back to 2006 these records would encompass the years 1983 to 2006.) 'We are not going back through the records to 1983.'⁷⁴⁸

According to DNRM, it remains the responsibility of the individual worker or the NMA to seek retrieval of records. The department can then supply them to a practitioner upon request.⁷⁴⁹ Only in this way will a case of suspected CWP be identified from data stored by the scheme.

Additionally, the committee holds concern that the health scheme has not moved to an electronic system, as recommended by the Monash Review. It was indicated to the committee that DNRM are still receiving health assessments as paper-based records requiring people to input the data. A health surveillance program should be engaging the appropriate software so that the examining physician can feed meaningful data directly into the health scheme database.⁷⁵⁰

DNRM advised the committee that the department is investigating e-health management proposals where coal mine worker health assessments are linked to a respirable dust exposure database, and anticipates an online system to be in place by the end of 2017.⁷⁵¹

⁷⁴² Mr Jack Farry, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 11; DNRM, response to question taken on notice during a briefing, 2 February 2017.

⁷⁴³ DNRM, submission 35, p 32.

⁷⁴⁴ Ms Lisa Janczuk, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 10.

⁷⁴⁵ Dr Gareth Kennedy, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 12.

⁷⁴⁶ Mr Natasha Robertson and Ms Lisa Janczuk, public hearing transcript, Brisbane, 2 February 2017, p 14.

⁷⁴⁷ Ms Lisa Janczuk, public hearing transcript, Brisbane, 2 February 2017, 14.

⁷⁴⁸ Dr Gareth Kennedy, public hearing transcript, Brisbane, 2 February 2017, p 12.

⁷⁴⁹ Dr Gareth Kennedy, public hearing transcript, Brisbane, 2 February 2017, p 12.

⁷⁵⁰ Private hearing, Brisbane, 2 February 2017.

⁷⁵¹ DNRM, response to question taken on notice during a hearing, 22 March 2017, no.4, p 7; Mr Mark Stone, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 16.

DNRM has made a commitment to accept the recommendations of the Monash Review in relation to data management and surveillance of health data, and the committee notes the department's efforts from 2016 to clear the backlog of records requiring data entry.⁷⁵²

The committee remains concerned that there are records from the backlog that may have notations indicating a suspected case of CWP and that these are not being identified as they are processed. The department is clearing the backlog, but acknowledges that it is not looking for missed cases of CWP, as 'that has not been the focus'.⁷⁵³ This is a significant missed opportunity.

Key finding

DNRM did not adequately administer the *Coal Mining Safety and Health Act 1999* to ensure coal mine workers were not exposed to the serious health hazard of respirable coal mine dust. In so doing, DNRM failed to protect the health of coal mine workers with respect to respirable coal mine dust.

Recommendation 42

Health assessment data should be captured and stored digitally in a health assessment database in a manner that allows regular and meaningful surveillance, so that it may be used to identify trends in disease, inform policy decisions and identify regional areas or individual mines for potential scrutiny. (See also [Recommendation 39\(I\)](#))

5.5 Coal workers' health assessments

From 1993, the Coal Industry Employees' Health Scheme required coal mine managers to instruct the Nominated Medical Officer (NMA) to undertake a health assessment of a new employee. A chest x-ray was required of those entrants whose proposed duties included working in an underground mine or working in an environment which, in the opinion of the NMA, was likely to involve exposure to dust.⁷⁵⁴

A key feature of the health scheme from 2001 was that the NMA made the decision regarding a requirement for a chest x-ray, based on a 'risk of dust exposure' to the worker as determined by the employer.⁷⁵⁵

This 'risk of dust exposure' assessment was part of the wider regulatory framework that has been described as risk based.⁷⁵⁶ According to Mr Ham, if there was an occupational exposure, for example coal dust, then there had to be a health and safety management system that would assess that risk, both in terms of exposure and outcome.⁷⁵⁷

DNRM described the system in this way:

The legislation may be described as risk based. It is underpinned by the requirement that the risk of injury and illness to any person resulting from coalmining operations be at an acceptable level. The legislation focuses on outcomes rather than prescription. It provides a framework under

⁷⁵² DNRM, submission 35, pp 31, 32.

⁷⁵³ Mr Mark Stone, DNRM, public hearing transcript, Brisbane, 2 February 2017, p 12.

⁷⁵⁴ Coal Industry Employees' Health Scheme Order 1993, s 14(1).

⁷⁵⁵ DNRM, response to question taken on notice during a briefing, 14 October 2016, no. 6.

⁷⁵⁶ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 2.

⁷⁵⁷ Mr Bruce Ham, public hearing transcript, Ipswich, 4 November 2016, p 45.

*which individual mines must have systems for appropriately managing risks to an acceptable level.*⁷⁵⁸

The committee heard that under the scheme prior to 2017, a health assessment was required every five years and a chest x-ray was required in consultation with the NMA to determine the level of risk in the mine, in terms of level of exposure to dust, in order for a worker to receive a chest x-ray.⁷⁵⁹ This meant that not every coalmine worker was x-rayed. Only those workers deemed to be at risk from dust exposure were required to be x-rayed under the scheme.⁷⁶⁰

In practice, it was the employer who determined whether or not a worker was at risk of dust exposure.⁷⁶¹ According to the QRC, the decision about a worker's risk to dust exposure may not have been based on any conscious desire to cover up:

*Companies were complying with their requirements under the health scheme by ensuring workers completed pre-employment medicals with reviews up to every five years, with at-risk workers getting screening x-rays in accordance with legislation. This was a process in which the industry had enormous faith.*⁷⁶²

The Monash Review found there were significant limitations associated with the current requirement for health assessments predicated upon whether a worker was 'at risk from dust exposure':

*The criteria to determine jobs 'at risk from dust exposure' are not explicit in the regulations. The DNRM also [does] not specify which generic SEG categories fulfil these conditions. All underground workers (probably 13 of 15 underground SEGs) are likely to experience dust exposure, but some above-ground workers at underground sites, some open-cut miners and some workers at CHPPs may also be at risk.*⁷⁶³

Key finding

The allowance for some coal mine workers to be excluded from routine chest x-ray screening if not considered to be 'at risk' of dust exposure is unacceptable in light of the re-identification of CWP.

Recommendation 43

Health Assessments under the Coal Workers' Health Scheme should be required for all coal workers, removing the current exception for workers employed for a 'low risk task'.

5.6 Frequency of health assessments

From 1 January 2017, the CMSHR required that for the purposes of the health scheme, respiratory function (spirometry) and chest x-ray examinations must occur at least once every 10 years for above-ground coal mine workers and at least once every five years for underground coal mine workers.⁷⁶⁴

⁷⁵⁸ Mr Mark Stone, DNRM, public briefing transcript, Brisbane, 14 October 2016, p 4.

⁷⁵⁹ Mr James Purtill, DNRM, Public hearing transcript, Brisbane, 14 October 2016, p 8.

⁷⁶⁰ Ms Rachel Cronin, Deputy Director-General, public briefing transcript, Brisbane, 14 October 2016, p 6.

⁷⁶¹ Mr Russell Albury, DNRM, public briefing transcript, Brisbane, 14 October 2016, p 18.

⁷⁶² Mr Michael Roche, QRC, public hearing transcript, Brisbane, 11 November 2016, p 2.

⁷⁶³ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 40.

⁷⁶⁴ DNRM, submission 35, p 121.

5.6.1 New South Wales

Coal Services Pty Ltd (Coal Services) is an independent organisation established under the NSW *Coal Industry Act 2001*. Coal Services operates a Specialised Health and Safety Scheme that provides integrated surveillance services aimed at preventing illness and injury in the workplace.⁷⁶⁵

Periodic medical assessments are required to include chest x-rays every six years for coal mine workers, where a coal mine worker is defined as 'a person working on coal extraction and/or treatment of coal at a coal operation'.⁷⁶⁶

A chest x-ray is required every 6 years if the worker has a high risk of dust exposure. The frequency of x-ray applies to underground coal miners and 'at risk' open-cut miners.⁷⁶⁷

5.6.2 The United States of America

In the USA, the following voluntary examinations are to be provided by the mine operator:

- mine operators must provide every miner employed in or at any coal mine a respiratory assessment, chest x-ray and spirometry examination at no cost to the worker, at intervals no sooner than 3.5 years and no later than 4.5 years.⁷⁶⁸

The following health assessments are mandatory for all coal workers:

- an initial chest x-ray and spirometry examination of every commencing miner at an underground coal mine or surface mine,
- a second chest x-ray and spirometry examination three years following the initial examination if the miner is still engaged in coal mining, and
- a third chest x-ray and spirometry examination two years following the second chest x-ray if the miner is still engaged in coal mining and if the second chest x-ray showed evidence of category 1, 2 or 3 pneumoconiosis under the ILO classification, or the second spirometry examination indicated a decline lung function.⁷⁶⁹

5.6.3 How often assessments should occur

The TSANZ made the following recommendations with regards coal mine worker health assessments:

*We think they should be x-rayed at baseline, when they first join the company ... We believe in screening every three years... At the moment we are recommending radiology, chest x-ray and spirometry.*⁷⁷⁰

⁷⁶⁵ Coal Services Pty Ltd, *Annual Report 2016*, October 2016, p 3.

⁷⁶⁶ Coal Services administers four key orders which underpin these responsibilities, as established pursuant to powers conferred by the *Coal Industry Act 2001*, including Order 41 (Health Surveillance). Order 41 requires employers of a coal mine worker or operators of a coal operation in New South Wales to ensure that pre-placement and periodic (three-yearly) health surveillance medical assessment are completed for their workforce. Coal Services Pty Ltd, *Order 41*, [http://www.coalservices.com.au/MessageForceWebsite/Sites/340/Files/Order_41_information_\(March_2017\).pdf](http://www.coalservices.com.au/MessageForceWebsite/Sites/340/Files/Order_41_information_(March_2017).pdf)

⁷⁶⁷ Coal Services Pty Ltd, *Order 41*, [http://www.coalservices.com.au/MessageForceWebsite/Sites/340/Files/Order_41_information_\(March_2017\).pdf](http://www.coalservices.com.au/MessageForceWebsite/Sites/340/Files/Order_41_information_(March_2017).pdf)

⁷⁶⁸ Mine Safety and Health Act of 1977 (USA), 37.3(a) and 37.92 (a).

⁷⁶⁹ Mine Safety and Health Act of 1977 (USA), 37.3(b) and 37.92(b).

⁷⁷⁰ Dr Deborah Yates, public hearing transcript, Brisbane, 11 November 2016, p 27.

Key findings

There is a sufficient basis to require underground coal mine workers to undertake full health assessments including spirometry and chest x-rays or other approved imaging every three years. This recognises the overwhelming prevalence of CWP cases amongst underground coal miners.

All other coal workers, including above-ground coal mine workers, coal handling, port, and transport workers, and coal-fired power station workers, should be required to undertake full health assessments, including spirometry and chest x-rays or other approved imaging, at least every six years.

Approved Medical Advisors, or a worker's personal medical practitioner, may recommend the worker undertake medical assessments unrelated to the Coal Workers' Health Scheme at closer intervals than is required under the health scheme depending on the worker's personal medical history and circumstances. This should not affect the required frequency of assessments under the health scheme.

Recommendation 44

All coal workers should be required to undertake a health assessment prior to commencing work in the coal industry, including coal transportation and handling outside coal mines.

Recommendation 45

All underground coal mine workers should be required to undertake a health assessment every three years.

Recommendation 46

All other coal workers should be required to undertake a health assessment at least every six years.

5.7 Provision of health assessments

5.7.1 Mobile units

During the course of this inquiry the committee noted Queensland Health's BreastScreen Queensland program as an example of a best practice public health screening program.⁷⁷¹

In addition to the program's network of screening and assessment service sites, BreastScreen Queensland provides mobile and relocatable screening services across Queensland. They publish a screening schedule to regional areas six months in advance on their website.⁷⁷²

NIOSH offers mobile respiratory health screening to coal miners across the USA through a fleet of mobile units. NIOSH directly provides mobile screening services via these mobile units, to more than 1000 miners annually. At no cost to the worker, the screenings include a work history questionnaire, a chest radiograph, a respiratory assessment questionnaire, and spirometry testing. General health assessment and blood pressure screening is also conducted. Typically, the process takes about 30 minutes. NIOSH provides the individual miner with the results of their own screening. By law, each person's results are confidential. No individual information is publicly disclosed.

The mobile units travel across the USA, visiting coal mines, coal-mining communities, and even retirement communities. The locations the mobile units will be visiting are published on the NIOSH website six months' in advance. The mobile units are staffed by a small team expert medical

⁷⁷¹ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 5; and Professor John Slavotinek, public hearing transcript, Brisbane, 11 November 2016, p 33.

⁷⁷² BreastScreen Queensland, BreastScreen Queensland mobile service schedule, <http://www.breastscreen.qld.gov.au/mobile-service.asp>.

professionals employed and specifically trained by NIOSH. As a result, the data collected from these mobile units is of a high standard and is reliable for use in epidemiological research by the NIOSH research divisions.⁷⁷³

Dr Cohen advised:

A mobile unit has a role because there are some places that are a bit too remote. You can get these digital x-ray units on a trailer easily. They are not that hard to do, and the spirometry is compact. I think a mobile unit that provides that basic screening surveillance has a very useful role to play. Given the nature of the Australian coalmining communities that are quite rural like [the USA], I think it would make sense.⁷⁷⁴

The committee delegation to the USA had the opportunity to inspect one of the NIOSH mobile units and learn about their use in providing health assessments and surveillance to workers in coal mining communities.

Image 18 NIOSH mobile health screening van



Source: CWP select committee image.

Recommendation 47

The Coal Workers' Health Scheme should obtain and utilise at least one Coal Workers' Health Mobile Unit, similar to those used by NIOSH, capable of delivering chest x-ray, spirometry, and general health assessments for coal workers and former coal workers in regional Queensland.

Recommendation 48

The Coal Workers' Health Mobile Units should be properly staffed and maintained under the Coal Workers' Health Scheme, and operate out of the Scheme's headquarters in Mackay.

Recommendation 49

The cost of health assessments undertaken at the Coal Workers' Health Mobile Units should be met by the Coal Workers' Health Scheme.

⁷⁷³ For more background, refer to the report on travel to the USA by committee delegates at Appendix C.

⁷⁷⁴ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 29.

5.7.2 Telephone helpline

The committee notes that since the identification of CWP in 2015, DNRM has made information and factsheets about CWP and coal miners' health assessments available on its website.⁷⁷⁵ The department has also published a fact sheet specifically for retired miners.⁷⁷⁶ However, throughout the course of this inquiry the committee secretariat has continued to field queries from mine workers and former mine workers concerned for their respiratory health on how they may obtain a respiratory health assessment and who is responsible for paying for such assessments. The committee heard evidence of a miner with early signs of pneumoconiosis being advised that he would need to arrange a chest CT, at a cost to himself of \$500.⁷⁷⁷ Clearly such costs should be met by the worker's employer, workers' compensation, or the health scheme for retired and former miners.

As at May 2017, there is no dedicated helpline service providing free and confidential advice to miners and their families concerning CWP and the health assessment process.

Recommendation 50

The entity responsible for the Coal Workers' Health Scheme should provide a public information service, consisting of a toll-free telephone helpline and online service, to give free and confidential advice to mine workers, former mine workers and their families who have concerns about their respiratory health.

5.8 Nominated medical advisors

Under the current Health Scheme, coal mine worker health assessments can be undertaken by, or under the supervision of, an NMA.⁷⁷⁸ NMAs are appointed by employers, including mining operators and contractors who employ coal mine workers.⁷⁷⁹

According to Professor Malcolm Sim, NMAs are the 'linchpin of this scheme because they draw together all of the relevant information and make decisions and certify the end result of the medical assessment'.⁷⁸⁰

The Monash Review found there were too many NMAs performing health assessments to allow for adequate initial training, maintenance of skills and quality assurance.⁷⁸¹ There are more than 200 NMAs registered to conduct health assessments under the health scheme. They practise in over 140 clinics and across five different States.⁷⁸²

There is currently no requirement for the Commissioner, or any other regulator, to formally approve the appointment of medical practitioners as NMAs. Nor is there any formal system for vetting the addition of NMAs to the list held by DNRM. Selection and appointment of NMAs is entirely at the discretion of the mine operator, contractor or labour hire firm. The evidence obtained by the

⁷⁷⁵ DNRM, 'Support for coal mine workers', <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/medicals/pneumoconiosis/support-workers>

⁷⁷⁶ DNRM, 'Former coal mine workers and respiratory health', https://www.dnrm.qld.gov.au/data/assets/pdf_file/0010/927514/former-coal-mine-workers-health.pdf

⁷⁷⁷ Public hearing transcript, Brisbane, 15 March 2017, p 56.

⁷⁷⁸ Under s 46A of the CMSHR.

⁷⁷⁹ CMSHR, s 45.

⁷⁸⁰ Public hearing transcript, Brisbane, 9 November 2016, p 2.

⁷⁸¹ Monash Centre for Occupational and Environmental Health, Review, p 44.

⁷⁸² Monash Centre for Occupational and Environmental Health, Review, p 42.

committee during this inquiry confirms the findings of the Monash Review and demonstrates the serious failings of the current health scheme relating to NMAs, namely:

- lack of specific training, experience or professional knowledge of the coal mining industry, the work actually undertaken by particular coal mining occupational groups, and the associated occupational exposure to coal mine dust
- lack of knowledge or experience in diagnosing CWP and CMDLD
- substandard health assessment practices, including failure to assess the patient properly, or at all
- substandard performance of spirometry testing
- substandard interpretation of chest x-rays and failure to refer for specialist assessment by a radiologist or respiratory physician
- inappropriate emphasis on assessing a worker's 'fitness for work' and the practice of conducting a 'tick and flick' health assessment
- lack of, or perceived lack of, independence from mine operators and mining companies, and
- the absence of an authoritative centralised entity ensuring minimum qualifications or conducting regular audits and surveillance of performance.

5.8.1 Registration and control

As at December 2016, 243 NMAs registered were noted in the register maintained by DNRM.

The committee was informed that, in practice, the vast majority of health assessments are performed by a small cohort of NMAs.⁷⁸³ The Monash Review found, as at 2015, that NMAs were located mainly in Brisbane, Mackay, Sunshine Coast, Rockhampton and the Gold Coast.⁷⁸⁴ While some of these centres are clearly a considerable distance from Queensland's coal fields, the location of NMAs in major coastal centres may reflect the increasing tendency of FIFO mine workers to live in these centres while working in the central Queensland coal fields.

Prior to 2005 there were approximately 40 NMAs. The number of NMAs expanded significantly during the mining boom.⁷⁸⁵ Dr Smith told the committee:

I felt that it was really getting out of hand... As work increased and the boom took hold, the employers appointed more and more NMAs. A lot of the work was contract work, a lot of contractors appointed an NMA for convenience. They might appoint a doctor that was nearby as an NMA, and the employers then set no standards for the appointment, they just appointed a doctor as their NMA.⁷⁸⁶

It was generally accepted by all those who gave evidence to the committee on this issue that the number of NMAs must be significantly rationalised and some process of formal approval or accreditation of NMA by DNRM (or other relevant regulator) should be required.

⁷⁸³ DNRM, submission 35, p 42; as at December 2016, 22 NMAs are completing two-thirds of health assessments in Queensland.

⁷⁸⁴ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 42.

⁷⁸⁵ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 42.

⁷⁸⁶ Public hearing transcript, Brisbane, 30 November 2016, p 6.

5.8.2 Qualifications and training

An NMA must be a medical practitioner, but there are currently no other prescribed minimum qualifications or professional requirements, including in terms of having experience in occupational medicine or knowledge of coal mine operations.⁷⁸⁷

This was not always the case. Prior to 2001, under the health scheme NMAs and EMOs were required to have a knowledge and understanding of coal mine operations.

In the period 1982 to 1993, an EMO was defined as 'a medical practitioner nominated by the coal mining company and approved by the Coal Board'. The EMO was expected to have knowledge of the requirements of 'most job functions' of a mine and an understanding that the employee may have to work in the more 'arduous areas' of a mine.⁷⁸⁸

The 1993 Order established the role of NMA, defined as 'a medical practitioner registered in Queensland and nominated by a manager from a coal mine'.⁷⁸⁹ Other than medical qualifications, NMAs were required to have 'a sound knowledge' of:

- the Coal Industry Employees' Health Scheme
- the operations, activities and tasks performed by the worker
- the environment at the relevant mine, and
- 'an interest' in occupational health and health maintenance programs.⁷⁹⁰

According to the CFMEU:

When the coal board scheme was first put in place in 1983 or 1984 doctors appointed as nominated medical advisers by the employer had to be approved by and registered with the Queensland Coal Board. The Department of Natural Resources and Mines—whatever name it was back in 2009 or 2011—took a policy decision that they were not approving anything under the regulations.⁷⁹¹

Mr Ham described an informal system of vetting doctors as NMAs prior to registration by the Coal Board:

... while the Queensland Coal Board did not exactly approve doctors when they applied for a job, I gave them a little questionnaire to the effect of, 'Do you understand exactly what the scheme is about? Have you read the manual and do you understand all of that? You have been to underground mines, haven't you?' If they said, 'I'm not going to an underground mine', they were probably not the right man to be a nominated medical adviser. There was a level of encouraged self-selection. Out of that we had a nice small group of nominated medical advisors who would get together and kick around the problems of their communities.⁷⁹²

Regular sharing and maintaining professional knowledge among NMAs throughout Queensland was described as 'incredibly useful', especially for general practitioners in rural areas.⁷⁹³ Regular

⁷⁸⁷ CMSHR; DNRM, submission 35, p 42.

⁷⁸⁸ *Queensland Government Gazette*, 11 December 1982, vol CCLXXI, no.81, pp 1659-1675.

⁷⁸⁹ Coal Industry Employees' Health Scheme Order 1993, s 13, in accordance with definitions prescribed under the *Coal Mining Act 1925* (Qld), s 4.

⁷⁹⁰ Coal Industry Employees' Health Scheme Order 1993, s 11.

⁷⁹¹ Mr Andrew Vickers, CFMEU, public hearing transcript, Ipswich, 4 November 2016, p 28.

⁷⁹² Public hearing transcript, Ipswich, 4 November 2016, p 50.

⁷⁹³ Dr Ewan Mc Phee, private capacity, public hearing transcript, Emerald, 15 December 2016, p 6.

professional training and knowledge sharing in occupational health was not enshrined in the legislation.

The way that we ran the system up to sort of 2001 is that every six months we would have a meeting of nominated medical advisors. Most of them would come to Brisbane—one or two would miss out—and we would sit around the table and have a chat. Respiratory function did rate a regular mention, so that if you keep the group small you can actually get the industry health issues across.⁷⁹⁴

As the numbers of NMAs grew, regular catch-ups became 'very challenging' and eventually ceased.⁷⁹⁵

In recent years training of NMAs was less intensive and focused more on the fitness for work aspects than the respiratory screening aspects.⁷⁹⁶

They have no experience in mining, they do not appreciate the risk profile of mining jobs. They have no occupational medicine background.⁷⁹⁷

Some attempts were made to equip new NMAs with the requisite information, as Dr Smith related:

When I started there, I realised that nominated medical advisers were being appointed without being given any information on what the role required, so I set up an information kit for newly appointed nominated medical advisers to help them with that role.⁷⁹⁸

The Monash Review reported that the lack of specific training for NMAs was particularly concerning.

There is currently no formal training of NMAs prior to being registered to undertake coal mine workers' health assessments. However, regular meetings with NMAs were previously conducted by DNRM prior to the expansion of the number of NMAs during the mining boom. In addition, NMAs are not required to hold any specific qualifications apart from being a registered medical practitioner. Instead, DNRM furnishes newly registered NMAs with an information kit. The current version (dated 24/2/15) is an 18-page document which outlines the process of the coal mine workers' health scheme, and illustrates examples of work restrictions relevant to nominated medical conditions, such as manual handling weight restrictions for musculoskeletal injury and diminished cardiovascular fitness. With respect to respiratory conditions, the information kit advises that individuals with chronic obstructive airways disease and pneumoconiosis are to avoid exposure to irritant airborne contaminants (including dusts) and should not work underground. However, there are no instructions or clinical standards to guide further evaluation and follow-up of abnormal clinical findings or newly diagnosed medical conditions, so the focus is mainly on fitness for work. NMAs are also advised not to disclose medical conditions on section 4.

...

The lack of initial or ongoing training for NMAs is particularly concerning. There is currently no means of assessing NMAs' understanding of the content of the NMA information kit or its appropriate application, and no ongoing audit of NMAs' performance, apart from an administrative review at HSU. The main purpose of the information kit is to provide administrative procedures for conducting health assessments, rather than information about CMDLD or medical guidelines. There is no information in the kit about the primary purpose of the

⁷⁹⁴ Mr Bruce Ham, public hearing transcript, Ipswich, 4 November 2016, p 49.

⁷⁹⁵ Mr Bruce Ham, public hearing transcript, Ipswich, 4 November 2016, p 49.

⁷⁹⁶ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 2.

⁷⁹⁷ Dr David Smith, public hearing transcript, Brisbane, 30 November 2016 (morning), p 6.

⁷⁹⁸ Public hearing transcript, Brisbane, 30 November 2016, p 19.

*Coal Mine Workers' Health Scheme and no explicit instructions about the early signs of CMDLD, nor about procedures for clinical management/referral for suspected CMDLD cases.*⁷⁹⁹

In the US, the Department of Labour provides extensive online training, free-of-charge, to all medical professionals involved in the assessment of workers for CWP and CMDLD. This training is freely available online and may be accessed anywhere in the world by doctors, coal mine workers or anyone interested in better understanding CMDLD.⁸⁰⁰

The committee notes that DNRM provided medical practitioners with some limited information about CWP in 2016. The department is currently developing a consultation paper on issues related to NMAs and medical assessments. The consultation paper 'will canvas a number of issues such as the role of doctors, training, minimum qualifications and experience, and on-going clinical audit'.⁸⁰¹

5.8.3 Quality control of health assessments, examining medical officers

Under the current regulation anyone can conduct a medical examination on a coal mine worker as part of the health assessment, provided the person is 'qualified and competent to conduct the examination'.⁸⁰² While not expressly defined in the legislation, these persons are referred to on the health assessment form as EMOs.⁸⁰³ The NMA is required to complete and sign off on the report, but is not expressly required to actually see or examine the worker being assessed.⁸⁰⁴

Professor Sim confirmed that the role of the EMO is not clearly defined in the scheme. EMOs are 'medical officers who do the actual assessments in many cases. They do not do the certifications. We think that is not a good process'.⁸⁰⁵

The committee was troubled by evidence that the regulation allows for registered nurses and other non-doctors, who are designated as EMOs, to perform health assessment examinations that are later certified by a medical doctor as NMA without the doctor ever actually seeing the patient. This appears to be common practice because 'that is how the system is set up'.⁸⁰⁶

Dr Smith told the committee that the regulation allows the actual medical examination to be conducted by another doctor, or 'anyone with the appropriate skills' so long as the assessment is done under the supervision of the NMA.⁸⁰⁷ He stated: 'Nurses and paramedics are doing it in some places'. Disturbingly, he noted that 'there is no definition of what 'supervision' means and, in some cases, supervision is probably non-existent'.⁸⁰⁸

Even if the NMA did conduct the examination, the assessment was performed to 'tick the boxes' and ensure fitness for work. Taking an occupational history was not a priority.

⁷⁹⁹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 44.

⁸⁰⁰ Accessed at UIC, MidAmerica Centre for Public Health practice, Public Health Learning, <https://www.publichealthlearning.com/course/view.php?id=94>

⁸⁰¹ DNRM, submission 35, p 43. DNRM has since advised that minimum requirements are being developed for NMAs, including a continuing competency program; DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 4, p 2.

⁸⁰² CMSHR 46A(2).

⁸⁰³ DNRM, correspondence dated 28 October 2016.

⁸⁰⁴ CMSHR 46B (4)(a)(ii).

⁸⁰⁵ Public hearing transcript, Brisbane, 9 November 2016, p 2.

⁸⁰⁶ Dr Ewen McPhee, public hearing transcript, Emerald, 15 November 2016; private hearing, Moranbah, 23 November 2016; Mr Stephen Mellor, public hearing transcript, Mackay, 25 November 2016, p 45; Mr Matthew O'Toole, public hearing transcript, Blackwater, 15 December 2016, p 5.

⁸⁰⁷ Public hearing transcript, Brisbane, 30 November 2016 (evening), p 6.

⁸⁰⁸ Public hearing transcript, Brisbane, 30 November 2016 (evening), p 6.

None of the many coal mine workers and former coal mine workers who gave evidence to the committee could recall being asked during a coal workers' health scheme health assessment for a detailed occupational history or history of occupational exposure to dust.

Mr McMILLAN: *Going back to your Coal Board medicals—the four that you had in Queensland—when you had those medicals, do you remember whether the doctor who was doing the assessment with you asked you about the level of dust that you were exposed to underground?*

Mr Kirkwood: *No ... You go to the guy who does the Coal Board medicals. You get checked. As long as you can walk and you can breathe, that is basically it. You do a function test on your lungs and I did not have any problems with that.*

Mr McMILLAN: *We have heard a lot of evidence that, depending on where you work underground, there are different levels of exposure to dust.*

Mr Kirkwood: *Yes.*

Mr McMILLAN: *Did the doctor who did those assessments ever ask you what particular jobs you were doing?*

Mr Kirkwood: *No, not really, no. I do not think they ever did, no.*⁸⁰⁹

Tragically, several of the 21 Queensland coal workers now diagnosed with CWP recalled having health assessments and x-rays where they were certified as fit to work with no discussion of their occupational exposure to dust or the possibility they might have CMDLD.

Underground mine worker Mr Kevin McPhail worked in the mines for over 30 years. He was diagnosed in March 2016 after his chest x-ray was sent to Dr Robert Cohen for analysis. He worked as a shearer driver on a longwall, and was at times exposed to very heavy dust. He attested that he had a chest x-ray every five years as part of his medical assessment. He stated:

*Every five years you have to do a Coal Board medical. Every one of those x-rays had come back clear—no problems, none whatsoever. Even the 2010 one came back clear until just recently Dr Foley sent it over [to the USA] to have it checked by [Dr] Cohen, and it came back positive.*⁸¹⁰

Mr Chris Byron underwent a medical assessment and chest x-ray in June 2006. The EMO noted the following on his health assessment form in 2006:

*A routine x-ray this year revealed pulmonary nodules, pneumoconiosis, sarcoidosis, atypical infection, post-pneumonia changes being investigated and had pneumonia three times in 2004.*⁸¹¹

Despite the notation on his health assessment form, the NMA certified Mr Byron as fit to return to work in an underground coal mine.⁸¹² The committee was shocked and saddened to hear evidence from Mr Byron that he continued to work in underground mines until 2013⁸¹³ and has suffered from severe respiratory problems for over 10 years.⁸¹⁴ He stated:

You would not wish this to happen to anyone. If regulations are not put in place to stop these practices, more coalminers will get this horrible disease of black lung. I have been totally let down

⁸⁰⁹ Public hearing transcript, Emerald, 16 December 2016, p 6.

⁸¹⁰ Public hearing transcript, Moranbah, 22 November 2016, p 4.

⁸¹¹ Public hearing transcript, Mackay, 25 November 2016, p 33.

⁸¹² Public hearing transcript, Mackay, 25 November 2016, pp 32-33.

⁸¹³ Public hearing transcript, Mackay, 25 November 2016, p 36.

⁸¹⁴ Public hearing transcript, Brisbane, 22 March 2017, pp 12-13.

*by the system, being the Department of Natural Resources and the collieries, doctors and specialists who did not care about my health.*⁸¹⁵

5.8.4 Independence of Nominated Medical Advisors

The independence of NMAs and EMOs was questioned by a number of witnesses during the course of the inquiry.⁸¹⁶

*Coal board medicals, especially during the boom times, was a very lucrative activity and a lot of practices started doing coal board medicals, but there is no control ... what is the experience of the doctor doing the examination, has he ever been in a coalmine, does he know what to look for? The system is just not designed to deliver what we expect it to deliver.*⁸¹⁷

The Senate Committee report noted that NMAs are appointed and remunerated by mining companies. DNRM has no role in the appointment of NMAs, nor is there any specific training required for them. The Senate Committee noted the vulnerability of the scheme, particularly as it involves NMAs, 'whose position is effectively owed to the mining companies who nominate them'.⁸¹⁸

Mine worker Mr Stephen Walker gave evidence that coal board medicals 'should not be the employer's choice of doctor, it should be someone completely independent from the mining industry because self-regulation can never work in mining'.⁸¹⁹

The committee noted however the evidence of a practising doctor and NMA situated in a mining community, who emphatically denied any knowledge or experience of capture of NMAs by mining companies.⁸²⁰ A second practising doctor noted the difficulties in successfully performing the role as NMA:

... we are asked to see and assess people at a single point in time. In particular, with coal workers' pneumoconiosis being at its very early stage a very subtle illness and disease to diagnose, I think that we are ill-equipped in our current capacity to effectively be a part of a health system to identify that at a very early stage.

*Our predominant role, though, has been one of assessing fitness for a person to go to work. Much of our role is centred around looking at their physical capacities and any other diseases and to identify, as a separate matter, that the burden of illness for the people we deal with often relates to lifestyle diseases such as things like obesity, drug abuse, hearing problems and physical disablement. Coal workers' pneumoconiosis has been, I think, very difficult for us to keep within our sphere of view.*⁸²¹

The CFMEU made the following submissions in relation to NMAs:

*... [they] need to be specialists in the role that they undertake; they need to not be aligned to the coal companies or the union; they need to be independent; and they need to be appointed by government ... It cannot be the 267 NMAs that we have now.*⁸²²

⁸¹⁵ Public hearing transcript, Mackay, 25 November 2016, p 33.

⁸¹⁶ Mr Shane Rolls, private capacity, public hearing transcript, Middlemount, 24 November 2016, p 21.

⁸¹⁷ Private hearing, Moranbah, 23 November 2016.

⁸¹⁸ Senate Select Committee on Health, *Fifth interim report*, p 44.

⁸¹⁹ Public hearing transcript, Middlemount, 23 November 2016, p 18.

⁸²⁰ Private hearing, Moranbah, 23 November 2016.

⁸²¹ Dr Ewan McPhee, private capacity, public hearing transcript, Emerald, 15 December 2016, pp 1-2.

⁸²² Mr Stephen Smyth, CFMEU, public hearing transcript, Blackwater, 14 December 2016, p 5.

DNRM has advised the committee that the department is developing a new framework for approved medical providers under the Coal Mines Workers' Health Scheme.⁸²³ However the committee remains concerned that as long as NMAs are appointed by mine operators and their appointment is not subject to further scrutiny or regulation, they will not be sufficiently independent.

*At all times a nominated medical adviser should maintain an independence, and that should be clear both to the company who employs them and the mine worker who presents to them.*⁸²⁴

Key findings

The current regulatory regime fails to provide sufficient safeguards to ensure that medical practitioners engaged to perform health assessments under the Coal Mine Workers' Health Scheme possess the necessary skills and experience to properly perform those assessments.

There are far too many Nominated Medical Advisors currently registered with DNRM to ensure they have sufficient exposure to and experience of coal mine workers to properly perform health assessments under the health scheme.

The absence of any requirement for NMAs to be approved by a regulatory body has allowed significant failures in the health scheme to develop and persist.

Recommendation 51

'Nominated Medical Advisors' should be renamed and redefined as 'Approved Medical Advisors'.

Recommendation 52

Approved Medical Advisors should be approved as such by the Commissioner for Mine Safety and Health.

Recommendation 53

A subset of Approved Medical Advisors with appropriate qualifications and experience in diagnosing occupational respiratory diseases should be approved by the Commissioner for Mine Safety and Health to conduct respiratory health assessments and designated 'Approved Medical Advisor – Respiratory (AMA-R)'. (See also [Recommendation 39\(i\)](#)).

5.9 Radiologists and respiratory physicians

High quality x-rays are a vital component of a successful respiratory health surveillance program. Of equal importance is that the x-rays are interpreted consistently and proficiently. The committee noted that the Monash Review found grave deficiencies in the standard of x-rays taken, and the competence of medical professionals interpreting the scans.

The committee heard evidence from a number of miners who believed their x-rays may have been read by their NMA, and not by a trained radiologist or respiratory specialist.⁸²⁵

In many instances where radiologists did interpret chest x-rays, there was a failure to recognise indications of CMDLD. This may have occurred for a number of reasons, including:

- no one was looking for CWP or any other CMDLD (refer to section 1.8)

⁸²³ DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 4, p 3.

⁸²⁴ Dr Ewan McPhee, public hearing transcript, Emerald, 15 December 2016, p 6.

⁸²⁵ Public hearing transcript, Middlemount, 24 November 2016, p 2; Mr Stephen Mellor, public hearing transcript, Brisbane, 15 March, p 49.

- radiologists lacked the necessary skills and knowledge to recognise early or even complex CWP (refer to 4.9.2), and/or
- the occupational context of the x-ray, being that of a coal mine worker, was not provided (refer to 5.9.3).

Mine workers had chest x-rays taken according to the requirements of the health scheme, and did so under the assumption that their scans would be competently read and any abnormalities identified.

Mr Steve Mellor was a contracted coal mine worker who worked underground for 11 years. He had an x-ray taken in 2012 as part of his health assessment. It was not until the x-ray was reviewed again in 2016 that he was diagnosed with CWP. The x-ray had visible indications of simple CWP even though the report from 2012 stated that there were 'no opacities'.⁸²⁶

Mr Kevin McPhail reported that while working in the mines, 'every one' of his health assessment x-rays came back clear, even his most recent one from 2010. This x-ray was sent to be viewed by Dr Cohen, and Mr McPhail was subsequently diagnosed with CWP.⁸²⁷

In Tieri, Mr Brad Rogers and Mr Gavin Anastasi both informed the committee that early signs of CWP were not detected in their health assessment x-rays. Refer to Mr Rogers' testimony at section 1.5.2 for an account of his misdiagnosis.

Mr Anastasi worked as a contractor in a number of mines before becoming a permanent employee. He had his first chest x-ray in 2005 and then x-rays in approximately 2006 and 2010. In 2016 he had a CT scan for another ailment. By happenstance his daughter, who worked for a medical imaging company in Bundaberg, offered to have his CT scan looked at by her company's doctors. He was subsequently diagnosed with CWP.⁸²⁸

NMAs also operated under the same misplaced faith in the system:

*I had always made an assumption that the people who I was referring to were qualified to provide an opinion upon a chest x-ray. That was my assumption. It was with some deep concern that I was—I was quite troubled by the fact that that is not the case.*⁸²⁹

The committee was shocked to hear evidence in March 2017 that around 20 per cent of new x-rays taken under the Coal Workers' Health Scheme and sent from Queensland to the USA for reading by accredited B-readers, continue to be of such poor quality they are unreadable.⁸³⁰

5.9.1 Chest x-ray

The Monash Review conducted a sample survey of chest x-rays from miners with more than 10 years of experience in coal mines. The x-rays were sourced from DNRM's health assessments records repository. The review found a significant number of x-rays had quality issues, which could affect the accurate detection of the small opacities on the lung.⁸³¹

Review of the ILO image quality scores showed that only 25% of CXRs [chest x-rays] were Quality 1, 55% were Quality 2, 19% were Quality 3, and 1% were Quality 4. The CXRs that were rated Quality 3 had technical defects that to some extent affected the ability to classify the images, although it was felt that classification was still possible. Images of Quality 3 should represent a

⁸²⁶ Public hearing transcript, Brisbane, 15 March 2017, p 49.

⁸²⁷ Mr Kevin McPhail, public hearing transcript, Moranbah, 22 November 2016, p 4.

⁸²⁸ Public hearing transcript, Tieri, 14 December 2017, p 13.

⁸²⁹ Dr Ewan McPhee, public hearing transcript, Emerald, 15 December 2016, p 3.

⁸³⁰ Public hearing transcript, Brisbane, 15 March 2017, p 5.

⁸³¹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 12.

*much smaller proportion of CXR images in a surveillance program. Observed technical problems with the CXRs included images with poor positioning, (such as exclusion of portions of the lungs in the image or overlap of the lung fields by the shoulder blades), poor contrast, and excessive edge enhancement. These issues can make it difficult to accurately detect the small opacities of pneumoconiosis. Unfortunately, these technical problems cannot be resolved by manipulation of the digital images after image acquisition and processing has taken place.*⁸³²

The Monash Review also found major discrepancies between the results of its review of coal miners’ chest x-rays, the radiological review and report findings of those x-rays at the time they were taken, and the required follow-up by the NMA.

The radiology and NMA reports were analysed to determine whether or not the changes of pneumoconiosis were recognised and to determine if further action was taken ...

*... CXRs identified by the reviewers as having features consistent with simple pneumoconiosis by chest radiograph were identified by the original radiologists as having interstitial abnormalities that could possibly be interpreted as evidence of pneumoconiosis. A number of these CXRs had irregular opacities. Irregular opacities have been well described in CWP, although they may also occur with emphysema. The remainder (n=13) were classified as normal by the original radiologist. In neither case where possible pneumoconiosis was identified by the original radiologist did the NMA record a finding about possible CWP, nor was any recommendation made regarding fitness to work from a respiratory point of view.*⁸³³

Figure 9 Comparison of findings of radiology reports and NMA assessments by Monash reviewers

Case	Small Opacity Profusion	Radiologist Report	NMA Assessment of Report	NMA Action
1	1/0	Normal	Normal	Fit
2	1/0	Not available for review	None	Fit
3	1/0	Normal	Normal	Fit
4	1/0	Normal	Normal	Fit
5	1/0	Normal	Normal	Fit
6	1/0	Normal	Normal	Fit
7	1/0	Not available for review	None	Fit
8	1/0	Abnormal (Consistent with pneumoconiosis)	None	Fit
9	1/0	Normal	Normal	Not fit (right knee injury)
10	1/0	Normal	Normal	Fit
11	1/0	Not available for review	None	Fit
12	1/0	Normal	Normal	Fit
13	1/1	Abnormal (Consistent with pneumoconiosis)	None	Not fit (hearing, vision)
14	1/1	Normal	None	Fit
15	1/1	Normal	Normal	Fit
16	1/1	Normal	Normal	Fit
17	1/1	Normal	Normal	Fit
18	1/2	Normal	Normal	Fit

Source: Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 53.

⁸³² Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 50.

⁸³³ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 52.

The Monash Review recommended that chest x-rays should be performed by appropriately trained staff to a suitable standard of quality, and interpreted according to the ILO classification.⁸³⁴

The committee sought expert medical advice regarding the imaging and detection of CMDLDs from a number of thoracic physicians, including Dr Robert Cohen of the University of Illinois.⁸³⁵

The chair and deputy chair travelled to the USA to investigate how the federal government regulates, identifies and manages CWP and other CMDLDs. They met with representatives from NIOSH and the MSHA.

Certified B-readers are physicians who have demonstrated proficiency in interpreting and classifying chest x-rays for pneumoconiosis, according to the ILO classification system.⁸³⁶

The respiratory division of NIOSH operates the Coal Workers' Health Surveillance Program. The program offers chest x-rays to miners for B-reader interpretation at NIOSH. The program also collects information on respiratory symptoms, occupational histories, smoking status, blood pressure and spirometry testing. NIOSH certification in B-reading is considered world's best practice.

In response to the re-identification of CWP in Queensland, DNRM introduced a dual-screening process in July 2016. Chest x-rays taken under the scheme are first read by an Australian radiologist to the ILO classification and then assessed by NIOSH-approved B-readers at the University of Illinois at Chicago under the supervision of Dr Cohen.

This process was adopted by DNRM recognising Dr Cohen's world-leading expertise in this field, but also because there were no NIOSH accredited B-readers in Australia at the time. The committee was very concerned to learn as a result of its delegation to the US, which included a visit to the NIOSH B-reader program in West Virginia, that NIOSH made an offer to DRNM in 2015 to provide a B-reader course in Queensland. However, the offer was not taken up. It was not until early 2017 that the first Australian B-readers were certified, having undertaken the training program at their own expense at NIOSH in the US.⁸³⁷

Mine operators in the USA are required to offer their workers respiratory testing at least every five years, however participation by the coal mine worker is voluntary.

In the USA the prevalence rate of black lung and other CMDLD amongst coal workers is between two and 12 per cent and the incidence rate is not trending down. Some regions are experiencing increasing rates of complex pneumoconiosis and progressive massive fibrosis. Dr Cohen conceded that because the program is voluntary, and many workers fear they may lose their jobs, authorities were only seeing these cases when:

*... they came to the attention of the system ... after their careers were finished and they were laid off or were too sick to work, and then they finally appeared at the federal black lung screening program for compensation.*⁸³⁸

The committee notes the standards set out in the regulations of the Coal Workers' Health Surveillance Program and administered in the USA by the federal Department of Health and Human Services in

⁸³⁴ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 12.

⁸³⁵ Private briefing, Brisbane, 16 November 2016; Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017.

⁸³⁶ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 62.

⁸³⁷ Public hearing transcript, Brisbane, 15 March 2017.

⁸³⁸ Public hearing transcript, Brisbane, 15 March 2017, p 18.

accordance with MSHA.⁸³⁹ The standards apply to health assessments of coal miners including chest x-rays and spirometry examinations.⁸⁴⁰

Prior to 2016 there was no statutory requirement for a dual independent reading of a chest x-ray in Queensland and radiologists were not required to assess x-rays using the ILO on the health assessment form. Furthermore, the decision as to who was to have a chest x-ray under the scheme was based on a decision by the employer, or the coal mine operator, as to who was 'at risk from dust exposure'.⁸⁴¹

As at December 2016, the department had sent 1,920 chest x-rays to the USA for dual reading. Not all chest x-rays held by the HSU are undergoing this process. The department has sent chest x-rays of:

- current workers going through regular screening
- workers voluntarily seeking to have their x-rays re-read, and
- retired workers and those who have left the industry voluntarily seeking to have their x-rays read.⁸⁴²

The committee was informed that an additional 136 x-rays and CT scans were sent by the CFMEU on behalf of its members to the USA for reading at the University of Illinois under the supervision of Dr Cohen.⁸⁴³

It is of great concern to the committee that a significant proportion of x-ray images received by DNRM and sent to the USA for analysis continue to be below acceptable standard. According to Dr Cohen:

*I would say that one thing that is a bit disappointing is that the percentage of images that is of a quality that degrades our ability to read them is still around 20 per cent. I think that is what we found in the Monash review. Even looking through the data most recently of this whole body of x-rays that we have read, 20 per cent [is] quality 3 or worse.*⁸⁴⁴

However Dr Cohen has since noted that DNRM leaders and staff had greatly assisted Dr Cohen and his team, providing 'an incredible amount of work' to develop a system of transferring files securely and quickly from Queensland to the USA. He also noted that DNRM staff had 'learned how to view images in an appropriate manner and identify images that were of unacceptable quality in order to request replacement images'.⁸⁴⁵

5.9.2 Qualifications and training of radiologists

The committee was dismayed to hear of former mine workers undergoing invasive biopsies in 2015 to diagnose their disease because there was 'nobody in Australia who could read an x-ray properly'.⁸⁴⁶ For many years there were too few specialists capable of reading an x-ray for pneumoconiosis.

⁸³⁹ United States Government, <https://www.federalregister.gov/documents/2016/10/24/2016-24405/specifications-for-medical-examinations-of-coal-miners>

⁸⁴⁰ Cornell University Law School, Legal Information Institute, <https://www.law.cornell.edu/cfr/text/42/part-37>

⁸⁴¹ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 2.

⁸⁴² DNRM, submission 35, p 37; the committee also heard of delays in receiving a reading back from the USA. In some cases, mine workers had waited over 12 months, see public hearing transcript, Middlemount, 24 November 2016 (morning), p 7.

⁸⁴³ Mr Stephen Smyth, CFMEU, public hearing transcript, Blackwater, 14 December 2016, p 3.

⁸⁴⁴ Public hearing transcript, Brisbane, 15 March 2017, p 5.

⁸⁴⁵ Dr Robert Cohen, correspondence dated 22 February 2017.

⁸⁴⁶ Mr Percy Verrall, private capacity, public hearing transcript, Ipswich, 4 November 2016, p 1; Mr Dave Walker, public hearing transcript, Mackay, 25 November 2016, p 36.

Dr Smith recalled:

*Certainly there was an absence in Queensland of readers who could read to the ILO standard. What had happened was that in Queensland we had Dr Rathus and Dr Abrahams, whose report you have. They were both ILO trained readers, both experts in reading those. Once those people retired—and Rathus and Abrahams have both died since—we had no ILO trained readers left in Queensland, to my knowledge.*⁸⁴⁷

CWP is difficult to identify, as Dr Smith observed:

*There are very subtle changes in the chest x-ray that need to be picked up. If you are not, for a number of reasons, looking for them or, for some reason or other, you do not spend enough time on the film to see them, then you will miss cases.*⁸⁴⁸

In NSW, Coal Services has in-house radiographers operating in x-ray facilities in a number of locations. Local providers are also sourced, however the authority maintains 'a very small pool' of radiologists. Coal Services noted it had 'a level of confidence in the quality of the radiology that we were receiving back'.⁸⁴⁹

In response to the re-identification of CWP among coal mine workers in Queensland, the Royal Australian and New Zealand College of Radiologists (RANZCR) prepared a register of clinical radiologists who are available to report on chest x-rays for CWP in accordance with the ILO classification. The committee was informed, as at December 2016, that there were 40 clinical radiologists on the register, with 24 based in Queensland.⁸⁵⁰

The TSANZ recommended:

*... that the films should be read by an accredited radiologist with specialist expertise, according to the ILO criteria. Once this has been read, if there is an abnormality detected—if they have abnormal lung function as well and any symptoms—they should be referred to a respiratory physician. We believe that early referral is important.*⁸⁵¹

NIOSH established the B-reader proficiency program in 1974 to train a pool of qualified readers.⁸⁵² B-readers must retest every four years to maintain their qualification.⁸⁵³ The B-reader training and certification process may take only three days, 'provided the participants are trained radiologists with a lot of chest imaging experience', so that they 'just had to learn how to use that system'.⁸⁵⁴

Prior to March 2017 there were no NIOSH certified B-readers in Australia. Dr Cohen reported that there are now two in Australia who recently qualified and they are based in Brisbane.⁸⁵⁵

⁸⁴⁷ Public hearing transcript, Brisbane, 30 November 2016, p 14.

⁸⁴⁸ Public hearing transcript, Brisbane, 30 November 2016, p 15.

⁸⁴⁹ Private briefing, Sydney, 23 February 2017.

⁸⁵⁰ DNRM, submission 35, p 37.

⁸⁵¹ Dr Deborah Yates, Thoracic Society of Australia and New Zealand, public hearing transcript, Brisbane, 11 November 2016, p 27.

⁸⁵² United States Centers for Disease Control and Prevention, NIOSH, <https://www.cdc.gov/niosh/topics/chestradiography/breader.html>

⁸⁵³ United States Centers for Disease Control and Prevention, NIOSH, <https://www.cdc.gov/niosh/topics/chestradiography/breader.html>

⁸⁵⁴ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 41.

⁸⁵⁵ Public hearing transcript, Brisbane, 15 March 2017, pp 7, 10.

The committee received evidence that while B-readers are one way of ensuring a certain standard, 'having a proper ILO person or a properly qualified radiologist still gives you the same outcome'.⁸⁵⁶

The committee believes that on-going training to NIOSH standards is crucial for those professionals performing radiography within the health scheme. RANZCR recommended the establishment of a screening program with features including:

- training for participating radiologists on induction, and the requirement for the radiologist to have NIOSH equivalent B-reader certification
- double or dual reading by two experienced radiologists
- central collection of data and previous images for comparison purposes
- on-going feedback to participating radiologists on performance.⁸⁵⁷

DNRM's position paper on *Chest x-ray screening for the Coal Mine Workers' Health Scheme* proposes screening guidelines with some new features:

- the selection of a private sector dual-reading provider
- the provider to read all chest x-rays under the scheme to the ILO Classification
- for the first 12 months, at least one of the dual-readers must be trained in the ILO Classification, with all readers to be ILO trained after 12 months
- radiographic imaging service providers will require registration with the department
- x-rays taken by registered imaging services must be digitally referred to the dual-reading provider, and
- all digital x-rays held by the provider must be made available to doctors, workers and the department upon request.⁸⁵⁸

Dr Cohen observed of these proposals:

*I would encourage [DNRM] to consider continuing the program they started [in collaboration with the USA] with two certified folks, and I think they should be able to do that going forward.*⁸⁵⁹

He acknowledged that Queensland would not need a large number of qualified readers:

*I think ... if you could get five or six people you should be fine to do that and they should be able to cover that.*⁸⁶⁰

In March 2017, Minister Lynham announced the new guidelines will be phased in from July 2017. In April 2017, he announced a tender to source 'a Queensland-based provider for radiologists to dual read x-rays to the ILO Standard'.⁸⁶¹

The committee considers that comprehensive and specific training is essential to ensure those who are engaged to read and assess chest x-rays under the health scheme are able to do so properly.

⁸⁵⁶ Private briefing, Sydney, 23 February 2017.

⁸⁵⁷ Emeritus Professor Odwyn Jones, submission 4, p 4.

⁸⁵⁸ DNRM, *Chest x-ray screening for the Coal Mine Workers' Health Scheme: refined proposal from stakeholder feedback: position paper*, March 2017, p 9. The committee noted advice from DNRM that the department expects to tender for a Queensland dual-reading chest x-ray provider in April 2017; DNRM, response to question taken on notice during a hearing, 22 March 2017, no. 4, p 2.

⁸⁵⁹ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, p 36.

⁸⁶⁰ Public hearing transcript, Brisbane, 15 March 2017, p 40.

⁸⁶¹ Hon Dr Anthony Lynham MP, Minister for State Development and Minister for Natural Resources and Mines, 'Black lung protections outlined in Parliament', media release, 23 March 2017; and 'X-ray tender a critical step in fighting black lung', media release, 21 April 2017.

However, it is not necessary for Queensland to 're-invent the wheel', expending limited resources on preparing training that is already available elsewhere.

Mr SPRINGBORG: *You would obviously be aware that our officials here have recently put out a couple of directions papers where they are seeking to invent a process of more competent x-ray and x-ray analysis and spirometry. Do you consider that that is reinventing the wheel, given the available resources and knowledge that you have in the United States around the availability of several things such as this from NIOSH and MSHA, which have all been done in conjunction with yourself and also the online training, particularly with regard to spirometry?*

Dr Cohen: *I think that certainly I would recommend that the department review all the material that is available from NIOSH. We have had the Coal Workers' Health Surveillance Program nationally in the United States since the passage of the federal Coal Mine Health and Safety Act, and we have been doing spirometry and all this imaging work for these populations for many, many years in a very coordinated and organised way. We have spent millions developing these materials and this training and the certifications. The American College of Radiology just finished completion of a contract for almost \$1 million to review the educational materials for the B reading program, and we are now reviewing that syllabus and we are going to be posting that shortly. It seems to me it would be a shame not to take advantage of it. I do not believe the US government will charge a nickel to Queensland. We believe that this is to be provided as a service to any government or organisation that cares for mineral dust exposed workers. Certainly it could and should be adapted for Queensland, so I would not just take it without reviewing it and making sure that it meets your needs, but it is a good starting point.⁸⁶²*

The committee understands that as at May 2017, two Queensland doctors have undertaken NIOSH accredited B-reader training and examination and been certified by NIOSH as international B-readers. It is hoped more Queensland doctors will undertake this training and become NIOSH certified in the near future. However, the committee acknowledges that a critical volume and frequency of practice in classifying chest x-ray examinations under the ILO classification system is needed to maintain clinical skill and proficiency. Until such competencies can be attained and maintained amongst Queensland B-readers, it will be necessary to maintain the safety net of having USA-based B-readers review classifications performed by Australian B-readers. To ensure the mining industry, and the general public, may have faith in the integrity of this new system, the committee considers this safety net should be maintained for at least five years.

5.9.3 Importance of context, including occupational history

Professor John Slavotinek identified two main problems with the chest x-ray component of the health scheme prior to 2016. Firstly, the technique of obtaining the x-ray and quality of the image was highly variable. Secondly, the information provided on the referral slip for the x-ray was very limited.⁸⁶³ The committee heard:

... a radiologist really needs to receive the clinical context of the patient, together with a request for imaging, for them to be able to make appropriate and useful diagnosis.⁸⁶⁴

Dr Smith concurred:

Part of the problem has been that the NMAs have not made it clear to radiologists that they are looking at a chest x-ray of a coalmine worker. That is a very important issue and one which I

⁸⁶² Public hearing transcript, Brisbane, 15 March 2017, p 8.

⁸⁶³ Public hearing transcript, Brisbane, 11 November 2016, p 32.

⁸⁶⁴ Ms Natalie Vukolova, RANZCR, public hearing transcript, Brisbane, 11 November 2016, pp 30-31.

*think has come to light quite a few times and ... we have taken steps to require NMAs to make that statement on the x-ray request form.*⁸⁶⁵

Since the re-identification of CWP in Queensland, radiologists and specialists have been looking for signs of the very early manifestations of the disease. Dr Deborah Yates of the TSANZ noted:

*[W]e have to remember that, with early disease, it is more difficult to distinguish it from other things. If you look, for example, at the causes of little spots on the x-ray, which is what you will see with early coal workers' pneumoconiosis, there are probably about 250 different things that can cause this. Therefore, our diagnostic certainty is less than it was in earlier days.*⁸⁶⁶

The committee received expert advice from a Brisbane-based thoracic physician who stressed the importance of obtaining an adequate history of dust exposure. A very detailed occupational history will provide radiologists and respiratory specialists with an indication of the possible level of coal dust exposure of the worker.⁸⁶⁷

According to Dr Cohen, physicians need a very accurate and carefully performed occupational history in order to accurately and reliably diagnose a coal mine dust disease:

*Every job that that person has had over their lifetime should be elicited. You then go over the exposures and try to quantify in your mind what the exposures were ... It has to be detailed.*⁸⁶⁸

NSW Coal Services ensures that a referral for an x-ray is accompanied by specific identification that the x-ray is of a coal mine worker and there are instructions to look for the presence of any dust disease, as well as any other abnormalities.⁸⁶⁹

5.10 Spirometry training and equipment standards

The Monash Review conducted an online survey of registered NMAs in 2016. It found limited training among those conducting the spirometry test, and inadequate maintenance of spirometry devices.⁸⁷⁰ The review reassessed 256 spirometry results of coal mine workers held by the department and found less than half had been accurately interpreted and reported by NMAs.⁸⁷¹

The Queensland Mine Safety Framework RIS of 2013 proposed strengthening the respiratory function component of the health assessment. The RIS included a proposal to require those carrying out health assessments be appropriately trained in audiometry and spirometry testing.⁸⁷² As discussed above, the RIS did not progress.

There was general acknowledgement in this inquiry of substandard spirometry testing performed by NMAs in regional areas.⁸⁷³

In NSW spirometry tests, along with audiometry, are conducted at the pre-employment medical and then every three years. NSW Coal Services conducts spirometry 'in-house' to ensure consistency and

⁸⁶⁵ Public hearing transcript, Brisbane, 30 November 2016, p 15.

⁸⁶⁶ Public hearing transcript, Brisbane, 11 November 2016, p 35.

⁸⁶⁷ Private briefing, Brisbane, 7 November 2016.

⁸⁶⁸ Public hearing transcript, 15 March 2017, p 21.

⁸⁶⁹ Private briefing, Sydney, 23 February 2017.

⁸⁷⁰ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 55.

⁸⁷¹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 56.

⁸⁷² DNRM, Queensland Mine Safety Framework Regulatory Impact Statement (RIS), p 105.

⁸⁷³ Dr Bruce Leibowitz, public hearing transcript, Mackay, 25 November 2016, p 47.

quality. All doctors and nurses employed by the authority undergo regular and external training in spirometry to maintain professional competency.⁸⁷⁴

In the USA, MSHA requires that spirometry testing is undertaken by properly qualified personnel.⁸⁷⁵ A number of submitters to this inquiry recommended spirometry be conducted by appropriately trained staff.⁸⁷⁶ The committee learned that the Department of Labor has made on-line training freely available to physicians wishing to gain better knowledge of COPD, lung function testing and diagnostic conclusions.

NIOSH has made a NIOSH-approved spirometry training program and associated material, along with a sophisticated longitudinal results tracking software, available on its website free of charge.⁸⁷⁷

Dr Cohen noted that the correct equipment is also important:

*One other point about spirometry is that the equipment is important. These devices, which are \$5,000 to maybe \$10,000, are not incredibly expensive. They are much cheaper than x-ray equipment.*⁸⁷⁸

In May 2016, DNRM regulated a new requirement for spirometry to adhere to the *Queensland Health: Spirometry (Adult) Guideline*,⁸⁷⁹ primarily based on the American Thoracic Society and European Respiratory Society (ATS/ERS) guidelines.⁸⁸⁰

In December 2016 DNRM released a consultation paper *Spirometry for the Coal Mine Workers' Health Scheme – Next steps in planning reform*. In March 2017 DNRM published a position paper which outlined a new spirometry screening guidelines for the scheme.⁸⁸¹ In summary, DNRM proposed:

- appointment of an external organisation to draft standards for the accreditation of medical practices taking and interpreting spirometry for the scheme, based on the Queensland Health (Adult) Spirometry Guideline
- development of standards for training courses for practitioners undertaking spirometry for the scheme, with DNRM to retain a register of training courses for the scheme
- on-going clinical audit and compliance checking of spirometry conducted by accredited practices, with DNRM to retain regulatory oversight and establish and maintain a register of accredited practices and training courses
- limiting eligible practices providing spirometry services for the scheme to those registered and accredited by the external accrediting organisation.⁸⁸²

⁸⁷⁴ Private briefing, Sydney, 23 February 2017.

⁸⁷⁵ Emeritus Professor Odwyn Jones, submission 4, p 8.

⁸⁷⁶ QRS, submission 18, p 28; RACP, submission 20, p 4.

⁸⁷⁷ Dr Robert Cohen, public hearing transcript, Brisbane, 15 March 2017, pp 26-27; NIOSH, <https://www.cdc.gov/niosh/topics/spirometry/training.html>.

⁸⁷⁸ Public hearing transcript, Brisbane, 15 March 2017, p 8.

⁸⁷⁹ DNRM, submission 35, p 40; Queensland Health, *Spirometry (Adult)*, version 1.0, 2012, https://www.health.qld.gov.au/_data/assets/pdf_file/0026/147653/qh-gdl-386.pdf

⁸⁸⁰ Queensland Health, *Spirometry (Adult)*, version 1.0, 2012,

https://www.health.qld.gov.au/_data/assets/pdf_file/0026/147653/qh-gdl-386.pdf

⁸⁸¹ DNRM, *Spirometry for the Coal Mine Workers' Health Scheme: Refined proposal from stakeholder feedback: Position paper*, March 2017, p 2.

⁸⁸² DNRM, *Spirometry for the Coal Mine Workers' Health Scheme: Refined proposal from stakeholder feedback: Position paper*, March 2017, pp 6-7.

In March 2017 Minister Lynham announced that by July 2017, Queensland will have these 'stringent guidelines in place that spell out what is required of people conducting spirometry tests'.⁸⁸³

5.10.1 Qualifications of medical professionals

During its inquiry the committee observed that DNRM, as the overarching authority for the scheme, did not identify the crucial role medical professionals played in the systematic failure of the health scheme.

*No-one sort of drew it all together. I would say, 'Why isn't there a central body of people who are experienced in assessing lung function, assessing history, assessing x-rays and maybe a multidisciplinary approach with an occupational physician, radiologist and thoracic physician to examine all of that data?' That should have been done prospectively over the years.*⁸⁸⁴

A collaborative group of health specialists - the Coal Mine Dust Lung Diseases Collaborative Group - was formed in December 2016 to establish a medical consensus on CMDLD in Australia, including CWP. The group is made up of specialists from the TSANZ, the Australasian Faculty of Occupational and Environmental Medicine, and the RANZCR.

The group aims to:

- assist in the development of processes, systems and clinical pathways for the screening, diagnosis and medical management of CMDLDs, and
- assist with planning and implementation of medium and long term state and national strategies for the medical monitoring of CMDLD.⁸⁸⁵

Professor Sim acknowledged that Australia has well-trained radiologists, respiratory physicians and occupational physicians, but he observed that the local medical capability 'is not currently being harnessed effectively' to deal with the problems associated with diagnosing CWP.⁸⁸⁶ He noted:

*I think it comes down to adequate training, adequate quality control measures, knowing what to do with abnormalities when they are raised, appropriate referral, appropriate further diagnostic tests that need to be done, whether they are respiratory tests or further imaging that needs to be done.*⁸⁸⁷

Key findings

There has been widespread systemic failure across all aspects of the Coal Mine Workers' Health Scheme. Significant further reform is immediately needed.

Recommendation 54

All health assessments under the Coal Workers' Health Scheme should include spirometry testing undertaken by an appropriately qualified and experienced person or provider, approved by the Commissioner for Mine Safety and Health.

⁸⁸³ Hon Dr Anthony Lynham MP, Minister for State Development and Minister for Natural Resources and Mines, 'Black lung protections outlined in Parliament', media release, 23 March 2017.

⁸⁸⁴ Private briefing, Brisbane, 7 November 2016.

⁸⁸⁵ Dr Bob Edwards, response to question on notice, 14 November 2016.

⁸⁸⁶ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 3.

⁸⁸⁷ Public hearing transcript, Brisbane, 9 November 2016, p 5.

Recommendation 55

All health assessments under the Coal Workers' Health Scheme should include a chest x-ray or other medical image taken by an appropriately qualified and experienced person or provider, approved by the Commissioner for Mine Safety and Health.

Recommendation 56

All coal workers' chest x-rays or other medical images taken for the purposes of the Coal Workers' Health Scheme should be read and interpreted by an appropriately qualified and experienced radiologist approved by the Commissioner of Mine Safety and Health.

Recommendation 57

All coal workers' chest x-rays or other medical images taken for the purposes of the Coal Workers' Health Scheme should be assessed and classified for pneumoconioses using the International Labour Organisation (ILO) system for Classification of Radiographs by appropriately qualified persons approved for such purpose by the Commissioner for Mine Safety and Health.

It is essential that, in establishing the improved Coal Workers' Health Scheme, and giving effect to these recommendations, precious time is not wasted re-inventing systems, processes and policies that have already been established elsewhere and may be usefully adapted to the Queensland context. The committee is mindful that to every extent, the Coal Workers' Health Scheme must be designed and implemented to achieve the best possible health outcomes for our coal workers.

Dr Cohen has indicated his desire and willingness to help establish a world's best practice Coal Workers' Health Scheme here in Queensland. His involvement, or that of an equivalent world-leading expert in coal worker health, would help ensure industry, worker, and community confidence in the new Scheme.

Recommendation 58

Dr Robert Cohen, or another internationally recognised expert on the surveillance and management of coal workers' health, should be engaged to consult with and advise government on the establishment of the improved Coal Workers' Health Scheme and the implementation of these recommendations as soon as practicable.

The committee is most concerned that all steps are taken to ensure that the new Coal Workers' health Scheme does not slip back into the bad habits of the past. The parliamentary committee having oversight of the new Mine Safety and Health Authority should keep a close watching brief in this regard. That committee's oversight must be robust and driven by a true cultural commitment to always ensuring proper scrutiny and protection to guard against any slipping back into these bad habits and ensuring the implementation of international best practice.

5.11 Queensland Health

When the health scheme commenced in January 1983, the Queensland Coal Board began a practice of sending chest x-rays exhibiting signs of abnormal lung function to the Queensland Department of Health ('Queensland Health') for further investigation

For example, the medical records of some workers who were the subject of the Rathus and Abrahams survey in 1984 were provided to Queensland Health. According to DNRM, Queensland Health advised in 2016 that a check against the destruction register of the Metro South Clinical Tuberculosis Service showed that x-rays from this time have been destroyed.⁸⁸⁸

⁸⁸⁸ DNRM, submission 35, p 33.

The committee understands that the practice of sending identified health assessments to Queensland Health continued until the Queensland Coal Board was abolished in 1998. However, there is no documentary evidence to indicate when collaboration with the Queensland Health ceased.

Queensland Health does not currently have a direct role in the regulatory framework of the scheme, nor does it have responsibility for occupational health and safety. In terms of occupational disease, Queensland Health's role is in the management of patients who present themselves to Queensland Health facilities and in providing treatment for symptoms of occupational disease.⁸⁸⁹

*Hospital and health services provide routine clinical services to coalmine workers when required, as they do for any member of the community... When we are looking specifically at Queensland Health's role in the management of coalmine workers with pneumoconiosis, miners may be reviewed in a specialist outpatient setting or require hospitalisation for the treatment of symptomatic coalmine workers' lung disease. Miners with simple coal workers' pneumoconiosis would not be expected to have any symptoms that would require hospitalisation, and it would be expected that only those with more advanced disease would require inpatient treatment.*⁸⁹⁰

The committee noted that the CMDLD Collaborative Group (refer to section 5.11.3) is supported by the Queensland Chief Health Officer. The group convened on 17 March 2017 to confirm a diagnostic clinical pathway for CMDLD and to finalise guidelines for diagnosis on CMDLD.⁸⁹¹

5.11.1 Notifiable disease

CWP is not a notifiable disease. The *Public Health Act 2005* (Qld) provides for the notification and management of certain diseases that may incur a public health risk. The *Public Health Act* does not provide for the management of diseases associated with mining in the occupational setting.

As CWP has not been notifiable, Queensland Health was unable to provide the committee with a definitive number of cases identified by outpatient hospital coding. There is a code for coal workers' pneumoconiosis, J60, but Queensland Health attested that of those cases specifically assigned the code in recent years, 'a very small number' would be miners with CWP. Additionally, use of the code applies only to public hospital admissions and does not include cases presenting to general practitioners, specialists or private hospitals.⁸⁹² According to Queensland Health the majority of those cases assigned the code J60 have been individuals with a pathological diagnosis of black pigment in the lung, and very likely have nothing to do with CWP.⁸⁹³

DNRM has introduced into CMSHR a requirement for SSEs to notify DNRM when cases of prescribed diseases are identified, of which CWP is now one. (Refer to Chapter 3 on the current regulatory framework.) Unfortunately the SSE may not always be informed if a worker is diagnosed with a prescribed disease. In the context of the coal mining industry, the person best placed to notify a prescribed disease to the department is the NMA. DNRM have advised the committee that they have identified this issue. Future amendments to the regulation may prescribe an NMA for the purpose of notifying prescribed diseases.⁸⁹⁴

DNRM advised in December 2016:

A consultation paper on health surveillance is currently being prepared by the department to canvass a proposed model with stakeholders to ensure all factors are taken into account. This will

⁸⁸⁹ Dr Suzanne Huxley, Queensland Health, public briefing transcript, Brisbane, 14 October 2016, p 35.

⁸⁹⁰ Ms Sophie Dwyer, Queensland Health, public briefing transcript, Brisbane, 14 October 2016, p 33.

⁸⁹¹ DNRM, response to question taken on notice, 22 March 2017, no. 4, p 2.

⁸⁹² DNRM, submission 35, p 55.

⁸⁹³ Dr Suzanne Huxley, public briefing transcript, Brisbane, 14 October 2016, p 35.

⁸⁹⁴ DNRM, response to question taken on notice, 22 March 2017, no. 2, Attachment 1, p 1.

*include how and to whom information of diseases are reported to the department and stakeholders. Further changes to the regulatory framework may be required to streamline the reporting process for prescribed diseases.*⁸⁹⁵

Recommendation 59

Cases of CWP/CMDLD identified or diagnosed by medical professionals should be compulsorily reported to the Chief Health Officer, Queensland, as a 'Notifiable Disease' under the *Public Health Act 2005*.

5.11.2 Professional qualifications

There is currently no statutory requirement for Queensland Health to address an identified lack of skills among Queensland's radiologists. The committee heard that, 'the focus of [professional education] would be through more clinical training at the specialist colleges rather than specifically Queensland Health'.⁸⁹⁶

5.11.3 Practitioner education, public education

The committee notes Queensland Health has distributed a fact sheet about CWP to general practitioners through its medical practitioner network.⁸⁹⁷

The AMA Queensland recommended developing increasing collaboration between DNRM and Queensland Health, which 'will help to strengthen' a new and improved coal workers' health scheme.⁸⁹⁸

DNRM stated in December 2016:

DNRM has been working closely with Queensland Health since cases of CWP were first confirmed in 2015. The Chief Health Officer has provided advice and facilitated review of public health records and distributed information about the disease to health professionals.

*Queensland Health experts continue to support DNRM in the implementation of the Monash review recommendations, for example with advice from the Chief Radiologist at BreastScreen Queensland and medical physicist [sic] advice from Biomedical Technology Services.*⁸⁹⁹

Recommendation 60

The legislative framework should require the Queensland Chief Health Officer to report to the Mine Safety and Health Authority and the parliamentary committee with responsibility for the Authority on an annual basis on Queensland Health's activities in relation to CMDLD, including CWP.

⁸⁹⁵ DNRM, submission 35, p 105.

⁸⁹⁶ Ms Sophie Dwyer, Queensland Health, public briefing transcript, Brisbane, 14 October 2016, p 34.

⁸⁹⁷ Dr Suzanne Huxley, Queensland Health, public briefing transcript, Brisbane, 14 October 2016, p 38.

⁸⁹⁸ AMA Queensland, submission 23, p 8.

⁸⁹⁹ DNRM, submission 35, p 94.

5.12 Industry stakeholders

5.12.1 Mining advisory committees

The CSMHAC was established in 2001 and is still in operation.⁹⁰⁰ It is a statutory committee made up of representatives from industry, unions and government, with its primary role being to give advice and make recommendations to the Minister about promoting and protecting the safety and health of persons at mines.⁹⁰¹

The CSMHAC is supported by the Queensland Mining Health Improvement and Awareness Committee (HIAC) which was established in 2008 to assist industry to anticipate, identify, evaluate and control health hazards in the mining environment. The HIAC is also a tripartite committee made up of representatives from government, industry and unions.⁹⁰²

Between 2002 and 2015, any changes to content and requirements of the health assessment form were the subject of consultation with the CSMHAC.⁹⁰³

During the inquiry the committee heard that the CSMHAC, on a number of occasions, failed to agree on proposed recommendations to change aspects of the HSU or aspects of the operation of the health scheme.⁹⁰⁴

It was suggested in evidence that one of the reasons the recommendations of the 2002 HSU review were not fully implemented was lack of tripartite support within the CSMHAC, particularly from the CFMEU. The CFMEU refuted that assertion:

*The Unions had concerns with a push to move from a Coal Mine Workers' Health Scheme which under the format taken from the Coal Board had set standards for medical assessment to enter and remain in the industry to one totally controlled at the whim of SSEs and HR departments...The CFMEU did not have a problem with setting up of a robust HSU, if it was to have defined roles and responsibilities and be adequately resourced to perform those functions.*⁹⁰⁵

The CFMEU noted that the recommendations from the 2002 review did not need tripartite support to be implemented, and suggested that perhaps the department had a certain unwillingness to proceed.⁹⁰⁶

Mr Fritz Djukic gave evidence that in March 2013, he had presented the CSMHAC with his concerns 'specifically about respirable dust and in particular the increasing incidence of CWP in the US'.⁹⁰⁷ As to whether the CSMHAC took his concerns seriously, Mr Djukic stated:

*I cannot answer that. I believe that my presentation was provided to [CSMHAC] and they had discussions, but I am not privy to that information.*⁹⁰⁸

⁹⁰⁰ Under the CSMHA.

⁹⁰¹ DNRM, submission 35, p 13.

⁹⁰² Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 1.

⁹⁰³ DNRM, response to question taken on notice during a briefing, 14 October 2016, *Chronology: Queensland coal mine workers' health scheme 1981 – 2016*.

⁹⁰⁴ Private hearing, Brisbane, 30 November 2016, and Mr Mark Stone, public hearing transcript, Brisbane, 30 November 2016, p 7.

⁹⁰⁵ CFMEU, response to question taken on notice during a hearing, 14 December 2016, 18 January 2017, p 3.

⁹⁰⁶ CFMEU, response to question taken on notice during a hearing, 14 December 2016, 18 January 2017, p 4.

⁹⁰⁷ Public hearing transcript, Mackay, 25 November 2016, p 7.

⁹⁰⁸ Public hearing transcript, Mackay, 25 November 2016, p 8.

In September 2013 the government released a consultation RIS, the *Queensland Mine Safety Framework Regulatory Impact Statement*. The RIS proposed amendments to improve safety and health in mining and quarrying.⁹⁰⁹

The RIS included 'refocusing the Coal Mine Workers' Health Scheme' to address hazards such as dust and noise.⁹¹⁰

Mr Mark Stone, of DNRM stated that there was a lack of tripartite support for the proposed reforms.⁹¹¹ Mr Stone confirmed this led to a significant delay:

CHAIR: *What happened between 2013 and 2015?*

Mr Springborg: *Somebody mentioned tripartite support or lack thereof?*

CHAIR: *Yes, but that is two years of tripartite support negotiation.*

Mr Stone: *Yes, that's correct.*⁹¹²

Former Commissioner Mr Paul Harrison observed that the RIS did not proceed as it did not have 'key stakeholder support' from both union and industry.⁹¹³

The CFMEU stated in January 2017 that the reforms proposed in the 2013 RIS were 'not developed in the same tripartite manner as the current Coal Mining Safety and Health Act and Regulation'.⁹¹⁴ The CFMEU held concerns that the government's intention to discard the 'fitness for work' element of the scheme would expose the current health scheme to the '... whim of the Employer, or more the Coal Operators who control and appoint the SSEs'.⁹¹⁵

The union noted there was nothing in the RIS about the powers and functions of the HSU.⁹¹⁶

Mr Harrison acknowledged there was 'not a lot of detail in the RIS about the reforms', however it was recognised that the HSU 'was not doing a health surveillance function'.⁹¹⁷

The RIS, and the reforms proposed within the framework, did not progress beyond 2015.⁹¹⁸

The committee also received evidence that by 2013 'the level of interest in HIAC had waned and it was not as effective in raising the profile of occupational health as it should have been'.⁹¹⁹ The department commissioned a review of HIAC headed by Emeritus Professor Tony Parker from Queensland University of Technology and a team of tripartite representatives. The aim of the review was to make recommendations to improve the relevance and effectiveness of the committee. The review was completed but not published.⁹²⁰

⁹⁰⁹ Commissioner for Mine Safety and Health, Queensland Mines Inspectorate Annual Performance Report 2015-16, p 20.

⁹¹⁰ DNRM, Queensland's Mine Safety Framework: Consultation Regulatory Impact Statement, 2013, p xiii.

⁹¹¹ Public hearing transcript, Brisbane, 30 November 2016, p 7.

⁹¹² Public hearing transcript, 30 November 2016, p 8.

⁹¹³ Public hearing transcript, 22 March 2017, pp 2, 5.

⁹¹⁴ CFMEU, response to question taken on notice of 14 December 2016, Blackwater, 18 January 2017, p 17.

⁹¹⁵ CFMEU, response to question taken on notice of 14 December 2016, Blackwater, 18 January 2017, p 17.

⁹¹⁶ CFMEU, response to question taken on notice of 14 December 2016, Blackwater, 18 January 2017, p 17.

⁹¹⁷ Mr Paul Harrison, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 2.

⁹¹⁸ Dr David Smith, public hearing transcript, Brisbane, 30 November 2016, pp 7-8.

⁹¹⁹ Mr Paul Harrison, public hearing transcript, 22 March 2017, pp 1-2.

⁹²⁰ Mining Safety and Health Advisory Committee, Annual Report 2015-16, p 4.

According to DNRM, HIAC is currently undergoing a review.⁹²¹

As at December 2016, the CSMHAC had been tasked with overseeing the reform of the scheme into 2017 and is reportedly engaged in the progress of reforms.⁹²² The department stated:

*Union, employer and departmental representatives from the CSMHAC are currently working through a range of measures to tackle coal workers' pneumoconiosis.*⁹²³

The committee notes that the CSMHAC tripartite advisory committee was unable to reach agreement regarding the critical reforms to the health scheme proposed in the RIS of 2013, and has on occasion been instrumental in the failure of proposed recommendations for change, resulting in health and safety reforms being indefinitely delayed.

While seeking agreement between all stakeholders in the mining industry is aspirational, in terms of the health and safety of the mining workforce, it has proved to be unobtainable. Noting that tripartite negotiation was floundering, DNRM should have progressed with proposed reforms on a unilateral basis.

Key finding

The Coal Mining Safety and Health Advisory Committee (and similar committees established under the other mining safety and health Acts) would no longer serve a useful purpose under the new regulatory framework proposed by the committee. The statutory functions of these committees could easily be transferred to the Board of the Mining Safety and Health Authority, which includes widespread industry representation including mine operators and unions.

Recommendation 61

The Coal Mining Safety and Health Advisory Committee and similar committees established under the mining safety and health Acts should be abolished and their statutory functions transferred to the Board of the Mine Safety and Health Authority.

5.12.2 Union response to re-identification of CWP

The committee notes that following the diagnosis of coal miners with CWP in 2015, the CFMEU Mining and Energy Division commenced an industry-wide campaign to draw attention to black lung disease and the risk it poses to coal mine workers. Were it not for the efforts of the CFMEU in this regard, it is most unlikely all the current cases of CWP would have been discovered.

In May 2015, CFMEU ISHRs sent a safety alert to all Queensland coal mines advising that two cases of CWP had been diagnosed.⁹²⁴ As stated above, since the re-identification of CWP, the CFMEU has sent 136 x-rays of suspected cases to the USA for dual reading under the supervision of Dr Cohen.⁹²⁵

The CFMEU has provided support for former and retired miners to attend public hearings of this inquiry, and has offered advice to the committee concerning the arrangement and timing of regional hearings to best accommodate shift workers.

⁹²¹ DNRM, response to question taken on notice during a briefing, 14 October 2016, no. 9.

⁹²² DNRM, submission 35, p 27.

⁹²³ DNRM, submission 35, pp 22, 63.

⁹²⁴ CFMEU, submission 27, p 7.

⁹²⁵ Mr Stephen Smyth, public hearings transcript, Blackwater, 14 December 2016, p 3.

5.12.3 Mine operators response to re-identification of CWP

The committee heard that the results of a health assessment, in terms of details of any diagnosis, cannot be shared with the mine operator without the worker's consent. The mine operator will receive notice of the worker's fitness for work, or fitness for work on restricted duties.⁹²⁶

BHP Billiton noted this was a 'critical gap in the system' as mine operators cannot offer timely assistance to affected employees or identify and prevent or mitigate dust exposures.⁹²⁷

Evidence provided to this committee suggests a large difference in management and approaches amongst mine operators regarding their commitment to dust mitigation and to the health of their workforce. The re-identification of CWP triggered responses ranging from quick acknowledgement and action to blame-shifting and avoidance.

Mine operator Vale Australia stated that since 2015 it has undertaken a number of proactive measures at its mine site Carborough Downs including:

- sought advice from respiratory specialists in Australia and in the USA prior to the diagnoses of four workers with CWP
- engaging the services of an occupational respiratory physician and B-reader in the USA, Dr Robert Cohen, to review chest x-rays for over 200 current Vale employees in combination with the mine's NMA
- undertaking open and regular communication with the workforce, the CFMEU, and the Queensland DNRM and Mines Inspectorate
- facilitating briefings to the workforce by the NMA and Dr Cohen.⁹²⁸

BHP Billiton advised it has supported its current employees and contractor personnel in the following ways:

- offering x-rays reviewed by Australian and American specialists to all employees
- providing access to free health and counselling services for all workers at its mines
- information sharing at its mines, and
- supporting employees diagnosed with CWP, including assistance with medical and travel expenses, and retraining and redeployment into new roles where appropriate and where the employee has expressed a desire to continue working.⁹²⁹

⁹²⁶ Mr Matt Cooper, public hearing transcript, Moranbah, 23 November 2016, p 11.

⁹²⁷ BHP Billiton, submission 28, p 12.

⁹²⁸ Vale Australia Pty Ltd, submission 16, p 3.

⁹²⁹ BHP Billiton, submission 28, p 2.

6. Workers' compensation

*To WorkCover who are sitting there in the room: you do not walk in our shoes. You come into my home and stay here with me for 24 hours and you would be running out of the door within the first hour. You have the means to help these victims.*⁹³⁰

6.1 Overview of current arrangements

The *Workers' Compensation and Rehabilitation Act 2003* (Qld) (WCRA) and associated regulation establishes Queensland's system of workers' compensation. The WCRA requires an employer to insure or self-insure against work-related injury sustained by a worker, where the work is a significant contributing factor to the injury.⁹³¹

Statutory benefits (including lost wages, medical expenses, and a lump sum in cases of permanent impairment) are available under the WCRA where a worker can show that his or her employment was a significant contributing factor to their disease.⁹³²

The scheme is a no fault scheme, which means that an injured worker does not have to prove any negligence by their employer or other party for the injured party to be entitled to statutory benefits.⁹³³

CWP and the other CMDLD are defined as 'Latent Onset Injuries' under s36A of the WCRA. As such, an entitlement to workers' compensation arises when a doctor first diagnoses the condition.⁹³⁴

Depending upon the employer an application is made with either WorkCover or a self-insurer. Self-insurers are companies that take on the responsibility and liability to insure their own workers for workers' compensation. The committee heard that WorkCover covers approximately 63 per cent of all coal workers in Queensland.⁹³⁵ The remaining 37 per cent are covered by two-self-insurers – Xtracare, for Glencore employees, and BHP Billiton Queensland Workers' Compensation, for BHP Billiton employees.⁹³⁶

The two self-insurers require that a detailed application form for workers' compensation be lodged. In all cases, a workers' compensation medical certificate must be provided with any application for compensation. The worker has six months from the date of the entitlement to compensation arising (the date of diagnosis) within which to lodge the application. If the application is not lodged within that time frame, then reasonable cause for the delay must be provided by the worker, or the application will be rejected.⁹³⁷

A worker diagnosed with a CMDLD has to prove that they have the particular illness and that the illness has been brought about or caused, aggravated or substantially contributed to, by their exposure to respirable dust in the course of their employment.⁹³⁸

Queensland's workers' compensation scheme has been described as a 'short tail' scheme, which means that entitlement under the scheme stops when any of the following occurs:

- the incapacity due to work related injury ceases

⁹³⁰ Mrs Sue Byron, private capacity, public hearing transcript, Brisbane, 22 March 2017, p 13.

⁹³¹ Queensland Treasury, Office of Industrial Relations, *Information Paper*, October 2016, p 3.

⁹³² WCRA, s 32; Maurice Blackburn Lawyers, submission 26, p 10.

⁹³³ Queensland Treasury, Office of Industrial Relations, *Information Paper*, October 2016, p 3.

⁹³⁴ WCRA, s 36A; CFMEU, submission 27, p 18.

⁹³⁵ Mr Bruce Watson, WorkCover Queensland, public hearing transcript, Brisbane, 31 January 2017, p 2.

⁹³⁶ Queensland Treasury, response to question on notice taken 14 October 2016, p 3.

⁹³⁷ WCRA, s 131; CFMEU, submission 27, p 17.

⁹³⁸ WCRA, ss 32, 34; CFMEU, submission 27, p 18.

- the worker's injury is stable and a lump sum payment has been accepted based on permanent impairment
- the worker has received weekly payments of compensation for five years, or
- the weekly benefits received reach the maximum amount (\$314,920 as at 1 July 2016).⁹³⁹

6.2 Common law claims

A worker can seek common law damages where they can show negligence on the part of the employer (or a third party).

Should the worker be able to establish negligence, they can pursue common law damages against their employer or other party responsible for causing their disease. Damages may be for pain and suffering, loss of income and future loss of earning capacity. There are no time limits within which a worker must bring a common law claim for a 'dust disease'.⁹⁴⁰

However, a worker who is assessed as having less than 20 per cent permanent impairment must choose between a statutory lump sum and common law damages.⁹⁴¹

A common law claim is likely to be a lengthy and expensive process. The CFMEU stated:

*It remains to be seen what approach the insurers are going to take in relation to these [CWP] claims, but with multiple employers, coal mines, coal mine operators and potential respondents, the scarcity of dust monitoring data and documentation, indemnity and contribution arguments between respondents and the period of time being dealt with, there is plenty of scope for life to be made extremely difficult for workers afflicted with CWP.*⁹⁴²

6.3 CWP and workers' compensation claims

6.3.1 Claims for workers' compensation

Approximately 1,000 workers' compensation claims are lodged by coal mine workers each year in Queensland. The majority of these claims are for minor injuries, such as sprains, or musculoskeletal injuries, such as back pain. Less than one per cent are for respiratory conditions. The majority of respiratory claims include colds and flu, asthma and bacterial tract infections. They are generally resolved quickly and result in no ongoing health concerns for the worker.⁹⁴³

The Queensland Office of Industrial Relations (OIR) advised in April 2017 that there had been 41 claims lodged for CMDLD among Queensland coal mine workers. Of these, six were lodged with self-insurers and the remainder with WorkCover.⁹⁴⁴

As at April 2017, WorkCover had accepted eight claims with a diagnosis of CWP. An additional 14 claims are pending. Of the six claims made to self-insurers, three had been accepted as CWP, two had been accepted with an alternative diagnosis, and one was pending a decision.⁹⁴⁵

⁹³⁹ Queensland Treasury, Office of Industrial Relations, *Information Paper*, October 2016, p 4.

⁹⁴⁰ Maurice Blackburn Lawyers, submission 26, p 10.

⁹⁴¹ Queensland Treasury, Office of Industrial Relations, *Information Paper*, October 2016, p 5.

⁹⁴² CFMEU, submission 27, p 27.

⁹⁴³ Queensland Treasury, response to question taken on notice during a hearing, 22 March 2017.

⁹⁴⁴ Queensland Treasury, response to question taken on notice during a hearing, 22 March 2017.

⁹⁴⁵ Queensland Treasury, response to question taken on notice during a hearing, 22 March 2017.

The OIR advised that there was one claim from a coal mine worker for CWP lodged in 2006, which was accepted. There were then no further claims lodged for a period of five years.⁹⁴⁶ According to OIR, 'the majority of claims have appeared in the last two years'.⁹⁴⁷

The committee notes the widespread belief that CWP had been eradicated in Queensland until recently persisted despite WorkCover's acceptance of the diagnosis and claim for CWP from the worker in 2006. The committee was dismayed to learn that DNRM was not notified of the case by WorkCover.⁹⁴⁸ One reason given for the lack of communication was that there was no protocol for WorkCover to notify DNRM, or any other stakeholder group.⁹⁴⁹ OIR and DNRM now have a memorandum of understanding (MOU) for sharing information:⁹⁵⁰

*That is one of the reasons why we endeavoured to get a memorandum of understanding in place where we could share data and had Crown law draft that for me so that we can make sure now when a CWP claim comes into the scheme information will be provided directly to the Department of Natural Resources and Mines by our data and evaluation area. Going forward, that issue has been addressed.*⁹⁵¹

The MOU is an authorisation to disclose relevant data and permit the disclosure of workplace incident data concerning CMDLD, including CWP. OIR stated:

*OIR and DNRM will continue to cooperate, monitor and evaluate whether any further data exchanges are appropriate and can be entered into having regards to legal restrictions that apply to disclosure of personal and health information under relevant legislation.*⁹⁵²

It was acknowledged that the insurer may have notified the employer of the 2006 case and if so, the employer should have advised DNRM as to the nature of the accepted claim.⁹⁵³ However, there is no evidence to suggest that the department received this information at the time. The mine with which the worker's claim is associated was closed in 1987 and no longer in operation.⁹⁵⁴

6.3.2 The unique nature of CWP with regards to workers' compensation

If CWP is diagnosed in its early stages, a worker may have no respiratory symptoms and no impairment, yet the consequences of a diagnosis of simple CWP for the worker are immediate. According to the CFMEU, as there is no treatment that can reverse or cure the illness, all specialist advice to date in respect of CWP is to remove the worker from areas where they are exposed to respirable dust. The worker is not eligible for workers' compensation benefits under the statutory scheme, because a worker diagnosed with simple CWP does not have an 'incapacity' for work, as the term in the legislation is interpreted under the law.⁹⁵⁵ The OIR informed the committee that these workers may be entitled

⁹⁴⁶ Mr Paul Goldsbrough, Office of Industrial Relations, Queensland Treasury, public briefing transcript, Brisbane, 14 October 2016, p 29.

⁹⁴⁷ Mr Paul Goldsbrough, public briefing transcript, Brisbane, 14 October 2016, p 28.

⁹⁴⁸ Mr Paul Goldsbrough, public briefing transcript, Brisbane, 14 October 2016, p 28.

⁹⁴⁹ Mr Michael Roche, QRC, Public hearing transcript, Brisbane, 11 November 2016, p 6.

⁹⁵⁰ DNRM, submission 35, p 30; the MOU is dated 16 October 2016.

⁹⁵¹ Mr Paul Goldsbrough, public briefing transcript, Brisbane, 14 October 2016, p 28.

⁹⁵² Queensland Treasury, Office of Industrial Relations responses to workers' compensation issues raised in submission to the Coal Workers' Pneumoconiosis (CWP) Committee, p 9.

⁹⁵³ Mr Paul Goldsbrough, public briefing transcript, Brisbane, 14 October 2016, p 28.

⁹⁵⁴ Queensland Treasury, response to Question taken on Notice during a briefing, 14 October 2016.

⁹⁵⁵ CFMEU, submission 27, p 19.

to weekly compensation for lost wages until the employer is able to deploy the worker to a dust free work environment.⁹⁵⁶

At present, some workers who have been diagnosed with simple CWP and who are employed on a full time permanent basis by coal mine operators have been provided with alternative duties in areas where there is less exposure to respirable dust.⁹⁵⁷

The CFMEU expressed fears that this situation might not continue once the focus on CWP and coal mine safety shifts, as there is no statutory requirement for an employer to continue to employ the afflicted workers.⁹⁵⁸ The CSOA also noted this risk. Once a worker has been on paid leave for 12 months and the statutory prohibition on termination has expired, the mine worker could be terminated for being unable to perform the duties required of their pre-injury position.⁹⁵⁹

According to the CFMEU, the situation for employees of contractors and labour hire firms is significantly worse. As the law currently stands, coal mine operators are within their rights to exclude such a worker from the mine site. Once that occurs, their employer has no obligation to pay them wages or provide them with any alternative role.⁹⁶⁰

If a coal mine worker is working fewer hours because of an incapacity from CWP, the worker is entitled to weekly compensation for the lost wages, as well as medical and rehabilitation expenses. A worker assessed as having permanent impairment may be eligible for lump sum compensation or common law damages or both. A worker with total incapacity for work related to CWP may be entitled to compensation in the form of a lump sum payment or common law damages or both.⁹⁶¹

6.3.3 Costs associated with screening for CWP

If a former or retired worker is found not to have CWP and a claim through a workers' compensation scheme is subsequently rejected, then the worker bears the costs of the medical advice and assessments. This presents an obvious risk that some will opt to not take up this important testing, on the basis of possible costs.⁹⁶²

There are also greater financial risks for a claimant if they make a common law damages claim against a mining company which is later unsuccessful.⁹⁶³

6.3.4 Investigating an application for Workers' Compensation

Once the application for compensation and the accompanying medical certificate has been lodged, the insurer investigates the matter in order to determine whether it is satisfied that the worker has proved (on the balance of probability) that they were a 'worker' and have sustained an 'injury'. The practice to date has been that the insurer requires the applicant to provide a detailed employment, dust exposure and medical history.⁹⁶⁴

According to the CFMEU, workers who have lodged statutory workers' compensation claims and have been successful have been required to undergo medical examinations by specialists engaged by the

⁹⁵⁶ Queensland Treasury, Office of Industrial Relations, Information Paper, October 2016, p 6.

⁹⁵⁷ BHP, submission 28, p 10; Vale, submission 16, p 3.

⁹⁵⁸ CFMEU, submission 27, p 22.

⁹⁵⁹ APESMA, submission 31, p 7.

⁹⁶⁰ *Coal Mining Safety and Health Act 1999* (Qld); and CFMEU, submission 27, p 23.

⁹⁶¹ Queensland Treasury, Office of Industrial Relations, Information Paper, October 2016, p 6.

⁹⁶² Maurice Blackburn, submission 26, p 10.

⁹⁶³ Public hearing transcript, Ipswich, 4 November 2016, p 30.

⁹⁶⁴ CFMEU, submission 27, p 18.

insurers, before a decision on their claim was made.⁹⁶⁵ In three cases (including the first worker diagnosed with the condition in May 2015), the workers underwent invasive lung biopsies prior to their claims being accepted.⁹⁶⁶

Mr Steve Mellor related his experience with his compensation claim:

*Just to have your case confirmed as definite CWP by the different administrations like WorkCover and the Department of Mines can be arduous and demanding. To then be advised by WorkCover that you have been assessed as having a zero per cent permanent impairment and offered a lump sum of zero dollars is offensive and humiliating.*⁹⁶⁷

Mr Mellor explained that WorkCover had not offered realistic options in terms of re-training, beyond obtaining low-skilled employment. He held little faith in WorkCover's motivation: 'the quicker they can get me out of their system the quicker they can move on and do whatever they are doing'.⁹⁶⁸ As a former contracted underground worker in the mines, the option of working in an alternative, less-dusty role in a mine was unavailable to him. He said that he was living on his personal savings and would probably have to sell his house.⁹⁶⁹

Of great concern to the committee was that Mr Mellor reported receiving no treatment or rehabilitation options after his diagnosis, or even advice about how to maintain his health. His doctor approached the respiratory clinic at Mackay Base Hospital for entry into their program, but as at 15 March 2017, Mr Mellor had not received a reply.⁹⁷⁰

*Once you are diagnosed you walk out the door and that is it. Nobody wants to talk to you, nobody cares, nobody wants to even help you.*⁹⁷¹

Mr Mellor's application for compensation, including a lump sum payment, was accepted by WorkCover in mid-2016, however his claim was finalised when he was found to have zero per cent permanent impairment. Mr Mellor was informed that 'there are roles within the mining industry suited to your education, training and experience and your medical requirement to avoid coal dust exposure'. Mr Mellor is a former contracted employee and, not surprisingly, has not been offered any alternative positions by his former employers in the mines.⁹⁷²

In August 2016, Mr Mellor lodged a common law claim against WorkCover as the insurer. As a contracted worker, Mr Mellor's common law claim involves 10 different small contractor employers and four different mine operators.⁹⁷³ Statutory claims under the WCRA, such as Mr Mellor's, are closed pending the outcome of the common law claim. WorkCover has offered to look into other ways to support Mr Mellor:

*We can offer pulmonary rehabilitation if we have the right medical support here in Australia and offer to cover that in a sense.*⁹⁷⁴

⁹⁶⁵ CFMEU, submission 27, p 18.

⁹⁶⁶ CFMEU, submission 27, p 19.

⁹⁶⁷ Public hearing transcript, Brisbane, 15 March 2017, p 43.

⁹⁶⁸ Public hearing transcript, Brisbane, 15 March 2017, p 44.

⁹⁶⁹ Public hearing transcript, Brisbane, 15 March 2017, p 46.

⁹⁷⁰ Shortly after Mr Mellor's attendance at the public hearing of 15 March 2017, he informed the committee the Mackay Base Hospital had contacted him and advised that he could attend their respiratory clinic; correspondence to CWP Select Committee, 22 March 2017. On 22 March 2017, WorkCover informed the committee they were assisting Mr Mellor. See: Bruce Watson, public hearing transcript, Brisbane, p 24.

⁹⁷¹ Public hearing transcript, Brisbane, 15 March 2017, p 44.

⁹⁷² Public hearing transcript, Brisbane, 15 March 2017, p 47.

⁹⁷³ Public hearing transcript, Brisbane, 22 March 2017, p 24.

⁹⁷⁴ Public hearing transcript, Brisbane, 15 March 2017, pp 50-51.

Mrs Sue Byron told the committee about the experience she and her husband Chris, a CWP sufferer, have had with WorkCover in dealing with his claim for workers' compensation to cover medical expenses incurred over more than ten years trying to get a diagnosis:

Mr McMILLAN: *You and Chris came before the committee on 25 November.*

Mrs Byron: *Yes, we did.*

Mr McMILLAN: *At that stage I asked Chris if he had made a claim for WorkCover and he told us that he had and that at that stage you were hopeful that it would be approved quickly.*

Mrs Byron: *Yes, we were hopeful, but it did not happen.*

Mr McMILLAN: *You told the chair a few moments ago that you received an email from WorkCover on 20 March.*

Mrs Byron: *Yes.*

Mr McMILLAN: *That email confirmed that WorkCover had accepted Chris's claim for coalmine dust disease?*

Mrs Byron: *Yes.*

Mr McMILLAN: *But you got a telephone call the following day from a Mr Thornhill from WorkCover.*

Mrs Byron: *Yes.*

Mr McMILLAN: *What did he tell you?*

Mrs Byron: *He told us that, no, it was not pneumoconiosis that he was covering him for - it was for chronic bronchitis only—and to hand in the receipts for pharmacy, doctor bills et cetera from 15 November until now.*

Mr McMILLAN: *That was 15 November 2016.*

Mrs Byron: *Yes.*

Mr McMILLAN: *Mrs Byron, this might seem like a silly question, but I need you to tell us as much as you can. Did you and Chris incur any medical expenses in relation to finding out what was wrong with him before November 2016?*

Mrs Byron: *Yes.*

Mr McMILLAN: *Can you estimate how much you have spent with trips to Brisbane, consultation fees for Dr Edwards -*

Mrs Byron: *We have estimated it, Mr McMillan. Mr Costigan and also Mr Springborg asked me that at the hearing in November. All I could say in answer to both men - because I have never sat down and added it up - was thousands upon thousands.*

Mr McMILLAN: *That is, of course, not counting the emotional toll that it has taken on you and Chris.*

Mrs Byron: *That is right.⁹⁷⁵*

Mr Bruce Watson, CEO of WorkCover, explained to the committee that Mr Byron's case had highlighted some problems with the WorkCover system for dealing with complex CWP presentations.

Mr SPRINGBORG: *As I understand it, from Mrs Byron's testimony here again today, which reinforces what we have become aware of, Mr Byron was positively diagnosed in 2006 with a number of conditions relating to work in the coal industry—black lung, or CWP, and bronchitis.*

⁹⁷⁵ Public hearing transcript, Brisbane, 22 March 2017, p12.

You are comfortable, then, to take one part of the diagnosis, which is chronic bronchitis, and to pay out on that from at least November but not comfortable to pay out for what appears to be the pinnacle, most significant underlying condition, which is CWP, which was confirmed, basically, in the same diagnosis in 2006?

Mr Watson: *As I mentioned in my opening words, after last week's evidence by Dr Cohen we have taken an approach to try to broaden this and accept early on coal workers' lung disease, of which bronchitis, or whatever it is called, is the path that we could accept the claim on and start assisting this worker. That was not the end of it. That is the point I raise when I am saying, unfortunately, that is the impression that our injured worker got. We are still pursuing a definitive diagnosis of CWP. That is the main issue here.*

Mr McMILLAN: *You accept that Mr Byron and Mrs Byron believe you have basically said, 'Red light. No, no, no,' in relation to CWP? You accept that that is what they believe, but the door is still open for that? That is what you are saying?*

Mr Watson: *Absolutely. I heard that, and I can assure you that as soon as I go back to my office if not me then, I can assure you, a senior manager of WorkCover will be clarifying that matter with Mr and Mrs Byron.*

Mr COSTIGAN: *You accept that Mr Byron and Mrs Byron believe you have basically said, 'Red light. No, no, no,' in relation to CWP? You accept that that is what they believe, but the door is still open for that? That is what you are saying?*

Mr Watson: *Absolutely. I heard that, and I can assure you that as soon as I go back to my office if not me then, I can assure you, a senior manager of WorkCover will be clarifying that matter with Mr and Mrs Byron.*⁹⁷⁶

Mrs Byron, addressing her remarks to workers' compensation insurers, expressed her deep frustration and called for action:

*To WorkCover who are sitting there in the room: you do not walk in our shoes. You have no idea what you are putting families through. You come into my home and stay here with me for 24 hours and you would be running out of the door within the first hour. You have the means to help these victims. There are now 21. My husband is No. 17. You can help them. You can help us, but you choose to be very businesslike. It is not right. It is not fair. Be ashamed of yourselves. One day it could be you. It could be your mother, your brother, your cousin or your uncle. It could be someone in your family. How would you feel about that? Do the right thing and help these men because this is only the start of it, gentlemen and ladies, if present. We have had 21 diagnosed. This is going to go into the thousands. Do your work and get this sorted very quickly so you can put us out of our misery. That is where we are: we live in misery.*⁹⁷⁷

For mine workers, whether they are seeking workers' compensation through WorkCover or a self-insurer, recourse is available when their claim for lump sum compensation is denied. Parties to a claim have the right to a review of decisions and the review is conducted independently of the insurer by OIR on behalf of the Workers' Compensation Regulator. In addition, if a party to a claim is aggrieved by the review decision they can appeal to the Queensland Industrial Relations Commission.⁹⁷⁸

The committee was very disappointed and dismayed by the evidence it received from Steve Mellor, Chris and Sue Byron, and others about their experiences in dealing with workers' compensation insurers. It is hoped that the strength and bravery of these witnesses who told the committee about their experiences will be a wake-up call to those insurers who have so far failed them. However, there

⁹⁷⁶ Public hearing transcript, Brisbane, 22 March 2017, p27.

⁹⁷⁷ Public hearing transcript, Brisbane, 22 March 2017, p13.

⁹⁷⁸ OIR response to workers' compensation issues raised in submissions to the Coal Workers' Pneumoconiosis (CWP) Committee, 8 December 2016, p 5.

is clearly a need for ongoing oversight of these bodies to ensure these failures are not repeated. The committee expects that the OIR and the Workers' Compensation Regulator will ensure this oversight is maintained.

Beyond that, the committee has made a specific recommendation in relation to a permanent statutory committee of the Queensland Parliament to oversee public administration in Queensland. (See section 9.8 of this report and Recommendation 68.)

6.4 Other jurisdictions

6.4.1 New South Wales

The workers' compensation scheme that looks after coal miners in NSW is known as Coal Mines Insurance and has been in operation since 1922. The scheme provides specialised assistance and protection to all workers who work in or about a coal mine in NSW. This scheme writes all risk for the NSW coal industry.⁹⁷⁹

In NSW the Dust Diseases Authority (formerly the Dust Diseases Board) provides not only financial compensation, but also ongoing assistance to improve quality of life. This can include mobility aids, personal care, and medication and treatment from health professionals, as well as general assistance such as domestic support and respite care for families.⁹⁸⁰

6.4.2 United States of America

The federal Department of Labor in the USA is charged with managing a compensation program and a medical treatment program for miners through the Office of Workers' Compensation Programs.

A worker claiming compensation for simple CWP is required to prove physiological impairment through lung function testing. An assessment is made as to whether coal mine dust was a significant contributing factor to the workers' condition. A worker with complex CWP or PMF is considered totally disabled and there is no need for any further disability evaluation. If PMF is indicated on an x-ray, claimants are by law considered to be totally disabled and are awarded compensation.

A person with lung function of 60 per cent or less of a pre-injury reference point equally is generally considered to be 'totally disabled', and may claim full medical benefits as well as cash benefits for themselves (and their surviving spouse or children if they pass away).⁹⁸¹ Persons determined to have lesser levels of impairment are generally eligible to receive medical benefits for a specified duration of time, which varies depending on the seriousness of their condition.

6.4.3 Potential reform of the Workers' Compensation Scheme

Maurice Blackburn Lawyers submitted that the current statutory and common law rights available to workers, including those impacted by dust diseases, are adequate and do not require further amendment.⁹⁸²

⁹⁷⁹ Coal Services, submission 33, p 10.

⁹⁸⁰ CFMEU, submission 27, p 10.

⁹⁸¹ Public hearing transcript, Brisbane, 15 March 2017, p 35. See also: United States Department of Labour, *Division of Coal Mine Workers' Compensation (DCMWC) – Pulmonary Functions Standards and Tables*, <https://www.dol.gov/owcp/dcmwc/regs/compliance/blpfst.htm>

⁹⁸² Maurice Blackburn, submission 26, p 10.

BHP Billiton similarly submitted:

*It is our opinion that the statutory Workers Compensation scheme, as a 'no fault' insurance scheme, paid for by employers (through premiums), provides the best avenue to compensate workers who have sustained a workplace illness or injury, including CWP.*⁹⁸³

The CFMEU submitted that Queensland's statutory workers' compensation scheme still provides the best avenue to compensate workers who have sustained a workplace illness or injury, including CWP.⁹⁸⁴

The QRC reported concerns in relation to two aspects of the scheme:

- the potential negative impact on future earning capacity when a worker is diagnosed with the early stages of CWP, often at a young age, and there is little or no impairment to work, and
- the potential costs borne by retired workers to obtain screening tests such as x-rays, CT scans and reviews by respiratory specialists that will not be covered by the statutory scheme if the results from the screening are 'all clear'.

The Senate Committee made a number of recommendations regarding workers' compensation in its review report. Recommendation 5 was:

*The committee recommends that the mining industry, through its representative bodies, must create an industry-wide fund to provide compensation for coal mine workers who contract CWP. The fund's aims should include identification of, and communications with former mine workers who may require CWP screening and compensation for travel, medical, and other costs associated with undergoing CWP screening and diagnosis. Workers' access to compensation from this fund should not be time-limited in any way.*⁹⁸⁵

[Refer to Appendix E for an overview of the Senate Committee review and report].

The QRC proposed the establishment of a taskforce which would engage with government and unions to look at reforms to the workers' compensation scheme to address any identified gaps in the current system due to specific issues related to CWP. The suggested guiding principles for this review were:

- workers who contract CWP at work should receive compensation, in a timely fashion, and the coal mining industry should fund this, and
- retired workers should be able to have the required screening tests (e.g. chest x-rays, CT scans and reviews by respiratory physician) undertaken, and the coal mining industry should fund this.⁹⁸⁶

The QRC called on the committee to consider the following:

- a streamlined claims process to reduce delays if a claim is inadvertently made with the wrong insurer/company, i.e. it is paid out quickly and then recovered between insurers
- whether there is a need to compensate individuals diagnosed with CWP who are found to have 'zero impairment' (no loss of lung function), if they can no longer work underground
- funding for health screening of retired workers, and
- whether the current time limit on claims for CWP of six months post-diagnosis is appropriate.⁹⁸⁷

⁹⁸³ BHP Billiton, submission 28, p 11.

⁹⁸⁴ BHP Billiton, submission 28, p 11.

⁹⁸⁵ Senate Select Committee on Health, *Fifth interim report*, p 72; Dr Brian Plush, submission 15, p 8.

⁹⁸⁶ QRC, submission 18, p 11.

⁹⁸⁷ QRC, submission 18, p 11.

BHP Billiton and Glencore expressed support for QRC's proposal to establish a multi-party taskforce to review the workers' compensation scheme and recommend possible reform, as a matter of priority.⁹⁸⁸

The Black Lung Victims Group called for the establishment of a victims' fund through an industry levy of 10 cents per tonne on all coal produced in Queensland 'to support victims and changes to workers' compensation so that the system protects and supports black lung victims'.⁹⁸⁹ This proposal was supported by the CSOA.⁹⁹⁰ The CSOA recommended that Queensland adopt the NSW model because 'an industry-specific fund would be the most appropriate way of ensuring that there is a long-term and viable method of compensating workers suffering from CWP'.⁹⁹¹

Taking note of these various concerns and proposals, OIR reported that an industry stakeholder reference group had been established to look at ways to improve the workers' compensation scheme for long latent diseases and whether the current arrangements for CWP and CMDLD are adequate.⁹⁹²

On Thursday 23 March 2017, Industrial Relations Minister the Hon Grace MP issued a media release confirming that the stakeholder reference group had reported back with recommendations, and that the government would implement those recommendations in full. The group recommended:

- the introduction of a medical examination process for former or retired coal mine workers who have concerns that they may have CWP who retired or left the mining industry prior to 1 January this year, with costs to be borne by insurers
- statutory clarification that a worker with simple CWP who experiences disease progression can apply to reopen their claim to access further benefits under the workers' compensation scheme
- enhanced rehabilitation and return to work programs for those diagnosed with simple CWP, to assist them back into suitable alternative employment, and
- the alignment of the workers' compensation scheme with arrangements for the health scheme.⁹⁹³

The committee supports these proposed reforms to the current workers' compensation scheme, rather than the establishment of a 'victims fund' or other new scheme for coal workers. The committee considers these reforms to be the best way to remedy the current deficiencies in the workers' compensation scheme to meet the needs of those diagnosed with CWP or CMDLD.

The committee understands that the process of drafting reforms to the current workers' compensation legislation is already well advanced. The Minister for Industrial Relations and the OIR are to be commended for their swift action to ensure coal miners are not left without adequate protections under the scheme any longer than absolutely necessary.

However, the committee is also cognisant of the need for this report to address all of the committee's terms of reference. On that basis, the committee proposes to adopt the recommendations of the workers' compensation stakeholder reference group.

⁹⁸⁸ BHP Billiton, submission 28, p 12; and Glencore, submission 32, p 8.

⁹⁸⁹ Black Lung Victims Group, submission 21, p 1.

⁹⁹⁰ Ms Catherine Bolger, public hearing transcript, Rockhampton, 12 December 2016, p 18.

⁹⁹¹ Public hearing transcript, Rockhampton, 12 December 2017, p 8.

⁹⁹² Hon Grace MP, Minister for Employment and Industrial Relations, Minister for Racing and Minister for Multicultural Affairs, 'Extra support on way for Queensland coal workers', Ministerial media statement, 23 March 2017, <http://statements.qld.gov.au/Statement/2017/3/23/extra-support-on-way-for-queensland-coal-workers>

⁹⁹³ Public hearing transcript, Brisbane, 22 March 2017, p 29.

Key finding

The legislative arrangements of the current workers' compensation scheme in Queensland are not adequate to provide for the needs of retired coal miners, the needs of miners who may not be entitled to lump sum payment due to the absence of permanent impairment, or the needs of miners who have already accepted some form of compensation but whose lung disease has since progressed.

Recommendation 62

The *Workers' Compensation and Rehabilitation Act 2003* and *Workers' Compensation and Rehabilitation Regulation 2014* should be amended as necessary to provide for:

- a) the introduction of a medical examination process, with costs to be borne by insurers, for former or retired coal workers who have concerns that they may have CWP or CMDLD and who retired or left the mining industry prior to the commencement of the proposed new provisions of the Coal Workers' Health Scheme for retired miners
- b) statutory clarification that a worker with CWP or CMDLD who experiences disease progression can apply to reopen their workers' compensation claim to access further benefits under the workers' compensation scheme
- c) enhanced rehabilitation (including, where appropriate, pulmonary rehabilitation) and return to work programs for those diagnosed with CWP or CMDLD, to assist them back into suitable alternative employment
- d) the alignment of the workers' compensation scheme with proposed new arrangements for the Coal Workers' Health Scheme.

7. Retired miners

*I am a third generation coalminer. I can go back to when I was a kid and I saw people with black lung disease hanging onto picket fences to get down the main street of Collinsville. It is a terrible thing.*⁹⁹⁴

7.1 Collective knowledge in coal mining communities

During the course of this inquiry the committee heard of the importance to the mining workforce of mining communities, including their families and friends, where the shared knowledge of mining safety and health is valued and where people support and assist each other. Mining communities have collectively felt the strain during the mining boom and in the current economic climate.

This sense of community has been challenged recently for a number of reasons:

*It is difficult to specify an exact date as to when the [health scheme] began to fail, however many of those people we spoke to believe that the system began to fracture sometime between 2005 and 2013. One easily identifiable reason for this breakdown is the massive changes occurring in the mining industry at this time. More workers were being employed by the industry and more coal was being extracted, which led to more dust and longer exposure time to more workers. Short term contractors and drive in, drive out (DIDO) and fly-in, fly-out (FIFO) workers also became a much bigger phenomenon in the mining industry which effectively destroyed the historically close ties between NMAs and coal miners and led to a dilution in corporate knowledge and awareness.*⁹⁹⁵

Additionally, there has traditionally been a noted 'sea change' to coastal regions by mine workers on leaving the industry:

Most mines are located in the order of three hundred kilometres distance from the coastal areas. In the early stages of development in the Bowen Basin mines, small mining towns were developed to domicile the workforce and their families. Since then attitudes of society have changed and an increasing proportion of the workforce choose to locate their families in the coastal towns of Mackay and Rockhampton (Yeppoon).

*Upon retirement, very few mineworkers choose to stay in the mining towns resulting in the community having very few senior members. As a result, a mine also loses much of its corporate memory resulting in many of the lessons of the past being re-learnt by adverse experiences.*⁹⁹⁶

In February 2017 the committee met with representatives from Coal Services NSW, the authority providing occupational health and medical services to the mining industry in that state.

In NSW, there is a small proportion of fly-in fly-out (or drive-in drive-out) workers. The sense of community and shared history in mining communities helps provide coal mine workers with an understanding of the inherent long-term dangers of the coal mining industry. Experienced and retired workers are aware of the danger of prolonged dust exposure. They know about black lung and share their knowledge with new workers.⁹⁹⁷

⁹⁹⁴ Councillor Peter Ramage, private capacity, public hearing transcript, Collinsville, 21 November 2016, p 2.

⁹⁹⁵ AMA Queensland, submission 23, p 2.

⁹⁹⁶ B Lyne, *Hazard Management in Longwall Installations*, 3rd Coal Operators' Conference, University of Wollongong and the Australasian Institute of Mining and Metallurgy, 12-14 February 2003, p 15.

⁹⁹⁷ Private briefing, Sydney, 23 February 2017.

During the course of this inquiry the committee heard from retired workers who recalled an era when developing black lung was a real and known possibility. Mr Joe Barber, a retired coal miner who commenced work in Queensland mines in 1975, related:

*We knew of blokes who had had [CWP]. The workforce then would not work in dust... They would just move back and get out of the dust. You would not work in it. Today, the new guys coming into the industry - the contract labour in the industry - think it is normal. They think it is normal to work in dust.*⁹⁹⁸

The committee acknowledges the important role of the CFMEU Mining and Energy Division in maintaining contact with retired and former miners and ensuring their collective experience and knowledge is not lost to the industry.

7.2 Retired miners and the Coal Mine Workers' Health Scheme

There is currently no regulated requirement for coal mine workers who leave the industry (either to work in another industry or to retire) to be assessed on their departure or subsequently monitored in terms of their respiratory health. At present, it is the responsibility of the individual to seek further monitoring.⁹⁹⁹

7.2.1 Exit medical assessments

In 1984 the Rathus and Abrahams report identified that retiring miners should be subject to a chest x-ray upon retirement or exit from the industry.¹⁰⁰⁰

The concept of introducing an exit medical into the regulatory framework was considered by both the Queensland Coal Board and the CFMEU as part of the health and safety measures introduced after the Moura mine disaster in 1994. The rise in the number of contract mine workers inhibited this reform, as Mr Bruce Ham recalled:

*Andrew Vickers [of the CFMEU] and I were both involved in casting the regulations. While we would have liked to have had exit medicals put in the regulations, there was an argument that we had to accede to that, if a guy works in the industry for two weeks, maybe he has to get a Coal Board medical to get in, but an exit medical is probably inappropriate.*¹⁰⁰¹

7.2.2 Health assessments of retired workers

The Monash Review noted that the health scheme was always designed to assess current coal mine workers, so once workers retire or move to another industry they are lost to the scheme. Consequently, respiratory problems among former coal mine workers have remained largely unidentified.¹⁰⁰²

⁹⁹⁸ Public hearing transcript, Tieri, 14 Dec 2016, p 4.

⁹⁹⁹ CFMEU, submission 27, p 9.

¹⁰⁰⁰ Dr E.M. Rathus and Dr E.W. Abrahams, *Report on the Queensland Coal Board Coal Miners' Health Scheme*, Queensland Coal Board, May 1984, p 19.

¹⁰⁰¹ Public hearing transcript, Ipswich, 4 November 2016, p 45.

¹⁰⁰² Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 27.

Noting the long latency period of the disease, retired mine workers can be at significant risk of developing CWP:

*Given the long latency between exposure and disease occurrence, the population at risk in the mining industry extends to previous employees including retired coal miners and coal miners who have transferred to other industries.*¹⁰⁰³

The QRC acknowledged that retired workers need ready and affordable access to screening tests such as x-rays, CT scans and review by respiratory specialists, to determine if they have CWP.¹⁰⁰⁴

A number of submissions called for a mandatory respiratory screening program of coal workers to include workers no longer employed in the industry.¹⁰⁰⁵

Dr Cohen also recommended that the current health scheme be extended to retired and former coal mine workers. Participation for this cohort is available on a voluntary basis in the USA.

*In the United States, we offer this black lung evaluation for anyone who ever worked in coalmining. They do not have to have [worked] a certain minimum number of years. If they worked as a coalminer and they can prove that, they can get the black lung evaluation, which includes history, physical, chest x-ray, lung function testing and actually exercise testing with blood gas assessment— oxygen levels in the blood.*¹⁰⁰⁶

7.2.3 Voluntary health assessments

The committee notes that a number of mining companies have offered support to retired workers who may be concerned about their respiratory health, by offering to cover the cost of health assessments and associated tests, including chest x-rays. For example:

*BHP Billiton has established a process for its retired employees to receive free medical guidance from an Occupational and Environmental Physician who has over 20 years' experience in the field and is skilled in the diagnosis and management of occupational illness and injury. An initial evaluation will be provided and ongoing support will be managed on a case by case basis.*¹⁰⁰⁷

Mining company Peabody Energy informed the committee:

*We are identifying those past employees who may have left the industry or retired, with a view to providing appropriate information and offering x-ray screening and respiratory function testing.*¹⁰⁰⁸

Further, Anglo American advised that it has also recently instigated a process of offering chest x-rays for former employees who have concerns regarding their respiratory health.

*As part of this process, it will be ensured that any such chest x-rays will be read in accordance with the Coal Mine Workers' Health Scheme 'New Chest X-Ray Process'. Appropriate individual information will be provided to DNRM such that these can be subject to the second US reader process and the information captured in the DNRM database.*¹⁰⁰⁹

¹⁰⁰³ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 115.

¹⁰⁰⁴ QRC, submission 18, p 3.

¹⁰⁰⁵ See submissions 10, 15, 18 and 27.

¹⁰⁰⁶ Public hearing transcript, Brisbane, 15 March 2017, p 28.

¹⁰⁰⁷ BHP Billiton, submission 28, p 10.

¹⁰⁰⁸ Peabody Energy, submission 22, p 3.

¹⁰⁰⁹ Anglo American, submission 25, p 4.

Questions were raised, however, as to whether the offers from mining companies extend beyond former employees, to former contract workers.¹⁰¹⁰

The committee also has significant reason to doubt how genuine these offers of support are given the very limited efforts by the companies to communicate the offer to former employees.

Mr McMILLAN: *You have also indicated in your submission that BHP-Billiton has established a process for its retired employees to receive free medical guidance from an occupational and environmental physician.*

Mr McMILLAN: *How was that offer made?*

Ms Foot: *In that case they had a letter as well and for the former underground workers who are currently at our open-cut mines the GM of each site sat down and spoke to them one on one as well. As you can appreciate, it is probably a smaller number of people.*

Mr McMILLAN: *How did you go about identifying former underground mineworkers?*

Ms Foot: *This was in relation to former underground mineworkers who had been redeployed into our business.*

Mr McMILLAN: *So they were still employees in other parts of the business?*

Ms Foot: *Correct.*

Mr McMILLAN: *I see. Have you made any attempt to extend that offer to former employees who are no longer working in any part of BHP?*

Ms Foot: *The offer is there if people want it. In terms of how we have communicated that, we have done one aspect of it and then the industry as a whole has done a little bit more as well. One of the things that we have done obviously with our internal communications is we have encouraged people to reach out to their networks as well, so we have used the informal networks. As we understand it—and we have checked in with what DNRM and other people have done as well—we understand that the Department of Health has also communicated to GPs with information around CWP and we feel that any retired or former workers that are in the community would probably be going to their GPs if they have any concerns. Some of the GPs in the local towns are people that we work with as NMAs and they are certainly aware of the process as well.¹⁰¹¹*

Mr McMILLAN: *How was it [the offer to ex-employees] communicated?*

Mr Oswell: *There were toolbox talks, the site presentation, so on and so on. I am not quite sure exactly when they occurred, but it was in the weeks prior to late November, early December. I would have to check the dates.*

Mr McMILLAN: *How did you expect that toolbox talks and site presentations about this offer would reach ex-employees?*

Mr Oswell: *Obviously we have contact details of ex-employees when they leave the site. Unless the employee updates our records, we do not know if they change address, phones and all the rest of it. Our ability to contact ex-employees, we feel, is pretty limited. We were hoping and planning that, by communicating that information to the current workforce and its family connections, friends, colleagues and so on and so on, the word would get out that that offer has been made, that we had a process for those who wanted to take us up on that offer and that*

¹⁰¹⁰ Public hearing transcript, Rockhampton, 12 December 2016, p 35.

¹⁰¹¹ Public hearing transcript, Brisbane, 3 March 2017, p 34.

there were various contact persons. There were a number of different ways they could institute that process.

Mr McMILLAN: *Is there any intention to try to contact ex-employees through historical contact details that you might have on file?*

Mr Oswell: *No. ... because the records soon get out of date as people tend to move fairly quickly after they finish. We lose track of them. Unless they update our records, we do not know. ...*

Mr McMILLAN: *When you prepared this submission in or about November last year, you submitted to the committee that you had instigated a process for offering these x-rays to ex-employees. At that stage, no communication of that offer had actually been made?*

Mr Oswell: *Correct. The intention was that in that very week... It is in the future tense.*

Mr McMILLAN: *Even at the stage where you say the process had in fact been completed but not yet implemented at the time of making this submission, it was never intended in that process actually to communicate that offer directly to any ex-employees?*

Mr Oswell: *Two parts of that. If I go directly to the words 'we had instigated the process,' the implementation of the process was going to happen the very week the submission was put out. In our process we did not have any means formally documented about specifically contacting or trying to make contact with ex-employees directly.*

Mr McMillan: *I will just ask you again—it was never intended to directly communicate that offer to any ex-employee? That is right, is it not?*

Mr Oswell: *Not directly. If the ex-employee made contact, that was the trigger for the offer, the communications pack, the offer of the x-ray and all the rest of it, but it was dependent upon the ex-employee making contact. There were a number of means of triggering the process.*

Mr McMillan: *I should be clear. Anglo is not the only coal operator in Queensland that has made a submission to this inquiry asserting that there exists some kind of process for engaging external ex-employees. Across the Bowen Basin, the committee heard evidence from ex-coal workers. I do not think—and I will be corrected if I am wrong—a single ex-coal worker knew anything about any kind of offer. It is a pretty hollow offer to make if you never intend anyone to hear about it, is it not?*

Mr Oswell: *I would dispute that. I understand from reading your transcripts that people reported that they had not heard of any offer. That was quite correct, because at that very time the implementation of the communication to the existing workforce of this whole process upon whom we relied to get the message out to ex-employees wherever they may be had not happened. But the process is here. We specifically had no means necessarily, or no formal approach here, to try to directly contact ex-employees.*

Mr McMILLAN: *What do you mean by that, that you had no formal approach? You have contact details for former employees in terms of tax file declaration forms and employee contact information. You are required to retain all of that information for a period after employees leave your employ, are you not?*

Mr Oswell: *Yes.*

Mr McMILLAN: *What do you mean when you say that you had no way of contacting people?*

Mr Oswell: *Our process does not include any kind of defined way of directly contacting ex-employees.*

Mr McMILLAN: *But that is a process that you have established, is it not? When you say, 'Our process has no way of contacting them,' you have chosen to exclude the obvious way which is sending letters to people based on their historical addresses?*

Mr Oswell: *Correct. That is a step we have not taken.*¹⁰¹²

The CFMEU advised the committee that in December 2015 it established a process whereby union members can fill in a lung disease registration form, documenting their health concerns and work history, and attaching any CT scans or x-rays. The union then sends the scans to the USA for dual reading. As at December 2016, approximately 150 union members, including former workers, had registered.¹⁰¹³

DNRM has also sought to address the concerns regarding the lack of coverage of retired and former workers by the health scheme. DNRM informed the committee that, as at 6 December 2016, a total of 1,920 chest x-rays had been sent to the USA for dual reading, including x-rays from retired workers and those that have left the industry.¹⁰¹⁴

From 1 January 2017, retired and former mine workers can also access health assessments after their employment has ended. Coal workers can have a 'retirement examination' within three months of their retirement.¹⁰¹⁵ This option is available to workers who have worked in the coal mining industry for at least three years.¹⁰¹⁶ QRC noted that this regulatory change means employers will be required to organise and pay for a retirement examination for any eligible retiring coal mine worker who requests it.¹⁰¹⁷

The committee considers that it is crucial that these initiatives are enshrined in legislation, through appropriate statutory amendments to the CMSHA, CMSHR and related instruments and scheme documentation.

Recommendation 63

The Coal Workers' Health Scheme should be extended to provide for continuing health assessments of retired and former coal workers, on a voluntary basis, under the scheme. These assessments should include the same elements and criteria as routine assessments under the scheme, and be provided for in addition to the 'retirement examinations' provided for by the current scheme.

7.2.4 Communication with retired or former mine workers

In recommending the statutory extension of the Coal Workers' Health Scheme, the committee recognises that there can be difficulties in locating and therefore communicating with retired and former coal mine workers.

DNRM advised the committee that it had commenced targeted advertising campaigns to raise awareness of CWP amongst retired workers and to encourage them to obtain medical advice if they have any concerns.¹⁰¹⁸ DNRM, the CFMEU and some coal mining companies have also sought to publicise the recently established processes under which retired miners can access health assessments

¹⁰¹² Public hearing transcript, Brisbane, 31 January 2017, pp 25-27.

¹⁰¹³ Public hearing transcript, Blackwater, 14 December 2016, p 16.

¹⁰¹⁴ DNRM, submission 35, p 37.

¹⁰¹⁵ DNRM, submission 35, pp 59, 69.

¹⁰¹⁶ Queensland Government, Regulatory changes, <https://www.business.qld.gov.au/industry/mining/safety-health/mining-safety-health/medicals/pneumoconiosis/regulatory-changes>

¹⁰¹⁷ QRC, submission 18, p 34.

¹⁰¹⁸ DNRM, submission 35, p 28.

on a voluntary basis. However, it was apparent during this committee's public hearings late in 2016 that some retired miners were unaware of these offers.¹⁰¹⁹

The CFMEU noted the difficulties engaging with retired miners:

*We have been able through our own networks—and it is very sporadic—to contact people. Most of them have rung us. Some of the old retirees have come into our office in Rockhampton or Mackay and said, 'I worked in the mines.'*¹⁰²⁰

*We have sent out safety alerts through our own distribution network, but, again, that is not getting to those retired guys or even those guys who when the industry came off the boil said, 'I have had enough of mining. I am going over the hill and I am not coming back.' That is one area that again falls into the unknown.*¹⁰²¹

Other former workers related to the committee an unwillingness to undergo a medical examination, fearing that the outcome may be a fatal diagnosis.¹⁰²²

Noting these challenges, the committee considers that it is crucial that DNRM continues to actively promote the availability of free health assessments to retired and former mine workers.

Recommendation 64

The entity responsible for the Coal Workers' Health Scheme should take all reasonable steps to ensure that free health assessments are promoted to, and accessible for, retired and former miners.

7.2.5 Workers' compensation for relation to retired and former coal workers

Retired coal mine workers who are no longer working are still able to make a claim under the workers' compensation scheme. WorkCover stated:

*You do not have to be currently employed to lodge a claim with us. Provided that you were exposed while you were working as a worker in Queensland, it does not matter if you have been retired since then. There are no limits in Queensland about having to lodge claims while you are working.*¹⁰²³

WorkCover also acknowledged the difficulty reaching out to retired and former workers:

*... people are talking to their doctors, so if we can elevate the level of knowledge amongst the local medical community and also there are a range of stakeholders that are involved such as unions and the employers as well with their contacts in the community.*¹⁰²⁴

As previously noted (see chapter 6.4), the OIR established a stakeholder reference group made up of representatives of employers, trade unions, WorkCover, self-insurers and the OIR to improve the workers' compensation scheme for long latent diseases and consider whether the current arrangements are adequate. This reference group made specific recommendations to ensure the workers' compensation scheme can adequately meet the needs of retired and former miners. Those recommendations have been adopted by the committee in this report.

¹⁰¹⁹ Public hearing transcripts, Ipswich 4 November 2016, p 26; Moranbah, 21 November 2016, p 24; Dysart, 23 November 2016, p 14; Middlemount, 23 November 2016, pp 7, 10; Middlemount, 24 November 2016, p 21; Rockhampton, 12 December 2016, 29; and Emerald, 16 December 2016, p 7.

¹⁰²⁰ Public hearing transcript, Blackwater, 14 December 2016, p 5.

¹⁰²¹ Public hearing transcript, Blackwater, 14 December 2016, p 5.

¹⁰²² Public hearing transcript, Middlemount, 23 November 2016, p 6.

¹⁰²³ Mrs Janine Reid, public hearing transcript, Brisbane, 31 January 2017, p 11.

¹⁰²⁴ Public hearing transcript, Brisbane, 31 January 2017, p 12.

The committee commends the Minister, the Hon Grace Grace MP, for committing to the implementation of the stakeholder reference group's recommendations to introduce an interim medical examination process for retired and former coal mine workers until the proposed new provisions of the Coal Workers' Health Scheme are implemented.

8. Other coal workers and communities

Whilst the main focus of the inquiry so far has been on coal mine workers, the committee heard of coal dust exposure among coal mining communities, coal port terminal workers, and rail workers involved in the transportation of coal.¹⁰²⁵ The evidence gave cause for concern. Consequently, upon the committee's urging, on 23 March 2017, the terms of reference for the committee's inquiry were extended to include occupational respirable dust exposure for coal rail workers, coal port workers, coal-fired power station workers and other workers. As noted earlier, these aspects will be the subject of a further report by the committee.

The committee has undertaken some initial work on the new terms of reference. The committee heard evidence that monitoring of airborne dust is undertaken on each of the four coal systems in the central Queensland coal rail network, on the south west system, and to varying degrees in coal export terminals.¹⁰²⁶ Given the re-identification of CWP among coal mine workers, further investigation may be required into the adequacy and effectiveness of monitoring technologies and monitoring programs along coal rail corridors, at coal export terminals, and at coal fired power stations.

Evidence from hearings and research to date suggests that current monitoring practices, engineering controls and coal dust suppression methods likely do provide an effective means for reducing workers' exposure.¹⁰²⁷ Measured coal dust concentrations do not appear to exceed air quality guidelines for health or national exposure standards for airborne contaminants in occupational environments, and

¹⁰²⁵ Councillor Peter Ramage, public hearing transcript, Collinsville, 21 November 2016, p 2; Mr Paul Harwood, public hearing transcript, Middlemount, 23 November 2016, p 8; Mr B J Davison, public hearing transcript, Brisbane, 1 February 2017, pp 1-12; Mr Robert Barnes, public hearing transcript, Mackay, 7 March 2017, p 2; Mr John Lee, public hearing transcript, Mackay, 7 March 2017, p 6; Mr Greg Dalliston, public hearing transcript, Brisbane, 15 March 2017, p 31. See also submissions 9, 13, 34, 39, 42, 44.

¹⁰²⁶ Mr B J Davison, public hearing transcript, Brisbane, 1 February 2017, pp 7-8; Queensland Rail, public hearing transcript, Brisbane, 22 March 2017, pp 3-4; Aurizon, public hearing transcript, Brisbane, 22 March 2017, pp 6-8, 10; Pacific National, public hearing transcript, Brisbane, 22 March 2017, pp 11-15; Queensland Rail, response to question taken on notice during a hearing, 22 March 2017, no.2, p 1; Pacific National, response to question taken on notice during a hearing, 22 March 2017, no.1, p 1. See also Aurizon Pty Ltd, submission 41, p 4; Port of Brisbane Pty Ltd, *Coal Dust Management Plan*, 2013; Professor David Cliff and Dr Caitlin Jones, *Port of Hay Point Coal Dust Study*, Prepared for North Queensland Bulk Ports Corporation Limited, 2 August 2016.

¹⁰²⁷ Mr William Davison, public hearing transcript, Brisbane, 1 February 2017; Aurizon, public hearing transcript, Brisbane, 22 March 2017; Pacific National, public hearing transcript, Brisbane, 22 March 2017; Queensland Rail, public hearing transcript, Brisbane, 22 March 2017; Aurizon, *Occupational Hygiene Report: Respirable Dust & Silica Exposure Monitoring for Coal Train Drivers Rockhampton/ Callemondah*, April 2016; Pacific National, response to question taken on notice, 22 March 2017, no.s 1 and 2, p 1; Queensland Rail, response to question taken on notice during a hearing, 22 March 2017, no.s 2 and 4, pp 1-2; Department of Science, Information Technology and Innovation (DSITIA), *South West System Coal Dust Management Plan*, November 2013; Queensland Rail Network, *Central Queensland Coal Network: Coal Dust Management Plan*, 2010; Port of Brisbane Pty Ltd, *Coal Dust Management Plan*, 2013; Professor David Cliff and Dr Caitlin Jones, *Port of Hay Point Coal Dust Study*, Prepared for North Queensland Bulk Ports Corporation Limited, 2 August, 2016; Katestone Environmental Pty Ltd, *Literature Review of Coal Train Dust Management Practices*, prepared for the NSW Environment Protection Authority, December 2014; Hon Andrew Powell, Department of Environment and Heritage Protection, 'Investigation finds Tennyson dust levels within acceptable limits', media release, 14 December 2012; DSITIA, *Western-Metropolitan Rail Systems Coal Dust Monitoring Program*, Final Report, 2013; Connell Hatch, *Environment Evaluation of Fugitive Coal Dust Emissions from Coal Trains Goonyella, Blackwater and Moura Coal Rail Systems*, Commissioned by Queensland Rail Limited, 2008.

there is as yet no evidence of CWP or other respirable conditions relating to coal dust among these workers.¹⁰²⁸

Studies have shown that the majority of coal dust emitted along the rail corridor during coal transit predominantly consists of particles 10 microns in diameter or larger.¹⁰²⁹ These particles are not considered a threat to human health as they are unlikely to penetrate the lungs. However, more recent dust sampling data may be required especially with regards to the concentration of respirable airborne coal dust particles of less than 2.5 microns in diameter (PM_{2.5}); and airborne particles between 2.5 and 10 microns in diameter (PM₁₀). These particles pose the greatest risk to human health as they are capable of penetrating the lower airways and lodging inside the lungs.

Nonetheless, the committee believes that continued health surveillance is necessary for any worker on the coal supply chain involved in the handling and transportation of coal. The committee warns against complacency due to the apparent low risks of exposure to current rail and port workers. The committee was concerned to hear of the more dusty conditions that previously prevailed at coal loadout points, in unsealed train cabins, at rail receiving stations, in the stock piles and around ship loaders.¹⁰³⁰ Whilst more recent times have seen the advent of greater use of automated machinery and processes and adequate dust mitigation strategies, the committee is concerned that long term and retired rail and port workers who have worked in these high risk areas may have been exposed to elevated levels of coal dust over a prolonged period of time. The health surveillance of these workers needs to include high-quality chest x-ray imaging with interpretation and classification of that imaging by a physician who is trained and competent in the ILO system.

Recommendation 65

An expanded or additional category of workers, defined as 'coal worker', should be established to include workers involved in the transportation and handling of coal outside a 'coal mine' including rail workers (e.g.: coal train loaders and drivers), port workers (e.g.: dozer, stacker/reclaimer, and ship loader operators), power station workers, and maritime workers (e.g.: tug and line boat crew).

Recommendation 66

The definition of 'coal worker' for these purposes should ensure these workers are protected by the legislated OEL; their working environments are subject to mandatory atmospheric monitoring of respirable dust and mandatory reporting of the results of that monitoring; and the Coal Workers' Health Scheme.

¹⁰²⁸ Mr William Davison, public hearing transcript, Brisbane, 1 Feb 2017; Aurizon, public hearing transcript, Brisbane, 22 March 2017; Queensland Rail, public hearing transcript, Brisbane, 22 March 2017, pp2-3; Pacific National, public hearing transcript, Brisbane, 22 March 2017.

¹⁰²⁹ Queensland Rail, response to question taken on notice, 22 March 2017, no. 2, p 1; DSITIA, Western-Metropolitan Rail Systems Coal Dust Monitoring Program, Final Report, 2013, p 4; DSITIA, South West System Coal Dust Management Plan, November 2013, pp 4, 5.

¹⁰³⁰ Public hearing transcripts, Brisbane, 1 February 2017; Mackay, 7 March 2017; Brisbane, 22 March 2017.

9. Fact finding by the committee

Select committees of the Parliament are rare. It is rarer still for a select committee to be charged by the Parliament with terms of reference requiring it to inquire into facts and events that have led to serious failures of public policy resulting in serious illness or death. Such tasks are usually left to Commissions of Inquiry with significantly greater time and resources than are afforded to a Select Committee of the Parliament. The initial terms of reference for this inquiry required the committee to undertake a process of fact-finding – akin to the process that would ordinarily be undertaken by a Commission of Inquiry – to determine the adequacy of arrangements to prevent and eliminate CWP in Queensland; the roles and actions of government departments and agencies, mine operators, nominated medical advisers, radiologists, ISHRs and unions in those arrangements; and the efficacy of methodologies and processes used in the coal mining industry for dust measurement and mitigation.

In light of the special nature of this inquiry, it is necessary and appropriate to make comment regarding those who have participated in the inquiry and contributed to the evidence upon which the committee's findings and recommendations are based.

9.1 Witnesses and submitters to the inquiry

During the course of the inquiry so far, the committee has received oral evidence from 69 current and former coal workers and their family members; 13 union representatives; 23 current and former departmental or regulatory officials; 21 representatives of mine operators; six medical professionals; 28 academics or industry consultants, and a range of other industry operators, stakeholder groups and individuals. Perhaps most important of all to this inquiry, the committee also took evidence from 10 of the 21 Queensland coal miners diagnosed with CWP, and a number of others suffering from respiratory problems or CMDLD.

Written submissions to the inquiry were provided by 10 individual workers; four union groups; DNRM (and a former departmental official); six mining operators; three industry bodies or associations; six medical professionals or groups; and a number of other academics, businesses, and local groups and community members.

Many of these witnesses and submitters also provided additional information in responses to questions taken on notice and in private correspondence.

9.2 Coal workers

Much of the evidence given to the committee by current and retired coal workers was taken during hearings conducted in regional Queensland in November and December 2016. By travelling to key mining communities for these hearings, the committee aimed to minimise geographical barriers to participation and to better ensure miners and other coal workers, and their families, were able to tell their stories. The committee recognises that many workers nevertheless travelled significant distances and made various personal or professional sacrifices in order to appear. Many witnesses attended public hearings to give evidence immediately before or after a 12 hour shift.

Coal workers are traditionally a stoic group. Some witnesses noted that giving their evidence in public, let alone with employers watching on and under the glare of media scrutiny, was significantly unsettling. Many participated publicly nonetheless.

The committee also held seven private hearings to assist those witnesses who wanted to give evidence to the committee, but wished to do so confidentially.

The committee recognises that coming forward to give evidence in an inquiry such as this may carry with it significant fear of recrimination. Miners told the committee of their concerns:

I will lose my job for speaking [publicly]. There is no doubt about that...

*No one who has spoken [today] still works there. They have all gone so they probably feel a bit more protected.*¹⁰³¹

*If you mouth off, you are not going to stay there long. You will get done for a safety issue or something. Like I said, I understand you guys saying you can offer protection. You cannot. Sorry, guys. They will pick me on something else. They will pick me on a safety issue or something else and I will be gone.*¹⁰³²

I decided yesterday after the meeting we had here [to give evidence]. I am very shy and find it very hard public speaking...

With everything that is going on with Anglo at the moment I am massively stressed.

*I have days where I do feel very down. I have got four kids and my life is very uncertain at the moment... I honestly hope the standard that the mines are required to follow is lifted dramatically.*¹⁰³³

The committee expresses its admiration and gratitude to all coal workers and their families who gave evidence, in both public and private hearings, for their vital contribution to this inquiry. Without their willingness to come forward and tell their stories, the committee could never have fulfilled its terms of reference.

9.3 CWP sufferers and their families

The committee was particularly moved by the evidence given by CWP sufferers and their families. The committee is greatly indebted to these witnesses, who bravely shared very personal accounts of their declining health and their experiences at the hands of medical professionals, insurers and government officials, prior to and following their diagnosis. The physical and emotional toll of travelling to hearings and recounting these experiences was not lost on the committee.

Mr Verrall confided at the public hearing in Brisbane:

*Even the steps at the front of the building this morning, I was exhausted just walking up them.*¹⁰³⁴

The giving – and receiving – of evidence was, at times, a highly emotional experience:

Mrs Byron: *...I am sorry; normally I am very strong and it takes a lot for me ever to cry - a lot. I am just so sorry I broke down with you today. I wish I had been stronger for you.*

CHAIR: *Mrs Byron, we broke down, too, so do not feel too bad about that...*

Mrs Byron: *... He is my boy. No-one can look after him like I can. All the doctors in the world: they can give him the medicine - they can give him everything - but they cannot give him the emotional support that I can give him and his family. That is where it all comes in to keep him alive - the love of his family.*¹⁰³⁵

Mr Mellor: *I feel like that from every department, not just the Mackay Base Hospital. From the beginning, it is the department of mines, it is the QRC - everybody. They do not want anything to*

¹⁰³¹ Private hearing, Dysart, 23 November 2016.

¹⁰³² Private hearing, Dysart, 23 November 2016.

¹⁰³³ Private hearing, Middlemount, 24 November 2016.

¹⁰³⁴ Public hearing transcript, Brisbane, 15 March 2017, p 58.

¹⁰³⁵ Mrs Sue Byron, public hearing transcript, Brisbane, 22 March 2017, p 15.

do with us. We have a disease they know nothing about and it seems like they do not want to learn anything about it. It is frustrating for all of us. I speak with a lot of the other diagnosed people regularly and we are just sick of it. We do not know what to do. We cannot go to anybody. Our GPs do not know, because we have all decided to go to GPs who are not NMAs. There is no training or information for the regular GPs out there, let alone the NMAs who were not doing their job anyway. There is no information for anybody. I feel like I could find more about Zika virus in this country than I could about black lung .

Mr COSTIGAN: *You feel like you are running around in circles and do not know where -*

Mr Mellor: *Chasing our own tails and nobody is prepared to help us. I have rejection letters from everybody from WorkCover, Newstart. They want more documentation and you do not have the documentation or you have to go to see another doctor.*

CHAIR: *Which you pay for yourself?*

Mr Mellor: *Yes, we pay for them all.*

CHAIR: *It is disgusting; absolutely disgusting.*

Mr COSTIGAN: *Mr Mellor, you have obviously had the support of the CFMEU?*

Mr Mellor: *Certainly. When I walked out of the doctor's surgery the day I was diagnosed, they were the only ones who gave a damn that I had this. Everybody else turned their backs on us. They were the only guys who really cared for us.*

CHAIR: *What about your family, Steve? How are they coping?*

Mr Mellor: *It has been hard on us all, I suppose. I guess they think that we were going to get a lot of the answers that we were going to get and it is not happening. As you said, it has been nearly 12 months. It is just frustrating - frustrating financially and everything.*

CHAIR: *What happens when you run out of the inheritance money?*

Mr Mellor: *I will probably have to sell my house.*

CHAIR: *Steve, this is disgraceful. We live in Australia. We live in Queensland. None of us on this committee want to see that happening to you. None of us want to see that happening.*

Mr Mellor: *It is frustrating, because I guess we know we live in a fully developed country, a first world country, and we have the technology there. It is almost like they do not want to know anything about it; that the less they can deal with it, the better.¹⁰³⁶*

The testimony of the wives and partners of miners – like Mrs Sue Byron, Mrs Daphne Verrall and Mrs Kim Smyth – especially provided crucial insights into the devastating and wide-ranging effects of CWP not only on the person diagnosed, but on their family and wider community.

I am not the only wife that is going through this. It is all miners' wives. Miners are a brotherhood. If one is in trouble, that whole brotherhood comes in to help. Behind that brotherhood you have the wives, so they come in to help for the husband and you find that closeness. Because they are out at a mine site and you are in town, you cannot get out there and many a time he has had to come home with this pneumonia, and [mine employers] have done nothing. We have run around for 10 years and they have done nothing but send us to this doctor, that doctor, fly here and fly there, each time thinking, 'I wonder if his lungs will explode while we're in the air.'¹⁰³⁷

¹⁰³⁶ Public hearing transcript, Brisbane, 15 March 2017, p 46.

¹⁰³⁷ Mrs Sue Byron, public hearing transcript, 25 November 2016, p 37.

*I am here as a coalminer's daughter, coalminer's granddaughter, mother of children who work in the coalmines and wife to a husband who worked in the coalmines. I have four sisters, all of whom are married to coalminers, so we have a pretty vested stake in what is happening at the moment.*¹⁰³⁸

Mr Verrall spoke of the life he and his wife have shared since he became ill with CWP:

*We do not have a real good life together now because of this condition. She is my carer; she looks after me. If I did not have her, I know where I would be now: I would not be here. That is how I feel with it...*¹⁰³⁹

*I can't do a thing at home. I get exhausted. Even the steps at the front of the building this morning, I was exhausted just walking up them.*¹⁰⁴⁰

On 15 March 2017, Mr Verrall provided the committee with an update:

CHAIR: Percy, your wife has been caring for you.

Mr Verrall: Yes.

CHAIR: And now she is very ill.

Mr Verrall: She is breaking down every day. I have to take her for a drive because she cannot stand sitting around in that home.

CHAIR: Percy, who is now caring for both of you?

Mr Verrall: She is.

CHAIR: Who is?

Mr Verrall: She is looking after me and I am doing the best I can to look after her.

CHAIR: So you are struggling to look after each other?

Mr Verrall: I have got to have her with me when I go for a shower because I stop breathing. I have to have a puffer. I carry one with me to help me breathe.

CHAIR: So you look after each other but no-one is caring for both of you.

Mr Verrall: No-one is caring for both of us.¹⁰⁴¹

9.4 Unions

The committee received detailed submissions from the CFMEU Mining and Energy Division, the Australian Manufacturing Workers' Union (AMWU), the Queensland Nurses Union and the Maritime Union of Australia (MUA). It also received significant oral testimony from a number of union officials and safety and health representatives.

The CFMEU Mining and Energy Division particularly played an important role in promoting the committee's inquiry activities and public hearings, and supporting mine workers and other expert witnesses to participate in these hearings and help inform the committee's deliberations.

In addition, the CFMEU provided crucial information to help plan the committee's research trip to the USA to observe world-leading practice in dust mitigation and monitoring and in the identification of CWP.

¹⁰³⁸ Mrs Kim Smyth, public hearing transcript, Brisbane, 15 March 2017, p 56.

¹⁰³⁹ Public hearing transcript, Ipswich, 4 November 2016, p 9

¹⁰⁴⁰ Mr Percy Verrall, private capacity, public hearing transcript, Brisbane, 15 March 2017, p 58.

¹⁰⁴¹ Public hearing transcript, Brisbane, 15 March 2017, p 58.

9.5 Mine operators

The committee received submissions from current Queensland mine operators including Vale Australia Pty Ltd, Caledon Coal, Peabody Energy, Anglo American, BHP Billiton, and Glencore.

The committee also received two submissions from the representative body of mine operators, the QRC.

The submissions received from mine operators, while understandably keen to protect their own interests and present their responses to CWP in the best light, were nonetheless of great assistance to the committee in fulfilling its terms of reference.

In its primary submission, the QRC noted that the entire Queensland coal industry was 'shocked' when cases of CWP began to be identified among coal mine workers in 2015.¹⁰⁴² The QRC maintained that industry participants did not realise 'the extent of the issues that led to the re-identification of CWP' and that the industry had 'enormous faith' in the capacity of the health scheme to reveal any problems with the respiratory health of its workers.¹⁰⁴³

On 12 July 2016, eight major coal mine operators wrote jointly to the Minister for Natural Resources and Mines committing themselves to addressing the issue of CWP and to provide Queensland coal mine workers with 'a safe workplace'.¹⁰⁴⁴ This is commendable.

The committee is satisfied that most coal mine operators now appreciate the real risk of exposing their workers to respirable coal mine dust, and the vital importance of maintaining a heightened state of awareness of CWP and CMDLD.

The committee invited senior executives from five major coal mine operators to attend and give evidence in person before the committee. Initially, all five companies agreed to do so voluntarily. However, the committee was most disappointed that BHP Billiton - Australia's largest coal mine operator - after initially indicating its willingness to cooperate fully with the committee, subsequently declined to voluntarily provide further evidence relevant to its operations at Broadmeadow mine. Instead, the committee exercised its power to require the attendance of those executives by summons.¹⁰⁴⁵

***CHAIR:** Thank you very much for your attendance here this afternoon. Before I welcome Ms Bobbie Foot and Mr Matt Cooper, can I say how extremely disappointed this committee has been in the sense that, whilst we recognise your cooperation in the past with this committee, we are very disappointed that we had to summons BMA and yourselves to attend this hearing today. We have had cooperation from the majority of the coal industry in relation to our inquiry which is very serious because, as you know, 19 men now have been diagnosed with black lung disease and some of those men are going to die a terrible death. For BMA, a transnational company, to write to this committee and give us a lecture about how you have been cooperative in the past and therefore you do not intend to come again in my view could be interpreted as a contempt of this parliament and we will not stand for it. Bearing that in mind, I would think that whoever has been advising you two here before us today needs to go back and re-examine the rules of the parliament, because you have been called before this committee and we have all the rights of*

¹⁰⁴² QRC, submission 18, p 1.

¹⁰⁴³ QRC, submission 18, p 9.

¹⁰⁴⁴ QRC, submission 18, attachment A.

¹⁰⁴⁵ The committee notes, but does not accept, the explanation subsequently provided by BHP Billiton that 'it appears the source of the issue was a misunderstanding with the committee secretariat in relation to the nature of the invitation to appear...' (BHP Billiton letter to the committee dated 4 March 2017.)

*the Queensland parliament whilst it is in session. I believe that an apology from BMA to the members of this committee is appropriate.*¹⁰⁴⁶

During the course of the inquiry the committee was invited by several coal mine operators to inspect their mining operations. The committee accepted two of these invitations and inspected operations at two coal mines in November and December 2016.

9.6 Summons

From early in its inquiry, the committee was conscious of the need for it to gather a large amount of often technical and personal information in a short timeframe. To this end, more than 60 summonses were issued to mining operators, DNRM, and the CFMEU requiring production of material relevant to the committee's investigations. This process resulted in more than 10,000 documents being produced to the committee.

The summonses imposed onerous obligations for compliance on the recipients. In almost all cases, recipients worked diligently to assist the committee by providing the documents requested in a useful and organised manner. The committee commends the recipients of these summonses for the cooperative approach adopted to assist the committee.

9.7 Queensland Government, Department of Natural Resources and Mines

The committee received evidence from representatives of DNRM, Queensland Health, and Queensland Treasury's OIR.

However, it was with DNRM – where a dedicated CWP inquiry unit was established – that most of the committee's engagement with government occurred.

From the commencement of this inquiry, there has been a substantial divergence between the pledges of DNRM officials to provide ready assistance to the committee's inquiry, and the degree to which such assistance or information has in fact been forthcoming. The committee was appalled by the level of disregard for its work demonstrated by some senior officers of DNRM. Despite repeated assurances from DNRM that it would work expeditiously to assist the committee in any way possible, the committee has been met with resistance and obstruction by some officers of DNRM. Documents requested have not been produced, requiring the issue of a summons. Key departmental witnesses, vital to understanding the system failure at HSU were not advised they would be required to give evidence, were then produced only under threat of summons, and were not properly prepared by DNRM prior to their appearances before the committee. Frequently senior officers have been unprepared and unable to answer important questions relevant to the committee's inquiry and where answers were given, often the officers were argumentative and resistant to acknowledging the wide-ranging failures of their department.

This appears to be a reflection of a culture and attitude that has built up over 30 years.

In addition, the committee was disappointed on some occasions to discover new or updated information in relation to DNRM's response to committee enquiries or questions second-hand, including through media releases, new publications on the department's website, or informal advice from stakeholders, rather than through direct communication from DNRM.

These inconsistencies were a source of significant frustration for committee members, given the seriousness of the inquiry and its effects on Queensland mine workers and their families. The issues at hand required a dedicated commitment to uncovering the factors and events contributing to the systemic failures in addressing CWP in Queensland, regardless of where or with whom fault may lie.

¹⁰⁴⁶ Public briefing transcript, Brisbane, 3 March 2017, p 26.

The committee is concerned that efforts to avoid blame and delays associated with message management within DNRM may have hindered an appropriately transparent and open inquiry process.

The *Code of Practice for Public Service Employees Assisting or Appearing before Parliamentary Committees* provides:

*Public service employees are expected to provide committees with full and honest answers and evidence. If public service employees are unable or unwilling to answer questions or provide information, they should advise the committee accordingly and provide reasons.*¹⁰⁴⁷

Regrettably, much of the information obtained from DNRM came at the committee's prompting and not through any proactive communication on the part of the department. In addition, the committee and its secretariat at times experienced what appeared to be delaying tactics, hollow or imprecise answers and a demonstrated contempt by some departmental officials for the work of the committee.

The following two examples from the public briefing provided to the committee on 14 October 2016 are illustrative of the nature of the committee's interactions with DNRM in this regard.

Mr Jason Costigan MP: *where are these documents [health assessments] stored and has the DG or any of your staff seen these records sitting there perhaps wondering what they are? Do you know what they are? Do you know where they are? Have you seen them? Have any of your staff seen them boxed up or in whatever way they are stored?*

Ms Cronin: *We have archive facilities with a number of records in storage. I would have to clarify whether those archive facilities are containing the records that you are necessarily asking of me today. If I can get that articulated I am more than happy to take that on notice and have a look, but we have a number of archive facilities where records are retained.*¹⁰⁴⁸

Mr McMillan: *Mr Stone, you gave some evidence about the proactive role, if I can describe it that way, of the inspectorate in assisting industry to be aware of risks. You gave evidence particularly that there are nine present guidance notes issued by the inspectorate to the coalmining industry. Are any of those notes specifically dealing with coalmine dust?*

Mr Stone: *No, they are not, but I would add that there is a recognised standard. Before I move to guidance notes, which really provide advice and set out the expectations of the inspectorate and guide industry, the recognised standard which describes how industry can achieve an acceptable level of risk, the recognised standard for respirable dust monitoring and another recognised standard on the control of dust are in a very late stage of a draft and will be part of the new legislative framework commencing 1 January, specifically addressing that point and providing a level of prescription around consistent reliable monitoring and reporting and the provision of that data to the department.*

Mr McMillan: *But those standards are not in place yet?*

Mr Stone: *They are not.*

Mr McMillan: *As at the present time and over the past decade or more, has there been any standard or guidance note issued to industry expressly addressing coalmine dust and identifying it as a hazard for which mine operators have obligations to prevent?*

Mr Albury: *We might have to take this on notice.*

¹⁰⁴⁷ Queensland Government, *Code of Practice for Public Service Employees Assisting or Appearing Before Parliamentary Committees*, p 2.

¹⁰⁴⁸ Public briefing transcript, Brisbane, 14 October 2016, pp 8-9.

Mr McMillan: Finally, you are aware of the notion of hazards and principal hazards under the coalmining safety and health legislation.

Mr Stone: I am.

Mr McMillan: Does coalmine dust above the acceptable level constitute a principal hazard?

Mr Albury: It could be argued that way.

CHAIR: Yes or no?

Mr Albury: It could be argued that way.¹⁰⁴⁹

DNRM provided this incomplete and inadequate answer to a question taken on notice from the public hearing in Brisbane on 2 February 2017.

QUESTION:

Mr McMILLAN: Thank you. Recommendation No. 17 recommended that a medical advisory panel be appointed consisting of up to four medical practitioners who are experienced in mining and/or quarrying industries and including at least two persons holding specialist registration in occupational medicine. Recommendation No. 18 is the recommendation to establish a part-time occupational physician within the unit. Those two recommendations read together, it seems to me, suggest that the part-time occupational physician was to oversee the establishment and proper resourcing of the unit, give some expert clinical guidance as to how it should function, but that the unit should be essentially supported by this medical advisory panel consisting of four expert clinicians. That medical advisory panel was never established, was it?

Mr Stone: I do not believe it was, but I will verify that.

Mr McMILLAN: Can you take on notice that the committee would like to know why not?

Mr Stone: I will.¹⁰⁵⁰

ANSWER:

The department employed a part-time occupational physician in 2004 in accordance with recommendation 18 of the Review of the Health Surveillance Unit.

It is understood that work commenced to identify medical practitioners to constitute a medical advisory panel in accordance with recommendation 17. However, it is unclear why implementation of recommendation 17 was not completed.¹⁰⁵¹

The Committee is extremely concerned that public service officers were not properly prepared or aware of their obligations under the Code of Practice to assist the committee's inquiry by providing full and honest answers to questions wherever possible.

¹⁰⁴⁹ Public briefing transcript, Brisbane, 14 October 2016, p 18.

¹⁰⁵⁰ Public hearing transcript, Brisbane, 2 February 2017, p 10.

¹⁰⁵¹ DNRM, response to question taken on notice during a hearing, 17 February 2017.

Key finding

The cooperation of DNRM, and some of its senior executive officers, with the work of this committee fell well below the standard required of public service officers assisting a parliamentary committee.

Despite repeated assurances from DNRM that it would work expeditiously to assist the committee in any way possible, the committee has been met with resistance and obstruction by some officers of DNRM. Documents requested have not been produced in a timely manner, requiring the issue of a summons. Key departmental witnesses, vital to understanding the failure of the health scheme, were not advised they would be required to give evidence, were then produced only under threat of summon, and were not properly prepared by DNRM prior to their appearances before the committee. Frequently senior officers of DNRM have been unprepared and unable to answer important questions relevant to the committee's inquiry and where answers were given, often the officers were argumentative and resistant to acknowledging the wide-ranging failures of their department.

Recommendation 67

The committee recommends that the Public Service Commissioner review the transcripts of public and private hearings of the committee involving Queensland public servants and consider the extent to which those officers cooperated with and assisted the committee, including whether or not any public servant misled the committee or otherwise breached the *Code of Practice for Public Service Employees Assisting or Appearing Before Parliamentary Committees*.

9.8 A statutory parliamentary committee on public administration

The committee has uncovered widespread administrative failings. As with all select committees, the committee was established to examine particular terms of reference and only for a limited time. From its establishment to the date of this report the committee was given a period of a little over eight months. Had a commission of inquiry been established to examine the issues addressed by the committee, the timeframe would no doubt have been considerably longer. Experience demonstrates that commissions of inquiry can easily cost government upwards of \$10 million. This committee has been resourced in part from general resources of the parliament, and extra costs to the present time of perhaps one-twentieth of that figure. This inquiry demonstrates the efficiency and effectiveness of the use of parliamentary committees for inquiries of this nature.

In its review of the parliamentary committee system in 2010, the Committee System Review Committee (CSRC) considered the roles of committees. The CSRC noted concerns raised before it that the committees then in existence had limitations on the matters they could investigate. It noted specifically concerns raised at that time by the Clerk of the Parliament that:

... 'a unicameral parliament should have a committee system that encompasses and scrutinises the array of functions/portfolios of government'. He expressed the view that the 2009 reforms have a number of deficiencies, in particular the restriction on the new portfolio committees 'from investigating and reporting on events, incidents or operational matters'.¹⁰⁵²

¹⁰⁵² Committee System Review Committee, *Review of the Queensland Parliamentary Committee System*, December 2010, p 17.

The CSRC recommended a system of portfolio committees – the system currently in place. It specifically recommended:

*... that all portfolio committees have the ability to report on all aspects of government activities, including investigating and reporting on events, incidents and operational matters.*¹⁰⁵³

In responding to this recommendation, the government of the day, whilst accepting the recommendation in principle, expressed the view:¹⁰⁵⁴

*... that the primary functions of these portfolio committees should involve scrutiny of legislation, budget estimates and public accounts and public works functions. In addition to this, the Government accepts that, as a next stage, a possible role for these portfolio committees could involve reporting on other events, incidents and operational matters within the relevant portfolio. The Government refers to the CLA for consideration this broader role having regard to issues such as prevention of forum shopping, protection of individual rights and reputations and the avoidance of duplication on matters currently under investigation by statutory officers and bodies.*¹⁰⁵⁵

The portfolio committees remained without this power for some time. Indeed, for a number of years they had no power of self-reference. As a result of amendments made in 2016, a portfolio committee has the power, within its portfolio areas, to 'initiate an inquiry into any other matter it considers appropriate'.¹⁰⁵⁶

The fact remains that parliamentary committee inquiries of the nature of this inquiry into CWP are very rare, indeed almost without precedent.¹⁰⁵⁷ The portfolio committees are busy committees and, depending on the composition of the Assembly, can be dominated by members of the government of the day.

This committee believes there is a need for a stand-alone committee to investigate incidents and events in public administration.

Key finding

There is a need for a stand-alone statutory committee of the Queensland parliament to investigate incidents and events in public administration.

There should be established as a statutory committee, a parliamentary committee on public administration, with the power to investigate matters of public administration, on its own motion or on reference from the Assembly. The committee must be bi-partisan and have the power to initiate its own investigations.

¹⁰⁵³ Committee System Review Committee, *Review*, recommendation 14, at p 17.

¹⁰⁵⁴ Committee System Review Committee, *Review of the Queensland Parliamentary Committee System, Government interim response*, March 2011, page 6.

¹⁰⁵⁵ Queensland Government, *Government Response to the Committee System Review Committee*, 2011, p 6.

¹⁰⁵⁶ *Parliament of Queensland Act 2001*, s 92(1)(d).

¹⁰⁵⁷ A recent example is the inquiry by the Parliamentary Crime and Misconduct Committee (PCMC) into the then Crime and Misconduct Commission's release and destruction of Fitzgerald inquiry documents. It can be noted that the PCMC was not a portfolio committee and was acting in its jurisdiction with a specific monitor and review role regarding the CMC. See Parliamentary Crime and Misconduct Committee, report 90, *Inquiry into the Crime and Misconduct Commission's release and destruction of Fitzgerald Inquiry documents*, April 2013.

Recommendation 68

The committee recommends that there be established, as a statutory committee of the parliament, a Committee on Public Administration. The committee is to have the power to investigate matters of public administration, on its own motion or on reference from the Assembly. The committee is to consist of three members nominated by the Leader of the House and three members nominated by the Leader of the Opposition. The committee is to have the power to call for persons, documents and other items.

Appendix A – List of submissions

Sub #	Submitter
1	David Cliff
2	Andrew Gray
3	Bernard Corden 3.2 2 nd submission 3.3 3rd submission
4	Emeritus Prof Odwyn Jones
5	Bruce Ham 5.2 2 nd submission
6	The Thoracic Society of Australia & New Zealand and Lung Foundation Australia
7	Stanley William
8	Neil Whittaker
9	Helen Gibson
10	Jason Mathewson
11	Queensland Nurses' Union
12	Daniel O'Connor
13	Clean Air Wynnum
14	Australian Institute of Occupational Hygienists Inc
15	Dr Brian Plush
17	The Royal Australian and New Zealand College of Radiologists
18	Queensland Resources Council 18.2 2 nd submission
19	Caledon Coal
20	Australasian Faculty of Occupational and Environmental Medicine (AFOEM)
21	Black Lung Victims Group
22	Peabody Energy
23	AMA Queensland
24	Breathe Safe Pty Ltd 24A Supplementary submission

Sub #	Submitter
25	Anglo American
26	Maurice Blackburn Lawyers
27	Construction, Forestry, Mining & Energy Union (CFMEU)
28	BHP Billiton
29	Ian Nicholas
30	Dr Ian Matthews
31	Association of Professional Engineers, Scientists and Managers, Australia
32	Glencore
33	Coal Services
34	Garry Reed
35	Department of Natural Resources and Mines
36	Australian Manufacturing Workers' Union (AMWU)
37	Frederick 'John' Hempseed
38	The Mine Ventilation Society of Australia (MVSA)
	38A Correspondence from MVSA requesting retraction of submission
	38B Correspondence from AUSIMM The Minerals Institute requesting redaction to MVSA submission
39	Confidential Submission
40	Duncan Chalmers
41	Confidential Submission
42	Maritime Union of Australia
43	Green Consulting Group Pty Ltd
44	Richard Barry
45	Pump Investments Pty Ltd
46	Confidential submission
47	Jason Bing

Appendix B – List of witnesses

Public briefings

14 October 2016, Brisbane

- Mr Russell Albury, Acting Chief Inspector of Mines (Coal), Department of Natural Resources and Mines
- Ms Rachael Cronin, Deputy Director-General - Mineral and Energy Resources, Department of Natural Resources and Mines
- Mr James Purtill, Director-General, Department of Natural Resources and Mines
- Mr Mark Stone, Acting Chief Mine Safety and Health Officer, Department of Natural Resources and Mines
- Mr Paul Goldsbrough, Executive Director, Safety, Workers' Compensation and Policy Services, Office of Industrial Relations, Queensland Treasury
- Ms Janene Hillhouse, Director, Workers' Compensation and Policy Services, Office of Industrial Relations, Queensland Treasury
- Ms Sophie Dwyer, Executive Director, Health Protection Branch, Prevention Division, Queensland Health
- Dr Suzanne Huxley, Senior Medical Officer, Health Protection Branch, Prevention Division, Queensland Health

Private briefings

- 7 November 2016, Brisbane
- 23 February 2017, Sydney

Public hearings

2 November 2016, Brisbane

- Mrs Kate du Preez, Commissioner for Mine Safety and Health, Department of Natural Resources and Mines

4 November 2016, Ipswich

- Mrs Daphne Verrall, Private Capacity
- Mr Percy Verrall, Private Capacity
- Mr Timothy Whyte, CFMEU Representative
- Mr Allan Berlin, Retired Miner
- Mr Bill Drysdale, Retired Miner, Ipswich Retired Coal Miners' Association
- Dr Bevan Kathage, Retired Miner, Ipswich Retired Coal Miners' Association
- Mr Joe Llewellyn, Retired Miner
- Mr Ray Powell, Retired Miner
- Mr Colin Webb, Retired Miner
- Mr Jason Hill, Industry Safety and Health Representative, CFMEU
- Mr Andrew Vickers, General Secretary, CFMEU
- Mr Stephen Woods, Industry Safety and Health Representative, CFMEU Mining and Energy Queensland
- Mr Bruce Ham, retired Mining Health and Safety Adviser, former Coordinator of the Queensland Coal Board Coal Industry Employees' Health Scheme
- Mr Russell Albury, Chief Inspector of Coal Mines, Mineral and Energy Resources, Department of Natural Resources and Mines
- Ms Rachael Cronin, Deputy Director-General, Mineral and Energy Resources, Department of Natural Resources and Mines
- Mr James Purtill, Director-General, Department of Natural Resources and Mines
- Mr Mark Stone, Executive Director, Mine Safety and Health

9 November 2016, Brisbane

- Professor Malcolm Sim, Director, Monash Centre for Occupational and Environmental Health, Monash University

11 November 2016, Brisbane

- Ms Judy Bertram, Deputy Chief Executive and Director, Community and Safety, Queensland Resources Council
- Mr Michael Roche, Chief Executive Officer, Queensland Resources Council
- Ms Lucy Witheriff, Policy Advisor, Health, Safety and Community, Queensland Resources Council
- Ms Bobbie Foot, Head, Health, Safety and Environment, BHP Billiton Mitsubishi Alliance
- Dr Robert McDonald, Vice President, Health and Hygiene, BHP Billiton
- Dr Deborah Yates, Thoracic Society of Australia and New Zealand
- Dr Greg Slater, President, Royal Australian and New Zealand College of Radiologists
- Professor John Slavotinek, Dean, Faculty of Clinical Radiology, Royal Australian and New Zealand College of Radiologists
- Dr Nigel Sommerfield, Fellow, Royal Australian and New Zealand College of Radiologists
- Ms Natalia Vukolova, Chief Executive Officer, Royal Australian and New Zealand College of Radiologists
- Professor David Cliff, Private Capacity

21 November 2016, Collinsville

- Councillor Peter Ramage, Private Capacity
- Mr Roderick MacDonald, Private Capacity
- Mr Bob Sawyer, Private Capacity
- Mr Garry Suhle, Private Capacity
- Mr Steve Laidlaw, Private Capacity
- Ms Vicki Ramage, Private Capacity

22 November 2016, Moranbah

- Mr Bernie Hendriksen, Private Capacity
- Mr Nathan Leotta, Private Capacity
- Mr Stuart McConnell, Private Capacity
- Mr Kevin McPhail, Private Capacity
- Mr Mark Fillingham, Private Capacity
- Mr Scott Leggett, Private Capacity
- Mr Nick Tanner, Private Capacity

23 November 2016, Moranbah

- Mr Matt Cooper, General Manager, Broadmeadow Mine, BHP Billiton Mitsubishi Alliance
- Ms Bobbie Foot, Head, Health, Safety and Environment, Broadmeadow Mine, BHP Billiton Mitsubishi Alliance
- Mr Shaun Isaacs, Private Capacity
- Mr Michael Eastment, Private Capacity
- Mr Jason Meikle, Private Capacity

23 November 2016, Dysart

- Mr Ken Ingrey, Private Capacity
- Ms Sandra Page, Private Capacity
- Mr Sam Streeter, Private Capacity

23 November 2016, Middlemount

- Mr Wayne Michel, Private Capacity
- Mr Alan Richmond, Private Capacity
- Mr Paul Harwood, Private Capacity
- Mr Michael Cocking, Private Capacity
- Mr Nigel Lawless-Pyne, Private Capacity
- Mr Stephen Walker, Private Capacity

24 November 2016, Middlemount

- Mr Gavin Adams, Private Capacity
- Mr Grant Hedley, Private Capacity
- Mr Shane Rolls, Private Capacity
- Mr Zac Harper, Private Capacity
- Ms Kayla Heke, Private Capacity
- Mr Russell Herdman, Private Capacity
- Mr John Morris, Private Capacity
- Mr Luke Scotton, Private Capacity
- Mr Simon Taylor, Private Capacity

25 November 2016, Mackay

- Mr Russell Albury, Chief Inspector of Mines (Coal), Mines Inspectorate, Department of Natural Resources and Mines
- Mr Creswick Bulger, Inspector of Mines (Coal), Mine Safety and Health, Department of Natural Resources and Mines
- Mr Fritz Djukic, Inspector of Mines (Occupational Hygiene), Mackay, Department of Natural Resources and Mines
- Mr Mark Stone, Executive Director - Mine Safety and Health, Department of Natural Resources and Mines
- Mr Kelvin Schiefelbein, Underground Mine Manager, Carborough Downs, Vale Australia
- Mr Andrew Vella, General Manager and Site Senior Executive, Carborough Downs, Vale Australia
- Mr Nathan Willows, Health, Safety and Training Manager, Carborough Downs, Vale Australia
- Mr Chris Byron, Private Capacity
- Mrs Sue Byron, Private Capacity
- Mr Paul Head, Private Capacity
- Mr Steve Mellor, Private Capacity
- Mr Dave Walker, Private Capacity
- Associate Professor David Farlow, Clinical Dean, Mackay Clinical School, James Cook University
- Dr Bruce Leibowitz, Queensland X-Ray
- Professor Louis Schofield, Director, Australian Institute of Tropical Health and Medicine

30 November 2016, Brisbane (morning session)

- Dr David Smith, Occupational Physician, Department of Natural Resources and Mines
- Mr Mark Stone, Executive Director - Mine Safety and Health, Department of Natural Resources and Mines

30 November 2016, Brisbane (evening session)

- Dr David Smith, Occupational Physician, Department of Natural Resources and Mines
- Mr Mark Stone, Executive Director - Mine Safety and Health, Department of Natural Resources and Mines

12 December 2016 – Rockhampton

- Dr Brian Plush, Particulate Matter Scientist
- Mr Neil Whittaker, Private capacity
- Ms Catherine Bolger, Director, Collieries' Staff and Officials Division, Association of Professional Engineers, Scientists and Managers, Australia
- Mr Adam Guy, Legal Officer, Collieries' Staff and Officials Division, Association of Professional Engineers, Scientists and Managers, Australia
- Mr Bryce Allen, Private Capacity
- Ms Marie Allen, Private Capacity
- Mr John Hempseed, Private Capacity
- Mr Chris Hughes, Private Capacity
- Mr Peter Lyon, Private Capacity
- Mr Jason Kemp, Private Capacity

14 December 2016 - Tieri

- Mr Joe Barber, Site Safety and Health Representative, Oaky North Mine
- Mr Jimmy McConachy, Diesel Fitter, Oaky North Mine
- Mr Kerrod Slatter, Coalmine Worker, Oaky North Mine
- Mr Gavin Anastasi, Private Capacity
- Mr Brad Rogers, Private Capacity
- Mr Matthew Earl, Private Capacity
- Mr Heath Perkins, Private Capacity
- Mr Tim Trewin, Private Capacity
- Mr Alistair Warren, Private Capacity

14 December 2016, Blackwater

- Mr Stephen Smyth, President, CFMEU Mining and Energy Division, Queensland District

15 December 2016, Blackwater

- Mr Matthew O'Toole, Private capacity

15 December 2016, Emerald

- Dr Ewen McPhee, President, Rural Doctors Association of Australia and Nominated Medical Advisor
- Mr Lachlan Jarrett, Private Capacity
- Mr Mitch Wyatte, Private Capacity

16 December 2016, Emerald

- Mr Ray Kirkwood, Private Capacity

31 January 2017, Brisbane

- Mr Paul Abernethy, Lead Customer Experience, WorkCover Queensland
- Ms Janine Reid, Legal Counsel, WorkCover Queensland
- Mr Bruce Watson, Chief Executive Officer, WorkCover Queensland
- Dr Bharath Belle, Coal Ventilation Engineering Manager, Anglo Coal
- Mr Mike Oswell, Health, Safety and Environment Manager - Coal Australia, Anglo Coal
- Ms Liz Sanderson, Coal Australia Occupational Health and Rehabilitation Specialist, Anglo Coal
- Mr Jordan Taylor, Safety, Health and Environment Manager, Moranbah North Mine, Anglo Coal

1 February 2017, Brisbane

- Mr William (BJ) Davison, Independent Coal Industry Safety, Health and Management Consultant
- Mr Tim Hobson, Site Senior Executive and General Manager, Grasstree Mine
- Mr Philip Hibbs, President, Australian Institute of Occupational Hygienists (AIOH)
- Mr Johannes Holtzhausen, President, Mine Ventilation Society of Australia (MVSA)
- Mr Nick Johnstone, Director, Breathe Safe Pty Ltd
- Mr Javier Riveros, Sales and Operations Manager, Breathe Safe Pty Ltd

2 February 2017, Brisbane

- Mr Jack Farry, Senior Inspector of Mines (Occupational Hygiene), and Acting Manager, Health Surveillance Unit, Department of Natural Resources and Mines
- Ms Lisa Janczuk, Acting Senior Project Officer, Health Surveillance Unit, Department of Natural Resources and Mines
- Dr Gareth Kennedy, Director, Mine Safety Technology and Research Centre, SIMTARS
- Ms Natasha Robertson, Senior Project Officer, Health Surveillance Unit, Department of Natural Resources and Mines
- Mr Mark Stone, Executive Director - Mine Safety and Health, Department of Natural Resources and Mines
- Mr Russell Albury, Chief Inspector of Mines (Coal), Mines Inspectorate, Department of Natural Resources and Mines
- Mr David Turner, Director, Engineering, Testing and Certification Centre, SIMTARS
- Mr Stewart Bell, Former Commissioner, Mine Safety and Health

1 March 2017, Brisbane

- Ms Kylie Ah Wong, General Manager, Health, Safety and Training, Glencore Coal Assets Australia
- Mr Ian Cribb, Chief Operating Officer, Glencore Coal Assets Australia
- Mr Darren Nicholls, Director of Underground Operations Queensland, Glencore Coal Assets Australia
- Mr Damien Wynn, Site Senior Executive and Operations Manager, Oaky North Mine, Glencore Coal Assets Australia

3 March 2017, Brisbane

- Mr Peter Baker, Senior Vice President, Underground Operations, Peabody Energy Australia
- Mr Mike Carter, Site Senior Executive and General Manager, North Goonyella Mine, Peabody Energy Australia
- Mr Andrew Clough, Vice President, Health Safety and Environment, Peabody Energy Australia
- Mr Matt Cooper, Site Senior Executive and General Manager, Broadmeadow Mine, BHP Billiton Mitsubishi Alliance
- Ms Bobbie Foot, Head, Health, Safety and Environment, BHP Billiton Mitsubishi Alliance
- Mr Robert Djukic, Director, Coal Workers' Pneumoconiosis Inquiry Unit, Minerals and Energy Resources, Department of Natural Resources and Mines
- Mr James Purtill, Director-General, Department of Natural Resources and Mines
- Mr Ian Bray, Assistant National Secretary, Maritime Union of Australia

7 March 2017, Mackay

- Mr Robert Barnes, Private Capacity
- Mr John Lee, Private Capacity
- Mr Kevin Paskins, Private Capacity

15 March 2017, Brisbane

- Dr Robert Cohen, Director of Occupational Lung Disease, Division of Pulmonary and Critical Care Medicine, Feinberg School of Medicine, Northwestern University
- Mr Greg Dalliston, Industry Safety and Health Representative, Queensland District, CFMEU
- Mr Steve Mellor, Private Capacity
- Ms Janna Stephen, Industry Manager, WorkCover Queensland
- Mr Bruce Watson, Chief Executive Officer, WorkCover Queensland
- Mrs Kim Smyth, Private Capacity
- Mr Percy Verrall, Private Capacity

22 March 2017, Brisbane (morning session)

- Mr Paul Harrison, Private Capacity
- Mr Chris Byron, Private Capacity
- Ms Sue Byron, Private Capacity
- Mr Paul Goldsbrough, Executive Director, Safety, Workers' Compensation and Policy Services, Office of Industrial Relations, Queensland Treasury
- Ms Janene Hillhouse, Director, Workers' Compensation and Policy Services, Office of Industrial Relations, Queensland Treasury
- Mr Bruce Watson, Chief Executive Officer, WorkCover Queensland

22 March 2017, Brisbane (evening session)

- Mr Greg Fill, General Manager Safety, Assurance and Environment, Queensland Rail
- Mr Ed McKeiver, Vice President, Coal Customers, Aurizon Holdings Ltd
- Ms Prue Dunstan, Safety, Health and Environment Manager, Queensland Coal and Bulk, Pacific National
- Mr Brett Lynch, General Manager, Queensland Coal and Bulk, Pacific National

Private hearings

- 2 November 2016, Brisbane
- 23 November 2016, Moranbah
- 23 November 2016, Dysart
- 24 November 2016, Middlemount
- 25 November 2016, Mackay
- 30 November 2016, Brisbane
- 12 December 2016, Rockhampton
- 15 December 2016, Blackwater
- 16 December 2016, Emerald
- 2 February 2017, Brisbane
- 1 March 2017, Brisbane (two sessions)
- 7 March 2017, Mackay
- 22 March 2017, Brisbane

Appendix C – Report on travel to the United States of America by committee delegates

REPORT ON TRAVEL

The Coal Workers' Pneumoconiosis Select Committee

**Delegation to the United States of America:
Pittsburgh and Chicago**

13 – 17 February 2017

Coal Workers' Pneumoconiosis Select Committee Delegation to the United States of America: Pittsburgh and Chicago

13 – 17 February 2017

Official party

Mrs Jo-Ann Miller MP, chair, Member for Bundamba

Hon Lawrence Springborg MP, deputy chair, Member for Southern Downs

Mr Ben McMillan, counsel assisting the Inquiry

Dr Jacqueline Dewar, research director

Introduction

The Coal Workers' Pneumoconiosis (CWP) select committee was established by the Queensland Parliament on 15 September 2016 to conduct an inquiry and report on the 're-emergence' of CWP amongst coal mine workers in Queensland. In undertaking the inquiry, the committee was asked to consider the following terms of reference ('the initial terms of reference'):

- (a) the legislative and other regulatory arrangements of government and industry which have existed in Queensland to eliminate and prevent CWP
- (b) whether these arrangements were adequate, and have been adequately and effectively maintained over time;
- (c) the roles of government departments and agencies, mine operators, nominated medical advisers, radiologists, industry safety and health representatives and unions representing coal mine workers in these arrangements
- (d) the study into CWP undertaken by Monash University and the findings of the Senate Select Committee on Health (Fifth Interim Report) and other relevant reports and studies
- (e) the efficacy and efficiency of adopting methodologies and processes for coal mine dust measurement and mitigation, including monitoring regimes, engineering measures, personal protective equipment, statutory requirements, and mine policies and practices, including practices in jurisdictions with similar coal mining industries
- (f) other matters the committee determines are relevant, including other respiratory diseases associated with underground mining.

On 23 March 2017, the parliament provided the committee with additional terms of reference in relation to other workforce cohorts and occupational respirable dust issues.

The terms of reference require the committee to undertake a process of fact-finding – akin to the process that might be undertaken by a commission of inquiry – to determine the adequacy of arrangements, the roles of interested parties, and the efficacy of methodologies and processes used in the coal mining industry. To meet the terms of reference the committee had to undertake a forensic examination of the evidence obtained by it in testimonial and documentary form, to determine the facts and make findings as to those facts.

Significantly, paragraph (e) of the initial terms of reference required the committee to consider the practices for coal mine dust measurement and mitigation, including monitoring regimes, engineering measures, personal protective equipment (PPE), etc., in jurisdictions with similar coal mining industries to Queensland.

Further, the committee considered that a proper inquiry into the adequacy of arrangements which have existed in Queensland to eliminate and prevent CWP (paragraph (a) of the terms of reference) required the committee to consider the nature and extent of those arrangements in other jurisdictions in Australia and overseas.

The United States of America (USA) is now recognised internationally as the world's best practice jurisdiction in relation to coal mine dust regulation and health surveillance of coal workers. The purpose of this delegation was to investigate how the USA:

- regulates the coal mining industry, particularly including their arrangements for the regulation of coal mine dust, and
- identifies and manages CWP and CMDLD, including their arrangements for coal miners' health surveillance and workers' compensation.

Unfortunately, the approval process for the full delegation to travel to the USA was hampered and delayed by the initial refusal by the Acting Premier to approve travel for counsel assisting the committee's inquiry.

As a select committee of the parliament, the scope of the means (under the *Parliament of Queensland Act 2001* and the Standing Orders) by which the committee may gather evidence to find the facts necessary to meet its terms of reference is wide and largely unfettered. In the Fitzgerald Inquiry report, Commissioner Fitzgerald referred to the 'need to consider introducing a comprehensive system of parliamentary committees to enhance the ability of Parliament to monitor the efficacy of Government.' He noted (underlining added):

Parliamentary Committees enhance the skills of backbenchers of all parties and increase their experience in and familiarity with public administration, as well as reinforcing their sense of purpose and appreciation of their independent Parliamentary role and responsibility.

Committees could examine the expenditure and administration of Government departments and associated public bodies, as well as the policies they administer. This would increase the chance that misconduct, incompetence or inefficiency will be exposed.

Committees may conduct inquiries into major areas of policy or investigate matters of public concern, or both. The useful roles they can play are varied and diverse.

Parliamentary Committees should have the power to conduct public hearings, as well as the power to investigate and obtain information and documents and, where appropriate, accept and report on petitions and complaints. The legislative process should allow sufficient time for the involvement of Parliamentary Committees, having regard particularly to members' general Parliamentary duties, including attending to their constituencies.

*The skills individual members bring to Parliament are often inadequate for the analysis of complex public accounts and transactions and scrutiny of major legislation. A Parliamentary Committee at times may need, and must be able to obtain, independent expert staff and consultants.*¹⁰⁵⁸

Counsel assisting the committee was engaged by the Clerk of the Parliament on 18 October 2016. The committee unanimously endorsed his appearance as counsel assisting at all public and private hearings. Counsel assisting subsequently appeared at all public and private hearings conducted by the committee, and cross-examined nearly all witnesses who appeared to give evidence before the committee.

¹⁰⁵⁸ GE Fitzgerald, *Commission of Inquiry into Possible Illegal Activities and Associated Police Misconduct*, July 1989, pp 124-5.

The role of counsel assisting a parliamentary select committee is akin to the role of counsel assisting a commission of inquiry or royal commission. In his article titled 'Role of Counsel in Commissions and Inquiries', Peter Dunning QC, now the Solicitor-General of Queensland, wrote:

Royal Commissions have been a feature of English law since the 11th Century. Prior to the authority of parliament they were the means by which the Sovereign might become informed on particular issues for decision making purposes. After the authority of parliament was established, and many of those functions in effect passed to parliamentary committees, Royal Commissions took the form with which we are now more generally familiar. It was that form that was adopted in Australia, the 19th Century being a period of the extensive use of Royal Commissions in England. ...

*The position of counsel assisting in inquiries such as these has long been important. It has been described as "...standing in the shoes of the Attorney-General representing the public interest" in the conduct of a Royal Commission.*¹⁰⁵⁹

In *Bretherton v Kaye & Winneke*¹⁰⁶⁰ the Supreme Court of Victoria noted that 'there is public benefit derived from briefing counsel to carry out the usual duties imposed upon an advocate in an inquiry established to investigate serious matters'.

The functions of counsel assisting to a significant extent will be shaped and influenced by two instruments. The first is the terms of reference (often contained within letters patent), which prescribe the subject matter of the investigation or inquiry. The second is the statute under which the inquiry is conducted.

As to the first, inquiries vary greatly in subject matter as determined by the terms of reference. Questions of interpretation sometimes arise concerning their scope. It is the subject matter which will influence and sometimes determine what procedures, methods or approaches are to be adopted for a commission of inquiry to effectively and properly discharge its responsibilities. The subject matter may be broad ranging, such as an inquiry into a whole enterprise or undertaking (e.g. the functioning of a whole industry such as the building and construction industry) or it may concern particular allegations, e.g., allegations of maladministration or suspected illegality, impropriety or corrupt conduct by one or more government officials.

*Plainly, as the subject matter will have a far-reaching influence on the approach and method considered appropriate and to be employed, it will also shape and influence the role that will be expected of counsel assisting.*¹⁰⁶¹

Fundamentally, the role of a barrister engaged to assist a parliamentary select committee will be shaped by the terms of reference established by the Parliament and the nature of assistance required by the committee. Where a forensic examination of facts and evidence is required, counsel assisting would generally be expected to guide that examination by providing advice to the committee and undertaking the questioning of witnesses who give oral evidence to the committee.

Importantly, counsel assisting should advise the committee in relation to what evidence should be sought, how that evidence should be taken, and how the committee should deal with that evidence in finding the necessary facts in order to meet the committee's terms of reference.

Given the grave importance of the inquiry to be undertaken pursuant to the terms of reference, the committee considered that thorough and professional forensic examination by counsel assisting of the

¹⁰⁵⁹ GE Fitzgerald, *Commission of Inquiry into Possible Illegal Activities and Associated Police Misconduct*, July 1989, pp 124-5.

¹⁰⁶⁰ (1971) VR 111 at 123

¹⁰⁶¹ "The role of counsel assisting in commissions of inquiry", Justice Peter M Hall, *BarNews*, Winter 2005, <http://www.austlii.edu.au/au/journals/NSWBarAssocNews/2005/14.pdf>

complex factual, legal, and technical issues arising from the evidence the committee received was vital to the committee's discharge of those terms of reference.

The committee considered that counsel assisting would play a crucial role in supporting the committee's inquiry activities throughout the course of the delegation's travel to the USA, both through the provision of technical legal advice on important jurisdictional and legislative matters and in gathering evidence from scientific and medical experts and regulators whom the committee sought to meet with in the United States. The committee considered the presence and involvement of counsel assisting in this important part of the committee's work would be critical as the committee sought to form its findings and recommendations.

There was an exchange of correspondence between the committee, the Speaker of the House, and the Premier and Acting Premier about the requested travel approval. That correspondence is attached to this report.

Thankfully, the Premier ultimately approved travel for the full delegation, including counsel assisting.

However, it is regrettable that the initial request of the committee for the full delegation, including counsel assisting, was not approved initially. It suggests an initial failure by executive government to properly appreciate the significance of the work being undertaken by the committee and the fundamental separation of power between the executive and the committee as an organ of the legislative branch of government. It is hoped that, in future, executive governments will properly recognise this separation of power and not seek to limit or curtail the work of a parliamentary committee by refusing approval for essential travel.

Summary of the visit

The delegation undertook a busy schedule of site visits, briefings and meetings with a range of US government agencies and officials, and world-leading medical professionals at the fore-front of CWP identification and management.

The delegation visited the following locations:

- National Institute for Occupational Safety and Health (NIOSH): Center for Dust Control Research, Pittsburgh, Pennsylvania
- US Department of Labor, Mines Safety and Health Administration (MSHA): Dust Division, Pittsburgh, Pennsylvania
- NIOSH: Division of Respiratory Disease Studies, Morgantown, West Virginia
- Black Lung Clinic: Northwestern Medicine, Northwestern University, Chicago, Illinois
- Black Lung Center of Excellence: University of Illinois, Chicago.

Itinerary

Saturday 11 Feb 2017 – Sunday 12 Feb 2017	Delegation travel from Brisbane to Pittsburg.
Monday 13 Feb 2017 08.30 – 16.30	NIOSH, Center for Dust Control Research: Pittsburgh Research Laboratory
Tuesday, 14 Feb 2017 09.00 – 16.00	MSHA, Dust Division, Pittsburgh Safety and Health Technology Center
Wednesday 15 Feb 2017 09.00 – 16.00	NIOSH, Coal Workers Health Surveillance Unit, Morgantown, West Virginia
Thursday 16 Feb 2017 09.00 – 14.00	Black Lung Clinic: Northwestern Medicine, Northwestern University Chicago, Illinois
Friday 17 Feb 2017 09.00 – 15.00	Black Lung Center of Excellence: University of Illinois, Chicago
Sunday 19 Feb 2017 – Wednesday 21 Feb 2017	Delegation return travel to Brisbane.

**National Institute for Occupational Safety and Health
Mining Research Division: Center for Dust Control Research, Pittsburgh**

Monday 13 February 2017	
8:30am 9:00am	– Overview of Pittsburgh Mining Research Division <i>Adam Smith, Deputy Director, PMRD</i>
9:00am 9:30am	– Overview Dust Ventilation Toxic Substances Branch <i>Drew Potts, Branch Chief</i>
9:30am 12:30pm	– Program presentations Personal Dust Monitor – <i>Jay Colinet, Senior Scientist</i> Current Dust Control Research – <i>James Rider, Dust Team Leader</i> End of Shift Silica Monitoring – <i>Dr Emanuele Cauda, Principal Investigator</i>
12:30pm 1:00pm	– Break
1:00pm 2:30pm	– Dust Lab tour Longwall Gallery – <i>James Rider, Dust Team Leader</i> Continuous Miner Gallery – <i>John Organiscak, Mining Engineer</i> Shuttle Car Canopy Air Curtain/Shield Foam Testing Apparatus – <i>Randy Reed, Mining Engineer</i>
2:45pm 3:45pm	– Aerosol Lab tour FTIR Lab – <i>Dr Emanuele Cauda, Principal Investigator</i> Weighing Lab – <i>Dr Lauren Chubb, Physical Scientist</i> Marple Chamber - <i>Dr Emanuele Cauda, Principal Investigator</i> Helmet CAM – <i>Andrew Cecala, ATS Team Leader</i>
4:00pm 4:30pm	– Wrap up <i>Adam Smith, Deputy Director, PMRD</i>

The US Federal *Occupational Safety and Health Act of 1970* established NIOSH as a research agency focused on worker safety and health, and supporting employers and workers to create safe and healthy workplaces. NIOSH is part of the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC).

As a federal agency of the US Government, NIOSH’s research is independent of industry.

The delegation visited the NIOSH Mining Research Division at Pittsburgh. The Research Division employs up to 170 research staff with an annual operating budget of approximately US\$ 26 million. The Research Division is located on a large campus in the suburbs south of downtown Pittsburgh. The

site also houses offices for the MSHA Dust Division, the US Department of Energy, and the NIOSH National Personal Protective Technology Laboratory (NPPTL).

The delegation visit was structured around briefings and meetings with senior NIOSH researchers and guided tours and inspections of the impressive research facilities at the Pittsburgh campus. The delegation heard that NIOSH operate several large-scale and longitudinal research programs at the Pittsburgh facility. Of particular interest to the delegation was the extensive research undertaken by the NIOSH team into respirable coal mine dust and silica dust monitoring, and the development of control technologies and strategies for airborne contaminants.

The delegation received an extensive briefing on the development and use of real-time personal dust monitors in the USA. This included a detailed chronological account of the development of the ThermoFisher PDM3700 from prototype, through the earlier model (the PDM3600), to its eventual implementation across the USA coal mining industry for respirable dust compliance monitoring. It was noted that the PDM3700 had been designed by ThermoFisher in collaboration with MSHA and NIOSH researchers and industry specifically to meet the latest requirements of MSHA's Final Rule on lowering miners' exposure to respirable coal mine dust, including personal dust monitors (Final Rule).¹⁰⁶²

The delegation heard that extensive testing had been completed by NIOSH on the PDM3700 and its predecessor models over at least 13 years. It is certified by MSHA (18-A140015-0) as intrinsically safe for use in underground coal mines and meets all requirements of the *Code of Federal Regulations* Title 30, Part 74, which deals with coal mine dust sampling devices and high-voltage continuous mining machine standard for underground coal mines.

The delegation was shown a demonstration of the PDM3700 in operation and given the opportunity to tour the NIOSH dust laboratories where these devices are calibrated and the results of testing is analysed.



Hon Lawrence Springborg MP, deputy chair, discussing the specifications of the ThermoFisher PDM3700 with Dr Emanuele Cauda – NIOSH Mining Research Division, Pittsburgh

¹⁰⁶² The concentration limits for respirable coal mine dust were lowered from 2.0 mg/m³ to 1.5 mg/m³ at underground and surface coal mines. The concentration limits for respirable coal mine dust are lowered from 1.0 mg/m³ to 0.5 mg/m³ for intake air at underground mines and for part 90 miners (coal miners who have evidence of the development of pneumoconiosis).

Dr Jay Colinet, Senior Scientist, gave the delegation an illuminating presentation on his involvement in personal dust monitoring research over 20 years. Of particular interest to the delegation was Dr Colinet's involvement in a research project in 2012 looking into the apparent disparity in prevalence of CWP between the USA and Australia. Essentially, the focus of the project was to understand why the USA had a significant incidence of CWP in its mining population, while Australia apparently had none since the 1980s, despite largely similar coal mining industries. This research project resulted in a paper, 'Coal Workers' Pneumoconiosis Prevalence Disparity between Australia and the United States', being published in the academic journal *Mining Engineering*.¹⁰⁶³

Dr Colinet stated that the re-identification of CWP in Queensland in 2015 was of great concern to him and his colleagues, but that it did explain some of their previously unanswered questions about how Australia had apparently managed to eradicate CWP in its mining workforce.

Mr James Rider, Dust Team Leader, gave the delegation a presentation on the Research Division's current research programs on respirable dust control methods and technologies. The delegation was then invited to inspect the centre's Longwall Gallery – a full scale longwall coal mining laboratory, where scientists develop and test dust mitigation methods and technologies.



Mrs Jo-Ann Miller MP, chair, Hon Lawrence Springborg MP, deputy chair, and Mr Ben McMillan, Counsel assisting, inspecting the full-scale longwall gallery at the NIOSH Center of Dust Control Research, Pittsburgh USA (with Dr Jay Colinet).

The Pittsburgh Research Laboratory also includes a full scale continuous miner dust laboratory. The facility provides the opportunity to test technologies to control respirable dust and gas levels against parameters such as face ventilation, water spray, machine-operated dust controller operation, mining height and mining machine position.

¹⁰⁶³ Joy G, Colinet J, Landen D. Coal Workers' Pneumoconiosis Prevalence Disparity between Australia and the United States. *Mining Engineering*. 2012;vol 64, no 7.

The delegation also received briefings on the centre's work in relation to:

- causes of respirable dust
- dust particle size
- use of water sprays to reduce airborne dust
- best practice configuration and water spray pattern for dust mitigation
- best practice in regard to mine ventilation
- use of body-worn video cameras to monitor positioning of miners on the coal face and assess relationship with personal dust monitoring results.

**Mine Safety and Health Administration, Dust Division
Pittsburgh Safety and Health Technology Center (PSHTC)**

Tuesday 14 February 2017	
9:00am – 10:00am	Meet with PSHTC leadership <i>George Gardner, Center Chief and Division Chiefs</i>
10:15am – 11:30am	Continuous miner and longwall dust control practices Presentation, <i>Mark Schultz, Staff Engineer</i>
11:30am – 1:00pm	Break
1:00pm – 1:30pm	Discussion on sampling strategies
1:30pm – 3:00pm	Laboratory tour <i>Deborah Tomko, Chief: Environmental Assessment and Contaminants Branch</i> Gravimetric (Weighing) Lab Diesel Particulate Matter Inductively Coupled Plasma Infra-Red Imaging X-Ray Diffraction Aerosol Lab
3:00pm– 4:00pm	Follow-up discussions

Mine Safety and Health Administration

The Federal Department of Labor’s MSHA is the regulatory agency responsible for health and safety law and policy across all USA-based mining industries, including coal mines, metalliferous mines and quarries. All other workplace health and safety matters, other than related to mining, are regulated by the Occupational Safety and Health Administration (OSHA).

MSHA:

- develops and enforces safety and health rules for all U.S. mines
- provides technical, educational and other types of assistance to mine operators
- and works cooperatively with industry, labor organisations (unions), and other Federal and state agencies to improve safety and health conditions for all miners in the United States.

MSHA is responsible for the enforcement of the dust standards, including the 2014 Final Rule, across all US mines. The Coal Mine Safety and Health Division is a major provider of compliance dust monitoring to mine operators. It also certifies and authorises commercial providers under the Federal Code.

Importantly, MSHA's Pittsburgh Safety and Health Technology Center (PSHTC) audits all compliance dust sampling undertaken throughout the USA, independently examining and analysing samples at its laboratories.

MSHA's other regulatory activities include:

- conducting inspections, including mandatory quarterly inspections of all underground coal mines and semi-annual inspections of surface coal mines and facilities each year
- investigating fatal and serious non-fatal accidents
- issuing citations and orders for any observed violations
- conducting health sampling of respirable dust and noise exposure at mines, as well as monitoring toxic materials and harmful physical agents
- investigating complaints of hazardous conditions reported by miners
- investigating criminal violations
- examining complaints of discrimination reported by miners
- conducting safety and health conferences with mine operators on violations that are issued.

The delegation's visit to the PSHTC began with presentations by senior staff and an overview of each of the following divisions:

Dust Division

The Dust Division provides engineering and technical assistance to the mining industry for the control and abatement of solid particulates present in the mining environment. It also gathers, compiles, and analyses information regarding concentrations of respirable dust, silica, diesel particulate matter, trace metals, and related substances, and identifies health hazards that may result from overexposure. The Division develops procedures and formulates precautions to be taken to minimise the degree and extent of hazards. Furthermore, the Dust Division receives and analyses respirable dust samples collected by mine operators as required by Section 202(a) of the *Federal Mine Safety and Health Act of 1977*. The Division also provides assistance to industry in reducing exposure to environmental dusts.

Mine Electrical Systems Division

The Mine Electrical Systems Division provides electrical engineering services related to the safe use of electricity during the extraction and processing of mineral resources. Project areas include high and low voltage power distribution, mining equipment controls, elevators, hoists, wire rope evaluations and testing, power electronics, and computer control. The Division disseminates technical procedures for the safe use, installation, maintenance, and testing of these electrical systems and equipment. It also develops specialised test equipment, devices, and instruments needed to make these evaluations.

Mine Emergency Operations Division

The Mine Emergency Operations Division coordinates and facilitates the on-site activities of MSHA during deployments to mine emergencies. The division deploys and operates the MSHA's Underground Communications and Mine Tracking System and the MSHA Mine Rescue Robots during mine emergencies. It also coordinates the activities of the Mine Emergency Unit during mine emergencies and recovery operations and provides periodic training to the units within MSHA and the mining industry. The division is responsible for reviewing and approving mine seal designs for use in isolating unventilated mine atmospheres from active mine workings. Furthermore, the division performs nationwide technical assistance and support for mine seals across the design, construction, certification, and acceptance phases.

Mine Waste and Geotechnical Engineering Division

The Mine Waste and Geotechnical Engineering Division provides technical assistance and engineering services to evaluate and solve problems in the coal and metal/non-metal mining industries involving the fields of civil and mining engineering. Areas of division expertise are geotechnical engineering,

structural engineering, dam safety, hydrology, fluid mechanics, materials science, mining under or near bodies of water, and haulage. Division services include field and accident investigations; in-depth review of engineering designs and plans; expert witness testimony; and training.

National Air and Dust Laboratory Division

The National Air and Dust Laboratory Division is responsible for the analysis of air and gas samples collected during routine MSHA inspections and special investigations conducted in coal and metal/non-metal mines, and during laboratory and field studies pertinent to the health and safety of workers in the mining industry. The analysis of coal mine dust is performed to determine the total incombustible content, the presence and/or degree of coking, the amount of float dust, and the silica content. The majority of samples submitted for analysis are collected by MSHA inspectors during mine inspections, and in other investigations of hazards from toxic or explosive gases and combustible mine dust.

Physical and Toxic Agents Division

The Physical and Toxic Agents Division provides technical assistance to inspection personnel and the mining industry for the purpose of reducing exposure to harmful physical and toxic agents, such as noise, vibration, heat stress, and toxic liquids, vapours or gases present in the mining environment. The Division gathers information and analyses mine environmental conditions for exposure determinations, instrument evaluation, development of adequate engineering controls, and the modification or development of standards and regulations. It also conducts field investigations to provide the latest scientific data in support of MSHA's inspection activities and to assist mine operators in achieving compliance with established exposure standards. It also maintains a Mobile Gas Analysis Laboratory for on-site use in times of emergency.

Roof Control Division

The Roof Control Division provides engineering and geological technical services concerning the evaluation of ground support systems, mine design, and actual ground conditions at underground mining operations. The Division maintains specialised laboratories for the testing of ground support products and for the forecasting of the potential for ground control problems through remote sensing analyses. It also monitors the applications of automated temporary roof support systems, cabs, and canopies to mining equipment.

Ventilation Division

The Ventilation Division conducts field evaluations of plant and mine ventilation systems, develops digital and laboratory simulations to analyse ventilation systems, and monitors the mine atmosphere during mine rescue and recovery operations. The Division also advises the command centre for a mine emergency of the mine atmosphere explosibility, withdrawal limits for rescue/recovery personnel, effectiveness of the firefighting activities, and status of a mine fire. Furthermore, the Division investigates the causes and means to prevent future accidents, including mine fires and explosions. Division staff members also train mining industry personnel in plant and mine ventilation, gas detection, and prevention and control of fires and explosions.

The delegation also held valuable discussions with each of the division chiefs.

The delegation was involved in a series of round-table discussions and presentations on dust control and ventilation in underground mines with officers from the Dust Division. Significant focus was given to discussion of the Final Rule which commenced on 1 August 2014. The rule added a number of increased protections for coal miners, and closes a number of loopholes that may have contributed to continued exposure to high levels of coal dust. The rule includes:

- increased sampling by mine operators
- use of new technology for real-time sampling results
- immediate corrective action when excessive dust levels are found

- determination of noncompliance based on a single MSHA sample, and
- reduced dust standards.

On 1 August 2016, Phase III of the rule came into effect. New requirements include:

- the concentration limits for respirable coal mine dust reduced from 2.0 milligrams of dust per cubic meter of air (mg/m³) to 1.5 mg/m³ at underground and surface coal mines, and
- the concentration limits for respirable coal mine dust reduced from 1.0 mg/m³ to 0.5 mg/m³ for intake air at underground mines and for 'part 90' miners (coal miners who have evidence of the development of pneumoconiosis).

The delegation received a briefing on the use by MSHA of real-time personal dust monitoring equipment, specifically the PDM3700, for regulatory atmospheric dust monitoring. Ms Deborah Tomko, Chief of the Environmental Assessment and Contaminants Branch, explained the training and assessment processes developed by MSHA to ensure inspectors and industry could properly maintain, calibrate, and use the PDM3700 for compliance monitoring purposes. She explained that this training takes approximately six hours and is delivered by MSHA staff across the United States, and around the world.

The delegation was informed that, so far, approximately 52,000 US miners have been trained in the use of the unit. Ms Tomko indicated that she had recently travelled to China to conduct training on the PDM3700. The delegation heard that senior officers from MSHA had established relations with a number of international jurisdictions to share information and training.

This information stood in stark contrast to the evidence the committee received in public hearings that one of the impediments to the use of the PDM3700 in Queensland was that there was no capacity in Australia to maintain or calibrate the devices. The delegation was surprised and disappointed to learn that relatively modest and inexpensive training to achieve such capacity is available to the Queensland mining sector and Department of Natural Resources and Mines (DNRM), through MSHA, but has not yet been taken up.

The delegation also inspected each of the MSHA Dust Division technical laboratories and had the benefit of seeing demonstrations of scientific testing, sample integrity processes and records management. The delegation gained valuable insights from these into the processes used by MSHA to receive and analyse respirable dust samples collected by mine operators, as required by section 202(a) of the *Federal Mine Safety and Health Act of 1977*.



CWPSC delegation members at the Mine Safety and Health Administration, PSHTC Gravimetric Laboratory, with Dust Division scientists.

Teleconference with the National Mine Health and Safety Academy

The delegation heard about the recruitment and training of mine safety and health inspectors. The National Mine Health and Safety Academy (academy) in Beaver, West Virginia, is the world's largest institution devoted to health and safety in mining. It is a central training facility for Federal mine safety and health inspectors, mine safety professionals, other government agencies, and the mining industry.

The Academy is supported by the Superintendent of the Academy and five major units:

- Department of Instructional Services
- Department of Mining Technology
- Department of Instructional Materials
- Facilities Maintenance Branch
- Printing and Training Materials Distribution

The delegation held a teleconference with the Superintendent of the National Mine Health and Safety Academy and discussed the training courses and qualifications offered by the academy. It was noted that entry to the academy is open to anyone with 5 years' experience in the mining industry. The academy program is an intensive residential education and training course, run over 8 months. On completion of the program, inspectors become authorised representatives of the US Secretary of Labor, with statutory powers under the Federal Code.

The delegation heard that authorised representatives (mines inspectors) are generally long-term appointments and there is little movement between the role of authorised representative and positions within industry as a mine operator officials. This suggests the academy program and a dedicated career path for inspectors may be a useful and effective tool in avoiding regulatory capture.

It was of great interest to the delegation to learn that the academy accepts candidates from international mining regulators and had trained students from Peru, China, Ukraine and Columbia. The superintendent was not aware of any Queensland mine inspectors having undertaken training at the academy, although he did recall visits from senior officials of the Mine Inspectorate and DNRM over the years.

Ventilation division

The delegation also met with senior officers from the ventilation division. The delegation was informed that all mine ventilation plans must be submitted to the MSHA ventilation division and approved prior to seeking approval to establish a new longwall mine or block. Ventilation plans submitted for approval must include details of dust abatement measures to be applied for the specific mining operation.

Wednesday 15 February 2017

National Institute for Occupational Safety and Health

Division of Respiratory Disease Studies – Morgantown, West Virginia

9:00am 9:15am	–	Introductions and welcome <i>David Weissman, Director, National Institute for Occupational Safety and Health</i>
9:15am 10:00am	–	Overview of the Coal Workers' Health Surveillance Program (CWHSP) CWHSP B-reader Program Enhanced Program Autopsy Study
10:00am 10:15am	–	Break
10:15am 11:00am	–	Introduction to diseases caused by coal mine dust and medical tests used to screen for them Diseases Conventional chest radiography / ILO system Potential role of Chest CT Mention spirometry / Lung function tests (presented separately later in agenda)
11:00am 12:00pm	–	IT infrastructure for programs X-ray data (demonstrate Picomm, B-Viewer), spirometry data, UCMS
12:00am 1:30pm	–	Break
1:30pm 2:30pm	–	Spirometry - combined overview of CWHSP spirometry services, spirometry course certification, Spirometry Longitudinal Data Analysis (SPIROLA) software/Longitudinal spirometry
2:30pm 3:00pm	–	Mobile outreach / Enhanced Coal Workers' Health Surveillance Program (ECWHSP) (visit mobile unit)
3:00pm 4:00pm	–	CWHSP findings and impact Follow-up discussions

The delegation visited the NIOSH Division of Respiratory Disease Studies (DRDS) in Morgantown, West Virginia and met with senior officers, researchers and key health professionals involved in the NIOSH Coal Workers' Health Surveillance Program (CWHSP).¹⁰⁶⁴

The DRDS provides national and international leadership on the identification, evaluation, and prevention of occupational respiratory diseases, and conducts research relevant to a wide range of occupational respiratory diseases including work-related asthma, asbestosis, chronic obstructive pulmonary disease and CWP.

The DRDS consists of the following program areas:

- Respiratory Research
- Field Studies
- Respiratory Surveillance Program (*non-coal mining*)
- CWHSP
- Enhanced Coal Workers' Health Surveillance Program (ECWHSP) (Mobile Units)
- NIOSH Spirometry Training Program.

The delegation was given an extensive briefing on each of the Division's program areas, with a particular focus on coal workers' health surveillance and research.

NIOSH Coal Workers' Health Surveillance Program

The CWHSP was initially established in 1970 by the US *Federal Coal Mine Health and Safety Act of 1969*. In accordance with the Final Rule, the CWHSP provides the following services:

- Health screening for coal miners

CWHSP provides USA coal miners with the opportunity to undergo health screening for respiratory disease with respiratory symptom questionnaires, chest radiography, and spirometry (a type of lung function test) at first entry into coal mining and at intervals thereafter throughout their coal mining careers. Medical facilities must be approved by NIOSH for participation in CWHSP before they can provide services to coal miners under the program.

- NIOSH B-reader program

The B-reader program aims to create and maintain a pool of physicians who are able to classify chest radiographs for the presence and severity of changes associated with pneumoconiosis (dust-induced lung disease) using the International Labour Organisation's classification system. It accomplishes this aim by providing learning opportunities and examinations that document physicians' abilities to use the classification system.

- ECWHSP

The ECWHSP uses specially designed mobile medical examination units staffed by trained personnel to conduct surveys across the nation at times and in locations that are convenient to coal miners. Screening includes work histories, spirometry testing, and chest x-rays – all done onsite in the mobile unit, free of charge. Reports of individual health findings are then sent to participant and maintained confidentially by NIOSH as patient medical records.

The CWHSP is a federally mandated worker medical monitoring program for underground coal miners. Its intent is to identify and prevent early CWP from progressing to disabling disease.

NIOSH has collected and maintained data from this program since its inception in 1970. The delegation heard that the scheme currently holds approximately 75million chest x-rays.

¹⁰⁶⁴ Since the delegation visit, the DRDS has been restructured and renamed the Respiratory Health Division (RHD).

The CWHSP includes:

- ongoing miner surveys, including work histories
- spirometry testing
- radiographic examinations (chest x-rays) obtained by the mobile examination unit
- a publicly available and searchable Data Query System, able to generate tables and maps of disease data by demographic and geographic criteria
- development of public education programs.

The delegation heard that the scheme demonstrates world's best practice in coal worker health surveillance. However, participation in the program is not mandatory in the USA and therefore the rate of participation across the coal mining industry is unfortunately low.

NIOSH spirometry training program

Spirometry is a diagnostic test used to assess lung function. The delegation heard that only 60% of spirometry tests undertaken in primary care facilities are done correctly. As a result, NIOSH has the responsibility of approving spirometry courses developed to train technicians who perform spirometry under the OSHA Cotton Dust Standard and the Final Rule.

The purpose of a NIOSH-approved course is to improve the quality of testing by ensuring that technicians who perform spirometry have received sufficient theoretical and hands-on training.

The delegation was given a demonstration of spirometry testing, including Hon Springborg MP undertaking the testing and viewing his results. Discussion with NIOSH experts covered:

- the need to undertake spirometry testing on appropriate instruments with accurate calibration
- the need to standardise spirometry reports
- the use of the approved NIOSH spirometry training to accredit spirometry providers.

The delegation learned that NIOSH has made all its spirometry training materials available free of charge on its website. This was notable given the evidence heard by the committee, and detailed in the Monash Review, regarding the appalling rates at which spirometry testing in Queensland has been done improperly, yielding meaningless results and unusable research data.

These training courses and materials have been translated into Arabic, Chinese, French, Indonesian, Italian, Portuguese, Russian, Spanish and Turkish. All are available freely on the NIOSH website.

The delegation also learned about Spirometry Longitudinal Data Analysis (SPIROLA), the software developed by NIOSH for longitudinal spirometry data analysis.

SPIROLA is an easy-to-use visual and quantitative tool intended to assist health care providers in monitoring and interpreting computerised longitudinal spirometry data for individuals or patient groups. The software is only intended to assist the user in assembling the information required to make medical decisions, and cannot be substituted for competent and informed professional judgment. However, the software can provide easily accessible visual information about decline in lung function that may be of significant assistance in identifying early stage CWP or CMDLD.

As with all other NIOSH spirometry materials, SPIROLA is available for download free of charge from the NIOSH website.

Radiographic chest imaging

The delegation heard that radiographic chest imaging is a necessary component of surveillance programs to identify occupational respiratory diseases. The International Labour Office (ILO) classification system is used for standardised characterisation of the presence and severity of changes compatible with pneumoconiosis in plain chest radiographic images. Its use is mandated by Federal law in several surveillance and compensation settings.

DRDS is currently leading the transition of medical radiographic screening for occupational respiratory diseases from older film-based technology to digital chest imaging. The Surveillance Imaging Management Systems laboratory, which is located at the Morgantown facility, has played a critical role in this effort.

The delegation was briefed on the value of the B-reader process and heard that the ILO had developed standards for systematically describing and classifying radiographic appearances of abnormalities caused by the inhalation of dusts. The purpose of the standards was to achieve uniformity in assessing pneumoconiosis across readers. The B-reader program aims to develop and maintain competency in radiographic reading by evaluating the ability of readers to classify a test set of radiographs, and maintaining a pool of qualified readers who can provide accurate and precise ILO classifications. In order to qualify as a B-reader, physicians must undergo intensive training and pass an examination. The exam has a pass rate of fifty percent.

The delegation learned that the B-reader program had been made available and delivered (by NIOSH expert staff) in a number of international jurisdictions including:

- Brazil
- India
- Italy
- Japan
- South America
- Thailand.

NIOSH had developed an extensive range of training tools in relation to the B-reader program which are available online at no cost. The delegation was informed that NIOSH made an offer in 2015 to DRNM to provide a B-reader course in Queensland. However, the offer was not taken up. It was subsequently not until early 2017 that the first Australian B-readers were certified, having undertaken the training program at their own expense at NIOSH in the USA.

ECWHP mobile unit

NIOSH offers mobile respiratory health screening to coal miners across the USA through a fleet of mobile units. At no cost to the worker, the screenings include a work history questionnaire, a chest radiograph (x-ray), a respiratory assessment questionnaire, and spirometry testing. General health assessment and blood pressure screening is also conducted. Typically, the process takes about 30 minutes. NIOSH provides the individual miner with the results of their own screening. By law, each person's results are confidential. No individual information is publicly disclosed.

The mobile units travel across the USA, visiting coal mines, coal mining communities, and even retirement communities. The locations the mobile units will be visiting are published on the NIOSH website six months in advance. The mobile units are staffed by a small team of expert medical professionals employed and specifically trained by NIOSH. As a result, the data collected from these mobile units is of a high standard and is reliable for use in epidemiological research by the NIOSH research divisions.

The delegation viewed a mobile unit and heard how successful this program had been in providing health surveillance for miners. NIOSH directly provides mobile screening services via these mobile units to more than 1000 miners annually.



NIOSH ECWHSP mobile unit.

Thursday 16 February 2017

Black Lung Clinic

Division of Pulmonary and Critical Care

Northwestern Medicine, Northwestern University

Dr Robert Cohen invited the delegation to visit the Black Lung Clinic at Northwestern Medicine in Chicago and, with permission, observe a full clinical assessment and diagnostic process for a coal miner suspected of having CWP or CMDLD. This was an extraordinary opportunity for the delegation and the committee is most grateful to the patient and all the clinical staff at the Black Lung Clinic for allowing the delegation to observe and learn from this process.¹⁰⁶⁵

Dr Cohen is the Professor of Medicine (Pulmonary and Critical Care) at Northwestern and leads the Black Lung Clinic, which provides assessment and diagnosis of respiratory disease for coal mine workers from across the United States.

In addition to legislating standards to reduce exposure to coal mine dust and establishing the Coal Workers' Health Surveillance Program, the USA federal *Coal Mine Health and Safety Act* of 1969 established the Black Lung Disability Trust.

The Black Lung Disability Trust guarantees compensation to workers or their families in cases where there is a ten-year history of mine work, coupled with x-ray or autopsy evidence of severe lung damage. Additionally, a 'rate retention' clause allows workers with progressive lung disease to transfer to jobs with lower exposure without loss of pay, seniority, or benefits. Financed by a federal tax on coal.

The Federal *Black Lung Benefits Act* of 1973 is a US federal law which provides a compensation scheme made up of monthly payments and medical benefits to coal miners totally disabled from pneumoconiosis arising from employment in or around the nation's coal mines. The law also provides monthly benefits to a miner's dependent survivors if pneumoconiosis caused or hastened the miner's death, and to miners disabled by the disease and their widows.

The delegation heard that the federal Black Lung Benefits Program is separate from state workers' compensation programs. Some miners may qualify for one program and not the other. The federal program provides payments and medical treatment to coal miners who are totally disabled from pneumoconiosis arising from their employment.

The Black Lung Clinic at Northwestern Medicine undertakes the clinical diagnoses of coal mine dust lung disease (CMDLD) for the federal compensation program.

¹⁰⁶⁵ The committee especially wishes to acknowledge and thank Mr Charles Galvin, a retired miner from Taylorville, Illinois, who allowed the delegation to observe his medical examination and shared with us his experiences of coal mining over a 40-year career.

Black Lung Clinic

The delegation was privileged to observe the medical examination and assessment of Mr Charles Galvin, a retired miner from Taylorville, Illinois, at the Black Lung Clinic. The medical evaluation included a full employment history and physical examination, chest imaging, lung function testing at rest and a cardiopulmonary exercise test to determine impairment and disability. The delegation was impressed with the thoroughness of this examination and the exceptionally high level of professionalism and expertise of the individuals who conducted all aspects of the evaluation.



Mr Charles Galvin, retired coal miner, undergoing a series of respiratory tests at the Black Lung Clinic at Northwestern Medicine. Pictured with Dr Robert Cohen and Black Lung Clinic staff.

Friday 17 February 2017
Black Lung Center of Excellence
University of Illinois, Chicago



The Black Lung Centre of Excellence is housed within the School of Public Health at the University of Illinois, Chicago.

The delegation visited the Black Lung Center of Excellence at the University of Illinois, Chicago and met with Dr Robert Cohen and his team.

Dr Cohen is Clinical Professor of Environmental and Occupational Health Sciences at the University of Illinois and leads the Black Lung Center of Excellence as Principal Investigator of the Black Lung Clinic Program.

The delegation heard that the center was established to address the needs of the Health Resources and Service Administration's Black Lung Clinic Program. It was identified that health care professionals who work with coal miners were largely unaware of the changing patterns and severity of CMDLD and this could put miners at risk for increased morbidity and mortality due to undiagnosed, or under treated respiratory disease.

The goal of the program is to provide high level medical expertise in medical surveillance, screening, diagnosis, treatment and medical legal services to providers, clinics, advocacy organisations and governmental agencies whose main goal is to care for coal miners.

B-reader program

Dr Cohen and his team gave the delegation an overview of the B-reader program used to read the chest x-rays of miners.

The delegation heard that Dr Cohen and his colleagues at the Black Lung Center of Excellence have been engaged by DNRM to B-read over 2000 electronic images of chest x-rays of current Queensland miners taken following the re-identification of CWP in Queensland in 2015.

Black Lung Clinical Database

The delegation heard that the Center of Excellence has received USA federal government funding to develop and coordinate a database for the storage of clinical information on current and former miners treated at participating Black Lung Clinic program sites.

The Black Lung Clinical Research database is for the collection and evaluation of medical data of miners at risk for a variety of illnesses due to workplace exposures including dust, noise, fumes and chemicals. The delegation heard of the significant value to public health of this database.

Training program for medical examiners

The centre, in partnership with the Federal Department of Labor's Division of Coal Mine Workers' Compensation, provides a training program known as the Black Lung Disability Evaluation and Claims Training for Medical Examiners.

The training program is developed as a set of four modules:

- spectrum of disease of CMDLD
- diagnosis of CMDLD
- measuring respiratory impairment and digital chest imaging
- evaluating causation and disability.

The delegation was told that this online training is provided at no cost. Dr Cohen told the delegation that three of these modules were transferable to any jurisdiction.

Dr Cohen told the delegation that he alerted senior officers within DNRM to the existence of these training resources and their possible utility in training Queensland's Nominated Medical Advisors in 2016 shortly after the report of the Monash Review. The delegation was most disappointed to learn that DNRM does not appear to have considered the use of these resources.

Pulmonary care and rehabilitation

The delegation heard about the benefits of pulmonary care and rehabilitation for sufferers of CWP. Dr Cohen discussed the establishment of Better Breather Clubs, a community-based exercise and education program to assist in pulmonary rehabilitation. It was found that these clubs delivered significant benefits to CWP sufferers.

Conclusions and summary

There is no doubt that the committee would not have been able to gather the necessary information and evidence to meet its terms of reference and make meaningful recommendations for reform of the current Queensland regulatory regime for coal mining without this delegation visit to the USA.

The information and evidence gathered was comprehensive and enormously useful to the committee in understanding where the regulatory regime in Queensland has failed and how it can be improved.

The committee wishes to acknowledge and sincerely thank the numerous staff of NIOSH, MHSA, Northwestern Medicine, and the University of Illinois for the generous sharing of their knowledge and experiences.

The committee also acknowledges and thanks the federal government of the USA for allowing these dedicated public servants to meet with our delegation and share their work.

Attachment – Correspondence concerning requested travel approval



Coal Workers' Pneumoconiosis Select Committee

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Our Ref: INQ-CWP

16 December 2016

Hon A Palaszczuk MP
Premier and Minister for the Arts
PO Box 15185
CITY EAST QLD 4002

via email: thepremier@premiers.qld.gov.au

Dear Premier

Proposed Overseas Travel with respect to the committee's inquiry into the re-emergence of coal workers' pneumoconiosis, February 2017

We write on behalf of the Coal Workers' Pneumoconiosis (CWP) Select Committee for approval for a delegation representing the committee to travel to the United States in February 2017.

It is critical that the CWP Select Committee travels to the United States to witness world's best practice in dust mitigation and meet with world experts in the management of dust mitigation in mines and the identification, management and treatment of CWP.

The committee secretariat is currently compiling an itinerary and has requested assistance from travel services in the preparation of a cost estimate for the proposed travel, which will be submitted shortly for your consideration and also that of the Speaker of the Queensland Parliament.

In the meantime, noting the timeframe, we are providing some preliminary information to support the committee's forthcoming travel application.

Yours sincerely,

A handwritten signature in black ink that reads 'jo ann miller'.

Mrs Jo-Ann Miller MP
Chair

A handwritten signature in black ink that reads 'Lawrence Springborg'.

Hon Lawrence Springborg MP
Deputy Chair

cc clerksoffice@parliament.qld.gov.au; Neil.Laurie@parliament.qld.gov.au

Intended Coal Workers' Pneumoconiosis Select Committee travel for February 2017

Delegation of the Queensland Parliament

Mrs Jo-Ann Miller MP as Chair of the Coal Workers' Pneumoconiosis (CWP) Select Committee is seeking to lead a delegation including one other member and two persons from the CWP Select Committee secretariat:

- Mrs Jo-Ann Miller MP, Member for Bundamba, Chair
- Hon Lawrence Springborg, MP, Member for Southern Downs, Deputy Chair
- Dr Jacqueline Dewar, Research Director
- Mr Ben McMillan, Counsel Assisting

Objectives of the proposed travel

The CWP Select Committee believes it is both vital and beneficial to travel to the United States to witness world's best practice in dust mitigation and meet with world experts in the management of dust mitigation in mines and the identification, management and treatment of CWP.

Proposed itinerary

Sunday 12/02/16	Brisbane to Los Angeles
Monday 13/02/16	Los Angeles to Pittsburgh
Thursday 16/02/16	Pittsburgh to Chicago
Saturday 18/02/16	Chicago to Brisbane

The proposed travel would include consultation with the following persons and organisations:

Pittsburgh

National Institute for Occupational Safety and Health (NIOSH) Pittsburgh Research Laboratory, Pittsburgh Pennsylvania, Centre for Dust Control Research.

United States' Mine Safety and Health Administration (MSHA) Pittsburgh Safety and Health Technology Centre, Dust Division.

Mr Joe Main, Assistant Secretary of Labor for Mine Safety and Health, head of the United States' Department of Labor's Mine Safety and Health Administration.

Chicago

Black Lung Clinic Centre of Excellence, Pittsburgh

Professor Robert Cohen, Environmental and Occupational Health Services, University of Illinois and world expert in CWP. Currently consulting with Queensland DNRM.

An application for overseas travel, detailing itinerary and estimated costs, will be provided shortly.



Coal Workers' Pneumoconiosis Select Committee

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Our Ref: INQ-CWP

20 December 2016

Hon Peter Wellington MP
Speaker of the Legislative Assembly
Parliament House
George Street
BRISBANE QLD 4000

via email: speaker@parliament.qld.gov.au

Dear Mr Speaker

Proposed Overseas Travel with respect to the committee's inquiry into the Coal Workers' Pneumoconiosis

As outlined in our correspondence of 16 December 2016, the Coal Workers' Pneumoconiosis (CWP) Select Committee proposed that a delegation representing the committee travel to the Pittsburgh and Chicago in the United States in February 2017 to conduct meetings and site visits. This travel will allow the committee to consider world's best practice in relation to CWP in the following areas:

- Health surveillance
- Dust monitoring and mitigation
- Regulatory compliance, and
- Worker's compensation.

In support of this application, please find attached a committee travel application, a draft itinerary and an estimate of costs for the proposed travel. A copy has also been sent to the Premier and the Minister for the Arts, Hon Palaszczuk MP.

We look forward to your consideration of this valuable and critical aspect of the Select Committee's work.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'jo ann miller'.

Mrs Jo-Anne Miller MP
Chair

A handwritten signature in black ink, appearing to read 'L. Springborg'.

Hon Lawrence Springborg MP
Deputy Chair

cc Neil.Laurie@parliament.qld.gov.au



Your Ref: Our Ref 8.1.27

23 December 2016

Hon Anastacia Palaszczuk MP
Premier of Queensland
Minister for the Arts
PO Box 15185
City East Qld 4002

Dear Premier

I refer to correspondence to me from the Coal Workers' Pneumoconiosis Select Committee dated 16 and 20 December 2016 regarding proposed overseas travel to the United States with respect to the committee's inquiry. I understand that you have also been written to directly in the same terms by the Committee.

Part 2.4.3.3 of the Remuneration Handbook provides as follows:

Overseas travel by Committee Members

Where the Committee Chairperson approves that the Committee travels overseas, the Chairperson must submit an application for overseas travel to the Speaker for approval by the Premier. The written application should include:-

- *a detailed proposed itinerary including each day to be spent on Parliamentary Business; and*
- *a statement of objectives for the proposed travel indicating the nature of Parliamentary Business to be undertaken and proposed goals.*

The Speaker will forward the application to the Premier together with a recommendation with respect to approval of the application. Where applications have been approved by the Premier, Members are not required to seek further approval for minor variations to the proposed itinerary.

The Committee budget meets the cost of:

- *transportation such as commercial or charter air travel, car hire, taxis, ferry/public transport expenses, airport car parking, passport fees, visa fees/travel insurance etc; and/or*
- *accommodation, meals and incidental costs.*

/2...

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Regarding this submission, I make the following observations:

- Whilst no specific itinerary has been provided, the dates of proposed travel and organisations/persons with whom the Committee intends to meet have been provided. I understand that approvals are required from the current administration for some of the meetings/visit and such approvals have not yet been sought pending your approval. I think enough information has been provided in the information provided by the Committee for approval in principle with a requirement for a full itinerary to be provided once all meetings have been settled.
- I am simply not in a position to know whether or not this visit is critical to the Committee's final report on the terms of reference. I am aware that at least one of the persons with which the Committee proposes to meet is likely to attend Australia and give evidence to the Committee in Brisbane early in 2017 (Dr Robert Cohen, University of Illinois), but the visit obviously enables site visits and wider interaction with experts/industry in the recognised 'best practice' jurisdiction. Given the importance of this inquiry generally, I recommend the proposed travel, on the basis that the Committee is in the best position to assess whether such travel is necessary to ensure the quality of its final report.
- There are, however, some matters I need to stress so you can consider as part of your decision making process:
 - There is effectively no budget for this Committee. In the Clerk of Parliament's letter to the Under Treasurer regarding the Cabinet Budget Review Committee's (CBRC) mid year funding submission, the Clerk with my authority stated the following:

"I would also like to highlight a potential funding matter that has only been recently identified following the decision of the Parliament on 15 September 2016 to establish the Coal Workers' Pneumoconiosis (CWP) select committee. As some background:

•On 18 August 2016 there had been an Opposition motion to establish a Royal Commission into the matter, but that motion was amended to effectively calling for the establishment of a select committee to inquire into coal workers' pneumoconiosis (CWP) within 30 days;

•The Coal Workers' Pneumoconiosis (CWP) select committee was established by the Parliament on 15 September 2016 to conduct an inquiry and report on the re-emergence of CWP amongst coal mine workers in Queensland;

•The Select Committee on CWP is required to report by April 2017;

•The Parliamentary Service is providing from its existing Committee Office resources a number of research officers and other support staff. However, the Select Committee is formulating extensive public hearings and engagement (necessitating costs including advertising and travel) and has already engaged Counsel (at a cost of approximately \$12,500 per week) to assist its inquiry. It is also seeking to have medical experts on CWP engaged on a consulting basis;

/3...

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•Whilst it is very early in the Select Committee's inquiry, it is likely that the Committee will incur significant costs (at least \$200,000-300,000) that are unlikely to be able to be absorbed by the Parliamentary Service's existing budget; and

•The Speaker has indicated that once the costs are known an assessment will be undertaken and a request for supplementation for the additional costs may be forwarded to CBRC."

Obviously the costs of the proposed overseas travel will add to the funding burden for which I intend to ask CBRC to provide additional funding.

- It is difficult to estimate the final cost of the Committee for which CBRC additional funding will be sought at this time. The Clerk's best estimate at this time is around \$250,000 excluding the cost of the proposed overseas travel. (I note that this is the estimated total cost for internal travel, Counsel Assisting and incidental matters and does not include the considerable human resources provided internally from existing resources within Parliamentary Service, such as Committee officers).
- The cost estimate for the proposed travel is \$68,415.20. However, this cost estimate does not include the additional appearance costs of Counsel Assisting (approximately \$20,000 – eight days at \$2,500 per day). The real total cost of the proposed travel is, therefore, \$88,415.20. There is precedent for a small delegation to represent committees on overseas travel, usually the Chair, Deputy Chair and a Committee Officer. The Committee's submission proposes that Counsel Assisting also attend with the delegation on the overseas travel. The Chair has advised the Clerk that Counsel Assisting will assist the delegation by examining experts, along with the Chair and Deputy Chair, which will be recorded and later published by the Committee. Counsel was engaged to assist in the preparation of material for the Committee's hearings (evidence of past activities), assisting the Committee with examinations at hearings, settle summonses and correspondence etc. Each attendee on the proposed travel costs AUD \$17,103.80. In short, attendance by Counsel Assisting will add about \$37,000 to the real total cost of the overseas travel (\$17,103.80 in travel costs and \$20,000 in attendance fees). Without Counsel Assisting the real total cost for the delegation would be closer to \$51,000. Of course, the value added by Counsel Assisting is something about which I cannot assess.

I trust the above matters are of assistance to you in your decision making process.

Yours sincerely



HON PETER WELLINGTON MP
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Premier of Queensland
Minister for the Arts

For reply please quote: EP/KS - TP/16/17220 - DOC/17/1792

11 JAN 2017

Mrs Jo-Ann Miller MP
Chair
Coal Workers' Pneumoconiosis Select Committee
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Dear Mrs Miller

Jo-Ann,

Thank you for your letters of 16 and 20 December 2016 seeking approval for a delegation representing the Coal Workers' Pneumoconiosis Select Committee to travel to the United States in February 2017.

I recognise the importance of this trip to understanding, and witnessing, world's best practice in dust mitigation. This trip will provide the opportunity to meet with world experts in the management of dust mitigation in mines and the identification, management and treatment of coal workers' pneumoconiosis.

I note the importance of this trip to the work being undertaken by the Coal Workers' Pneumoconiosis Select Committee. As such, I am pleased to approve overseas travel for you, as Chair of the Committee, the Honourable Lawrence Springborg MP, Deputy Chair and Dr Jacqueline Dewar, Research Director.

Again, thank you for taking the time to write to me about this matter.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Jackie Trad', written over a vertical line.

JACKIE TRAD MP
ACTING PREMIER



Your Ref: Our Ref: 8.1.6

12 January 2017

Mrs Jo-Ann Miller MP
Chair
Coal Workers' Pneumoconiosis Select Committee
Parliament House
George Street
BRISBANE QLD 4000

Dear Mrs Miller

Re. Application for travel to USA

I refer to the above and our telephone conversations on Monday and yesterday in relation to my recommendation to you that if you are not happy with the Premier's decision you should respond with the further information you believe is relevant and was not considered when the decision was made.

In relation to your further claim as to the reason why the decision was made, your Committee records will show I have approved all of your Committee's requests and the reason why this application was sent to the Premier was because the rules require the Premier's approval for all overseas travel.

I attach a copy of my submission to the Premier.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Peter Wellington'.

HON PETER WELLINGTON MP
Speaker of the Legislative Assembly

Enc.

Parliament House
George St Brisbane Queensland 4000 Australia
Phone + 61 7 3553 6700
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Coal Workers' Pneumoconiosis (CWP) Select Committee

Parliament House
George Street
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Ph: +61 7 3553 6696
Email: cwpsc@parliament.qld.gov.au

Our Ref: INQ-CWP

12 January 2017

Hon Jackie Trad MP
Acting Premier
PO Box 15185
CITY EAST QLD 4002

via email: thepremier@premiers.qld.gov.au

Dear Acting Premier

Call to review decision regarding Coal Workers' Pneumoconiosis Select Committee travel to the United States

We refer to your letter of 11 January 2017 in relation to the Coal Workers' Pneumoconiosis Select Committee's proposed travel to the United States, and the absence in that letter of approval for Counsel Assisting to travel with the Committee, as requested.

We write on behalf of the Committee to ask that you review this decision immediately.

Counsel Assisting the Committee was engaged by the Clerk of the Parliament on 18 October 2016. The Committee unanimously endorsed his appearance as counsel assisting at all public and private hearings. Counsel Assisting has subsequently appeared at all public and private hearings conducted by the Committee, so far over 15 days, and cross-examined nearly all witnesses who have appeared to give evidence before the Committee. Thorough and professional forensic examination by Counsel Assisting of the complex factual, legal, and technical issues arising from the evidence the Committee receives is vital to the Committee's discharge of its terms of reference.

The terms of reference require the Committee to undertake a process of fact-finding – akin to the process that might be undertaken by a Commission of Inquiry – to determine the adequacy of arrangements, the roles and actions of interested parties, and the efficacy of methodologies and processes used in the coal mining industry. Paragraph (e) of the terms of reference expressly requires the Committee to examine "practices in jurisdictions with similar coal mining industries."

The Committee's travel to the United States is vital to meeting these terms of reference. Already the Committee has received substantial evidence that the US has adopted world's best practice methodologies and processes for coal mine dust measurement and mitigation, including monitoring regimes, statutory requirements, and mine policies and practices. The proposed travel includes examination of the US National Institute for Occupational Safety and Health (NIOSH), a division of the Centre for Disease Control, and the principal agency in the United States responsible for coal mine safety and health regulation. The Committee will also visit the Chicago clinic of Dr Robert Cohen from the University of Illinois. Dr Cohen is recognised as the world's leading expert on CWP. The Queensland Department of Natural Resources and Mines has recognised the status and expertise of Dr Cohen and his team of 'B-Readers' by establishing a program of review by them of the x-rays and CT scans of Queensland coal mine workers suspected of having CWP. Dr Cohen's team are currently the only expert team in the world certified to diagnose and classify CWP to the ILO standard. He is now routinely consulted by the DNRM in relation to CWP issues. The Committee understands that senior officers from the Department are also proposing to visit Dr Cohen and his team in the US later this year.

Counsel Assisting will play a crucial role in supporting the Committee's inquiry activities throughout the course of the approved travel to the United States, both through the provision of technical legal advice on important jurisdictional and legislative matters and in acting as counsel assisting to question witnesses, experts, and regulators whom the Committee seeks to hear from while in the United States. The presence and involvement of Counsel Assisting in this important part of the Committee's work will be critical as the Committee looks to begin forming its findings and recommendations.

In the Fitzgerald Inquiry report, Commissioner Fitzgerald referred to the "need to consider introducing a comprehensive system of Parliamentary Committees to enhance the ability of Parliament to monitor the efficacy of Government." He wrote:

Committees may conduct inquiries into major areas of policy or investigate matters of public concern, or both. The useful roles they can play are varied and diverse.

Parliamentary Committees should have the power to conduct public hearings, as well as the power to investigate and obtain information and documents and, where appropriate, accept and report on petitions and complaints. ...

The skills individual members bring to Parliament are often inadequate for the analysis of complex public accounts and transactions and scrutiny of major legislation. A Parliamentary Committee at times may need, and must be able to obtain, independent expert staff and consultants.¹

In *Bretherton v Kaye & Winneke*² the Supreme Court of Victoria noted that "there is public benefit derived from briefing counsel to carry out the usual duties imposed upon an advocate in an inquiry established to investigate serious matters." This statement of legal principle is commonly referred to in legal and academic articles regarding the role of Counsel Assisting in inquiries.³

It is routine in Commissions of Inquiry for counsel assisting to be engaged to question witnesses, advise the Commissioner/s, and make submissions to assist in the determination of findings and recommendations. The Committee was established by the Parliament to undertake the task of a Commission of Inquiry but in less time and at substantially less cost. It must not be hampered in that task by the refusal to allow counsel assisting to travel with the Committee in undertaking its work.

The Committee calls on you to promptly confirm your approval for Counsel Assisting to accompany the Committee on this trip – the importance of which you duly acknowledge – and thereby ensure the Committee may most effectively fulfil its responsibilities in relation to the inquiry's Terms of Reference.

We seek a response by 5.00pm Sunday, 15 January 2017.

Yours sincerely


Mrs Jo-Ann Miller MP
Chair


Mr Jason Costigan MP
Acting Deputy Chair

¹ GE Fitzgerald, Commission of Inquiry into Possible Illegal Activities and Associated Police Misconduct, July 1989, pp 124-5.

² (1971) VR 111 at 123

³ See for example, "Role of Counsel Assisting in Commissions and Inquiries"¹ Peter Dunning QC (now Solicitor-General of Queensland), *BarWeb*, 23 May 2003



Coal Workers' Pneumoconiosis Select Committee

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Our Ref: INQ-CWP

12 January 2017

Hon Peter Wellington MP
Speaker of the Legislative Assembly
Parliament House
George Street
BRISBANE QLD 4000

via email: speaker@parliament.qld.gov.au

Dear Mr Speaker

We refer to your letter to the committee dated 12 January 2017 and wish to point out substantial errors of fact in relation to your letter to the Premier of Queensland, dated 23 December 2016.

Firstly, with reference to the first dot point on page 2 of your letter to the Premier, the committee is required to travel to fulfil its responsibilities under its terms of reference and we specifically draw your attention to *Para e* of those terms of reference. Secondly, in quoting from the Clerk's letter to the Under Treasurer (page 2 of your letter), you repeat an error by referring to Counsel as having been engaged at an approximate cost of \$12,500 per week. This is simply untrue, except when he is engaged for the whole week. This has only been the case for two weeks since Counsel Assisting was appointed and in both cases this was on regional trips.

We were advised when the committee was established that all resources would be provided to the committee to undertake its work and that resourcing would be no issue whatsoever, including travel. I understand that this same commitment was given to stakeholders by the Premier's office, the Minister for Natural Resources and Mines and other parties. We also understand following discussions with the Clerk that any costs in relation to this inquiry would be charged back to the Treasury for reimbursement to the Parliamentary Services Committee. In relation to the final dot point (on page 3 of your letter), for the cost estimate of proposed travel, it is clearly wrong in the sense that no final cost has been determined by this committee. The committee has not yet determined how many hearing days there will be because this is to be negotiated with the organisations in the United States. Therefore, any estimate of Counsel Assisting the committee's appearance fees is farcical.

It is our intention to put to the committee that, should these decisions have been made on the basis of costs alone, it go public to the people of Queensland seeking their personal contributions to raise the appropriate money to send Counsel Assisting with us to the United States.

We would then be asking the people of Queensland to send their contributions direct to you as Speaker of the Parliament so that Counsel Assisting can be funded to travel with the committee. We intend to do this in the interests of democracy, the separation of powers between the Executive and Parliament, and the Fitzgerald inquiry principles, and the important work of this committee, considering 19 people have already been diagnosed with Black Lung disease and, sadly, may suffer a very painful death. We would advise that you establish a cost centre for the receipting of any funds sent to you for such purposes, and also for auditing by the Auditor-General.

Yours sincerely


Mrs Jo-Ann Miller MP
Chair


Mr Jason Costigan MP
Acting Deputy Chair

cc clerksoffice@parliament.qld.gov.au; Neil.Laurie@parliament.qld.gov.au



Premier of Queensland
Minister for the Arts

For reply please quote: *EP/KS - TR/17/497 - DOC/17/14282*

13 JAN 2017

Mrs Jo-Ann Miller MP
Chair
Coal Workers' Pneumoconiosis Select Committee
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Dear Mrs Miller

Jo-Ann

Thank you for your letter of 12 January 2017 co-signed by Mr Jason Costigan MP, Acting Deputy Chair, seeking approval for Counsel Assisting to travel with the Coal Workers' Pneumoconiosis Select Committee to the United States in February 2017.

As stated in my letter of 11 January 2017, I acknowledge the importance of this trip to the Committee's research and understanding world's best practice in dust mitigation. I have received your request for the Counsel Assisting to accompany the Committee and will reconsider my decision and respond accordingly.

Again, thank you for taking the time to write to me about this matter and I will be in contact once I have reviewed the decision.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Jackie Trad', with a stylized flourish at the end.

**JACKIE TRAD MP
ACTING PREMIER**



Premier of Queensland
Minister for the Arts

For reply please quote: *EP/AS – TF/17/677 – DOC/17/16281*
Your reference: *INQ-CWP*

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18 JAN 2017

Mrs Jo-Ann Miller MP
Chair
Coal Workers' Pneumoconiosis Select Committee
Parliament House
George Street
BRISBANE QLD 4000

Dear Mrs Miller

Thank you for your letters of 12 and 16 January 2017 seeking approval for the Counsel Assisting the Committee to travel with the Coal Workers' Pneumoconiosis Select Committee (the Select Committee) to the United States in February 2017.

The Select Committee is an important part of the Queensland Government and the Select Committee's ability to complete a comprehensive investigation into significant issues that affect Queenslanders is essential.

I understand that the Select Committee is responsible for undertaking a thorough investigation process of practices in other jurisdictions according to the Terms of Reference, and that the Counsel Assisting the Select Committee will be critical to this process. Therefore, in this instance, I approve Mr Ben McMillan, Counsel Assisting the Select Committee to travel to the United States.

I advise that it is not usual for Counsel Assisting to be permitted to participate in travel of this nature, and this will not be a common practice for future inquiries that require fact gathering to be completed in other jurisdictions.

I remind the Select Committee members completing this trip, and the Counsel Assisting, that expenses are to be kept to a minimum.

Again, thank you for writing to me on this matter.

Yours sincerely

**ANNASTACIA PALASZCZUK MP
PREMIER OF QUEENSLAND
MINISTER FOR THE ARTS**

Appendix D – Chronology of events

Date	Event	Document/Source	Internal document Number
1825			
	Coal was discovered in Queensland. Subsequently, coal mining became established in Australia.	DNRM, submission 35, p 132.	
1831			
	First reported CWP case internationally	Gregory JC. 'Case of particular black infiltration of the whole lung resembling melanosis'. <i>Edinburgh Med Surg J.</i> 1831, 36, 389-394.	
1840s-1940s			
	Predominantly shovel and pick method for coal mining	Transcript, Ipswich, 4 November 2016, pp 47-8. DNRM, submission 35, p 134.	
1860s & 70s			
	Invention of pneumatic drills (rock or drilling machines). Greatly increased speed of work, allowed mining at greater depths and increased quantity and spread of dust. Fine particles airborne when rocks fractured and inhaled leading to CMDD. Dynamite, available from 1867, contributed to the issues. Six times more effective in shattering rock than previous explosives, also increased miners, exposure to silica dust.	Bowden, B and Penrose, B (2006). 'Dust, Contractors, Politics and Silicosis: Conflicting Narratives and the Queensland Royal Commission into Miners Phthisis', 1911. <i>Australian Historical Studies</i> , 37(128), 89-107.	

1910			
	<p>Royal Commission into Silicosis (then also called miners' phthisis). <i>Mines Regulation Act 1910</i></p> <p>According to the research article:</p> <p>In 1910 the Department of Mines reported that 'conditions arise in which dust is present to an almost intolerable extent.' Dust control brought under <i>Mines Regulation Act 1910</i>.</p> <p><i>Mines Regulation Act 1910</i> brought in dust safety methods but the definition of 'owner' effectively passed responsibility for dust suppression, and safety in general, from the owner of the mine to the tributer or contractor. Owners receiving a royalty or rent were explicitly excluded from responsibility for ventilation and dust suppression.</p> <p>Article argues the official stance at the time (Queensland Commissioner for Public Health, officials from Department of Mines and majority of the Legislative Council) denied even the existence of miners' phthisis, neatly severing any occupational connection by arguing it was simply common tuberculosis, the white plague, with lower class stigma. <i>The composition of the Royal Commission at the time meant that an endorsement of this perspective was virtually preordained.</i> Unions at the time left the issue to parliament.</p> <p>The findings of the Royal Commission attributed blame for the problem to the workers and contractors themselves.</p>	<p>Queensland Parliament, Record of Proceedings, Legislative Assembly, 30 September 1910, p 1173.</p> <p>Bowden, B and Penrose, B (2006). 'Dust, Contractors, Politics and Silicosis: Conflicting Narratives and the Queensland Royal Commission into Miners Phthisis', 1911. <i>Australian Historical Studies</i>, 37(128), 89-107.</p>	
1913	Annual coal production reached 1 million tonnes per annum for the first time.	DNRM, submission 35, p 132.	
1916			

	Government brought miners' phthisis under the <i>Workers' Compensation Act</i>	Bowden, B and Penrose, B (2006). 'Dust, Contractors, Politics and Silicosis: Conflicting Narratives and the Queensland Royal Commission into Miners Phthisis', 1911. <i>Australian Historical Studies</i> , 37(128), 89-107.	
1925			
	<i>Coal Mining Act 1925</i>		
1948			
	<i>Coal Industry (Control) Act 1948</i>		
1949			
	Powell Duffryn Technical Services study – found 15% of coal workforce were suspected of having CWP.	Powell Duffryn Technical Services, 'Report to the Queensland Government by Powell Duffryn Technical Services Ltd on the Coal Industry of Queensland', 1949, p 89. Referred to in evidence by Bruce HAM, transcript, Ipswich, 4 November 2016, p 44.	
	Annual coal production reached 2 million tonnes per annum for the first time.	DNRM submission 35, p 132.	
1950s			
	Further increase in development and use of mechanical machines	DNRM submission 35, p 132.	

	Coal production in Queensland in 1950 amounted to 2.3 million tonnes, sourced from more than 80 underground mines.	DNRM submission 35, p 132.	
1957			
	'Mechanisation at the start of continuous miners'	Transcript, Ipswich, 4 November 2016, p 47. DNRM, submission 35, p 134.	
1959			
December	<p>Workers' Compensation Acts Amendment Bill (No. 2) amendment included abolishing 15 year qualifying period – 15 year qualifying period had been in effect since section 14B came into operation.</p> <p>The 15 year qualifying period had meant that applicants were debarred from compensation if their condition presented more than 15 years after they had left the industry. The amendment bill sought to abolish this time period due to the condition being recognised as a latent onset disease.</p> <p>Debate discussed the "huge injustice" to workers and their families with this latent onset, occupational disease. This was specifically stated in Hansard for Coal Workers Pneumoconiosis, but they also called it anthracosis and miners' phthisis and silicosis (acknowledged cross over with coal dust and silica).</p>	Queensland Parliament, Record of Proceedings, Legislative Assembly, 4 December 1959, pp 1908-1914.	
1960s	1960s the Queensland coal industry underwent major growth, including establishment of new export mines in south east Bowen Basin at Moura and Kianga in central Queensland.	DNRM, submission 35, p 132.	
1969-1971			

	5,500 tonnes produced in 24 hours, compared with the same amount in 2 hours in 2016.	Transcript, Ipswich, 4 November 2016, p 15.	
	Annual coal production reached 10 million tonnes per annum for the first time.	DNRM, submission 35, p 132.	
	By 1970, more than 95% of coal production from underground mines in Queensland was using 'completely mechanised' methods.	DNRM, submission 35, p 134.	
1981			
	Queensland Coal Board (QCB) Annual Report announces proposed health scheme for coal miners.	QCB 30 th Annual Report 1981, p 46.	A85303
1982			
11 December	<p>QCB acting in pursuance of its authority vested in it under the <i>Coal Industry (Control) Act 1948-1978</i>, made its first Order, in force 1st January 1983.</p> <ul style="list-style-type: none"> • First order covers new entrants, and existing entrants in some circumstances, medical certification of fitness for employment. 	Queensland Government Gazette, 11 December 1982, Vol. CCLXXI, No. 81, pp 1676-1677.	A108697 A103054
December 1982 – January 1983	<ul style="list-style-type: none"> • QCB second order is the compulsory medical examination (chest x-ray) for all employees in the coal mining industry who are, or have been, engaged in mining or associated operations. • Form No. 6 for the order covering new entrants includes field for medical examiner to record an ILO Pneumoconiosis Classification: (0/-, 0/0, 1/0, etc.) <p>These orders later form the foundation documents for the survey work undertaken by RATHUS and ABRAHAMS.</p>	Queensland Government Gazette, 19 March 1993, Vol. CCCII, No. 61, pp 1355–1368.	A103060 A108697
1983			
1 January	Coal Mine Workers Health Scheme commenced.	First and Second Health Order.	A108697

	<p>The former Queensland Coal Board was a tripartite body comprising senior representatives from the coal industry, mining unions and the mines department. In December 1982, the Queensland Coal Board authorised the development of a coal miners health scheme which started on 1 January 1983 with a programme to survey, by chest x-ray and lung function test, all colliery employees in Queensland. Health Scheme detected CWP which prompted 2nd Health orders.</p>	<p>Queensland Government Gazette, 11 December 1982, Vol. CCLXXI, No. 81, pp 1676-1677.</p> <p>Queensland Government Gazette, 19 March 1993, Vol. CCCII, No. 61, pp 1355–1368.</p>	
March	<p>Chest x-ray program commences in conjunction with Department of Health; two consultants (RATHUS and ABRAHAMS) engaged to read the x-rays; all personnel x-rayed were advised on the results of the examination.</p>	<p>QCB 32nd Annual Report 1983, p 45.</p>	A85529
1984			
May	<p>RATHUS and ABRAHAMS report:</p> <p>CXR survey 7784 (123 former). 1984 prevalence study of CMDLD in Queensland identified 499 abnormalities including 75 cases of pneumoconiosis or suspected pneumoconiosis among 7784 current and 123 retired employees.</p>	<p>RATHUS, E, ABRAHAMS, E. 'Report on Queensland Coal board Coal Miners' Health Scheme', May 1984.</p>	A103054
May	<p>Report recommended:</p> <ul style="list-style-type: none"> • permanent health scheme for coal miners. • regular supervision of the 75 identified cases, particularly of the largest category of the group: those assigned ILO classification of 1/1, and who had reported between 9 and 49 years in coal mining. • appointment of dedicated Chief Medical Officer and auxiliary staff, CMO to, inter alia: <ul style="list-style-type: none"> ○ periodically follow up retired miners by chest x-ray and medical examination on a routine basis or at request, and create a central 	<p>RATHUS and ABRAHAMS, p 16, 20.</p>	A103054

	register for the co-ordination of the program and recoding of data as required in a central location.		
May	QCB summarises scheme outcomes.	QCB 33 rd Annual Report 1984, p 42.	A85727
May	QCB reported in its Annual Report 1984-85 that it was following up on the identified cases. In November 2016 the department acknowledged it had relied upon the authority of that statement by QCB to conclude that follow up did occur. <i>Note: No information about a permanent health scheme (as recommended in report above) for miners until 1993.</i>	Public briefing transcript, Ipswich, 4 November 2016, p 54.	
	Mr Andrew VICKERS of CFMEU expressed the opinion that the RATHUS and ABRAHAMS report was kept quiet at the time. He states that if any of his members had received a follow up (regarding possible CWP), he would have heard about it (as president of Queensland district of the union).	Public briefing transcript, Ipswich, 4 November 2016, p 28.	
1985			
1985-1989	1985 QCB Annual Report confirms that employees advised of abnormality as a result of x-ray program completed in 1984 have been contacted again. Each fiscal year the QCB reports on the number of new entrants medically examined.	QCB 34 th Annual Report, 1985, p 33. QCB 35 th Annual Report, 1985-86, p 23; QCB 36 th Annual Review, 1986-87, p 2; QCB 37 th Annual Review, 1987-88, p 1; QCB 38 th Annual Review, 1988-89, p 4.	A85731 A86136 A86142 A86143 A86144
1986			

	First longwall introduced in Queensland at German Creek central and southern – expanded later.	Transcript, Ipswich, 4 November 2016, p 48. DNRM submission 35, p 134.	
16 July	Moura No. 4 mine disaster – 12 miners died	‘Moura No. 4 underground mine accident: Report of the Warden’s inquiry’ , Queensland Government publications, 1987.	
1987			
	<i>Coal Industry (Control) Regulation 1987</i>		
1988			
	Occupational health and safety responsibility transferred from Department of Health to the Division of Work, Health and Safety within Industrial Relations.	Public briefing transcript, Brisbane, 14 October 2016, p 33.	
1988-2002	Four cases paid for total permanent disability for respiratory disorders by Coal and Oil Shale Superannuation Fund.	Transcript, Ipswich, 4 November 2016, p 45.	
1990			
	Prior to 1990 all health survey data entered manually to database at DNRM	Monash Centre for Occupational and Environmental Health, UIC School of Public Health, ‘Review of Respiratory Component of the Coal Mine Workers’ Health Scheme for the Queensland Department of Natural Resources and Mines’ , Final Report, 12 July 2016, p 57.	A86643

1991			
	QCB investigates improvements to Coal Miners' Health Scheme	QCB 40 th Annual Review 1990-91, p 14.	A86273
1992			
	QCB reports full revision of provisions relating to health screening and monitoring for coal mining employees.	QCB 41 st Annual Review, 1991-92, p 13.	A86274
1993			
1993-1998	According to Bruce HAM, from 1993-1998 there were 15 cases of suspected CWP identified by the scheme and referred to Department of Health for further investigation.	Transcript, Ipswich, 4 November 2016, p 45.	
March	<p>Coal Industry Employees' Health Scheme Order 1993 is made (3rd order).</p> <p>Object of order is to provide for health assessment of entrants to the Queensland coal mining industry and regular health assessment of all employees in the Queensland coal mining industry.</p> <p>Form A – Pre Employment Health Assessment form states what sections are to be completed by the Entrant, the Examining Medical Officer and the Nominated Medical Adviser. Section 4, which the form states is to be completed by the QCB, is the ILO Pneumoconiosis Classification.</p> <p>Form B – Periodic Health Assessment. Section 5 – Queensland Coal Board to complete the ILO Pneumoconiosis Classification.</p>	<p>Queensland Government Gazette, 19 March 1993, No. 61.</p> <p>Queensland Government Gazette, 19 March 1993, No. 61, clause 5.</p> <p>1993 – Form A.</p> <p>Forms 1993-2001 Form B.</p>	<p>A103060</p> <p>A86536</p>

			A86537
May	<p>Queensland Coal Industry Employees Health Scheme is introduced. Scheme relies on 17 QCB approved medical physicians instead of 80 health professionals previously involved.</p> <p>QCB provides service in terms of quality control in checking data entry and co-ordination with the Specialist Health Unit of the Queensland Department of Health in relation to random screening and screening abnormal chest x-rays for lung disorders.</p>	<p>QCB 42nd Annual Review 1992-93, p 12.</p> <p>QCB 43rd Queensland Coal Industry Review 1993-94, p 13.</p>	<p>A86552</p> <p>A86558</p>
1994			
7 August	<p>Moura No 2 mine disaster – 11 miners died. Together with 1986 Moura mine disaster, caused deaths of 23 mine workers, and led to revision of coal mining health and safety legislation in the late 1990s.</p>	<p>‘Moura No. 2 underground mine accident: Report of the Warden’s inquiry’, Queensland Government publications, January 1996.</p>	
1995			
	<p>X-ray screening program identified 8 cases of pneumoconiosis related to non-coal sources. None of the workers had a long history of exposure to coal dust. One case however had a long work history in the coal industry working on open cut drills and as such the report highlighted the need for caution in relation to exposure to silica dust.</p>	<p>QCB 44th Queensland Coal Industry Review 1994-95, p 12.</p>	A86559
	<p>National Occupational Health and Safety Commission (Safe Work Australia) guidelines included a respiratory questionnaire – this was not included in Queensland’s form which was later found to be deficient.</p>	<p>Monash Centre for Occupational and Environmental Health, UIC School of Public Health, ‘Review of Respiratory Component of the Coal Mine Workers’ Health Scheme for the Queensland</p>	A86643

		Department of Natural Resources and Mines', Final Report, 12 July 2016.	
1996			
	<i>Colbran v Workers' Compensation Board of Queensland</i> . WorkCover Queensland and self-insurers have subsequently relied upon this case to close cases and limit payments to persons with confirmed CWP arguing the worker may seek 'alternative employment'.	<i>Colbran v Workers' Compensation Board of Queensland</i> [1996] 152QGIG VICKERS, Transcript, Ipswich, 4 November 2016, p 29.	
1997			
	Mr VERRALL retired	' Coal dust disease opens historic Queensland wounds ', <i>Brisbane Times</i> (online), 6 December 2015.	
18 February – 17 March	Ms Carmel BOFINGER, Senior Research Scientist, Mining and Research Development Centre, SIMTARS. Travel to NIOSH and MSHA, Pittsburgh	DNRM document provided to Committee dated 3 March 2017.	FA28511
1998			
	QCB abolished The 1993 health order becomes a regulation under the <i>Coal Mining Act 1925</i> . Powers held under the former Scheme Order by the QCB were transferred to the Chief Executive (Director General) of the Department of Mines and Energy. Objective of the 1998 Regulation was almost identical to the 1993 Order.	QCB 47 th Queensland Coal Industry Review 1997-98, p 3. Coal Industry Employees' Health Scheme Regulation 1998.	A21969

	Nomination, approval and requirements for appointment as a nominated NMA remained identical except that the Director-General of DME held the powers previously held by the QCB.	DNRM, response to question taken on notice during a briefing 14 October 2016, additional response 4, A21969.	
May 1998	Health scheme now administered by the Health Surveillance Unit, Safety and Health Division of the Department of Mines and Energy under the <i>Coal Mining Act 1925</i>	QCB 47 th Queensland Coal Industry Review 1997-98, p 15.	A86613
Late 1998	Coal Mining Safety and Health Bill expected to go to Parliament late 1998; legislation places increasing obligations on mine operators through 'duty of care' principle. Legislation less prescriptive but mines may be required to demonstrate that the employ best practice management of health and safety risks.	QCB 47 th Queensland Coal Industry Review 1997-98, p 15.	A86613
1999			
	<i>Queensland Coal Mine Safety and Health Act 1999</i>		
	Establishment of a tripartite Coal Mining Safety and Health Advisory Council to advise the Minister Major monitoring and enforcement role for the Inspectorate	Explanatory notes, Queensland Coal Mine Safety and Health Bill 1999, p 1.	
	<i>Coal Mining Act 1925</i> repealed by <i>Coal Mining Safety and Health Act 1999</i>		
	<i>Mining and Quarrying Safety and Health Act 1999</i>		
	DNRM – Health and Safety division report findings <ul style="list-style-type: none"> • 75 cases identified with ILO classifications in the 1984 study, none were reported to be currently in the coal industry • Issues with pre-employment screening (5 respiratory disease cases had been missed) 	Bruce HAM, 'A risk assessment on dust and related respiratory disease in coal miners', <i>Safety & Health Division</i> , 1999.	

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

	<ul style="list-style-type: none"> • 13 cases with ILO classifications identified • Evidence that 5 people with ILO classifications in 1993 were being managed in the work environment • Issues with dust levels in longwall mines that required addressing • A number of people with ILO classification were not being kept away from dust at work. 		
	QUT, SIMTARS and the Queensland Coal Board supported by Queensland Health Promotion Council to demonstrate a health promotion model that used a needs assessment at two mines in Queensland.	Bruce Ham, 'A risk assessment on dust and related respiratory disease in coal miners', <i>Safety & Health Division</i> , 1999.	
6 – 9 September	Mr Peter MINAHAN, Chief Inspector of Mines, Safety and Health Division visited MSHA, Arlington.	DNRM document provided to Committee dated 3 March 2017.	FA28511
1999-2001	NMAs changed when legislation changed – no longer regulated by the coal board. There followed a proliferation of NMAs, localities away from mines and a 'fit for work' focus for health assessments.	Transcript, Brisbane, 30 November 2016, p 5.	
2000			
	Since year 2000 DNRM mining health data scanned forms; more recently only selected variables entered.	Monash Centre for Occupational and Environmental Health, UIC School of Public Health, 'Review of Respiratory Component of the Coal Mine Workers' Health Scheme for the Queensland Department of Natural Resources and Mines', Final Report, 12 July 2016, p 57.	A86643
27 October	Department of Mines and Energy, approved scope of disposal authority for Coal Industry Employment Health Assessments. Permanent retention of records.	DNRM, response to question taken on notice during briefing 14 October 2016, No. 1.	A103044
2001			

<p>16 March</p>	<p><i>Coal Mining Safety and Health Regulation 2001 (CMSHR)</i></p> <p>CMSHR establishes the Queensland Coal Mine Workers' Health Scheme.</p> <p>All coal mine workers required to undergo medical assessment prior to employment at coal mine, and then at least once every five years during employment.</p> <p>Assessments must be carried out in accordance with instructions, and covering the matters in the approved form.</p> <p>Chief Inspector may approve forms for use under the Act.</p>	<p>CMSHR, Part 2 of Division 6.</p> <p><i>Coal Mining Safety and Health Act 1999, s 281.</i></p>	
	<p>AS 2985 specified under <i>Coal Mining Safety and Health Regulation 2001</i></p>		
	<p><i>Mining and Quarrying Safety and Health Regulation 2001</i></p>		
	<p>Prior to 2001 health forms had ILO classification of each chest x-ray.</p>	<p>Form B – Periodic Health Assessment. Section 5 – <i>Queensland Coal Board to complete</i> the ILO Pneumoconiosis Classification.</p> <p>Forms 1993-2001 Form B.</p>	<p>A103060</p>
<p>2002</p>			

	Mines Inspectorate within department undertook a review of the department's Health Surveillance Unit. A tripartite working group was formed to undertake the review consisting of representatives from government, mining companies and CFMEU. Review published by department in 2003.	Hon Dr Anthony LYNHAM, Legislative Assembly, question on notice, No. 240, 24 February 2016. Queensland Government, Natural Resources and Mines, 'Review of the Health Surveillance Unit', 2003, pp 77-85.	A105401
	"Minutes state not enough specialised people to read x-rays and that came from the Department". Claim made in 2016 by Jason HILL (CFMEU) in ABC 730 report.	Matt Peacock, ABC 730 Report , 3 March 2016.	
2002-2014	Prescribed Health Assessment Form is updated over time. Proposed changes to the form have been the subject of consultation with the Coal Mining Safety and Health Advisory Committee.	Forms 2002 health assessment form; Forms 2009 health assessment form; Forms 2010 health assessment form; Forms 2011 health assessment form. DNRM, response to question taken on notice during briefing 14 October 2016, additional response, No. 5.	A108697
2003			
	Review of the Health Surveillance Unit published by the department. Review found: <ul style="list-style-type: none">• Primary focus of mineworker health surveillance programs focused on respiratory disease and noise-induced hearing loss and that workers compensation data indicated that major compensation costs were 'heavily orientated' towards musculoskeletal injury and psychological	Queensland Government, Natural Resources and Mines, 'Review of the Health Surveillance Unit', 2003, pp 77-85. DNRM, response to question taken on notice during hearing 30 November 2016, No. 9.	A105401

	<p>impairment, with relatively minor costs related to respiratory and auditory injury or illness.</p> <ul style="list-style-type: none"> • Review made 21 recommendations, including: <ul style="list-style-type: none"> - replace current scheme and include a new HSU that will be established to meet the needs of coal mining, metalliferous mining industries in Queensland - the role and function of HSU be an individual part of the Mines Inspectorate with the department and based in Brisbane - adequate provision be made in mining legislation to permit proper functioning of the health surveillance process - coal mining and quarrying regulations be drafted to contain similar provisions to systematically monitor and assess workers' occupational health and control the risk of injury or disease to mine workers - an occupational physician be appointed on a part-time basis - the existing coal industry health surveillance database be integrated into the new health surveillance program. <p>Occupational physician recommendation was adopted. Recommendation that Health scheme be replaced by broader scheme not adopted.</p>	<p>Hon Dr Anthony LYNHAM, Legislative Assembly, question on notice No. 240, 24 February 2016.</p>	
<p>August</p>	<p>In 2003, after the Review of the Health Surveillance Unit was published by the department, Mr Brian LYNE, then Deputy Chief Inspector of Mines and one of the authors of the review report, stated:</p> <p><i>It was apparent the current health surveillance was not focussed on current occupational health hazards affecting mine workers.</i></p>	<p>Dr SMITH, Public hearing transcript, Brisbane, 30 November 2016, p 1.</p> <p>Brian LYNE, <i>Health surveillance: past history and future potential</i>, Townsville Conference, August 2003.</p>	

	<p>In considering workers' compensation occupational injury and illness data, Mr LYNE stated:</p> <p><i>The current emphasis on respiratory and hearing conservation matters [in the scheme] are relatively well controlled and other health issues have a higher incidence rate.</i></p> <p>He emphasised the review identified musculoskeletal injury and psychological impairment as the two major occupational injury disease problems facing the mining industry.</p>		
	<p>Mr VERRALL presented at hospital with symptoms of CWP but not diagnosed</p>	<p>Senate Select Committee on Health, <i>Fifth Interim Report: Black Lung: "it has buggered my life"</i>, Commonwealth of Australia, April 2016, p 55;</p> <p>Hall Payne Lawyers, 'Black Lung resurgence: seeking compensation and getting help', 14 July 2016.</p>	
2004			
2004	<p><i>Mining Legislation Amendment Regulation (No.1) No. 219 2004</i> amended s. 89(3) CMSHR. Prior to the amendment, s. 89(3) referred to the supply of PPE in the work environment as a response to excessive respirable dust. The amendments prioritised reviewing controls for monitoring dust over the use of PPE.</p>	<p><i>Mining Legislation Amendment Regulation (No.1) No. 219 2004, s 14.</i></p>	
2004-2016	<p>Dr David SMITH appointed in 2004 as Occupational Physician on a part-time basis, retired end 2016. Position description for role:</p> <p><i>to provide specialist medical, expert technical and policy advice to the department on health assessments of mining industry workers.</i></p>	<p>Hon Dr Anthony LYNHAM, Legislative Assembly, question on notice, No. 240, 24 February 2016.</p>	

July 2004	Then Minister for Mines Mr Stephen ROBERTSON announced that as well as appointment of occupational physician, the department would establish: <i>A medical advisory panel to represent all sectors of the industry...to allow specific hazards to be addressed while developing competencies for medical practitioners to deliver occupational health programs.</i>	Robertson, Hansard, Estimates Committee G – Natural Resources, Mines and Energy, 23 July 2004, p 503.	
2004-2006	WORKER D diagnosed in 2004 with CWP by Queensland Health pathology and doctors. In August 2006, his solicitors lodged a claim with WORKCOVER Queensland for lump sum compensation for permanent impairment. Claim accepted and assessed by Medical Assessment Tribunal. WORKER D accepted lump sum payout.	In confidence material provided to committee.	S91GC399550
2005			
	Prior to 2005 there were 40 NMAs and they received training from DNRM. From 2005 there was the mining boom. No more NMAs trained by DNRM as there were too many. NMAs given info pack on 'fit for work'.	Monash Centre for Occupational and Environmental Health, UIC School of Public Health, 'Review of Respiratory Component of the Coal Mine Workers' Health Scheme for the Queensland Department of Natural Resources and Mines', Final Report, 12 July 2016, p 42.	A86643
2006			
14 – 24 April	Mr Jan OBERHOLZER, Manager, Mining and Research and Development Centre, SIMTARS visited: Mine Escape Planning and Emergency Shelters Workshop, Washington; and Inaugural International Mining Health and Safety Symposium, Wheeling.	DNRM document provided to Committee dated 3 March 2017.	FA28511
1 September-2012	WORKER B health assessment including radiology report indicated CWP and other possible lung disease and noted WORKER B's underground work history. Radiology reports indicated confirmed nodules and potential CWP. Despite this evidence, the doctor indicated WORKER B fit to work	Confidential Committee document provided by CFMEU.	

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	underground. Doctor indicated “no” to the question “Any reason why the coal miner may not be fit for duty in relation to work (b) underground in (f) dusty conditions or (j) in any other capacity”. WORKER B continued to work underground for a further 7 years and suffered repeat severe episodes of pneumonia.		
1 October 2006 – 23 October 2016	36% of all coal workers who were examined had a chest x-ray. 97% of underground coal workers who were examined had a chest x-ray.	DNRM, response to question taken on notice during briefing 14 October 2016, No. 3.	A103057
2006-2007	Two workers compensation claims paid for CWP cases – Department of Industrial Relations	Confidential document provided by WorkCover.	
2007			
2007	Section 34 CMSHA amended to include a new penalty: <i>if the contravention caused multiple deaths – 2000 penalty units or 3 years imprisonment</i> . Some existing penalties had the number of penalty units increased.	<i>Mining and Other Legislation Amendment Act 2007, No 46, s6.</i>	
2007	Mr VERRALL diagnosed with CWP did not seek workers compensation as no longer working at BHP and was not told of the diagnosis by his doctor or told it was a work related disease. VERRALL fought and won against BHP self-insurer who said the claim was out of time. Workers’ Compensation Regulator waived the time period. The matter may still be appealed by BHP to the Queensland Industrial Relations Commission (for claims). Health issues arose after Mr VERRALL left the mining industry.	Hall Payne Lawyers, ‘Black Lung resurgence: seeking compensation and getting help’, 14 July 2016.	
14 – 29 October	Mr Paul HARRISON, Director, SIMTARS, and Mr Darren BRADY, Principal Scientific Advisor, SIMTARS, visited: NIOSH, Pittsburgh; and MSHA, Pittsburgh.	DNRM document provided to committee dated 3 March 2017.	FA28511
2007-2008	Coal exports from Queensland increased to 153.3 million tonnes.	DNRM, submission 35, p 134.	

2008			
7 – 23 June	Mr Darren BRADY, Manager, Occupational Hygiene, Environment and Chemistry Centre, SIMTARS visited: North American Mine Ventilation Symposium, Reno, Nevada; NIOSH, Pittsburgh; MSHA, Pittsburgh.	DNRM document provided to committee dated 3 March 2017.	FA28511
June	<p>The Queensland Ombudsman commenced an investigation of the Queensland Mines inspectorate (QMI) within the Department of Mines and Energy. This followed general allegations in the media and elsewhere that QMI may not have been adequately fulfilling its compliance roles under the CMSHA and the <i>Mining and Quarrying Safety and Health Act 1999</i> and that mining safety standards had fallen as a result.</p> <p>The Ombudsman concluded that DME was conducting its compliance activities reasonably well. The Ombudsman found deficiencies in the way the department recorded much of its informal compliance activity and found inconsistencies in the use, format and terminology of mine record entries.</p> <p>The Ombudsman found that much public criticism of QMI stemmed from a perception that the agency had been 'captured', or inappropriately influenced by the mining industry.</p> <p>The Ombudsman did not find evidence to substantiate the criticism, but found there was a reasonable perception the QMI is subject to capture due to:</p> <ul style="list-style-type: none"> • its compliance practices, especially the preference for informal compliance options which are not recorded in a way that may be publicly reported on; • regional factors, leading to the development of social relationships and reliance on mine operators' hospitality; and • staffing issues, including high degree of mobility between the QMI and the mining industry. 	See Queensland Ombudsman, ' Regulation of Mine Safety in Queensland Report ', 2008, pp xii, 30 and 125.	

	Ombudsman found little communication between WorkCover Queensland and the QMI, and recommended that QMI and WorkCover establish a memorandum of understanding or similar arrangement, to enable QMI to obtain from WorkCover de-identified reports of mine related injuries.		
18 – 25 July	Mr Tilman RASCHE, Senior Inspector of Mines, Safety and Health Division attended Third Annual International Mining, Health and Safety Symposium, Salt Lake City.	DNRM document provided to Committee dated 3 March 2017.	FA28511
	Mr Stewart BELL established the Health Improvement and Awareness Committee (HIAC), to assist mining and quarrying industries to anticipate, identify, evaluate and control occupational health hazards. Remit included noise, chemical exposure, legionnaire's disease, fatigue and dust.	Transcript, Brisbane, 22 March 2017, p 1.	
	MOU between WorkCover and QMI established for QMI to obtain from WorkCover de-identified reports of mine related injuries.	Commissioner for Mine Safety and Health, Annual Report 2009-2010, p 20.	
	CMSHA regulation making power under s. 282 was expanded.	<i>Mining and Other Legislation (Safety and Health Fee) Amendment Act 2008, s 4.</i>	
2009			
29 August – 15 September	Mr Darren BRADY, Manager, Occupational Hygiene, Environmental and Chemistry Centre, SIMTARS and Mr Larry RYAN, Senior Computer Systems Engineer, SIMTARS visited: NIOSH, Pittsburgh.	DNRM document provided to Committee dated 3 March 2017.	FA28511
	Mr Stuart BELL appointed as Queensland's first Commissioner for Mine Safety and Health (retired from public service 2014).	Commissioner for Mine Safety and Health, Annual Report 2009-2010.	

	<p>CMSHA amended to stipulate an additional objective: <i>to provide a way of monitoring the effectiveness and administration of provisions relating to safety and health under this Act and other mining legislation.</i></p> <p>The CMSHA also amended to establish and appoint a Commissioner for Mine Safety and Health.</p>	<p><i>Mines and Energy Legislation Amendment Act 2009, ss 4, 5 and 6.</i></p>	
2009-2016	<p>WORKER C underwent coal board medical including chest x-ray in 2009. Health workers identified abnormality on x-ray and dismissed it as scarring due to previous history of pneumonia. Worker C sent back to work underground. Worker received no follow up until coal board medical in 2014-15 where there was no mention of any issue with the chest x-ray. In 2016 WORKER C had chest x-ray re-examined in light of the Queensland CWP issue. Re-examination of WORKER C's x-ray showed potential CWP and a CT examination was performed which confirmed CWP. Brisbane Thoracic Surgeon Dr EDWARDS then examined the scan from 2009 and indicated that pneumoconiosis was visible on the 2009 scan. WORKER C since provided with above ground duties, however, WORKER C expressed concern that there is still coal dust in this environment.</p>	<p>Tabled document during a hearing 14 December 2016; Transcript, Tieri, 14 December 2016.</p>	A102201
2009-2010	<p>Queensland's coal exports set a new record of 183 million tonnes per annum. Industry subsequently experienced decrease in coal exports, as a result of major flooding and damage to infrastructure in 2010-2011, and wider global economic trends.</p> <p>During boom, mine operators utilised bonus systems. The bonus was directly linked to producing more coal. The more coal a worker got out, the more the worker earned.</p>	<p>DNRM, submission 35, p 134.</p> <p>Transcript, Ipswich, 4 November 2016, pp 19-20.</p>	
2010			
	<p><i>Coal Mining Safety and Health Amendment Regulation (No.1) 2010</i> amended section 46 "Health Assessment" of the CMSHR. The amendment restricted health assessments to coal mine workers for a task <i>other than a</i></p>	<p><i>Coal Mining Safety and Health Amendment Regulation (No.1) 2010, s5.</i></p>	

	<p><i>low risk task</i>. The definition provided for a low risk task: <i>a task shown by a risk assessment to create a risk that is so minimal it can be managed effectively without requiring the worker to undergo a health assessment</i>.</p> <p>The amendments also inserted a subsection that specifically provided for subsequent medical assessments on matters identified in previous assessments.</p>		
26 February – 21 March	Mr Paul HARRISON, Executive Director, SIMTARS and Mr Darren BRADY, Manager, Occupational Hygiene, Environment and Chemistry Centre, SIMTARS attended: SME Annual Conference and Exhibit, Phoenix; NIOSH, Pittsburgh; and MSHA, Pittsburgh.	DNRM document provided to Committee dated 3 March 2017.	FA28511
	Queensland government report of a dust self-assessment survey of coal mines acknowledged the “general confusion around the requirements for, and the content of health surveillance for Queensland coal mine workers.”	Queensland Department of Employment, Economic development and Innovation 2010, ‘Queensland Government Dust self-assessment Feedback Report Part A – Coal’, Contract No: File 04241.	
2011-12			
	DNRM conducted 1523 mine inspections, of which 136 were unannounced.	DNRM, submission 35, p 16-17.	
	s. 42 CMSHA amended to specify that the safety and health management system be a single system for all persons.	<i>Mines and Energy Legislation Amendment Act 2001, s 7.</i>	
2012			
2012-2013	DNRM conducted 1578 mine inspections, of which 127 were unannounced.	DNRM, submission 35, p 16-17.	
18 February – 6 March	Mr Paul HARRISON, Executive Director, SIMTARS and Mr Darren BRADY, Director, Mine Safety Technology, SIMTARS attended: SME Annual Conference and Exhibit, Seattle; NIOSH, Pittsburgh; and MSHA, Pittsburgh.	DNRM document provided to Committee dated 3 March 2017.	FA28511

11 May	WORKER E has chest x-ray and radiologist and NMA indicate all clear and WORKER E is fine to continue to work underground. WORKER E leaves industry at some point to care for terminally ill father. WORKER E returns to industry in 2016 and accordingly has to undergo a new coal board medical with chest x-ray. 2016 x-ray indicates CWP. Subsequently, 2012 x-ray is re-examined and it is confirmed WORKER E had CWP at least since 11 May 2012.	Transcript, Brisbane, 15 March 2017, from p 43; Office of Industrial Relations, response to question taken on notice during a hearing 15 March 2017, Brisbane (CONFIDENTIAL).	A140424 (Confidential)
June	The department commenced review of the <i>Coal Mining Safety and Health Act 1999</i> and the <i>Mining and Quarrying Safety and Health Act 1999</i> . The department released a public consultation paper seeking comment on its preferred options in relation to a state response to the National Mine Safety Framework.	DNRM, submission 35.	
	NIOSH publishes a paper suggesting possible reasons behind the different rates of CWP seen in the US and Australia: <i>Coal workers' pneumoconiosis prevalence disparity between Australia and the United States</i>	Joy, Colinet and Landen, ' Coal workers' pneumoconiosis prevalence disparity between Australia and the United States ', <i>Journal of Mining Engineering</i> , 64(7), June 2012, pp 431-4.	
2013			
2013-2014	DNRM conducted 1622 mine inspections, of which approximately 8.3% were unannounced.	DNRM, submission 35, pp 16-17.	
	Mr VERRALL made aware of his earlier CWP diagnosis.	Transcript, Ipswich, 4 November 2016, p 1.	
	First mine to use top coal caving method in Queensland, enabling operators with thicker seams to increase their recovery of coal. The extraction method can present significant challenges for dust control compared with conventional longwalls.	DNRM, submission 35, p 14.	

	<p>Mines Inspectorate asked this mine to provide dust data due to concerns the new technology may generate more dust than conventional longwall mining.</p> <p>Mine unable to keep dust levels below regulatory limit and Mines Inspectorate issued two directives.</p>		
	<p>Mines Inspectorate issued its first directive relating to respirable coal dust. <i>"Prior to this date, there were no concerns raised with the Mines Inspectorate about respirable dust"</i>.</p>	DNRM, submission 35, p 14.	
	<p>25,000 deaths due to CWP globally in 2013</p>	<p>Thoracic Society of Australia and New Zealand and Lung Foundations Australia, submission 6, p 2.</p>	
	<p>The then Department of Science, Information Technology, Innovation and the Arts commenced an investigation into coal dust levels along the Western and Metropolitan Rail Systems in South-East Queensland. The monitoring results showed that ambient particle concentrations complied with ambient air quality objectives at all rail corridor monitoring sites during both the pre and post-veneering monitoring periods.</p> <p>The major influence on the levels of particles was not rail transport emissions, but other urban particle emission sources.</p> <p>Ongoing air quality monitoring continues at Cannon Hill Railway Station in Brisbane, Jondaryan west of Toowoomba, and the Ports of Gladstone and Brisbane.</p>	<p>DNRM response to submissions, in submission 35, p 71.</p> <p>Further information available at: www.ehp.qld.gov.au/management/coal-dust/monitoring</p>	
<p>21 February – 9 March</p>	<p>Mr Paul HARRISON, Executive Director, SIMTARS attended: SME Annual Conference and Exhibit, Denver; NIOSH, Pittsburgh; and University of Kentucky.</p>	<p>DNRM document provided to Committee dated 3 March 2017.</p>	<p>FA28511</p>

<p>September</p>	<p>Government releases <i>Queensland's Mine Safety Framework Consultation Regulatory Impact Statement</i> proposing amendments to mining safety and health framework for consultation. Proposed amendments include refocusing Coal Mine Workers' Health Scheme to address hazards such as dust and noise, to allow the Inspectorate to focus on health surveillance.</p> <p>RIS identified a number of concerns:</p> <ul style="list-style-type: none"> • high levels of employment and movement within the mining industry have meant a significant increase in the number of health assessments received by DNRM over recent years, putting DNRM 'under significant administrative strain' • many NMAs appointed by employers have little or no experience or expertise in occupational medicine and therefore may not be providing appropriate medical assessments under the regulations • problems with the appeal process in regard to the termination or demotion of a worker based on their health assessment, where a worker can obtain another health assessment that conflicts with the original health assessment. <p>The RIS proposed to, inter alia:</p> <ul style="list-style-type: none"> • return the scheme to the original purpose, a more simplified health surveillance of coal industry workers addressing health issues that historically have been health hazards to the industry such as noise and dust • place emphasis on surveillance to obtain baseline data of workers new to the industry and periodic data throughout the period a worker is employed in the industry. Data would then alert the department to problems across the industry or at a particular mine. <p>The department recently stated the delay in progressing the RIS was due to a lack of tripartite support.</p>	<p>Queensland's Mine Safety Framework Consultation Regulatory Impact Statement</p> <p>Commissioner for Mine Safety and Health, <i>Queensland Mines Inspectorate Annual Performance Report 2015-16</i>, p 20; Department of Natural Resources and Mines, <i>Queensland's Mine Safety Framework: Consultation Regulatory Impact Statement</i>, 2013, pp xiii, 103-105.</p>	
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		DNRM, submission 35, p 26.	
	<p>From 2013, 8 mines have been issued with 1 or more directives in relation to dust monitoring or dust management. In determining what enforcement action to take, the Inspectorate has developed an enforcement and compliance process, comprising successive steps. (It is presumed this process is the one adopted since 2013).</p> <ul style="list-style-type: none"> • Site inspection conducted and MRE made. A directive may be issued requiring the mine to supply information to Inspectorate. • A further directive may be issued, if Inspector determines appropriate from information supplied under initial directive, to develop a plan to rectify any issues identified, by a stated date. • Step 3 – Level 3 compliance meeting with District Inspector. • Step 4 – Level 4 compliance meeting with Chief Inspector. • Step 5 – Options include: (a) directive to reduce shearer speed; (b) directive to reduce exposure time and hours cutting until compliance demonstrated; (c) directive to stop production until appropriate action implemented. 	Full description of steps see: DNRM, response to question taken on notice during briefing 14 October 2016, No. 10.	A106363
2014			
2014-2015	DNRM conducted 1533 inspections, of which approximately 6.7% were unannounced.	DNRM, submission 35, p 16-17.	
	Second mine introduced longwall top coal caving technology. Directive issued to this mine to reduce dust levels below adjusted regulatory limit.	DNRM, submission 35, p 14.	

20 February – 7 March	Mr Paul HARRISON, Deputy Director-General, Mine Safety and Health and Mr Martin WATKINSON, Executive Mining Engineer, SIMTARS attended: SME Annual Conference and Exhibit, Salt Lake City; Single Peak Mine Montana; and NIOSH, Pittsburgh.	DNRM document provided to Committee dated 3 March 2017.	FA28511
19-29 June	Dr Ken LIDDELL, Director, Mining Research and Development Centre, SIMTARS and Mr Andre de KOCK, Principal Engineer, Mining Research and Development Centre, SIMTARS visited NIOSH, Sol's Run test facility, West Virginia.	DNRM document provided to Committee dated 3 March 2017.	FA28511
	Mr Paul HARRISON in capacity as Chief Mine Safety and Health Officer, DNRM, initiated a tripartite review of HIAC, Chaired by Emeritus Professor Tony PARKER AM from School of Public Health and Social Work at QUT to evaluate whether or not HIAC's vision remains relevant and if it is achieving its goals.	Commissioner for Mine Safety and Health, Queensland Mines Inspectorate Annual Performance Report 2014-15; Transcript, Brisbane, 22 March 2017, pp 1-2.	
September	DNRM request all underground coal mines to provide dust monitoring data covering period 2012-2014 after results at some conventional longwall mines showed respirable coal dust concentration levels were higher than regulatory limit. Further directives were issued.	DNRM, submission 35, p 14.	
2015			
2015-2016	DNRM conducted 1760 mine inspections, of which approximately 9.2% were unannounced.	DNRM, submission 35, pp 16-17.	
	Further directives issued by DNRM Mines Inspectorate A safety alert was published regarding preventing dust-related lung diseases. It recommended that mines audit and review their dust control measures.	DNRM, submission 35, p 15.	

	<p>WORKER F diagnosed with CWP after working in the industry for around 30 years. Worker had multiple chest x-rays over the previous 10 years but not diagnosed until 2015.</p> <p>In relation to WORKER F's costs he stated: <i>I have paid for all of this myself. All of my travelling, all of my CAT scans, PET scans, the specialists; it has all come out of my pocket.</i></p>	<p>Senate Select Committee on Health, <i>Fifth Interim Report: Black Lung: "it has bugged my life"</i>, Commonwealth of Australia, April 2016, pp 52-53.</p>	
	<p>WORKER G diagnosed with CWP. Had approximately three chest x-rays between 2005 and 2011. CT scan in 2015 showed CWP. Unknown if previous x-rays have been re-examined.</p>	<p>Transcript, Tieri, 14 December 2016.</p>	
12-27 February	<p>(CANCELLED TRIP)</p> <p>Mr Paul HARRISON, Deputy Director-General, Mine Safety and Health was scheduled to attend: SME Annual Conference and Exhibit, Denver; Colorado School of Mines, Golden City; NIOSH, Pittsburgh; and Penn State University, Pittsburgh.</p>	<p>DNRM document provided to Committee dated 3 March 2017.</p>	FA28511
13 May	<p>Case of CWP reported to DNRM (by NMA).</p>	<p>DNRM correspondence provided to Committee dated 20 March 2017.</p>	
18 May	<p>Workforce Industry Safety and Health Representatives (ISHRs) issued a Safety Alert to all Queensland coal mines advising that two cases of CWP had been diagnosed and reminding the companies of the legislative requirements on dust control.</p>	<p>Submission 27, p 7.</p>	
15 July	<p>Mr VERRALL's CWP diagnosis reported in media (incorrectly) as "First case in 30 years".</p>	<p>Hall Payne Lawyers, 'Black Lung resurgence: seeking compensation and getting help', 14 July 2016.</p>	
July - December	<p>Further CWP cases reported: 21 July, 19 November and 22 December</p>	<p>DNRM, response to question taken on notice during briefing 14 October 2016, additional response 4, A21969.</p>	A21969

September 2015 – July 2016	Mr Paul HARRISON in the role of Chief Mine Safety and Health Officer, Department of Natural Resources and Mines	Paul HARRISON, transcript, Brisbane, 22 March 2017, pp 1-7, 16-22.	
1 October 2015-23 October 2016	47% of all coal workers who were examined had a chest x-ray. 97% of underground coal workers who were examined had a chest x-ray.	DNRM, response to question taken on notice during a briefing 14 October 2016, No. 3.	A103057
1 October	Safety Alert sent by ISHRs to all Queensland coal mines advising that three cases of CWP now diagnosed and reminding the companies of the legislative requirements on dust control.	Submission 27, p 7.	
October	Review of underground dust data completed by DNRM.	DNRM, submission 35, p 15.	
10 November	The three cases of diagnosed CWP are reported by coal industry online newsletter the "International Coal News". The ICN reports that the Queensland Mines Inspectorate views the matter as a key concern and says: "It is recommended that mine operators audit and review the effectiveness and implementation of the site safety and health management system to minimise the risk of lung disease to worker".	Submission 27, p 8.	
1 December	The CFMEU issues media release highlighting CWP issue. ABC TV's 7.30 current affairs program reports on CWP. Queensland Minister, Hon Dr Anthony LYNHAM, announces urgent review of process for reviewing the periodic chest x-rays that coal workers undertake. It emerges that tens of thousands of x-rays unreviewed. DNRM admits there is shortage of medical professionals qualified to read them.	Submission 27, p 8.	
December	The Chief Inspector Coal Mines wrote to workers to advise that radiologists in Queensland are trained to the required standards.	'Wrong advice putting miners in greater Black Lung Danger', <i>Australasian Mining Review</i> , 27 January 2016, p 3.	

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	Royal Australian and New Zealand College of Radiologists states only a fraction of local radiologists are qualified.		
21 December	ISHR issued a notice to all underground mines, described as a directive under s 167 of CMSHA, requesting compliance and respirable dust samples.	Submission 27, pp 12-13.	
22 December	Chief Inspector Coal Mines, Russell ALBURY, issued an email to the same mines stating that his view is the directive does not meet the requirements of section 167, is not valid, and he therefore does not have the power to review the directive.	Submission 27, pp 12-13.	
December	DNRM commenced engagement with Monash University to undertake a review of the respiratory component of the Coal Mine Workers' Health Scheme, supported by a tripartite working committee.	DNRM, response to question taken on notice during briefing 14 October 2016, additional response 4, A21969.	A21969
	Safe Work Australia commences a review of workplace exposure standards for more than 600 airborne contaminants.	DNRM response to submissions, in submission 35, p 118.	
End 2015	ANGLO Coal purchased two initial PDM3700 monitors and started process of obtaining certification. Anglo engaged Thermo Fisher Scientific – the manufacturer –about whether it was willing to make modifications to the unit. ANGLO subsequently purchased 10 more PDM3700 units.	Public hearing transcript, Brisbane, 31 January 2017, p 30.	
2015-2016	Ninety per cent of 244 million tonnes of coal produced in Queensland is sourced from Bowen Basin. Coal is our leading export, generating \$21.4 billion in export revenue 2015-16. Coal provides 10 percent of the state's total taxation and royalty revenue.	DNRM, ' Queensland's mining and petroleum industry overview ', July 2016. Queensland Resources Council, 'What is Queensland's coal industry worth to Queensland', 2015-16.	
2016			

First quarter	ANGLO representative states SIMTARS first approached by ANGLO regarding approval/explanation about approval and/or intrinsic safety of the PDM3700 in first quarter of 2016.	Public hearing transcript, Brisbane, 31 January 2017, p 31.	
January-August	DNRM requests all underground coal mines to provide dust monitoring data for period 2000-11. Following analysis the Mines Inspectorate combined this data with the data received for 2012-14 and presented it at the annual Queensland Mining Industry Health and Safety Conference in August 2016. Further directives were issued by Mines Inspectorate.	DNRM, submission 35, p 15.	
14 January	Minister LYNHAM announces five point action plan to identify and prevent CWP.	Submission 27, p 8.	
March	Interim report summary of the Monash University review of the respiratory component of the Coal Mine Workers' Health Scheme released.	Monash Centre for Occupational and Environmental Health, UIC School of Public Health, 'Interim Findings – Review of Respiratory Component of the Coal Mine Workers' Health Scheme', 31 March 2016.	A86637
April-December	WORKER E has 2016 chest x-ray and finding of confirmed CWP. (ILO classification 2/2). 2012 x-ray is re-examined and confirmed had had CWP since that time. Subsequent to 2016 diagnosis and confirmation of CWP since 2012, WORKER E has sought permanent disability compensation under superannuation scheme and been rejected. WORKER E has pursued WORKCOVER claim and has been rejected/assessed as zero percent impairment and zero payout. WORKER E states he has had to fund his own medical and travel expenses in relation to claim. DR BROWN assessed WORKER E as 0% impairment. In April 2016 WORKER E's GP referred WORKER E for pulmonary rehabilitation at Mackay Hospital. Mackay Hospital rejected referral for pulmonary rehabilitation for WORKER E.	Transcript, Brisbane, 15 March 2017, from p 43.	

April	WORKER F has WORKCOVER claim approved for CWP.	Lucy Smith, 'Black lung sufferer first to receive workers compensation', <i>Daily Mercury</i> , 18 April 2016.	
April	Black Lung Senate Inquiry report is tabled.	Senate Select Committee on Health, <i>Fifth Interim Report: Black Lung: "it has buggered my life"</i> , Commonwealth of Australia, April 2016, p xi.	
April	As at April 2016, there had been 23 directives issued regarding dust compliance. Four of these remained open at April 2016. These four directives were issued across three mines. All three mines were demonstrating compliant dust levels in April 2016. However, the inspectorate was holding the directives open to ensure sustained compliance (compliance for at least 3 consecutive months).	DNRM, response to question taken on notice during hearing 2 November 2016, No. 26.	A72459
May	<p>Prescribed Health Assessment Form amended to specify:</p> <ul style="list-style-type: none"> • that all chest x-rays under the Scheme must be undertaken by a specialist radiology clinic and read by a specialist radiologist • examining doctors must ensure the x-ray request states the subject is a coal mine worker and the film should be examined for pneumoconiosis under the <i>ILO International Classification of Radiographs of Pneumoconioses</i> • spirometry must be undertaken by appropriately trained operators to the standard outlined by Queensland Health (Spirometry Adult – Guideline). <p>Queensland Health distributed a Monash University developed fact sheet on CWP to general practitioners.</p>	DNRM, response to question taken on notice during briefing 14 October 2016, additional response 4.	A21969 A86642

27 May	Campaign commences to raise awareness amongst current workers and retired coal mine workers. Campaign includes regional newspaper advertising during July and the distribution of postcards and posters at mine sites.	DNRM, response to question taken on notice during a briefing 14 October 2016, additional response 4, A21969.	A21969
13 July	Sim review of Respiratory Component of the Coal Mine Workers Health Scheme for Queensland DNRM – review completed. The aims of the review: <ul style="list-style-type: none"> • determine whether the respiratory component of the health assessment performed under the Queensland Coal Mine Workers' Health Scheme ('the scheme') is adequately designed and implemented, to most effectively detect the early stages of coal mine dust lung disease among Queensland coal mine workers, estimating the extent and providing feedback and, if not, • recommend necessary changes to correct deficiencies identified under the above aim, recommend measures to follow up cases that may have been missed as a result of these deficiencies, and identify what additional capacity is needed in Queensland to improve this scheme. Overall findings included: <ul style="list-style-type: none"> • There were 'major system failures at virtually all levels of design and operation'. • Scheme put in place in 1983 in response to concern about pneumoconiosis and other respiratory abnormalities had by 2015 come to place the emphasis was on 'fit for work'. • Scheme was limited as it excluded retired and former coal miners. • Respiratory component of scheme was not clearly stated, with potential for important patterns of early lung changes to be overlooked. • Review emphasised the prime focus for addressing respiratory diseases in coal workers is effective dust control and monitoring, medical 	Monash Centre for Occupational and Environmental Health, UIC School of Public Health, 'Review of Respiratory Component of the Coal Mine Workers' Health Scheme for the Queensland Department of Natural Resources and Mines', Final Report, 12 July 2016.	A86643

	<p>screening is the secondary line of information about the effectiveness of such controls.</p> <p>Recommendations included:</p> <ul style="list-style-type: none">• changes to the Coal Mine Workers Health Scheme to explicitly focus on early detection• clinical guidelines to be developed for medical assessments and follow-up investigation• requirement for DNRM to report detected cases• changes to the health assessment form to include all relevant respiratory components• refinement of criteria to determine workers 'at risk from dust exposure'• changes to the number, registration and training of NMAs• changes to standards applied and examination of chest x-rays and spirometry• transition to electronic records management. <p>The department has stated 'it supports all 18 recommendations of the review in order to protect the health of coal mine workers and to restore workers' confidence in the Health Scheme.'</p>		
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DNRM, submission 35, p 27.

27 July	Changes made to health assessment form in response to Monash review recommendations. These changes were to clarify that copies of spirometry reports are to be provided to the department, and to require spirometry to be undertaken by appropriately trained operators to the standard outlined in the relevant guideline.	DNRM, response to question taken on notice during briefing 14 October 2016, No. 7.	A103061
July	<ul style="list-style-type: none"> backlog of health assessment data entry department around 100,000. commitment received by all underground coal mine operators to offer new x-rays for workers where the x-ray was older than 2 years, and to re-check x-rays that are less than 2 years old in accordance with the ILO classification. department introduces a dual reading program (27 July) with all chest x-rays to be sent to the University of Illinois at Chicago to be double checked by NIOSH approved B readers. prescribed Health Assessment Form updated to ensure x-ray results are reported in accordance with the ILO classification. Health form also updated to include a link to the Spirometry Adult – Guideline. policy work commences on the recommendations made in the Monash review Recommendations progress under 5 themes: Chest x-rays, spirometry, medical assessment and Practitioners, Electronic Records Management and Surveillance. 	<p>Transcript, Brisbane, 14 October 2016, p 6.</p> <p>DNRM, response to question taken on notice during briefing 14 October 2016, additional response 4, A21969.</p> <p>DNRM response to submissions, in submission 35, p 81.</p>	A21969
19 August	Minister LYNHAM attends the COAG Energy Council and seeks support for a national screening program for retired workers. All Ministers commit to the health of coal mine workers and agree to collaborate to raise awareness among at risk former coal mine workers.	DNRM, response to question taken on notice during briefing 14 October 2016, additional response 4, A21969.	A21969
15 September	Coal Workers' Pneumoconiosis Select Committee is established to undertake an inquiry and report on the re-emergence of CWP amongst coal mine workers in Queensland.	Queensland Parliament, Record of Proceedings, 15 September 2016, p 3619.	
28 September	Position paper and PowerPoint presentation on PDM3700 provided to SIMTARS on behalf of ANGLO and GLENCORE	Public hearing transcript, Brisbane, 31 January 2017, p 32.	

29 September	Changes made to health assessments through amendments to the <i>Coal Mining Safety and Health Regulation 2001</i> (commencing 1 January 2017, see date below).	<i>Coal Mining Safety and Health Regulation 2001</i>	
October	MOU between Industrial Relations and DNRM becomes aware of WorkCover cases (<i>see 2008 MOU referred to above</i>). MOU appears to have been rapidly made in response to the discovery of WC claims in 2000's for CWP that were accepted and paid of which DNRM was unaware.	Transcript, Brisbane, 14 October 2016, p 28.	
October	First case of open cut miner with confirmed CWP - Queensland	Submission 27, p 8.	
October	Monash recommendation specifically provided that spirometry should be conducted only at respiratory laboratories accredited by the Thoracic Society of Australia and New Zealand (TSANZ). As at October DNRM states there are 10 TSANZ accredited laboratories – 9 in south east Queensland and 1 in Cairns.	DNRM, response to question taken on notice during briefing 14 October 2016, No. 8.	A106357
October	<p>Consultation paper for a proposed chest x-ray screening program released to stakeholders.</p> <p>Regulation passed with the following changes to commence from 1 January 2017:</p> <ul style="list-style-type: none"> • introducing voluntary exit medicals for retirees • a requirement for Senior Site Executives to notify the department when a case of CWP is diagnosed • X-rays required for all underground mine workers every 5 years and all above ground workers every 10 years, or more frequently as required by the Nominated Medical Adviser. 	DNRM, response to question taken on notice during briefing 14 October 2016, additional response 4, A21969.	A21969
11 October	16 confirmed cases of CWP in coal industry	Queensland Government (website), Business Queensland, 'Coal workers' pneumoconiosis', at 11 October 2016.	

<p>October</p>	<p><u>Chest x-ray</u></p> <p>DNRM has dual screening system in place by October 2016. As at 11 October, 1129 x-rays under the system have been digitally transferred to the USA.</p> <p>DNRM states it is working to develop and implement a Queensland-based dual reading x-ray screening program. Consultation occurred with Queensland Health and operators of existing screening schemes - BreastScreen Queensland, Coal Services NSW and NIOSH.</p> <p><u>Electronic Records Management</u></p> <p>Preliminary work undertaken to scope requirements for electronic management system. Improved programs for x-rays, spirometry and health assessments to inform the development of this new electronic system. The key principles underpinning the design of the system will include:</p> <ul style="list-style-type: none"> • the management of all health data and images in a digital environment • inclusion of all coal workers' records • direct access by medical professionals and coal workers on request • best practice security and privacy standards • availability of data for industry wide surveillance; and a unique identifier for each worker. <p><u>Surveillance</u></p> <p>Preliminary work commenced to identify the operation of surveillance programs in other jurisdictions.</p>	<p>DNRM, response to question taken on notice during briefing 14 October 2016, No. 7.</p>	<p>A103061</p>
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	<p><u>Implementation</u></p> <p>DNRM continue to consult with existing CSMHAC in relation to implementation of the Monash recommendations. The department will also continue to engage with relevant medical bodies, and medical practitioners as required.</p> <p><u>Other</u></p> <p>In preparation for commencement of the regulation amendments, the department is developing a respirable dust database to enable surveillance and reporting. It is envisaged that monitoring results will be displayed on the department's website to provide transparency of reporting. Dust data to be published annually</p>		
14 October	OIR commits to finding all possible CWP claims.	WorkCover, document tabled during hearing on 22 March 2017, Overview of the process undertaken to find claims.	A141442
14 October	DNRM states the total number of CMWHA records held by the department for the period commencing January 1983 – 14 October 2016 is estimated to be 395,478, relating to an estimated 135,382 workers over the 33 year period. The records are stored at: Eagle Farm, Recall – Geebung and Acacia Ridge, Redbank and Stafford.	DNRM, response to question taken on notice during a briefing 14 October 2016, additional response 04, A21969.	A103058
15 – 25 October	<p>OIR queried regulator database of over 2 million claims for any respiratory claim or any mention of lung, coal, black lung, pneumoconiosis, silicosis, coal dust, anthracosilicosis, sarcoidosis, pneumonitis or any variant of the above.</p> <p>Just under 11,000 claims were found regardless of industry or coal exposure – includes influenza, common cold, teachers losing voice.</p>	WorkCover, document tabled during hearing on 22 March 2017, Overview of the process undertaken to find claims.	A141442

	Filters created to refine search criteria and triage files for follow up. Example: screening out claims for coal dust in the eye or slips on coal dust.		
25 October	OIR sent list of claims to insurers for review. Note: as BHP and Glencore only became self-insurers in 1998 (Glencore coal in 2004), OIR was reliant on WorkCover Queensland information to find claims earlier than this date. By late October self-insurers found no evidence of coal workers' lung disease claims not already known to OIR.	WorkCover, document tabled during hearing on 22 March 2017, Overview of the process undertaken to find claims.	A141442
31 October	CFMEU states that ISHRs made Site Senior Executives from all coal mines in Queensland aware of non-compliance with Mine Record Entry, and as at 16 November 2016 it is waiting for a response.	Submission 27, pp 15-16.	
3 November 2016 – mid February 2017	WorkCover identified 1,499 claims for review. This included archived claims where the information was not stored electronically or not easily accessible. WorkCover manually review all 1,499 claims. Two full time staff working from most likely to least likely. Report provided to OIR – 14 claims were identified as possible CWP. No further information could be ascertained as to whether these individuals had CWP based on file review. WorkCover undertook to contact the 14 potential CWP claims from mid-February 2017.	WorkCover, document tabled during hearing on 22 March 2017, Overview of the process undertaken to find claims.	A141442
November	Dr EDWARDS confirmed the earlier diagnosis of CWP in 2006 for WORKER B. Dr EDWARDS also confirmed CWP on recent x-rays and CT scan of 2016. In November, Dr EDWARDS signs a medical certificate for WORKER B for WORKCOVER confirming CWP since 2006. WORKER B provides medical certificate to solicitor in November 2006.	Public hearing transcript, Brisbane, 22 March 2017, pp 8-15.	
24 November	DNRM has confirmed 17 cases of CWP. (The department confirms a case when the department's occupational physician confirms the diagnosis of a coal worker by their relevant medical practitioner).	DNRM response to submissions, in submission 35, p 88.	

9 December	<p>DNRM submission to the committee.</p> <p>The department stated five key areas to 'operationalise' the recommendations:</p> <ul style="list-style-type: none"> • chest x-rays • spirometry • medical practitioners • surveillance • digital records management. 	Submission 35, p 27.	
9 December	<p>DNRM comments on regulatory amendments due to commence on 1 January 2017 in relation to regular reporting of dust monitoring results by mining companies:</p> <p><i>Results will be regularly reviewed by the Coal Mining Safety and Health Advisory Committee and can be reported publicly through the Mines Safety & Health Annual Report. Data can be provided to the independent Commissioner for Mines Safety and Health who provides an annual report to the Minister and Parliament.</i></p>	DNRM response to submissions, in submission 35, p 89.	
December	<p>Since 2013 the Mines Inspectorate has issued 36 directives to nine underground coal mines. This included directives to: review a safety and health management system, review the effectiveness of dust controls, reduce cutting speed, and to suspend operations.</p>	DNRM response to submissions, in submission 35, p 64.	
Late 2016- January 2017.	<p>PDM3700 - ANGLO undertakes process of trying to perform gap analysis between South African certification and also the US certification and then Australian certification process. Lengthy process, obtained relevant information and then handed information to SIMTARS. SIMTARS then started process of gap analysis on 6 December 2016.</p> <p>SIMTARS provided preliminary results of this analysis in late January 2017.</p>	Public hearing transcript, Brisbane, 1 January 2017, p 30.	
2017			

<p>1 January</p>	<p>Commencement date for amendments to CMSHR. The amendments imposed additional obligations relating to:</p> <ul style="list-style-type: none"> (a) mandatory reporting of certain notifiable occupational diseases, including CWP, to the Mines Inspectorate (b) clarifying coal mine worker health assessment requirements (c) introducing voluntary respiratory and chest x-ray examinations for retiring coal mine workers (arranged and paid for by the employer) (d) strengthening respirable dust monitoring requirements. <p><i>DNRM notes the reporting obligations of the SSE under section 198 of CMSHA to give notice of a disease only come into effect if the SSE receives a report of a disease that is prescribed under the regulation. – DNRM response to submissions, in submission 35, p 83.</i></p>	<p>CMSHR; Explanatory notes, Mining Safety and Health Legislation (Coal Workers' Pneumoconiosis and Other Matters) Amendment Regulation 2016.</p> <p>DNRM response to submissions, in submission 35, p 83.</p>	
<p>16 January- March</p>	<p>WORKER B provides additional medical certificate from Dr EDWARDS stating that WORKER B has chronic bronchitis in addition to CWP. In March 2017, WORKCOVER indicates it approves WORKER B's claim. The next day WORKCOVER contacts WORKER B to request payment records in relation to chronic bronchitis since 2016. WORKCOVER indicates the chronic bronchitis claim has been approved but the CWP claim has not been approved. WORKCOVER indicates it needs the 2016 CT scan and that the scan will still need to be read by Dr COHEN.</p> <p>This is despite confirmation of CWP by three doctors, two in 2006 and one in 2016, and the WORKCOVER medical certificate provided by Dr EDWARDS confirming WORKER B's CWP diagnosis dating back to 2006.</p> <p>At the hearing in March 2017, WORKCOVER acknowledges an error of judgment by WORKCOVER in handling WORKER B's case and undertakes for a senior representative from WORKCOVER to contact WORKER B to apologise and confirm the CWP claim is still on foot.</p>	<p>Transcript, Brisbane, 22 March 2017, from p 8.</p>	

<p>February March</p>	<p>- In relation to a common law claim, WORKER E was provided with a letter from WORKCOVER which stated, inter alia: <i>It is not admitted that the claimant was exposed to an unreasonable level of coal dust.</i></p> <p>WORKER E's GP again referred WORKER E for pulmonary rehabilitation at the Mackay Hospital (after prior rejection of referral in 2016). WORKER E awaiting response from hospital as at 15 March 2017.</p>	<p>Transcript, Brisbane, 15 March 2017, from p 43; and specifically p 51; Confidential material supplied to the committee.</p>	<p>Tabled document 15 March 2017, Brisbane. CONFIDENTIAL A141427</p>
<p>March</p>	<p>20 cases of CWP since 2015 – all have worked in Bowen Basin coal fields at some point in their careers.</p>	<p>Michael Wray, 'Black Lung: Miners shafted by fatal mistakes', <i>Courier Mail</i>, 8 April 2017.</p> <p>DNRM, submission 35, p 7.</p>	
<p>17 March</p>	<p>Almost 5000 x-rays have been sent to the US.</p>	<p>The Honourable Anthony LYNHAM MP, Minister for State Development and Minister for Natural Resources and Mines, 'Black lung protections outlined in Parliament', media release, 23 March 2017.</p>	
<p>22 March</p>	<p>Tabling of <i>Inquiry into the re-identification of coal workers' pneumoconiosis in Queensland – interim report</i></p> <p>The committee states that it expects to make significant and wide-ranging recommendations in relation to the public administrative framework for protecting the health and welfare of coal workers in Queensland, and that it might recommend changes , including in the following areas:</p> <ul style="list-style-type: none"> • the Occupational Exposure Limit (OEL) for respirable coal mine dust • the regulation of atmospheric dust monitoring • the frequency and extent of atmospheric dust monitoring inspections 	<p>CWPSC, Report No. 1, <i>Inquiry into the re-identification of coal workers' pneumoconiosis in Queensland – interim report</i>, March 2017, pp 11-12.</p>	

	<ul style="list-style-type: none"> • the workplaces at which atmospheric dust monitoring must be undertaken • the use of real time dust monitors • the current Coal Mine Workers' Health Scheme • the providers of radiographic imaging and spirometry under the Health Scheme • the arrangements for ensuring coal workers' chest x-rays are properly read and classified according to the International Labour Organisation (ILO) system for Classification of Radiographs by properly qualified and approved B-Readers • the cost and scope of health assessments for retired or former coal workers • the workers' compensation scheme as it applies to long latency respiratory diseases • the regulatory environment, and • the implementation of a new regulatory environment. 		
23 March	Coal Workers' Pneumoconiosis Select Committee – extension of reporting date and terms of reference.	Queensland Parliament, Record of Proceedings, 23 March 2017, pp 870-1.	
23 March	<p>Stakeholder reference group formed in 2016 has reported back to Minister GRACE with the following recommendations:</p> <ul style="list-style-type: none"> • Medical examinations for former coal mine workers concerned they may have CWP, and who have retired or left the coal mining industry prior to 1 January 2017 – with costs to be borne by WorkCover • Ensuring workers with simple CWP who experience disease progression can apply to re-open their claim to access further benefits under the workers' compensation scheme • Extra rehabilitation support to assist workers back into suitable alternative employment • Streamlining workers compensation arrangements so they properly align with the Coal Mine Workers' Health Scheme. 	The Honourable Grace GRACE MP, Minister for Employment and Industrial Relations, Minister for Racing and Minister for Multicultural Affairs, media release 'Extra support on way for Queensland coal workers', 23 March 2017.	

	Minister GRACE states the government will implement the recommendations in full and the department will see they are implemented as a matter of highest priority.		
23 March	<p>Minister LYNHAM stated the following in a media release:</p> <ul style="list-style-type: none"> • By July a Queensland-based system for dual read x-rays will be phasing in. A tender will be called in May to source a Queensland based provider for radiologists to dual read x-rays to the ILO standard. • Mining companies must provide dust monitoring data to the Mines Inspectorate every three months and the first set of results will be published online in June. • By July, Queensland will have stringent guidelines in place that spell out what is required of people conducting spirometry tests. • In May an agreed process for clinical diagnosis of CWP will be completed. This has been developed by medical experts, including US expert Dr COHEN. • By end of 2017, an electronic health record system will be in place. This will enable coal mine workers, current or retired, to access their own health records, irrespective of where they live and work. • By mid-2017 a new health assessment form will be in place to ensure capture of appropriate information for health surveillance. 	The Honourable Anthony LYNHAM MP, Minister for State Development and Minister for Natural Resources and Mines, 'Black lung protections outlined in Parliament', media release, 23 March 2017; Queensland Parliament, Record of Proceedings, 23 March 2017, pp 868-9.	
April	Currently, 51 operating coal mines in Queensland, of which 11 are underground and 40 are open cut mines.	DNRM, correspondence by email dated 10 April 2017.	A155097

24 April	DNRM publishes new recognised standard on its website - RS15: Underground respirable dust control	DNRM, https://www.dnrm.qld.gov.au/ <i>RS15: Underground respirable dust control</i>	
27 April	21 confirmed cases of CWP reported to DNRM since May 2015.	Queensland Government (website), Business Queensland , 'Coal workers' pneumoconiosis', at 27 April 2017.	

Appendix E – Key reviews relating to the Queensland coal mining industry

Report on the Queensland Coal Board Coal Miners' Health Scheme, 1982 - 1984

On 11 December 1982 an Order was issued by the Queensland Coal Board to conduct a medical examination of all current coal mining employees in Queensland.¹⁰⁶⁶ Medical consultants Dr E.M. Rathus and Dr E.W. Abrahams were appointed to perform the survey. Drs Rathus and Abrahams identified 75 cases of pneumoconiosis or suspected pneumoconiosis. The report of the survey (Rathus and Abrahams report) was published by the Queensland Coal Board in 1984.

Rathus and Abrahams commenced their survey in March 1983 on the Ipswich coal fields, and continued until April 1984, at which time all mines in Queensland (then 33 mine sites) had participated as required. It was compulsory for coal mine workers to be surveyed. Retired miners were to participate in the survey on a voluntary basis.¹⁰⁶⁷

During the analysis the researchers used the International Labour Office (ILO) 1980 International Classification of Radiographs of the Pneumoconiosis, to assess chest x-rays.¹⁰⁶⁸

Rathus and Abrahams reported 7,784 employees and 123 retired employees were surveyed. The authors identified abnormalities in the chest x-rays of 499 mine workers. Of these, 102 received follow-up investigation. In addition to the 75 cases or suspected cases of pneumoconiosis, the survey identified 47 cases of emphysema, four cases of asbestos-related pathology, two cases of silicosis and 20 cases showing indications of pleural thickening and changes in the lung.¹⁰⁶⁹

Rathus and Abrahams provided comment in regards to the number of cases detected of pneumoconiosis. On the 75 cases identified, 30 were assigned a 1/1 p/p ILO classification¹⁰⁷⁰, which meant that these cases were suggestive of simple pneumoconiosis.¹⁰⁷¹

They noted that the number of retired miners surveyed was small and a larger cross-section of this population group would have better reflected the incidence of pneumoconiosis in Queensland coal miners.¹⁰⁷² They observed that recognition of the early signs of pneumoconiosis is quite difficult and is easily confused with, and complicated by, associated conditions such as emphysema, chronic bronchitis and asthma.¹⁰⁷³ Given the survey included total workforce, including employees who were not coal miners or those directly and constantly exposed to coal dust during their work, the prevalence of identified pneumoconiosis is likely to be at the 'more optimistic end of the spectrum as a result'.¹⁰⁷⁴

Rathus and Abrahams recommended regular supervision of the 75 identified cases, particularly of the largest category of the group: those assigned the ILO classification of 1/1 p/p, and who had reported between 9 and 49 years in coal mining. They stated that such persons, 'should be informed of their status', and routine follow-up be established.¹⁰⁷⁵

¹⁰⁶⁶ Queensland Government Gazette, 11 December 1982, vol CCLXXI, no 81, pp 1676-1677.

¹⁰⁶⁷ E.M. Rathus and E.W. Abrahams, Report on the Queensland Coal Board Coal Miners' Health Scheme: chest x-ray and emphysema check survey of colliery employees in Queensland, The Queensland Coal Board, May 1984, p 6.

¹⁰⁶⁸ Rathus and Abrahams, *Report*, p 14.

¹⁰⁶⁹ Rathus and Abrahams, *Report*, p 9.

¹⁰⁷⁰ Rathus and Abrahams, *Report*, p 14.

¹⁰⁷¹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 50.

¹⁰⁷² Rathus and Abrahams, *Report*, p 15.

¹⁰⁷³ Rathus and Abrahams, *Report*, p 14.

¹⁰⁷⁴ Rathus and Abrahams, *Report*, p 14.

¹⁰⁷⁵ Rathus and Abrahams, *Report*, p16.

Rathus and Abrahams observed that regular chest x-rays of the mining workforce remains:

*[T]he only logical and acceptable yardstick of the long-term effectiveness of the controls demanded by the Department of Mines and implemented by the industry and its workforce.*¹⁰⁷⁶

Notably, the Rathus and Abrahams report stated the following in regards to record management:

*The present survey has provided a great deal of data on individuals, all of which is available in a haphazard fashion. There is no central authority for the storage of x-rays, or for recall of medical reports, or for notification of progress x-rays for persons where it is indicated.*¹⁰⁷⁷

Rathus and Abrahams observed that Queensland's mining industry, with a large workforce population, and with defined occupational health hazards, requires the supervision of a dedicated Chief Medical Officer and auxiliary staff. They recommended that a Chief Medical Officer be responsible for a number of duties including:

- co-ordination of compulsory medical examinations for new employees and periodic x-rays of current employees
- periodic follow-up of retired miners by chest x-ray and medical examination on a routine basis or at request
- identification of persons requiring further checks or annual supervision basis on x-ray findings, and
- creation of a central register for the co-ordination of the program and recoding of data as required in a central location.¹⁰⁷⁸

The Rathus and Abrahams report recommended that miners with an indication of CWP be reviewed on a regular basis, preferably annually, and that there be a means available for notification of those persons identified with CWP.¹⁰⁷⁹

Mr Bruce Ham noted that the Rathus and Abrahams report largely reflects the reduction in exposure to coal dust following improvements in mining technologies in the late 1950s and 1960s, but questioned why there were 75 cases of CWP reported in 1984, and none in the years following.¹⁰⁸⁰

In terms of a government response to the survey, it would appear that little was done by way of response from the Queensland Coal Board or the Queensland Government. Former miner Mr Percy Verrall could not recall receiving any information about the survey, nor did he observe improvements to safety equipment or dust mitigation measures in the mid-1980s as a direct result of the survey.¹⁰⁸¹

The Queensland Coal Board reported in its 1984-85 Annual Report that it was following up on the identified cases. The department recently acknowledged that they have relied upon the authority of that statement by the Queensland Coal Board to conclude that follow-up did occur.¹⁰⁸²

In terms of the cases of CWP identified during the 1984 survey, retired miner Mr Colin Webb stated:

Some got a recall on their x-rays when we were getting the x-rays. They had to go down and get another one, but they used to say it was some mistake on the part of the operator. There was a

¹⁰⁷⁶ Rathus and Abrahams, *Report*, p 17.

¹⁰⁷⁷ Rathus and Abrahams, *Report*, p 20.

¹⁰⁷⁸ Rathus and Abrahams, *Report*, p 20.

¹⁰⁷⁹ Rathus and Abrahams, *Report*, p 19.

¹⁰⁸⁰ Submission 5, p 2.

¹⁰⁸¹ Public briefing transcript, Ipswich, 4 November 2016, p 11.

¹⁰⁸² Public briefing transcript, Ipswich, 4 November 2016, p 54

*spot [on the x-ray] there that shouldn't have been there, and that it all it was. We never got any real definite results from the x-rays.*¹⁰⁸³

Dr Bevan Kathage, a retired miner, speculated on why no remarkable action occurred as a result of the survey:

*Shortly after 1984 this industry here [in Ipswich] declined substantially, and it may well be that ... the industry and the workforce just sort of dissipated, and it just fell over.*¹⁰⁸⁴

Mr Andrew Vickers of the CFMEU was more definitive. He expressed the opinion that the Rathus and Abrahams report was kept quiet. He noted that the 1984-85 Annual Report of the Queensland Coal Board featured one brief paragraph on the survey and report. In regards follow-ups of miners with identified CWP, he stated:

*There is one thing I know for certain. I know my members well enough in this industry. If any of my members had received a follow-up that they might have been suffering from coal workers' pneumoconiosis, as president of the Queensland district of this union I would have been told.*¹⁰⁸⁵

F W Windridge, Wardens Inquiry: report on an accident at Moura no 2 underground mine on Sunday, 7 August 1994, Queensland, Wardens Court, 1996

On 20 September 1975, thirteen miners died at Kianga Mine after an explosion, which was found to have been caused by spontaneous combustion. The mine was sealed and the bodies of the thirteen men were never recovered.

Eleven years later on 16 July 1986, 12 miners were killed at Moura No 4 Mine after an explosion. The blast was thought to have been initiated by either frictional ignition or a flame safety lamp. In this case, the bodies were recovered.

Twenty-one men were working underground at the Moura No 2 mine, located east of Moura in Central Queensland, on 7 August 1994.

At 11.35pm, an explosion tore through the mine and only ten men escaped. The remaining men, working in a more southern area, failed to resurface.

Two days later, at 12.20pm on 9 August, a second explosion shook the mine. It was after this devastating blast that all rescue efforts were abandoned and the mine sealed, with all workers assumed dead.¹⁰⁸⁶

The inquiry, headed by Frank Windridge, started in October 1994 and was handed down on 17 January, 1996. The inquiry considered the findings from previous inquiries into the fatal accidents of 1975 and 1986.

The inquiry made a number of recommendations including that mines be required to put in place mine safety management plans to cater for key risk areas. It further recommended that mine safety management plans be based on detailed risk or hazard analyses.¹⁰⁸⁷

¹⁰⁸³ Public briefing transcript, Ipswich, 4 November 2016, p 22.

¹⁰⁸⁴ Public briefing transcript, Ipswich, 4 November 2016, p 23.

¹⁰⁸⁵ Public briefing transcript, Ipswich, 4 November 2016, pp 27-28.

¹⁰⁸⁶ Tara, 'Written in blood', Australasian Mine Safety Journal, <http://www.amsj.com.au/news/written-in-blood/>, 15 February 2016.

¹⁰⁸⁷ F W Windridge, Wardens Inquiry: report on an accident at Moura no 2 underground mine on Sunday, 7 August 1994, Queensland, Wardens Court, 1996, p 62.

The inquiry also made the following comment regarding legislation:

*The concept 'duty of care' is sound and should be promulgated by any new legislation. It rightly puts onus on every person in the work environment to take reasonable care to ensure their own safety and health and to not endanger the safety and health of others. However, the concept does not lead naturally to the conclusion that all persons are (or can be) equally responsible for safety, even for their personal safety. Responsibility implies authority and those with highest authority inevitably have the greatest responsibility, both to form rules and to ensure that they are complied with.*¹⁰⁸⁸

Queensland Government Natural Resources and Mines, Review of the Health Surveillance Unit, 2002-2004

In 2002 the Mines Inspectorate within the department undertook a review of the department's Health Surveillance Unit. A tripartite working group was formed to undertake the review consisting of representatives from government, mining companies and the CFMEU.¹⁰⁸⁹

The *Review of the Health Surveillance Unit* ('the review') was published by the department in 2003.

The review found the prime focus of mineworker health surveillance programs in Queensland, New South Wales and Western Australia was on respiratory disease and noise-induced hearing loss. However, the review found workers' compensation data indicated that major compensation costs were 'heavily orientated' towards musculoskeletal injury and psychological impairment, with relatively minor costs related to respiratory and auditory injury or illness.

The review made 21 recommendations, including the following recommendations relevant to the Coal Mine Workers' Health Scheme:

- that the current scheme be replaced and included in a new HSU that will be established to meet the needs of the coal mining, metalliferous mining and quarrying industries in Queensland
- that the role and function of the HSU be an individual part of the Mines Inspectorate with the department, based in Brisbane
- that adequate provisions are made in mining legislation to permit proper functioning of the health surveillance process
- that coal mining and mining and quarrying regulations be drafted to contain similar provisions to systematically monitor and assess workers' occupational health and control the risk of injury or disease to mine workers
- that an occupational physician be appointed on a part-time basis, and
- that the existing coal industry health surveillance database be integrated into the new health surveillance program.¹⁰⁹⁰

The recommendation to appoint an occupational physician to work within the health surveillance program was adopted, and Dr David Smith was appointed in 2004 on a part-time basis. He retired at the end of 2016. The position description for the role, advertised by the department in 2016, was stated as:

¹⁰⁸⁸ F W Windridge, Wardens Inquiry: report on an accident at Moura no 2 underground mine on Sunday, 7 August 1994, Queensland, Wardens Court, 1996, p 74.

¹⁰⁸⁹ Hon Dr Anthony Lynham MP, Question on Notice, No 240, 24 February 2016.

¹⁰⁹⁰ Queensland Government, Natural Resources and Mines, *Review of the Health Surveillance Unit*, 2003, pp 77-85.

The role of the occupational physician is to provide specialist medical, expert technical and policy advice to the department on health assessments of mining industry workers.

The recommendation that the health scheme be replaced by a broader scheme was not adopted.¹⁰⁹¹

In July 2004, the then Minister for Mines, Hon Stephen Robertson MP, announced that as well as the appointment of an occupational physician, the department would establish 'a medical advisory panel to represent all sectors of the industry ... to allow specific hazards to be addressed while developing competencies for medical practitioners to deliver occupational health programs' in response to recommendation 17 of the report.¹⁰⁹² The department has advised that work commenced to establish an advisory panel but this work was never completed, for reasons unknown to the department.¹⁰⁹³

Shortly after the review was published, Mr Brian Lyne, then Deputy Chief Inspector of Mines and one of the authors of the review report¹⁰⁹⁴ observed from the review that, 'it was apparent the current health surveillance was not focused on current occupational health hazards affecting mine workers'.¹⁰⁹⁵ In considering workers' compensation occupational injury and illness data, Mr Lyne stated: 'the current emphasis on respiratory and hearing conservation matters [in the scheme] are relatively well controlled and other health issues have a higher incidence rate'.¹⁰⁹⁶ He emphasised that the review identified musculoskeletal injury and psychological impairment as the two major occupational injury and disease problems facing the mining industry.¹⁰⁹⁷

In February 2017 a DNRM official lamented that 'the same recommendations to refocus on longitudinal health surveillance' were made in the 2004 review and once again in the Monash Review of 2016.¹⁰⁹⁸

Report of the Queensland Ombudsman, The Regulation of Mine Safety in Queensland: a review of the Queensland Mines Inspectorate, 2008

The Queensland Ombudsman commenced an investigation of the Queensland Mines inspectorate (QMI) within the Department of Mines and Energy following general allegations in the media and elsewhere that QMI may not have been adequately fulfilling its compliance roles under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999* and that mining safety standards may be falling as a result.

The Ombudsman concluded that the DME was conducting its compliance activities reasonably well. The Ombudsman found deficiencies in the way the department recorded much of its informal compliance activity, as well as inconsistencies in the use, format and terminology of mine record entries.

Most notably, the Ombudsman found that much of the public criticism of the QMI stemmed from a perception that the agency had been captured, or inappropriately influenced by the mining industry. While the Ombudsman found no evidence to substantiate the criticism, there was a reasonable perception that the QMI is subject to capture from the mining industry and from officers in the

¹⁰⁹¹ Hon Dr Anthony Lynham MP, Question on Notice, No 240, 24 February 2016.

¹⁰⁹² Hon Steven Robertson MP, Hansard, Estimates Committee G – Natural resources, Mines and Energy, 23 July 2004, p 503.

¹⁰⁹³ DNRM, response to Question on Notice taken on notice during a hearing, 17 Feb 2017.

¹⁰⁹⁴ Dr David Smith, public hearing transcript, Brisbane, 30 November 2016, evening session, p 1.

¹⁰⁹⁵ Brian Lyne, *Health surveillance: past history and future potential*, Townsville Conference August 2003, Queensland Department of Natural Resources and Mines, pp 2-3.

¹⁰⁹⁶ Brian Lyne, *Health surveillance: past history and future potential*, Townsville Conference August 2003, Queensland Department of Natural Resources and Mines, pp 2-3.

¹⁰⁹⁷ Brian Lyne, *Health surveillance: past history and future potential*, Townsville Conference August 2003, Queensland Department of Natural Resources and Mines, pp 2-3.

¹⁰⁹⁸ Mr Mark Stone, public hearing transcript, Brisbane, 2 February 2017, p 8.

department responsible for promoting and supporting mining in Queensland. The main reasons for the perception were:

- its compliance practices, especially the preference for informal compliance options which are not recorded in a way that can be publicly reported
- regional factors, leading to the development of social relationships and reliance on mine operators' hospitality, and
- staffing issues, including a high degree of mobility between the QMI and the mining industry.¹⁰⁹⁹

Among other recommendations, the Ombudsman found little communication between WorkCover and the QMI, and recommended that the QMI and WorkCover establish a memorandum of understanding or similar arrangement, to enable QMI to obtain from WorkCover de-identified reports of mine-related injuries.¹¹⁰⁰

The Queensland Ombudsman did not identify any issues or make recommendations with regards the administration and management of the Coal Workers' Health Scheme or the Health Surveillance Unit.

The Commissioner for Mine Safety and Health within the department reported in the 2009-2010 Annual Report that it had established a memorandum of understanding with WorkCover to obtain from WorkCover de-identified reports of mine related injuries.¹¹⁰¹

The Queensland Mine Safety Framework Regulatory Impact Statement, 2012 - 2015

In June 2012 DNRM commenced review of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*. The department released a public consultation paper seeking comment on its preferred options in relation to a state response to the National Mine Safety Framework.

According to Dr Smith, concerns over the operation of the health scheme were identified by the department prior to 2013. The committee heard that Dr Smith was directly involved in the development of the amendments in the proposed regulation 2013.¹¹⁰² Dr Smith stated:

.. the [health] assessment at the moment is partly an assessment of fitness for work and partly a health assessment. The department does not see it as the role of regulator to assess fitness for work. The role of the regulator is to ensure that a person's health is not affected in the long-term by that work.

Dr Smith recommended a strengthening of the respiratory function testing component of the health assessment by inclusion of a respiratory questionnaire.¹¹⁰³

In September 2013 the government released a consultation regulatory impact statement, the *Queensland Mine Safety Framework Regulatory Impact Statement* (RIS). The RIS proposed amendments to improve safety and health in mining and quarrying, and increase regulatory consistency with other states including New South Wales and Western Australia.¹¹⁰⁴

The RIS included 'refocusing the Coal Mine Workers' Health Scheme' to address hazards such as dust and noise. The proposed changes were designed to:

¹⁰⁹⁹ Report of the Queensland Ombudsman, *The Regulation of Mine Safety in Queensland*, June 2008, p xii.
¹¹⁰⁰ Report of the Queensland Ombudsman, *The Regulation of Mine Safety in Queensland*, June 2008, p 30.
¹¹⁰¹ Commissioner for Mine Safety and Health, Annual Report 2009-2010, p 20.
¹¹⁰² Public hearing transcript, Brisbane, 30 November 2016, p 6.
¹¹⁰³ Public hearing transcript, Brisbane, 30 November 2016, p 7.
¹¹⁰⁴ Commissioner for Mine Safety and Health, Queensland Mines Inspectorate Annual Performance Report 2015-16, p 20.

*enable the Mines Inspectorate to focus its efforts towards health surveillance activities to determine whether the work or the work environment at particular mines is harming the health of coal mine workers. In this way measures can be taken to address a hazard harming workers' health before it results in chronic illness.*¹¹⁰⁵

Notably, the RIS identified a number of concerns:

- the high levels of employment and movement within the mining industry meant a significant increase in the number of health assessments received by DNRM over recent years, putting DNRM 'under significant administrative strain'
- many NMAs appointed by employers had little or no experience or expertise in occupational medicine and were not providing an appropriate medical assessment under the regulations, and
- problems that had emerged with the appeal process in regards to the termination or demotion of a worker based on their health assessment, where a worker can obtain another health assessment that conflicts with the original health assessment.¹¹⁰⁶

The RIS proposed to:

- return the scheme to the original purpose, a more simplified health surveillance of coal industry workers addressing health issues that historically had been health hazards to the industry such as noise, and dust
- place an emphasis on surveillance to obtain baseline data of workers new to the industry and periodic data throughout the period the worker was employed in the industry. Data would then alert the department to problems across the industry or at a particular mine
- shift 'fitness for work' responsibility, so that whether a worker is fit for work at a particular mine would be the responsibility of the mine's SSE who had the obligation to ensure the safety and health of workers at a mine, including fitness for work
- require through regulation that only medical practitioners with appropriate qualifications and/or experience could carry out health assessments, including appropriate training for doctors in audiometry and spirometry
- resolve future disputes about conflicting health assessments only under the Fair Work Act 2009, and
- allow employers to nominate a medical practitioner for the fitness for work assessments, which could be the same medical practitioner as the one conducting the health surveillance assessment, however the initial assessment will only be required after a worker had started in the industry and within three months of commencing work.¹¹⁰⁷

According to the then Minister for Natural Resources and Mines Mr Andrew Cripps, the department received 246 public submissions in response to the RIS, including a submission from the CFMEU.

The CFMEU expressed concern that the RIS included a proposal to stop safety and health representatives being able to issue directives about unsafe operations. However, the union stated the health scheme did not need to be 're-focused' as it was 'an excellent example of best practice at work'.¹¹⁰⁸

¹¹⁰⁵ Department of Natural Resources and Mines, Queensland's Mine Safety Framework: Consultation Regulatory Impact Statement, 2013, p xiii.

¹¹⁰⁶ Department of Natural Resources and Mines, Queensland's Mine Safety Framework: Consultation Regulatory Impact Statement, 2013, pp 103-104.

¹¹⁰⁷ Department of Natural Resources and Mines, Queensland's Mine Safety Framework: Consultation Regulatory Impact Statement, 2013, pp 104-105.

¹¹⁰⁸ https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0016/244042/cfmeu-submission.pdf

As at 2016 the changes proposed in the RIS have not progressed. The Commissioner for Mine Safety and Health made the following statement in the Annual Report of 2015-16:

*The consultation RIS attracted 246 submissions but submissions were mostly divided along industrial lines on some issues. ... Further tripartite collaboration and cooperation with industry and union representatives, will be needed, in order to finalise consultation and the proposed legislative amendments.*¹¹⁰⁹

The department recently stated that the delay in progressing the RIS was due to a lack of tripartite support.¹¹¹⁰

The Senate Select Committee on Health: Fifth interim report, Black lung: "It has buggered my life", April 2016

The Senate Select Committee on Health (Senate Committee) undertook an inquiry into the re-emergence of CWP in 2016, following reports of diagnosed cases between October 2015 and February 2016.¹¹¹¹

The committee heard evidence that CWP was a preventable disease, and posed the question, 'How is it that this totally preventable disease had re-emerged in Australia now?'¹¹¹² The committee found: '... a litany of regulator failure and regulatory capture, industry indifference and incompetence, inconsistency risk mitigation and patchy and sometimes compromised health monitoring throughout Australia'.¹¹¹³

In undertaking the inquiry the Senate Committee aimed to provide a Commonwealth perspective on the response to the re-emergence of CWP, stating that the eradication of CWP should be a national issue, not just a Queensland issue.¹¹¹⁴ To that end, the committee made a number of recommendations in its report of April 2016, the first of which was to establish a National Coal Dust Monitoring Group.

The Senate Committee proposed this group be made up of representatives from mining companies, state governments, technical experts and industry stakeholders. The group would 'urgently undertake' an analysis of the cause of widespread breaches of dust mitigation in the industry, and implement a work program for effective dust mitigation measures aimed at the immediate reduction of coal mine workers' exposure to harmful levels of coal dust.¹¹¹⁵

Other recommendations from the committee, to be undertaken at a national level, included:

- improved dust monitoring and increased public transparency and accountability around dust monitoring
- creation of a database of best practice dust suppression techniques and management of dust sampling data
- creation of a best practice dust control forum or committee, and
- creation of an industry-wide fund to provide compensation for coal mine workers who contract CWP.¹¹¹⁶

¹¹⁰⁹ Commissioner for Mine Safety and Health, Queensland Mines Inspectorate Annual Performance Report 2015-16, p 20.

¹¹¹⁰ DNRM, submission 35, p 26.

¹¹¹¹ Senate Select Committee on Health, *Fifth interim report*, p xi.

¹¹¹² Senate Select Committee on Health, *Fifth interim report*, p xii.

¹¹¹³ Senate Select Committee on Health, *Fifth interim report*, p xii.

¹¹¹⁴ Senate Select Committee on Health, *Fifth interim report*, p xiii.

¹¹¹⁵ Senate Select Committee on Health, *Fifth interim report*, p xv.

¹¹¹⁶ Senate Select Committee on Health, *Fifth interim report*, pp xv-xvii.

The Senate Committee also made recommendations that the Queensland Government:

- commence a review of the state's regulatory provisions regarding compliance
- ensure relevant officials undertake training to avoid regulatory capture, and
- amend the role of Nominated Medical Advisor to be an independent statutory position.¹¹¹⁷

Review of Respiratory Component of the Coal Mine Workers' Health Scheme for the Queensland Department of Natural Resources and Mines, Final Report, July 2016

In July 2015, a case of Coal Workers Pneumoconiosis (CWP) was confirmed in Queensland. Following the detection of additional cases of CWP, the Minister for State Development and Natural Resources and Mines commissioned the Monash Centre for Occupational and Environmental Health ('the Monash Review') in December 2015. The review was conducted in collaboration with the School of Public Health, University of Illinois in Chicago. The review team was led by Professor Malcolm Sim.

The aims of the review were to:

- *determine whether the respiratory component of the health assessment performed under the Queensland Coal Mine Workers' Health Scheme ('the scheme') is adequately designed and implemented, to most effectively detect the early stages of coal mine dust lung disease among Queensland coal mine workers, estimating the extent and providing feedback and, if not,*
- *recommend necessary changes to correct deficiencies identified under aim A, recommend measures to follow up cases that may have been missed as a result of these deficiencies, and identify what additional capacity is needed in Queensland to improve this scheme.*¹¹¹⁸

As at the start of the review in December 2015, DNRM had identified six confirmed cases of CWP in Queensland coal workers. During the course of the review a seventh confirmed case was reported in May 2016.

The review considered the more general coal mine dust disease (CMDLD), a group of lung diseases that result from cumulative inhalation of respirable coal dust, including:

- classic fibrotic lung disease associated with CWP, including progressive massive fibrosis (PMF) the most severe form of CWP
- mixed dust pneumoconiosis and silicosis
- chronic bronchitis
- emphysema, and
- diffuse dust-related fibrosis.

The review did not focus on the issue of dust levels in Queensland coalmines. Additionally, the review was not designed to provide an accurate estimate of the likely extent of coalmine dust lung disease in Queensland coalminers.¹¹¹⁹

Findings of the review

¹¹¹⁷ Senate Committee Report, April 2016, pp xvii-xviii

¹¹¹⁸ Monash Centre for Occupational and Environmental Health, Review of Respiratory Component of the Coal Mine Workers' Health Scheme for the Queensland Department of Natural Resources and Mines: Final Report, 12 July 2016, p 5.

¹¹¹⁹ Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, pp 1, 3.

Overall, the review of the respiratory component of the scheme revealed 'major system failures at virtually all levels of design and operation'.¹¹²⁰

Australia had had very few reported cases of CWP since the 1990s, with reported occurrences dropping considerably between the years 1979 and 2002.¹¹²¹ The review noted that the identified deficiencies with the respiratory component of the current scheme were compounded by the widespread belief that CWP had been eliminated in Queensland. The report stated, 'where there is a lack of belief that [the disease] can occur among coal mine workers, then it is no surprise that there is a lack of rigour applied to detect such diseases'.¹¹²²

The review noted that the scheme was put in place in 1983 in response to concerns about pneumoconiosis and other respiratory abnormalities. However by 2015, the scheme's current emphasis had become 'fitness for work'. The respiratory component of the scheme was not clearly stated, with potential for important patterns of early lung changes to be overlooked.¹¹²³

CMDLD may develop years after exposure to coal dust, even if exposure stops. The dust remains in the lungs and CMDLD may only become apparent some years later. The review found this to be another limitation of the scheme, because it excluded retired and former coal miners and there is a lack of ongoing health surveillance for these groups.¹¹²⁴

The review emphasised that the prime focus for addressing respiratory diseases in coal workers is effective dust control and monitoring, which should be 'the first line of action in protecting coal mine workers from CMDLD'.¹¹²⁵ According to Malcolm Sim, medical screening is a 'secondary line of information about the effectiveness of such controls'.¹¹²⁶

X-rays

The review assessed chest x-rays from 248 coal mine workers with more than 10 years of underground experience and identified 18 possible cases of simple CWO. The review team compared their findings to the findings of radiology reports and NMA assessment of those reports, and found only two x-rays were identified by the original radiologists as having interstitial abnormalities. In neither case where possible pneumoconiosis was identified did the NMA record a finding about possible CWP, now was any recommendation made regarding fitness to work in terms of respiratory health.¹¹²⁷

Spirometry

The Monash Review conducted an online survey of registered NMAs in 2016 and found limited training among those conducting the spirometry test, and inadequate maintenance of spirometry devices.¹¹²⁸

The review reassessed 256 spirometry results held by the department of coal mine workers and found less than half had been accurately interpreted and reported by NMAs.¹¹²⁹

¹¹²⁰ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 16.

¹¹²¹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 22.

¹¹²² Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 16.

¹¹²³ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 27.

¹¹²⁴ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 32.

¹¹²⁵ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 17.

¹¹²⁶ Professor Malcolm Sim, public hearing transcript, Brisbane, 9 November 2016, p 4.

¹¹²⁷ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 52.

¹¹²⁸ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 55

¹¹²⁹ Monash Centre for Occupational and Environmental Health, *Review*, 2016, p 56.

Recommendations from the review

The review identified ways to modify the current scheme to make it more effective in undertaking medical screening for CWP in the future. The report made 18 recommendations in the following areas:

- changes to the Coal Mine Workers Health Scheme to explicitly focus on early detection
- clinical guidelines to be developed for medical assessments and follow-up investigation
- requirement for DNRM to report detected cases
- changes to the health assessment form to include all relevant respiratory components
- refinement of criteria to determine workers 'at risk from dust exposure'
- changes to the number, registration and training of NMAs
- changes to standards applied and examination of chest x-rays and spirometry
- transition to electronic records management.¹¹³⁰

DNRM stated 'it supports all 18 recommendations of the review in order to protect the health of coal mine workers and to restore workers' confidence in the Health Scheme'.¹¹³¹ The department has focused on five key areas to 'operationalise' the recommendations:

- chest x-rays
- spirometry
- medical practitioners
- surveillance

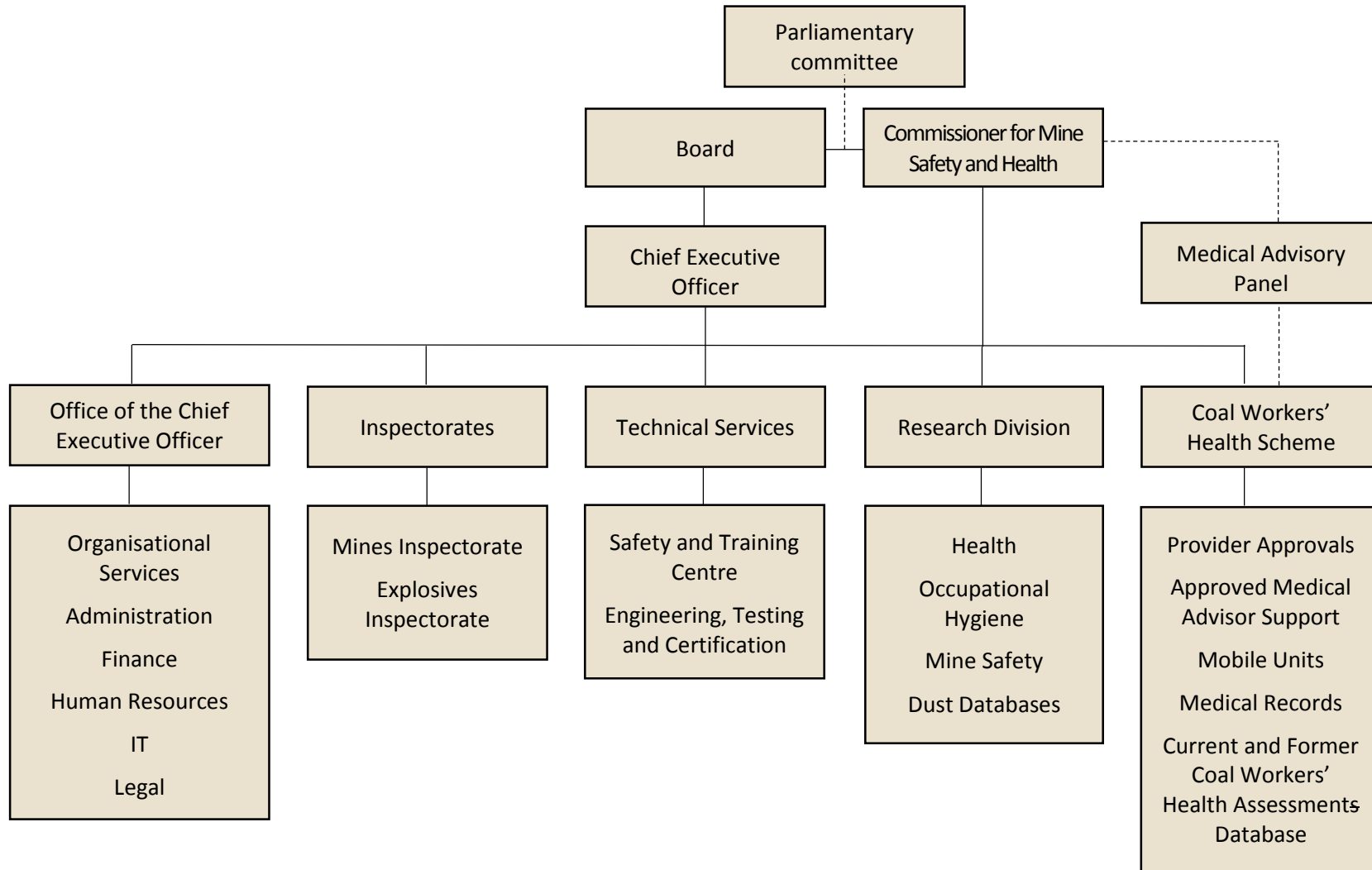
digital records management.¹¹³²

¹¹³⁰ Monash Centre for Occupational and Environmental Health, *Review*, 2016, pp 7-15.

¹¹³¹ DNRM, submission 35, p 27.

¹¹³² DNRM, submission 35, p 27.

Appendix F – Proposed Mine Safety and Health Authority Organisational Chart



Appendix G – Confirmed cases of CWP in Queensland

Coal Mine Worker CWP case number	Age	Work history	Sector	Country/State	Occupation/Position	Employment status	Date of notification to DNRM	Basis of Confirmation
1	53	14 years	Coal - underground	United Kingdom	Underground miner	Unknown	13/05/2015	Notified by NMA.
		3 years	Non-mining		Worker – Car manufacturing			
		8 years	Non-mining		Underground cabler – Telecommunications company			
		5 years	Coal - underground	Queensland	Underground operator			
2	74	4 years	Non-mining		Potter	Retired	21/07/2015	Notified by CFMEU.
		4 years	Coal - underground	Queensland	Underground miner			
		13 years	Non-mining		Truck driver			
		11 years	Coal - underground	Queensland	Underground miner			
		1 year	Non-mining		Worker - PVC pipe manufacturing			
		6 years	Coal - opencut	Queensland	Miner			

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

3	52	2 years	Coal - underground	Queensland	Maintenance supervisor	Unknown. Believed to reside in USA	19/11/2015	Notified by CFMEU. Diagnosed in USA.
4	52	24 years	Coal - underground	United Kingdom	Underground miner	Unknown	22/12/2015	Notified by NMA. Supporting evidence from US-based B- reader.
		3 years	Coal - underground	Queensland	Underground miner			
		6 years	Coal - underground	Queensland	Longwall operator			
5	67	4 years	Coal - underground	NSW	Miner	Unknown	8/01/2016	Notified by NMA.
		4 years	Non - mining		Roof Tiler			
		4 years	Coal - underground	NSW	Miner			
		4 years	Non-mining		Furniture removalist			
		1 year	Coal - underground	Queensland	Miner			
		3 years	Non-mining		Builder			
		4 years	Non-mining		Assistant nurse			

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

		2 years	Non-mining		Contractor			
		5 years	Coal - underground	Queensland	Miner/Mine technician			
6	52	15 years	Non-mining		Electrician	Unknown. CWP detected during pre-employment health assessment	14/01/2016	Notified by NMA.
		2 years	Non-mining		Sandblaster & Powder Coater			
		1 year	Non-mining		Railway labourer			
		15 years	Coal - underground	Queensland	Electrician			
7	56	5 years	Gold		Miner	Unknown.	12/5/2016	Notified by NMA. Supporting evidence from US-based B-reader.
		4 years	Coal - underground	Queensland	Mine construction worker			
		26 years	Coal - underground	Queensland	Underground miner			
8	56	5 years	Non-mining		Fitter/Mechanic	Unknown.	28/06/2016	Notified by

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

								NMA, diagnosis by Qld Physician.
		4 years	Non-mining		Field service fitter			
		7 years	Non-mining		Truck Driver – self employed			
		12 years	Coal - underground	Queensland	Longwall mechanical engineer			
		2 years	Coal - underground	Queensland	Compliance engineer			
		4 years	Coal - underground	Queensland	Project superintendent			
9	40	11 years	Coal - underground	Queensland	Underground miner	Unemployed.	30/06/2016	Notified by CFMEU. Supporting evidence from Qld Physician.
10	63	8 years	Non-mining		Plant operator (Non-mining)	Unknown.	30/06/2016	Notified by CFMEU. Supporting evidence from Qld Physician.
		3 years	Coal - underground	Queensland	Underground miner			
		9 years	Coal - opencut	Queensland	Opencut miner			

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

		12 years	Coal - underground	Queensland	Underground deputy			
		11 years	Coal - underground	Queensland	Shift Supervisor			
11	56	10 years	Non-mining		Welding trades assistance	Unknown.	4/08/2016	Identified by Monash review. Notified by NMA. Supporting evidence from Qld Physician.
		10 years	Non-mining		Smelter crane operator			
		7 years	Metals underground	Queensland	Airleg/Jumbo operator			
		12 years	Coal - underground	Queensland	Underground operator			
12	57	12 years	Non-mining		Farmer	Is permitted to work in low dust work environment.	4/08/2016	Notified by CFMEU. Supporting evidence from Qld Physician.
		2 years	Non-mining		Mechanic			
		2 years	Non-mining		Plant operator			

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

		11 years	Coal - underground	Queensland	Underground miner/fitter			
13	38	15 years	Coal - underground	Queensland	Underground miner	Unknown.	9/08/2016	Identified by Monash review. Notified by NMA. Supporting evidence from Qld Physician.
14	64	3 years	Non-mining		Electrician	Retired.	9/08/2016	Notified by Qld Physician.
		3 years	Non-mining		Roof plumber			
		20 years	Coal - underground	Queensland	Underground miner/deputy			
		3 years	Coal - underground	Queensland	Underground deputy			
		16 years	Coal - underground	Queensland	ERZ controller			
15	54	20 years	Coal - underground	United Kingdom	Underground miner	Unknown.	5/09/2016	Notified by NMA. Supporting evidence from US-based B-reader.

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

		6 years	Coal - underground	United Kingdom	Supervisor			
		4 years	Coal - underground	Queensland	Supervisor			
16	55	10 years	Non-mining		Mechanic	Unknown.	11/10/2016	Notified by NMA. Supporting evidence from US-based B-reader and Qld Physician.
		31 years	Coal – open-cut	Queensland	Plant operator			
17	69	13 years	Coal - underground	NSW	Miner/operator	Retired.	24/11/2016	Notified by Qld Chest Physician.
		6 years	Coal - underground	Queensland	Miner/operator			
		16 years	Coal - underground	Queensland	Supervisor			
		7 years	Coal - underground	Queensland	Underground deputy			
18	56	18 years	Coal - Underground	United Kingdom	Underground miner	Unknown.	13/12/2016	Notified by NMA. Diagnosed by Australian Radiologist by


Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

								CT Scan. Supporting evidence from Qld Physician.
		2 years	Non-mining		Quality Control Officer – polyester yarn factory			
		2 years	Non-mining		Bricklayer (Self-employed)			
		8 years	Coal - underground	Queensland	Underground miner			
19	44	14 years	Coal - underground	Queensland	Mechanic/Fitter	Unknown.	28/02/2017	Notified by NMA. Diagnosed by Australian Radiologist by CT Scan. Supporting evidence from Qld Physician.
20	64	7 years	Unknown.	Unknown.	Unknown.	Employed	20/04/2017	Notified by NMA. Confirmed by Qld Chest Physician.
		7 years	Non-mining	Queensland	Saw Miller			
		7 years	Unknown.	Unknown.	Unknown.			

Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland

		3 years	Unknown.	Unknown.	Driller/Shaft Sinking			
		7 years	Coal - underground	Queensland	U/G Contractor			
		13 years	Coal - underground	Queensland	Mine Technician			
21	68	14 years	Unknown.	Unknown.	Carpenter	Employed	26/04/2017	Notified by NMA. Confirmed by Qld Chest Physician.
		1 year	Unknown.	Unknown.	Carpenter			
		3 years	Coal – open-cut	Queensland	Plant Operator			
		21 years	Coal – open-cut	Queensland	Plant Operator/Carpenter			
		3 years	Coal – open-cut	Queensland	Pump crew dozer operator			
		8 years	Coal – open-cut	Queensland	Drill operator			

Appendix H – Coal Mine Workers' Health Scheme Health Assessment Form

Department of Natural Resources and Mines	 Queensland Government
<h3>CMSHR 1 – Health assessment form</h3> <p style="text-align: right; font-size: small;">Section 46A, Coal Mining Safety and Health Regulation 2001</p>	
Full name (given name(s) and family name)	Date of birth
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
<h4>Instructions for completing health assessment</h4>	
<h5>Employer</h5> <ul style="list-style-type: none"> <input type="checkbox"/> Must arrange for the health assessment of the coal mine worker (the worker) and meet the cost of the assessment. <input type="checkbox"/> Must complete section 1, including relevant generic similar exposure group (SEG) and dates of last respiratory function and chest x-ray examinations for current workers (employer must make all reasonable attempts to obtain these dates). 	
<h5>Coal mine worker</h5> <ul style="list-style-type: none"> <input type="checkbox"/> Must bring photo identification to have identity checked by the examining medical officer (EMO). <input type="checkbox"/> Must complete section 2 of this form, including work history as follows: <ul style="list-style-type: none"> - if the coal mine worker is commencing work in the industry – must provide full previous work history; or - if the coal mine worker is already employed in the industry – must provide work history since last health assessment. <input type="checkbox"/> Must attach a separate statement if space on form is insufficient (e.g. for work history). 	
<h5>Examining medical officer / nominated medical adviser</h5> <ul style="list-style-type: none"> <input type="checkbox"/> Must check photo identification provided by the worker. <input type="checkbox"/> Must review sections 1 and 2 of this form, noting (and taking advice from employer) if the worker requires colour vision test, chest x-ray examination, etc. (Note - a respiratory function examination should be undertaken at every routine periodic health assessment). <input type="checkbox"/> Must review/complete section 2 of this form (with the worker as required and comment on any abnormality). <input type="checkbox"/> Must ensure standardised respiratory symptoms questionnaire is administered in accordance with the instructions for interviewers approved by the British Medical Research Council's Committee on Environment and Occupational Health <input type="checkbox"/> Must ensure (a) spirometry is performed by a qualified and competent person to the standard outlined in the Queensland Health: Spirometry (Adult) Guideline and (b) a copy of the spirometry report and spiograph is submitted to the nominated medical adviser (NMA) (if not the NMA). <input type="checkbox"/> Must ensure the chest x-ray request form clearly states the subject is a coal mine worker and the image is required to be examined by a radiologist listed on the BANZCR Register in accordance with the Guidelines for the Use of the ILO International Classification of Radiographs of Pneumoconiosis. <input type="checkbox"/> Must complete section 3 of this form. <input type="checkbox"/> Must attach a separate statement if space on form is insufficient. <input type="checkbox"/> Must not complete section 4 if not the NMA. <input type="checkbox"/> Must, where appropriate, forward the completed health assessment form (with all sections intact) to the NMA (if not the NMA). 	
<h5>Nominated medical adviser</h5> <ul style="list-style-type: none"> <input type="checkbox"/> Must review sections 1, 2 and 3 of this form. <input type="checkbox"/> Must submit a copy of the digital chest x-ray image file (DICOM), x-ray report, International Labour Organization (ILO) classification form and two-reader process consent form to the Department's Health Surveillance Unit (HSU) prior to completing section 4. (HSU will arrange a further ILO classification (i.e. second reading) by the University of Illinois and then forward results to the NMA). <input type="checkbox"/> Must complete section 4 following the second reading. <input type="checkbox"/> Must arrange appropriate additional testing if the worker has abnormal respiratory function or chest x-ray examination results. <input type="checkbox"/> Must arrange appropriate practical testing if the worker has an abnormal colour vision or hearing results affecting "fitness for duty". <input type="checkbox"/> Must assess whether the assessment provides adequate information to complete section 4 on the fitness for duty of the worker. <input type="checkbox"/> Must provide an explanation of section 4 to the worker and, where practical, secure the signature of the worker on the report. <input type="checkbox"/> Must provide a copy of section 4 to (a) the worker at the address shown on page 2 of this form; and (b) the employer. <input type="checkbox"/> Must forward a copy of the completed health assessment form (with all sections intact), the original x-ray image (if taken) and the spirometry report (including the spirometer graphs) to the HSU. <input type="checkbox"/> Must keep the data on which the assessment was based and a copy of the approved form completed for the assessment. 	
<h4>Privacy statement</h4> <p>The Department of Natural Resources and Mines (the Department) is collecting the information on this form for the purpose of identifying and monitoring medical conditions or impacts on health resulting from exposure to chemical and physical agents in the coal mining industry as authorised under Chapter 2, Part 6, Division 2 of the <i>Coal Mining Safety and Health Regulation 2001</i> (the Regulation). Information collected in this form is routinely provided to the nominated medical advisor for the purpose of facilitating/undertaking a health assessment of the worker and to the University of Illinois at Chicago, USA for the purpose of a further ILO classification (by completing this form, you agree to this transfer). The nominated medical adviser may provide all or some of the information to an examining medical officer for the purpose of undertaking all or part of a health assessment. The nominated medical adviser will disclose the information in section 4 of this form (the health assessment report) to the worker's employer. The Department may disclose information included in this form for research purposes only if the identity of the worker is protected. The Department will not disclose the worker's personal information to any other parties unless authorised or required by law.</p>	
Form CMSHR 1 – Health assessment form This form was approved by the chief inspector under section 281 of the <i>Coal Mining Safety and Health Act 1999</i>	
Version 2 – effective 1 January 2017 Page 1 of 13	

Department of Natural Resources and Mines



Section 1 – Employer to complete

1.1 Employment details

a) Employer

b) Address

c) Telephone

d) Mine (e.g. Southern Colliery)

e) Name of employer's nominated medical adviser (NMA)

f) Person's/coal mine worker's proposed/current position

g) Person's proposed/coal mine worker's current generic similar exposure group (SEG)¹

h) Date of coal mine worker's last respiratory function examination² (if known)

i) Date of coal mine worker's last chest x-ray examination² (if known)

1.2 Reasons for health assessment and matters to be assessed

a) Person is to be employed as a coal mine worker (pre-employment health assessment)

b) Nominated medical adviser considers the assessment is necessary after being given a notice under section 49(3)

c) Nominated medical adviser has decided that a periodic assessment is required

d) Nominated medical adviser has advised that the person/worker undergo a subsequent assessment for a particular matter identified by a previous assessment

e) Does the coal mine worker require colour discrimination? Yes No

f) Is the worker at risk from occupational noise? Yes No

g) Is the worker at risk from hazardous chemicals? (If 'yes' provide comment below) Yes No

h) Are there hazardous duties requiring a specific fitness assessment? (comment) Yes No

Employer's comments _____

1.3 Requirement for respiratory function and chest x-ray examinations


a) Person is to be employed as a coal mine worker (pre-employment)

b) Person is employed as an aboveground worker (required at least every 10 years)

c) Person is, or was, employed as an underground worker (required at least every 5 years)

¹ The generic SEG is sourced from the list provided in the Mines Inspectorate [similar exposure group factsheet](#).

² The dates for these examinations may be obtained by contacting the HSU via email to HSU@dnrm.qld.gov.au



Department of Natural Resources and Mines

Section 2 – Coal mine worker to complete

2.1 Coal mine worker's details

a) Family name

Given name(s)

b) Date of birth

c) Gender Male Female

d) Address

e) Telephone

f) Email

2.2 Work history

Year		Employer	Mine	Surface or underground	Position (job title)	Country/State
From	To					

2.3 Health-related History

(a) Have you previously had a medical examination under this scheme? Yes No

(b) If Yes, when was the last examination?

(c) Have you been admitted to a hospital or undergone surgery or an operation? Yes No

(d) Have you ever had an illness or operation that has prevented you from undertaking your normal duties for more than two weeks? Yes No

(e) Have you ever had an injury that has prevented you from undertaking your normal duties for more than two weeks? Yes No

(f) Are you taking any medication? Yes No

(g) Do you use hearing protection whilst in noisy areas? Yes No

(h) Do you use respiratory protection whilst in dusty areas? Yes No

Examining medical officer's comments _____

Form CMSHR 1 – Health assessment form – Section 2 (Coal mine worker to complete) Version 2 – effective 1 January 2017 Page 3 of 13
 This form was approved by the chief inspector under section 281 of the Coal Mining Safety and Health Act 1999

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2.4 Have you ever suffered from, or do you now suffer from, any of the following?

- | | Yes | No | | Yes | No |
|---|--------------------------|--------------------------|--|--------------------------|--------------------------|
| (a) Heart disease or heart surgery | <input type="checkbox"/> | <input type="checkbox"/> | (m) Sciatica, lumbago, slipped disc | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Chest pain, angina or tightness in chest | <input type="checkbox"/> | <input type="checkbox"/> | (n) Fractures or dislocations | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) High blood pressure | <input type="checkbox"/> | <input type="checkbox"/> | (o) Neck injury or whiplash | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Deafness, loss of hearing or ear problems | <input type="checkbox"/> | <input type="checkbox"/> | (p) Back or neck pain which has prevented you from undertaking full duties | <input type="checkbox"/> | <input type="checkbox"/> |
| (e) Ringing noises in your ears | <input type="checkbox"/> | <input type="checkbox"/> | (q) Knee problems, cartilage injury | <input type="checkbox"/> | <input type="checkbox"/> |
| (f) Other hearing difficulties | <input type="checkbox"/> | <input type="checkbox"/> | (r) Shoulder, knee or any other joint injury | <input type="checkbox"/> | <input type="checkbox"/> |
| (g) Disease or disorder of the nervous system | <input type="checkbox"/> | <input type="checkbox"/> | (s) Hernia | <input type="checkbox"/> | <input type="checkbox"/> |
| (h) Episodes of numbness or weakness | <input type="checkbox"/> | <input type="checkbox"/> | (t) Arthritis or rheumatism | <input type="checkbox"/> | <input type="checkbox"/> |
| (i) Psychiatric illness | <input type="checkbox"/> | <input type="checkbox"/> | (u) Dermatitis, eczema, or skin problems | <input type="checkbox"/> | <input type="checkbox"/> |
| (j) Blackouts, fits or epilepsy | <input type="checkbox"/> | <input type="checkbox"/> | (v) Allergies | <input type="checkbox"/> | <input type="checkbox"/> |
| (k) RSI, tenosynovitis, over-use syndrome or wrist strain | <input type="checkbox"/> | <input type="checkbox"/> | (w) Allergic reaction or reaction to chemicals or dust | <input type="checkbox"/> | <input type="checkbox"/> |
| (l) Diabetes | <input type="checkbox"/> | <input type="checkbox"/> | | | |

2.5 Previous vaccinations and blood tests

- (a) When were you last immunised against Tetanus? Year
- (b) When were you last immunised against Hepatitis A? Year
- (c) When were you last immunised against Hepatitis B? Year
- (d) When was your last cholesterol test? Year

Examining medical officer's comments _____

Coal miner worker's declaration (to be witnessed by examining medical officer)
 I certify to the best of my knowledge that the above information supplied by me is true and correct.

Signature Date / /

Witness Date / /



Department of Natural Resources and Mines

Section 3 – Examining medical officer to complete

3.1 ID Check

	Type
--	------

3.2a Height

	cm
--	----

3.2b Weight

	kg
--	----

Comment

3.3 Vision **Visual acuity**

Uncorrected	
Right	Left
(a)-(b) Distant	6/
(c)-(d) Near	N

Corrected	
Right	Left
(e)-(f)	6/
(g)-(h)	N

3.4 Visual fields (by confrontation) Abnormal Normal

3.5 Colour vision test (if indicated as required by the employer)

Ishihara colour vision practical test Abnormal Normal

NOTE: The nominated medical adviser is to arrange practical colour vision test if an abnormal result impacts on a worker's fitness for current/proposed position.

3.6 Work-related colour vision practical test (if Ishihara colour vision test is abnormal) Unsatisfactory Satisfactory

3.7 Hearing

Audiogram		500 Hz	1000 Hz	1500 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
(a)-(h)	Left								
(i)-(p)	Right								

(q) Time since last high noise exposure?

	hours
--	-------

(r) Audiogram result Abnormal Normal

(s) Were hearing aids used Yes No

(t) Auditory canals Abnormal Normal

(u) Tympanic membranes Abnormal Normal

The result is normal if hearing threshold is 40dB or less in the better ear at 500, 1000, 1500 and 2000 Hz.

NOTE: The nominated medical adviser is to arrange practical hearing test if an abnormal result impacts on a coal mine worker's for current/proposed position.

3.8 Work-related hearing practical test (if above hearing test abnormal) Unsatisfactory Satisfactory

Examining medical officer's comments (Note any abnormality, including past noise exposure and tinnitus) _____

3.9 Cardiovascular system

Systolic	Diastolic
/min	

(a) Blood pressure

(b) (Repeated if necessary)

(c) Pulse rate

(d) Peripheral pulses Absent Present

(e) Heart sounds Abnormal Normal

(f) Evidence of cardiac failure or oedema Yes No

(g) Varicose veins Yes No

(h) E.C.G. (if indicated by some abnormality) Abnormal Normal

Examining medical officer's comments _____

Department of Natural Resources and Mines



3.10 Respiratory function examination

3.10.1 Standardised respiratory symptoms questionnaire

The below questionnaire must be administered in accordance with the [instructions](#) approved by the British Medical Research Council's Committee on Environment and Occupational Health. The actual wording of each question must be used. Tick 'Yes' or 'No', or put other codes as indicated in boxes. When in doubt record as 'No'.

Preamble

I am going to ask you some questions, mainly about your chest. I'd like you to answer 'Yes' or 'No' whenever possible.

Cough

- 1. Do you usually cough first thing in the morning in the winter? Yes No
- 2. Do you usually cough during the day – or at night – in the winter? Yes No

If 'Yes' to 1 or 2

- 3. Do you cough like this on most days for as much as three months each year? Yes No

Phlegm

- 4. Do you usually bring up any phlegm from your chest first thing in the morning in winter? Yes No
- 5. Do you usually bring up any phlegm from your chest during the day – or night – in winter? Yes No

If 'Yes' to 4 or 5

- 6. Do you bring up phlegm like this on most days for as much as three months each year? Yes No

Periods of cough and phlegm

- 7a. In the past three years have you had a period of (increased) cough and phlegm lasting for three weeks or more? Yes No

If 'Yes'

- 7b. Have you had more than one such period? Yes No

Breathlessness

If the subject is disabled from walking by any condition other than heart or lung disease, omit question 9 and enter 'Yes' here.

- 8a. Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill? Yes No

If 'Yes'

- 8b. Do you get short of breath walking with other people of your own age on level ground? Yes No

If 'Yes'

- 8c. Do you have to stop for breathe when walking at your own pace on level ground? Yes No

Wheezing


- 9. Have you had attacks of wheezing or whistling in your chest at any time in the last 12 months? Yes No

- 10a. Have you ever had attacks of shortness of breath with wheezing? Yes No

If 'Yes'

- 10b. Is/was your breathing absolutely normal between attacks? Yes No

- 11. Have you at any time in the last 12 months been woken at night by an attack of shortness of breath? Yes No


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Chest illnesses

12a. During the past three years have you had any chest illness which has kept you from your usual activities for as much as a week? Yes No

If 'Yes'

12b. Did you bring up more phlegm than usual in any of these illnesses? Yes No

If 'Yes'

12c. Have you had more than one illness like this in the past three years? Yes No

Past illnesses

13. Have you ever had, or been told that you have had:

- a) An injury affecting your chest? Yes No
- b) Heart trouble? Yes No
- c) Bronchitis? Yes No
- d) Pneumonia? Yes No
- e) Pleurisy? Yes No
- f) Pulmonary tuberculosis? Yes No
- g) Bronchial asthma? Yes No
- h) Other chest trouble? Yes No
- i) Hay fever? Yes No

Tobacco smoking

14a. Do you smoke? Yes No

If 'No'

14b. Have you ever smoked as much as one cigarette a day (or one cigar a week or 28 grams of tobacco a month) for as long as a year? Yes No

If 'No' to both parts of question 14, omit remaining questions on smoking.

15a. Do (did) you inhale the smoke? Yes No

If 'Yes'

15b. Would you say you inhaled the smoke slightly (= 1), moderately (= 2), or deeply (= 3)?

16. How old were you when you started smoking regularly?

17a. Do (did) you smoke manufactured cigarettes? Yes No

If 'Yes'

17b. How many do (did) you usually smoke per day on weekdays?

17c. How many per day at weekends?

17d. Do (did) you usually smoke plain (= 1) or filter tip (= 2) cigarettes?


17e. What brands do (did) you usually smoke?

18a. Do (did) you smoke hand-rolled cigarettes? Yes No

If 'Yes'

18b. How much tobacco do (did) you usually smoke per week in this way (in grams)?

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18c. Do (did) you put filters in these cigarettes? Yes No

19a. Do (did) you smoke a pipe? Yes No

If 'Yes'

19b. How much pipe tobacco do (did) you usually smoke per day (in grams)?

20a. Do (did) you smoke small cigars? Yes No

If 'Yes'

20b. How many of these do (did) you usually smoke per day?

21a. Do (did) you smoke cigars? Yes No

If 'Yes'

21b. How many of these do (did) you usually smoke per week?

For present smokers

22a. Have you been cutting down your smoking over the past year? Yes No

For ex-smokers

22b. When did you give up smoking altogether?

Examining medical officer's comments _____

3.10.2 Examination of chest

Auscultation Normal Abnormal

Examining medical officer's comments _____

3.10.3 Spirometry

Spirometry must be performed by a qualified and competent person to the standard outlined in [Queensland Health: Spirometry \(Adult\) Guideline](#). Submit a copy of the spirometry report and spirograph with this health assessment.

Date of spirometry examination


Spirometry results	Observed		Predicted		Observed/Predicted (%)	
FEV ₁ (litres)	(a)		(d)		(g)	
FVC (litres)	(b)		(e)		(h)	
FEV ₁ / FVC (%)	(c)		(f)			

(i) Is FEV₁ / FVC < 70%? Yes No

(j) Overall spirometry result Normal Abnormal

Examining medical officer's comments _____

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3.10.4 Comparative assessment

a) Was a comparative assessment of one or more previous examinations conducted? (If 'No' explain reason in comments section) Yes No

b) Results of respiratory function examination Normal Abnormal

Examining medical officer's comments _____

NOTE: The nominated medical adviser is to arrange additional testing for abnormal respiratory function examination results

c) Was person referred for laboratory lung function test? (attach test report) Yes No

d) If 'Yes', what was the outcome of the laboratory lung function test Normal Abnormal

e) Overall respiratory function result Normal Abnormal

Examining medical officer's comments _____

3.11 Chest x-ray examination

Examining medical officer must ensure the x-ray request form clearly states the subject is a coal mine worker and the image is required to be examined by a radiologist listed on the [RANZCR Register](#) in accordance with the [Guidelines for the Use of the ILO International Classification of Radiographs of Pneumoconiosis](#).

3.11.1 Chest x-ray details

a) Was a chest x-ray carried out? (If 'Yes' if attach the x-ray report, if 'No' explain reason in comments below) Yes No

b) Date of chest x-ray examination

c) ILO classification form (for first reading) completed and attached? (If 'No' explain reason in comments below) Yes No

Examining medical officer's comments _____

NOTE: The nominated medical adviser is to arrange additional testing for abnormal chest x-ray examination results.

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- d) Was person referred for a high resolution CT scan?
(If 'Yes', attach HRCT scan report) Yes No
- e) Was person referred to specialist physician? (If 'Yes', attach specialist's report) Yes No
- f) Was a prescribe disease detected? (If 'Yes', include finding in section 4) Yes No
- g) Has the department's occupational physician been notified? Yes No

Examining medical officer's comments _____

3.12 Musculo-skeletal system

	Abnormal	Normal
(a) <u>Lower back</u>		
(i) Range of movement	<input type="checkbox"/>	<input type="checkbox"/>
(ii) Posture and gait	<input type="checkbox"/>	<input type="checkbox"/>
(iii) Straight leg raising	<input type="checkbox"/>	<input type="checkbox"/>
(b) <u>Neck</u> – range of movement	<input type="checkbox"/>	<input type="checkbox"/>
(c) <u>Joint movements</u>		
(i) Upper Limbs	<input type="checkbox"/>	<input type="checkbox"/>
(ii) Lower Limbs	<input type="checkbox"/>	<input type="checkbox"/>
(iii) Reflexes	<input type="checkbox"/>	<input type="checkbox"/>

3.13 Urinalysis and Blood Sugar

	Present	Absent
(a) Sugar	<input type="checkbox"/>	<input type="checkbox"/>
(b) Protein/albumin	<input type="checkbox"/>	<input type="checkbox"/>
(c) Blood	<input type="checkbox"/>	<input type="checkbox"/>
(d) Blood sugar analysis (optional)	<input type="checkbox"/>	<input type="checkbox"/>

3.14 Abdomen

(a) Abdominal scars	<input type="checkbox"/>	<input type="checkbox"/>
(b) Abdominal mass	<input type="checkbox"/>	<input type="checkbox"/>
(c) Hernia	<input type="checkbox"/>	<input type="checkbox"/>

3.15 Skin

(a) Eczema, dermatitis or allergy	<input type="checkbox"/>	<input type="checkbox"/>
(b) Skin cancer or other abnormality	<input type="checkbox"/>	<input type="checkbox"/>

Examining medical officer's comments _____

3.16 Is the coal mine worker's fitness for duty is likely to be affected by any of the following?

- (a) Dietary Habits Yes No
- (b) Exercise routine Yes No
- (c) Stress Level Yes No
- (d) Alcohol Consumption Yes No
- (e) Drugs or medication not prescribed by a doctor Yes No

Department of Natural Resources and Mines



3.17 Is there any reason why the coal mine worker may be not fit for duty in relation to work

- (a) As an operator of (or working around) around heavy vehicles Yes No
- (b) Underground (including use of self-rescue breathing devices and escape) Yes No
- (c) Shift work Yes No
- (d) Performing heavy manual handling Yes No
- (e) In wet or muddy conditions Yes No
- (f) In dusty conditions Yes No
- (g) At height or on ladders Yes No
- (h) In confined spaces Yes No
- (i) While wearing safety footwear or other personal protective equipment such as ear plugs, glasses and respirators Yes No
- (j) Another capacity – define Yes No

Examining medical officer's comments _____

Examining medical officer's name and address Please print or stamp	Signature Date / /
---	---

Department of Natural Resources and Mines



Section 4 – Nominated medical adviser to complete

Health assessment report

4.1 Coal mine worker details

- a) Family name
- Given name(s)
- b) Date of birth
- c) Employer
- d) Mine (e.g. Southern Colliery)
- e) Coal mine worker's proposed/current position

4.2 Respiratory function and chest x-ray examinations summary

- a) Date of examination by examining medical officer
- b) Date of the coal mine worker's last respiratory function examination
- c) The coal mine worker has had a comparative assessment of their respiratory function Yes No
- d) Date of the coal mine worker's last chest x-ray examination
- Name of radiologist and practice
- Date of US based x-ray review (second reading)
- e) I have examined/reviewed the results of the coal mine worker whose name appears in section 4.1a (above), and that in my opinion this worker (tick all boxes that apply):
 - (i) displays indications of adverse health effects that may be attributed to exposure to a causative agent at the mine
 - (ii) has the following prescribed disease:
 - chronic obstructive pulmonary disease
 - coal workers' pneumoconiosis
 - silicosis
 - legionellosis
 - (iii) should seek further advice as to the treatment/management of their medical condition from their treating medical practitioner
- f) I have advised the coal mine worker to seek further advice as to the treatment/ management of their medical condition from their treating medical practitioner
- g) Recommended date of next health assessment

Department of Natural Resources and Mines



CMSHR 2 – Retirement examination form

Section 49A, Coal Mining Safety and Health Regulation 2001

Full name (given name(s) and family name)

Date of birth

Instructions for completing the retirement examination form

Employer

- Must arrange for a retirement examination when asked by an eligible coal mine worker and meet the cost of the examination.
- Must complete section 1, including relevant [generic similar exposure group](#) (SEG).

Coal mine worker

- Must bring photo identification to have identity checked by the examining medical officer (EMO).
- Must complete section 2 of this form (including full work history information).
- Must attach a separate statement if space on form is insufficient (e.g. for full work history).

Examining medical officer / nominated medical adviser


- Must check photo identification provided by the coal mine worker.
- Must review sections 1 this form.
- Must review/complete section 2 of this form (with the worker as required and comment on any abnormality).
- Must ensure standardised respiratory symptoms questionnaire is administered in accordance with the [instructions](#) approved by the British Medical Research Council's Committee on Environment and Occupational Health
- Must ensure (a) spirometry is performed by a qualified and competent person to the standard outlined in the [Queensland Health Spirometry \(Adult\) Guideline](#) and (b) a copy of the spirometry report and spirograph is submitted to the nominated medical adviser (NMA) (if not the NMA).
- Must ensure the chest x-ray request form clearly states the subject is a coal mine worker and the image is required to be examined by a radiologist listed on the [RANZCR Register](#) in accordance with the [Guidelines for the Use of the ILO International Classification of Radiographs of Pneumoconiosis](#)
- Must complete section 3 of this form.
- Must attach a separate statement if space on form is insufficient.
- Must **not** complete section 4 if not the NMA.
- Must, where appropriate, forward the completed retirement examination form (with all sections intact) to the NMA (if not the NMA).

Nominated medical adviser

- Must review sections 1, 2 and 3 of this form.
- Must submit a copy of the digital chest x-ray image file (DICOM), x-ray report, International Labour Organization (ILO) classification form and two-reader process consent form to the Department's Health Surveillance Unit (HSU) prior to completing section 4. (HSU will arrange a further ILO classification (i.e. second reading) by the University of Illinois and then forward results to the NMA).
- Must complete section 4 following the second reading.
- Must arrange appropriate additional testing if the worker has abnormal respiratory function or chest x-ray examination results.
- Must assess whether the examination provides adequate information to complete section 4.
- Must ensure an appropriate follow up test and review is arranged if the coal mine worker has an abnormal respiratory function or chest x-ray examination result.
- Must provide an explanation of section 4 to the worker and, where practical, secure the signature of the worker on the report.
- Must provide a copy of section 4 to (a) the worker at the address shown on page 2 of this form; and (b) the employer.
- Must forward a copy of the completed retirement examination form (with all sections intact), the original x-ray image (if taken) and the spirometry report (including the spirometer graphs) to the HSU.
- Must keep the data on which the examination was based and a copy of the approved form completed for the examination.

Privacy statement

The Department of Natural Resources and Mines (the Department) is collecting the information on this form for the purpose of identifying and monitoring medical conditions or impacts on health resulting from exposure to chemical and physical agents in the coal mining industry as authorised under Chapter 2, Part 6, Division 2 of the *Coal Mining Safety and Health Regulation 2001* (the Regulation). Information collected in this form is routinely provided to the nominated medical adviser for the purpose of facilitating/undertaking a retirement examination of the coal mine worker and to the University of Illinois at Chicago, USA for the purpose of a further ILO classification (by completing this form, you agree to this transfer). The nominated medical adviser may provide all or some of the information to an examining medical officer for the purpose of undertaking all or part of a retirement examination. The nominated medical adviser will disclose the information in section 4 of this form (the retirement examination report) to the coal mine worker's employer. The Department may disclose information included in this form for research purposes only if the identity of the coal mine worker is protected. The Department will not disclose the coal mine worker's personal information to any other parties unless authorised or required by law.


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Section 1 – Employer to complete

1.1 Employment details

a) Employer

b) Address

c) Telephone

d) Mine (e.g. Southern Colliery)

e) Name of employer's nominated medical adviser (NMA)

f) Coal mine worker's current/former position

g) Coal mine worker's current/former generic similar exposure group (SEG)¹

h) Date of coal mine worker's last respiratory function examination² (if known)

i) Date of coal mine worker's last chest x-ray examination² (if known)

1.2 Reasons for retirement examination

a) Coal mine worker has asked the employer for a retirement examination

b) Coal mine worker has worked as a coal mine worker for more than three years

c) Coal mine worker has not had a respiratory function examination and a chest X-ray examination and a comparative assessment of respiratory function that complies with section 46A during the three year period before retiring

¹ The generic SEG is sourced from the list provided in the Mines Inspectorate [similar exposure group factsheet](#).
² The dates for these examinations may be obtained by contacting the HSU via email to HSU@dnrm.qld.gov.au

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Department of Natural Resources and Mines



Section 2 – Coal mine worker to complete

2.1 Coal mine worker's details

a) Family name

Given name(s)

b) Date of birth

c) Gender Male Female

d) Address

e) Telephone

f) Email

2.2 Work history

Year		Employer	Mine	Surface or underground	Position	Country/State
From	To					

Coal miner worker's declaration (to be witnessed by examining medical officer)
 I certify to the best of my knowledge that the above information supplied by me is true and correct.

Signature Date / /

Witness Date / /



Department of Natural Resources and Mines

Section 3 – Examining medical officer to complete

3.1 ID Check Respiratory function examination

	Type
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3.2 Respiratory function examination

3.2.1 Standardised respiratory symptoms questionnaire

The below questionnaire must be administered in accordance with the [instructions](#) approved by the British Medical Research Council’s Committee on Environment and Occupational Health. The actual wording of each question must be used. Tick ‘Yes’ or ‘No’, or put other codes as indicated in boxes. When in doubt record as ‘No’.

Preamble

I am going to ask you some questions, mainly about your chest. I’d like you to answer ‘Yes’ or ‘No’ whenever possible.

Cough

1. Do you usually cough first thing in the morning in the winter? Yes No

2. Do you usually cough during the day – or at night – in the winter? Yes No

If ‘Yes’ to 1 or 2

3. Do you cough like this on most days for as much as three months each year? Yes No

Phlegm

4. Do you usually bring up any phlegm from your chest first thing in the morning in winter? Yes No

5. Do you usually bring up any phlegm from your chest during the day – or night – in winter? Yes No

If ‘Yes’ to 4 or 5

6. Do you bring up phlegm like this on most days for as much as three months each year? Yes No

Periods of cough and phlegm

7a. In the past three years have you had a period of (increased) cough and phlegm lasting for three weeks or more? Yes No

If ‘Yes’

7b. Have you had more than one such period? Yes No

Breathlessness

If the subject is disabled from walking by any condition other than heart or lung disease, omit question 9 and enter ‘Yes’ here. Yes

8a. Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill? Yes No

If ‘Yes’


8b. Do you get short of breath walking with other people of your own age on level ground? Yes No

If ‘Yes’

8c. Do you have to stop for breathe when walking at your own pace on level ground? Yes No

Wheezing

9. Have you had attacks of wheezing or whistling in your chest at any time in the last 12 months? Yes No

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<p>10a. Have you ever had attacks of shortness of breath with wheezing? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'Yes'</i></p> <p>10b. Is/was your breathing absolutely normal between attacks? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>11. Have you at any time in the last 12 months been woken at night by an attack of shortness of breath? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>Chest illnesses</i></p> <p>12a. During the past three years have you had any chest illness which has kept you from your usual activities for as much as a week? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'Yes'</i></p> <p>12b. Did you bring up more phlegm than usual in any of these illnesses? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'Yes'</i></p> <p>12c. Have you had more than one illness like this in the past three years? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>Past illnesses</i></p> <p>13. Have you ever had, or been told that you have had:</p> <ul style="list-style-type: none"> a) An injury affecting your chest? <input type="checkbox"/> Yes <input type="checkbox"/> No b) Heart trouble? <input type="checkbox"/> Yes <input type="checkbox"/> No c) Bronchitis? <input type="checkbox"/> Yes <input type="checkbox"/> No d) Pneumonia? <input type="checkbox"/> Yes <input type="checkbox"/> No e) Pleurisy? <input type="checkbox"/> Yes <input type="checkbox"/> No f) Pulmonary tuberculosis? <input type="checkbox"/> Yes <input type="checkbox"/> No g) Bronchial asthma? <input type="checkbox"/> Yes <input type="checkbox"/> No h) Other chest trouble? <input type="checkbox"/> Yes <input type="checkbox"/> No i) Hay fever? <input type="checkbox"/> Yes <input type="checkbox"/> No <p><i>Tobacco smoking</i></p> <p>14a. Do you smoke? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'No'</i></p> <p>14b. Have you ever smoked as much as one cigarette a day (or one cigar a week or 28 grams of tobacco a month) for as long as a year? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'No' to both parts of question 14, omit remaining questions on smoking.</i></p> <p>15a. Do (did) you inhale the smoke? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'Yes'</i></p> <p>15b. Would you say you inhaled the smoke slightly (= 1), moderately (= 2), or deeply (= 3)? <input style="width: 100px; height: 15px;" type="text"/></p> <p>16. How old were you when you started smoking regularly? <input style="width: 100px; height: 15px;" type="text"/></p> <p>17a. Do (did) you smoke manufactured cigarettes? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If 'Yes'</i></p> <p>17b. How many do (did) you usually smoke per day on weekdays? <input style="width: 100px; height: 15px;" type="text"/></p> <p>17c. How many per day at weekends? <input style="width: 100px; height: 15px;" type="text"/></p> <p>17d. Do (did) you usually smoke plain (= 1) or filter tip (= 2) cigarettes? <input style="width: 100px; height: 15px;" type="text"/></p>	
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17e. What brands do (did) you usually smoke?

18a. Do (did) you smoke hand-rolled cigarettes?

Yes No

If 'Yes'

18b. How much tobacco do (did) you usually smoke per week in this way (in grams)?

18c. Do (did) you put filters in these cigarettes?

Yes No

19a. Do (did) you smoke a pipe?

Yes No

If 'Yes'

19b. How much pipe tobacco do (did) you usually smoke per day (in grams)?

20a. Do (did) you smoke small cigars?

Yes No

If 'Yes'

20b. How many of these do (did) you usually smoke per day?

21a. Do (did) you smoke cigars?

Yes No

If 'Yes'

21b. How many of these do (did) you usually smoke per week?

For present smokers

22a. Have you been cutting down your smoking over the past year?

Yes No

For ex-smokers

22b. When did you give up smoking altogether?

Examining medical officer's comments _____

3.2.2 Examination of chest

Auscultation

Normal Abnormal

Examining medical officer's comments _____



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3.2.3 Spirometry

Spirometry must be performed by a qualified and competent person to the standard outlined in [Queensland Health: Spirometry \(Adult\) Guideline](#). Submit a copy of the spirometry report and spiograph with this health assessment.

Date of spirometry examination

Spirometry results	Observed		Predicted		Observed/Predicted (%)	
	(a)	(b)	(d)	(e)	(g)	(h)
FEV ₁ (litres)	(a)	(b)	(d)	(e)	(g)	(h)
FVC (litres)	(b)	(c)	(e)	(f)	(h)	(i)
FEV ₁ / FVC (%)	(c)	(d)	(f)	(g)		

- (i) Is FEV₁ / FVC < 70%? Yes No
 (j) Overall spirometry result Normal Abnormal

Examining medical officer's comments _____

3.2.4 Comparative assessment


- a) Was a comparative assessment of one or more previous examinations conducted? (If 'No' explain reason in comments section) Yes No
 b) Results of respiratory function examination Normal Abnormal

Examining medical officer's comments _____

NOTE: The nominated medical adviser is to arrange additional testing for abnormal respiratory function examination results

- c) Was person referred for laboratory lung function test? (attach test report) Yes No
 d) If 'Yes', what was the outcome of the laboratory lung function test Normal Abnormal
 e) Overall respiratory function result Normal Abnormal

Examining medical officer's comments _____


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3.3 Chest x-ray examination

Examining medical officer must ensure the x-ray request form clearly states the subject is a coal mine worker and the image is required to be examined by a radiologist listed on the [RANZCR Register](#) in accordance with the [Guidelines for the Use of the ILO International Classification of Radiographs of Pneumoconiosis](#).

3.3.1 Chest x-ray details

a) Was a chest x-ray carried out?
(If 'Yes' if attach the x-ray report, if 'No' explain reason in comments below) Yes No

b) Date of chest x-ray examination

c) ILO classification form (for first reading) completed and attached?
(If 'No' explain reason in comments below) Yes No

Examining medical officer's comments _____

NOTE: The nominated medical adviser is to arrange additional testing for abnormal chest x-ray examination results.

d) Was person referred for a high resolution CT scan?
(If 'Yes', attach HRCT scan report) Yes No

e) Was person referred to specialist physician? (If 'Yes', attach specialist's report) Yes No

f) Was a prescribe disease detected? (If 'Yes', include finding in section 4) Yes No

g) Has the department's occupational physician been notified? Yes No

Examining medical officer's comments _____

Examining medical officer's name and address Please print or stamp	Signature Date / /
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Section 4 – Nominated medical adviser to complete

Retirement examination report

4.1 Coal mine worker details

- a) Family name
- Given name(s)
- b) Date of birth
- c) Employer
- d) Mine (e.g. Southern Colliery)
- e) Coal mine worker's current/former position

4.2 Respiratory function and chest x-ray examinations summary

- a) Date of examination by examining medical officer
- b) Date of the coal mine worker's last respiratory function examination
- c) The coal mine worker has had a comparative assessment of their respiratory function Yes No
- d) Date of the coal mine worker's last chest x-ray examination
- Name of radiologist and practice
- Date of US based x-ray review (second reading)
- e) I have examined/reviewed the results of the coal mine worker whose name appears in section 4.1a (above), and that in my opinion this worker (tick all boxes that apply):
 - (i) displays indications of adverse health effects that may be attributed to exposure to a causative agent at the mine
 - (ii) has the following prescribed disease:
 - chronic obstructive pulmonary disease
 - silicosis
 - coal workers' pneumoconiosis
 - legionellosis
 - (iii) should seek further advice as to the treatment/management of their medical condition from their treating medical practitioner
- f) I have advised the coal mine worker to seek further advice as to the treatment/ management of their medical condition from their treating medical practitioner

4.3 Declaration

- g) As nominated medical adviser, I have explained the outcome of the health assessment to the coal mine worker Yes No
- h) As nominated medical adviser, I have provided a copy of this report to the coal mine worker Yes No
- i) The coal mine worker has given written consent for the nominated medical adviser to provide an explanation of this report to the employer with the coal mine worker present Yes No

Coal miner worker's declaration — I have been advised of the outcome of this retirement examination
(Practical constraints prevent this from being a compulsory item)

Coal mine worker's signature Date / /

NMA's name and address

Practice stamp NMA's Signature Date / /

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