

Commissioner for Mine Safety and Health

Queensland Mines Inspectorate
Annual Performance Report 2015–16



Photography

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September 2016

The Honourable Anthony Lynham MP
Minister for State Development and
Minister for Natural Resources and Mines
61 Mary Street
Brisbane Qld 4000

Dear Minister

In accordance with section 73E(1) of the *Coal Mining Safety and Health Act 1999* I am pleased to submit to you the Commissioner for Mine Safety and Health's annual performance report for the year ending 30 June 2016.

Yours sincerely

A handwritten signature in black ink, appearing to read 'K du Preez', with a long horizontal flourish extending to the right.

Kate du Preez
Commissioner for Mine Safety and Health

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Abbreviations and definitions

Abbreviations

AWU	Australian Workers' Union
AMWU	Australian Manufacturing Workers Union
CFMEU	Construction, Forestry, Mining and Energy Union
CMSHAC	Coal Mining Safety and Health Advisory Committee
CWP	Coal workers' pneumoconiosis
DNRM	Department of Natural Resources and Mines
ERZ	Explosion risk zone
ETU	Electrical Trades Union
HIAC	Health Improvement and Awareness Committee
HPI	high potential incident
IQA	Institute of Quarrying Australia
MSHAC	Mining Safety and Health Advisory Committee
QMI	Queensland Mines Inspectorate
QRC	Queensland Resources Council
RIS	Regulatory Impact Statement
Simtars	Safety in Mines Testing and Research Station
SEG	Similar exposure group
SSE	Site Senior Executive
SSHR	Site safety health representative
SWIIG	Serious Workplace Incident Interagency Group

Definitions

Coal mine	Mine subject to the <i>Coal Mining Safety and Health Act 1999</i> and associated regulation.
Serious accident	Serious accident at a mine is an accident at a mine that causes: <ol style="list-style-type: none"> a. the death of a person; or b. a person to be admitted to a hospital as an inpatient for treatment for the injury
High potential incident	A high potential incident at a mine is an event, or a series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person.
Metalliferous mine	Mine subject to the <i>Mining and Quarrying Safety and Health Act 1999</i> and associated regulation.
Quarry	Excavation of hard rock for use in construction (operations covered by the <i>Mining and Quarrying Safety and Health Act 1999</i> and associated regulation).
Queensland Mines Inspectorate	A regulatory unit within Mine Safety and Health, Department of Natural Resources and Mines.

Background

The office of the Commissioner for Mine Safety and Health was established under the *Coal Mining Safety and Health Act 1999* and the relevant provisions commenced under this Act and the *Mining and Quarrying Safety and Health Act 1999* on 1 July 2009.

The Commissioner for Mine Safety and Health's functions are to:

- advise the Minister for Natural Resources and Mines on mine safety and health matters generally
- fulfil the roles of chairperson of the Coal Mining Safety and Health Advisory Committee (CMShAC) under the *Coal Mining Safety and Health Act 1999* and chairperson of the Mining Safety and Health Advisory Committee (MSHAC) under the *Mining and Quarrying Safety and Health Act 1999*
- monitor and report to the Minister for Natural Resources and Mines and to Parliament on the administration of provisions about safety and health under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*
- perform the functions given to the Commissioner under the provisions of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

In addition, the Commissioner is required under section 73E(1) of the *Coal Mining Safety and Health Act 1999*, to provide a report to the Minister on the performance of the department in regulating mine safety. The Queensland Mining Inspectorate (QMI) enforces the provisions of the *Coal Mining Safety and Health Act 1999*, the *Coal Mining Safety and Health Regulation 2001*, the *Mining and Quarrying Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Regulation 2001*, and advises, mentors and educates the mining industry about safety and health.

QMI is well resourced, competent and dedicated to improving safety and health outcomes in the mining and quarrying industries. Remuneration provides attraction, retention and qualification incentives approved by the Public Service Commission.

A stable operating environment with low staff turnover has been maintained within QMI. It has continued to successfully recruit staff to key roles over the past 12 months as vacancies have arisen commensurate with industry activities.

The activities of QMI for 2015–16 are summarised in the body of this report. In addition, information on the operations of the Board of Examiners, the advisory committees and more comprehensive mining industry safety and health information can be obtained in the following reports:

- Board of Examiners Annual Report
- Coal Mining Safety and Health Advisory Committee Annual Report
- Mining Safety and Health Advisory Committee Annual Report
- Queensland Mines and Quarries Safety Performance and Health Report
- Department of Natural Resources and Mines Annual Report

A copy of these reports can be obtained from www.publications.qld.gov.au. Search for the title of the report.



Queensland Mines Rescue Challenge, EK Healy Cup, 2015
Photo: Queensland Mines Rescue Service

From the Commissioner for Mine Safety and Health



In the 2015–16 data reporting period, I can report that the metalliferous mining and quarrying industry and the coal mining industry experienced a fatality-free year in 2015–16. This outcome is a testament to the good work done by government, unions, employees and workers in applying risk management processes—striking a balance between prescriptive

regulation and risk management. While this achievement is something to be celebrated, it has been tarnished by the sudden reappearance of Coal Workers' Pneumoconiosis (CWP) and a number of serious accidents and high potential incidents (HPI's).

As the newly appointed independent Commissioner for Mine Safety and Health, I intend to maintain and improve the good work already done by my predecessors. Through consultation and ensuring all stakeholders' recommendations are considered; through knowledge sharing, and emphasising continuous improvement across all mining operations, I intend to focus on:

- continuing to assess key actions and work currently underway to tackle the re-emergence of CWP
- re-examining management practises for respirable crystalline silica and diesel particulate exposure for coal, metalliferous and quarrying sites
- assessing potential mental health programs, including looking at stress associated with the economic downturn
- improving safety and health reporting by reconsidering traditional safety indicators as well as the processes involved in capturing, analysing and communicating safety and health data to better identify and understand safety and health trends, and lead indicators.

Lastly, the Queensland mining industry has a high safety standard due to a combination of rigorous safety processes, employee training, new technologies and improved communication. Safety and health is an ongoing process and when new hazards arise, new technology is introduced or other changes occur to the work environment, these changes need to be addressed to ensure that every mine worker goes home safe and healthy every day.

Acknowledgements

I would like to thank Mr Paul Harrison and Mr Mark Stone who were appointed to the role of Acting Commissioner for Mine Safety and Health during the 2015–16 Financial Year for fulfilling this role competently.

Fatality free year

In 2015–16 both the metalliferous mining and quarrying industry and the coal mining industry had a fatality free year. This is the first time this has occurred in Queensland since mining fatality records have been kept, going back to 1877.

The last fatality free year for the metalliferous mining and quarrying industry was 10 years ago in 2005–06 while for the coal mining industry it was in 2012–13. Since 1970 the coal mining industry has had 12 fatality free years while the metalliferous mining and quarrying industry have had 4. In that time there have been 124 fatalities in coal mines and 118 fatalities in metalliferous mines and quarries.

Coal Workers' Pneumoconiosis

Following confirmed cases of CWP in 2015–16, DNRM engaged experts from Monash University's Centre for Occupational and Environmental Health to conduct an independent and comprehensive review (Monash review) of the respiratory component of the Coal Mine Workers' Health Scheme (health scheme). The full report can be found on the DNRM website at www.dnrm.qld.gov.au

The purpose of the independent Monash review was to determine if the medical screening program within the health scheme was effective for the early detection of pneumoconiosis. The review was one action in the government's five point plan, announced in January 2016 to help identify and prevent the disease.

Published on 13 July 2016, the Monash review found structural failings within the health scheme and identified concerns regarding the quality, reading and reporting of chest X-rays and spirometry.

Early detection of coal mine dust lung disease and intervention is essential. A worker with the early stages of CWP may have no symptoms, but they should not continue to work in a dusty environment. Accordingly, early detection through an effective screening program is critical to protecting the workforce.

To support early detection, coal mine operators offered all underground coal mine workers new checks on existing chest X-rays, and miners could opt to have a new chest X-ray if their last one was taken more than two years ago.

Following the release of the Monash review, the department introduced immediate changes so that all new coal mine worker chest X-rays were assessed by both an Australian radiologist and a US-based NIOSH approved reader. This interim measure will remain in place until local radiologists have undertaken further training to the required international standard and a new medical screening program is established.

As noted in the Monash report, respiratory health screening is not a substitute for effective dust control. Coal mine workers' exposure to respirable dust must be kept to an acceptable level and below the regulated limit. In 2015–16, the department increased its focus on dust management to ensure coal mine operators maintain compliance with regulated limits to protect the respiratory health of workers.

At the request of the Minister, the CMSHAC, with strong support from industry and the QMI, commenced work on CWP related amendments to the Coal Mining Safety and Health Regulation 2001, as well as the development of recognised standards for monitoring and control of respirable dust in coal mines. The proposed amendments provide for the respiratory health assessment of retiring coal mine workers, the notification of CWP and other occupational diseases, and more transparent monitoring and reporting of personal respirable dust samples.

I have assessed the key actions taken, and the work currently underway, to tackle the re-emergence of CWP and am confident that these measures will succeed in stamping out dust related lung diseases. I am also impressed with the combined efforts of government agencies, the unions, industry and the medical profession all working together to address this issue as swiftly as possible.

Hazardous dust exposures

In the last report, QMI raised concern about the exposure of underground coal mine workers to dust generated by mining activities. Analysis of personal respirable dust exposure records for all underground coal mines for the period 2012–14 showed that workers in production areas (particularly development and longwall areas) may be exposed to hazardous levels of respirable dust. Long term dust exposure at these levels puts workers at a higher risk of developing disabling lung diseases such as CWP.

Figure 1 shows the mean respirable dust concentration measured for workers in the longwall production area. Relative to 2014, where several mines exposed operators to levels equal to or greater than the adjusted regulatory exposure limit, the performance trend in 2015–16 generally shows improvement.

The longwall production area represents the highest risk group with respect to respirable coal dust exposure and as such has been the primary focus of QMI's field based inspection activities and compliance regime.

QMI is currently processing all respirable dust data across all similar exposure groups (SEGs) over the period 2000 to present. This analysis will include all reported exposure data from development, underground maintenance, outbye and Explosion Risk Zone (ERZ) controllers, and is planned to be presented in a separate report.



*Simtars' virtual reality training centre
Photo: DNRM*

Figure 2 shows the mean respirable dust concentration measured for workers in the longwall production area over the sixteen year period 2000–15. The data show that for the period 2000–13, 10% of longwall SEGs were equal to or greater than the adjusted regulatory exposure limit. For the year 2014, 60% of longwall SEGs were equal to or greater than the adjusted regulatory exposure limit. This number fell to 18% of mines longwall SEGs equal to or greater than the adjusted regulatory limit, in the year 2015.

QMI continues to work closely with all coal mine sites to reduce worker exposure to respirable dust and ensure compliance.

In December 2015, QMI provided input to a request for information from Safe Work Australia (SWA), regarding SWA’s plan to review and revise occupational exposure standards for airborne contaminants, including coal, silica, and diesel particulate matter. QMI continues to engage with SWA to provide input to this work.

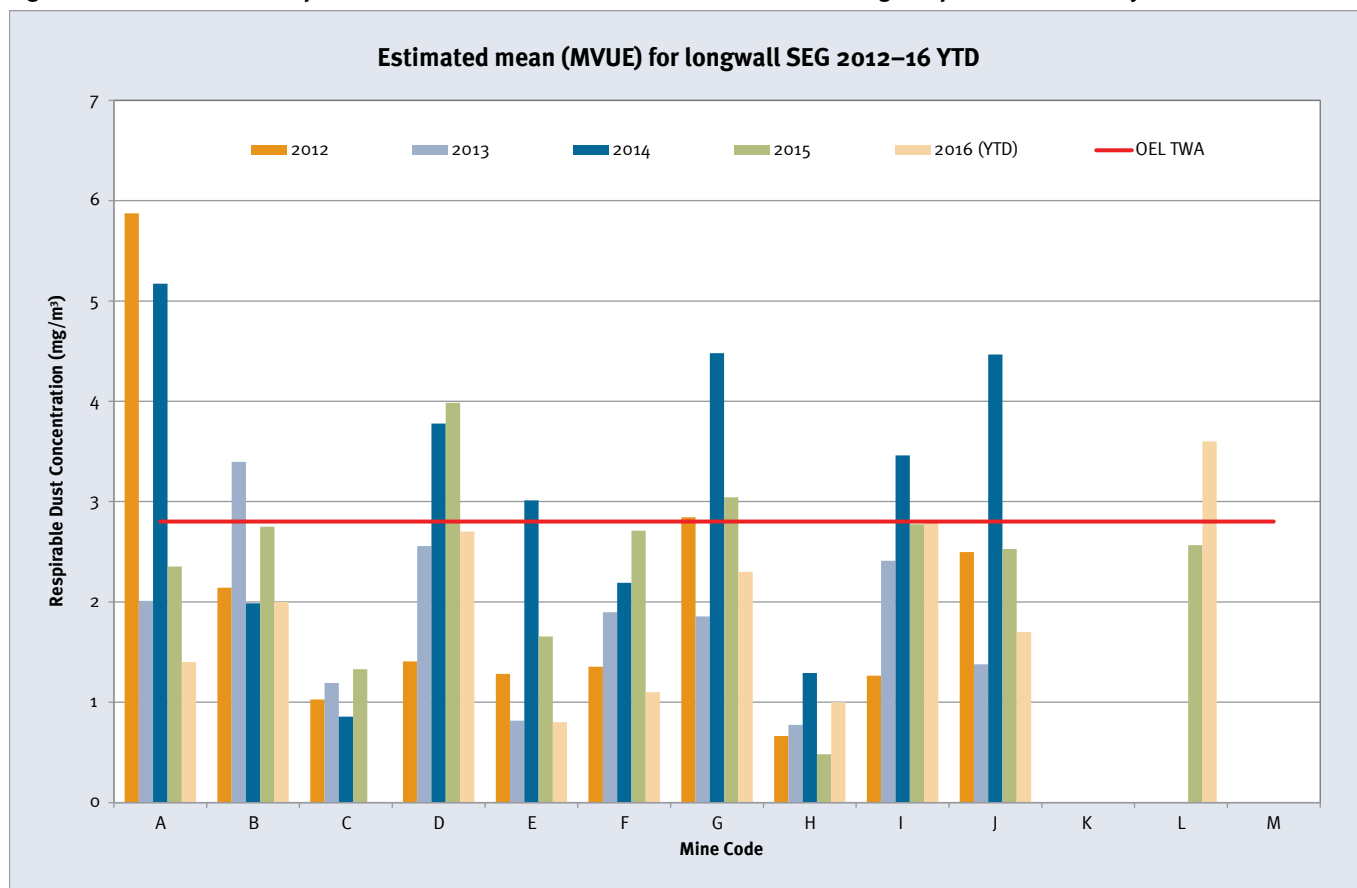
Big 9 Projects

In early 2015–16, QMI Central Region conducted an analysis of 12 months of HPI in open cut coal and underground coal mines. The analysis highlighted a number of HPI categories with common contributing factors or root causes.

The results of this analysis are the Big 9 sub-projects, which aim to reduce HPIs in the categories of:

1. Health strategy
2. Respirable dust
3. Management structures – open cut mines
4. Vehicle interaction
5. Equipment fire
6. Strata management – open cut mines
7. Surface cable incidents
8. ERZ co-ordination and control
9. Contractor management

Figure 1: Estimated mean respirable dust concentrations measured for workers in longwall production for the years 2012–16 YTD



Notes:

1. The respirable dust (coal dust) exposure limit under the Coal Mining Safety and Health Regulation 2001 is 3 mg/m³. Each coal mine adjusts this regulatory limit where persons work more than eight hours a day or more than 40 hours a week. The most common adjusted exposure limit used in Queensland coal mines is 2.8 mg/m³, as shown Occupational Exposure Limit Time-weighted Average (OEL TWA).
2. One underground coal mine did not have an operating longwall during 2012–16 (K).
3. One underground coal mine did not have an operating longwall during 2012–14 (L).
4. One underground coal mine ceased production during 2015 (C).
5. One underground coal mine had not started longwall production at the time of this report (M)

By October 2015, QMI had developed a strategy for management, delivery and evaluation of effectiveness of these areas.

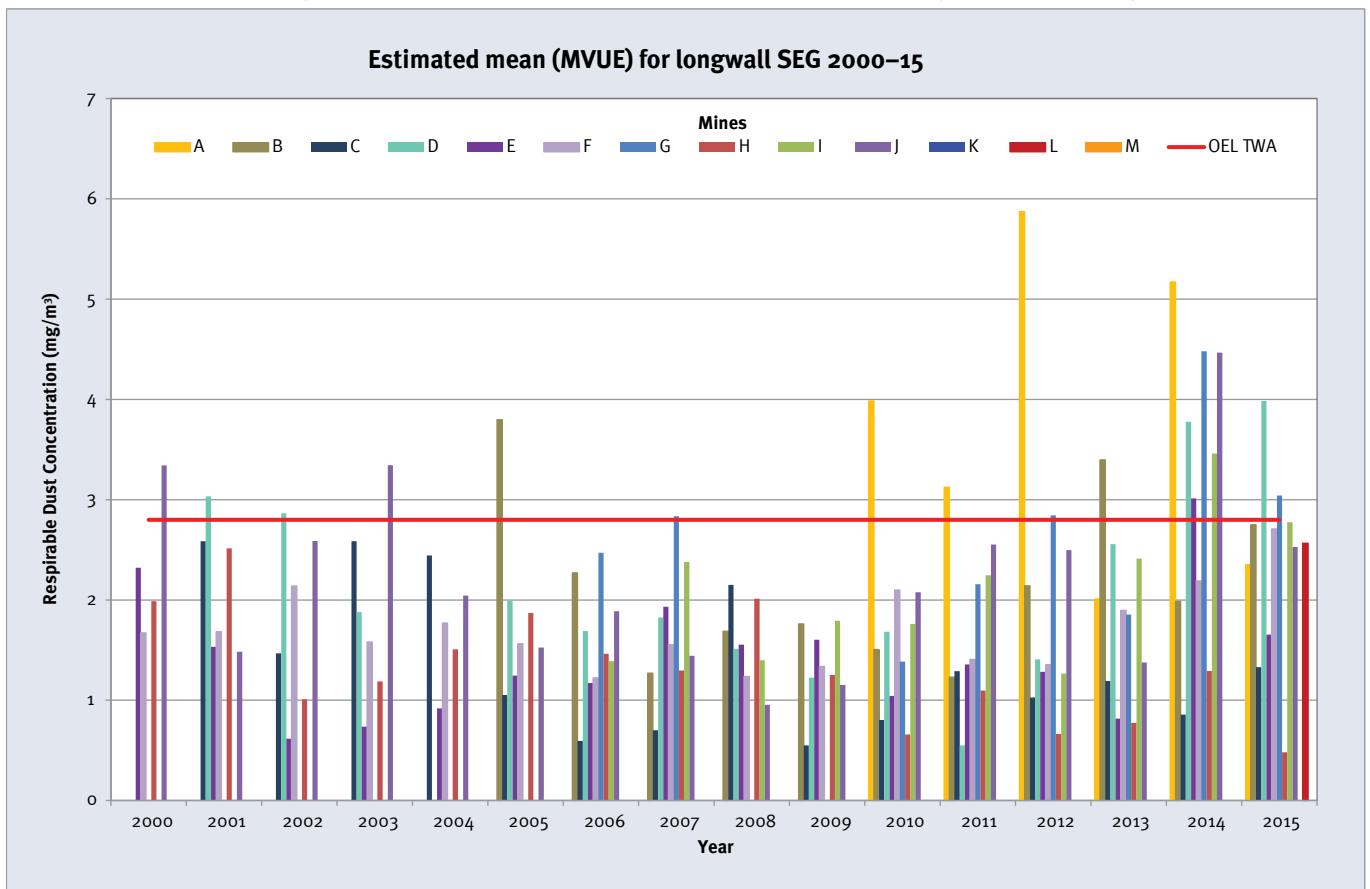
The project was launched by the Acting Chief Inspector of Coal at the Mining Leaders forum in November 2015. QMI has utilised site meetings throughout the year to communicate the Big 9.

Big 9 Forums

QMI conducted stakeholder forums throughout the year as part of this project. These included:

- Site Senior Executives (SSE) through the Open Cut Managers Forum and the Underground Managers Forum
- Open Cut Examiners Forum
- ERZ controllers Forum
- Mine Engineering Managers
- Electrical Engineering Managers
- Site Safety and Health Representative (SSHR) Forum

Figure 2: Estimated mean respirable dust concentrations measured for workers in longwall production for the years 2000–15



Notes:

1. The respirable dust (coal dust) exposure limit under the Coal Mining Safety and Health Regulation 2001 is 3 mg/m³. Each coal mine adjusts this regulatory limit where persons work more than eight hours a day or more than 40 hours a week. The most common adjusted exposure limit used in Queensland coal mines is 2.8 mg/m³.
2. Two underground coal mines did not have an operating longwall during 2012–14.
3. One coal underground coal mine does not operate a longwall.
4. One underground coal mine recently commenced its first longwall and at the time of writing this report, had insufficient data points for analysis.

The forums provided an opportunity: to communicate the problems with stakeholders and provide detailed analysis; to discuss incident reviews and learnings; to raise awareness of guidance or standards; and provide detailed inspection results. It was a good chance for QMI to emphasise its expectations around safety and health system development and implementation.

While it is challenging to measure the success of these projects, I am confident that QMI's strong focus on the project will be rewarded by an improvement in mine safety and health performance.

Mining Safety and Health Legislative Amendments

The department is implementing a streamlined, staged approach to progressing priority legislative amendments.

Key legislative amendments to improve Queensland's mining safety and health laws will be progressed as a priority in response to the re-emergence of CWP. Initial priority regulatory amendments include strengthening respirable dust management requirements for coal mines and prescribing notifiable occupational diseases. Other priorities will enable implementation of the recommendations arising from the independent Monash review to improve the coal mine workers' health scheme.

Other legislative proposals covered in the Queensland Mine Safety Framework Consultation Regulatory Impact Statement or subsequently proposed, are being prioritised based upon significant feedback to date from a large number of stakeholders including unions, industry and other government agencies.

Electrical hazards—Intrinsically Safe Power Circuit Investigation

In July 2014 a large fire occurred on a Feeder Breaker installation at an underground coal mine. The initial investigation identified the source of the fire as a damaged cable supplied from an intrinsically safe power supply. Intrinsically safe circuits are designed to limit energy levels in the event of a fault to below that able to ignite methane. Its ability to start a fire was therefore unexpected. In response to this incident, QMI issued *Safety Alert No. 315 Damaged cable results in feeder breaker fire* in April 2015.

Since then, QMI, with assistance from Simtars, has continued to investigate how intrinsically safe electrical equipment contributed to this incident. This investigation found that all intrinsically safe electrical equipment and componentry met the design requirements of Australian Standards and certificates of conformity. Further testing, however, did prove that, given

the right circumstances, a series resistance fault could produce enough energy to cause an ignition of coal or materials that are commonly found in an underground coal mine environment, such as grease.

QMI reviewed the Australian Standards for the design and use of electrical equipment in hazardous areas. It found that these do not currently provide comprehensive information/warnings about potential issues from surrounding external resistive type faults in intrinsically safe circuits generating enough heat to cause a fire. QMI has approached the appropriate Australian Standards committees in relation to concerns about this issue.

This issue was also raised at CSMHAC and an addition to Recognised Standard 01 *Underground electrical equipment and electrical installations* will be included that highlights the issue and provides advice in relation to risk management processes associated with intrinsically safe power circuits.

Stone dust application

The effective use of incombustible stone dust plays an important role in the prevention and suppression of coal dust explosions in underground coal mines. A Mines Inspector has been assigned key responsibilities in stone dust applications due to incidences of poor stone dust application in industry.

Accredited stone dust training

Simtars rolled out an accredited stone dusting training package to assist industry in achieving appropriate stone dust sampling and analysis. The training is still being undertaken within the Queensland mining industry. However, it is disappointing to report that several mines have not considered this to be in their training matrix.

Airoduster

QMI has been deeply involved in reviewing the implementation of the new Airoduster to industry. Inspectors have been reviewing reports and analysis of independent samples from the Airoduster to ensure it meets an acceptable level of risk for the control of the propagation of a coal dust explosion.

This has seen interest from the NSW Mines Inspectorate, where stone dusting is identified as high risk activity. NSW Inspectors accompanied by Queensland Inspectors, visited Anglo Coal's Moranbah North Coal Mine to find out more before its implementation in NSW. QMI provided information on the independent sampling conducted and observations on its application.

Research and development

QMI continues to conduct research and development on how to achieve adequate stonedust levels within the mining industry. This research focuses primarily on the manufacture of stonedust and its effects on the mediums of delivery into specific areas requiring application.

Review of delivery systems

One benefit of the collaboration between QMI Inspectors and industry is the significant improvements in how stonedust is delivered. Delivery system improvement has been implemented at Moranbah North and North Goonyella coal mines. This delivery system provides an ability to monitor the incombustible content at any time over the product cycle.

Emergency response

The annual Level 1—State Emergency Exercise, carried out at North Goonyella coal mine from 7–8 October 2015, provided an opportunity for coal mine workers, mine management, Queensland Mines Rescue Service (QMRS) and DNRM to assess industry’s preparedness for an underground emergency.

There were 20 assessors onsite in addition to representatives from Simtars, QMI, the Queensland and New South Wales mines rescue services, University of Queensland Minerals Industry Safety and Health Centre, a Construction, Forestry, Mining and Energy Union (CFMEU) industry safety and health representative, two personnel from DNRM Corporate Communications, and mine staff from Newlands, Broadmeadow and Grasstree mines.

The simulation occurred at the beginning of a shift and involved an outburst in a development heading that released gas and coal debris, injured the development personnel and disrupted the development auxiliary fan ventilation.

A methane gas plug travelled into the return roadway, where an Eimco (having been on cleaning duties the previous shift) acted as an ignition source. The resulting explosion damaged

ventilation overcasts and a stopping. This resulted in a short circuit of air and gases from the explosion, travelling to the longwall where coal mine workers (CMWs) had to wear self-contained self-rescuers (SCSRs) to effect an escape.

The assessors highlighted the strong leadership shown by the first response mines rescue trained coal mine workers to recover the injured and trapped and the excellent response by Peabody corporate communications to social media. There were however, some areas for improvement such as the donning and changeover of self-contained self-rescuers, information transfer, delays in mobilising QMRS and training.

Mines rescue

Simtars and the QMRS have a long-standing relationship providing emergency response to Queensland’s mining industry. In June 2015, Simtars and QMRS signed a memorandum of understanding whereby Simtars will provide services to cover QMRS obligations as a Registered Training Organisation (RTO)

As part of this ongoing relationship, Simtars has been actively involved in QMRS mines rescue competitions, deploying the Simtars mobile gas laboratory to participate in one of the scenario tests for the mines rescue teams.

The Simtars mine gas analysis laboratory was deployed to the Newlands North mine for the Queensland Memorial Cup competition and the E.K. Healy Cup at North Goonyella.



Mineworker applying stonedust
Photo: DNRM

The E.K. Healy cup is named after Mr E.K. Healy a former Under-Secretary of Mines in the Department of Mines, Queensland Government. The E.K. Healy Cup represents the pinnacle of mines rescue performance within Queensland, with the top four teams on the day going forward to represent Queensland at the National mines rescue competition.

Importance of tripartite role in mine safety and health in Queensland

The re-emergence of CWP means that the industry now faces significant additional challenge which government, unions, employers and workers are working together on measures to tackle. Tripartite collaboration is required to achieve the objectives of the legislation to protect the safety and health of persons at mines and persons who may be affected by mining operations; and ensures broad support can be garnered from the three sides.

Therefore the tripartite participants recommit to this through cooperation, consultation and the sharing of knowledge to ensure an effective safety and health system.



John Smith

In July 2016, QMI farewelled its longest-serving Inspector, John Smith. John, who was Senior Inspector of Mines (Mechanical), hung up his high-vis for the last time after a staggering 53 years within the coal mining industry (with 32 years of that within QMI).

Like many miners of his era, John came from a long ancestry of coal miners in the UK, joining the National Coal Board in 1963 and commencing training as a mechanical engineer.

“This is a choice I never regretted”, said John, presenting his thoughts about an ever-changing industry, at a Mechanical Engineers Forum in Capella recently.

John became part of the mechanisation of the coal industry in the UK, before moving to Australia to share his knowledge in 1978. After some time in the industry, he joined QMI in 1984.

When John joined the Inspectorate, it was small but dedicated. Then there were two explosions at Moura with unacceptable loss of life and this made everyone stop and think. John saw this as the catalyst to adopt the tripartite consultation model we see today—a demonstration of what can be achieved when we all get together.

I would like to congratulate John on a stellar career and wish him well for his retirement.



Mines rescue personnel participating in emergency responsiveness
Photo: DNRM

Commissioner for Mine Safety and Health's activities for 2015–16

During the year, the Commissioner for Mine Safety and Health:

- attended and presented at a broad range of mining industry conferences, meetings and seminars on mine safety and health issues currently facing the industry, including:
 - o Queensland Mining Industry Health and Safety Conference 2015, Townsville
 - o 14th Annual Quarrying Safety and Health Seminar, Brisbane
 - o Miners memorial day at Mt Morgan 19 September 2015
 - o Memorial service to commemorate 20 year anniversary of Moura No. 2 tragedy, Moura 20 September 2015
 - o 2015 Mines Inspectorate annual briefing to the mining industry, George Street Brisbane
 - o Sustainable Minerals Institute Research Focus Group
 - o CFMEU introduction meeting for new Commissioner
 - o Anglo American Coal – Update on Safety Management Practices.

The Commissioner chaired and participated in advisory meetings, including:

- seven CSMHAC meetings (Chief Inspector of Coal Mines chaired two in the Commissioner's absence)
- two MSHAC meetings

Looking ahead: the Queensland Mines Inspectorate's strategic priorities

Fatal 4 hazards

An analysis of 21 of the 22 fatalities in the metalliferous mining and quarrying industry that have occurred since 2001 (when the current mining legislation was introduced) has identified that one of the following four hazards have featured predominantly in each fatality:

- Falls (13 fatalities)
- Collisions (four fatalities)
- Uncontrolled pressure release (two fatalities)
- Entanglement (two fatalities)

At the Leaders' briefing in November 2015 these four hazards were designated by the Chief Inspector of Mines, Phil Goode, as the 'Fatal 4 hazards' which the QMI would be focusing on over the next four years. These hazards also predominate in the occurrence of HPI's and serious accidents. The aim of this campaign is to ensure, for each of the hazards, that the lessons learned from the related fatalities in terms of the risk management controls required to prevent recurrence are not forgotten by both current and future generations of mine workers.

QMI will develop hazard specific industry guidance material and structured inspection guides for use by mines inspectors as part of their routine inspection schedule. During the second half of 2015–16, QMI developed a structured inspection guide dealing with fall hazards, rolling it out in March 2016. This guide addresses the fall hazards from the perspective of the fall of people, fall of equipment, fall of material and rockfalls. The focus on fall hazards will continue through 2016–17 with development of documentation for collision hazards progressing in parallel for a focused campaign in 2017–18.

Big 9 in 2016–17

Remaining project elements of the Big 9 will continue in 2016–17, namely:

- Equipment Fire and Surface Cable Management are expected to be completed in the year ahead, although continued inspections will occur in line with the established project parameters.
- Evaluation of inspection results and further HPI analysis will determine improvements.

An example is shown below for collisions for open cut mines. Unfortunately March 2016 was a particularly bad month both in number and potential consequence of incidents. The Inspectorate released communication to sites on the major incidents in March.

Figure 3 outlines vehicle collisions in open cut mines in Central Region. Unfortunately September 2015 and March 2016 were particularly bad months both in number and potential consequence of incidents. QMI released safety advice to mine sites on the major incidents.

Figure 4 shows a positive trend in uncontrolled movement reduction. It is not expected that the number of uncontrolled movements is reduced to zero, due to the positive culture of reporting near misses. This emphasises the importance of seeing improved inspection results and a reduction in occurrence of incidents where only luck has prevented major harm.

Figure 3: Vehicle collisions by month for Central Region

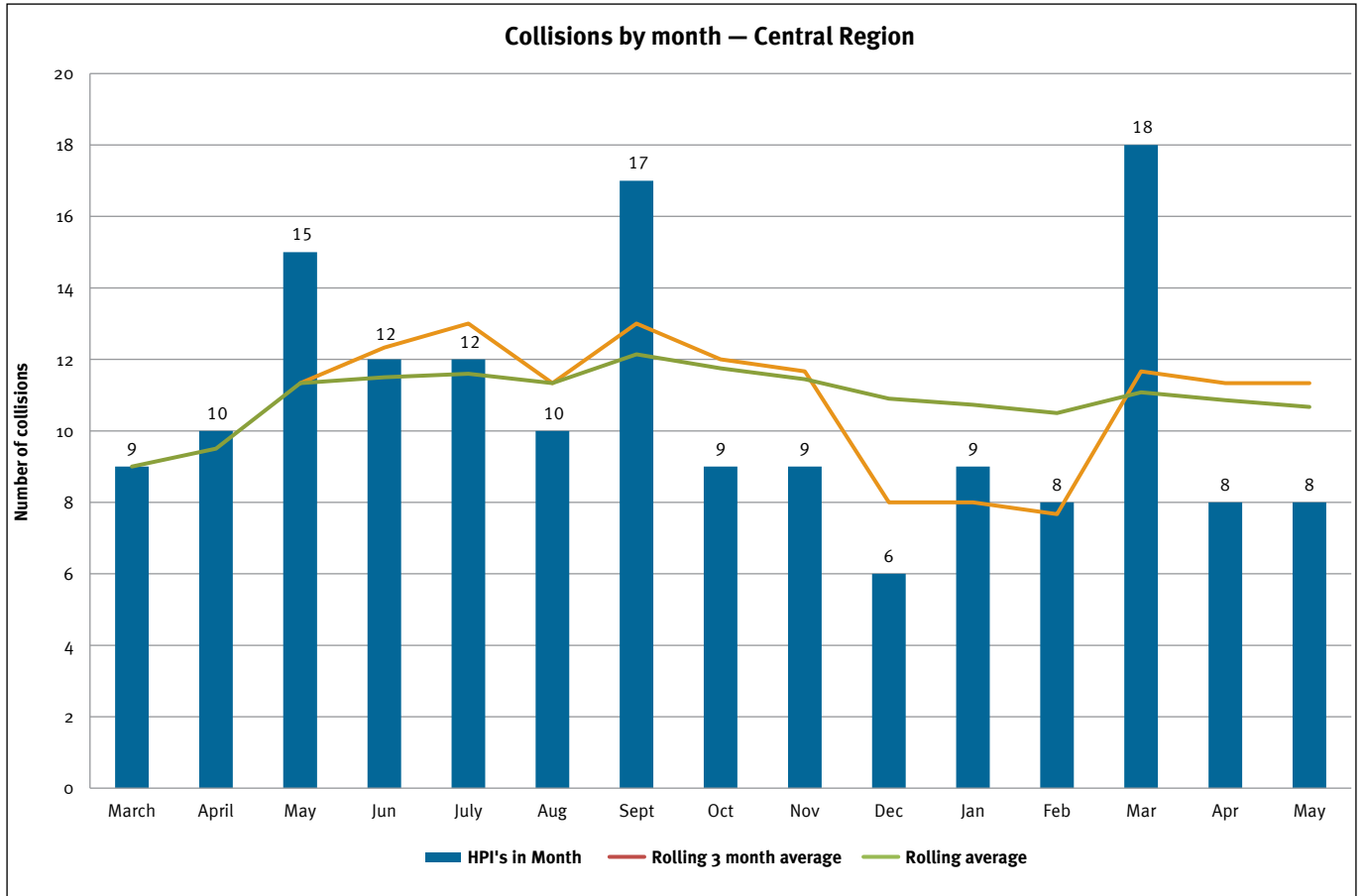
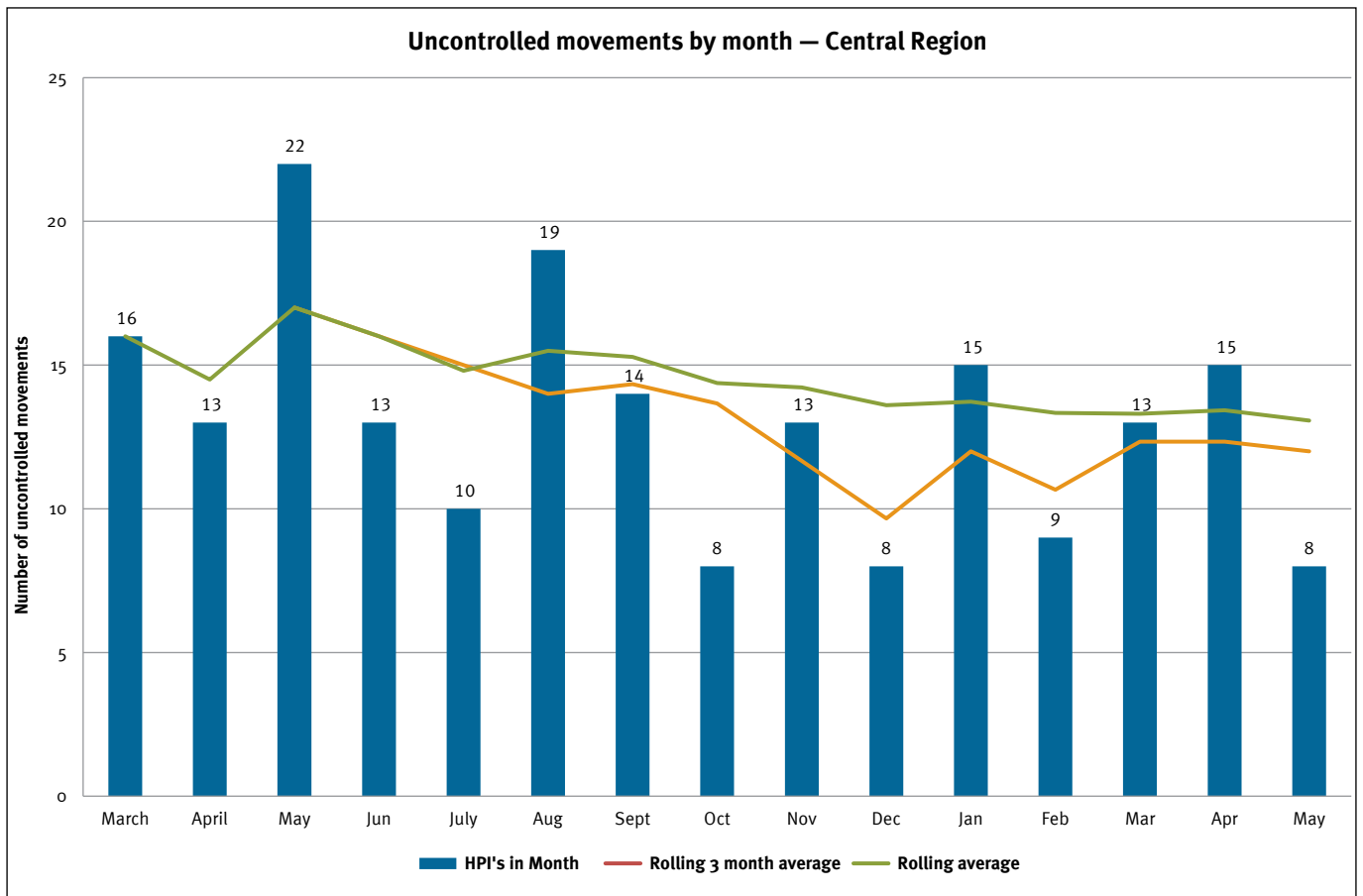


Figure 4: Uncontrolled vehicle movements by month for Central Region



Safe drilling and blasting at small mines and quarries

With more and more surface metalliferous mines and quarries outsourcing their drill and blast activities to contractors, QMI recognised the need to ensure that SSEs and supervisors are aware of the hazards and risk controls required for safe drilling and blasting activities at their sites. During 2014–15, QMI and the Queensland Explosives Inspectorate developed a one day drill and blast awareness training course to support SSEs and supervisors – delivering the training during the first half of 2015. During 2015–16 six of these workshops were held.

In April 2016, QMI and the Explosives Inspectorate with assistance from the Institute of Quarrying Australia (IQA) published the *Safe Drilling and Blasting for Small Mines* field book—as a reference tool for SSEs and supervisors, based on the one day course and industry workshop. The training course will continue to be delivered on an as needs basis in 2016–17.

Metalliferous Underground Mine Managers forum

QMI conducted a number of forums throughout the year to engage with all levels of management across operational mines. The forums provide a direct channel between QMI and mine sites, and provide the opportunity to outline what we see as the safety and health issues and to outline what expectations QMI have of operators.

The first ever Metalliferous Underground Mine Managers forum was held in March 2016, at Mt Isa, in what is intended to be at least an annual event. The forum was hosted by Glencore over two-days and brought together the appointed underground mine managers from the 11 underground metalliferous mines and others who hold the certificate of competency but are not appointed. It was an opportunity for the mine managers and mines inspectors to interact and share learnings from incidents and discuss safety and health issues of common interest and concern.

Managing the risk of operating on-highway trucks on metalliferous mines and quarries

QMI conducted a survey of mines and quarries within the Northern Region (Townsville district) to look at any safety issues relating to the safe operation of on-highway vehicles (OHV) at sites.

A number of key areas were identified that could lead to unacceptable levels of risk, including:

- Not having suitable information available to ensure the operation and maintenance of OHVs has been carried out correctly.

- OHV brake checks not being carried out correctly or at all.
- OHV operating on ramps and roadways outside of design specifications.

A result of this survey meant that SSEs at mines and quarries within this district were challenged during scheduled QMI inspections to demonstrate their effective management of OHV.

SSEs were expected to demonstrate that:

- Original Equipment Manufacture's (OEM) manuals and information is available onsite for all mobile equipment including OHVs.
- Records of services and maintenance available on site to OEM requirements.
- All ramps and gradients surveyed or measured to ensure mobile equipment only operated on gradients within their specifications.
- No OHV on gradients above 15% and brake test facilities if gradients about 10%.

The program is continuing in the Northern Region and will be introduced in the Mt Isa area and Southern Region in 2016–17.

Level 1 Emergency Exercise in underground metalliferous mines

One of the matters discussed at the Metalliferous Underground Mine Managers forum was the current level of emergency response capability within each underground mine. A presentation by Martin Watkinson (Executive Mining Engineer) from Simtars on the Level 1 Emergency Exercise that is conducted annually within coal mines, prompted a decision by the forum attendees to adapt the process to underground metalliferous mines. Subsequently Glencore's George Fisher Mine volunteered to be the first underground metalliferous mine to hold such an exercise.

A planning committee has been formed comprising members of QMI, Simtars, Queensland Mines Rescue, George Fisher Mine and industry to organise the exercise which is planned to take place in the first quarter of 2016–17.

Managing respirable crystalline silica

In the coming year, QMI will have an increased focus on improved management practices of respirable crystalline silica (RCS) and other respirable dust at metalliferous mining and quarrying sites.

Guidance material on the management of dust and respirable silica in metalliferous mines and quarries will be developed and where appropriate will incorporate the relevant recommendations of the independent Monash review.

A structured inspection guide will be developed from the guidance material and will be used by QMI to assess the adequacy of existing controls at underground metalliferous mines, sandstone mines and quarries which have high silica content in the host rock.

QMI is currently reviewing the RCS elements of the Mining and Quarrying Safety and Health Regulation 2001 to consider amendments such as:

- including a schedule of reportable diseases, including silicosis
- classifying RCS as a hazard
- monitoring of airborne crystalline silica to be carried out as prescribed by applicable Australian Standards
- considering a management plan for crystalline silica.

Proposed guidance material regarding management of dust and respirable silica in metalliferous mines and quarries will also be developed.

Support of next of kin following a serious or fatal workplace accident

QMI will continue to implement the government's policy to provide support for surviving family members following a serious or fatal workplace incident. QMI, the Explosives Inspectorate and the Petroleum and Gas Inspectorate are members of the Serious Workplace Incident Interagency Group (SWIIG) which originated from the Families Forum held 2 June 2015.

During 2015–16, SWIIG worked on a whole-of-government approach to a number of initiatives identified at the forum, including development of an advisory document for next of kin; providing counselling services for those affected; and a single point liaison service for next of kin provided by the Coroner's office. In February 2015, the Inspectorates agreed to utilise the coronial liaison service, to improve consistency in communicating with next of kin and provide timely and ongoing progress information from the initial contact after a fatal accident through to the completion of the coronial process.

Mine plans

Under the safety and health legislation for both coal mining and mining and quarrying, SSEs must submit plans of mine workings to the Chief Inspectors at specified times.

Throughout 2015–16, QMI worked with representatives of the Queensland Digital Exploration Reports system (QDEX) to develop electronic storage and retrieval functionality of mine plans. User acceptance testing for the system commenced in June 2016, using plans submitted by selected underground metalliferous mines.

Legislative amendments

Legislative amendments related to respirable coal dust and coal worker health assessment remain a prime focus for QMI and the tripartite consultation model (including CSMHAC). This model will continue to be used to develop legislative amendments supported by stakeholders.

Respirable coal dust exposure

Monitoring of Queensland coal mines' management of respirable dust exposure and data will continue. Compliance action will be conducted where required to ensure a sustainable level of control and limit the exposure of workers to an acceptable level of risk.

Management structures

A guideline on how to integrate safety and health competencies into mine management has been developed as part of the commitment to assist industry to raise competency standards. I anticipate that this document will be considered for development as a recognised standard by CSMHAC.

Emergency response and post-incident management

The ability of Queensland mines to respond effectively during and after an emergency continues to be an important focus for the QMI. To help industry improve the ability to plan for and respond to mine emergencies, a recognised standard on emergency response for underground and open cut mines is being developed.

The annual Level 1—State Emergency Exercise, provides a realistic simulation of a mine emergency and identifies improvement opportunities for responders. The implementation of the improvements identified during the exercise across the industry is vital to building a robust emergency response system and these will be audited by the QMI during 2016–17.

Recognised Standards

Recognised standards for tyres and rims, place change, and management structures are currently being drafted and will be finalised by CSMHAC for recommendation as recognised standards. There are a number of other standards such as polymerics (adhesive chemicals used in strata support) and emergency response which will be developed during the year.

Diesel particulate management

QMI held two meetings this year in relation to diesel particulate matter (DPM). The committee, comprised of mainly industry engineers and ventilation officers, met on 30 September 2015 and 18 March 2016 to focus on:

1. maintaining atmospheric testing schedules to ensure a low level of DPM in the vicinity of working coal miners, with particular emphasis on longwall change out
2. improving exhaust filter performance and extending the life of the filter medium by trialling new filter designs
3. encouraging and being involved in developing new, cleaner engine packages to the certification stage
4. working with particulate measuring instrument company in instrument improvement and development.

Over the next 12 months the focus will be on more involvement of mine ventilation officers and mining engineers in the control of DPM. From a mechanical perspective, the current engines are as 'clean' as possible, producing a minimum amount of particulates and capturing as much as the exhaust filter is able.

It is the role of mine mechanical personnel to maintain this low level of particulate production for current engines, while searching for cleaner engines or cleaner technologies.

Mines Inspectorate and staff activities for 2015–16

The significant activities for the Mines Inspectorate and its inspectors during 2014–15 are listed below.

Conducting audits, inspections and compliance meetings

- Conducted 32 audits and 1597 inspections of mine sites throughout Queensland totalling 1731 inspectorate days.
- Conducted 101 investigations of mine accidents and incidents throughout Queensland totalling 1276 inspectorate days.
- Issued 332 directives and 994 substandard condition or practice notices to mines.
- Conducted four level 4 and 29 level 3 compliance meetings with the mining industry.
- Published 10 safety alerts, three safety bulletins and two guidance notes.

Participation in committees and workshops

- Member of and participated in the HIAC.
- Member of Mental health working party (HIAC) in consultation with WorkCover Queensland, Institute of Quarrying Australian (IQA) and University of Newcastle regarding promotion of mental health initiatives in mining and resources.
- Member and secretary of CSMHAC.
- Member and secretary of MSHAC.
- Member of and participated in the Board of Examiners (BOE).
- Member of the Government Radiation Safety Users group.
- Member of committee for development of *Recognised standard for polymeric chemicals*.
- Member of committee for development of the *Shaft construction guidance note*.

Audits, inspections and compliance meetings



- Member of committee for the review of the *Accident reporting guidance note*.
- Member of committee for development of the *Site Safety and Health Representative guidance note*.
- Member of committee for development and implementation of *Guidance note of effective management structures*.
- Member of the organising committee for the 14th Annual Quarrying Safety and Health Seminar held at the Brisbane Convention and Exhibition Centre (refer Appendix 1 for details).
- Member and secretary of the Queensland Mining Industry Health and Safety Conference organising committee.
- Member of the Simtars Certification Advisory Committee.
- Member of the Mining Electrical Safety Association.
- Member Ex Technical Association (Australia and New Zealand).
- Honorary member of the South West Resources Industry Skills Association Inc. (RISA).

- Hosted and member of the organising committee for Small Mines and Quarry seminars in North Queensland (various locations and dates – refer to Appendix 1).
- Hosted Mechanical Engineering Managers forum in Capella 29 June 2016.
- Hosted the 2015 Mines Inspectorate Annual Briefing to Industry, George Street, Brisbane.
- Hosted Small Mines Safety and Health Management Systems seminar.
- Department/mining regulator representative at University of Newcastle Centre for Resources Health and Safety and Minerals Council of Australia Collaborative Researchers Forum 2015, November 2015.
- Participated in the Diesel Particulate Matter Steering Committee.
- Participated in the review and further development of a *Diesel Exhaust Guideline*.
- Participated in Electrical Engineering Managers group meetings on lightning in mines.
- Participated in a national working group to develop national code of practice for winders.
- Participated and Chaired the committee for development of the five year strategic plan on Occupational Health for the Mines Inspectorate.
- Chair of and attendance at the Queensland Mine Electrical Safety Association Inc. (MESA) committee meeting 20–22 June 2016.
- Attended small mines meetings in Northern Territory 17 December 2015.
- Attended meetings for development of the recognised standard for place change mining operations.
- Attended Functional Safety workshop December 2015.
- Convened and chaired the State Emergency Exercise Management Committee comprising QMI, Simtars, CFMEU, Minerals Industry Safety and Health Centre (MISHC), and industry. QMI involvement included participation in the planning and execution of the Level 1 Mine Emergency Exercise at North Goonyella coal mine on 7 October 2015.
- Convened, facilitated and chaired biannual Surface Mine Electrical Engineering Managers meetings.
- Conducted a Face Meshing Workshop with mine managers
- Gemfields Drill and Blast workshop Northern Territory 23 September 2015.
- Regulators representative on the Cement Concrete and Aggregates Australia (CCAA) occupational health and safety subcommittee.
- Southern Region staff attended the Northern Region regional meetings.

- Southern Region staff attended the Central Region regional meetings.
 - Provide support to New Zealand Board of Examiners
- Appendix 1 and 2 provides a full list of QMI participation.

Conference participation and professional development forums

- Attended the 14th Annual Quarrying Safety and Health Seminar held at Brisbane Convention and Exhibition Centre, June 2015.
- Attended IWA/CCAA Environmental Seminar.
- Attended 2015 Annual Resource Industry Skills Association Conference.
- Attended and presented at the Australian Manufacturing Workers' Union coal shop stewards conference at Rockhampton.
- Attended the NSW Mine Inspectorate's mechanical engineering safety seminar.
- Attended Mine Managers Association continued professional development workshops.
- Attended mine electrical safety conference.
- Attended Australian Institute of Occupational Hygienists' conference December 2015.
- Attended NSW Dust standing committee – March 2016.
- Attended site safety and health representatives' conference.
- Attended Task Group #4 meeting February 2016.
- Attended and presented a paper at the annual electrical safety conference in Brisbane.
- Attended and presented at the North Region Safety and Health Seminars in Townsville and Cairns.
- Attended the Resources Industry Skills Association (RISA) Conference.
- Attended Wheel and Rim Training Rockhampton.
- Attended Bridgestone Tyre and Rim workshop Mackay.
- Co-hosted Queensland Mining Industry Health and Safety Conference with Queensland Resources Council (QRC) and mining unions, 16–18 August 2015.
- Contributed to development of Gemfields handbook, IQA
- Facilitated Explosion Risk Zone (ERZ) forums.
- Two Inspectors obtained Diploma in Extractive Industry – Diploma of Surface Operations Management RII50113.
- Inspectors also attended professional and/or vocational training sessions to update skills, knowledge and understanding of current technical, regulatory and administrative practices.

Appendix 1 provides a full list of presentations.

Contribution to reviews and development of Australian Standards

Committees

QMI chaired and/or participated in these standards committees:

- Standards Australia Committee EL 023 – Electrical equipment in mines and quarries
- Standards Australia Committee ET 006-1 – Australian IEC Ex conformity assessment
- Standards Australia Committee MS 067 – Underground Mining Ex Mark
- Standards Australia Committee ME 018 – Underground mining mechanical
- Standards Australia Committee ME 018-02-01 – Control systems and brakes
- Standards Australia Committee ME 018-03 – Guides and rubbing ropes
- Standards Australia Committee ME 018-03-01 – Conveyances for inclined shafts
- Standards Australia Committee ME 018-04 – Diesel engine systems
- Standards Australia Committee ME 035 – Hydraulic & Pneumatic Systems
- Standards Australia Committee ME 063 – Surface mining mechanical

Review and development of standards

QMI participated in the review and/or development of these standards:

- Standards Australia – Australian Standard Electrical protection handbook
- Standards Australia – Australian Standard Cable management handbook
- AS/NZS 3584.1 – Diesel engine systems for underground coal mines – Fire protected – Heavy duty
- AS/NZS 3584.2 – Diesel engine systems for underground coal mines – Explosion protected standards
- AS/NZS 3584.3 – Diesel engine systems for underground coal mines – Explosion protected – Maintenance
- AS/NZS 3785.8 – Underground mining – Shaft equipment – Personnel conveyances in other than vertical shafts
- AS/NZS 4730.3 – Mechanical brakes
- AS/NZS 4730.5 – Winder control systems
- Development of Facility Description Guidance Note
- Development of Shaft Sinking Guidance Note
- Development of High Voltage Truck Guidance Note
- Development of Recognised Standard for dust management
- Development of Recognised Standard for dust monitoring
- Development of Guidance Note for electric propulsion systems used in self powered earthmoving machinery

- Development of ‘Falls’ Fatal Structured Inspection Guide
- Reviewed the Small Mines Safety and Health Management System template
- Developed and published a small mines Drill and Blast Fieldbook with Institute of Quarrying Australia

Working together with inspectors from other jurisdictions

- Conducted electrical inspections of New Zealand underground coal mines
- Queensland electrical inspectors meetings which included attendance by NSW mining electrical inspectors.
- Attended the NSW Mechanical Inspector’s meeting.
- Consulted with NSW Mines Inspectorate and interested parties on polymeric chemicals.
- Worked with the NSW Mines Inspectorate in relation to the mechanical engineering safety seminar at Homebush, Sydney.
- Met with NSW electrical inspectors regarding the possible development of a handbook for high voltage electric vehicles.
- Participated in the Australian Governmental Occupational Hygienist representatives’ meetings.
- Member of Local Communities Emergency Management Committee
- Worked with and provided training to Coal India

Working together with other agencies and partners

- Provided engineering advice to Abandoned Mines Lands Program with regards to Mount Morgan.
- Presented to CFMEU at site safety and health representatives’ conference
- Facilitated electrical awareness seminars on behalf of the IQA.
- Participated in an industry group for high density compressed natural gas drive trucks for a trial in a Queensland surface coal mine.
- Worked with the Queensland Petroleum and Gas Inspectorate on overlapping tenures legislation changes.
- Worked with Queensland Explosives Inspectorate on major investigations.
- Assist the Department of Environment and Heritage in managing a series of blasting complaints at a quarry
- Attended the Miners Memorial Day in Moura
- Observer at the New Acland Emergency Exercise
- Observer at the Jeebropilly Emergency exercise

- Assisted Simtars with proximity detection project by offering comment on how systems should interact
- Provided advice to Simtars on the requirements for an online training program for Electrical Engineering Managers, Persons to Control Electrical Work and Electricians
- Board member of the Institute of Quarrying Australian Institute Quarrying Education Foundation
- Assisted the Institute of Engineers Australia with Mechanical Certification Interviews
- Worked with Resource Planning to map Lotus Notes and QRock databases.
- Attended CASA emergency exercise at Phosphate Hill

- Attended and presented at Queensland Police Service Officer in Charge Conference
- Worked with WorkCover Queensland, IQA and University of Newcastle regarding mental health working party to facilitate promotion of mental health initiatives in mining and resources
- Memorandum Of Understanding with Queensland Police Service sharing of resources regarding investigations of fatalities, injuries and serious incidents

Appendix 2 provides a full list of training undertaken in 2015–16.

Mines Inspectorate and staff activities for 2015–16



- Active members of 18 safety committees
- Hosted and participated in 22 committees and workshops
- Attended 21 professional development forums
- Chaired and participated in 10 committees for the development of Australian Standards
- Participated in the review and development of 16 safety standards
- Worked on 9 projects with inspectors from other jurisdictions from Australia and abroad
- Worked on 15 projects with intra-government and industry agencies



Mines Inspectors at tyre rim training in Mackay, Queensland
Photo: DNRM

Providing advice to the Minister on mine health and safety matters

As required by the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*, the Commissioner provides advice to the Minister on mine health and safety matters.

In undertaking this role, the Commissioner met regularly with the Honourable Anthony Lynham MP, Minister for State Development and Minister for Natural Resources and Mines and/or his ministerial staff.

The Commissioner kept the Minister fully apprised of all important safety and health matters and provided independent advice on legislative reviews and policy issues relevant to the administration of Queensland's mining legislation.

Mining and coal mining safety and health advisory committee meetings

CMSHAC and MSHAC were established to give advice and make recommendations to the Minister on promoting and protecting the safety and health of people at coal mines, metalliferous mines and quarries.

The committees consist of nine members representing QMI, workers and operators who are nominated to and appointed by the Minister. The membership term is three years. The Chairperson for both committees is Commissioner for Mine Safety and Health.

CMSHAC includes members from the CFMEU, Electrical Trades Union (ETU), QRC and QMI, while MSHAC has members from the Australian Workers' Union (AWU), Australian Manufacturing Workers Union (AMWU), Queensland quarrying industry, Queensland Resources Council (QRC) and QMI.

In 2015–16, both committees made significant contributions to improving the safety standard at all mines and quarries (Tables 1 and 2).

Table 1: Coal Mining Safety and Health Advisory Committee meetings and key activities 2015–16

Meeting number	Date
68	9 December 2015
69	6 April 2016
Planning Day	7 April 2016
70	26 April 2016
71	11 May 2016
72	25 May 2016
73	8 June 2016
Activities	
Updated recognised competencies	<p>A major role of the committee is to recognise the competencies required for roles and positions mentioned in mine safety and health legislation. Recognised competencies are available on the department's website.</p> <p>Updating and adding to these competencies from time to time is a necessary committee function. The committee recognised updates to competencies for those certifying mine plans, and for persons in charge of winders. There was also a general update to competency unit designators due to changes implemented by the training industry.</p>
Recognised standard subcommittee	<p>The committee has convened a tripartite recognised standards subcommittee, whose members worked on the following draft recognised standards during 2015–16:</p> <ul style="list-style-type: none"> • QGN24 Develop and implement management structure, was evaluated and Committee members agreed it should go the Recognised Standard sub-committee for review and advice on its adoption as a Recognised Standard. • Use of polymeric substances at Queensland underground coal mines • All tyres and rims (resulting from the Coroner's findings and recommendations in the Wayne MacDonald Inquiry) • Place change mining, is currently at final draft stage • The Minister requested the Committee develop a Recognised Standard on dust monitoring and reporting. A working group was established and the Recognised Standard: Monitoring Respirable dust in coal mines, is now at final draft stage • Underground Respirable Dust Control <p>The Committee also discussed the need to have suitable personal dust monitoring equipment certified for use in Queensland underground coal mines, and if this is to be prescribed in a Recognised Standard.</p>
Ministerial interaction	<p>Minister Lynham opened the 26 April 2016 meeting, acknowledging the role of the Committee in providing him advice and recommendations, and promoting and protecting the safety and health of workers.</p> <p>The Minister requested the committee advise him on a number of priority areas, including:</p> <ul style="list-style-type: none"> • development of a Recognised Standard for dust monitoring, emphasising the importance of this area for him, and requesting advice by the 31st of May. • to consider support for recommendations from the Monash review. He requires the committee to advise him on how best to support the final recommendations of the review and asked the committee to start with the report's interim recommendation on establishing an appropriate cohort of suitably qualified Nominated Medical Advisors.
Legislative amendments	<p>Amendments to the Coal Mining Safety and Health Regulation 2001 to accommodate changes to dust monitoring and the coal mine workers health scheme arising from the re-emergence of coal workers pneumoconiosis were discussed and agreed to in four of the six Committee meetings held during 2015–16. The amendments are currently at an advanced stage with the Queensland Parliamentary Counsel drafter.</p>

Table 1: Coal Mining Safety and Health Advisory Committee meetings and key activities 2015–16

(continued)

Raising the committee profile	The Committee has instituted measures to raise its profile in the mining industry, including a presentation on the committee and its role, and introducing the members at the 2016 Queensland Mining Industry Health and Safety Conference. Holding Committee meetings in mining regional areas has been decided upon, with the first meeting in 2017 to be held in Toowoomba.
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Table 2: Mining Safety and Health Advisory Committee meetings and activities 2015–16

Meeting number	Date
47	8 April 2016
48	23 June 2016

A new MSHAC was formed in May 2016 after the previous committee memberships had lapsed. Only 2 meetings were held in this reporting period. While only active for a relatively short period of time, some activities and achievements included:

Activities	
Legislation	Regular updates were provided to the committee covering the planned amendments to the Act and Regulations as a result of earlier consultation of proposed regulatory impacts on industry. Updates also included current initiatives by the Board of Examiners in the areas of ongoing professional development and ‘practicing certificates’.
Abandoned mines and quarries	Metalliferous mines and quarries, on abandonment, are required to submit their final mine plans to the inspectorate. To facilitate an easier submission process and ready accessibility to mine plans, an electronic lodgement facility was established by DNRMs’ Geoscience Information Service and presented to the committee at its first committee meeting in April 2016. It is anticipated that the system will ‘go live’ later during the year, once it has undergone rigorous user acceptability testing.
Surveyors competency	The committee received ongoing briefs covering the Surveyors Board of Queensland analysis of competency levels of surveying staff, and initiatives to maintain and improve current competency standards of their members at mines sites.
Guidance notes	Updates were provided to the committee covering the development and status of several Guidance Notes currently under preparation.
Committee updates	The meetings received a brief update covering activities of the Coal Mining Safety and Health Committee, as well as general updates on industry workshop and conference activities, and the Health Improvement and Awareness Committee (HIAC).
Level 1 Mine Emergency Exercise	The committee was briefed on an upcoming ‘Level 1’ major emergency exercise to be held at the George Fisher mine, near Mt Isa. This exercise plans to test the emergency response capability of the this underground mine, in particular the use of refuge stations underground, mutual assistance arrangements between the mine and other nearby mines in the region, Qld Mines Rescue services, and local services such as Ambulance, Police and Fire and Rescue Service.



Komatsu WA900 loading a Komatsu 15500 rear dump truck
Photo: DNRM

Health Improvement and Awareness Committee

HIAC was established in 2008 to assist the mining and quarrying industries anticipate, identify, evaluate and control occupational health hazards.

Mine workers (through unions), industry and QMI are represented on the committee. In addition, Alison Abbott from the Healthy Workers Initiative, Workplace Health and Safety Queensland (WHSQ) attends HIAC as a permanent observer to provide updates on key initiatives for workplaces in managing obesity and smoking, and increasing exercise participation.

As the committee was awaiting the results of an independent review, the priorities for 2016 were not determined.

HIAC met four times during the year:

- 2 September 2015 (Hosted by Thiess Mining)
- 3 December 2015 (Hosted by Anglo American Coal)
- 15 March 2016 (Hosted by Downer EDI Mining)
- 11 June 2016 (Hosted by DNRM)

HIAC topics for 2015–16

HIAC collaborated with industry and other partners, including WorkCover and WHSQ, to cover the following topics during 2015–16:

- **Biological Monitoring of Hazardous Chemical Exposures**
Dr David Smith (DNRM Occupational Physician), BMA Coal and Glencore MIM covered historical aspects of biological monitoring, introduction of a new biological monitoring program to determine control effectiveness, and longer term management of lead respectively.
- **Mental health toolkit updates**
The Mental Health Working party continued to partner with WorkCover Queensland, and other industry contacts to develop a tailored approach for prevention and promotion of mental health strategies for the mining and quarrying sector. This included liaising with the IQA on promoting their seminars and the University of Newcastle on their research findings from the ACARP Mental Health in Mining study, and reviewing the QRC Blueprint for Mental Health.

Risk Management of Hazardous Chemical Exposures and introduction of the Globally Harmonised System (GHS)

Carolyn Topping from WHSQ provided an overview of the GHS, due to be introduced into Australia from January 2017. Committee members also heard from the Coal and Metal sectors on risk management of hazardous chemicals in those sectors.

Other HIAC activities

HIAC continued to receive and discuss updates from the diesel particulate matter subcommittee.

Review of the *Coal Mining Safety and Health Act 1999* and the *Mining and the Quarrying Safety and Health Act 1999*

The review of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999* has continued through further targeted stakeholder consultation.

The review has been ongoing for a number of years—originally being an initiative of the Conference of Chief Inspectors of Mines. The review process then continued under the National Mine Safety Framework (NMSF) which was one of 27 Council of Australian Governments reforms under the *National Partnership Agreement to Deliver a Seamless National Economy*.

In late 2013, proposed amendments under the NMSF were outlined through the release of Queensland's Mine Safety Framework consultation regulatory impact statement (RIS) which assessed options for reform. The consultation RIS proposed amendments to, where possible, improve safety and health; and increase regulatory consistency with the other large mining states of New South Wales and Western Australia, whilst mostly retaining the current legislation.

The current legislation was formed by government, industry and unions through excellent tripartite collaboration following the Moura mining disasters. Queensland has been recognised internationally for its generally strong mining safety and health record under the current legislation; however the NMSF tripartite consultation process enabled consultation with New South Wales and Western Australia and proposals about possible improvements for Queensland.

The consultation RIS attracted 246 submissions but submissions were mostly divided along industrial lines on some issues. There is a need to, where possible, overcome these divisions and focus again on excellent tripartite collaboration including through the Advisory Committees, to further improve the current legislation and address current challenges.

Further tripartite collaboration and cooperation with industry and union representatives, will be needed, in order to finalise consultation and the proposed legislative amendments.

The Coal Mining Safety and Health Regulation 2001 and the Mining and Quarrying Safety and Health Regulation 2001 are due to be remade but the redrafting of the Regulations has been postponed until the mine safety framework amendments to the Acts have been finalised through tripartite collaboration. Postponing the remaking of the Regulations has been possible because the *Statutory Instruments Act 1992* allows Regulations to be exempted from automatic expiry after 10 years, if the Acts under which the Regulations are made are subject to ongoing review.

Published material

Guidance notes

QGN 23 Facility descriptions for metalliferous mines and quarries. September 2015

QGN 24 Guidance for coal mines to develop and implement a management structure. July 2015

Safety alerts

Safety alert 319 Dragline and cable tractor interaction. 28 October 2015

Safety alert 320 Rock from loading shovel smashes rear window of a dozer. 30 November 2015

Safety alert 321 High pressure water jet injection injury. 8 February 2016

Safety alert 322 Worker injured in pugmill. 10 March 2016

Safety alert 323 Worker injured by a discharging fire suppression cylinder. 29 March 2016

Safety alert 325 Contract coal mine worker suffers cardiac arrest. 2 April 2016

Safety alert 326 Serious leg injuries from unrestrained drill rig break-out wrench. 31 May 2016

Safety alert 318 Update Mobile mixing unit explosives truck rollover. 1 June 2016

Safety alert 327 Uncontrolled engine shutdown on a dump truck. 10 June 2016

Safety alert 328 Working under a stope bridge. 28 June 2016

Safety bulletins

Safety bulletin 150 Exploding lead acid batteries. 27 October 2015

Safety bulletin 151 Preventing dust-related lung diseases. 30 October 2015

Safety bulletin 153 Handling and management of surface trailing cables. 29 March 2016

All recognised standards, guidelines, guidance notes and other published material can be found on the department's website www.business.qld.gov.au/industry/mining/safety-health/mining-safety-health

Our staff

Recruitment and retention activities

DNRM continues to ensure sufficient suitably qualified individuals are available to respond to safety and health incidents and assist the mining industry to maintain world’s best practice in safety and health.

Figures 5 and 6 detail the positions supporting the activities and functions of QMI. However, the head office positions also provide the same support for the Explosives Inspectorate and the Petroleum and Gas Inspectorate

Figure 5: Inspectorate staff within QMI by region

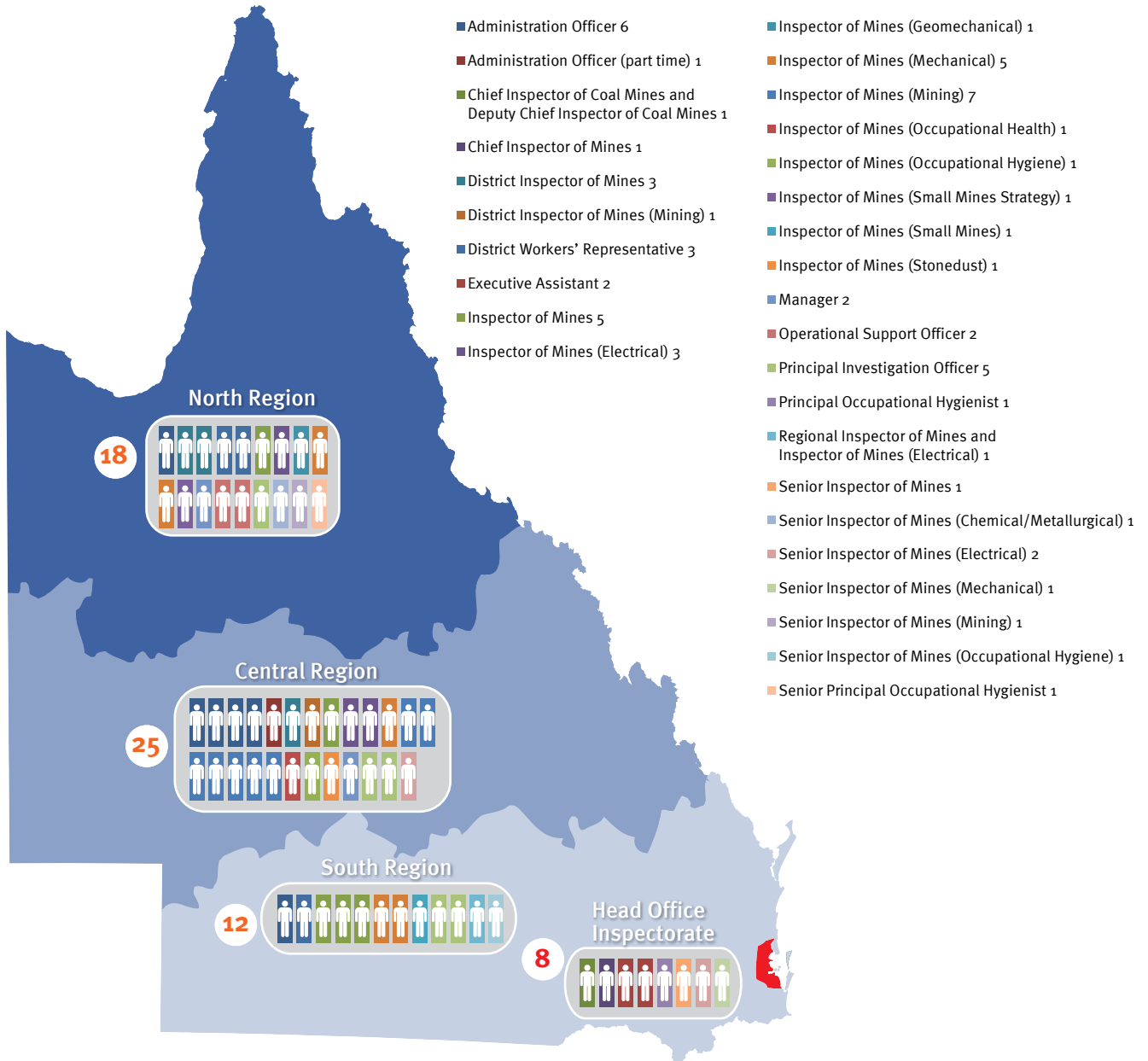
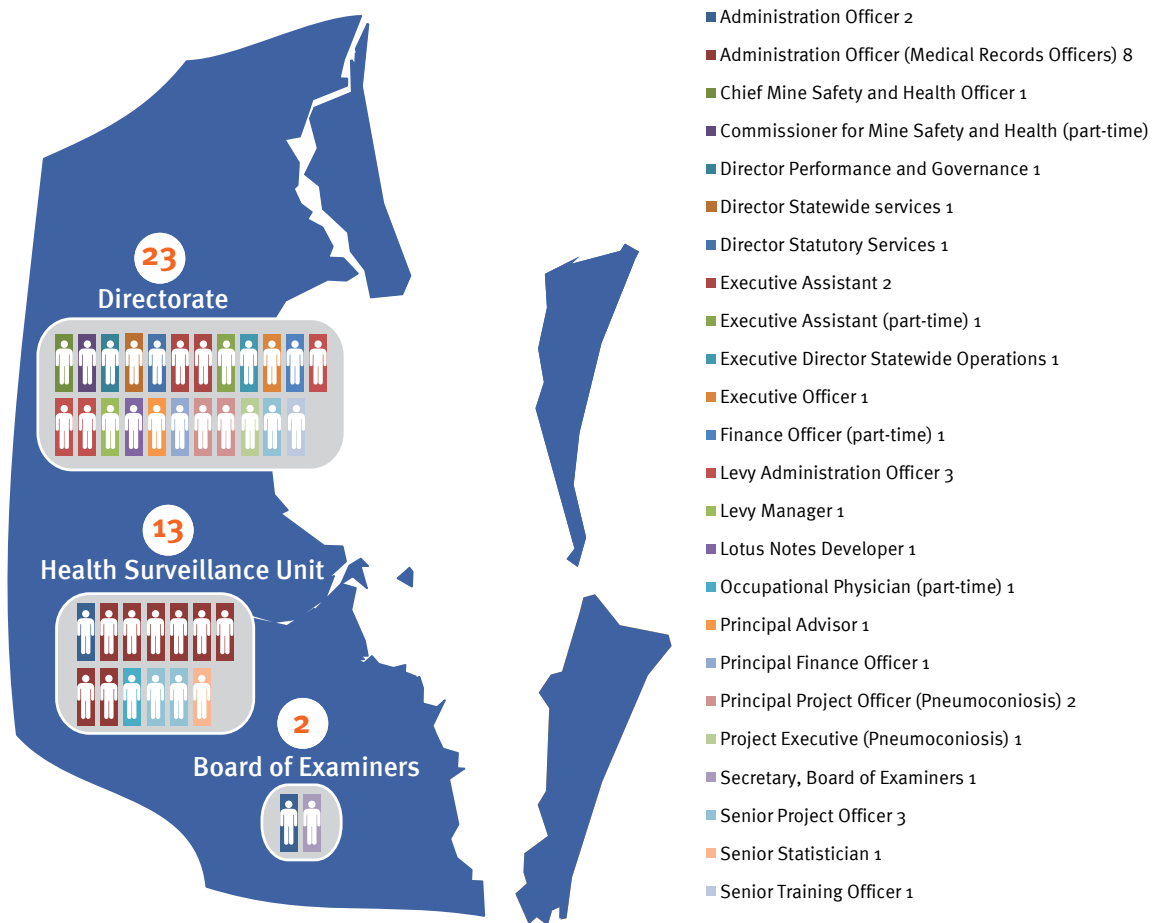


Figure 6: Directorate, Health Surveillance Unit and Board of Examiners staff



Mines rescue personnel participating in emergency responsiveness
 Photo: DNRM

Appendix 1: Workshops, seminars, conferences, presentations 2015–16

Mines inspectors delivered presentations, workshops and seminars to industry, interstate regulators and other stakeholders on a range of safety and health issues as detailed in Table 3 and Figure 7.

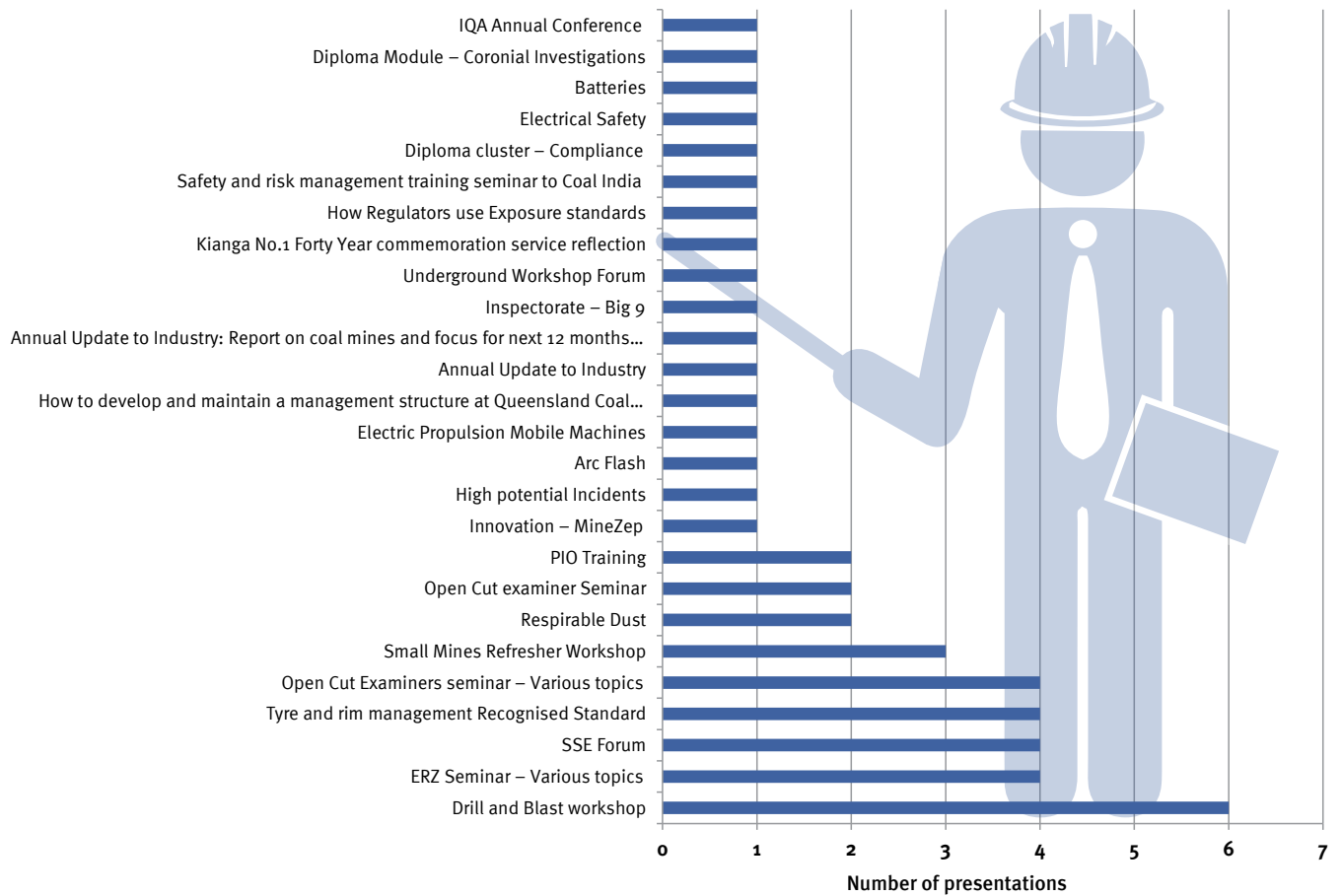
Table 3: Presentations given by QMI staff during 2015–16

Date	Audience	Topic	Presenter/s	Location
1 July 2015	Open cut examiners	Open Cut Examiners seminar – Various topics	Neil Reynoldson & Cres Bulger	Moranbah
8 July 2015	ETU Seminar	Electrical Safety	Paul Sullivan	Brisbane
8 July 2015	Open cut examiners	Open Cut Examiners seminar – Various topics	Neil Reynoldson & Cres Bulger	Moranbah
16 July 2015	SSHR Underground	Respirable Dust	Fritz Djukic	Mackay
29 July 2015	Mining Industry	Tyre and rim management Recognised Standard	Tilman Rasche	Brisbane
30 July 2015	SSHR	High potential Incidents	Neil Reynoldson	Rockhampton
30 July 2015	SSHR	Batteries	Theo Kahl	Rockhampton
30 July 2015	SSHR	Arc Flash	Nev Atkinson	Rockhampton
4 August 2015	Industry	Open Cut examiner Seminar	Lionel Smith	Toowoomba
4 August 2015	Open cut examiners	Open Cut Examiners seminar – Various Topics	Neil Reynoldson & Cres Bulger	Toowoomba
11 August 2015	Industry	Open Cut examiner Seminar	Colin Smith	Toowoomba
11 August 2015	Open cut examiners	Open Cut Examiners seminar – Various Topics	Neil Reynoldson & Cres Bulger	Toowoomba
18 August 2015	Mining industry	How to develop and maintain a management structure at Queensland Coal Mines to facilitate the development and implementation of the Safety and Health Management System	Russell Albury	Townsville
28 August 2015	Mining Industry	Tyre and rim management Recognised Standard	Tilman Rasche	Brisbane
10 September 2015	Industry	Small Mines Refresher Workshop	Wayne Scott	Helidon
11 September 2015	Various	Electric Propulsion Mobile Machines	Lionel Smith	Brisbane
16 to 18 September 2015	Mining Industry	Tyre and rim management Recognised Standard	Tilman Rasche	Emerald
18 September 2015	Mining Industry	Kianga No.1 Forty Year commemoration service reflection	Russell Albury	Rockhampton
23 September 2015	Industry	Drill and Blast workshop	Wayne Scott	Emerald
15–16 October 2015	Various	IQA Annual Conference	Wayne Scott	Adelaide
26–27 October 2015	Inspectors	Diploma Module – Coronial Investigations	John Barron	Brisbane
4 November 2015	Coal SSE's	SSE Forum	Deon Esterhuizen	Toowoomba
2 November 2015	Catalyst	Innovation – MineZep	Tilman Rasche	Cairns
24 November 2015	Leaders Forum	Annual Update to Industry: Report on coal mines and focus for next 12 months including the Big 9	Russell Albury	Brisbane
24 November 2015	Leaders Forum	Annual Update to Industry	Phillip Goode	Brisbane
24 November 2015	Leaders Forum	Respirable dust	Fritz Djukic	Brisbane
26 November 2015	Gas Inspectors	PIO Training	John Barron	Brisbane
2 December 2015	Inspectors	PIO Training	John Barron	Brisbane

Table 3: Presentations given by QMI staff during 2015–16 (continued)

Date	Audience	Topic	Presenter/s	Location
4 December 2015	SSE Coal – Southern Region	Inspectorate – Big 9	Neil Reynoldson	Toowoomba
4 December 2015	Mining Industry	Tyre and rim management Recognised Standard	Tilman Rasche	Brisbane
7 December 2015	Occupational Hygienists	How Regulators use Exposure standards	Fritz Djukic	Perth
8 December 2015	NZ Inspectors	Small Mines Refresher Workshop	Wayne Scott	Brisbane
9 December 2015	Industry	Drill and Blast workshop	Wayne Scott	Gold Coast
4 February 2016	Coal SSE's	SSE Forum	Lionel Smith	Toowoomba
1 March 2016	Industry	Underground Workshop Forum	Phillip Goode	Townsville
7–11 March 2016	Inspectors	Diploma cluster – Compliance	John Barron	Brisbane
06 April 2016	Industry	Drill and Blast workshop	Wayne Scott	Maryborough
20 April 2016	Industry	Drill and Blast workshop	Wayne Scott	Gold Coast
22 April 2016	Coal SSE's	SSE Forum	Lionel Smith	Toowoomba
10 May 2016	ERZ Controllers	ERZ Seminar – Various topics	Graham Callinan, Fritz Djukic, Shaun Dobson, Keith Brennan, Paul Brown, Neil Randolph, Kev Poynter, Richard Gouldstone	Regional Presentations
11 May 2016	Industry	Drill and Blast workshop	Wayne Scott	Toowoomba
12 May 2016	ERZ Controllers	ERZ Seminar – Various topics	Graham Callinan, Fritz Djukic, Shaun Dobson, Keith Brennan, Paul Brown, Neil Randolph, Kev Poynter, Richard Gouldstone	Regional Presentations
17 May 2016	ERZ Controllers	ERZ Seminar – Various topics	Graham Callinan, Fritz Djukic, Shaun Dobson, Keith Brennan, Paul Brown, Neil Randolph, Kev Poynter, Richard Gouldstone	Regional Presentations
19 May 2016	ERZ Controllers	ERZ Seminar – Various topics	Graham Callinan, Fritz Djukic, Shaun Dobson, Keith Brennan, Paul Brown, Neil Randolph, Kev Poynter, Richard Gouldstone	Regional Presentations
20–30 May 2016	Mining Industry	Safety and risk management training seminar to Coal India	Tilman Rasche	India
25 May 2016	Industry	Small Mines Refresher Workshop	Wayne Scott	Simtars
26 May 2016	Industry	Drill and Blast workshop	Wayne Scott	Sunshine Coast
03 June 2016	Coal SSE's	SSE Forum	Lionel Smith	Nanango
9 June 2016	ERZ Controllers	ERZ Seminar – Various topics	Graham Callinan, Fritz Djukic, Shaun Dobson, Keith Brennan, Paul Brown, Neil Randolph, Kev Poynter, Richard Gouldstone	Regional Presentations
10–20 June 2016	Mining Industry	Safety and risk management training seminar to Coal India	Tilman Rasche	India
16 June 2016	Industry	Review of new Small Mines Safety and Health Management System kit	Wayne Scott	Brisbane
17 June 2016	Mining Industry	14th Annual Quarrying Safety & Health Seminar	Phillip Goode	Brisbane
21 June 2016	Industry	Opening Address MESA	Phillip Goode	Brisbane
23 June 2016	MSHAC	Australian Institute Occupational Hygiene Feedback	Jack Farry	Brisbane
28 June 2016	Mining Industry	Report on Big 9 and respirable dust status	Russell Albury	Emerald

Figure 7: Presentations given by QMI staff 2015–16



*Presentation to Inspectors at Conference of Chief Inspectors of Mines
Photo: DNRM*

Appendix 2: Training and professional development 2015–16

QMI's role is to ensure acceptable safety and health standards are established and practised within the mining and quarrying industries. As part of this role inspectors carry out audits, investigations and inspections to monitor and enforce compliance.

As such, inspectors need to be highly skilled and have a thorough understanding of the issues facing industry. To this end, inspectors undergo continuing training and development to ensure their skills and knowledge are kept current and relevant. The courses and training programs undertaken by inspectors in 2015–16 are given in Table 4.

Table 4: Courses undertaken by QMI staff during 2015–16

Courses undertaken by mines inspectors in 2014–15
Advanced interview skills
Basic wheel/ rim training course
Building emergency procedures assessment
Carry out the risk management processes
Certificate IV training and assessment
Coal seam gas reservoir assessment
Code of conduct and ethical decision making
Complaints management
Coordinate resource allocation and usage
Cultural awareness
Electronic document records management system
Establish and maintain the inrush management plan
Establish and maintain the risk management system
Evaluate workplace legislation compliance
Exploration drill rig safety awareness course for inspectors
Facilitation
Give evidence
Heavy duty off - the - road tyre application training
Incident cause analysis method and human factors lead investigator
Investigate possible breaches of workplace legislation
Lead auditor in occupational health and safety management systems
Lead effective workplace relationships
Manage conflict
Manage major incidents and emergencies
Manage personal work priorities and professional development
Mental health awareness workshop
Natural hazard protection systems, natural mitigation case studies for slope stabilization
Operate and maintain a four wheel drive vehicle
Overview and release of the new investigations manual
Participate in the investigations of incidents
Perform rescue from a live LV panel
Principal investigations officer workshop
Promote compliance with legislation in the public sector
Promote the values and ethos of public service
Provide cardiopulmonary resuscitation
Provide first aid
Provide first aid in remote situations
Supervise and carry out complex inspections and monitoring
Use complex workplace communication strategies
Written communications



