

Managing Health Hazards in Queensland Mines: A collaborative approach.

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Introduction:

A review of the Queensland Mines Inspectorate (QMI) in 2005 *recommended that the* QMI should have access, either internally or externally, to the necessary expertise to deal with organisational, occupational hygiene, ergonomics and other risks.

The Department of Mines and Energy recognise that a collaborative approach is the most effective means for managing health hazards across the mining industry. An initiative has therefore been taken to establish a tri-partite Committee to combine efforts to reduce health risks in mining.

Turning the focus to health:

The Queensland Mining Health Improvement and Awareness Committee (HIAC) has been established to assist industry anticipate, identify, evaluate and control **health** hazards in the mining environment.

Health and safety management efforts in mining have traditionally focused on the safety aspects. This is often because the outcomes of safety hazards are usually immediate and the consequences are visually graphic (eg. loss of limb, chemical burn). In most cases these hazards are well understood and easily recognised (For example, an unguarded drive motor on a conveyor, unsupported roof in a development heading or an unprotected opening on a platform).

In contrast, the outcomes of health hazards may be progressive and not realised until it is too late. The effects are not often visible and in some cases the hazard is not clearly understood and difficult to measure. The same vigour and effort that has always been dedicated to the pursuit and management of safety hazards needs to be devoted to managing health hazards in mining. HIAC aims to focus its efforts on health hazards in the mining industry. The committee will provide a forum to monitor emerging health issues and discuss those which are not clearly understood.

The Queensland Mining Health Improvement and Awareness Committee has been established to enable the inspectorate, unions and industry to work in unison to provide a greater emphasis on worker **health** and the prevention of illness and disease.

Collaboration Works!

In 1954 the Joint Coal Board of New South Wales established the Standing Committee on Dust Research and Control. This committee comprises representatives of the colliery operators, mining unions, industry specialists, government departments and Coal Services Pty Limited.

The standing dust committee has been servicing the NSW coal industry successfully now for over 50 years. In this time the committee has been acknowledged as playing an instrumental role in the reduction in the number of cases of coal workers pneumoconiosis.

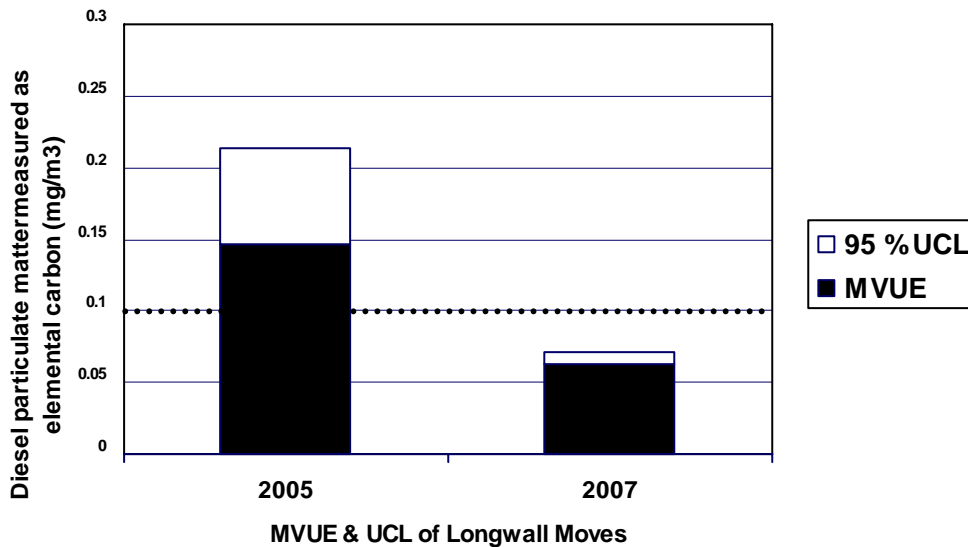
More information on the Standing Committee on Dust Research and Control can be found at http://coalservices.com.au/index.php?Itemid=34&id=8&option=com_content&task=view

In a similar manner the Queensland Diesel Particulate Matter (DPM) Steering Committee was established in 2004 to collectively consider the emerging issue associated with exposure to DPM in underground coal mines. This committee comprises representatives from unions, industry operators, mines inspectorate and original equipment manufacturers (OEMs). The Steering Committee has focused on practical means for controlling diesel emissions at the source of generation. The committee is credited for raising the awareness of this issue across the Queensland coal mining industry through its collaborative and interactive approach. The sharing of best practice has been the cornerstone of success in this process. To date 17 meetings have been held. Representatives from all underground coal mines have attended meetings.

- Major gains in the reduction of diesel particulate emissions have been demonstrated through:
- ❖ Refined maintenance techniques on old engines verified through rigorous emission testing.
 - ❖ Extensive trials on alternative fuels.
 - ❖ Changes to ventilation circuits.
 - ❖ Exploring advances in engine management systems and exhaust treatment devices.
 - ❖ Development of a DPM management system self audit tool

Figure 1 demonstrates the reduction in personal DPM exposures achieved for mineworkers participating in a longwall move at a central Queensland coal mine by converting an intake airway used as a travel road to a return airway. This information has been presented to the steering committee.

Figure 1: Reduction in personal exposures to Diesel Particulate Matter at a Queensland coal mine during longwall moves.



About HIAC

HIAC has been established to provide a resource on health hazards applicable to the mining industry, with technical input from specialists. The Committee identify and discuss current and emerging health hazard information. HIAC will facilitate the dissemination of current and factual information to industry and, importantly, mine workers. HIAC will adopt a balanced science based view that informs stakeholders of risk and avoids miscommunication that may lead to undue worker, industry or community concerns.

HIAC has developed a Strategic Plan which communicates guiding principles for the committee. This document is attached as Appendix 1.

HIAC Representation:

As discussed, HIAC is tripartite and ownership of this committee is shared equally among operators, unions and the mines inspectorate. Operator representatives have been appointed for coal, metalliferous and quarries. Both of the major mining union bodies have representation. The committee is well serviced by the diverse skill base of the members including occupational hygienists, an ergonomist, occupational physician, senior mine management and worker representatives with many years mining experience.

The position of chair is currently occupied by the mines inspectorate, however this position will be rotated over time. Although this committee was initially established by the inspectorate, the intent is for this committee to be owned and driven by those it attempts to service, industry and mine workers.

Health Hazards to be covered

HIAC has identified key topics to focus their resources and prioritise discussions. This list will change through consultation and as emerging issues develop in the mining sector. In the first instance exposure to airborne dust will be addressed by the committee. A system for risk assessing and prioritising the remaining and any emerging health hazards is currently being developed by a working party within HIAC.

Other health hazards that have been identified to date include:

- Ergonomic hazards
- Noise
- Extended shifts and shiftwork
- Vibration
- Diesel Particulate Matter (DPM)
- Hazardous substances
- Heat
- Radiation in mining
- Psychosocial hazards (drug/alcohol over-use and stress)
- Biological hazards (Legionella or blue green algae etc).

For each health hazard reviewed by the Committee, exposure monitoring data and trends and other health effect data will be reviewed to determine whether, in fact, exposures are being controlled and reduced to an acceptable level.

Progress to date

Planning for HIAC commenced in May 2007. During this planning period the committee membership was finalised and a guiding document was drafted. This document was to form the basis for HIAC's strategic plan (Appendix 1). Members were asked to review this document prior to the first meeting so that it could be tabled for discussion.

The inaugural meeting was held in Moranbah and hosted by BMA Broadmeadow Coal Mine. At this meeting each committee member was asked to contribute their expectations to the group. These discussions formed the basis for establishing the meeting protocols that all future meetings would adhere to. This exercise also revealed there was resounding support from the group to focus its efforts on the common goal of improving the health of mine workers regardless of "who we represent or where we have come from".

The second meeting was hosted by Xstrata Zinc and Copper in Mount Isa. At this meeting the strategic plan was finalised by the committee. The majority of this meeting was devoted to discussion of the first selected health hazard, airborne dust. Informative presentations focusing on dust control and assessment strategies were provided by industry and union representatives.

The third meeting is scheduled to be held in August 2008. This meeting will be held in Townsville to coincide with the Queensland Mining Industry Health and Safety Conference. The purpose of this meeting will be to review the process for risk ranking and prioritising the remaining and any emerging health hazards identified.

Getting Involved

HIAC is committed to being action driven, practical, and visible to industry and mine workers. For this reason all meetings will be held at mine sites in mining communities. Each meeting will include a presentation by the hosting mine and a site tour where feasible. The site senior executive, site safety and health representative and other key personnel from the hosting mine will be invited to attend as observers. Other interested parties will also be invited to attend such as the Nominated Medical Advisors in the area.

HIAC encourages any persons interested in improving health in Queensland mines to become involved through their respective industry representative or union organisation. HIAC is all about sharing best practice and producing practical guidance materials that focus on the control of health hazards. To do this effectively we need the input and support from all our stakeholders.

HIAC is currently considering mechanisms for the communication and dissemination of all guidance material and other related information produced. As HIAC evolves this is likely to be a web based service.

For more information on HIAC contact the Committee Coordinator Kevin Hedges (kevin.hedges@dme.qld.gov.au).

Appendix 1

QMHIAC – Strategic Plan

Strategic Plan

QMHIAC_001

Queensland Mining Health Improvement and Awareness Committee

Version no.	Date	Changed by	Nature of amendment
QMHH_001dr.1	31/01/2008	FD	Draft
QMHIAC_001dr.2	24/04/2008	KH	Revised draft and committee name change
QMHIAC_001dr.3	19/05/2008	KH	Revised draft and section 11 added.
QMHIAC_001	31/05/2008	KH	Revised wording in section 11.

Name Stewart Bell

Position Executive Director, Department of Mines and Energy, Safety and Health

Signature  Date 5/6/08

Name Tim Whyte

Position Industry Safety and Health Representative
Construction, Forestry, Mining and Energy Union (CFMEU)

Signature  Date 13/6/08

Name Rob Carson

Position Workers Representative, Australian Workers Union (AWU)

Signature  Date 16-7-08

Name Jack Farry

Position Representing Queensland Resources Council (QRC)

Signature  Date 18th JUNE 2008

Terms of reference

Vision
Keeping mining healthy. Health standards are developed, agreed, implemented and maintained, by collaboration between government, worker representatives and industry.
Purpose
The Queensland Mining Health Improvement and Awareness Committee has been established to assist industry to identify, evaluate and control health hazards in the mining environment. Through collaboration, promote systems, guidance material and good practices to prevent injury and illness from health hazards.
Scope
Provide a forum with participation from industry, worker and government representatives to guide industry to consistently assess and control health hazards. <ul style="list-style-type: none">• Airborne dust including respirable crystalline silica (RCS)• Extended shifts and shiftwork.• Ergonomic hazards• Diesel particulate matter (DPM)• Radiation in mining• Noise• Heat• Metals including, lead, arsenic, cadmium and mercury• Hazardous substances• Vibration• Psychosocial hazards (drug/alcohol over-use and stress).• Biological hazards (Legionella or Blue-green algae etc)

Queensland Mining Health Improvement and Awareness Committee Members			
Name	Representing	Role	Specialist
Chris Skelding	Department of Mines and Energy (DME) Safety and Health	Chairperson	Senior Mines Inspector – Mining Engineer
Kevin Hedges	Department of Mines and Energy (DME) Safety and Health	Coordinator	Occupational Hygienist
Fritz Djukic	Department of Mines and Energy (DME), Safety and Health	Member	Occupational Hygienist
Trudy Tilbury	Department of Mines and Energy (DME), Safety and Health	Member	Ergonomist
David Smith	Department of Mines and Energy (DME), Safety and Health	Member	Occupational Physician
Gerard Tiernan	Safety in mines testing and research station (Simtars)	Member	Occupational Hygienist
Gordon Samuel	Queensland quarry industry	Member	Risk Manager
Tim Jackson	Queensland coal industry	Member	Underground Mine Manager
Michael Holmes	Queensland metal industry	Member	General Manager
Tim Whyte	Construction, Forestry, Mining and Energy Union (CFMEU)	Member	Industry Safety and Health Representative
Rob Carson	Australian Workers Union (AWU)	Member	Workers Representative
Jack Farry	Queensland Resources Council (QRC)	Member	Occupational Hygienist
Carissa Crozier	Department of Mines and Energy (DME) Safety and Health	Secretary	Secretarial support

1. Introduction

In August 2004, the Minister for Natural Resources and Mines announced a review of the Mines Inspectorate. The review was overseen by a steering committee consisting of representatives from the two mining unions, industry and the Department of Mines and Energy's Mines Inspectorate. A major emphasis of the review was broadening the inspectorate skill base to enable more complete coverage of mining issues that fell within the occupational health and safety (OHS) stream. Occupational hygiene, organisational and ergonomics were the critical health-related skills identified as part of this review.

Key recommendations and guiding principles relating to health taken from the review 'Reforms to the Queensland Mines Inspectorate' (October 2005) are condensed and illustrated in the following extracts taken from the document.

The Minister requested that the review examine the current performance and future capacity of the inspectorate to perform against government, industry and workforce expectations, including the skills base, structure and location of the Mines Inspectorate....

Looking to the future the Mines Inspectorate will be an inspectorate with a broader range of skills in occupational health and safety (OHS) with specific expertise and experience in the mining industry...

The inspectorate should have access, either internally and externally, to the necessary expertise to deal with organisational, occupational hygiene and ergonomic risks.

This full document may be viewed at

www.dme.qld.gov.au/mines/inspectorate/pdf/reforms_inspectorate.pdf

2. About the Committee

The Queensland Mining Health Improvement and Awareness Committee has been established to enable the inspectorate to work in unison with unions and industry to provide a greater emphasis on worker health and the prevention of illness and disease. The intent is for the Committee to provide a resource, with technical input from specialists. It will provide an opportunity for unions, industry and government to collaborate when developing strategies for improving worker health. The Committee will identify and discuss available and emerging health hazard information. This will add value to the mining and quarrying industry by highlighting issues of critical concern. The Committee will facilitate the dissemination of current and factual information to industry and, importantly, mine workers. The Committee will provide a balanced science based view that informs stakeholders of risk and avoids miscommunication that may lead to undue worker, industry or community concerns. The Committee is attempting to improve the health outcomes for workers in Queensland's mining and quarrying industries. To achieve this goal in the long term, it is essential that a cooperative team approach is adopted from the outset for the success and longevity of this committee. This not only applies to the immediate members of the Committee but to the inspectorate, industry and union bodies as a whole. To achieve the vision and purpose of the Committee, the functions and strategic goals of the Committee will be communicated to all stakeholders, and there will be regular opportunities for feedback and participation.

The Queensland Mining Health Improvement and Awareness Committee has been established to assist industry anticipate, identify, evaluate and control health hazards in the mining environment.

3. Strategy

The Committee will adopt a tripartite consultative approach with the aim to providing a mechanism to:

- Identify health hazards in mining operations
- Evaluate the health risks to mine workers
- Provide information to industry about the health risks
- Investigate control measures
- Promote best practice to minimise health risks
- Share good practice information with industry
- Ensure that the effectiveness of controls are evaluated
- Challenge Industry for feedback

The Committee will identify key topics to focus their resources and prioritise discussions. However, this may change through consultation and as emerging health issues develop within the mining sector.

Health hazards identified include:

- Airborne dust including respirable crystalline silica (RCS)
- Extended shifts and shiftwork
- Ergonomic hazards
- Diesel particulate matter (DPM)
- Radiation in mining
- Noise
- Heat
- Metals including lead, arsenic, cadmium and mercury
- Hazardous substances
- Vibration
- Psychosocial hazards (drug/alcohol over-use and stress)
- Biological hazards (Legionella or Blue-green algae etc)

Plans to reduce the risk from each of these hazards will be developed and the Committee will be informed of progress and implementation.

The current Coal Diesel Particulate Matter (DPM) steering committee, chaired by industry, will continue to operate in its existing format but additional support will be provided, where necessary, by the Committee. The Committee will receive regular updates from the DPM steering committee and any items of interest will be tabled for discussion.

4. Committee Structure

The committee must be representative of industry, be cross functional and will consist of a maximum of 13 members. The structure is:

- Coal industry representative
- Metal industry representative
- Quarries industry representative
- QRC representative
- CFMEU representative
- AWU representative
- Simtars representative
- DME Occupational Hygienists (Co-ordinator)
- DME Ergonomist
- Senior Mines Inspector (Chair)
- Medical adviser (DME Occupational Specialist).

Although the Mines Inspectorate will initially chair the meetings, it is suggested that, over time, this responsibility will be rotated between government, unions and industry.

Observer's role will be utilised as an opportunity for information sharing.

5. Frequency of meetings

The Committee will meet quarterly for one day. Each year a meeting will be planned for at a coal mine, metal mine, quarry and a Department of Mines and Energy office. This may include Simtars facilities at Redbank and/or Mackay. Meetings will include a presentation by the host venue and a mine site tour, where feasible. Initially there will be a need for more frequent meetings.

6. Meeting venues

The meeting venue will rotate between regions. During the first meeting of each calendar year, a program for the next four meetings will be discussed and tabled.

The site senior executive of the selected mine and other key personnel from the mine (e.g. site safety and health representative [SSHR], long wall coordinator, occupational hygienist and OHS manager etc) will be encouraged to attend.

7. Communication plan

The Committee's progress will be communicated back through industry bodies such as the Queensland Resources Council (QRC), the Institute of Quarrying Australia (IQA), the Cement, Concrete and Aggregates Association (CCAA) and the Australian Institute of Mining and Metallurgy (AusIMM), ACARP, Mine Managers Association of Australia, Cooperative Research Centre, MIRMGATE. In addition, regular updates will be provided in the Queensland Government Mining Journal (QGMJ), on the DME website, at conferences and in other industry print media such as Longwall News.

It is essential that this Committee is supported and acknowledged by industry and unions to ensure it can achieve its objectives and be sustainable over time.

8. Data collection and assessment

For each health hazard the Committee will evaluate exposure. This may be achieved by collection of exposure data or health surveillance data from relevant facets of the mining industry. The Committee will discuss a system for the ethical collection and review of such exposure data.

Where possible, data will be obtained from other Australian states and international bodies such as the US Mine Safety and Health Administration (MSHA), National Institute for Occupational Safety and Health (NIOSH) and Department of Minerals and Energy (Republic of South Africa).

9. Role of the Queensland Mining Health Improvement and Awareness Committee and link with the Advisory Councils

The Committee will provide recommendations to the Chairperson of the Mining Safety and Health Advisory Council (MSHAC) and Coal Mining Safety and Health Advisory Council (CMSHAC). These councils are recognized under the *Mining and Quarrying Safety and Health Act 1999* and *Coal Mining Safety and Health Act 1999*.

10. Administrative support

The Committee will receive the following administrative support from the Mines Inspectorate:

- Liaison with the host venue to ensure appropriate arrangements have been made for room allocation, conference facilities and catering (if required).
- General administrative support including circulating the agenda, minute taking, distribution of minutes and distribution of pertinent information before and after meetings.

11. Review

This strategic plan will undergo annual review.