

Health management plans



What is a health management plan (HMP)?

A health management plan (HMP) identifies all health hazards that may have an adverse effect on the health for all workers (i.e. employee, contractor, subcontractor, self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company and volunteers) at all stages of a mine operation.¹

The HMP outlines a description of the arrangements that are in place for all monitoring, assessment and regular inspection of the working environment at the mine to ensure the health of workers is not adversely affected because of the mining operations and provides details of the controls and management measures that the mine operator will implement in order to manage the associated risks.

Regular inspections, audits, atmospheric monitoring, noise monitoring, medical examinations and health monitoring are used to demonstrate that controls and systems of work are effective with exposures maintained below standards and are as low as practicable such that workers are not adversely affected.

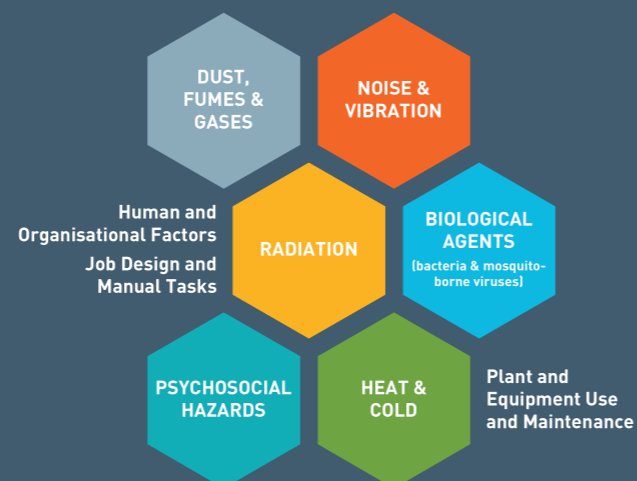


Why is a HMP required?

All mining workplaces have some form of chemical, biological, physical hazards or human stressors that may cause injury, illness, or impair workers' health or wellbeing. These agents can include dusts, chemicals, radiation, noise, extremes of temperature, ergonomics, vibration, bacteriological, fungal and illumination hazards. In addition, stress can be caused by shift work, remote locations and time away from home.

The Work Health and Safety (Mines) Regulations 2022² outline that a mine operator must prepare and implement a HMP for the mine (r675EA (1)), which identifies all health hazards that may have an adverse effect on the health or safety of any worker or other person (r675EA (3a)). The HMP must provide details of control measures the mine operator will implement to manage the risk (r675EA (3b)).

A HMP provides a systematic process for managing agents at all stages of the mining operation. It is an integral part of an organisation's mine safety management system (MSMS) (r675EA(5)). The HMP complements other major hazard management plans for the site. The HMP documents the agent, how hazards are controlled and what methods are used to verify that controls are effective.



When is a HMP required?

All mining operations (including processing plants, supporting infrastructure (e.g. ports, camps), rehabilitation areas and exploration activities) are required to identify hazards, assess the risks posed by the hazards, implement controls and document the methods by which the effectiveness of those controls are assessed. Accordingly, all sites are required to have a HMP or equivalent plan that aims to protect worker health. A HMP is required:

- prior to operations commencing (as the hazards must be identified and controls implemented prior to operations)
- whenever a significant change occurs to operations that may alter the risk profile.

The HMP is reviewed and submitted five yearly if the risk profile or control strategies have not changed significantly. HMPs along with an associated health risk assessment (HRA) must be submitted to DEMIRS via the Safety Regulation System (SRS). To demonstrate ongoing management and compliance, a summary report with key highlights and actions is submitted to DEMIRS annually.

Regulatory requirements

In addition to the mandatory requirements described above in r675EA (1), r675EA (2) and r675EA (5) above, the Work Health and Safety (Mines) Regulations 2022 prescribe the following in r675EA (4):

In preparing and implementing the health management plan for a mine, the mine operator of the mine must have regard to all relevant matters, including the following:

- a. heat, humidity and contaminants to which a person at the mine may be exposed
- b. any other health hazard, including noise and chronic exposure to musculoskeletal stressors
- c. assessment of risk due to identified health hazards;
- d. control measures considered and implemented to minimise, so far as is reasonably practicable, the adverse effects of identified health hazards
- e. the establishment and implementation of a monitoring schedule to identify any new health hazard and to assess the effectiveness of controls implemented
- f. actions to be taken if monitoring indicates that implemented control measures are not effective
- g. risk-based biological and health monitoring of persons
- h. actions to be taken if biological or health monitoring indicates adverse effects on persons.

The mine operator must also give relevant workers the following information (r675EB 92).

- a. any likely adverse effects on the worker's health due to mining operations at the mine
- b. necessary precautions to be taken by the worker
- c. other controls in place to prevent or minimise the adverse effect on the worker's health.

What must be included in a HMP?

DEMIRS describes the requirements of the HMP document in their publication *Preparation of a Health and Hygiene Management Plan – Guide*. The requirements are summarised below.



STEP 1 Describe the operation, this must include an overview of the operation such that the location, scale of operation and principal activities are clear. For example, principal minerals being extracted, orebody content, presence of fibrous minerals, size of workforce etc..

STEP 2 Identify the hazards and the controls associated with each area of the operation. For example during exploration, mining, hauling, processing stockpiling etc. all controls must reduce the risk to as low as reasonably practical (ALARP) and follow the hierarchy of control (r36).

STEP 3 Assess the Risk. Exposure represents the potential for a dose to be delivered by the agent (via inhalation, absorption through the skin, ingestion or otherwise acquired), and is determined by the actual concentration of the agent in comparison to the agent’s workplace exposure standard (WES). The parameters used to determine risk must be defined within the HMP, generally through a risk assessment matrix.

STEP 4 Verification and validation of controls. Verifying that controls are functioning as intended is a critical aspect of risk management. Many techniques are available to verify that controls are effective. These can include:

- atmospheric sampling
- biological monitoring
- noise dosimetry
- audiometric testing
- medical examinations
- ventilation system measurements (e.g. capture velocities)
- audits and inspections
- workforce questionnaires
- workplace examinations/inspections.

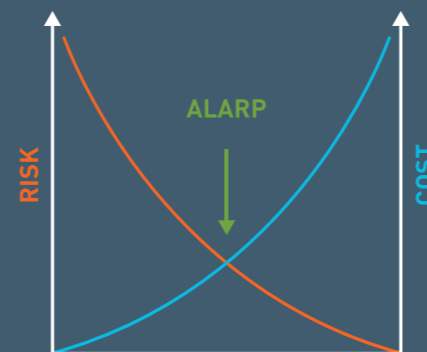
STEP 5 The final stage of the HMP is to summarise the findings of the hazard identification and risk assessment process, the validation/sampling programme, and identified improvements that will result in reduced risk to the workforce. A key component of this step is the implementation of new controls and the modification of existing ones to reduce the risk levels to ALARP.

Occupational hygiene monitoring and HMPs

An occupational hygiene monitoring programme (OHMP) is an integral part of any HMP. The OHMP allows an organisation to validate that their controls are working or identify risks before they lead to health issues. The OHMP should be risk based and must be designed by a competent person. Depending on the risk posed by the operation, the OHMP would normally be facilitated by one or a combination of the following:

- a Mine Air Quality Officer
- a Noise Officer
- a Radiation Safety Officer.

These roles may be filled by an appropriately qualified occupational hygienist, or the hygienist may oversee this.



Airborne contaminant monitoring



For airborne contaminant monitoring, the competent person will use their expertise and judgement to design an appropriate monitoring strategy that considers the nature and duration of the process, the nature of the airborne contaminant, sampling and analysis errors, and the required statistical significance of the data set derived.

Determination of compliance often requires the collection of a number of exposure measurements, often involving a number of workers selected at random to remove bias and increase the representativeness of the data collected.

Statistical analysis is undertaken, and a decision statistic is used for comparison against the WES. Details of all samples taken as part of a HMP monitoring plan must be uploaded to the DEMIRS SRS.

Further investigation and actions to improve controls must be documented in the SRS following an exceedance of a WES. Further information is available in the CME information sheet *“Workplace exposure standards for airborne contaminants.”*

Noise monitoring



An approved Noise Officer (NO) confirms that all noise information contained within the HMP is correct and accurate. The NO shall be satisfied that controls are adequate to prevent workers from being exposed to excessive noise and vibration and that exposure is as low as practicable. The NO shall be satisfied that the verification and validation methods detailed in the HMP (e.g. hearing tests, dosimetry, audiometric testing) are sufficiently robust to confirm that controls are suitable, effective and are implemented so as to reduce worker exposures to levels as low as practicable.

The NO is also responsible for producing the noise report and noise control plan for the operation. The HMP does not replace this obligation. Further information is available in the CME information Sheet *“Noise control in mining in WA.”*

Health monitoring



The mine operator must ensure that health monitoring is provided to workers if there is a risk of an adverse effect on the workers’ health because of exposure to a hazard associated with mining (if the exposure can be detected), and this must be described in the HMP for the mine.⁴

Further information is available in the CME information Sheet *“Health monitoring for work with hazardous chemicals.”*⁵

Resources and further information

- 1 DMIRS (2018) Preparation of a health and hygiene management plan - guide
- 2 Western Australian (2022) Work Health and Safety (Mines) Regulations
- 3 Safe Work Australia (2024) Workplace Exposure Standards for Airborne Contaminants
- 4 DMIRS (2023) Guide Health monitoring duties for persons conducting a business or undertaking
- 5 Safe Work Australia (2023) Code of Practice: Managing risks of hazardous chemicals in the workplace

