

## **MINE ENVIRONMENTAL CONTROL**

### **PAPER 6 OCTOBER 2018**

#### **MEMORANDUM**

#### **QUESTION 1**

##### **1.1 MHSA S.1 (a-h)**

##### **The objects of the Act are:**

1.1.1 To protect the health and safety of persons at mines. (1)

1.1.2 To require employers and employees to identify hazards and eliminate, control and minimise the risks relating to health and safety at mines. (1)

1.1.3 To give effect to the public international law obligations of the Republic that concerns health and safety at mines. (1)

1.1.4 To provide for employee participation in matters of health and safety through health and safety representatives and the health and safety committees at mines. (1)

1.1.5 To provide for effective monitoring of health and safety conditions at mines. (1)

1.1.6 To provide for enforcement of health and safety measures at mines. (1)

1.1.7 To provide for investigations and inquiries to improve health and safety at mines. (1)

1.1.8 To promote: (3)

- i) A culture of health and safety in the mining industry.
- ii) Training in health and safety in the mining industry.
- iii) Co-operation and consultation on health and safety between the State, employers, employees and their representatives.

##### **1.2 (MHSA S.102/Regulation 8.6)**

##### **Definitions**

1.2.1 "Biological monitoring" means a planned programme of periodic collection and analysis of body fluid, tissues, excreta or exhaled air in order to detect and quantify the exposure to or absorption of any substance or organism. (2)

1.2.2 "Employee" means any person who is employed or working at a mine. (1)

1.2.3 "Health and safety committee" means a health and safety committee established in terms of section 34. (2)

1.2.4 "Main fan" means a fan that controls the entire airflow of a mine, or the airflow of one or more of the major air circuits. (2)

1.2.5 "Booster fan" means a fan installed underground in the main air stream or in a split of the main air stream to assist the main fan to increase airflow and/or overcome resistance through a section of a mine. (2)

### 1.3 (MHSA Regulation 16 (2))

**The employer must keep the following information, on self-contained self-rescuers at the mine, covering the preceding 24 months:**

1.3.1 Total number and makes of self-contained self-rescuers in service at the mine. (1)

1.3.2 Number and make of self-contained self-rescuers purchased by the mine in that period. (1)

1.3.3 Number and make of self-contained self-rescuers withdrawn from use by the mine in that period. (1)

1.3.4 The number of shifts worked per day (1, 2 or 3). (1)

1.3.5 Number of self-contained self-rescuers in daily use (average for each month). (1)

1.3.6 Number of employees underground (average per shift). (1)

1.3.7 Number of spare self-contained self-rescuers available (average per month). (1)

1.3.8 A tabulation of the type of defects found. (1)

1.3.9 Number of self-contained self-rescuers repaired/refurbished; and. (1)

1.3.10 Number of self-contained self-rescuers tested in terms of regulation 16.4 (1)

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## **QUESTION 2**

### 2.1 (MHSA S.22)

**Every employee at a mine, while at that mine, must -**

2.1.1 Take reasonable care to protect their own health and safety. (1)

2.1.2 Take reasonable care to protect the health and safety of other persons who may be affected by any act or omission of that employee. (2)

2.1.3 Use and take proper care of protective clothing, and other health and safety facilities and equipment provided for the protection, health or safety of that employee and other employees. (2)

2.1.4 Report promptly to their immediate supervisor any situation which the employee believes presents a risk to the health or safety of that employee or any other person, and with which the employee cannot properly deal. (2)

2.1.5 Co-operate with any person to permit compliance with the duties and responsibilities placed on that person in terms of this Act; and (2)

2.1.6 Comply with prescribed health and safety measures. (1)

## **2.2 (MHSA S.29 (1-4))**

### **Election and appointment of Health and safety representatives**

2.2.1 At a mine referred to in section 25 (1), the employees in a designated working place may elect from among themselves health and safety representatives. (2)

2.2.2 The employees at the mine may elect from among themselves any full time health and safety representatives that may be agreed or determined in terms of section 26. (2)

2.2.3 The election referred to in sub sections (1) and (2) must be conducted in the prescribed manner. (2)

2.2.4 The employees elected as representatives in terms of this section must be appointed by the employer in the prescribed manner. (2)

## **2.3 (MHSA S.88)**

### **Hindering administration of the Act**

2.3.1 Any person, who hinders, opposes, obstructs or unduly influences any person who is performing a function in terms of this Act commits an offence. (2)

## **2.4 (MHSA Regulation 9.2 (3) )**

### **12.1 Appointee to report to the Employer**

2.4.1.1 The occupational hygiene risk assessment, with specific reference to planning, design, implementation and management of occupational hygiene at the mine. (1)

2.4.2 The occupational hygiene hazards that may cause illness or adverse health effects to persons, assess the results in terms of the implementation of control systems and the management thereof, and recommend remedial actions to the employer. (1)

## 2.5 MHSA Regulation 9.2 (7))

### **Employer to submit report to Regional Principal Inspector**

- 2.5.1 The employer must submit to the regional principal inspector of mines, on forms 21.9(2) (a) , 21.9(2) (b), 21.9(2) (c), 21.9(2) (d), 21.9(2) (e) and 21.9(2) (f),prescribed in chapter 21,and within 60 days from the relevant reporting period as indicated on each form, reports which contain information on the airborne pollutant, thermal stress and noise aspects of the system of occupational hygiene measurements, established and maintained in terms of regulation 9.2(2). (2)

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### **QUESTION 3**

#### **3.1 (MHSA S.9.1-7)**

- 3.1.1 Any employer may prepare and implement a code of practice on any matter affecting the health or safety of employees and other persons who may be directly affected by activities at the mine. (2)
- 3.1.2 An employer must prepare and implement a code of practice on any matter affecting the health or safety of employees and other persons who may be directly affected by activities at the mine if the Chief Inspector of Mines requires it. (2)
- 3.1.3 A code of practice required by the Chief Inspector of Mines must comply with guidelines issued by the Chief Inspector of Mines. (2)
- 3.1.4 The employer must consult with the health and safety committee on the preparation, implementation or revision of any code of practice. (2)
- 3.1.5 The employer must deliver a copy of every code of practice prepared in terms of subsection (2) to the Chief Inspector of Mines. (2)
- 3.1.6 The Chief Inspector of Mines must review a code of practice of a mine if requested to do so by a registered trade union with members at the mine, or a health and safety committee or a health and safety representative at the mine.(2)
- 3.1.7 At any time, an Inspector may instruct an employer to review any code of practice within a specified period if that code of practice: (3)
- Does not comply with a guideline of the Chief Inspector of Mines or
  - Is inadequate to protect the health or safety of employees

#### **3.2 (MHSA S.75.1-3)**

##### **The Minister may prohibit or restrict work:**

For any reason relating to health or safety, the Minister, by notice in the Gazette, may prohibit or restrict any work or any exposure of a person to a substance or an environmental condition, if -

- 3.2.1** The Minister has consulted the Council on the prohibition or restriction; and (1)
- 3.2.2 Unless the Minister believes that the public interest requires the notice to be published immediately, the Minister has
  - 3.2.2.1 Published a draft of the proposed notice at least three months previously; and (1)
  - 3.2.2.2 At that time invited interested persons to submit comments and representations concerning the proposed notice within a specified period. (1)
- 3.2.3 The Minister may attach any conditions to a prohibition or restriction by specifying them in the published notice. (1)
- 3.2.4 The Minister, after consulting the Council, may amend or withdraw a notice under subsection (1) at any time. (1)

### **3.3 (MHSA S.54).**

- 3.3.1 Section 54 (1)
- 3.3.2 The inspector may give any instruction necessary to protect the health or safety of persons at the mine, including but not limited to an instruction that:
  - 3.3.2.1 Operations at the mine or part of the mine be halted. (1)
  - 3.3.2.2 The performance of any act or practice at the mine or part of the mine be suspended or halted, and may place conditions on the performance of that act or practice. (1)
  - 3.3.2.3** The employer must take the steps set out in the instruction, within the specified period, to rectify the occurrence, practice or condition. (1)
  - 3.3.2.4 All affected persons, other than those who are required to assist in taking steps referred to in the paragraph above be moved to safety. (1)
- 3.3.3 An instruction must be given to the employer or a person designated by the employer or, in their absence, the most senior employee available at the mine to whom the instruction can be issued. (1)
- 3.3.4 An inspector may issue an instruction either orally or in writing. If it is issued orally, the inspector must confirm it in writing and give it to the person concerned at the earliest opportunity. (1)
- 3.3.5 If an instruction is not issued to the employer, the inspector must give a copy of the instruction to the employer at the earliest opportunity. (1)
- 3.3.6 Any instruction issued under subsection (1) (a) must either be confirmed, varied or set aside by the Chief Inspector of Mines as soon as practicable. (1)
- 3.3.7 Any instruction issued under subsection (1) (a) is effective from the time fixed by the inspector and remain in force until set aside by the Chief Inspector or until the inspector's instruction has been complied with. (1)

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## **QUESTION 4**

(MHSA Regulation 9.2 (4) – (6))

4.1 The employer must ensure that sufficient potable and palatable water, which complies with the requirements set out in schedule 22.9(2) (c), is readily available to all employees and clearly identified as drinkable. (2)

4.2

4.2.1 Regulation 9.2 (5)

4.2.2 The employer must provide and maintain suitable and adequate:

4.2.2.1 Change house to enable employees who perform work involving hazardous substances to change into working clothes at the start of their shift and to wash themselves and change their clothes at the end of their shift. (2)

4.2.2.2 Facilities to enable employees who perform work involving hazardous substances to wash their hands and faces before eating any meals at work. (2)

4.2.2.3 Readily available latrine facilities, within a reasonable distance from each working place. (2)

4.3 No employee may remove clothes referred to in regulation 9.2 (5) (a) from the mine unless such clothes have been decontaminated. (2)

4.4 (MHSA Regulation 8.6 (4-6))

4.4.1 The employer must take reasonable measures to ensure that a competent person examines every main and booster fan for effective operation, internally and externally, together with all appurtenant components that are necessary for the operation of the fan, at intervals not exceeding three months, or any lesser interval determined by the mine's hazard identification and risk assessment in terms of section 11. (2)

4.4.2 The employer must keep record of all examinations conducted in terms of regulation 8.6 (4), including remedial actions taken, for a period of at least the most recent ten years of the fan installation. (2)

## 4.5

### **DMR Guideline for the compilation of a Mandatory Code of Practice for Emergency Preparedness and Response:**

#### **Annexure II – 2      The Emergency Control Centre**

##### **Objectives**

- |                                                                                                                   |     |
|-------------------------------------------------------------------------------------------------------------------|-----|
| 4.5.1 To ensure an orderly and efficient transition from routine operations to effective mine emergency response. | (½) |
| 4.5.2 Gathering and analysing information.                                                                        | (½) |
| 4.5.3 Effective communication between various components.                                                         | (½) |
| 4.5.4 Planning strategy.                                                                                          | (½) |
| 4.5.5 Briefing and instructing of operational staff and rescue teams.                                             | (½) |
| 4.5.6 Co-ordinating planned action.                                                                               | (½) |
| 4.5.7 Direct operation.                                                                                           | (½) |
| 4.5.8 Involve all key personnel.                                                                                  | (½) |
| 4.5.9 Record keeping.                                                                                             | (½) |
| 4.5.10 Ensure safety of operational personnel.                                                                    | (½) |
| 4.5.11 Limit loss through effective management of the emergency.                                                  | (½) |
| 4.5.12 Initial re-organisation of mining operations.                                                              | (½) |

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