

EXAMINATION PAPER | CERTIFICATE OF COMPETENCE

Deputy of underground coal mines

August 2016

Coal Mining Practice and Legislation

Instructions to candidates

Unless otherwise stated all references to Act and Regulations are to the

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011

Work Health and Safety (Mines and Petroleum Sites) Act 2013

Work Health and Safety (Mines and Petroleum Sites) Regulation 2014

All five (5) questions are to be attempted.

All questions are of equal value - 20 marks each.

10 minutes reading time is allowed prior to the start of the examination.

Pen is to be used for all written answers.

Pencil can be used for any drawings/sketches.

Question 1 (total 20 marks)

- a) Clause 85 (5) of the *Work Health and Safety (Mines and Petroleum sites) Regulation 2014* requires a Deputy to undertake Inspections relating to 14 different elements. Describe 10 of these elements, including the frequency of inspection timeframe.
In the case of an underground coal mine at which mining operations are taking place, the following must be carried out under the inspection plan: (10 marks)
- b) *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* Clause 27 - relates to communication between shifts. As a Deputy what are you required to do to meet the expectations of Clause 27? (4 marks)
- c) List the Principal Control Plans required by *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* for an underground coal mine. (6 marks)

Question 2 (total 20 marks)

You are a mining supervisor/deputy production, you receive notification that there was a failed dust sample for your district and that several employees exceeded the exposure level for respirable dust.

- a) List 8 potential contributing causes for the failed sample for the:
 - i. Longwall. (4 marks – ½ mark each)
 - ii. Development panel. (4 marks – ½ mark each)
- b) List the controls that could be taken to prevent a reoccurrence of the failed sample for the:
 - i. Longwall. (4 marks)
 - ii. Development Panel. (4 marks)
- c) Explain the difference between Respirable and Inhalable Dust and the relevant statutory limits of each. (4 marks)

Questions 3 (total 20 marks)

You are a pre-shift Mining Supervisor/Deputy in a production panel, and your job is to supervise the setting up of the panel for the next production shift.

You observe a Load Haul Dump (LHD) truck fully loaded with materials reverse into the cut through outbye the face, the LHD strikes the Continuous Miner cable and you notice sparks and a small flame at the impact site. The flame self-extinguishes quickly.

The driver complains of tingling in his limbs. The auxiliary fan has tripped.

- a) Detail, in order of priority, the actions you would take in relation to this incident. (10 marks)
- b) Explain in your own words, the relevance of the *Work Health and Safety (Mines and Petroleum sites) Regulation 2014* to this incident and the requirements this legislation places on you and the mine operator. (5 marks)
- c) Once the emergency is over, you have been assigned the task of investigating the incident to suggest improvements that may be made to reduce the probability of a reoccurrence of the event. In your answer describe the hierarchy of controls that will be considered. (5 marks)

Question 4 (total 20 marks)

Your operation has experienced a number of strata failure events in an older area of the mine.

- a) What could be the contributing causes for these failures? (5 marks)
- b) A clear distinction between clauses 128 and 179 of the *Work Health and Safety (Mines and Petroleum sites) Regulation 2014* is required when reporting events. What are the considerations when reporting this event? (5 marks)
- c) List 10 elements that can be found in a Ground or Strata Management Plan as set out under the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*. (5 marks – ½ mark each)
- d) In relation to setting of support, what is meant by the terms “primary” “secondary” and “passive” support. (5 marks)

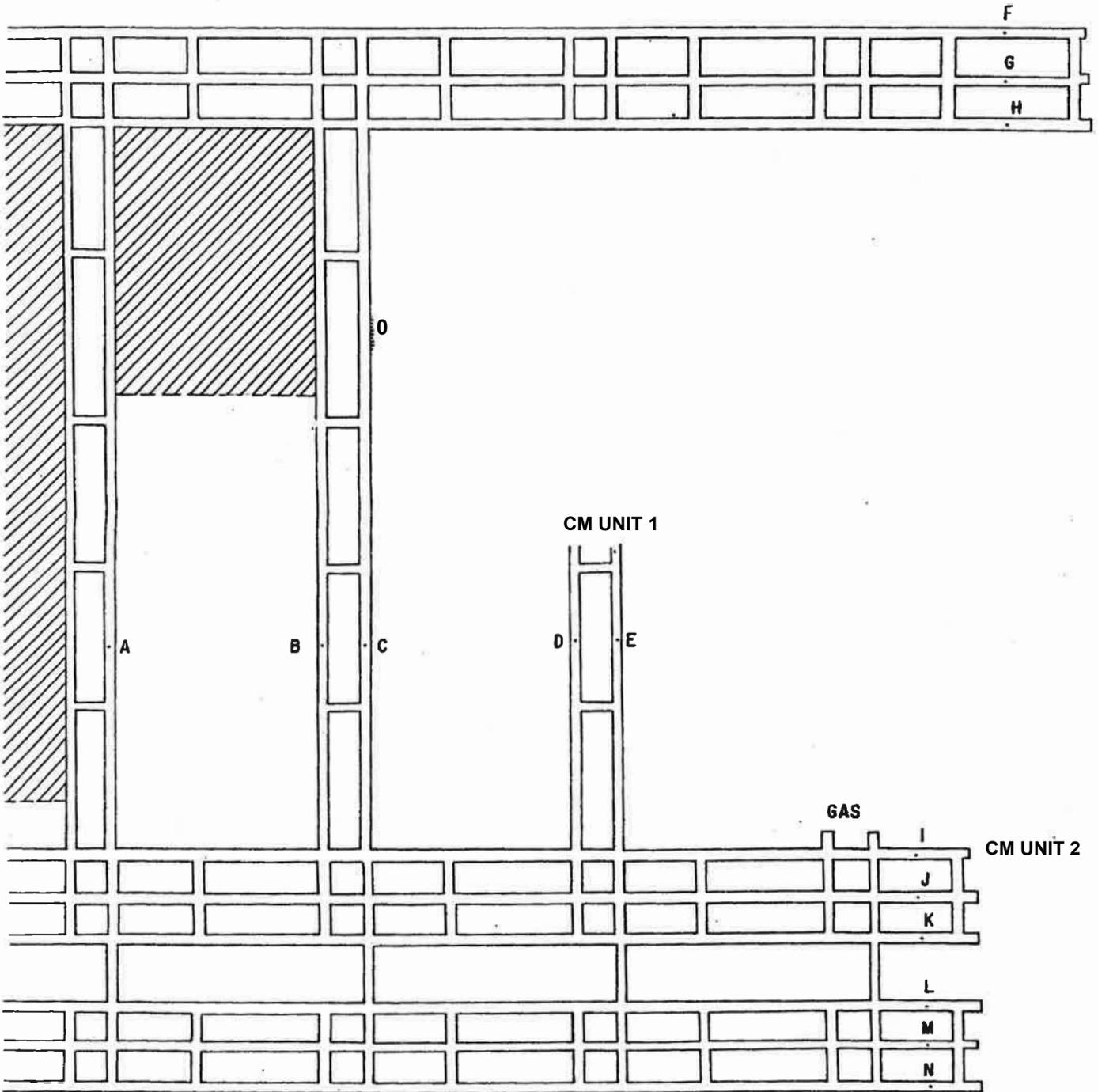
Question 5 (total 20 marks)

The mine on the attached plan (page 3) operates a Longwall and 2 Development units. The seam is 3.0m thick and is moderately gassy, but not liable to spontaneous combustion.

- a) Ventilate the attached plan – show intake and return airways, stoppings, coffin seals, regulators, overcasts, doors and seals. **NB: Scale 1:5000.** (8 marks)
- b) Complete the following chart, showing quantities at points A to O. (4 marks)

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	

- c) Show the position of fixed real time gas monitors to monitor the return airways of the mine, and what gases are monitored. (4 marks)
- d) The location of the hazardous zone for each area. (4 marks)



Scale 1:5000

More information

NSW Department of Industry
Governance Branch
Mining Competence Team

T: 02 4931 6625

Email: minesafety.competence@industry.nsw.gov.au

Acknowledgments

Deputy Examination Panel

© State of New South Wales through the Department of Industry, Skills and Regional Development 2016. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute the NSW Department of Industry, Skills and Regional Development as the owner.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (September 2016). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the NSW Department of Industry, Skills and Regional Development or the user's independent advisor.

PUB16/434