

EXAMINATION PAPER

Open cut examiner of coal mines other than underground mines certificate of competence

Written examination 5 June 2019

Instructions to candidates

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

- *Work Health and Safety Act 2011*
- Work Health and Safety Regulation 2017
- *Work Health and Safety (Mines and Petroleum Sites) Act 2013*
- Work Health and Safety (Mines and Petroleum Sites) Regulation 2014
- *Explosives Act 2003*
- Explosives Regulation 2013

OCE1 – Mining legislation

Question 1

- a) The Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 requires the mine operator to consult with workers. When is this required? (10 marks)

- b) While at work, workers have duties under the *Work Health and Safety Act 2011*. What are those duties? (10 marks)

Question 2

The *Work Health and Safety Act 2011* provides for the establishment of health and safety committees.

- a) When is a committee required to be established? (7 marks)
- b) What is the composition or constitution of a committee? (7 marks)
- c) A special provision exists for committees at mine workplaces. What is this provision? (6 marks)

Question 3

- d) The mine operator of an open cut mine must have arrangements in place for the regular inspection of the working environment of the mine. In the making of the arrangements what must be taken into account? (10 marks)
- e) As an open cut examiner working in a 24-hour, 7-day operation you are required to comply with a system for communication between outgoing and incoming shifts. What are the requirements of that system? (10 marks)

Question 4

- f) List and summarise the prescribed serious injuries or illnesses that are required to be notified? (10 marks)
- g) List and summarise the prescribed dangerous incidents relating to an open cut mine that are required to be notified. (10 marks)

Question 5

Your mine manager has asked you to assist in the review of the site's principal hazard management plans (PHMP) and principle control plans (PCP). With reference to relevant legislation:

- a) What is a principal hazard? (5 marks)
- b) List the PHMPs and PCPs required for an open cut mine site? (5 marks)
- c) What is the purpose of a PHMP? (5 marks)
- d) List the circumstances for when a review is required for a PHMP (5 marks)

OCE 2 – Practical open cut operation

Question 1:

You are the open cut examiner at a large open cut mine that includes a clean coal stockpile and reclaim tunnel in your inspection area. There are six reclaim valves that draw down the coal for loading into a rail bin. The reclaim tunnel is 300 metres in length with vibrating feeders and forced ventilation. A clean coal stacking gantry runs directly above each valve and limits the stockpile height above those valves to 20 metres. A bulldozer is required on the clean coal stockpile to push coal out for stacking and back into the valves for train loading.

After a recent incident in this area, where a bulldozer fell into a cavity in the coal while pushing out for stockpiling (refer to photo), your mining engineering manager has asked you to conduct a safety review of the area and associated tasks.



- a) Explain the process that you would undertake to conduct this review and what information you need to gather. (10 marks)
- b) List five key risks in the stockpile and reclaim tunnel activities. (15 marks)
- c) List the main controls for each risk identified in (b). (25 marks)

Question 2

- a) Where would you find information to identify the ton kilometre per hour (TKPH) values for haul trucks? (5 marks)
- b) If two tyres were of the same size and thread pattern, with the only difference being one of the tyres was a radial tyre and the other was a bias tyre, what tyre would have the highest TKPH value and why? (10 marks)
- c) How could you tell if the wheel/rim on one of your haul trucks is within its crack test date? (10 marks)
- d) Tyre position 1 on a 793 is suspected to have a heating tyre. As an open cut examiner, what are your immediate actions? (5 marks)
- e) What firefighting method would you use to address a tyre fire? (10 marks)
- f) When the fire is extinguished, what are the next steps required to be taken? (10 marks)

Question 3

You are a new open cut examiner at a small open cut coal mine using 9" (229 mm) diameter overburden holes. All holes in the pattern are around 15 metres deep. The shotfirer working on a Saturday calls you for advice because of the incorrect load sheets being issued to her. Show all calculations, assumptions and rules of thumb.

- a) What is the ideal sub drill range? (5 marks)
- b) What is the stemming length range using gravel? (5 marks)
- c) What is the ideal size of stemming gravel that you would use for this hole diameter? (5 marks)
- d) If the shot was a through-seam coal shot, what stand-off would you use to protect the mid coal seam? (8 marks)
- e) If the pattern is designed for ANFO, what changes would have to be implemented if the holes had 5 metres of water and wet product is used? (15 marks)
- f) What other options are available to avoid using a wet product in hole with 5 metres of water? (12 marks)

Question 4

You are an open cut examiner at a mid-sized open cut mine. In the early hours of Sunday morning, you receive an emergency call over the mine's two-way radio. The caller informs you that a loaded coal truck has rolled onto its side at a T intersection on the main haul road.

- a) What actions would you take as OCE as your initial response, after becoming aware of the incident? (20 marks)
- b) Is this matter notifiable? If so, specify the clause and description, notification requirements and next steps. (10 marks)
- c) What requirements are needed prior to recovering the truck and reopening the haul road. (10 marks)
- d) Outline the next steps to investigate and identify the possible causes of this type of incident and controls to mitigate these causes. (10 marks)

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