

Open cut examiner (OCE) of coal mines other than underground mines certificate of competence

Instructions to candidates

Legislation to be assessed:

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

Explosives Act 2003

Explosives Regulation 2014

OCE 1 – Mining legislation

All questions are to be attempted.

Answers are to be written in pen in this booklet ONLY.

Candidates must state all assumptions in their answers.

Refer to the relevant legislative provisions when answering all questions.

Question 1

- What is a principal hazard? (5 marks)
- What is a principal control plan? (5 marks)
- What is a duty holder? (5 marks)
- What must a duty holder do if risks to health and safety cannot be eliminated? (5 marks)

Question 2

An unmanned troop carrier rolled away from a lighting plant park-up area. The vehicle travelled about 200 m before hitting a centre dividing bund at an intersection and then rolled over. A fitter in a Ute had to take evasive action to avoid a collision with the roll away vehicle.

- What is meant by “incident site”? (5 marks)
- With reference to all applicable legislation detail all requirements that must be met in relation to this incident. (15 marks)

Question 3

You are an OCE at a newly developed Greenfield site that is currently looking at establishing a Health and Safety Committee.

- When must a Health & Safety Committee be established? (5 marks)
- What is the composition of a Health & Safety Committee at an open cut coal mine? (5 marks)
- Briefly summarise the “default procedure” that may be applied when health and safety issues are not resolved between parties to the issue. (10 marks)

Question 4

- Who is the regulatory authority in relation to explosives and shot firing at an open cut mine? (10 marks)
- Shot firers are considered to be at a higher risk of respirable dust hazards due to the environment in which they are exposed on a daily basis.

In relation to airborne dust in open cut coal mines, what are the sampling locations, persons to be sampled and frequency of those samples? (10 marks)

Question 5

Vehicle interaction is considered a major hazard at an open cut coal mine.

- When managing risks associated with the movement of mobile plant, what are the key matters that a mine operator must have regards to? (10 marks)
- Your Mining Engineering Manager has requested you assist in the review of the principal hazard management plan dealing with roads or other vehicle operating areas.

Under what circumstances must a review of this PHMP be undertaken? (10 marks)

OCE 2 – Practical open cut operation

All four (4) questions are to be attempted.

All questions are of equal value, 50 marks however, parts of a question may vary.

Question 1 - Incident management

You are the OCE at a large open cut mine. Late one evening, you receive a call from a light vehicle stating that they have just had a near miss with a large haul truck at an intersection.

Both vehicles had to take evasive action to avoid one another and came to a complete stop. The light vehicle driver sounded anxious over the two-way. You are approximately five minutes from the location.

- What information do you need and what are your immediate actions before arriving on the scene? (10 marks)

- b) You arrive on the scene and others nearby have also attended the scene to render any assistance required. You attempt to contact your Mining Engineering Manager but he is not answering. What are your next actions? (20 marks)
- c) You have been asked to coordinate an investigation into this incident. Outline the process you would follow, potential causes and control measures for each potential cause. (20 marks)

Question 2 – Explosives and shotfiring

You are an OCE at an open cut coal mine that utilises an overburden drill with a 229 mm diameter drill bit. The holes are drilled to a set depth of 20 m.

On your Saturday day shift the Shotfirer notifies you that the first six loaded holes of an overburden blast pattern were loaded to within 2 m of the collar. The holes were loaded with Heavy ANFO of 1.2 density.

Showing all calculations and workings:

- a) What is the design kg/m for these holes? (10 marks)
- b) Calculate the ideal stemming height using imported crushed gravel with medium to hard cap rock? (10 marks)
- c) What is the total explosives (in kg) if the hole is loaded to the correct stemming height? (10 marks)
- d) What could cause six consecutive holes to be overloaded and what actions are required to prevent this? (10 marks)
- e) What steps are required to address the six overloaded holes to reduce the explosives to the design stemming height? (10 marks)

Question 3 – Mining practice

You are a new OCE at a mine that utilises excavators as their prime loading units for overburden and coal extraction.

A P&H 2800 electric rope shovel that has been parked up for three years offsite is available to be used as a standby “swing machine”.

Your Mine Manager has asked you assist in developing a plan to introduce the P&H 2800 electric rope shovel to site.

- a) List what actions are required before the shovel can be put into service. (15 marks)
- b) List what changes you will need to consider in the implementation of the electric shovel? (20 marks)
- c) On the first shift of operation the machine becomes bogged after one track was placed off the coal edge in wet material. Outline what must be done to avoid another occurrence of this. (15 marks)

Question 4 – Contractor management/environment

You are the OCE on shift at an open cut mine. There are two large sediment dams being constructed on the lease boundary to catch mine water run-off. The sediment dams require over 50,000m³ of material to be cut, of which 30,000m³ will build the dam wall, and the remainder is to be disposed in a topsoil/clay stockpile at the edge of the open cut.

A contractor has been engaged to construct the dams. They will use the following equipment to undertake the work:

- 1 x 50t excavator
- 1 x 623H scraper
- 5 x 740 articulated dump trucks
- 1 x D9 bulldozers
- 1 x sheepsfoot roller

The works will take the contractor two weeks to complete.

- a) Using the Nertney Wheel, list what you would look for on your pre-shift and during-shift inspections in relation to this contractor operation. (25 marks)
- b) During construction, a nearby resident makes a complaint about excessive noise and dust coming from the contractor's work area. Your Mine Manager has asked you to provide an action plan to prevent reoccurrence.

Identify 10 actions (5 for noise, 5 for dust) that you would put in place to prevent reoccurrence which you will present to your Mine Manager. (25 marks)

More information

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Resources Regulator

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Acknowledgments

Open cut examiner of coal mines other than underground mines examination panel

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