



EXAMINATION PAPER | CERTIFICATE OF COMPETENCE

Open cut examiner of coal mines other than underground mines

June 2017

OCE1 – Mining Legislation

Instructions to candidates

All four (4) questions are to be attempted.

Legislation 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 2013

Question 1 (30 marks)

With reference to all relevant legislation, what are the requirements for each of the incidents below?

- A booster is found in the dig face of a waste excavator (6 marks)
- A fitter conducting a grinding task on a handrail gets a metal fragment embedded in his eye. The injury results in him being unfit for his usual duties for at least 2 weeks (6 marks)
- A contractor receives medical treatment by his Doctor the day after inhaling fire suppressant powder during the servicing of a truck automatic fire suppression system (6 marks)
- A section of high wall collapses causing rock damage to an operating lighting plant used in an active drill area (6 marks)
- After an inspection of a shot area the shotfirer notifies you that several boosters have gone missing from holes that were primed on the previous shift (6 marks)

Question 2 (20 marks)

As the Open Cut Examiner on a site, you would be aware that the Mine Operator is required to meet obligations related to the management of alcohol and other drugs in the workplace. With reference to the key legislative requirements;

- What are the key employer responsibilities in regards to the management of alcohol and other drugs in the workplace? (10 marks)
- What are the key employee responsibilities in regards to the management of alcohol and other drugs in the workplace? (10 marks)

Question 3 (30 marks)

Your Mine Manager has asked you, as an Open Cut Examiner at your mine, to assist in the review of the sites Principal Hazard Management Plans and Principle Control Plans. With reference to relevant legislation;

- List the Principal Hazard Management Plans and Principal Control Plans required for an open cut mine site? (10 marks)
- What is the purpose of a Principal Hazard Management Plan? (5 marks)
- Under what circumstances is a review required for a Principal Hazard Management Plan? (10 marks)
- What is the role of workers in relation to principal hazards? (5 marks)

Question 4 (20 marks)

Vehicle interaction is a major hazard at the open cut coal mine where you are appointed as an Open Cut Examiner.

When managing risks associated with the movement of mobile plant, what would you suggest are the key matters that a Mine Operator must have regards to? (20 marks)

OCE2 – Open cut mining practise

Instructions to candidates

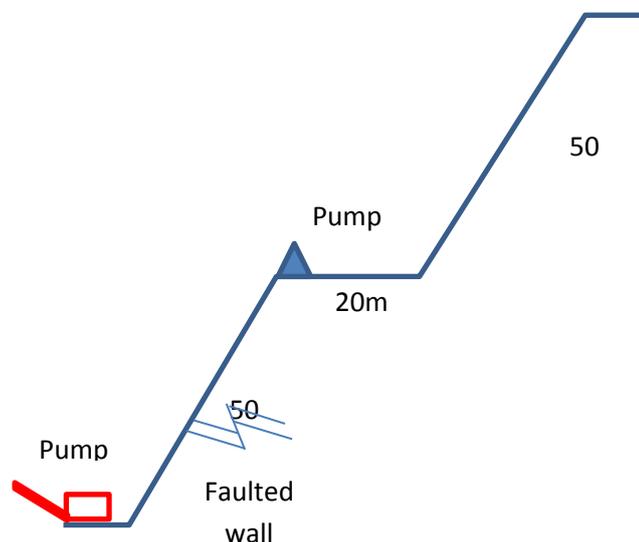
Only four (4) of the six (6) questions are to be attempted.

Questions 4 & 5 are compulsory.

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

Question 1 - Slope Stability

You are an OCE at a Hunter Valley mine with a 50m highwall that has a normal fault at an 80° angle. Within the highwall there is a 15m offset in the strata. A 20m pump access bench above the faulted highwall is the only access to a high priority pump (see Diagram).



- a) How could the fault affect access and water drainage on the pump access bench? (10 marks)
- b) What process would you have in place for the pump crew accessing the pit floor via highwall toe? (15 marks)
- c) What other procedures should be implemented for safe access? (15 marks)
- d) How does dynamic and static water affect the faulted area and highwall? (10 marks)

Question 2 - Explosives

You are an Open Cut Examiner at an open cut mine. The mine has recently introduced an electronic process to measure hole depth and automatically create load sheets for blasting (i.e. a portable tablet based system). The information is transferred wirelessly from the tablets to the trucks and back to the office. This includes all information including dipped length, stemming heights and load sheets for the MPU's and stemming trucks.

- a) Outline the process for implementing this type of change (15 marks)
- b) What are the risks for this type of system (10 marks)
- c) List the advantages of this system (10 marks)
- d) What extra steps are required to ensure all holes are loaded correctly (15 marks)

Question 3 - Spontaneous Combustion

You are an OCE for a large open cut mine running electric shovels and hydraulic excavators. The overburden and coal contains high sulphur and is prone to spontaneous combustion throughout the deposit. Recently you have had an increase in community complaints made to the EPA who then have requested a formal response from your mine. The operators on site are also starting to make reports regarding the smell citing they are getting headaches and nausea.

- a) List 5 controls that could be used to mitigate the hazards of spon com (15 marks)
- b) A fitter reports to you feeling ill after working on a field service in pit. He starts vomiting shortly after speaking with you. How do you respond to this situation? (25 marks)
- c) If the fitter is admitted to hospital, but released that day after receiving medical treatment, is it a Notifiable incident? (10 marks)

Question 4 - Underground workings (compulsory)

You are the OCE of an open cut mine utilising one electric shovel, hydraulic excavators and front end loaders. The operation is about to mine over old board and pillar workings. The workings were mined circa 1950's and some of the areas of the colliery had secondary extraction of the pillars.

- a) What information would you require to conduct an effective risk assessment? (15 marks)
- b) What are the hazards associated with working over this type of UG workings? (10 marks)
- c) What controls would you have in place for working over UG workings? (10 marks)
- d) What controls would you have specifically for the area where secondary extraction has taken place? (15 marks)

Question 5 - Environmental (compulsory)

You are an OCE at a small open cut operation on nightshift. The site has truck/hydraulic excavator operation as well as CHPP which lies inside your inspection area. There are two trains arriving early the next day and the CHPP is busy trying to wash enough coal to fill these overnight. A maintenance employee, on his way to work, noticed the creek on site had a black appearance. Upon inspection he has found the tailings line which runs through nearby bushland has a hole in it and appears to have been leaking for some time. Your attempts to contact the Environmental Engineer, Mine Manager and CHPP Manager have been unsuccessful.

- a) What steps would you take to control the situation? What management systems might you need to refer to or have knowledge of to deal with this incident? (25 marks)
- b) Given the incident occurred early in your shift it becomes clear that there isn't enough coal washed to fill tomorrow's trains unless you continue washing. Given this information what would you do? Explain your reasoning. (10 marks)
- c) What steps, process and controls would you put in place to prevent a reoccurrence? (15 marks)

Question 6 - Rope shovel incident

You are the night shift OCE of a small multi-seam open cut coal mine which has a large electric rope shovel that removes the bulk of the overburden. The rope shovel is currently located deep in the pit with 3 trucks allocated to it as they are tipping on a dump nearby the rope shovel.

You have just had a call from your rope shovel operator that *“One of the trucks has just pulled down the cable and cable stands near the rope shovel. The power tripped while the rope shovel was loading another truck and the bucket has made contact with the body of that truck”*

- a) What further information do you need to respond effectively? (5 marks)
- b) What is your immediate action? (10 marks)
- c) Is this a reportable event? Explain your reasoning. (5 marks)
- d) Your manager has asked you to conduct the investigation. Explain how you would do this, including what areas you would investigate and possible causes. (30 marks)

More information

NSW Department of Planning & Environment
Resources Regulator
Mining Competence Team

T: 02 4931 6625

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

Acknowledgments

Open cut examiner coal mines other than underground examination panel

© State of New South Wales through the NSW Department of Planning and Environment 2017

This publication is copyright. You may download, display, print and reproduce this material in an unaltered form only (retaining this notice) for your personal use or for non-commercial use within your organisation. To copy, adapt, publish, distribute or commercialise any of this publication you will need to seek permission from the NSW Department of Planning and Environment.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (July 2017). 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 Planning and Environment or the user's independent advisor.

PUB17/328