

EXAMINATION PAPER | CERTIFICATE OF COMPETENCE

Mechanical engineer of coal mines other than underground coal mines

August 2016

CME3 – Safety and mining legislation applicable to open-cut coal mines

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

It is expected that candidates will present their answers in an engineering manner making full use of diagrams, tables and relevant circuits where applicable and showing full workings in calculations. Credit marks will be given for such work in assessing marks for these questions. Neatness in diagrams and hand writing is essential and will be considered in the allocation of marks.

Provide answers in point form wherever appropriate. If you are unable to fit your answers in the available space, you may use the space on the opposing page. Three (3) blank pages have also been included at the end of the paper. Ensure the question you are answering is clearly marked.

Electronic aids may not be used, apart from a non-programmable calculator.

All questions are to be attempted.

All questions are of equal value, but parts of questions may vary in value. The marks applicable to each part of a question will be indicated adjacent to the question.

Place your identification number only, NOT your name, on your paper.

10 minutes reading time is allowed prior to the start of the examination. Candidates can use a highlighter to mark points of importance during the reading time, but may not begin answering the questions.

PART A is **open book**.

PART B is **closed book**.

PART A: Legislation (3 questions – open book)

Question 1 (total 25 marks)

Please read the below scenario and answer the following questions.

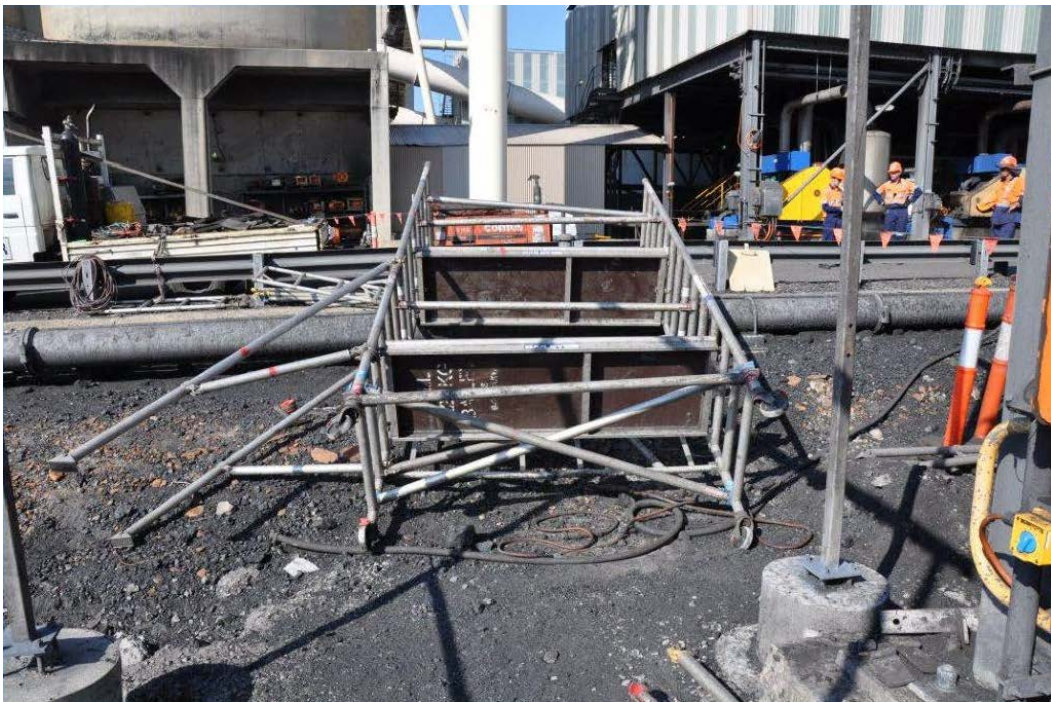
You hold the nominated mechanical statutory function as set out in Schedule 10 of the NSW, Work Health and Safety (Mines and Petroleum Sites) Regulations 2014.

The mine is currently undertaking major maintenance activities during three (3) weeks shut down over the Christmas / New Year period. Multiple contracting firms have been engaged to complete the scheduled works.

One of the major tasks is to replace a conveyor drive pulley on CV801 conveyor in the coal preparation plant. This task was contracted to F.F.F. Engineering Services. To gain access to the conveyor drive, sections of wall cladding and roofing are required to be removed. The task of removing and replacing the wall cladding and roof requires the use of scaffolding and a hired 60t mobile crane.

You received a phone call from the Mine Operator at 0715 hours on the 27th of December 20XX informing you of the following:

- During the process of replacing the roof section of the conveyor drive house, the roof section being lifted into position, the mobile crane unexpectedly slewed and collided with the scaffolding, resulting in the scaffolding toppling over.
- A 33 year old male fitter (John Citizen) who was on the scaffold at the time of the collision was severely injured as a result of the fall and required transportation to hospital to be treated for his injuries being; fractures to his left femur and left ulna. (Photographs of incident site attached). The crane rigger (Joe Public) who was directing the crane driver witnessed the incident. The incident occurred at approximately at 0615 hours.





The Mine Operator has directed you to manage the incident, gather more information and contact the Regulator (being the Inspector of Mechanical Engineering).

- a) What are your immediate actions and why? (5 marks)
- b) What initial information are you going to gather and what information are you intending to provide to the Regulator. (5 marks)
- c) Under which clause/s of the Regulations would you report this under and for what reasons? Complete the attached **Notification form (page 7)** including any assumptions if information is not provided. (15 marks)

Question 2 (total 25 marks)

The *Work Health and Safety (Mines and Petroleum Sites) Regulations 2014*, require Principal control plans to be developed at a mine or petroleum site.

- a) What key control plan would you be required to develop as the holder of the nominated mechanical statutory function as set out in Schedule 10 of the NSW, *Work Health and Safety (Mines and Petroleum Sites) Regulations 2014* and where would you locate the requirements for the development of this plan? (Detail all sections and references) (5 marks)
- b) List the other clauses of the *Work Health and Safety (Mines and Petroleum Sites) Regulations 2014* and the *Work Health and Safety Regulations 2011* and other guidance material that should be referenced and included to assist in the development of the required control plan? (20 marks)

Questions 3 (total 25 marks)

Work Health and Safety Regulations 2011, Chapter 5, Clause 203, Management of risk to health and safety says "A person with management or control of plant at a workplace must manage risks to health and safety associated with plant, in accordance with Part 3.1."

How would your mine apply this requirement to meet its obligations under this clause? (25 marks)

PART B: Practical mining (3 questions – closed book)

Question 4 (total 25 marks)

The surface coal handling system at your mine incorporates a 4000 tonne capacity saleable coal storage bin. The bin is of concrete and steel construction and circular, with conical bottom sections feeding two (2) clam shells from the discharge outlets which load road registered trucks.

There are no alternative means of loading the saleable coal other than using the bin.

A recent structural inspection and thickness test has revealed that greater than 75% of the steel conical bottom section plates were an average of eight millimetres (8 mm) thick. Some high wear areas were as low as five millimetres (5 mm) thick. The original plate thickness was half an inch (1/2").

No records or detail drawing exist of the steel conical sections, other than general arrangement drawings. The GA drawing indicates that the steel conical bottom sections were designed for mass flow of the product.

PART 1

The mine Operator asks you the following two (2) questions.

- a) What short term actions as the results of the thickness testing (if any), do you intend to take and justify? (5 marks)
- b) Is the bin safe to continue loading trucks and justify? (5 marks)

PART 2

The results of analysis and investigation determined repairs will be required to the conical sections:

- A contracting company will be engaged to manufacture and install the new cone sections.
- Cutting off the worn cone section and removing it
- Welding the new cone section into position

The process will involve the use of, the following equipment:

- Lifting equipment
 - Scaffolding
 - Mobile elevated work platform (MEWP)
 - Electric welding equipment
 - Gas cutting equipment
 - Electric power tools
- c) List controls to be taken to ensure the work is carried out in a safe and efficient manner. (5 marks)
 - d) What can be done to prevent the new cone sections from deteriorating in the future? (5 marks)
 - e) List the activities associated with these works that would be classified as "high risk" in terms of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014. (5 marks)

Question 5 (total 25 marks)

Your company is arranging to 'dry hire' three (3) 400 tonne rear dump trucks on a long term contract. The trucks are being hired from a hire company based in Queensland and the trucks had not been previously hired anywhere in NSW. As the nominated Mechanical Engineer, you have been asked to inspect the trucks for compliance in order for them to be used on site.

- a) List 20 items you would be checking for as part of the site introduction requirements (20 marks)
- b) What administration systems are required to bring the trucks onto site and for their ongoing management? (5 marks)

Question 6 (total 25 marks)

The *Work Health and Safety (Mines and Petroleum Sites) Regulations*

Clause 26 (a). Principal control plans. (4) Mechanical engineering control plan.

The operator of a mine or petroleum site at which there is a risk to health and safety associated with the mechanical aspects of plant and structures at a mine or petroleum site:

must prepare and implement a mechanical engineering control plan for the mine or petroleum site that sets out the means by which the operator will manage those risks in accordance of clause 9, and

Further to this, the mechanical engineering control plan must take into account, “the reliability of safeguards used at the mine or petroleum site to protect persons from the hazards posed by the plant or structure during each phase of its life cycle.”

- a) In your own words, define each of the following terms in context of mechanical engineering.
 - i. Functional safety. (2.5 marks)
 - ii. Safety critical systems (2.5 marks)
 - iii. Safety integrity level (2.5 marks)
 - iv. CAT levels (2.5 marks)
- b) List the basic steps to establish functional safety requirements (10 marks)
- c) List the critical systems you may expect to find in a Reject / Refuse discharge bin and list some of the agents of failure for the critical systems that you have identified. (2.5 marks)
- d) Describe how your inspection, testing and maintenance system would be configured to confirm the functionality of each of the critical systems identified in. (2.5 marks)

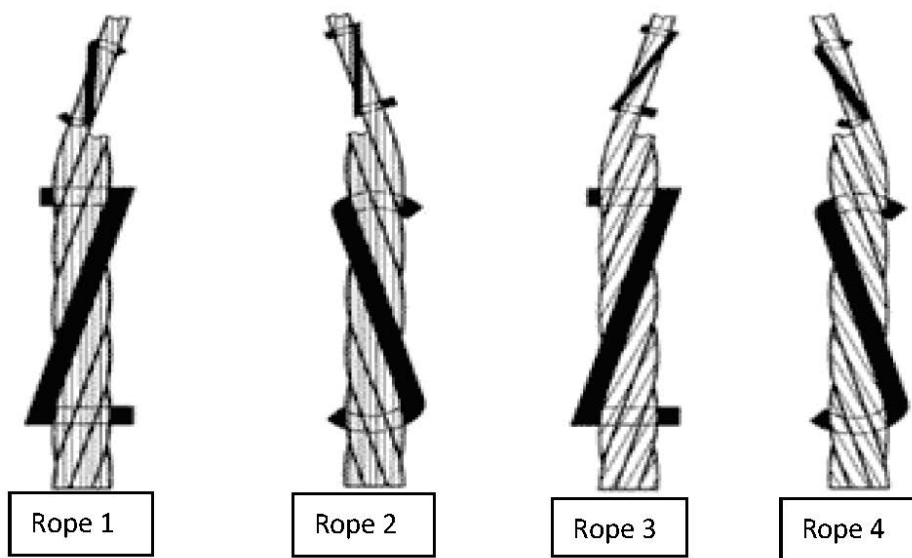
Question 7 (total 25 marks)

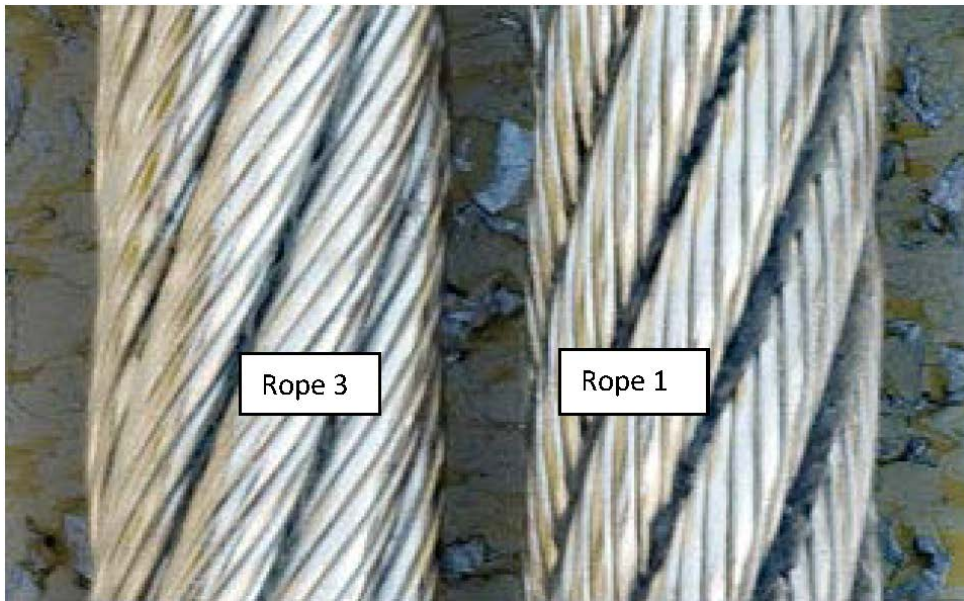
You have been successfully appointed the holder of the nominated mechanical statutory function as set out in Schedule 10 of the NSW, *Work Health and Safety (Mines and Petroleum Sites) Regulations 2014*. You have not previously worked in the mine’s geographical location within New South Wales. The mine Operator requires a written response to the following information:

- a) A list of ten (10) important statutory / safety / operational matters with which you would become familiar during the first three (3) months of commencing the role. (10 marks)
- b) Each matter requires having a description of your expectations. (10 marks)
- c) How would you set out the required information when presented to the Mine Operator? (5 marks)

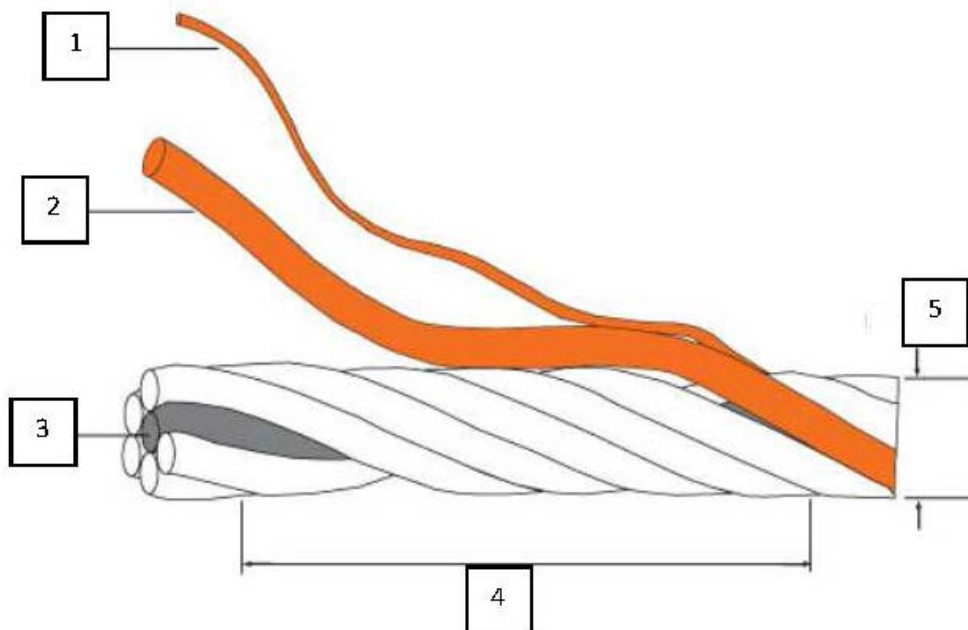
Question 8 (total 25 marks)

Below are four (4) diagrams and two photographs of typical wire rope constructions used in the mining industry.





- a) Provide the basic description of each of the four wire ropes. (5 marks)
- i. Rope 1 (1.25 marks)
 - ii. Rope 2 (1.25 marks)
 - iii. Rope 3 (1.25 marks)
 - iv. Rope 4 (1.25 marks)
- b) Describe the typical application of each lay description and why the selection for the application.
- i. Rope 1 and 2 (5 marks)
 - ii. Rope 3 and 4 (5 marks)
- c) Describe the major difference between the two constructions methods.
- i. Construction method rope 1 and 2. (2.5 marks)
 - ii. Construction method rope 2 and 3. (2.5 marks)
- d) Describe (name) the items (illustration below) 1 to 5 which contribute to the construction and description of a wire rope against the corresponding number lines below. (5 marks)



Form

Notification of incident and injury

WHS (Mines and Petroleum Sites) Legislation

February 2016 | v1.0

Instructions

See the *Notification of incident and injury guide* before completing this form.

All notifiers must complete sections 1 and 3.

Complete section 2 if the incident involves the death, injury or illness of a person.

Attach additional copies of section 2 if more than one person has been injured.

An ancillary form may be required for some types of incidents.

Important

In the case of a notifiable incident, the site of the incident must be preserved until an inspector arrives or any earlier time that an inspector directs. See the attached notes for a list of notifiable incidents.

For all incidents a record must be kept with the mine record or petroleum site record. In the case of an incident at a coal mine, a copy of this notice must also be given to an industry safety and health representative.

1 Information required for notification of an incident

Name of mine or petroleum site	Wash
Site address of mine or petroleum site	Wash Road
Name of mine operator or petroleum site operator	Wash Services

2 About the incident

Date of incident (Or in the case of illness, the date the illness first reported by or on behalf of the person suffering the illness)		Time of incident	____:____ HH MM AM:PM
Has this incident been previously reported to an inspector?	<input type="checkbox"/> Yes, verbally	<input type="checkbox"/> Yes, in writing	<input type="checkbox"/> No
Date incident previously reported			

Where did the incident occur?

Give exact details e.g. u/g heading, workshop, o/c bench, treatment plant

What was the nature of the incident?

Give details of any particular chemical, product, process or equipment involved.

- e.g.
- 1 Foot slipped on wet rung of metal ladder
 - 2 Chemicals stored in damaged containers
 - 3 Repeatedly lifting 16kg bags of cement from pallet or trolley

What was the apparent cause of the incident?

Give details of any particular chemical, product, process or equipment involved.

- e.g.
- 1 LHD brakes failed
 - 2 Leak of caustic soda
 - 3 Felt sudden pain in lower back although nothing extraordinary happened

Equipment involved

Give details of any type, make and model of equipment involved.

- e.g. Type: Loader – u/g, Make: ABC, Model: 123-45

Type	Make	Model

Give details of action that has been taken, or will be taken, to prevent the incident from happening again.

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Did anyone see the incident? If yes provide details of up to two people who observed the incident.

Person's name	Name of the person conducting business or undertaking in which the person works (<i>usually the employer; if self-employed, name of the business or undertaking</i>).	Phone number

Which *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* clauses and subclauses are applicable to the incident and/or injury?

Include all Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 clauses, subclauses and parts that are applicable to the incident and/or injury. Refer to the accompanying notes on page 7.

- e.g. *CI 179(a)(xiii) collision involving a vehicle or mobile plant*
 CI 178(a) an injury requiring immediate treatment as an in-patient
 CI 128(5)(o) unfit for ≥7 days
 CI 128(5)(a)-179(a)(ii)- a high potential incident involving an uncontrolled implosion, explosion or fire

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3 Is an ancillary report required?

If this incident relates to any of the incidents below, then please also complete the relevant *Ancillary report form* and submit no later than 30 days after the incident was required to be reported.

- CI 128(5)(i) the failure of the explosion-protection characteristics of explosion-protected plant while that plant is in service at an underground coal mine.

An ancillary report is only required if the failure relates to the explosion-protected characteristics of a diesel engine system.

- CI 179(a)(ii), CI 179(b) or CI 128(5)(a) (see attached notes).

An ancillary report is only required if the incident involves a fire related to mobile plant.

Injuries or illness associated with the incident

Did the incident involve the death, injury or illness of a person?	<input type="checkbox"/> Yes - Provide the full name of each person below and complete section 2 of this form for each person. Attach additional copies of section 2 if required.	<input type="checkbox"/> No
Name		
Name		

Name		
Name		
Will additional information be forthcoming?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

4 Information required for notification of a death, injury or illness

About the injured person

Surname			
Given names			
Date of birth		Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female

About the injured person (continued)

	Home address	Postal address If different to home address	
Street address			
City			
State			
Postcode			
Phone			
Fax			
Mobile			
Email			
Occupation			
Name of the person conducting business or undertaking in which the person works (usually the employer)(if self-employed, name of the business or undertaking).		Date employment commenced:	
Industry in which the business or undertaking is primarily conducted			
Type of work	<input type="checkbox"/> Full-time	<input type="checkbox"/> Part-time	<input type="checkbox"/> Casual <input type="checkbox"/> Other
Job type	<input type="checkbox"/> Employee of operator <input type="checkbox"/> Employee of contractor, other than labour hire company <input type="checkbox"/> Employee of labour hire company <input type="checkbox"/> Other, please specify _____		
Usual shift start time	__ : __ AM:PM HH MM AM:PM	Usual shift end time	__ : __ AM:PM HH MM AM:PM
Start time on day of incident	__ : __ AM:PM HH MM AM:PM		
Travel hours Number of hours worker spent travelling to work on the day of the incident		Rostered travel hours Number of hours worker spent travelling to and from work since the start of the current roster period	

Hours worked by worker in the last 7 calendar days before injury occurred Day 7 is the day of the incident	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Work experience in mining industry	_____ years _____ months		Work experience in task at time of injury			_____ years _____ months	
Training for task	<input type="checkbox"/> None		<input type="checkbox"/> Basic			<input type="checkbox"/> Extensive	

About the death, injury or illness as reported

Date of death, injury or illness (if other than incident date)		Time of injury/incident	
Date the death, injury or illness reported		Time injury or illness reported	

What was the injury or illness as reported?

Give full details including the nature of injury, the part of the body and any treatment.

What treatment did the person have?

- | | |
|---|--|
| <input type="checkbox"/> Hospital – inpatient admission | <input type="checkbox"/> Doctor’s surgery |
| <input type="checkbox"/> Hospital – treatment | <input type="checkbox"/> First-aid on site |
| <input type="checkbox"/> Hospital – assessment only | <input type="checkbox"/> Other (specify) _____ |

What was the person doing just before the incident?

Consequences of incident

Tick all that apply, for example, ‘lost time’ may have occurred, and ‘restricted duties’ may be likely to occur.

	Occurred	Likely to occur	Potential to occur
Fatality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Permanent incapacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lost time*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restricted duties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Lost time means an inability to work for 1 day or more, not including the incident day.*

Did the worker stop work or normal duties?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	When did the person stop work or normal duties?	
Is the worker expected to return to work?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	What is the estimated return to work date?	

5 Information required for all notifications

Is this form submitted by or on behalf of the operator of a mine or petroleum site	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Provide details of the person conducting the business or undertaking (PCBU) making this notification	
Details of PCBU other than the operator of a mine or petroleum site	Legal name	
	ACN if a company or ABN	
	Main business activity e.g. drilling	

Declaration

I declare that:

- I have authority from the mine operator /petroleum site operator /person conducting a business or undertaking to complete and submit this form on their behalf, and
- to the best of my knowledge, the information provided in this form, and any attachment to this form, is true and correct in every detail.

NOTE: Giving false or misleading information is a serious offence under section 268 of the *Work Health and Safety Act 2011*, and Part 5A of the *Crimes Act 1900*.

Name of authorised person		Position	
Contact telephone		Mobile	
Signature		Date	

Submitting the form

- Mail, deliver, fax or email this form to your local office of NSW Department of Industry Mine Safety from the list on the next page.
- Email notification is preferred.

This form may not be submitted to other offices of NSW Department of Industry

Do not submit pages 9-12.

In the case of an incident at a coal mine, a copy of this notice must also be given to an industry safety and health representative.

Maitland	NSW Department of Industry, Mine Safety PO Box 344 Hunter Region MC, NSW 2321	Phone: (02) 4931 6666 Fax: (02) 4931 6790 maitland.notification@industry.nsw.gov.au
Armidale	No postal submission of forms. Email only	armidale.notification@industry.nsw.gov.au
Orange	NSW Department of Industry, Mine Safety Locked Bag 21 Orange NSW 2800 Phone: (02) 6360 5333	Fax: (02) 6360 5363 After-hours emergencies only: (02) 6360 5343 orange.notification@industry.nsw.gov.au
Broken Hill	NSW Department of Industry, Mine Safety PO Box 696 Broken Hill NSW 2880	Phone: (08) 8088 9300 Fax: (08) 8087 8005 brokenhill.notification@industry.nsw.gov.au
Cobar	No postal submission of forms. Email only	cobar.notification@industry.nsw.gov.au
Wollongong	NSW Department of Industry, Mine Safety PO Box 674 Wollongong NSW 2500	Phone: (02) 4222 8333 Fax: (02) 4226 3851 wollongong.notification@industry.nsw.gov.au
Lithgow	No postal submission of forms. Email only	lithgow.notification@industry.nsw.gov.au
Lightning Ridge	NSW Department of Industry, Mine Safety PO Box 314 Lightning Ridge NSW 2834	Phone: (02) 6829 9200 Fax: (02) 6829 0825 lightningridge.notification@industry.nsw.gov.au

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Information from this form is collected for the purpose of regulating work health and safety in mines and petroleum sites, and the administration and enforcement of the *Work Health and Safety Act 2011*, *Work Health and Safety (Mines and Petroleum Sites) Act 2013*, *Mining Act 1992*, *Petroleum (Onshore) Act 1991*, *Explosives Act 2003* and *Radiation Control Act 1990*. The supply of this information is required by law. Information will be stored and managed in accordance with provisions under the *Privacy and Personal Information Protection Act 1998*. It will not be given to any other third party except as authorised by law. You may access or correct your personal information by contacting Governance & Information Requests Unit on (02) 9995 0911 or privacy@industry.nsw.gov.au. Further information regarding privacy can be obtained from the NSW Department of Industry website at www.industry.nsw.gov.au/privacy.

Disclaimer

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

PUB16/40

Notes:

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

Part A Notifiable incidents

Incidents arising from the conduct of a business or undertaking at a mine or petroleum site that involve the following matters

Death of a person – Work Health and Safety (Mines and Petroleum Sites) Act 2013 Section 14

Act Section Number	Section
14(a)	the death of a person

Serious injury or illness – Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 Clause 178

Regulation Clause Number	Clause
178(a)	an injury or illness requiring the person to have immediate treatment as an in-patient in a hospital,
178(b)	an injury or illness requiring the person to have immediate treatment for:
178(b)	(i) the amputation of any part of his or her body
178(b)	(ii) a serious head injury
178(b)	(iii) a serious eye injury
178(b)	(iv) a serious burn
178(b)	(v) the separation of his or her skin from an underlying tissue (such as degloving or scalping),
178(b)	(vi) a spinal injury
178(b)	(vii) the loss of a bodily function
178(b)	(viii) serious lacerations
178(c)	an injury or illness requiring the person to have medical treatment within 48 hours of exposure to a substance
178(d)	a fracture to a person's bone other than a bone in the person's hand (including a finger) or foot (including a toe)
178(e)	a condition prescribed as a serious illness for the purposes of section 36 of the WHS Act. Note. See clause 699 of the WHS Regulations

Prescribed serious illnesses – Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 Clause 178 and Work Health and Safety Regulation 2011 Clause 699

Regulation Clause Number	Clause
699(a)	Any infection to which the carrying out of work is a significant contributing factor, including any infection that is reliably attributable to carrying out work:
178(e)	699(a) (i) with micro-organisms
178(e)	699(a) (ii) that involves providing treatment or care to a person
178(e)	699(a) (iii) that involves contact with human blood or body substances
178(e)	699(a) (iv) that involves handling or contact with animals, animal hides, skins, wool or hair, animal carcasses or animal waste products
	The following occupational zoonoses contracted in the course of work involving handling or contact with animals, animal hides, skins, wool or hair, animal carcasses or animal waste products:
178(e)	699(b)(i) Q fever
178(e)	699(b) (ii) Anthrax
178(e)	699(b) (iii) Leptospirosis
178(e)	699(b) (iv) Brucellosis
178(e)	699(b) (v) Hendra Virus
178(e)	699(b) (vi) Avian Influenza
178(e)	699(b) (vii) Psittacosis

NOTE: The *Public Health Act 2010* also imposes obligations relating to the notification of certain medical conditions.

Dangerous incidents – Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 Clause 179

Regulation Clause Number	Clause
179(a)	an incident in relation to a workplace that exposes a worker or any other person to a serious risk to a person's health or safety emanating from an immediate or imminent exposure to:
179(a)	(i) an uncontrolled escape, spillage or leakage of a substance
179(a)	(ii) an uncontrolled implosion, explosion or fire (Note: Licence holders under the <i>Explosives Act 2003</i> have obligations to notify the regulator of certain incidents involving explosives)
179(a)	(iii) an uncontrolled escape of gas or steam
179(a)	(iv) an uncontrolled escape of a pressurised substance
179(a)	(v) the fall or release from a height of any plant, substance or thing
179(a)	(vi) the collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised within the meaning of Part 4 of the WHS Act
179(a)	(vii) the collapse or partial collapse of a structure
179(a)	(viii) the collapse or failure of an excavation or of any shoring supporting an excavation
179(a)	(ix) the inrush of water, mud or gas in workings at an underground excavation or tunnel
179(a)	(x) the unintended interruption of the main system of ventilation at an underground excavation or tunnel
179(a)	(xi) the loss of control of heavy earthmoving machinery (including any failure of braking or steering)
179(a)	(xii) the unintended activation, movement, or failure to stop of vehicles or machinery
179(a)	(xiii) a collision involving a vehicle or mobile plant

Regulation Clause Number		Clause
179(a)	(xiv)	damage to, or failure of, any part of a powered winding system or a shaft or shaft equipment
179(a)	(xv)	damage to any plant or structure
179(a)	(xvi)	a failure of ground, or of slope stability control measures
179(a)	(xvii)	rock falls, instability of cliffs, steep slopes or natural dams, occurrence of sinkholes, development of surface cracking or deformations or release of gas at surface, due to subsidence
179(a)	(xviii)	a vehicle or plant making contact with an energised source having a voltage greater than 1,200 volts (other than testing equipment applied to energised equipment in accordance with the WHS Regulations)
179(b)		a fire in the underground parts of a mine, including where the fire is in the form of an oxidation that releases heat and light
179(c)		an electric shock to a person (other than a shock due to extra low voltage)
179(d)		any initial indication that any underground part of a coal mine is subject to windblast, outbursts or spontaneous combustion
179(e)		the unintended overturning of any vehicle or of plant weighing more than 100 kilograms
179(f)		ejection of fly rock so that it falls outside an exclusion zone (being an area from which persons are excluded during blasting)
179(g)		any initial indication that there may be a fault in the cementing of a casing string forming part of the cement casing of a well

Part B – Other incidents arising out of the carrying out of mining or petroleum operations at a mine or petroleum site – *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 Clause 128*

The requirement to notify the regulator of these matters applies to operators of a mine or petroleum site. Other persons conducting a business should notify the operator if such an incident occurs and the operator must notify the regulator.

Regulation Clause Number		Clause
128(5)(a)		an event referred to in clause 179 (a) (i)–(xviii) that would have been a dangerous incident if a person were in the vicinity at the time when the incident or event occurred and in usual circumstances a person could have been in that vicinity at that time:
128(5)(a)	179(a)(i)	an uncontrolled escape, spillage or leakage of a substance
128(5)(a)	179(a)(ii)	an uncontrolled implosion, explosion or fire (Note: Licence holders under the <i>Explosives Act 2003</i> have obligations to notify the regulator of certain incidents involving explosives)
128(5)(a)	179(a)(iii)	an uncontrolled escape of gas or steam
128(5)(a)	179(a)(iv)	an uncontrolled escape of a pressurised substance
128(5)(a)	179(a)(v)	the fall or release from a height of any plant, substance or thing
128(5)(a)	179(a)(vi)	the collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised within the meaning of Part 4 of the WHS Act
128(5)(a)	179(a)(vii)	the collapse or partial collapse of a structure
128(5)(a)	179(a)(viii)	the collapse or failure of an excavation or of any shoring supporting an excavation
128(5)(a)	179(a)(ix)	the inrush of water, mud or gas in workings at an underground excavation or tunnel
128(5)(a)	179(a)(x)	the unintended interruption of the main system of ventilation at an underground excavation or tunnel
128(5)(a)	179(a)(xi)	the loss of control of heavy earthmoving machinery (including any failure of braking or steering)
128(5)(a)	179(a)(xii)	the unintended activation, movement, or failure to stop of vehicles or machinery
128(5)(a)	179(a)(xiii)	a collision involving a vehicle or mobile plant

Regulation Clause Number		Clause
128(5)(a)	179(a)(xiv)	damage to, or failure of, any part of a powered winding system or a shaft or shaft equipment
128(5)(a)	179(a)(xv)	damage to any plant or structure
128(5)(a)	179(a)(xvi)	a failure of ground, or of slope stability control measures
128(5)(a)	179(a)(xvii)	rock falls, instability of cliffs, steep slopes or natural dams, occurrence of sinkholes, development of surface cracking or deformations or release of gas at surface, due to subsidence
	179(a)(xviii)	a vehicle or plant making contact with an energised source having a voltage greater than 1,200 volts (other than testing equipment applied to energised equipment in accordance with the WHS Regulations)
128(5)(b)		the detection of a concentration of methane in the general body of the air at an underground coal mine (other than in a sealed area or goaf) greater than 2% by volume
128(5)(c)		an unplanned fall of ground, roof or sides that impedes passage, extends beyond the bolted zone or disrupts production or ventilation
128(5)(d)		a failure of ground support where persons could potentially have been present
128(5)(e)		the burial of machinery such that it cannot be recovered under its own tractive effort
128(5)(f)		progressive pillar failure or creep
128(5)(g)		a sudden pillar collapse
128(5)(h)		an electric arc occurring in the hazardous zone that is directly observed or that leaves visible evidence on an electric cable
128(5)(i)		the failure of the explosion-protection characteristics of explosion-protected plant while that plant is in service
128(5)(j)		a misfire or unplanned explosion of an explosive or explosive precursor
128(5)(k)		an unplanned event that causes the withdrawal of more than one person from the mine or petroleum site or part of the mine or petroleum site
128(5)(l)		an unplanned event that causes less than 2 exits from the mine or petroleum site to be available for use
128(5)(m)		any indication from monitoring data of the development of subsidence which may result in damage to any plant or structure or a failure of ground
128(5)(n)		an injury to a person (supported by a medical certificate) that results in or is likely to result in the person being unfit, for a continuous period of at least 7 days, to perform person's usual activities at the person's place of work
128(5)(o)		the illness of a person (supported by a medical certificate) that is related to a work process and that results in or is likely to result in the person being unfit, for a continuous period of at least 7 days, to perform person's usual activities at the person's place of work
128(1)(a)		results in illness or injury that requires medical treatment by a doctor, being the management or care of a patient including: (a) the suturing of a wound, (b) the treatment of fractures, (c) the treatment of bruises by drainage of blood, (d) the treatment of second and third degree burns, but not including diagnostic procedures, observation, counselling, first aid or therapeutic measures taken solely for preventative purposes.

More information

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Acknowledgments

Mechanical Engineer Examination Panel

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