NSW GOVERNMENT

NSW Resources Regulator

EXAMINATION PAPER

Mechanical engineering manager 2020

Mechanical engineering manager of underground coal mines certificate of competence

CME1 – Mechanical engineering practices applicable to underground coal mines

Written examination held 24 September 2020

Instructions to candidates

Unless otherwise stated all references to the Act, Regulations and Standards 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

It is expected that candidates will present their answers in an engineering manner, making full use of diagrams, tables, relevant schematics where applicable, and showing full workings in calculations. Consideration will be given when marking for legibility in diagrams and handwriting.

Provide answers in point form wherever appropriate. If you are unable to fit your answers in the available space use the three (3) blank pages 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 six (6) questions are to be attempted.

DOC20/792968

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.

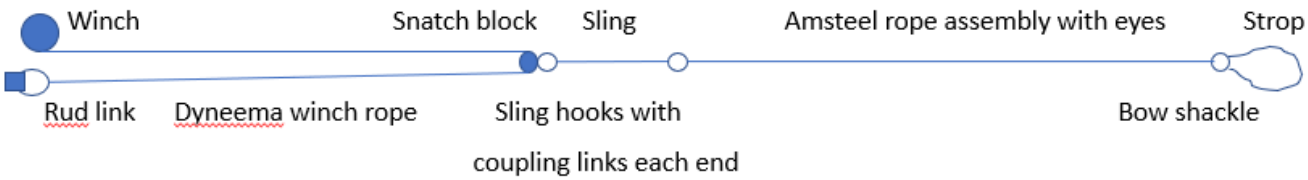
This examination is a closed book examination – that is you cannot bring any reference material in to refer to during the exam, such as copies of legislation. Reference material will be provided in the exam paper as applicable.

Question 1 (50 marks)

Workers have assembled the following towing equipment and joined it in series to free a jammed flight bar on a chain conveyor. One of the workers is an appointed fitter with a dogging certification. They plan to use an item of mobile plant fitted with a 15-tonne stall capacity winch running Dyneema synthetic fibre rope with a working load limit of 15-tonnes, reeved through the snatch block and back to the swivel Rudd link on the mobile plant chassis. The mobile plant is capable of 53-tonnes of tractive effort in first gear. The control lead for the winch remote is 10 metres long.

	WLL (tonnes)	Factor of Safety
• Dyneema fibre winch rope	15	2:1
• Snatch block to suit winch rope diameter	24	4:1
• Swivel Rud link on mobile plant	18	4:1
• 5 metre fibre sling	20	2.5:1
• 20 metre Amsteel blue synthetic tow rope	30	2:1
• Sling hooks with coupling links (hammer locks)	16	4:1
• 0.8 metre Recover fast strop	25	2:1
• Bow shackle	26	4:1

The general arrangement for the equipment identified above is as follows:



1. What is your understanding of the term ‘working load limit (WLL)’? (3 marks)
2. What is your understanding of the term ‘minimum breaking load’? (3 marks)
3. What is the rated capacity of the assembly, and which item is the limiting component? (4 marks)

4. What is the minimum breaking load of the assembly, and which item is the limiting component? (4 marks)
5. Do you consider the component identified above is acceptable to be the limiting component? Why, or why not? (3 marks)
6. What is the highest rated component in the system, and what is its minimum breaking load? (4 marks)
7. What components would need to be replaced with higher rated components, or doubled up, to make the full as reeved capacity of the winch the limiting factor? (9 marks)
8. You decide to do a job hazard analysis with the crew. List ten (10) controls specific to pulling loads you would consider including in the work process? (20 marks)

Question 2 (50 marks)

Part A – Conveyor components

1. Draw a pictorial schematic for the following items:

   i. Pictorial schematic including belt reeving for a clean side clean side conveyor drive head, and denoting which are drive pulleys (7 marks)

   ii. Pictorial schematic including belt reeving of a clean side dirty side conveyor tripper drive head, and denoting which are drive pulleys (7 marks)

   iii. Pictorial schematic including belt reeving of a six fall belt storage unit with one tag a long (9 marks)

Part B – Conveyor system design

1. List three (3) methods you can use in situ to increase the belt speed of a conveyor. (9 marks)
2. List three (3) ways you can increase the tonnage capacity of a conveyor in situ. (9 marks)
3. You want to increase the power input to a conveyor already installed at the mine. List three (3) alternative methods to minimise the potential for belt slip? (9 marks)

Question 3 (50 marks)

Part A – Multiple choice - Identify **ALL correct answer(s)** for each multiple-choice question (2 marks each)

a) Which Australian Standard would you consult for fixed platforms, walkways, stairways and ladders:

   i. AS1418
   ii. AS1657
   iii. AS4024
   iv. AS4100

b) The minimum width of a walkway should be equal to or greater than:
   i. 500mm
   ii. 550mm
   iii. 600mm
   iv. 750mm

c) Rung type ladders are used when the angle to the horizontal is:
   i. between 45 and 60 degrees
   ii. between 60 and 70 degrees
   iii. between 70 and 90 degrees
   iv. over 90 degrees

d) The handrail of a walkway shall be a vertical height of:
   i. Not less than 500mm, and not more than 700mm
   ii. Not less than 600mm, and not more than 800mm
   iii. Not less than 800mm, and not more than 1000mm
   iv. Not less than 900mm, and not more than 1100mm

e) The gap between the toe board and the floor of a walkway should not exceed:
   i. 10mm
   ii. 15mm
   iii. 20mm
   iv. 25mm

f) When considering the operational design of reclaim tunnels which of the following standards and/or guidelines should you refer to:
   i. AS4024 Safety of machinery series of standards
   ii. MDG1032 – Prevention and early detection and suppression of fires
   iii. MDG25 – Safe cutting and welding operations at mines
   iv. MDG29 – Guideline for the management of diesel engine pollutants in underground environments
   v. All of the above

g) According to MDG28 what are the recommended methane (CH4) detector set points for alarm and trip in reclaim tunnels
   i. 0.25% alarm and stop coal feed, 1% trip power to non-explosion protected equipment
   ii. 0.5% alarm and stop coal feed, 1% trip power to non-explosion protected equipment
   iii. 0.5% alarm and stop coal feed, 1.25% trip power to non-explosion protected equipment
   iv. 0.5% alarm and stop coal feed, 1.5% trip power to non-explosion protected equipment

h) Which of the following should be considered a risk control for the safe operation of reclaim tunnels?
   i. A system to control the entry of people to the reclaim tunnel and indicate when the tunnel is occupied

ii. Use of FRAS conveyor belting and accessories
iii. Emergency lighting and communications rated for safe operation in explosive atmospheres
iv. Ventilation of all parts of the reclaim tunnel to control airborne dust and prevent accumulation of gas or other airborne contaminants

i) Which of the following risk control measures would **NOT** be considered appropriate to prevent a potential dozer engulfment in the reclaim draw point?
   i. GPS in dozer cab with proximity alarm
   ii. Flashing light on conveyor gantry indicating active draw point
   iii. Spotter on conveyor gantry with two way radio to dozer operator
   iv. Heavy duty grizzly cage over the coal valve

j) Which of the following risk control measures would eliminate a potential dozer engulfment in the reclaim draw point?
   i. Remote autonomous dozer control
   ii. Heavy duty grizzly cage over the coal valve
   iii. Bucketwheel reclaimer
   iv. Rill tower

k) What does the term freeboard refer to with respect to belt conveyors?
   i. The distance the pulley is wider than the conveyor belt to allow for some belt misalignment
   ii. The distance fixed steel work is away from the edge of the conveyor belt to prevent contact during belt wander/misalignment
   iii. The waiving of rental accommodation costs for tenants to live in the conveyor gantry
   iv. The distance the belt is wider than the as loaded conveyed product to prevent lumps rolling off the side

l) What method(s) could you use to increase tension in a belt conveyor fitted with a gravity tower?
   i. Increase the mass of the counterweight
   ii. Increase the number of reeves of wire rope between the counterweight and LTU trolley
   iii. Increase the height of the gravity tower
   iv. Increase the installed power in the conveyor drive

m) What factor(s) influence the braking capacity of rubbered tyred mobile plant?
   i. Tyres with aggressive tread pattern
   ii. Increasing brake system pressure
   iii. Decreasing load capacity
   iv. Dust suppression watering on roads
   v. All of the above

n) How is the park brake applied in a truck Maxibrake system where air pressure is generated and stored in a reservoir?

i. Air applied, hydraulic release
ii. Air applied, spring release
iii. Spring applied, air release
iv. Hydraulic applied, air release

o) How are the service brakes applied in a truck Maxibrake system where air pressure is generated and stored in a reservoir?
i. Air applied, hydraulic release
ii. Air applied, spring release
iii. Spring applied, air release
iv. Hydraulic applied, air release

p) Hydraulic brake systems rely on what factor(s) to correctly apply?
i. Disc rotor not contaminated with oil, grease, or brake fluid
ii. Brake pads have sufficient contact area of friction material
iii. Air is bled out of the hydraulic lines
iv. Master cylinder and calliper piston seals are not leaking
v. All of the above

Part B – Short answer – Winding systems

1. Would you expect to see a balance rope on a slope haulage winder? (3 marks)
2. What is the purpose of a balance rope? (3 marks)
3. How many hoist ropes are there on a double drum winder? (3 marks)
4. Name two types of brakes that can be fitted to the control car of a slope haulage winder? (3 marks)
5. What is the function of a Kep? (3 marks)
6. For slope haulage winder conveyance rails what are the usual design vertical and horizontal curve radii? (3 marks)

Question 4 (50 marks)

The primary incline conveyor at your mine is a steel cord belt and has suffered major damage. New belt has been sourced and a contractor engaged to conduct the change out.

1. What documents relevant to the task should you review prior to commencing the task? List six (6) (6 marks)
2. What are the key risks for the task? List seven (7) (14 marks)
3. What controls should be in place to protect the steel cord belt from damage during operation of the conveyor? List five (5) (10 marks)
4. Identify all five (5) major tests required to achieve design registration of conveyor belt? (10 marks)
5. List four (4) typical components of a conveyor system that may require FRAS certification? (4 marks)

6. What tests do these components require to be certified FRAS? (6 marks)

Question 5 (50 marks)

You have recently been employed as the Mechanical Engineering Manager at a coal mine that has been closed for five (5) years and will recommence operations in three (3) months. The mine has a 1000 tonne capacity clean coal bin, which is in excess of 20 years old. All design documentation, as well as any maintenance history, of the bin has been lost. The bin is configured to discharge coal into road registered semi-trailer style trucks through pneumatically operated clamshell doors.
You have been asked to manage the recommissioning of the bin into service.

1. What steps would you take to manage the re-commissioning, and the ongoing maintenance of the bin? List fifteen (15) items you would consider. (15 marks)
2. List five (5) major risks associated with the operation and maintenance of bins? (15 marks)
3. Describe two (2) primary control measure for each of the five (5) major risks identified above? (20 marks)

Question 6

In the mining industry, people have been killed and injured while working on pressurised fluid power systems such as compressed air, hydraulics, fire water and pump lines. Work Health and Safety (Mines and Petroleum Sites) Regulation Schedule 2 (2) (3) (i) requires matters be taken into account when developing control measures to manage the risk associated with pressurised fluids.

1) As the Mechanical Engineering Manager of a new mine, describe the process of developing a Fluid Power Management Standard for your mine, including consultation requirements / references / inputs. (13 marks)
2) When considering what needs to be managed in fluid power systems, list thirteen (13) key hazards of Fluid Power. (13 marks)
3) As the Mechanical Engineering Manager responsible for managing Fluid Power risks, list the key controls required to manage Fluid Power in the following areas:
    a) Equipment design (8 marks)
    b) Competence of personnel (8 marks)
    c) Safe systems of work (8 marks)

NSW Resources Regulator

Mechanical engineering manager of underground coal mines certificate of competence

CME2 – Legislation and standards applicable to underground coal mines

Written examination held 24 September 2020

Instructions to candidates

Unless otherwise stated all references to the Act, Regulations and Standards 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

It is expected that candidates will present their answers in an engineering manner, making full use of diagrams, tables, and relevant schematics where applicable, and showing full workings in calculations. Consideration will be given when marking for legibility in diagrams and handwriting.

Provide answers in point form wherever appropriate. If you are unable to fit your answers in the available space use the three (3) blank pages 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 six (6) 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.

This examination is a closed book examination – that is you cannot bring any reference material into the exam, such as copies of legislation. Reference material will be provided in the exam paper as applicable.

Question 1

Work Health and Safety Regulation 2017 **(Total 50 marks)**

Part A – Chapter 4, Part 4.4 Falls

Clause 78 Management of risk of fall

(1) A person conducting a business or undertaking at a workplace must manage, in accordance with Part 3.1, risks to health and safety associated with a fall by a person from one level to another that is reasonably likely to cause injury to the person or any other person.

Note. WHS Act—section 19 (see clause 9).

1. In practical terms name three (3) types of fall events identified in 78 (2)? (9 marks)

Clause 78 (3)

A person conducting a business or undertaking must ensure, so far as is reasonably practicable, that any work that involves the risk of a fall to which subclause (1) applies is carried out on the ground or on a solid construction.

2. In terms of Clause 78 (5) "on a solid construction" is an area that has what physical properties? Name three (3). (9 marks)

Clause 79 Specific requirements to minimise risk of fall

(3) The person provides adequate protection against the risk if the person provides and maintains a safe system of work, including by:

(a) providing a fall prevention device if it is reasonably practicable to do so, or

(b) if it is not reasonably practicable to provide a fall prevention device, providing a work positioning system, or

(c) if it is not reasonably practicable to comply with either paragraph (a) or (b), providing a fall arrest system, so far as is reasonably practicable.

Examples.

(1) Providing temporary work platforms.

(2) Providing training in relation to the risks involved in working at the workplace.

(3) Providing safe work procedures, safe sequencing of work, safe use of ladders, permit systems and appropriate signs.

Note. A combination of the controls set out in this subclause may be used to minimise risks, so far as is practicable, if a single control is not sufficient for the purpose.

3. In practical terms what type of "fall prevention device" are included in Clause 79 (5)? Name three (3). (9 marks)

Clause 80 Emergency and rescue procedures

(1) This clause applies if a person conducting a business or undertaking provides a fall arrest system as a control measure.

4. What must be provided if 80 (1) is applicable? (9 marks)
5. In practical terms in relation to Clause 80 (5), "relevant worker" means what two types of work scenarios? (6 marks)

Part B – Chapter 4, Part 4.1 Noise

1. From Clause 56 Meaning of "exposure standard for noise", what are both the nominated exposure standards? (4 marks)
2. How are you going to determine the level of noise being emitted by the plant when it is in use? (4 marks)

Question 2

Pressurised Fluids **(Total 50 marks)**

The installation of a refurbished longwall was completed four weeks ago. At 3:00 am on Monday morning, you receive a phone call providing the following information:

- An interchock hose has failed
- Three (3) workers were on the adjacent support
- Two (2) workers are reporting severe eye irritation with one worker reporting loss of vision, and the other worker has a large bruise and graze across his arm.
- The longwall has been isolated and the injured workers are receiving first aid

1. Identify the three (3) most likely clauses this incident will be notified under. (6 marks)
2. What is the difference between incidents reported under Clause 128 and Clause 179? (4 marks)
3. Is this a "Dangerous incident"? Why / why not? (3 marks)
4. You are the first person contacted by the control room and advised that the incident has occurred. What are the immediate steps that need to be taken? (10 marks)
5. When the incident is notified to the Central Assessment Unit (CAU) a Section 198 Notice is served on the operation. What type of notice is this? (3 marks)
6. There are five (5) specific actions that this type of notice does NOT prevent. Identify four (4). (4 marks)

During your investigation you identify that all interchock hoses were replaced during the wall move. You determine the following:

- Primary supplier was unable to meet supply, so the mines purchasing people went to an alternate supplier to meet the delivery

- No test reports for the hoses are available on site
- When challenged the primary supplier could not supply any test reports
- The alternate supplier could supply test certificates, and no issues were identified

7. What is your response to the issues identified? (10 marks)
8. Following an incident, what do WHS(MPS) Regulations Clause 10 and Clause 12 require? (10 marks)

Question 3

Mechanical Engineering Control Plan (MECP) **(Total 50 marks)**

Part A – WHS(MPS) Regulations clause 26

1. With reference to WHS(MPS) Regulations Clause 26 describe in your own words what is a mechanical engineering control plan? (3 marks)
2. In your own words describe the function of the MECP? (6 marks)
3. Who has duties in relation to the MECP according to clause 26 (4)? (3 marks)

Part B – WHS(MPS) Regulations Schedule 2 Clause 2 Mechanical Engineering Control Plan

1. In subclause (1) the operator of a mine or petroleum site must, in preparing a mechanical engineering control plan, take what into account? (14 marks)
2. In subclause (2) A mechanical engineering control plan must set out the control measures for the following risks to health and safety associated with the mechanical aspects of plant and structures at the mine or petroleum site taking into account the matters set out in subclause (3)? In your own words list all seven (7). (14 marks)
3. In subclause (4) matters must be taken into account when developing a control measure referred to in subclause (2) in respect of a belt conveyor. In your own words list all five (5) (10 marks)

Question 4

Mechanical Engineering **(Total 50 marks)**

Part A – Work Health and Safety Act

1. The mine operator (as well as any other PCBU's at a mine) have a duty under Section 19 Primary duty of care to ensure, so far as is reasonably practicable, that workers and other people are not exposed to health and safety risks arising from the business or undertaking. This duty in relation to the mechanical aspects of plant and structures includes ensuring what, so far as is reasonably practicable? (9 marks)
2. Section 26 Duty of persons conducting businesses or undertakings that install, construct, or commission plant or structures. PCBU's including the mine operator involved in installation

construction or commissioning of plant or structures have a duty under 26 (2) to *ensure, so far as is reasonably practicable, that the way the plant or structure is installed, constructed or commissioned ensures the plant or structure is without risks to the health and safety of people who* do or are what? (12 marks)

Part B – Managing risks at mines

1. Work Health and Safety (Mines and Petroleum Sites) Regulation Clause 9 Management of risks to health and safety, and Part 3.1 of the WHS Regulation set out general obligations for managing risks to health and safety. What are the four (4) general steps involved in the risk management process? (8 marks)

Part C – WHS(MPS) Regulations Schedule 10 Statutory Functions

1. In Part 2, Clause (5) Mechanical Engineering Manager (MEM), what must the MEM do in relation to mechanical engineering standards and procedures? (8 marks)
2. In clause 5 (1) (b) what must the MEM do with respect to mechanical plant? (10 marks)
3. In clause 5 (2) what is required to exercise the statutory MEM function? (3 marks)

Question 5

Fill in the blanks, 2 marks each **(Total 50 marks)**

1. Work Health and Safety Regulation Clause 37 Maintenance of control measures (12 marks)
   A duty holder who implements a control measure to _____ or minimise risks to health and safety must ensure that the control measure is, and is _____ so that it remains, _____, including by ensuring that the control measure is and remains:
   a) _____, and
   b) Suitable for the _____ of the work, and
   c) Installed, _____ correctly

2. WHS(MPS) Regulation Clause 128 Duty to notify the Regulator of certain incidents (26 marks)
   (1) The operator of a mine or petroleum site must take all reasonable steps to ensure that the regulator is notified in accordance with this clause after becoming aware of an incident (other than a notifiable incident) arising out of the carrying out of mining operations or petroleum operations at the mine or petroleum site, but only if the incident:
      (a) results in illness or injury that requires _____ within the meaning of clause 13 of Schedule 9, or
      (b) is a high potential incident.
   (2) The notification must also be made to an _____ _____in the case of an incident at a coal mine.
   (5) In this clause high potential incident means any of the following:
      (a) an event referred to in clause 179(a) that would have been a _____ _____ if a person were reasonably 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,

(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) that is greater than 2% by volume,

(c) an unplanned fall of ground, roof or sides that impedes passage, extends beyond the bolted zone or disrupts production or ventilation,

(d) a failure of ground support where persons could potentially have been present,

(e) the burial of machinery such that it _____

(f) progressive pillar failure or creep,

(g) a sudden pillar collapse,

(h) an electric arc occurring in the hazardous zone at an underground coal mine that is directly observed or that leaves visible evidence on an electric cable,

(i) the failure of the _____ while that plant is in service at an underground coal mine,

(j) a misfire or unplanned explosion of an explosive or explosive precursor (but not in the case of a misfire at a mine or petroleum site other than a coal mine if the misfired explosive can be fired without any significant risk to a person),

(k) an unplanned event that _____of more than one person from the mine or petroleum site or part of the mine or petroleum site,

(l) an unplanned event that _____ from an underground mine to be available for use,

(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,

(n) an injury to a person (supported by a medical certificate) that results in or is likely to result in the person being unfit, _____ _____, to perform the person's usual activities at the person's place of work,

(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, _____, to perform the person's usual activities at the person's place of work,

(p) the presence of energised electrical plant that is _____ _____ in a hazardous zone at an underground coal mine (except where the use of the plant is permitted under clause 79),

(q) the detection of an atmospheric concentration of respirable dust that exceeds the level specified in clause 39(1)(a),

(r) the detection of an atmospheric concentration of crystalline silica that exceeds the exposure standard specified in the Workplace Exposure Standards for Airborne Contaminants,

(s) electrical plant that is powered by an internal battery is _____ in an underground coal mine,

(t) an _____ on mobile plant that is in operation (whether operated directly, remotely or autonomously),

(u) a _____ of heavy earthmoving machinery that is operated remotely or autonomously, including any failure of braking or steering,

(v) spontaneous combustion occurring at the surface of a coal mine (including an underground coal mine).

3. WHS(MPS) Regulation Clause 178 Serious injury or illness (12 marks)

For the purposes of section 14(b) of the WHS (Mines and Petroleum Sites) Act, each of the following is prescribed as a serious injury or illness of a person:

(a) an injury or illness requiring the person to _____ as an in-patient in a hospital,

(b) an injury or illness requiring the person to have immediate treatment for any of the following:

(i) the _____ of his or her body,

(ii) a _____ injury,

(iii) a _____ injury,

(iv) a serious burn,

(v) the separation of his or her skin from an underlying tissue (such as degloving or scalping),

(vi) a _____injury,

(vii) the loss of a bodily function,

(viii) serious lacerations,

(c) an injury or illness requiring the person to have medical treatment within 48 hours of

_____,

(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),

(e) a condition prescribed as a serious illness for the purposes of section 36 of the WHS Act.

Question 6

Diesel exhaust emissions **(Total 50 marks)**

Part A – WHS(MPS) Regulation 2014

1) The WHS(MPS) Regulation Clause 53 outlines the mine sites requirements for the management of diesel engine exhaust emissions and fuel standards.

(1) The mine operator of an underground mine must ensure that:

(a) exhaust emissions from diesel engines located underground are regularly sampled and analysed, and

(b) the results of that sampling and analysis are compared with the baseline exhaust emissions for the particular diesel engine when the engine was new (or as new), and

(c) the engine is regularly maintained so that emissions from the engine are as low as is reasonably practicable, having regard to those baseline exhaust emissions.

With reference to Clause 53 (1) what systems and standards would you implement to manage diesel exhaust emissions at your mine? List eight (8) (16 marks)

2) What systems or standards would you introduce in relation to WHS(MPS) Regulation Clause 53 (2) to manage the supply of diesel fuel for your mine, and explain in practical terms how they are applied/managed from a mechanical perspective?

(8 marks)

(2) The mine operator of an underground mine must ensure that any fuel used at the mine—

(a) is supplied in accordance with the Fuel Quality Standards Act 2000 of the Commonwealth and the Fuel Standard (Automotive Diesel) Determination 2001 made under that Act, or

(b) is supplied in accordance with a fuel standard that has been varied by an approval under that Act by the Minister administering that Act.

3) What are the Sulphur content requirements for an ultra-low sulphur diesel fuel? (2 marks)

4) WHS(MPS) Regulations Clause 71 Ventilation. Sub clause (3) identifies ventilation requirements for the operation of diesel engines where people are working. What are the requirements for both (a) and (b)? (10 marks)

***71 (3)** The mine operator of an underground coal mine must ensure that in any part of the mine where persons work and travel and where one or more diesel engines are in operation, the ventilation system provides an average volume of air measured across the work or travel area of:*

Part B – WHS Regulation 2017

1) The WHS Regulation 2017 Division 7 Managing risks from airborne contaminants includers the following:

49 Ensuring exposure standards for substances and mixtures not exceeded

A person conducting a business or undertaking at a workplace must ensure that no person at the workplace is exposed to a substance or mixture in an airborne concentration that exceeds the exposure standard for the substance or mixture.

50 Monitoring airborne contaminant levels

(1) A person conducting a business or undertaking at a workplace must ensure that air monitoring is carried out to determine the airborne concentration of a substance or mixture at the workplace to which an exposure standard applies if—

(a) the person is not certain on reasonable grounds whether or not the airborne concentration of the substance or mixture at the workplace exceeds the relevant exposure standard, or

(b) monitoring is necessary to determine whether there is a risk to health.

(2) A person conducting a business or undertaking at a workplace must ensure that the results of air monitoring carried out under subclause (1) are recorded and kept for 30 years after the date the record is made.

(3) A person conducting a business or undertaking at a workplace must ensure that the results of air monitoring carried out under subclause (1) are readily accessible to persons at the workplace who may be exposed to the substance or mixture.

Identify how you would manage Division 7 from a diesel exhaust emissions perspective, and explain in practical terms how the legislative requirements are applied? (14 marks)

CM9 reference: DOC20/792968