

New South Wales

**Board of Surveying and Spatial Information**

# **MINING LAW ASSESSMENT**

## **MINING SURVEYING**

### **Surveying and Spatial Information Act 2002**

(Mining Legislation)

Friday 23<sup>rd</sup> September 2016

**All questions to be answered**

Duration 2 Hours

Pass Mark of 60% Required

1. Sketch the following Symbols as defined in AS4368 *Mine Plans – Preparation and Symbols*:
  - a. Deputy's Station
  - b. Gas Sampling Location
  - c. Circular shaft working (downcast)
  - d. Seal
2. According to AS2397 *Safe Use of Lasers in the building and construction industry*, when must a Laser Safety Officer be appointed?
3. According to clause 86 of the Surveying and Spatial Information Regulation 2012, where can a notice of proposed entry be placed if no person is present on the land to be entered?
4. How much notice must be given to the occupier of any land that is proposed to be entered for the purposes of conducting a mining survey as defined by section 19 of the Surveying and Spatial Information Act 2002?
5. What is the definition of "mining survey" under the Surveying and Spatial Information Act 2002?
6. What is the maximum term of a mining lease as defined by section 71 of the Mining Act 1992?
7. For the purposes of calculating royalty, what is the definition of "deep underground mining" under clause 74(3) of the Mining Regulation 2016?
8. Name four (4) "mining purpose" as defined by clause 7 of the Mining Regulation 2016.
9. What is the maximum length of any side of a mineral claim as defined by the Mining Regulation 2016?
10. Name four (4) things that the person with management or control of the workplace where lasers are being used has to ensure under clause 223 of the Work Health and Safety Regulation 2011.
11. Name two (2) "duties of workers" as contained in section 28 of the Work Health & Safety Act 2011.
12. List the five (5) Hierarchy of Control measures for minimising risk as defined by clause 36 of the Work Health and Safety Regulation 2011.

13. Name the Act under which development consent for a mine or quarry is granted.
14. List two (2) types of development that are defined by the State Environmental Planning Policy (State and Regional Development) 2011, as State Significant Development.
15. The requirement to prepare an Extraction Plan for a Mine can be contained in which two (2) documents?
16. List the three systematic errors inherent in Electronic Distance Measuring equipment that the procedure outlined in Surveyor General's Direction No.5 - Verification of Distance Measuring Equipment tests for.
17. A survey to establish the terminal points of a new mine baseline in SCIMS must be carried out in accordance with which Surveyor General's Direction?
18. List two (2) details that should be shown when preparing a Locality Sketch for a new Permanent Mark in a Rural Area as required by Surveyor General's Direction No.2 - Preparation of Locality Sketch Plans.
19. As stated in Work Health and Safety (Mines) Act 2013 what is the definition of a "*mineral*"?
20. Define "mine operator" as described in the Work Health and Safety (Mines) Act 2013?
21. As described in the Work Health and Safety (Mines) Act 2013, to what places does this Act apply?
22. Name 2 places where the Work Health and Safety (Mines) 2013 does not apply?
23. Define "principal mining hazard" as stated in the Work Health and Safety (Mines) Regulations 2014.
24. As described in the Work Health and Safety (Mines) Regulations 2014 a survey plan is required for what mines?
25. As defined in the Work Health and Safety (Mines) Regulations 2014 for underground mines other than coal mines, what is the statutory function of the mine surveyor and what is the requirement for nomination?
26. As described in the Work Health and Safety (Mines) Regulations 2014 who nominates the mining surveyor and what are the maximum penalties if a surveyor is not nominated?

27. Name 3 items that the Mine Survey Plan must show, if present at the mine as nominated in the Work Health and Safety (Mines) Regulation 2014?
28. Define *Level Working Sheet* as nominated in the Surveying & Drafting Directions for Mine Surveyors (Mines) 2015?
29. What is the AHD reduced level accuracy requirement for each end of the Mine Baseline as stated in the Surveying & Drafting Directions for Mine Surveyors (Mines) 2015 for both spirit and trigonometric-GPS height measurements?
30. With regards to the Surveying & Drafting Directions for Mine Surveyors (Mines) 2015 what are the requirements for the maintenance of survey equipment?
31. In the sheet heading area of the Mine Survey Plan name 2 information requirements as defined by the Surveying & Drafting Directions for Mine Surveyors (Mines) 2015?

## Question 2 (10 Marks)

You are the nominated mine surveyor for an open cut coal mine. You have been instructed to investigate the extent and locations of a series of reasonably shallow depth abandoned underground workings from the 1930's that the mine is approaching. One of the companies concerns is that sections of the abandoned working appear to be on fire.

The underground workings are located within the existing mining lease and development consent areas.

Detail your considerations in regards to

- Steps you would undertake for the archival research project
- Complying with current Work Health and Safety legislation for any site investigations including any potential exploratory drilling.

### Question 3 (10 Marks)

The underground mine where you are the nominated registered mining surveyor (Surveying & Spatial Information Act 2002) is proposing to sink a shaft remote from any of the mine's existing surface Mining Leases.

Investigation of your current mining lease reports the existing mine lease starts at a depth of 50 metres and extends to a depth of 900 metres.

Provide detail and reasons for tenure requirements to sink and gain access to the shaft.

The Surveying & Spatial Information Act 2002 defines a Registered Surveyor, define the Registered Surveyors, survey responsibilities to peg the centre of the shaft, obtain tenure and access.

#### Question 4 (10 Marks)

The mine at which you are the nominated mine surveyor has recently acquired an adjacent open cut mine with a development consent dating from the mid 1990's that has been on care and maintenance for some time.

You have been instructed to prepare a Mining Operations Plan (MOP) to enable some areas of the mine to be developed.

Detail the process and information to be presented for the MOP application.

Your answer should include;

- What items from the consent are required to be depicted on the MOP plans and if these areas were not named or listed at the time of granting for the consent what should be shown?
- What should be included in the document where potentially the development consent may expire during the term of the MOP?

Question 5 (10 Marks)

Part 1.

You are the nominated mine surveyor at an underground metalliferous mine which is re-opening after closing 20 years prior.

You would like to continue using the original mine baseline local coordinates.

What step must you take to comply with Surveying & Drafting Directions for Mine Surveyors (Mines) 2015?

What datum must the Mine Survey Plans be submitted in?

Part 2.

Detail the files that must be included for the submission of the Mine Survey Plan for this mine on the signed CD-R.

Your answer should also include information on the minimum Mine Workings Digital Themes to be provided as well as nominating if the files are 2D or 3D.



Question 6 (10 Marks)

You are the nominated mine surveyor on a newly opened open cut copper mine. You are required to establish a network of control points emanating from your mine baseline, which was established by the construction company, to enable you to create a future site calibration for your GNSS equipment, which won't be available to you for some months. The only equipment available to you is an onsite electronic total station and some ancillary equipment.

With reference to ICSM publication, *Standards and Practices for Control Surveys (SP1 v1.7)*, the Surveyor General Directions and the Survey and Drafting Directions 2015, outline the minimally accepted Class, equipment, practices, networks, standards and reduction methods that should be used.