

New South Wales

**Board of Surveying and Spatial Information**

# **MINING LAW ASSESSMENT**

## **MINING SURVEYING**

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

(Mining Legislation)

Wednesday 24<sup>th</sup> September 2014

**All questions to be answered**

Duration 2 Hours

Pass Mark of 60% Required

1. Sketch the symbol for each of the features described below, as defined in AS4368 Mine Plans – Preparation and Symbols.
  - a. Drift – Underground to Underground
  - b. Fire Dam or Seal
  - c. Air measuring station
  - d. Circular Shaft – abandoned
  
2. Sketch the following symbols as defined in AS4368 Mine Plans – Preparation and Symbols?
  - a. First aid equipment
  - b. Fire depot and stations
  - c. Warning lines for limits of workings
  - d. Stone intrusion
  
3. If a symbol is not provided for within a relevant Australian Standard, what may be done?
  
4. List four (4) responsibilities of a Laser Safety Officer, as defined in AS2397- Safe use of lasers in the building and construction industry.
  
5. Electronic distance measuring equipment used for control and subsidiary surveys should be verified against the State Primary Standard of Measurement of Length, in accordance with which document?
  
6. List the three (3) instrument corrections required to be determined in order to achieve legal traceability as defined by the document referred to above.
  
7. What is the definition of an **Operator** as described in the Coal Mine Health & Safety Act 2002?
  
8. Who can nominate the operator for a coal operation in accordance with the Coal Mine Health & Safety Act 2002?
  
9. As per the Coal Mine Health and Safety Regulation 2006 what are the duties of mining surveyors?
  
10. As per the Coal Mine Health and Safety Regulation 2006 what must the survey and plan arrangements cater for?
  
11. What is the definition of an **abandoned mine** as described by the Mine Health and Safety Act 2002?
  
12. What must an Emergency Plan contain in accordance with the Mine Health and Safety Act 2002?
  
13. For control of risk of inrush what must be recorded on a plan in accordance with the Mine Health and Safety Regulation 2007?

14. What is required to be shown on the mine plan in accordance with the Mine Health and Safety Regulation 2007?
15. Name two of the objects of the Surveying and Spatial Information Act 2002?
16. What is the definition of a *mining survey* under the Surveying and Spatial Information Act 2002?
17. What is the definition of a *registered surveyor* under the Surveying and Spatial Information Act 2002?
18. What type of supervision does the Surveying and Spatial Information Act 2002 allow for a student of surveying to undertake a mining survey?
19. What is a **Level 1 Mine** as described in ESG3?
20. Name three Primary Domains listed in ESG3.
21. Name three Secondary Domains listed in ESG3.
22. Name two rehabilitation phases to be described in a MOP in accordance with ESG3.
23. As stated in the Survey and Drafting Directions for Mine Surveyors 2013, Amendments 2014, who is responsible for informing the Department of the Nominated Surveyor? What are the 2 pieces of information required?
24. Define **Endorsement** in accordance with the Survey and Drafting Directions for Mine Surveyors 2013, Amendments 2014?
25. What are 4 procedures that should be adopted for entries into field books as described in Survey and Drafting Directions for Mine Surveyors 2013, Amendments 2014?
26. What size is the mapping area on Seam Working and Void Sheets, and what are the distances between grid line intervals as described in Survey and Drafting Directions for Mine Surveyors 2013, Amendments 2014?
27. In what grid system can a metalliferous mine working under a current "Letter of Datum Reference" submit mine working plans and spatial data as described in Survey and Drafting Directions for Mining Surveyors 2008, Amendments 2014?
28. Name 4 features that can be shown in the mapping area of a Mine Workings Plan (both underground and Open Cut) as stated Survey and Drafting Directions for Mining Surveyors 2008, Amendments 2014?

29. What is the definition of a **Prescribed Dam**, naming the Act under which a dam is prescribed as described in Survey and Drafting Directions for Mining Surveyors 2008, Amendments 2014?
30. What must be specified on a Mine Workings Plan when offset survey stations (wall stations) are used as described in Survey and Drafting Directions for Mining Surveyors 2008, Amendments 2014?
31. List three of the five options are allowed for the Accuracy Attribute in a Metadata Statement for either a coal or metalliferous mine spatial submission.
32. List three Core Attributes for spatial data submission for metalliferous mine.
33. List three Metadata Attributes for spatial data submission for coal mine.
34. What is the Nominated Mining Surveyor declaring when they sign and date the CD-R containing the Mine Workings Spatial Information for submission for coal mine?
35. What are the minimum mine workings digital themes required for submission for an open cut metalliferous mine?

Question 2 (10 Marks)

- (a) Mining Purpose Leases provide a tenure or right to undertake mining related activities. These mining related activities are prescribed as Mining Purposes in the Mining Regulation 2010. List 10 Mining Purposes, detailing the approved activity.
  
- (b) Describe the process to renew a Mining Purposes Lease detailing the information to be submitted to support the renewal application.

Question 3 (10 Marks)

As the Nominated Mine surveyor for an open cut mine you have been instructed to engage an independent surveyor to carry out some surveys for the preparation of a JORC report.

The surveys will include locating some recent exploration holes as well as the location of the current mine workings.

Detail what hazards and management strategies you would require to be covered in a Safe Work Method Statement for these activities to be presented by the independent surveyor.

Question 4 (10 Marks)

You have been engaged by a company to undertake an archival research program for a new area for an existing mine.

Initial investigations reveal the area was previously mined by some small underground operations and is some basic plan and photographic information are available through a local historic association, though the information does not have any cadastre or coordinate references.

Detail the actions and processes you would employ to endeavour to locate this information spatially.

Your answer should include the process to exercise power of entry if required for a site survey.

Question 5 (10 Marks)

Prior to commencing extraction at an underground Coal Mine, outline what approvals are required and conditions met, in relation to Longwall mining and Mine Subsidence?



Question 6 (10 Marks)

You are the Nominated Mine Surveyor at a new open cut mine and have been asked to design locations and survey 6 pillared control stations at the mine.

What things would you take into account when planning the network design/geometry and the surveying of the pillars using GPS, referencing ICSM publication, *Standards and Practices for Control Surveys (SP1)*?

Also describe how you would process and analyse the data again referencing ICSM publication, *Standards and Practices for Control Surveys (SP1)*?