



Australian Government

RIIMCU503D Implement the gas drainage management plan

Release: 2

RIIMCU503D Implement the gas drainage management plan

Modification History

Release	Comment
1	This unit replaces RIIMCU503A Implement the gas drainage management plan
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to implement the gas drainage management plan in Coal mining.

This unit is appropriate for those working in supervisory roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Coal mining (Underground)

Elements and Performance Criteria

1. Plan and prepare for the implementation of the gas management plan	1.1 Access, interpret and apply gas management plan documentation, and ensure the work activity is compliant 1.2 Access, interpret and clarify the gas management plan 1.3 Identify and communicate to the relevant persons roles and responsibilities as specified in the gas management plan 1.4 Identify, forecast, schedule and record resources required for the implementation of the gas management plan 1.5 Identify training needs
2. Implement the gas drainage management procedures	2.1 Implement hazard control procedures associated with the gas drainage management plan 2.2 Implement the gas monitoring and testing system installation, operation and maintenance procedures in accordance with site

	requirements 2.3 Implement the gas drainage service installation and recovery procedures 2.4 Implement the gas drainage system maintenance procedures 2.5 Implement the gas drainage management plan training requirements 2.6 Implement action levels established to minimise the hazards of gas drainage 2.7 Implement gas drainage management system information recording and reporting procedures
3. Implement systems for audit and review of gas drainage systems and equipment	3.1 Audit gas drainage monitoring systems in accordance with legislative and site requirements 3.2 Audit recording and reporting systems in accordance with legislative and site requirements 3.3 Audit gas drainage installation, operation, maintenance and recovery procedures 3.4 Audit the gas drainage management training plan for currency, relevance and compliance with the requirements of the gas drainage management plan 3.5 Implement procedures for response to instances of non-compliance or other discrepancies/deficiencies revealed by audit

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMCU503A Implement the gas drainage management plan

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIMCU503D Implement the gas drainage management plan

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- implements the procedures and techniques for the safe, effective and efficient implementation of the gas drainage management plan including:
 - planning and coordinating work to meet site/legislative requirements
 - operating hand held monitoring equipment
 - accessing, evaluating and applying design criteria for gas drainage systems and devices
 - collecting, collating and evaluating gas drainage data
 - completing gas drainage planning mathematical calculations
 - interpreting geological information
 - preparing records and reports
 - applying the principles of mine design
- works with others to undertake and complete the implementation of the gas drainage management plan that meets all of the required outcomes including:
 - communicating clearly and concisely with others to receive and clarify work instructions, and convey work progress
 - identifying the relevant information and scope of the work necessary to meet the required outcomes
 - developing procedures appropriate to mine operations for management of gas drainage
 - identifying training needs related to the gas drainage

- preparing and interpreting briefings and handover details
- demonstrates completion of implementing the gas drainage management plan that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - identifying viable options and selecting the gas drainage management plan elements that best meet the required outcomes
 - conducting enquiries/investigations and preparing reports
 - establishing technical procedures relating to gas drainage
 - assessing the risks and consequences of gas drainage

Knowledge Evidence

The candidate must demonstrate knowledge of implementing the gas drainage management plan through:

- methods of gas drainage:
 - their applications/limitations against the mine design, mine and panel ventilation systems, systems of mining and current and future mine development
- drilling options and related equipment and techniques including:
 - impacts of intersecting and intersected holes and hole design
 - gas drainage on mining techniques, mine and panel design and production output
- strata geology and coal seam characteristics on the gas drainage management plan, including:
 - the effects of the type and quantity of gas in the coal seam
 - coal seam gradient, moisture content, friability, the porous features of the coal seam, stresses and intrusions
 - strata control systems and their effects on gas drainage
- outburst mining monitoring procedures
- components/factors to be considered in the gas management plan including:
 - pressure changes: causes, the impacts on the ventilation system, and the effects on gas drainage
 - heat/humidity: the sources and factors which may impact on gas drainage and personnel
 - underground water management principles and systems
 - the impacts of accumulation of coal dust after gas drainage has been completed
 - mine and goaf ventilation systems
- equipment, monitoring systems and techniques including:
 - mine fans: fan laws, fan types, performance characteristics, configurations, applications and limitations in association with the gas drainage management plan,
 - ventilation control devices: the types, purposes, design criteria and specifications, distribution/placement criteria and limitations
 - de-gassing: methods of control – including brattice, auxiliary fans, compressed air venturis, sails, hurdles, bleeders and purging

- fixed gas drainage monitoring systems: types, characteristics, uses and limitations
- gas drainage surveys: the types, frequency and method for conducting including pressure/quantity/temperature and gas
- use of computer-based systems for mine environment and gas drainage systems analysis
- processes and techniques for determining alarms and trigger points/levels
- • ventilation theory, including:
 - Atkinson's equation
 - methods of determining frictional resistance
 - gas laws, including Charles and Boyle
 - natural ventilation pressures
 - gas make
 - leakage
 - determination of mine resistance curves
 - regulator and equivalent orifice calculation
 - determination of fan operating/duty points
 - Kirkoff's laws
- emergency response and evacuation/disaster planning processes and techniques

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.	

*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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