



Australian Government

RIIOGD203F Prepare and operate drilling fluid systems

Release: 1

RIIOGD203F Prepare and operate drilling fluid systems

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to apply prepare and operate drilling fluid systems in drilling. It prepares individuals to establish operational requirements, select and test equipment, prepare and pump drilling fluids and operate a hopper system.

It applies to those working in assistant roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Drilling

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for operations	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply drilling fluid system documentation and confirm work activity is compliant 1.3 Identify and minimise environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures 1.4 Select the personal protective equipment required for work activity 1.5 Communicate with other personnel on site as required and confirm briefings and handover details are communicated and

ELEMENT	PERFORMANCE CRITERIA
	received 1.6 Assess geographic layout and confirm type of fluid system in use is suitable 1.7 Assess operation of mud mixers, dump valves and equalising valves 1.8 Identify and locate mud pump and discharge system
2. Establish operational requirements	2.1 Clarify difficulties in carrying out instructions with relevant personnel 2.2 Confirm availability and status of necessary permits to work 2.3 Confirm availability of necessary third party utilities 2.4 Confirm availability of required quantities and type of consumables 2.5 Identify errors, omissions and shortages and take remedial action as required within functional responsibility
3. Select and test equipment	3.1 Identify and select equipment required for work activities 3.2 Identify defects in equipment and take remedial action as required within functional responsibility 3.3 Confirm equipment is functional and fit for purpose and environment in which it will be used 3.4 Lubricate fluid circulation components
4. Prepare drilling fluids	4.1 Confirm availability of sufficient quantities and types of fluids against operational requirements 4.2 Confirm tanks and mixing equipment are clean and free from contamination according to instructions 4.3 Mix and treat fluids to specification 4.4 Obtain, label in writing and store samples according to workplace procedures and operational requirements
5. Pump drilling fluids and record data	5.1 Confirm recording and monitoring devices are pre-set to required parameters 5.2 Operate equipment according to safety and operational requirements 5.3 Assist with weighing and measuring viscosity of samples and record details 5.4 Record in writing data at scheduled times and frequencies according to operational requirements
6. Conduct hopper system operating procedures	6.1 Identify type of hopper system 6.2 Operate and maintain hopper system and associated components 6.3 Measure, calculate and log in writing mud properties 6.4 Recognise, record and report changes in returns of drilling fluid

ELEMENT	PERFORMANCE CRITERIA
	and pit volumes

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Interprets numerical information relating to fluid quantity, weight, viscosity, mix specifications and pit volumes
Reading	Identifies and interprets information from workplace procedures and documentation
Self-management	Monitors and minimises own exposure to worksite hazards during activities

Unit Mapping Information

Supersedes and is equivalent to RIIOGD203E Prepare and operate drilling fluid systems.

Links

Companion Volume implementation guides is found on VETNet -

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

Assessment Requirements for RIIOGD203F Prepare and operate drilling fluid systems

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- prepare and operate drilling fluid systems on at least two occasions, including:
 - maintaining and operating mud mixers, dump valves and equalising valves in the mud pits system
 - adding mud materials to mud systems as instructed
 - taking and recording mud properties readings.

During the above, the candidate must:

- locate and apply documentation required for preparing and operating drilling fluid systems
- conform to safe working practices and operational requirements
- implement the requirements, procedures and techniques for preparing and operating drilling fluid systems, including:
 - operating and maintaining all mud treatment units
 - interpreting and acting on additional flow in the mud returns or an increase in mud pit volume
 - lubricating fluid circulation components
- work with others to preparing and operating drilling fluid systems tasks that meet required outcomes, including:
 - organising work activities to meet task requirements
 - communicating with others to receive and clarify work instructions.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key policies, procedures and established requirements for preparing and operating drilling fluid systems, including those for:

- work health and safety and individual obligations
- operating and maintaining equipment including hopper system
- rig maintenance
- chemical handling
- preparing and pumping drilling fluids
- complying with safety data sheets (SDS)
- principles of the systems, equipment and their relationship to other plant
- rig safety and emergency procedures
- the layout of mud circulating, mixing and suction systems
- non-routine drilling operations
- compliance with personnel and rig management procedures layout of shaker, degasser and settling pits, and sand traps
- key factors affecting work activities described in performance evidence above, including:
 - fluid types and composition
 - geographic layout
 - type of fluid system in use
- hazards relevant to preparing and operating drilling fluid systems
- drilling team roles and objectives.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to prepare and operate drilling fluid systems
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 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.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**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 a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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