



Australian Government

RIIOGD504E Manage drilling operations

Release: 1

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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 implement drill management strategies, manage work health and safety obligations and oversee drilling and housekeeping operations in drilling.

This unit is appropriate for those working in management roles. They generally perform tasks involving a high level of autonomy which require the application of significant judgement in planning and determining the selection of equipment, roles and techniques for themselves and others. They are required to demonstrate the application of a broad range of technical, managerial, coordination and planning skills

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 managing drilling operations	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply documentation for managing drilling operations 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 and wear personal protective equipment required to the work activities

ELEMENT	PERFORMANCE CRITERIA
	1.5 Confirm personnel coordination requirements at the site are met prior to commencement of work activities 1.6 Determine anticipated budget for drilling operations
2. Implement drill management strategies	2.1 Obtain and check copies of contract and well program, design implementation strategies and communicate to relevant personnel 2.2 Prepare daily drilling written reports and tour sheets according to workplace procedures 2.3 Undertake inspections of operating site and camp, record and report 2.4 Establish communication strategies and confirm with operator's representative 2.5 Review, interpret and confirm company requirements 2.6 Implement and communicate reporting procedures according to workplace procedures 2.7 Establish and communicate rig maintenance arrangements
3. Manage work health and safety obligations	3.1 Implement and conduct crew meetings, record minutes and communicate to relevant personnel 3.2 Establish, implement, monitor, record and report safety inspection strategies 3.3 Induct new employees into site operations and establish monitoring strategies 3.4 Establish, implement, monitor and document permit-to-work procedures 3.5 Identify and implement emergency response arrangements 3.6 Identify, implement, monitor and document environmental and company requirements 3.7 Identify, rectify and report variances to relevant personnel
4. Oversee drilling operations	4.1 Obtain, confirm and clarify drill program 4.2 Select and access drilling plant, tools and equipment, confirm fit-for-service and report and repair any faults 4.3 Establish and monitor reporting mechanisms 4.4 Implement, maintain and monitor well control and blowout prevention strategies and report 4.5 Identify and investigate non-conformances, report and implement corrective strategies 4.6 Carry out and monitor appropriate tests and report
5. Oversee housekeeping activities	5.1 Clean, check, perform maintenance on and store plant, tools and equipment 5.2 Report issues identified with plant, tools and equipment

ELEMENT	PERFORMANCE CRITERIA
	5.3 Compare planned budget with outcome of operating costs and identify reasons for discrepancies

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
Problem-solving	Applies problem solving processes to identify risks, evaluate options and determine solutions

Unit Mapping Information

Supersedes and is equivalent to RIIOGD504D Manage drilling operations.

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 RIIOGD504E Manage drilling operations

Modification History

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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:

- manage drilling operations on at least two occasions, including:
 - undertaking routine inspections
 - identifying, rectifying and reporting non-conformances
 - inducting new employees into site operations
 - assessing safe work practices and adherence to drilling instructions
 - monitoring and reporting all drilling operations activity
 - carrying out numerical calculations, including:
 - addition, subtraction, multiplication, division
 - relating normal pressure to temperature
 - using calculator if required
 - using estimating skills (including mental arithmetic, visualisation of size and quantity)
 - basic geometry (including interpreting depth, direction)
 - using metric and imperials and converting between the two
 - interpreting gauges and graphs relevant to managing drilling operations
 - calculations relating to pressure (hydrostatic, surface, downhole, circulating), density, volume (fluid, air, gas), height, velocity, length and weight
 - measurements including penetration rate, rotary torque, rpm and pump pressure
 - budgeting and monitoring operating costs.

During the above, the candidate must:

- locate and apply required documentation, policies and procedures
- implement the requirements, procedures and techniques for the management of drilling operations, including:
 - identifying, addressing and reporting potential hazards and risks

- carrying out emergency response
- identifying, addressing and reporting environmental issues
- preparing written records and reports
- rectifying any identified faults and malfunctions within scope of own role and escalating where required
- work with others to manage drilling operations that meets required outcomes, including:
 - communicating with others to receive, give and clarify work instructions
 - preparing for and organising work activities to meet all task requirements
 - establishing and maintaining coordination with others relating to the work activity.

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 managing drilling operations, including those for:
 - identifying and managing risks
 - identifying, addressing and reporting environmental issues
 - setting up work activity
 - site isolation, signage and erecting barriers
 - work health and safety
 - selecting all plant, tools and equipment to carry out tasks and checking for faults
 - carrying out work to specifications
 - controlling identified hazards
 - applying technical solutions to drilling operations
 - well control
 - budgeting and monitoring operating costs
- downhole problems and solutions
- numerical calculations, including:
 - addition, subtraction, multiplication, division
 - relating normal pressure to temperature
 - estimating skills (including mental arithmetic, visualisation of size and quantity)
 - basic geometry (including interpreting depth, direction)
 - metric and imperial conversion
 - interpreting gauges and graphs relevant to managing drilling operations
 - calculations relating to pressure (hydrostatic, surface, downhole, circulating), density, volume (fluid, air, gas), height, velocity, length and weight
 - measurements including penetration rate, rotary torque, rpm and pump pressure.

Assessment Conditions

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

- include access to:
 - personal protective equipment
 - equipment required to manage drilling operations
- 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 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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