



Australian Government

Department of Education, Employment and Workplace Relations

RIIOGD204A Perform rig floor operations

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the performance of rig floor operations in the drilling industry. It includes: planning and preparing for rig floor operations, selecting handling equipment, handling tubulars and equipment, preparing and running drill string, preparing, running and cementing casing, preparing, running and cementing casing, running cement stinger assembly (non standard), assisting in preparation and running of blow out prevention (BOP), examining and servicing drill floor equipment, and maintaining a high standard of rig husbandry. 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.

Application of the Unit

This unit is appropriate for those working in an assistant role at worksites within:

- Drilling

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare equipment	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Obtain, confirm and apply work instructions for the allocated task 1.3. Identify, manage and report all potential hazards 1.4. Conform to safe working practices and current legislative and operational requirements 1.5. Resolve coordination requirements with others at the site prior to commencing and during work activities 1.6. Confirm availability of required quantities and type of consumables 1.7. Identify errors, omissions and shortages and take appropriate remedial action within functional responsibility
2. Select handling equipment	2.1. Identify and select equipment appropriate for the work to be performed and conforming to operational requirements 2.2. Confirm equipment is functional and fit for the purpose and the environment in which it will be used 2.3. Identify faults in the equipment and take appropriate remedial action taken within functional responsibility
3. Handle tubulars and equipment	3.1. Position tubulars and equipment according to operational requirements 3.2. Make and break connections safely 3.3. Identify faults and defects accurately and take appropriate remedial action within functional responsibility 3.4. Handle equipment using safe lifting and handling techniques 3.5. Record data accurately at appropriate times and frequencies
4. Prepare and run drill	4.1. Obtain and wear personal protective equipment, appropriate to task 4.2. Measure and record all down hole tools and pipe to assist driller

	4.3. Convey pipe and tools to drill floor with protectors fitted and in accordance with company safety operating procedures 4.4. Check tongs and slip dies for cleanliness and sharpness and secure long lines 4.5. Inspect, service and operate manual slips correctly 4.6. Operate make-up and break-out manual tongs correctly 4.7. Move drill floor drilling tools and equipment in accordance with operating procedures 4.8. Apply correct manual handling techniques 4.9. Conduct thread cleaning, inspection and lubrication safely 4.10. Make up and run drill string, applying correct use of chain tongs, safety clamps, rig tongs, slips and elevators
5. Prepare, run and cement casing	5.1. Prepare casing in accordance with rig operating procedures 5.2. Prepare shoe joints in accordance with company and manufacturer's requirements 5.3. Prepare well heads/casing hangers 5.4. Prepare running tools and cementing equipment 5.5. Check lifting appliances, identify and report faults 5.6. Check and prepare handling equipment 5.7. Prepare casing centralisers correctly 5.8. Prepare and install guide frames as required 5.9. Prepare appropriate well control equipment and mitigation control equipment in accordance with site requirements 5.10. Run casing in correct sequence 5.11. Fill casing safely 5.12. Connect appropriate cement line as per company procedure 5.13. Carry out cementing room duties while mixing 5.14. Assist as directed in preparing, running and cementing of cementing casings

6. Run cement stinger assembly (non-standard)	6.1. Land casing at appropriate joint 6.2. Assemble appropriate equipment to run cement stinger 6.3. Run drill pipe stringer inside casing as per rig specific operating procedure
7. Assist in preparation and running of blow out prevention (BOP) stack, riser and diverter package	7.1. Prepare running BOP equipment in accordance with rig operating procedures 7.2. Position BOP over the wellhead using the appropriate system 7.3. Assemble and check riser running equipment 7.4. Assemble and check appropriate pressure test caps 7.5. Assemble and check appropriate handling equipment 7.6. Assemble and check riser angle beacon and hole positioning equipment
8. Examine and service drill floor equipment	8.1. Read, interpret and apply lubrication schedules 8.2. Carry out lubrication in accordance with company and manufacturer's requirements 8.3. Identify and use correct types and quantities of lubricants for applications 8.4. Check drawworks, rotary table, swivel, all valves, including standpipe and choke and kill valves, wirelines and hoists and identify, report and rectify faults as appropriate
9. Maintain a high standard of rig husbandry	9.1. Maintain drill floor and equipment to company standard 9.2. Keep tools and portable equipment clean, well maintained and correctly stowed 9.3. Seal and stow flammable substances according to manufacturer's and statutory requirements 9.4. Keep covers and gratings in place, except when in use 9.5. Maintain tongs, slips and dies in a clean and sharp condition 9.6. Maintain non skid surfaces clean and free from oil and grease

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to perform rig floor operations:

- apply legislative, organisation and site requirements and procedures for performing rig floor operations
- prepare and run the temporary guide base:
 - correctly babbitt the wire line sockets
 - install the correct shear pins in the wire line sockets and their anchor pins correctly
 - paint and mark the guidelines, the temporary guide base running tool assembly and the temporary guide base guide cone correctly
 - check the temporary guide base running string to ensure that the guide base does not rotate
 - install and run the drill pipe guide frame above the temporary guide base on the running string
- prepare and run drill string:
 - measure and record pipe, sub and tools correctly
 - check the rig tongs and slips
 - check and use a safety clamp
 - service after use hole openers and large size non-sealed bearing bits
- assist as directed in preparing, running and cementing of casing:
 - check the slips, 350 ton elevator slips, elevator and tongs, including power tongs
 - assemble the casing centralisers correctly
 - make up the casing hanger and float or baffle collar correctly
 - make up the cement head sub
 - fill the casing safely and with the required frequency
 - thoroughly clean one mud pit and pre-mix any required mud materials
 - carry out the duties required in the cement room whilst mixing ie. manipulate the cement bulk pod, assist with any required additives, weigh the cement slurry
 - drop the trip dart or, if used, insert the second cement plug
 - switch from cementing unit displacement, e.g. which valves to manipulate when ordered
- prepare and operate pipe handling equipment:
 - check and overhaul the rig tongs and slips

- check the catheads and chains and operated pipe spinner correctly
- assist in making a conventional drilling connection using correct procedures
- know the additional safety regulations in force whilst flow testing a well
- assist in rigging up the electro-logging sheave cable, and know the patterns and positions of its hanging points
- know the safe practices to be observed when Well Loggers are handling explosives or radioactive materials

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to perform rig floor operations:

- rig safety and emergency procedures
- company and statutory safety guidelines, procedures and practices
- equipment safe operating procedures
- equipment condition and reporting mechanisms
- function of the triangular mark stamped just above the casing
- what steps are taken if the well kicks whilst running casing
- lubrication techniques
- rig maintenance
- normal drilling operations
- non-routine drilling operations
- man management/rig management
- conversion between metric and imperial
- range of numerical calculations and measurements including:
 - length
 - quantities
 - volumes
 - conversion rates
- well control

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for performing rig floor operations • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of rig floor operations • working with others to undertake and complete rig floor operations that meets all of the required outcomes • consistent timely completion of rig floor operations that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate

	cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete rig floor operations
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation may include:

- legislative, organisational and site requirements and procedures including:
 - Occupational Health and Safety Acts and Regulations
 - Duty of care
 - Petroleum Act and regulations
 - PSLA) Petroleum Submerged Lands Act (where relevant)
- manufacturer's guidelines and specifications
- Australian standards
- code of practice
- Employment and workplace relations legislation
- Equal Employment Opportunity and Disability Discrimination legislation
- relevant permits

Work instructions may come from briefings, handovers, plans and work orders and may be written or verbal, formal or informal and may include:

- re-tour safety meetings
- work inspection
- task specific - Job Safety Analysis (JSA)
- permit to work prepared if necessary
- safety briefing/induction
- weekly safety meetings
- toolbox
- permit to work
- communication through a range of channels including:
 - 2-way radio
 - intercom
 - hand signals
 - oral instruction
 - telephone
 - public address system
 - written work instructions
- reviewing data including:
 - job instructions

	• company/manufacturer's safe operating procedures • national standards and code of practice for manual handling • lubrication schedules • labels on hazardous materials • Job Safety Analysis (JSA) • training materials • safe use of equipment including: • safety harness • inertia reels • belts • use of personal protective equipment including: • safety helmet • safety footwear • safety glasses • gloves • riding belt • safety belt • life vest • recognising position of utilities including: • air • fuel • power • craneage • lighting • different working practices including • individual operation • team operation • use of personal protective equipment • consideration of toxic substances (e.g. H₂S) • continuous communication maintained • reacting to on-site emergencies
Hazards may include:	• working in proximity to drilling rig • working in a range of weather conditions including: • day/night • dry/wet • hot/cold • storms/lightning (dust storms/wind)

Coordination requirements may include:	• other equipment operators • maintenance personnel • supervisors • site personnel
Remedial action taken to deal with errors, omissions and shortages may include:	• report • record • rectify • replace • repair • adjust
Record of information may include:	• tubulars and equipment • faults and defects • downhole tools and pipe measurements • quantities of lubricants used
Equipment may include:	• bopis • bushings • casing running tools • casing stabbing basket/platform • catheads • cementing hose • consumables - dope/rope • diverter • down hole • drill pipe • elevators - manual/automatic • handling • hoisting/lifting equipment • job specific tools • pipe racking • riser • running tools • slips - manual/power • stinger running equipment • temporary guide bases (TGB/PGB) • tongs - manual/power • well control equipment • wellheads • winches • winches
Tubulars may include:	• drill pipe • drill collars

	• casing - 20", 133/8", 93/8", 7" and 5½" • tubing • riser
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Unit Sector(s)

Drilling (Oil and Gas)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.