



Australian Government

Department of Education, Employment and Workplace Relations

RIIOGD401A Rig up, conduct pre-spud operations and rig down

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the conducting of rig up, pre-spud and rig down operations in the drilling industry. It includes: planning and preparing for rig up operations; rigging up to spud; preparing for drilling of surface hole/subsea hole; preparing for pre-spud operations; conducting operations as per drilling program; and carrying out rig down operations. 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 a supervisory role or as a technical specialist, 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

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for operations	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. Resolve coordination requirements with others at the site prior to commencing and during work activities 1.5. Carry out pre rig-up procedure inspections (by rig manager, operator and crew) in accordance with standards for individual rigs 1.6. Coordinate movement of load and sequence of installation and location in accordance with rig movement plan 1.7. Check equipment for damage and/or loss by moving contractor and report and BI in accordance with requirements
2. Rig up to spud	2.1. Receive and action rig manager authorisation to commence rig-up to spud operations 2.2. Receive detailed instructions on use and type of mud from the operator and distribute as appropriate and to required specifications 2.3. Identify potential rig-up problems and take corrective action 2.4. Keep rig manager informed of operations in accordance with legislative and company requirements
3. Prepare for drilling of surface hole/subsea hole	3.1. Check drilling and hoist equipment, report damage to rig manager and record in accordance with company policies and procedures 3.2. Conduct equipment checks for nippling-up or cross-checked with relevant procedures 3.3. Check handling equipment for correct sizing and if fit for purpose 3.4. Confirm availability of and inspect, clean, calibrate and record tubulars in accordance

	<p>with requirements</p> <p>3.5. Check well control equipment against work program requirements</p> <p>3.6. Identify special tool requirements and check if fit for purpose and approved for use</p>
4. Prepare for pre-spud operations	<p>4.1. Lock pipe racks with drill pipe and position drill collars for immediate use</p> <p>4.2. Inspect casing running tools and prepare for operation</p> <p>4.3. Record casing tallies and report to appropriate company officer</p>
5. Conduct operations as per drilling program	<p>5.1. Determine optimum circulating and penetration rates and check deviations are in accordance with operators drilling program</p> <p>5.2. Continually check mud cleaning equipment and screens for integrity and correct operation</p> <p>5.3. Check drilling fluid quantities against program requirements with sufficient being in reserve to kill well and keep hole on full trip</p> <p>5.4. Record correct mud properties on tour report</p> <p>5.5. Operate all equipment in accordance with manufacturer regulations and company procedures</p> <p>5.6. Maintain a sound working relationship with third party contractors</p>
6. Rig down	<p>6.1. Receive and action rig manager authorisation to commence rig-down operations</p> <p>6.2. Identify potential rig-down problems and take corrective action</p> <p>6.3. Keep rig manager informed of operations in accordance with legislative and company requirements</p>

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 rig up, conduct pre-spud operations and rig down:

- apply legislative, organisation and site requirements and procedures
- oversee rigging
- manage and maintain pre-spud operations
- participate in inspections
- develop crew schedules and allocate jobs
- oversee mud-mixing operations
- check equipment/tools and record, report and rectify faults
- delegate
- problem solve
- plan for all circumstances
- operate forklift in line with licensing requirements
- read, interpret and apply regulations/company procedures
- convert from metric to imperial measurement
- carrying out calculations including:
 - quantities
 - up-hole velocity
 - specific gravity
 - volume
 - hydrostatic pressures
- operate machinery in a safe manner
- communicate effectively with management, crew and contractors
- meeting skills
- negotiation skills
- troubleshoot during drilling program
- read documents including:
 - load schedules
 - operating procedures
 - forms
 - government specifications

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 rig up, conduct pre-spud operations and rig down:

- rigging and slinging
- forklift operations
- local authorities
- rig specifications and measurements
- metric-imperial conversion
- marine operations
- drilling program to pre-spud operations
- drilling equipment
- rig up procedures
- casing
- mud systems
- routine drilling operations
- Job Safety Analysis (JSA)
- marine operations

Evidence Guide

<p>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.</p>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>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:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for rig up, pre-spud and rig down operations • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of rig up, pre-spud and rig down operations • working with others to plan, prepare and conduct rig up, pre-spud and rig down operations • evidence of the consistent successful rig up, pre-spud and rig down operations
<p>Context of and specific resources for assessment</p>	<ul style="list-style-type: none"> • 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

	<p>environment to sensitively accommodate cultural diversity.</p> <ul style="list-style-type: none"> • 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.
<p>Method of assessment</p>	<p>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:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • working with others to undertake and complete rig up, pre-spud and rig down operations • provision of clear and timely instruction and supervision by the individual of those involved in the conduct of rig up, pre-spud and rig down operations
<p>Guidance information for assessment</p>	<p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>

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.

<p>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisational and site requirements and procedures including: <ul style="list-style-type: none"> • Petroleum Submerged Lands Act (PSLA) • confined space • occupational health and safety • duty of care • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation • job sheet analysis (JSA) • organisational documentation may include: <ul style="list-style-type: none"> • hazard sheets • lease layout • rig layout • rig standards/specifications • instructions (e.g. use and type of mud) • drilling plan • chemical labels • operator manuals • load schedules • operating procedures
<p>Work instructions may come from briefings, handovers, plans and work orders and may be written or verbal, formal or informal and may include:</p>	<ul style="list-style-type: none"> • crewing schedules and allocating jobs to crew with drilling plan and prognosis being discussed with crews • safety briefing/induction • pre-tour safety meeting • tour changeover discussions • operator's representative memorandums • weekly safety meetings • Job Safety Analysis (JSA)

	<ul style="list-style-type: none">• instructions for specific jobs including:<ul style="list-style-type: none">• unloading of trucks• unsecuring of loads• assembling of rig• connecting power• trench digging• checking installation of safety equipment• installing waste pits• stowing equipment in correct stowages• drilling parameters to be maintained• mud density• casing depths• pre-safety check• pre-spud check• individual operation• team operation• use of personal protective equipment• consideration of h2s and other toxic substances• continuous communication maintained• reacting to on-site emergencies• emergency disconnect sequence• agreed procedures may include but are not limited to:<ul style="list-style-type: none">• company• facility• client• maintaining records including:<ul style="list-style-type: none">• crewing schedules• rig up checklist• pre-spud audit• tubular tallies• nature and scope of tasks• specifications• quality of finished works• achieved targets• operational conditions• obtaining of required permits• site layout• out of bounds areas
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	<ul style="list-style-type: none"> • worksite inspection requirements • lighting conditions • plant of equipment defects • coordination requirements or issues • contamination control requirements • environmental control requirements • barricade and signage requirements • remedial action to be taken to deal with errors, omissions and shortages include: <ul style="list-style-type: none"> • corrective action request against procedures • altering Job Safety Analysis (JSA) to include improved procedures
Hazards may include:	<ul style="list-style-type: none"> • working in proximity to drilling rig • working in different conditions including: <ul style="list-style-type: none"> • night time operations • day time operations • hot climates • cold climates • wet weather conditions • high wind
Coordination requirements may include:	<ul style="list-style-type: none"> • developing crewing schedules and allocating jobs to crews in line with operational requirements • other equipment operators • maintenance personnel • supervisors • site personnel
Equipment may include:	<ul style="list-style-type: none"> • drill strings • handling gear including tools • drilling rig and components • instrumentation • tubulars • mud system and auxiliary equipment
Instructions may be received via:	<ul style="list-style-type: none"> • 2-way radio • hand signals • telephone • public address system • written work instructions • internet or intranet communications
Corrective action may include:	<ul style="list-style-type: none"> • informing rig manager • informing company representative

	<ul style="list-style-type: none">• allocating maintenance tasks to appropriate person
Record may include:	<ul style="list-style-type: none">• damage reports• casing tallies• pre-spud operational reports

Unit Sector(s)

Drilling (Oil and Gas)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.