



Australian Government

Department of Education, Employment and Workplace Relations

RIOGD503A Oversee drilling operations

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers overseeing drilling operations in the drilling industry. It includes planning and preparing to oversee drilling operations, organising drilling of surface hole, supervising and participating in nipping up and pressure testing, organising rig up and rig up to spud, and completing and abandoning well. 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 management or supervisory 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

<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 overseeing drilling 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
2. Organise drilling of surface hole	2.1. Obtain copies of contract and well program, check and implement strategies designed and communicate to all parties 2.2. Obtain and check correct equipment and tools are on hand for surface hole operations 2.3. Check integrity of equipment and prepare/inspect casing and joints for damage 2.4. Maintain records and liaise with service companies to rectify faults 2.5. Ensure that appropriate equipment and personnel are on hand for casing
3. Supervise and participate in nipping up and pressure testing	3.1. Organise equipment and nipping-up requirements for drilling out 3.2. Ensure pressure testing of all BOP equipment is carried out 3.3. Ensure rig up to drill out is carried out in accordance with procedure 3.4. Monitor drill out safety processes and test gauge leak off as required
4. Organise rig up and rig up to spud	4.1. Assign crews to specific jobs and implement performance measures to monitor operations 4.2. Put appropriate monitoring strategies and checks in place to ensure integrity of operations 4.3. Check all specific instructions with operator's representative for drilling hole 4.4. Conduct crew meetings on total rig safety requirements

	<p>4.5. Report/rectify damage as required</p> <p>4.6. Ensure mud is mixed in accordance with procedures and properties defined in the drilling program</p> <p>4.7. Carry out pre-spud safety inspections with circulation and spud-in established</p> <p>4.8. Undertake surveys and report any deviations to operator's representative and record on appropriate documentation</p> <p>4.9. Supervise running in and cementing of casing with operator's written instructions being followed</p>
5. Complete and abandon well	<p>5.1. Supervise completion and well abandonment with operator's representative</p> <p>5.2. Make preparations to release rig and arrange shutdown preparation list</p> <p>5.3. Arrange servicing, repair and/or return of equipment through appropriate channels</p> <p>5.4. Abandon well in accordance with legislative, operator 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 oversee drilling operations:

- apply legislative, organisation and site requirements and procedures for overseeing drilling operations
- apply BOP specifications
- select and utilise correct drilling equipment
- apply drilling specifications
- apply legislation and acts
- nipple-up and pressure test within specifications
- rig up to spud
- coordinate drill team
- carry out numerical calculations including:
 - addition, subtraction, multiplication, division
 - relate normal pressure to temperature
 - using calculator if required
 - using estimated skills (e.g. mental arithmetic, visualisation of size and quantity)
 - basic geometry (e.g. interpreting depth, direction)
 - use of metric and imperials and conversion between the two
 - interpreting of gauges, graphs etc
 - calculations relating to pressure (hydrostatic, surface, downhole, circulating), density, volume (fluid, air, gas), height, velocity, length, weight
 - measurements (penetration rate, rotary torque, rpm, pump pressure)
- drill out of hole in accordance with procedures
- abandon well activity to procedures

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 oversee drilling operations:

- BOP specifications
- casing tools and their applications
- inspection and reporting procedures and practices
- equipment types and uses

- occupational health and safety/environmental obligations
- nipples-up and pressure testing techniques
- pressures
- drill out procedures
- testing
- rig up to spud procedure
- drilling programs
- run in and cementing procedures
- well abandonment and procedures

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 overseeing drilling operations • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of overseeing drilling operations • working with others to plan, prepare and oversee drilling operations • evidence of the consistent successful overseeing of drilling 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 environment to sensitively accommodate

	<p>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 oversee drilling operations • provision of clear and timely instruction and supervision by the individual of those involved in overseeing drilling 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

<p>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>	
<p>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation • Petroleum Submerged Lands Act (PSLA) • duty of care
<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"> • consideration of H2S and other toxic substances • reacting to on-site emergencies • nature and scope of tasks • specifications • quality of finished works • achieved targets • operational conditions • obtaining of required permits • site layout • out of bounds areas • worksite inspection requirements • lighting conditions • plant of equipment defects • coordination requirements or issues • contamination control requirements • environmental control requirements • barricade and signage requirements • safety briefing/induction • pre-tour safety meeting • weekly safety meetings • Job Safety Analysis (JSA)
<p>Hazards may include:</p>	<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"> • other equipment operators • maintenance personnel • supervisors • site personnel • continuous communication maintained • team operation
Records may include:	<ul style="list-style-type: none"> • daily drilling report • equipment damage/failure report • material requisition form • plant movement advice • materials and services received (report) • gas bottle returns • third party hire and monthly stock lists • change over notes • employee time sheets • drilling rate sheet • meal and bed sheet • fire extinguisher checklist • monthly tubular summary
Communicate may include by:	<ul style="list-style-type: none"> • 2-way radio • hand signals • telephone • public address system • written work instructions • internet/intranet <p><i>May be between:</i></p> <ul style="list-style-type: none"> • crew • service companies • operator's representative

Unit Sector(s)

Drilling (Oil and Gas)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.