



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **RIISAM314A Manage oil and gas drilling equipment maintenance**

**Release: 1**

## **RIISAM314A Manage oil and gas drilling equipment maintenance**

### **Modification History**

Not applicable.

### **Unit Descriptor**

This unit covers managing of equipment maintenance in the oil and gas drilling industry. It includes: planning and preparing; checking new and used equipment; and planning and organising maintenance and overhauls.

### **Application of the Unit**

This unit is appropriate for those working in a operational roles, 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. Prepare for equipment maintenance	1.1. Access, interpret and apply <b><i>compliance documentation</i></b> relevant to the managing of equipment maintenance in the oil and gas drilling industry 1.2. Obtain, confirm and apply <b><i>work instructions</i></b> for the allocated task 1.3. Identify, manage and report all potential <b><i>hazards</i></b> 1.4. Resolve <b><i>coordination requirements</i></b> with others at the site prior to commencing and during work activities
2. Check new and used equipment	2.1. Test materials and equipment regularly 2.2. Monitor availability of new and used equipment 2.3. Evaluate <b><i>costs</i></b> /benefits of replacing equipment, and recommend/implement the purchase/lease of replacement equipment 2.4. Check <b><i>stock levels</i></b> and order <b><i>spare parts and consumables</i></b> in accordance with company procedure 2.5. Maintain communication between operators, company and suppliers 2.6. Check manufacturer's manuals/company procedures for currency and relevancy
3. Plan and organise maintenance and overhauls	3.1. Determine type and frequency of maintenance tasks 3.2. Organise equipment maintenance and service to ensure availability is maintained and downtime minimised 3.3. Monitor performance of maintenance <b><i>schedules</i></b> and take corrective action if necessary 3.4. Arrange sources for obtaining back up or replacement equipment 3.5. Allocate personnel to carry out maintenance tasks

## 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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to manage oil and gas drilling equipment maintenance:

- apply legislative, organisation and site requirements and procedures
- apply stocks checking and maintenance requirements and procedures
- apply cost benefit analysis
- apply equipment/consumables order procedures
- apply reporting procedures

### Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to manage oil and gas drilling equipment maintenance:

- equipment and ancillary attachment characteristics, technical capabilities and limitation
- wear parts and relative frequency of replacement
- purpose of stock control
- financial transactions (e.g. cash flow, cost benefit analysis)

## 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.

<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<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"> <li>• knowledge of the requirements, procedures and instructions for managing oil and gas drilling equipment maintenance</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient management of oil and gas drilling equipment maintenance</li> <li>• working with others to undertake and complete oil and gas drilling equipment maintenance that meets all of the required outcomes</li> <li>• consistent timely completion of oil and gas drilling equipment maintenance that safely, effectively and efficiently meets the required outcomes</li> </ul>
<b>Context of and specific resources for assessment</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Evidence for assessment is best gathered using the outcomes of products and processes of the workplace context.</li> <li>• 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.</li> <li>• Customisation of assessment and delivery</li> </ul>

	<p>environment to sensitively accommodate cultural diversity.</p> <ul style="list-style-type: none"> <li>• Aboriginal people and other people from a non English speaking background may have second language issues.</li> <li>• Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances.</li> <li>• Where applicable, physical resources should include equipment modified for people with disabilities.</li> <li>• Access must be provided to appropriate learning and/or assessment support when required.</li> </ul>
<b>Method of assessment</b>	<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"> <li>• written and/or oral assessment of the candidate's required knowledge</li> <li>• observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes</li> <li>• consistently achieving the required outcomes</li> </ul> </li> <li>• first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• working with others to undertake and complete oil and gas drilling equipment maintenance</li> </ul> </li> </ul>
<b>Guidance information for assessment</b>	<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><b>Relevant compliance documentation</b> may include:</p>	<ul style="list-style-type: none"> <li>• legislative, organisation and site requirements and procedures</li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• code of practice</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul>
<p><b>Work instructions</b> may come from:</p>	<ul style="list-style-type: none"> <li>• briefings</li> <li>• handovers</li> <li>• plans and work orders</li> <li>• inductions</li> <li>• pre-tour safety meetings</li> <li>• weekly safety meetings</li> <li>• Job Safety Analysis (JSA)</li> <li>• agreed procedures may include but are not limited to:               <ul style="list-style-type: none"> <li>• company</li> <li>• facility</li> <li>• client</li> </ul> </li> </ul>
<p><b>Work instructions</b> may include:</p>	<ul style="list-style-type: none"> <li>• nature and scope of tasks,</li> <li>• specifications</li> <li>• quality of finished works</li> <li>• achievement targets,</li> <li>• operational conditions,</li> <li>• obtaining of permits required</li> <li>• site layout,</li> <li>• out of bounds areas,</li> <li>• worksite inspection requirements,</li> <li>• lighting conditions,</li> <li>• plant or equipment defects</li> <li>• hazards and potential hazards</li> <li>• coordination requirements or issues</li> </ul>

	<ul style="list-style-type: none"> <li>• contamination control requirements</li> <li>• environmental control requirements</li> <li>• barricade and signage requirements</li> </ul>
<b>Hazards</b> may include:	<ul style="list-style-type: none"> <li>• spillages</li> <li>• toxic chemicals</li> <li>• high pressure air and hydraulic fluid</li> <li>• rotating equipment</li> </ul>
<b>Coordination requirements</b> may include	<ul style="list-style-type: none"> <li>• rig team</li> <li>• maintenance personnel</li> <li>• supervisors</li> <li>• suppliers</li> </ul>
<b>Cost</b> items include:	<ul style="list-style-type: none"> <li>• plant equipment and hire</li> <li>• fuel, materials, drilling stores and bits</li> <li>• maintenance and drill string replacement</li> </ul>
<b>Scheduling</b> may include:	<ul style="list-style-type: none"> <li>• flow charts</li> <li>• time lines/diagrams</li> <li>• planned maintenance manuals</li> </ul>
<b>Spare parts and consumables</b> may be identifying by:	<ul style="list-style-type: none"> <li>• diagrams in makers' handbooks and other documents</li> <li>• lists in maker's handbooks and other documents</li> <li>• labels, bar codes etc, on items</li> </ul>
<b>Stock levels</b> can be maintained by:	<ul style="list-style-type: none"> <li>• two bin system</li> <li>• re-order level system</li> <li>• re-order cycle system</li> <li>• any of the above operating with computer assistance</li> <li>• replenishment system</li> </ul>

## Unit Sector(s)

Service and Maintenance

## Competency field

Refer to Unit Sector(s).



## **Co-requisite units**

Not applicable.