



**Australian Government**

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

# **RIOGD404A Coordinate air drilling operations**

**Release: 1**

## RIIOGD404A Coordinate air drilling operations

### Modification History

Not applicable.

### Unit Descriptor

This unit covers the coordination of air drilling operations in the drilling industry. It includes planning and preparing for air drilling operations, and examining correct air drilling procedures. 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
<p>1. Plan and prepare for coordination of air drilling operations</p>	<p>1.1. Access, interpret and apply <b>compliance documentation</b> relevant to the work activity</p> <p>1.2. Obtain, confirm and apply <b>work instructions</b> for the allocated task</p> <p>1.3. Identify, manage and report all potential <b>hazards</b></p> <p>1.4. Resolve <b>coordination requirements</b> with others at the site prior to commencing and during work activities</p> <p>1.5. Apply air drilling and conventional mud drilling techniques</p> <p>1.6. Apply occupational health and safety and emergency procedures to air and conventional mud drilling</p>
<p>2. Examine correct air drilling procedures</p>	<p>2.1. Demonstrate Job Safety Analysis (JSA) for air drilling application</p> <p>2.2. Identify and implement emergency response plan for air drilling operations</p> <p>2.3. Obtain, interpret and apply pre-tour and pre-drilling checklists</p> <p>2.4. Identify components that make up an air drilling package and explain their use to crew members</p> <p>2.5. Identify and apply parameters to watch during operations whilst air drilling</p> <p>2.6. Identify and secure crew numbers and expertise for air drilling operations</p> <p>2.7. Identify and confirm conditions required to initialise the drilling of new holes in accordance with company procedures</p> <p>2.8. Identify and explain test procedures to crew and carry out in accordance with company requirements</p> <p>2.9. Identify and explain tripping procedures to crew and apply in accordance with company requirements</p> <p>2.10. Determine and implement correct <b>communications</b> and <b>record keeping</b> procedures for air drilling operations</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 coordinate air drilling operations:

- apply legislative, organisation and site requirements and procedures for coordination of air drilling operations
- discuss and apply drilling concepts and methods
- apply air drilling procedures
- explain and describe the uses of air drilling package components
- apply emergency response procedures
- apply Job Safety Analysis (JSA)
- perform calculations including:
  - annular velocity
  - sinking/slipping velocity
  - pressure
  - flow test procedure
  - volume
  - conversion between metric and imperial
  - use of a calculator

### 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 coordinate air drilling operations:

- air drilling concepts and methods, advantages and disadvantages
- conventional mud drilling concepts and methods, advantages and disadvantages
- emergency response plan for air drilling operations
- pressure volume requirements
- air requirements
- dust drilling
- mist drilling
- stiff foam drilling
- aerated mud
- air drilling procedures
- emergency response
- Job Safety Analysis (JSA)



## 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><b>Overview of assessment</b></p>	
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></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"> <li>• knowledge of the requirements, procedures and instructions for coordination of air drilling operations</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient coordination of air drilling operations</li> <li>• working with others to plan, prepare and coordinate air drilling operations</li> <li>• evidence of the consistent successful coordination of air drilling operations</li> </ul>
<p><b>Context of and specific resources for assessment</b></p>	<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>• 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.</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 environment to sensitively accommodate</li> </ul>

	<p>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>• 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.</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>• consistent achievement of 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 the coordination of air drilling operations</li> <li>• provision of clear and timely instruction and supervision by the individual of those involved in the coordination of air drilling operations</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

<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><b>Relevant compliance documentation</b> may include:</p>	<ul style="list-style-type: none"> <li>• legislative, organisational and site requirements and procedures including:             <ul style="list-style-type: none"> <li>• (PSLA) Petroleum Submerged Lands Act</li> <li>• duty of care</li> <li>• daily pre-tour checklists</li> <li>• pre-drilling checklists</li> </ul> </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 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"> <li>• communication through:             <ul style="list-style-type: none"> <li>• safety briefing/induction</li> <li>• pre-tour safety meeting</li> <li>• weekly safety meetings</li> <li>• Job Safety Analysis (JSA)</li> <li>• agreed procedures including:                 <ul style="list-style-type: none"> <li>• company</li> <li>• facility</li> <li>• client</li> </ul> </li> </ul> </li> <li>• individual operation</li> <li>• team operation</li> <li>• use of personal protective equipment</li> <li>• consideration of H2S and other toxic substances</li> <li>• maintaining continuous communication</li> <li>• reacting to on-site emergencies</li> <li>• nature and scope of tasks</li> <li>• specifications</li> <li>• quality of finished works</li> <li>• achieved targets</li> <li>• operational conditions</li> </ul>



	<ul style="list-style-type: none"> <li>• obtaining of required permits</li> <li>• site layout</li> <li>• out of bounds areas</li> <li>• worksite inspection requirements</li> <li>• lighting conditions</li> <li>• plant of equipment defects</li> <li>• coordination requirements or issues</li> <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>• working in proximity to drilling rig</li> <li>• working in different conditions including: <ul style="list-style-type: none"> <li>• night time operations</li> <li>• day time operations</li> </ul> </li> <li>• potential for bushfires if flaring gas</li> <li>• hot climates</li> <li>• cold climates</li> <li>• wet weather conditions</li> <li>• high wind</li> </ul>
<b>Coordination requirements</b> may include:	<ul style="list-style-type: none"> <li>• other equipment operators</li> <li>• maintenance personnel</li> <li>• supervisors</li> <li>• site personnel</li> </ul>
<b>Communication</b> channels may include:	<ul style="list-style-type: none"> <li>• 2-way radio</li> <li>• hand signals</li> <li>• telephone</li> <li>• public address system</li> <li>• written work instructions</li> <li>• internet and intranet</li> </ul>
<b>Record keeping</b> may include:	<ul style="list-style-type: none"> <li>• daily tour sheets</li> </ul>

## Unit Sector(s)

Drilling (Oil and Gas)

## Competency field

Refer to Unit Sector(s).

## **Co-requisite units**

Not applicable.