



**Australian Government**

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

# **RIIBHD401A Supervise blast hole drilling operations**

**Release: 1**

## **RIIBHD401A Supervise blast hole drilling operations**

### **Modification History**

Not applicable.

### **Unit Descriptor**

This unit covers the supervision of blast hole drilling operations in resources and infrastructure industries. This includes: planning and preparing operations; initiating operations; and monitoring, adjusting, communicating and reporting on the execution of the operations.

### **Application of the Unit**

This unit is appropriate for those working in a supervisory role or as a technical specialist, within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- Metalliferous mining

### **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 blast hole drilling operations	1.1. Access, clarify and ensure the application of the <b>requirements and procedures</b> relevant to undertaking <b>blast hole drilling operations</b> 1.2. Access, clarify and ensure the application of the specific <b>task information</b> and <b>required outcomes</b> relevant to undertaking blast hole drilling operations 1.3. Prepare an <b>operational plan</b> which makes best use of the available <b>resources</b> and for the safe effective and efficient conduct of the operations
2. Initiate blast hole drilling operations	2.1. Acquire and make available the necessary resources for the safe, effective and efficient conduct of the operations 2.2. Issue clear and timely <b>instructions to team members</b> and others involved, for the safe, effective and efficient conduct of the operations
3. Monitor, adjust, communicate and report on the execution of blast hole drilling operations	3.1. <b>Monitor</b> the execution of blast hole drilling operations 3.2. <b>Initiate</b> adjustments to <b>blast hole drilling operations practice</b> or the operational plan to ensure safe, effective and efficient execution of the operations 3.3. Provide advice to <b>team members</b> to overcome <b>operational problems</b> encountered during the execution of blast hole drilling operations 3.4. Ensure plant equipment and tools maintenance requirements are carried out and recorded 3.5. Ensure reports are completed and submitted 3.6. Recommend changes to improve the safety, efficiency and effectiveness of the execution of blast hole drilling operations

## 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 their application in the variety of circumstances in which this unit may be applied. This includes the ability to carry out the following:

- interpreting legislative requirements and procedures
- interpreting organisational requirements and procedures
- interpreting client requirements and procedures
- interpreting manufacturer's requirements and procedures
- interpreting blast hole drilling operations project site geological data
- interpreting blast hole drilling operations project site geotechnical data
- interpreting blast hole drilling operations project site hydrological data
- interpreting blast hole drilling operations project site metrological data
- interpreting blast hole drilling operations project engineering survey information
- interpreting blast hole drilling operations project plans and drawings
- interpreting blast hole drilling operations project specifications
- preparing for and conducting of briefings, toolbox and site meeting
- preparing of short messages
- preparing and presenting of job reports
- preparing and maintaining of log books and diaries
- providing leadership
- applying blast hole drilling operations performance monitoring skills
- applying blast hole drilling operations trouble shooting skills
- applying blast hole drilling operations problem solving skills
- performing calculations for the execution of blast hole drilling operations
- providing recommendations for the improvement of the safe, effective and efficient execution of blast hole drilling operations

### Required knowledge

Specific knowledge is required to achieve the performance criteria of this unit, particularly for their application in the variety of circumstances in which this unit may be applied. Assessment requires evidence of the ability to identify and explain the purpose of:

- risk assessment and management requirement and procedures
- statutory compliance requirements and procedures
- occupational safety and health requirements and procedures
- environmental management requirements and procedures
- quality management requirements and procedures
- work zone traffic management requirements and procedures

- contract management requirements and procedures
- communication requirements and procedures
- administrative requirements and procedures
- blast hole drilling operations plant and equipment capabilities and application
- plant, equipment and tools maintenance requirements and procedures
- operational techniques for the execution of blast hole drilling operations
- potential operational problems in the execution of blast hole drilling operations
- blast hole drilling operations resource requirements and procedures
- activities scheduling requirements and procedures
- blast hole drilling operations materials delivery requirements and procedures
- job plan drafting of and administration requirements and procedures
- reporting requirements and procedures
- workplace relationship requirements and procedures
- organisational, client and site operational requirements
- relationship between various areas of resources and infrastructure activities and blast hole drilling operations
- team leadership techniques
- works planning techniques
- blast hole drilling operations monitoring methods

## 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 that are to apply in undertaking blast hole drilling operations</li> <li>• implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes of blast hole drilling operations</li> <li>• working with others to plan, prepare and execute blast hole drilling operations</li> <li>• operational plans which reflect the requirements of these blast hole drilling operations and are capable of achieving all of their required outcomes</li> <li>• resource plans which have made available adequate resources for the safe, effective and efficient execution of blast hole drilling operations</li> <li>• provision of clear and timely instruction, advice and supervision by the individual of those involved in the undertaking of these blast hole drilling operations</li> <li>• evidence of the consistent successful completion of blast hole drilling operations under their supervision</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</li> </ul>

	<p>skills.</p> <ul style="list-style-type: none"> <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 cultural diversity.</li> <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 a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the 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>
<p><b>Method of assessment</b></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"> <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 procedures and techniques for the safe, effective and efficient achievement of the required outcomes of blast hole drilling operations</li> <li>• operational plans which reflect the requirements of blast hole drilling operations and are capable of achieving all of their required outcomes</li> <li>• resource plans which have made available adequate resources for the safe, effective and efficient execution of blast hole drilling operations</li> </ul> </li> </ul>



	<ul style="list-style-type: none"><li>• consistent successful completion of blast hole drilling operations under their supervision</li><li>• first hand testimonial evidence of the candidate's:<ul style="list-style-type: none"><li>• working with others to plan, prepare and execute blast hole drilling operations</li><li>• supervising and providing clear and timely instruction and advice to those involved in the undertaking blast hole drilling operations</li></ul></li></ul>
<b>Guidance information for assessment</b>	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.

<p><b>Requirements and procedures</b> may include:</p>	<ul style="list-style-type: none"> <li>• legislative</li> <li>• organisational</li> <li>• client</li> <li>• site</li> <li>• manufacturer's</li> </ul> <p><i>and may include:</i></p> <ul style="list-style-type: none"> <li>• risk assessment and management requirements and procedures</li> <li>• statutory compliance requirements and procedures</li> <li>• occupational safety and health requirements and procedures</li> <li>• environmental management requirements and procedures</li> <li>• cultural and heritage requirements and procedures</li> <li>• traffic management requirements and procedures</li> <li>• quality requirements and procedures</li> <li>• communication requirements and procedures</li> <li>• procurement requirements and procedures</li> <li>• workplace relations requirements and procedures</li> <li>• contract management requirements and procedures</li> <li>• administration requirements and procedures, including records and reporting</li> <li>• maintenance, servicing, and housekeeping requirements and procedures</li> </ul>
<p><b>Blast hole drilling methods</b> may include:</p>	<ul style="list-style-type: none"> <li>• air drilling</li> <li>• down-hole hammer drilling</li> <li>• top-hole hammer drilling</li> </ul>
<p><b>Task information</b> may include:</p>	<ul style="list-style-type: none"> <li>• site geological data</li> <li>• site geotechnical data</li> <li>• site hydrological data</li> </ul>

	<ul style="list-style-type: none"> <li>• site meteorological data</li> <li>• site engineering survey data</li> <li>• known and potential site hazards, constraints and conditions</li> <li>• site cultural and heritage information</li> <li>• task specifications</li> <li>• task drawings</li> <li>• sources of materials</li> <li>• other organisations and contractors involved in the task or related</li> <li>• coordination, timing and budgeting requirements</li> </ul>
<b>Required outcomes</b> may include:	<ul style="list-style-type: none"> <li>• task specifications requirements</li> <li>• task drawings requirements</li> <li>• coordination requirements</li> <li>• activity scheduling requirements</li> <li>• unit cost requirements</li> <li>• overall operation cost requirements</li> <li>• waste management requirements</li> </ul>
<b>Operational plan</b> may include:	<ul style="list-style-type: none"> <li>• human resource requirements</li> <li>• plant and machinery requirements</li> <li>• construction materials requirements</li> <li>• sub-contractor support requirements</li> <li>• waste disposal requirements</li> <li>• coordination requirements</li> <li>• activity scheduling</li> <li>• materials delivery scheduling</li> <li>• risk assessment and management requirements</li> <li>• occupational health and safety requirements</li> <li>• quality management requirements, including testing scheduling requirements</li> <li>• traffic management requirements</li> <li>• environmental requirements</li> <li>• operation monitoring requirements</li> <li>• operation performance monitoring requirements</li> <li>• communication requirements</li> <li>• reporting requirements</li> </ul>
<b>Resources</b> may include:	<ul style="list-style-type: none"> <li>• labour</li> <li>• plant, equipment and tools</li> <li>• highway haulage vehicles</li> <li>• construction materials</li> </ul>

	<ul style="list-style-type: none"> <li>• sub-contractor services</li> </ul>
<b>Instructions</b> may include	<ul style="list-style-type: none"> <li>• briefings</li> <li>• handovers</li> <li>• work orders</li> <li>• toolbox meetings</li> <li>• site meetings</li> </ul>
<b>Teams members</b> may include:	<ul style="list-style-type: none"> <li>• other members of the organisations management team</li> <li>• members of the team directly involved in the operation</li> <li>• suppliers representatives</li> <li>• sub-contractors representatives</li> <li>• supervisors or managers of other organisations who are involved in related operations</li> </ul>
<b>Monitor</b> may include:	<ul style="list-style-type: none"> <li>• ongoing risk assessment</li> <li>• engineering survey</li> <li>• sampling and testing</li> <li>• observation and recording</li> <li>• general supervision</li> </ul>
<b>Initiate</b> may include:	<ul style="list-style-type: none"> <li>• written communication</li> <li>• oral communications</li> </ul>
<b>Blast hole drilling operations</b> may include:	<ul style="list-style-type: none"> <li>• identification of and responding to operational problems</li> <li>• equipment maintenance</li> </ul>
<b>Operational problems</b> may include:	<ul style="list-style-type: none"> <li>• keeping hole open to install explosives</li> <li>• equipment failure</li> <li>• drill string bogging</li> <li>• drill rods breaking</li> <li>• controlling drill hole direction</li> <li>• drilling in fractured ground</li> </ul>

## Unit Sector(s)

Blast Hole Drilling

## Competency field

Refer to Unit Sector(s).

## **Co-requisite units**

Not applicable.