



Australian Government

RIINHB310D Conduct surface directional drilling

Release: 2

RIINHB310D Conduct surface directional drilling

Modification History

Release	Comment
1	This unit replaces RIINHB310A Conduct surface directional drilling
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to conduct surface directional drilling in Coal mining and Drilling.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication

Unit Sector

Coal mining

Drilling

Elements and Performance Criteria

1. Plan and prepare for surface directional drilling	1.1 Access, interpret and apply conduct surface directional drilling, documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Communicate and coordinate activities with others throughout the work activity 1.6 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
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2. Bore pilot hole	2.1 Carry out pre-start and start up procedures 2.2 Identify, select and apply rig operational controls 2.3 Select appropriate cutting tool and drilling rig and components 2.4 Fit locating device to drill head and attach drill head to drill stem 2.5 Align drilling head with survey tool and survey control system 2.6 Drill pilot hole according to design alignment 2.7 Monitor drill path ensuring pilot hole meets conformance envelope and dogleg severity is within limits 2.8 Add drill stem sections as required 2.9 Steer drill head to achieve required pitch and direction 2.10 Monitor and interpret all gauge and dial readings 2.11 Monitor and interpret drill fluid return and drill spoil 2.12 Monitor and interpret drill head position and pitch 2.13 Continually monitor hazards and risks , and ensure safety of self, other personnel, plant and equipment 2.14 Maintain drill log and reports as required
3. Respond to problems	3.1 Identify possible problems in equipment or process 3.2 Determine problems needing action 3.3 Determine possible fault causes 3.4 Rectify problem using appropriate solution within area of responsibility 3.5 Follow through items initiated until final resolution has occurred 3.6 Report problems outside area of responsibility to designated person
4. Complete equipment maintenance and housekeeping	4.1 Carry out shutdown and secure equipment 4.2 Monitor wear on drill stem, particularly threads 4.3 Dress damaged threads or replace drill stem as required 4.4 Check all equipment and hoses 4.5 Monitor wear on drill heads and reamers and take required action 4.6 Clean all equipment on completion of bore, ensuring environmental controls are followed 4.7 Rotate drill stems in stack

	4.8	Ensure drill fluid is contained or disposed of appropriately
	4.9	Ensure housekeeping activities are completed
	4.10	Process records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIINHB310A Conduct surface directional drilling

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIINHB310D Conduct surface directional drilling

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of surface directional drilling including:
 - operating communications equipment, locators and fluid mixers
 - attaching drill head, back reamer, products
 - dressing slightly damaged drill stem threads
- works effectively with others to undertake and complete surface directional drilling that meets all of the required outcomes including:
 - complying with written and verbal reporting requirements and procedures
 - communicating clearly and concisely with others to receive and clarify work instructions
 - communicating clearly and concisely with others to resolve coordination requirements prior to commencing and during work activities
- demonstrates completion of surface directional drilling that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - selecting appropriate cutting tool and drilling rig and components
 - fitting locating device to drill head and attaching drill head to drill stem
 - aligning drilling head with survey tool and survey control system
 - drilling pilot hole according to design alignment

- monitoring drill path ensuring pilot hole meets conformance envelope and dogleg severity is within limits
- steering drill head to achieve required pitch and direction
- monitoring and interpreting all gauge and dial readings
- monitoring and interpreting drill head position and pitch

Knowledge Evidence

The candidate must demonstrate knowledge in conducting surface directional drilling through:

- accessing, interpreting and applying the organization and site requirements and procedures for;
 - work, health and safety
 - environmental issues
 - operating drill rig
 - housekeeping
- understanding the basic rock and geology types and their impact on HDD operations
- drill heads for different geology types
- back reamers for different geology types
- understanding the minimum radius of curvature for drill stem and for different products
- understanding the methods of steering drill head
- understanding the principles of HDD
- understanding the types of drill fluid, their uses and make up and adjustment procedures
- being prepared for fire/accident/emergency

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,

- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.	

*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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