



Australian Government

RIINHB306D Conduct large diameter auger drilling

Release: 2

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Modification History

Release	Comment
1	This unit replaces RIINHB306A Conduct large diameter auger 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 large diameter auger drilling in Civil construction 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

Civil construction

Drilling

Elements and Performance Criteria

1. Plan and prepare for large diameter auger drilling	1.1 Access, interpret and apply conduct large diameter auger drilling apply documentation, and 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. Operate large diameter auger drill	2.1 Carry out pre-start and start up procedures 2.2 Identify, select and apply rig operational controls 2.3 Collar borehole, start hole, maintain hole alignment, take corrective action for deflections 2.4 Make up appropriate drill string 2.5 Handle additional drill stems, inserting them in the drill string 2.6 Use appropriate gears, rotation, feed and holdback so that flights or bucket are substantially full for the soil being drilled at any given depth 2.7 Interpret drilling factors to determine conditions at the bit 2.8 Make and break auger string and drive head connections 2.9 Maintain a clear hole and a clear bottom and deploy tools for cleaning hole bottom at completed depth 2.10 Interpret or calculate actual depth at any point during drilling, interpret depth of strata changes and identify fill depth in any bore 2.11 Select appropriate strategies for recovery of dropped augers 2.12 Recover drill string using winch and/or head/kelly 2.13 Insert surface casing and deepen hole using smaller diameter auger or bucket, if required 2.14 Disassemble drill string and change augers and bit components 2.15 Select bits for formation being drilled 2.16 Select appropriate augering method for situation 2.17 Maintain spoil removal from hole collar 2.18 Cover and secure bores 2.19 Prepare and submit paperwork for daily activities 2.20 Continually monitor hazards and risks , and ensure safety of self, other personnel, plant and equipment 2.21 Select and use water and drilling fluids as appropriate 2.22 Bell foundation piles, if required 2.23 Clean pile bases and insert reinforcement cages, if required 2.24 Deploy bucket augers through surface casing and when drilling under bentonite muds 2.25 Use spin off and side casting of spoil as appropriate 2.26 Record daily hole depths and progress
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3. Respond to problems	3.1 Identify possible operational problems in equipment or process 3.2 Identify symptoms of problems needing remedial 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 external wear in drill string, rotate string elements to ensure even wear 4.3 Interchange drill bits and/or drill bit elements to maintain free cutting ability 4.4 Check all string and equipment elements for wear and proper function 4.5 Replace worn elements in string, bits and equipment and recycle 'out of specification' equipment for repair or redundancy 4.6 Apply lubrication as appropriate 4.7 Ensure housekeeping activities are completed 4.8 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

RIINHB306A Conduct large diameter auger 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 RIINHB306D Conduct large diameter auger 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
- works effectively with others to undertake and complete the large diameter auger drilling tasks 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 large diameter auger drilling that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - collaring borehole, starting hole, maintaining hole alignment, taking corrective action for deflections
 - making up appropriate drill string
 - handling additional drill stems, inserting them in the drill string
 - using appropriate gears, rotation, feed and holdback so that flights or bucket are substantially full for the soil being drilled at any given depth
 - interpreting drilling factors to determine conditions at the bit
 - selecting appropriate strategies for recovery of dropped augers
 - recover drill string using winch and/or head/kelly
 - inserting surface casing and deepen hole using smaller diameter auger or bucket, if required

- disassembling drill string and changing augers and bit components
- abandoning, covering/securing bores to ensure safety of others and crew

Knowledge Evidence

The candidate must demonstrate knowledge in conducting large diameter auger drilling through:

- accessing, interpreting and applying the organisation and site requirements and procedures for:
 - work, health and safety
 - environmental issues
 - operating drill rig
 - housekeeping
- identifying equipment spares and characteristics
- understanding equipment technical capabilities, system limitations, gauge readings and their interpretation
- understanding soil sampling techniques, deployment methods and record keeping
- complying with operational maintenance procedures for rig and equipment including pre-start checks
- understanding the basic geological formations likely to be encountered and their properties
- using water, mud and foam injection for jet auger drilling and/or screw pipe drilling
- using of diagrams, plans and instructions for positioning, recording work or progress
- using of tape measures and devices for assessing depth drilled
- 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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