



**Australian Government**

# **Assessment Requirements for RIIINHB315D Conduct top-hole hammer drilling**

**Release: 1**

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### **Modification History**

Not applicable.

## 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 top-hole hammer drilling including:
  - identifying various thread types on the equipment at site and the application of prescribed torque
  - identifying worn drill pipe and damaged threads
  - identifying and measuring various bits in use
  - using the various rod/pipe handling equipment on site
  - correctly and competently add/remove rods/pipe from the string
  - applying rotation speed and weight on the bit to maintain optimum performance
  - measuring line string components and calculating hole depth
  - applying the correct combination of hydraulic oil flow volume and pressure to maintain productivity
  - establishing collar hole
  - ensuring that samples are correctly collected and handled
  - ensuring that all string components are correctly maintained
  - measuring bits and related components to ensure compatibility
  - ensuring that bit sharpening equipment, used to sharpen TC bits are used correctly and safely and that bits are sharpened to correct tolerances
  - selecting various bit types for differing ground conditions
  - monitoring sample quality and correctly interpret changes
  - using prescribed techniques to safely clear sample delivery hose blockages
  - accepting responsibility for the correct installation and maintenance of restraining devices to pressure and sample delivery hoses
  - communicating the hazards of cuttings in the return air stream to all crew members
  - ensuring that drill pipe is inspected regularly and wear rates monitored
  - ensuring that threads are inspected and maintained as required
- works effectively with others to undertake and complete the conduct of top-hole hammer 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 consistent timely completion of top-hole hammer drilling that safely, effectively and efficiently meet all of the required outcomes on a minimum of one (1) occasion including:
  - selecting appropriate rod type, thread form and drill string components for job
  - measuring and selecting appropriate bit for the job
  - add/break out and remove drill rods/pipes and top hole equipment
  - adjusting/feeding/rotating drill at right rate for optimum penetration

- adjusting impact pressure and rate to match ground conditions
- measuring line string and calculating depth of hole
- preparing/monitoring the preparation of required fluids
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## Knowledge Evidence

The candidate must demonstrate knowledge in conducting top-hole hammer drilling through:

- accessing, interpreting and applying the organisation and site requirements and procedures for:
  - work, health and safety
  - environmental issues
  - operating drill rig
  - housekeeping
- critical need to match like threads with like threads on all tubular components and make up torque requirements
- parameters relating to wear of drill pipe and integrity of threads
- function of hole collaring
- methods required to limit the contamination of samples
- theory behind TC bit sharpening
- bit selection for different types of drilling and different ground conditions
- problems related to inaccurate measurement of bits and other related components
- importance of monitoring sample quantity
- role that blockages play in affecting sample quality
- methods commonly used to clear down hole blockages in air drilled holes and the hazards associated with clearing blockages
- methods used to clear a blockage in a sample delivery hose and the hazards associated with clearing blockages
- critical need for restraining devices to be fitted to all pressure delivery hoses and sample delivery hoses, the devices available and their methods of attachment
- dangers of drilled samples being returned to the surface at high velocity in air drilling operations and the parameters involved
- importance of checking gauges and monitoring pressures, flow rates and temperatures
- being prepared for fire/accident/emergency
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## 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 using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; and,

- where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing.
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## **Links**

SkillsDMC RII Companion Volumes - <http://www.skillsdmc.com.au/>