Australian Government

RIINHB219X Assist with reverse circulation drilling

DRAFT

Release: 1

RIINHB219X Assist with reverse circulation drilling

Modification History

Release	Comments
1	This unit of competency was first released in RII Resources and Infrastructure Industry Training Package Release 13.0.

Application

This unit describes the skills and knowledge required to assist with reverse circulation drilling. It prepares individuals to support the reverse circulation drilling process, handle samples, use restraining devices, mix drilling fluids and carry out basic maintenance of tools and equipment.

It applies to those working in assistant driller roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures.

Licensing/Regulatory Information

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

Pre-requisite unit(s)

No pre-requisite units

Competency field(s)

N/A

Unit sector(s)

Drilling

Elements and Performance Criteria

Element	**Performance criteria**
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Plan and prepare to assist with reverse circulation drilling	1.1 Obtain, read and confirm work requirements

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	1.2 Access, interpret and apply documentation required to assist with reverse circulation drilling and confirm work activity is compliant 1.3 Identify and minimise environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures 1.4 Select and wear personal protective equipment required for work activities 1.5 Obtain and interpret emergency procedures and identify steps in case of fire, accident and other emergencies 1.6 Communicate with other personnel on site as required and confirm briefings and handover details are communicated and received 1.7 Load, unload and move tools and equipment
2. Support the reverse circulation drilling process	2.1 Fit, remove and measure bits and down-hole tools to and from drill string as required 2.2 Prepare drill string in readiness for tripping and drilling 2.3 Add and remove drill rods to and from the drill string as required 2.4 Inspect and maintain drill rod, bits, threads and other required down-hole equipment 2.5 Use casing handling equipment 2.6 Install and seal casing 2.7 Use, install and maintain stuffing boxes and collar T-pieces
3. Handle samples	3.1 Obtain and lay out samples as required 3.2 Split, bag, label and store samples for transport 3.3 Clean and service sampling equipment 3.4 Obtain uncontaminated samples using required sampling methods 3.5 Identify safety precautions for handling potentially hazardous samples 3.6 Clear blockages in sample and delivery system 3.7 Note and report possible changes to sample quality due to blockages
4. Use restraining devices	4.1 Fit restraining devices

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	4.2 Identify dangers of high velocity samples in reverse circulation drilling and take required measures to minimise hazard
5. Mix drilling fluids for reverse circulation and foam drilling	5.1 Check labels and read and interpret safety information and hazard codes 5.2 Mix drilling fluids according to job requirements 5.3 Store drilling fluid components and additives
6. Carry out basic maintenance of tools and equipment	6.1 Perform inspections and routine checks on ancillary equipment, including the reverse circulation compressor and injection pump 6.2 Perform inspections and basic maintenance of rod handling equipment 6.3 Complete housekeeping activities to workplace requirements 6.4 Process records according to workplace procedures

Range of conditions

N/A

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Assessment Requirements for RIINHB219X Assist with reverse circulation drilling

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit, including evidence of the ability to:

- assist with reverse circulation drilling on at least two occasions, including:
    - preparing the work area, tools and equipment for drilling activities
    - handling the drill string, bits and down-hole tools during tripping and drilling
    - assisting with the installation of casing and associated collar equipment
    - collecting and processing samples to maintain sample integrity, including responding to blockages
    - controlling hazards associated with high-pressure hoses and high-velocity samples
    - preparing drilling fluids to suit job requirements
    - inspecting and maintaining drilling tools and equipment.

During the above, the candidate must:

- apply workplace documentation and procedures, including safety data sheets, to complete work safely and to required outcomes
- communicate with others to coordinate tasks, confirm instructions and handovers, and report issues and information as required.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit, including knowledge of:

- workplace policies, procedures and requirements relevant to assisting with reverse circulation drilling, including:
    - hazard identification, risk control and environmental protection within scope of own role
    - selection and use of personal protective equipment
    - emergency response procedures
    - safety data sheets (SDS) and hazard labelling
    - reporting, record-keeping and housekeeping requirements
- drilling team roles and responsibilities, and site communication protocols
- safe methods for loading, unloading and moving tools and equipment

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- principles of reverse circulation drilling, including the function of the drill string, bits, down-hole tools and compressor
- requirements for the compatibility, measurement and condition of drilling components, including threads
- purpose of casing and collar equipment, and methods for installing and sealing casing
- sampling methods and factors affecting sample quality, including contamination and blockages
- requirements for handling, labelling, storing and transporting samples, including potentially hazardous samples
- hazards of high-pressure air and high-velocity samples, and control measures including restraining devices
- types and purpose of drilling fluids and additives, and their mixing and storage requirements
- inspection and basic maintenance requirements for drilling tools, rod handling and ancillary equipment.

Assessment Conditions

The assessment must:

- include access to:
    - personal protective equipment
    - equipment required to assist reverse circulation drilling
    - workplace documentation such as, drill plans, site plans and procedures, manufacturer instructions and safety data sheets
- be conducted in a safe environment
- be assessed in the context of this sector's work environment
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide.

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Industry Experts

An industry expert engaged by an RTO to wholly or partially conduct assessment, independently or together with another assessor, or be involved in an assessment judgement, must also satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Assessors and industry experts delivering training in the drilling industry sector must also have a minimum of two (2) years industry experience, directly relevant to the training and assessment being provided.

Mandatory Workplace Requirements

Assessment of performance evidence may be in a workplace setting or an environment that accurately represents a real workplace.

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Unit Mapping Information

Previous Code and Title	Equivalence	Comments
RIINHB219E Assist with reverse circulation drilling	Equivalent	Application Elements and Performance criteria Performance and Knowledge Evidence Assessment Conditions Assessor and industry expert requirements

Links

Companion volumes, including implementation guides, are found on the national training register - https://training.gov.au/training/details/RII.

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