



**Australian Government**

**Assessment Requirements for RINHB411D  
Construct artesian (flowing) aquifer  
production bores**

**Release: 2**

## Assessment Requirements for RIINHB411D Construct artesian (flowing) aquifer production bores

### Modification History

Release	Comment
1	This unit replaces RIINHB411A Construct artesian (flowing) aquifer production bores
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.

### 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 legislation, documentation, policies and procedures
- works effectively with others to plan, prepare and conduct the construction of artesian (flowing) aquifer production bores including:
  - communicating clear and timely instructions to those involved
  - preparing for and conducting briefings, toolbox and site meetings
  - maintaining clear and legible written records and the reports
- demonstrates completion of the construction of artesian (flowing) aquifer production bores that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
  - designing the bore to ensure the exclusion of unsuitable waters
  - selecting a bore site that will prevent contamination and minimise interference with other bores and adhere to occupational health and safety requirements
  - selecting likely water entry mechanism from the formation to the bore such as open hole, slotted casing screens, gravel packs
  - assembling and inserting casing and screens
  - completing grouting operations to seal intermediate and/or inner production casing strings with a 15mm minimum thickness grout sheath or to seal selected zones so that the water from the production bore is drawn from one primary formation only, (unless otherwise allowed by the permit)
  - maintaining plumbness and alignment of the hole within the required limitations

- continuing development until a continuous, clean supply of water is obtained, in accordance with site, contractual or regulatory requirements
- performing pump and development tests to estimate the sand content and sustainable yield of the bore

## Knowledge Evidence

The candidate must demonstrate knowledge in constructing artesian (flowing) aquifer production bores through:

- accessing, interpreting and applying legislative, organization and site requirement and procedures for:
  - work, health and safety
  - environmental issues
  - operating drill rig
  - housekeeping
- the equipment characteristics, technical capabilities and limitations
- the basic geological formations, i.e. basic knowledge of both soil and rock classifications and various formations which permit groundwater movement and factors affecting groundwater quality for aquifer systems, including drillability and stability
- potential safety hazards and sources of contamination when siting a bore
- the necessity of having a signed agreement/contract with the client
- testing for alignment and plumbness of bores
- the appropriate casing materials for various applications
- the applications for wire-wound screens
- screen design parameters to ensure appropriate entrance velocities
- interpretation of sieve analysis results
- applications for natural pack, stabilising fill and artificial pack completion techniques
- objectives of bore development
- identifying and applying appropriate headworks design for class 3 bore applications
- characteristics of 'good samples' required for water well construction
- ways in which sampling errors can occur
- types of drilling fluids, their selection, use, testing and conditioning
- grout placement methods and procedures including pressure grouting
- using a range of numerical calculations
- appropriate fishing operations for the type(s) of drilling being undertaken
- materials safety data sheets (MSDS)
- 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

## **Links**

Companion Volume implementation guides are found in VETNet -

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