



Australian Government

NWP210B Perform basic water quality tests

Revision Number: 2

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Modification History

NWP210B Release 2: Layout adjusted. No changes to content.
NWP210B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to perform basic water quality tests.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field and operational staff with responsibility for preparing for, conducting and reporting on basic water quality tests in general water industry and water treatment operations.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit of competency contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where <i>bold italicised</i> text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare for basic water quality tests.	1.1 Receive instructions for conducting and recording basic water quality tests and confirm with appropriate personnel. 1.2 Confirm testing details and plan testing work according to legislative and organisational requirements. 1.3 Select, fit and use personal protective equipment specified for routine water tests. 1.4 Prepare and check testing equipment according to organisational requirements.
2 Conduct basic water quality tests.	2.1 Identify and check correct samples for testing and report abnormal sample characteristics. 2.2 Conduct basic water quality tests according to organisational requirements. 2.3 Maintain integrity of samples during testing. 2.4 Identify atypical data and take appropriate action.
3 Finalise work.	3.1 Record relevant information according to organisational requirements. 3.2 Dispose of samples and clean and store test equipment according to organisational procedures. 3.3 Clear and restore work area according to organisational requirements.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- conduct basic water quality tests
- calibrate testing equipment
- operate testing equipment
- conduct sub-sampling
- dispose of samples and waste
- communicate effectively
- produce reports and logs
- perform relevant work-related calculations
- work effectively as part of a team
- use literacy skills in regard to verbal and written communication in the workplace
- interpret work requirements

Required knowledge:

- range and purpose of basic water quality testing
- test procedures
- abnormal characteristics of water samples
- atypical test result data
- relevant work-related calculations
- maintenance and storage of reagents
- requirements for maintaining sample integrity
- documentation procedures for test results
- sample and waste disposal procedures
- relevant legislative and organisational requirements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The candidate should demonstrate the ability to perform basic water quality tests by:

- interpreting testing requirements and procedures
- preparing, checking and using equipment correctly
- conducting at least three different types of test safely while maintaining the integrity of samples
- recording all relevant information

Context of and specific resources for assessment

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- relevant codes, standards and government regulations

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice
- a decision of competence should only be made when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be authenticated and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based

activity and must include evidence relating to each of the elements in this unit

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in a manner appropriate to the skill levels of the operator and cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording, if used in the performance criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Basic water quality tests include:

- range of tests required for competent performance of work tasks in the organisational context
- should comprise at least three of the following types of test:
 - pH
 - temperature
 - electrical conductivity
 - microscopy
 - turbidity
 - colour
 - chlorine residual
 - jar testing
 - hardness
 - dissolved oxygen

Testing details may include:

- locations, including:
 - on-site testing
 - field-based testing
 - laboratory
- range of testing procedures and techniques that apply to organisational, plant or field sites
- variety of samples to be tested
- testing equipment to be used
- test reporting systems

Plan testing work may include:

- interpretation of instructions and directions
- timelines
- interaction and communication with team members and individuals
- interpretation of legislative and organisational requirements

Legislative and organisational requirements may include:

- relevant federal and state or territory legislation and regulations
- codes of practice, associated standards and guidance material
- documented organisational policies, manuals and induction programs

Testing equipment may include:

- relevant community planning and development agreements, such as land care agreements
- portable meters, such as:
 - pH meters
 - electrical conductivity meter
 - thermistors
 - comparators
 - pocket colorimeters
 - dissolved oxygen meters
- test kits
- microscopes
- thermometers

Abnormal sample characteristics may include:

- insufficient sample volume
- odour
- visible contaminants, such as:
 - scum
 - debris
 - discolouration

Maintaining integrity of samples may include:

- application of correct:
 - holding time
 - storage procedures
 - sub-sampling procedures

Atypical data may include:

- results that fall outside organisational range requirements
- results that fall outside legislated range requirements

Information may include:

- time and logging of sample receipt and testing
- visual observations
- equipment identification
- atypical results
- test results

Unit Sector(s)

Not applicable.

Competency field

Common.