



Australian Government

Department of Education, Employment and Workplace Relations

NWP218B Perform and record sampling

Revision Number: 2

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Modification History

NWP218B Release 2: Layout adjusted. No changes to content.

NWP218B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to collect and prepare water and wastewater samples according to legislative and organisational standard operating procedures.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field and operational staff with specific responsibility for collecting grab or composite water samples.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit 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 ***bold italicised*** text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare for water quality sampling.	<p>1.1 Confirm required <i>samples</i>, procedures for sampling and sampling locations according to <i>organisational requirements</i>.</p> <p>1.2 Select <i>sampling equipment</i> according to specified samples required and appropriate <i>sample preservation methods</i>.</p> <p>1.3 Identify, check and prepare materials, equipment and resources required to satisfy job plan according to organisational requirements.</p> <p>1.4 <i>Plan sampling work activities</i> to comply with sampling plan and organisational requirements.</p>
2 Conduct water quality sampling.	<p>2.1 Collect samples ensuring that sample types, <i>sampling locations</i> and sampling times comply with sampling plan.</p> <p>2.2 Maintain integrity of samples during sampling and label sample containers according to organisational requirements.</p> <p>2.3 Follow approved safety procedures to limit hazards and contamination to self, work area and environment.</p>
3 Record sampling data.	<p>3.1 <i>Record</i> required information according to legislative and organisational requirements.</p> <p>3.2 Report observations or measurements outside organisational guidelines or specifications for further action.</p>

Required Skills and Knowledge

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

Required skills:

- prepare, collect, label and preserve water samples
- dispose of waste and spent samples correctly
- produce reports and logs
- plan work activities
- work effectively as part of a team
- perform task-related calculations
- identify and obtain resources
- follow plans and instructions
- apply procedures and standards
- communicate work requirements
- use literacy skills in regard to verbal and written communication in the workplace
- use personal protective equipment

Required knowledge:

- types and purposes of water samples
- procedures and techniques for water sampling
- water sample preparation, including:
 - prevention of contamination
 - volume of sample
 - appropriate containers
 - preservation
 - location selection
 - location maintenance
 - equipment
 - transportation
 - documentation procedures for water samples
 - disposal procedures for waste and excess water samples
- task-related calculations
- legislative and organisational policies, procedures and standards
- communication systems
- work planning processes
- effects of weather and conditions on work
- hazards associated with collection of water samples

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 sampling by:

- planning and preparing for water sampling tasks
- collecting samples according to sampling plan
- maintaining integrity of water samples
- recording all required 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.

- Samples*** may include:
- grab, composite or flow-weighted composite samples for:
 - microbiological testing
 - testing for chemical and physical characteristics
- Organisational requirements*** may include:
- standard operating procedures
 - Australian standards, for example AS/NZS 5667 Water quality - sampling
 - state Environment Protection Authority sampling guidelines
 - legislative requirements
 - OHS
- Sampling equipment*** may include:
- buckets or wide-mouthed containers
 - depth samplers
 - sample dippers
 - sterile sample containers:
 - plastic
 - glass
 - test-specific, such as acid washed
 - weighted sample bottles
 - dip tubes
 - composite and discrete automatic samplers
- Sample preservation methods*** may include:
- refrigeration
 - freezing
 - chemical addition, such as acidification
 - shielding from direct sunlight
 - filtration
- Planning sampling work activities*** may include:
- interpretation of instructions and directions
 - timelines
 - interaction and communication with team members and individuals
 - customer service requirements
- Sampling locations*** may include:
- raw water supply, including:
 - surface water
 - groundwater
 - water distribution and treatment systems
 - wastewater collection and treatment systems

Records may include:

- sample records, field detail sheets or chain of custody forms, including information such as:
 - time sample was taken
 - details of person collecting sample
 - sample point
 - volume of sample
- data gathered at time of collection
- pre-treatment
- preservation
- instructions to transporters

Unit Sector(s)

Not applicable.

Competency field

Common.