



Australian Government

Department of Education, Employment and Workplace Relations

NWP545B Implement and manage water treatment processes monitoring program

Revision Number: 2

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Modification History

NWP545B Release 2: Layout adjusted. No changes to content.

NWP545B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to implement and manage the water treatment processes management plan including the treatment of raw water supplies to potable standards.

Application of the Unit

This unit supports the attainment of skills and knowledge required for managers in water organisations with responsibility for the management of the water treatment processes monitoring program.

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 <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 Implement and coordinate a water treatment process monitoring program.	<ul style="list-style-type: none">1.1 Confirm performance measures for the water treatment management plan.1.2 Design and implement <i>monitoring</i> and <i>testing</i> programs according to the objectives of the water treatment management plan and relevant <i>environmental factors</i>.1.3 Analyse, interpret and report testing results according to legislative and enterprise requirements.1.4 Identify and investigate problems and/or potential problems and report results and recommendations according to legislative and enterprise requirements.1.5 Store results and reports according to legislative and enterprise requirements.
2 Monitor and optimise the process and production.	<ul style="list-style-type: none">2.1 Monitor treatment process resource usage according to the water treatment management plan.2.2 Implement emergency action plans according to the water treatment management plan.2.3 Identify, report and recommend opportunities for process performance improvements according to the water treatment management plan.2.4 Provide advice and guidance to <i>customers</i> and stakeholders on <i>issues and resources</i> according to legislative and enterprise requirements.2.5 Review, interpret and action stakeholder and customer requirements according to the water treatment management plan.2.6 Identify and investigate breaches of the water treatment management plan provisions, report the results and/or recommendations and action according to legislative and enterprise requirements.
3 Report on the implementation and monitoring of the plan.	<ul style="list-style-type: none">3.1 Identify, investigate and report deviations from planned treatment parameters and quality and management plan requirements.3.2 Review objectives of the management and implementation plans.3.3 Make recommendations for changes to plan objectives and operational procedures.

Required Skills and Knowledge

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

Required skills:

- communicate effectively
- plan effectively
- prepare reports
- interpret and apply legislation and policies
- coordinate measuring and testing activities
- use mathematical and scientific techniques to interpret test results
- conduct investigations
- assess environmental impacts
- use data to inform planning processes
- coordinate operations and maintenance activities

Required knowledge:

- relevant legislation
- laboratory procedures
- range of appropriate measuring and testing procedures
- investigation procedures
- customer expectations and requirements
- environmental legislation
- enterprise financial systems and key performance indicators
- occupational health and safety legislation

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 implement and manage the water treatment processes' management plan including the treatment of raw water supplies to potable standards including:

- gathering, interpreting and synthesising information (including historical system data, current legislation and standards, stakeholder views and monitoring results) required to implement and monitor a water treatment processes monitoring plan
- ensuring monitoring and testing programs are run efficiently and effectively
- using data from monitoring arrangements to track the performance of the water treatment processes monitoring plan and inform the review of the plan
- preparing reports and recommendations for changes to the objectives of the management plan and its implementation

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/or 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, any cultural issues that may affect responses to the questions, and reflecting 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.

Monitoring may include:

- process control monitoring
- mechanical and electrical maintenance schedules
- mechanical and electrical equipment condition
- licensing requirements
- legislative requirements
- chemical, physical, biological and microbiological quality

Testing may include but not be limited by:

- physical analysis of water:
 - pH
 - conductivity
 - colour
 - turbidity
- chemical analysis of water:
 - chlorine
 - alkalinity
 - chemical oxygen demand
 - heavy metals
 - iron
 - manganese
- microbiological analyses:
 - coliforms
 - plate counts
 - algae identification and counts
- physical measures:
 - power
 - chemicals
 - water flows
 - sludge volumes
- mechanical testing:
 - vibration
 - noise
 - temperature

Environmental factors that

- flora

impact on the treatment
process may include:

- fauna
- organic and inorganic chemicals
- salinity (in a marine environment)
- nutrients
- oils and greases
- pesticides
- trade waste
- upstream communities and activities
- natural events (e.g. floods, fires)
- algae
- micro-organisms
- geology of catchment
- tastes and odours

Customers may include:

- individual consumers
- regulators
- suppliers
- government
- community or specific enterprises
- industry
- rural consumers
- internal and external customers

Issues and resources to be
considered may include:

- chemicals used/usage
- electricity used/usage
- gas used/usage
- people available
- technical skills and training
- funds available for capital and/or operation
- maintenance standards of plant and equipment
- maintenance procedures and schedules
- union expectations
- community expectations
- the natural environment
- the built environment
- occupational health and safety requirements

Unit Sector(s)

Not applicable.

Competency field

Treatment.