



Australian Government

AHCNRM502 Develop a water quality monitoring program

Release: 1

AHCNRM502 Develop a water quality monitoring program

Modification History

Release	TP Version	Comment
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to establish requirements for monitoring water quality and developing a program to monitor water quality in a given site. It includes carrying out water monitoring activities and evaluating program effectiveness.

This unit applies to those working in the role of coordinator or manager in an organisation, group or enterprise concerned with gathering information for land or water management purposes. The role is likely to include delegation of implementation tasks and may include consultation with specialists such as hydrologists and hydrographers.

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

Pre-requisite Unit

Nil.

Unit Sector

Natural Resource Management (NRM)

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. Determine water quality monitoring program requirements	1.1 Consult with client to identify scope, objectives and constraints of project and intended use of the data 1.2 Research and evaluate background information relevant to survey type and site 1.3 Determine water quality indicators to be measured, frequency and volume of sampling required to meet scope, objectives and constraints of project

Element	Performance criteria
	1.4 Establish procedures for data collection, processing and reporting that are consistent with the scope, objectives and constraints of the program and legislative requirements 1.5 Seek estimates of costs involved and sources of funds for the program 1.6 Identify and assess work health and safety hazards associated with conducting the sampling program 1.7 Provide a survey strategy that reflects project requirements, scope, objectives and constraints for discussion and approval
2. Undertake a site analysis	2.1 Identify and record physical and biological features of the site 2.2 Identify and record resource management factors contributing to water quality 2.3 Survey biota, as required, to meet the scope and objectives of the program 2.4 Identify and evaluate sampling points for safety, accessibility and opportunities for repeatable data collection
3. Plan monitoring program	3.1 Select suitable sites for repeatable monitoring to obtain representative samples 3.2 Source laboratory and field equipment for the monitoring program and determine costs 3.3 Confirm suitability and availability of laboratory and field equipment 3.4 Confirm surveyor access to site for the duration of the monitoring program 3.5 Document work health and safety controls and emergency procedures for the program in line with organisational policies 3.6 Document environmental sustainability policies and procedures and biosecurity measures 3.7 Document sampling techniques to be used 3.8 Document methods of data collection, monitoring and field techniques for field operators 3.9 Present survey schedules and procedures to appropriate personnel and the client for approval
4. Monitor water quality	4.1 Carry out water quality monitoring tasks in line with plan 4.2 Transport, store and treat samples with regard to temperature, maximum holding periods and other variables 4.3 Monitor surveying process for accuracy, compliance with the survey plans and procedures 4.4 Implement contingency plans when problems arise, whilst continuously assessing and evaluating the plan for errors and inconsistencies

Element	Performance criteria
5. Evaluate program	5.1 Record and save data according to plan requirements 5.2 Analyse data collected according to industry policies and guidelines and scientific standards 5.3 Draw outcomes, conclusions or trends from the monitoring program using industry standards for interpretation of water quality data and appropriate evidence and reasoned arguments 5.4 Seek advice from client as to satisfaction with monitoring program in terms of the process and outcomes 5.5 Provide report on outcomes to client with recommendations for changes and improvements for any further monitoring activities

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Unit Mapping Information

This unit is equivalent to AHCNRM502A Develop a water quality monitoring program.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCNRM502 Develop a water quality monitoring program

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Performance Evidence

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts.

The candidate must develop a water quality monitoring program in accordance with legislative and organisational policies. The candidate must also undertake the water quality monitoring.

The candidate must provide evidence that they can:

- establish scope, objectives and constraints and water quality monitoring requirements of the project through consultation with client
- undertake research and a site analysis to select suitable monitoring sites
- develop the monitoring plan in accordance with project brief and to meet client needs
- monitor water quality in accordance with project plan
- evaluate the program using data analysis, consultation with client and assessment against program objectives
- collect, transport and treat samples in accordance with organisational guidelines and policies
- analyse data according to scientific standards and organisational policies and guidelines
- apply work health and safety practices in the context of own work
- incorporate biosecurity into monitoring program
- apply sustainability practices in monitoring program
- draw conclusions based on appropriate evidence and reasoned arguments
- produce written reports to enterprise standards

Knowledge Evidence

The candidate must demonstrate knowledge of:

- water quality principles and factors including:
- hydrological cycle
- aquatic ecology

- water quality indicators
- chemical principles
- catchment and coastal management issues contributing to surface and groundwater quality
- standard techniques to assess ecological health of aquatic sites
- mathematical sampling techniques
- analytical techniques appropriate to water quality monitoring
- data storage and management
- accepted scientific processes and standards for data collection and analysis
- statistical analysis
- hazard identification, assessment and control

Assessment Conditions

Assessors must satisfy current standards for RTOs.

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