



Australian Government

Assessment Requirements for SISCAQU016 Manage pool water quality

Release: 1

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Modification History

Not applicable.

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- prepare a documented schedule covering one monthly period for chemical and microbiological monitoring, ensuring the schedule complies with operational and regulatory specifications
- evaluate data from three pool water samples, collected at different times, for one of the following types of disinfectant:
 - free chlorine, combined chlorine and total chlorine (where chlorine is used at the facility), or
 - free chlorine, combined chlorine and total chlorine plus cyanuric acid data (where cyanuric acid is used with chlorine as a stabiliser at the facility), or
 - free bromine and total bromine (where bromine is used at the facility)
- evaluate data from three pool water samples, collected at different times, for each of the following:
 - pH
 - total alkalinity
 - calcium hardness
 - total dissolved solids
 - temperature
- use safe work practices and manufacturer instructions to handle chemicals and treat pool water on two occasions
- from evaluation activities personally completed, or from case study documentation:
 - determine the required chemical treatment response for two different types of water imbalance issues
 - determine the required chemical treatment response for two different types of water contamination
 - for each treatment response, complete accurate records of the evaluation and corrective action, and update chemical register records.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- an overview of the provisions of the local state or territory government public health legislation that relates to pool water quality for public pools:
 - purpose in managing risks to public health
 - overarching compliance and risk management requirements and consequences of non-compliance
- regulatory and advisory functions of local government that relate to pool water quality
- how to access regulatory documents and select information relevant to the pool facility:
 - prescribed and recommended:
 - chemical parameters of pool water
 - types of pool water tests and testing schedules
 - record keeping requirements
 - codes of practice
 - water quality guideline and advisory documents
- microbiological hazards associated with pool water:
 - micro-organisms in pool water and typical sources, both bathers and the environment
 - common related illnesses
- effects of chemicals on bathers, both discomfort and more serious effects
- reasons to maintain clarity of pool water:
 - safety reasons
 - aesthetic reasons
 - reasons relating to effectiveness of disinfection
- reasons to maintain optimum chemical balance of pool water:
 - avoiding degradation of pool surfaces, metal fixtures and water treatment plant
 - bather comfort
 - clarity of water
 - reasons relating to effectiveness of disinfection
- key operational features of pool water treatment system components, and their role in maintaining pool water quality:
 - water circulation and distribution system
 - filtration system, including backwash processes and indicators for remedial backwash
 - disinfection system:
 - automated dosing system
 - continuous metered dosing system
 - pH control system
- methods used to monitor pool water quality and to record and evaluate data:
 - manual sampling and by automated probes
 - manual reports using spreadsheets
 - data logging technology where automated in-line tests are recorded electronically
- chemical parameters measured to control water balance, typical periodic schedules, and the role of the Langelier Saturation Index (LSI):

- pH
- total alkalinity
- calcium hardness
- total dissolved solids
- temperature
- common microbiological parameters measured, typical periodic schedules, and how to locate and use specifications for normal counts, and elevated counts that trigger mandatory reports to the local regulatory authority:
 - heterotrophic colony count (HCC)
 - *Escherichia coli* (E. coli)
 - *Pseudomonas aeruginosa*
- treatments required to maintain optimum pool water quality, and how to locate and use specifications for calculating the chemical dose specific to the pool facility:
 - disinfection
 - pH adjustments
 - de-chlorination
 - ozonisation or use of sanitiser
 - turbidity
- types of disinfectant agents and systems used in pools:
 - chlorine-based chemicals in different forms
 - chlorine stabilised with cyanuric acid
 - bromine-based chemicals in different forms
 - ultraviolet light plus hydrogen peroxide
- for each of the above listed disinfectant types:
 - applicability to different types of pools and source water
 - chemical abbreviations
 - an overview of how they work
 - relationship to pH, total alkalinity, total hardness and total dissolved solids
- types of remedial and emergency dosing methods, circumstances requiring their use, and how to locate and use specifications for calculating the chemical dose specific to the pool facility and problem:
 - superchlorination
 - shock dosing
- pH agents for raising and lowering pH:
 - common chemicals used and abbreviations
 - an overview of how these work
 - how these interact with disinfectant agents
- types of coagulants and flocculants and what these are used for
- formats and inclusions of:
 - organisational pool water monitoring and treatment schedules
 - pool water evaluation reports

- facility incident reports, mandatory reports to regulatory authorities, and how to complete these
- for the handling and storage of pool water chemicals:
 - work health and safety (WHS) practices including types of personal protective equipment used
 - manufacturer instructions and local state or territory regulatory specifications for correct environmental storage, and security of storage
 - importance of maintaining correct labelling of chemical containers
 - safe environmental disposal methods
 - format and inclusions of a chemical register, and how to complete.

Assessment Conditions

Skills must be demonstrated in an aquatic facility with an operating indoor or outdoor pool used by members of the public. Facilities can include those operated by commercial, not-for-profit, community and government organisations.

Assessment must ensure use of:

- pool water monitoring and treatment equipment
- personal protective equipment for chemical handling
- commercial pool water treatment chemicals and measuring equipment
- operational specifications for pool and water treatment plant
- public health regulatory documentation and specifications
- pool water test data and visual inspection reports
- template:
 - pool water monitoring and treatment schedules
 - chemical register
 - pool water evaluation reports
 - facility incident reports
 - mandatory regulatory reports
- manufacturer instructions and regulatory specifications for chemical handling and storage.

Assessors must satisfy the Standards for Registered Training Organisations requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1ca50016-24d2-4161-a044-d3faa200268b>