



Australian Government

SFIAQU212 Operate and maintain a recirculating aquaculture system

Release: 2

SFIAQU212 Operate and maintain a recirculating aquaculture system

Modification History

Release	Comments
Release 2	This version released with SFI Seafood Industry Training Package Version 2.0.
Release 1	This version released with SFI Seafood Industry Training Package Version 1.0.

Application

This unit of competency describes the skills and knowledge required to operate, monitor and maintain a recirculating aquaculture system (RAS) to keep water quality and environmental conditions within specified ranges for cultured or held stock.

The unit applies to individuals who carry out routine maintenance and minor repairs on the water treatment components of a recirculating aquaculture system as used in the seafood industry and within an aquascape or holding tank in the ornamental or pet sector, under the direction of a supervisor.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety, food safety, biosecurity and environmental regulations, legislation and standards that apply to the workplace.

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

Pre-requisite Unit

Nil

Unit Sector

Aquaculture (AQU)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>

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1. Prepare to operate a recirculating aquaculture system	1.1 Receive and confirm instructions with supervisor on water treatment components' operational requirements 1.2 Select, fit and adjust personal protective equipment as required 1.3 Locate and carry out routine pre-operational checks of components of the recirculating aquaculture system according to workplace procedure 1.4 Detect faulty components and report to supervisor 1.5 Identify abnormal operating and environmental conditions within the culture or holding structures or systems, and report to supervisor
2. Operate and monitor a recirculating aquaculture system	2.1 Operate automatic or mechanised equipment according to workplace procedures 2.2 Measure critical flow rates and other water quality parameters, and record data according to workplace procedures 2.3 Adjust operating components to optimise conditions for the culture or holding species 2.4 Check and test backup components for operational capacity 2.5 Report abnormal or non-standard conditions, and other risks, to supervisor
3. Maintain and repair a recirculating aquaculture system	3.1 Confirm work plan or schedule, environmental and biosecurity regulations, risks and contingency plans with supervisor 3.2 Collect basic tools, equipment, including personal protective equipment, spare parts and repair materials and take to worksite 3.3 Make basic repairs to sub-standard equipment and calibrate equipment following safe work practices 3.4 Service components and replace or repair worn or damaged parts or components according to supervisor instructions 3.5 Return components and water supply and disposal systems to working order 3.6 Check system for serviceability and performance, and report problems to supervisor
4. Finalise operation, monitoring and maintenance activities	4.1 Clean work area and dispose of waste materials safely according to workplace procedures 4.2 Check and store tools and equipment, reporting any identified repair requirements to supervisor

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.3 Record relevant data and observations, and report any abnormal records to supervisor

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret text in workplace procedures and instructions
Writing	Complete workplace maintenance and repair forms legibly and accurately
Numeracy	- Analyse data to complete basic calculations - Estimate and calculate volume and quantities of inputs and outputs of liquids, gases and solids - Set and adjust measurement scale to calibrate equipment
Oral communication	- Ask questions to clarify job requirements - Describe safety risks and abnormal records to supervisor using correct terminology

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
SFIAQU212 Operate and maintain a recirculating aquaculture system Release 2	SFIAQU212 Operate and maintain a recirculating aquaculture system Release 1	Minor update to performance criteria, and knowledge evidence for clarity regarding adherence to environmental and biosecurity requirements	Equivalent

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273>

Assessment Requirements for SFIAQU212 Operate and maintain a recirculating aquaculture system

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has safely operated and maintained at least one recirculating aquaculture system on at least one occasion, including:

- communicating with and reporting to supervisor about the operation and maintenance of water treatment components
- fitting and adjusting personal protective equipment
- carrying out the required maintenance and repairs to components
- carrying out routine monitoring and checks of equipment, flow rates and water quality
- completing accurate records on the operation and maintenance of water treatment components
- cleaning work area and storing tools and equipment after maintenance and repair activities.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- basic relationship of inputs (stock, feed, energy, water and labour) to outputs (wastes, product and water quality)
- overview of complexity of system and interrelationship of components
- environmental and biosecurity regulatory requirements
- conditions likely to impact on water flow
- health and safety relevant to operating and maintaining water treatment components
- operation and maintenance of automatic or mechanised equipment

- features of water quality and optimal and critical limits for various parameters and non-standard conditions.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in an aquaculture workplace setting or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - basic tools and equipment to complete repairs and maintenance
 - equipment to operate the system and maintain water quality
 - personal protective equipment
 - recirculating aquaculture system (RAS) with high technology components
 - spare parts and repair materials
 - water monitoring equipment
 - data or recording sheets
- specifications:
 - specific instructions, work plan or schedule and workplace procedures for operating and maintaining high technology water treatment components
- relationships:
 - evidence of interactions with supervisor.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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