

LANAqu35 SQA Unit Code HC1E 04

Manage aquaculture recirculation systems



Overview

This standard is about managing an aquaculture recirculation system, also known as Recirculating Aquaculture Systems (RAS), for any farmed fish or shellfish. It includes the development and management of procedures to monitor and maintain the production environment.

It requires that work is completed in accordance with site standard operating procedures and in line with industry codes of practice.

This standard is for those who manage an aquaculture recirculation system.

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Performance criteria

You must be able to:

- P1 implement procedures to ensure a healthy, safe and secure working environment
- P2 plan the resources required to monitor and maintain the aquaculture recirculation system
- P3 determine the **water quality parameter** specification for the recirculation system, appropriate for the species of fish/shellfish
- P4 manage procedures to monitor and maintain water flow/circulation within holding units
- P5 manage procedures to monitor and maintain the condition of the water-filtering and purification equipment
- P6 analyse data on water quality parameters to identify any **non-conformance** or potential non-conformance
- P7 investigate the cause of any non-conformance and take action to limit its impact
- P8 develop procedures to deal with system emergencies
- P9 seek specialist help and advice when required
- P10 manage procedures to maintain the health and welfare of farmed stock
- P11 develop procedures to manage hygiene and bio-security
- P12 evaluate the success of activities to manage the aquaculture recirculation system
- P13 manage aquaculture recirculation system records in accordance with legal requirements and site procedures

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Knowledge and understanding

You need to know and understand:

- K1 relevant legal and organisational requirements for health, safety and security associated with aquaculture recirculation systems
- K2 the water quality parameters for the fish/shellfish being farmed and how these are measured
- K3 the welfare requirements with respect to the species and life stage of the fish/shellfish being farmed and how these are maintained within the recirculation system
- K4 regulations surrounding the keeping of non-native species
- K5 the component parts of the recirculation system and how they support water treatment
- K6 the **processes used to monitor the conditions** within the recirculation system, manual and automated
- K7 the data required to monitor the recirculation system
- K8 maintenance schedules and their importance to the functioning of the recirculation system
- K9 how adjustments can be made to maintain the required conditions
- K10 how legislation affects water usage and discharge
- K11 how inappropriate water quality parameters can impact on the health and welfare of the species being farmed
- K12 how to minimise the impact of emergencies on the fish
- K13 site back-up systems and how they are used to maintain conditions in an emergency
- K14 sources of specialist advice and help who can provide a rapid response to the specialist systems
- K15 the importance of hygiene and bio-security in a recirculation system
- K16 legal requirements and site procedures for the management of recirculation system records
- K17 methods used to evaluate the success of activities to manage the aquaculture recirculation system

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Glossary

non-conformance – where water quality parameters fall outside specified tolerance levels

processes used to monitor the conditions – e.g. daily/weekly manual checks, alarm system, probe system

water quality parameter – e.g. ph, ozone, water levels, temperature, dissolved oxygen, alkalinity, nitrogen species, chlorine, salinity

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