

Water Treatment Technician

Unit WTTC01 Raw Water Services Operations

This training specification has been developed from the water process technician standard. The specification details the **minimum** training specification, as agreed by industry employers, to deliver the skills and knowledge required to carry out the raw water services operations in the water sector.

The specification details the critical requirement of the activity to carry out the work outlined and does not preclude employers from adding to the skills and knowledge detailed by the specification in their own training programmes.

All work must be carried out to approved procedures and practices and in accordance with statutory health, safety and environmental requirements.

What does this specification look like?

Water treatment technicians need to be able to:

- RWSO1 Select the raw water source or blend of sources to provide optimum raw water quality
- RWSO2 Control abstraction rates to take account of varying water quality and quantity, with the consideration of abstraction licence conditions
- RWSO3 Manage water abstraction, whilst taking into account energy efficiency

What do I need to take this module?

There are **NO** specific requirements for candidates prior to taking this module.

Performance Criteria

To achieve this unit, you will need to be able to:

General Requirements

- P1. Identify the work area to be accessed using company documentation, systems and work instructions
- P2. Select, inspect and wear required PPE in line with company procedures
- P3. Carry out a site specific risk assessment of the work area, identifying the hazards and control measures required
- P4. Maintain accurate and up to date records
- P5. Report information and data to the designated person

Task Specific – Raw Water Services Operations

- P6. Select the source or blend of sources that will give optimum raw water quality for the treatment works
- P7. Control water abstraction at rates that meet the quality and quantity requirements for water treatment and the conditions of the abstraction licence
- P8. Identify risks to treatment processes arising from raw water abstraction, such as weather events or conditions
- P9. Control the operation of all assets associated with the raw water source or sources for the treatment works, ensuring its serviceability status is known, examples include:
 - a) Screens
 - b) Penstocks
 - c) Booms
 - d) Bubble curtains
 - e) Pumps
 - f) Non-return valves
 - g) Meters
 - h) Valves
 - i) Surge Vessels
 - j) Pipelines
 - k) Aqueducts
- P10. Manage water abstraction to balance energy efficiency targets against the need for quality and quantity

Knowledge and Understanding

To achieve this unit, you will need to know and understand:

General Requirements

- K1. The principles of Health, Safety and Environmental legislation in relation when working with water treatment processes
- K2. The organisation's safety rules, policies and procedures relating to working with water treatment processes
- K3. The hazards associated when working with water treatment processes and the correct way to respond to them
- K4. How to select, inspect and use PPE when working with water treatment processes
- K5. How to carry out a site specific risk assessment and identify workplace hazards
- K6. How to respond in the event of an emergency situation in the workplace environment
- K7. How to leave the work area in a safe and secure condition
- K8. The company recording and reporting process

Task Specific – Raw Water Services Operations

- K9. Understands the importance of catchment management and protection
- K10. The objectives of abstraction processes and consequences of sub-optimal performance
- K11. The types and qualities of raw water available to the works
- K12. The strategies utilised to manage raw water quality and maximise yields from the sources available
- K13. The factors that influence raw water quality and risks
- K14. How water abstraction is regulated and licensed, implications of infringements and the role of the regulator
- K15. The design specification for the treatment processes in relation to raw water quality
- K16. The range, operation and maintenance of mechanical, electrical and instrumentation equipment utilized in raw water abstraction
- K17. Alarms, action levels, authorisation levels and consequences associated with the process
- K18. How to confirm the configuration, operation and performance of the raw water abstraction plant corresponds to the information based system (e.g. SCADA)
- K19. Key process parameters and variables associated with raw water abstraction
- K20. How to interrogate the SCADA system to:
 - a) Identify and control items of mechanical, electrical and instrumentation equipment
 - b) Evaluate trend data differentiating normal operational cycles from developing fault conditions or emerging risks

- c) How to identify the root cause of raw water abstraction problems and the sequence of actions required to restore the process to steady-state conditions, taking account of all process variables and knock-on effects

K21. Maintenance requirements

How will it be assessed?

To achieve this unit, you will need to be able to provide evidence of the performance criteria and the knowledge and understanding requirements listed above.

Assessment types:

1. External assessment – an external accrediting body will assess against a national minimum standard
2. Internal assessment process – a company led on-going assessment against requirements
3. End-point assessment – see assessment plan for further details here (will be Energy & Utility Skills defined)

What type of evidence will be expected?

To achieve this unit, you will need to be able to provide evidence of the performance criteria and the knowledge and understanding requirements listed above.

Evidence types:

1. On-going local assessments
 - a) Assessment plan, review, feedback, standard assessment sheets
2. Knowledge based learning
 - a) Classroom, exams, assignments, Q&A sessions, e-learning modules
3. Evidence portfolios
 - a) Learning logs, photos, observation sheets

Assessment types and process

