Level 5 Award in Understanding Waste Water Networks

Qualification Specification

Contents

Introduction

The **Level 5 Award in Understanding Waste Water Networks** is aimed at candidates who wish to demonstrate their knowledge and understanding of regulatory compliance requirements and best practice in waste water networks.

The Regulated Qualifications Framework (RQF) is the single framework for regulated qualifications, the regulatory body for this qualification is the Office of Qualifications and Examinations Regulation (Ofqual). This qualification is accredited onto the RQF.

Qualification Profile

Qualification title	**ProQual Level 5 Award in Understanding Waste Water Networks**
Ofqual qualification number	603/4235/3
Level	Level 5
Total qualification time	130 hours
Credits	13 credits
Guided learning hours	130
Assessment	Pass or fail Assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	11/3/2019
Qualification end date	

Entry Requirements

There are no formal entry requirements for this qualification. Centres should carry out an **initial assessment** of candidate skills and knowledge to identify any gaps and help plan the assessment.

Qualification Structure

To achieve the qualification candidates must complete ONE Mandatory unit.

Unit Reference Number	Unit Title	Credits	Unit Level	GLH
Y/617/4959	Understanding Waste Water Networks	13	5	130

Centre Requirements

Centres must be approved to offer this qualification. If your centre is not approved please complete and submit form **ProQual Additional Qualification Approval Application**.

Staff
Staff delivering this qualification must be appropriately qualified and occupationally competent.

Assessors/Internal Quality Assurance
For each competence-based unit centres must be able to provide at least one assessor and one internal quality assurance verifier who are suitably qualified for the specific occupational area. Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or quality assurance verifier qualifications, such as:

- ProQual Level 3 Certificate in Teaching, Training and Assessing
- Award in Assessing Competence in the Work Environment
- Award in Assessing Vocationally Related Achievement
- Certificate in Assessing Vocational Achievement
- Award in the Internal Quality Assurance of Assessment Processes and Practices
- Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practices

Support for Candidates

Materials produced by centres to support candidates should:

- enable them to track their achievements as they progress through the learning outcomes and assessment criteria;
- provide information on where ProQual's policies and procedures can be viewed;
- provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence

Assessment

Candidates must demonstrate the level of knowledge and/or skills described in the units. Assessment is the process of measuring a candidate's knowledge and understanding against the standards set in the qualification.

Each candidate is required to produce evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence could include:

- observation report by assessor
- assignments/projects/reports
- professional discussion
- witness testimony
- record of oral and written questioning
- Recognition of Prior Learning

Learning outcomes set out what a candidate is expected to know, understand or be able to do. **Assessment criteria** specify the standard a candidate must meet to show the learning outcome has been achieved.

Learning outcomes and assessment criteria for this qualification can be found from page 7 onwards.

To achieve this qualification all candidates must produce evidence which demonstrates their achievement of all of the assessment criteria.

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Simulations are permitted where candidates, during the course of their qualification, are not able to provide evidence from naturally occurring events.

Internal Quality Assurance

An internal quality assurance verifier confirms that assessment decisions made in centres are made by competent and qualified assessors, that they are the result of sound and fair assessment practice and that they are recorded accurately and appropriately.

Adjustments to Assessment

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements. Centres should contact ProQual for further information or queries about the contents of the policy.

Results Enquiries and Appeals

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Certification

Candidates who achieve the requirements for qualifications will be awarded:

- A certificate listing the units achieved, and
- A certificate giving the full qualification title -

ProQual Level 5 Award in Understanding Waste Water Networks

Claiming certificates
Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the requirements for a qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates
If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

Replacement certificates
If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement certificates.

Learning Outcomes and Assessment Criteria

Unit Y/617/4959
Understanding Waste Water Networks

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1. Understand the regulatory and legislative framework in which the water industry operates, with particular emphasis on the impact of the framework on the operation and maintenance of the waste water network	1.1 List the main legislation which pertains to the water industry and demonstrate an understanding of the key aspects and how they impact the operation of the waste water network
	1.2 Explain the regulatory framework and Water Quality Standards pertaining to the discharge of treated waste water to the environment and applicable to the discharge of untreated storm water discharges, partially treated storm water discharges and treated waste water
	1.3 Discuss possible future waste water network legislation and describe how the water industry can prepare, react and influence legislators and key opinion formers
	1.4 Contribute to the management of the expectations of the various stakeholder groups which influence the water industry, including regulators
	1.5 Explain the regulatory and economic impact of over and under achieving regulatory performance outcomes and contribute to the prioritisation of business activities to maximise the company's regulatory position in relation to the waste water network
	1.6 Describe the latest regulatory developments in relation to competition for water services and explain how the industry is adapting
2 Understand the implications of the waste water network on waste water treatment	2.1 Explain how the waste water network and conditions in the network influence the operation of waste water treatment works
	2.2 Explain the need for and operation of storm water storage and partial treatment of storm water overflows in relation to waste water networks and the management of Sustainable Urban Drainage Systems (SUDS)

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
3 Understand the impact of major components of the waste water network on waste water quality and resilience of the waste water network	3.1 Explain how the major components of the network from 'bath to bay' impact on function, selection and maintenance requirements 3.2 Explain what data is required to inform the effective management of waste water network 3.3 Explain the role and differences between short storm water, emergency outfalls and Long Sea Outfalls
4 Understand the impact of new developments on the waste water network	4.1 Demonstrate an awareness of the regulatory and legislative framework for the adoption of new assets, including Sustainable Drainage Systems 4.2 Demonstrate an awareness of the regulatory and legislative framework for work carried out by third parties on existing assets, e.g. diversion/build over, and new connections to existing assets 4.3 Demonstrate an awareness of the regulatory and legislative framework for the requisition of new assets
5 Understand the water company's waste water collection systems for effective operational management of the waste water network	5.1 Explain the water company's strategy for the coordination of cross functional boundaries to ensure effective operation of collection of waste water 5.2 Explain how specific systems and processes ensure effective operational management of waste water network to meet regulatory and customer requirements 5.3 Explain the water company's strategy on the evaluation of risk and its impact on operational management in relation to waste water networks 5.4 Explain the types of actions appropriate in the event of a failure or problem in relation to waste water networks 5.5 Explain the Water Company commercial billing systems based on both measured volumes for foul, combined sewerage as well as surface water and highways area basis for rainwater 5.6 Explain formulas for strength/pollution load billing systems, Mogden etc.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
6 Understand hydraulic principles in relation to the waste water network	6.1 Explain the application and importance of hydraulics for waste water networks
	6.2 Explain Pump Curves and System Curves
	6.3 Demonstrate the appropriate application of hydraulic principles across a range of waste water network applications and uses, including a scenario exercise for both foul sewerage flows and combined wet weather flows
	6.4 Explain the different methods of flow measurement in sewers, including their advantages and disadvantages
7 Understand best practice for the operation and maintenance of waste water networks	7.1 Explain typical operations of waste water network gravity pipelines and associated assets e.g. Combined Sewer Overflows and attenuation (detention) tanks
	7.2 Explain the different waste water network overflow screening principles and techniques
	7.3 Explain typical operations of waste water network pumping systems
8 Understand engineering principles in relation to waste water networks	8.1 Explain the requirements and applicability of plant maintenance regimes within the water industry including the role and importance of first line maintenance
	8.2 Explain basic electrical theory and principles and engineering practices to ensure the safe operation and isolation of electrical and mechanical plant
9 Understand best practice in relation to waste water networks and the processing of Trade Effluent in line with Regulatory requirements	9.1 Explain the regulatory framework and legislation pertaining to Trade Effluent
	9.2 Critically analyse the impact of trade effluent on waste water networks and how the effects can be mitigated
	9.3 Explain how industrial dischargers of trade effluent are affected by enforcement of legislation
	9.4 Explain how trade effluent legislation governs treatment costs
	9.5 Explain how trade effluent is managed in the commercial environment in the water industry and how this operates in relation to waste water networks

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	9.6 Critically analyse the process for enforcing trade effluent legislation
10 Understand best practice for management of waste water network assets	10.1 Explain the principles of whole life asset management, investment appraisal, and the application of maintenance strategies in the management of network assets
	10.2 Describe how to evaluate and appraise options for waste water network investment projects to address risks and deficiencies in the waste water network asset base
	10.3 Describe and critically evaluate the "*Smart Network*" technology and innovations which are available and becoming available to proactively manage network assets, with emphasis on predict and prevention of asset failure
	10.4 Critically analyse the origins of events and incidents and how they can occur in relation to both self-inflicted and "*otherwise*"
	10.5 Identify processes that can be used to avoid and minimise the occurrence of operational network failures that affect customers and network operation
	10.6 Describe the legislation pertaining to working in the Highway and its impact on operational activity
	10.7 Explain and critically analyse the appropriate methods of network repair and maintenance and the options for managing this activity through internal or external resources
	10.8 Demonstrate an understanding of the different gravity sewer and pressurised sewer rising main rehabilitation techniques to extend the asset life of different waste water network assets
11 Understand best practice for dealing with public health nuisance	11.1 Explain the origin and nature of nuisance arising from the waste water network e.g. odour, rodents, noise
	11.2 Explain legislation pertaining to nuisance control
	11.3 Demonstrate an understanding of the link between the waste water network and public health by an understanding of waterborne diseases and its control and prevention

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	11.4 Explain the causes of the deterioration of waste water quality within the network and the controls available to prevent it, e.g. Septicity
	11.5 Explain how nuisance can affect the health and well-being of workers and stakeholders
	11.6 Explain methods for assessing nuisance and the range of control methods available
12 Understand best practice for dealing with failures or problems arising within the operations of the waste water network	12.1 Explain how to identify and evaluate waste water network operations outside normal parameters of operation
	12.2 Explain how to resolve routine events on the waste water network e.g. blockage, FOGs
	12.3 Explain necessary actions that may be required to safeguard the health and safety of customers and minimise detrimental impact on the environment
13 Understanding best practice for dealing with waste water network flooding	13.1 Explain the regulatory framework and legislation pertaining to waste water network flooding
	13.2 Explain the difference between “hydraulic capacity flooding” and “extreme weather event – return period”
	13.3 Explain the typical impact of waste water network flooding on customers and how the affects can be mitigated
	13.4 Describe the process for managing waste water network flooding including regulatory reporting
14 Understanding best practice for dealing with waste water network pollution	14.1 Explain the regulatory framework and legislation pertaining to pollution
	14.2 Explain the typical impact of waste water network pollution on the environment and how the affects can be mitigated
	14.3 Describe the process for managing pollution including regulatory reporting
15 Understand the importance and application of innovation within the Water Sector pertaining to the waste water network	15.1 Explain the importance and application of innovation within the Water Sector
	15.2 Describe how you can use the innovation process within their organisation to deliver tangible benefits

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
16 Understand the importance and application of resilience within the Water Sector	16.1 Explain how resilience can be applied to the operation of the waste water network of their organisation, including through the use of scenario planning
	16.2 Explain how innovation can enhance resilience and the management of the waste water network within their organisation
17 Understand the management of the customer experience within waste water networks	17.1 Describe how compliance with all customer legislative standards is achieved
	17.2 Explain how the customer experience within the waste water network can be monitored and how it is reported
	17.3 Describe factors to consider in managing and recovering from a waste water network incident
	17.4 Identify some of the factors to consider when reviewing and learning from an incident
	17.5 Describe all the external stakeholders involved in the customer experience and the structure needed to manage engagement with these bodies pertaining to waste water networks

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

www.proqualab.com

enquiries@proqualab.com

Tel: +44 (0)1430 423822

ProQual AB Limited, ProQual House, Westbridge Court, Annie Med Lane, South Cave HU15 2HG
Company Registration Number: 07464445