



Assessor's Guidelines for SVQ3 Designing Water Networks SCQF level 6 (GA1J 23)

Publication date: March 2013
Publication code: DB6091

The information in this publication may be reproduced in support of SQA qualifications. If it is reproduced, SQA/CABWI should be clearly acknowledged as the source. If it is to be used for any other purpose, then written permission must be obtained from the Support Materials Development Officer at SQA. It must not be reproduced for trade or commercial purposes.

Published by the Scottish Qualifications Authority
The Optima Building, 58 Robertson Street, Glasgow G2 8DQ
Lowden, 24 Wester Shawfair, Dalkeith, Midlothian, EH22 1FD

www.sqa.org.uk

© Scottish Qualifications Authority/CABWI 2013

Contents

1	Introduction	2
	SVQ3 Designing Water Networks SCQF level 6: Overview	2
	National Occupational Standards (NOS) and award structures	3
	About SVQs and the SCQF	4
	How are standards defined in SVQs?	6
	Who is involved in SVQs?	6
	An Assessment Strategy for the SVQ	7
	Why would people be interested in the SVQ?	7
	How do candidates begin?	7
	Assessor and candidate roles	8
2	SVQ3 Designing Water Networks SCQF level 6	9
	General SVQ Requirements	9
2.1	General Evidence Requirements	9
2.1.1	Coverage of full SVQ requirements	10
2.1.2	Consistent competence over time	10
2.1.3	Varied evidence gathered from different work activities and situations	10
2.1.4	Evidence that occurs naturally	11
2.1.5	Witness testimonies	11
2.1.6	Employer involvement and contribution to assessment process	12
2.1.7	Evidence from water network design activities	12
2.2	Witness testimony	13
	Witness credibility	14
	Witness testimony content	15
	Recording witness testimony	15
2.3	Knowledge assessment	16
	General knowledge requirements	16
2.4	Approaches to collecting evidence: assessor or candidate-led	16
2.5	Types of evidence	17
	Graphical items and data in performance evidence	17
	Using generic workplace documentation	18
2.6	Recording SVQ evidence	19
	The SVQ audit trail	19
2.7	Using the sample recording format	20
3	Structures for SVQ3 in Designing Water Networks SCQF level 6	23
	SVQ3 Designing Water Networks SCQF level 6 (GA1J 23)	23
	Assessors' Unit Notes: SVQ3 Designing Water Networks SCQF level 6	24
	FA7W 04 Assess Factors that Impact on Utility Network Designs	24
	FA7V 04 Assess Design Options for Utility Networks	27
	FA9P 04 Produce Detailed Drawings to Support Utility Network Activities	30
	FC06 04 Use Technical Information to Review Utility Network Detailed Drawings	33
	FC9X 04 Provide Technical Information for the Design of Utility Networks	35
	FA8E 04 Develop Productive Working Relationships with Colleagues	38
4	Appendices	42
	Appendix 1: Core Skills signposting	42
	Core Skills signposting	43
	Appendix 2: Sample witness testimony pro forma (Generic)	44

Witness testimony.....	45
Appendix 3: Types of SVQ evidence and associated risks	46
Appendix 4: Sample assessor report form (generic)	55
Assessor Report Form.....	56
5 Recording Documents.....	61
Assessment Summary and Confirmation	61
SVQ 3 Designing Water Networks GA1J 23 Cover Sheet.....	62
Index of evidence.....	64
Assessment Summary and Confirmation	66
Unit FA7W 04 Assess Factors that Impact on Utility Network Designs.....	66
Unit FA7V 04 Assess Design Options for Utility Networks.....	72
Unit FA9P 04 Produce Detailed Drawings to Support Utility Network Activities.....	77
Unit FC06 04 Use Technical Information to Review Utility Network Detailed Drawings.....	82
Unit FA9X 04 Provide Technical Information for the Design of Utility Networks.....	86
Unit FA9X 04 Provide Technical Information for the Design of Utility Networks.....	87
Unit FA8E 04 Develop Productive Working Relationships with Colleagues	90
Unit FA8E 04 Develop Productive Working Relationships with Colleagues	91

About The Centre Guidance Notes

This guidance for SVQ3 Designing Water Networks is designed to provide assessment centres with information on the content, structure and delivery of the SVQ.

This document provides both general guidance, applicable across the SVQ, and more detailed information on each award, including general and specific Evidence Requirements. If you or your centre has any queries relating to the SVQ or its delivery, please contact either your allocated External Verifier (EV) or SQA contact.

This guidance (and updated versions issued during the lifetime of the SVQ) will be available on **www.sqa.org.uk** and produced on CD, though hard copies can be provided by CABWI Awarding Body on request (contact CABWI Awarding Body, 1 Queen Anne's Gate, London, SW1H 9BT; Tel: 020 7957 4523; e-mail: **enquiries@cabwi.co.uk**). The CD also includes evidence recording documents for each Unit, copies of the national occupational standards (NOS) in Network Construction Operations (Water), and Core Skills Signposting (as developed by Energy & Utility Skills).

Further information relating to the delivery of SVQs, including copies of the current SVQ forms and general SVQ centre guidance, may be obtained direct from the Scottish Qualifications Authority at the following address:

Scottish Qualifications Authority
The Optima Building
58 Robertson Street
Glasgow
G2 8DQ

www.sqa.org.uk

SQA Customer Contact Centre
Tel: 0845 279 1000
E-mail: **customer@sqa.org.uk**

1 Introduction

SVQ3 Designing Water Networks SCQF level 6: Overview

The SVQ3 Designing Water Networks SCQF level 6 covers the skills required by water network designers, whose role it is to develop designs for water network projects. This SVQ is based on national occupational standards developed by Energy & Utility Skills.

The majority of candidates' evidence for this SVQ must be generated from real work activities. This means that any candidate undertaking SVQ3 Designing Water Networks SCQF level 6 must be working in the water network design on a regular basis. Assessors must ensure that sufficient evidence of workplace performance is provided before recommending certification. While the SVQ Unit titles refer to 'utility networks', assessors must ensure that the evidence produced by candidates towards this SVQ is generated from work that the candidate has undertaken specifically on water network design.

The skills covered in the Designing Water Networks SVQ include:

- ◆ assessing factors that impact on network designs
- ◆ assessing options for the design of networks
- ◆ producing detailed drawings to support network activities
- ◆ using technical information to review detailed drawings for water networks
- ◆ providing technical information for the design of water networks
- ◆ developing productive working relationships with colleagues.

Completion of the requirements for each of the activities listed above results in a Unit award — six Units in total are needed for a full SVQ3.

National Occupational Standards (NOS) and award structures

The content and structure of the SVQ3 Designing Water Networks SCQF level 6 SVQ derives from the national occupational standards (NOS) in Multi-Utility Network Design, developed by Energy & Utility Skills, the Sector Skills Council for the electricity, gas, water and waste management industries. The SVQ requirements are produced in line with the NOS, award structures and assessment strategy, following consultation with representatives from water companies, industry training providers and other industry stakeholders.

Copies of the NOS in their final approved format can be provided with the centre guidance notes. The Units may also be obtained from the UK Standards website (www.ukstandards.org.uk) or from Energy & Utility Skills (www.euskills.co.uk). Updates to the content of the NOS may be made incrementally to keep pace with industry practice, but all centres will be advised of revisions in advance of implementation, with updated SVQ guidance if required.

If, in delivering the Designing Water Networks SVQ, the team identifies any queries or issues with the content of the NOS or the SVQ structure, please contact your external verifier or awarding body in the first instance. We can then advise you on the most suitable course of action and consult further with Energy & Utility Skills or the regulatory authorities, as necessary. Energy & Utility Skills can be contacted at the following address:

Energy & Utility Skills Limited
Friars Gate Two
1011 Stratford Road
Shirley
Solihull
West Midlands
B90 4BN.
Tel: 0845 077 9922
Fax: 0845 077 9933
Website: www.euskills.co.uk

About SVQs and the SCQF

Scottish Vocational Qualifications (SVQs) are work-based qualifications which set the level of occupational competence for each sector of the economy and are usually delivered in the workplace or in partnership with a college or other training provider. The qualifications have been designed by standards-setting bodies made up of experienced practitioners who represent employers, professional bodies, trade unions, education and voluntary organisations.

Each standards-setting body is responsible for developing national standards which define *what* employees (or potential employees) must be able to do, *how well*, and *in what circumstances*, to show that they are competent in their work.

Each SVQ which a standards-setting body develops has to fit into a broad framework which allows qualifications in the UK and throughout Europe to be compared.

There are SVQs for nearly all occupations in Scotland and they are available at SVQ levels 1–5. SVQs are currently notionally placed in the SCQF as the individual SVQs may be at differing SCQF levels and have differing amount of credit points, depending on the structure and context of the SVQ. SVQs are a means of recognising the skills and knowledge people need in employment, ie job competence. Successful completion of an SVQ provides clear evidence that the learner works to nationally recognised occupational standards.

Each Unit defines one aspect of a job or work-role, and says what it is to be competent in that aspect of the job. To be awarded a full SVQ, learners must achieve each of the SVQ Units which make it up by demonstrating that they are competent in that aspect of the job. The Units which make up the SVQ can also be taken as freestanding awards. Some SVQs or SVQ Units are incorporated into other awards or programmes including HNCs and Modern Apprenticeships.

Explanation of levels

SVQ1 (SCQF level 4)	Competence involves the application of knowledge and skills in the performance of a range of varied work activities, most of which may be routine or predictable.
SVQ2 (SCQF level 5)	Competence involves the application of knowledge and skills in a significant range of varied work activities, performed in a variety of contexts. At this level, there will be activities, which are complex or non-routine and there is some individual responsibility and autonomy. Collaboration with others, perhaps through membership of a work group or team, may often be a requirement.
SVQ3 (either SCQF level 6 or 7)	Competence involves the application of knowledge and skills in a broad range of varied work activities, most of which are complex and non-routine. There is considerable responsibility and autonomy, and control or guidance of others is often present.
SVQ4 (either SCQF level 8 or 9)	Competence involves the application of knowledge and skills in a broad range of complex technical or professional work activities, performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources is often present.
SVQ5 (SCQF level 11)	Competence involves the application of skills and a significant range of fundamental principles across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources feature strongly, as do personal accountability.

For further information on SCQF go to www.scqf.org.uk

How are standards defined in SVQs?

All SVQs consist of standards which can be broken down into various parts.

Units define the broad functions carried out in the sector, and are made up of a number of **Elements**. These **Elements** describe the activities which employees have to perform, and will require candidates to demonstrate certain skills or Knowledge and Understanding.

The quality of performance in what people must be able to do — how well they must perform — is described by **Performance Criteria**. In the SVQ3 Designing Water Networks SCQF Level 6 materials, these are shown as following the words, ‘The candidate can...’

The section on **Knowledge and Understanding** says what candidates must know and understand, and how this knowledge applies to their jobs.

You may also come across standards containing statements on **scope**. These give an indication of the breadth of knowledge or performance that the candidate must cover — eg they could list the types of equipment or techniques that candidates are expected to be familiar with and use, or the types of features that must be incorporated into their water network designs.

Increasingly, you may see changes to this format as standards become more user-friendly and are written in plain English. For example, there may be some standards containing **Range Statements** or **Evidence Requirements**, but over time these should disappear. You may, however, find that information on the context, nature and amount of evidence which is required to prove competence (which used to be given in Range Statements and Evidence Requirements) is now defined in the **assessment guidance** for the qualification. Assessment guidance is drawn up by the awarding body and is packaged along with the standards to form the SVQ.

Who is involved in SVQs?

There are several roles:

- ◆ **the candidate:** the person who wants to achieve the SVQ (eg an employee)
- ◆ **the assessor*:** the person who assesses the candidates and decides if they are competent (eg supervisor)
- ◆ **the internal verifier*:** an individual nominated by the centre (eg a company) who ensures that assessors apply the standards uniformly and consistently (eg supervisor’s line manager)
- ◆ **the External Verifier*:** an individual appointed by SQA who ensures that standards are being applied uniformly and consistently across all centres offering the SVQ

*Assessors and verifiers in centres will be asked by SQA to prove they have the appropriate occupational competence to assess and verify the SVQ. Occupational competence has been defined by the standards-setting body in the Assessment Strategy for this SVQ(s) — see SQA’s website (www.sqa.org.uk).

Assessors and verifiers are also expected to obtain an appropriate qualification in assessment and verification — this can be the Assessor/Verifier Units (the national standards for assessment and verification), or an alternative qualification which SQA also recognises.

An Assessment Strategy for the SVQ

As part of their review of the SVQ, the standards-setting body (Energy & Utility Skills) has developed an assessment strategy which defines a range of requirements:

- ◆ the occupational expertise requirements for assessors and verifiers
- ◆ a definition of simulation
- ◆ definition of the workplace
- ◆ information on a model of independent assessment or external quality control.

The relevant parts of the assessment strategy are published on SQA’s website (www.sqa.org.uk), and both SQA and assessment centres must comply with these requirements.

Why would people be interested in the SVQ?

People will take SVQs for a variety of reasons: to gain promotion, to prove their job competence, or for personal development. There will be other reasons too. One of the first things to do is to find out why your candidates want to do the SVQ, and to advise them of the appropriateness of the qualification. If anyone is acting as a coach or mentor to your candidates, they might help you to do this.

How do candidates begin?

Choosing the SVQ

You should make sure that candidates get guidance before starting out on an SVQ — they need advice to ensure that their existing job remit, skills, experience, and their plans for progression, are matched to the SVQ selected. It does not have to be you as the assessor, who carried out the matching process, but whoever has responsibility for this should ensure that the assessment opportunities available to the candidate are also considered.

Assessor and candidate roles

The assessor's role

As the assessor, your role is to:

- ◆ ensure candidates understand what is to be assessed and how it is to be assessed
- ◆ ensure the conditions and resources required for assessment are available
- ◆ help candidates to identify and gather evidence
- ◆ observe and record candidates carrying out the activities described in the standards — records should say what has been observed, how it was carried out, and what it demonstrates
- ◆ assess products of the candidate's own work
- ◆ question candidates and record the results
- ◆ help candidates to present evidence
- ◆ authenticate the evidence that candidates provide
- ◆ judge evidence and make assessment decisions
- ◆ identify gaps or shortfalls in candidates' competence
- ◆ provide feedback to candidates throughout the assessment process
- ◆ record achievement

The candidate's role

It is up to the candidate to ensure that they:

- ◆ prepare for assessment — become familiar with the standards, what is to be assessed and how it is to be assessed
- ◆ help to identify sources of evidence and how these could be assessed
- ◆ carry out activities, and/or produce products of their own work, and/or answer questions
- ◆ gather and present evidence
- ◆ receive and act on feedback from the assessor

The following sections contain detailed guidance on the requirements for delivering the SVQ3 Designing Water Networks SCQF level 6.

2 SVQ3 Designing Water Networks SCQF level 6

General SVQ Requirements

This section provides guidance on the collection, assessment and recording of SVQ evidence that applies across the SVQ3 Designing Water Networks SCQF level 6. The general Evidence Requirements detailed below must be observed in addition to any SVQ— or Unit-specific requirements outlined in Section C, which covers the SVQ structure and specific Units.

Please note — The NOS on which this SVQ is based cover multi-utility applications. However, the specific qualification title is ‘Designing Water Networks’. To achieve this SVQ, candidates MUST provide their evidence specifically from water network design activities. The scope of the evidence required for each Unit includes water industry-specific requirements that must be met.

The following details are listed in this section to avoid repetition for each Unit. If you have any queries arising relating to any of the Evidence Requirements, please do not hesitate to contact your External Verifier or the awarding body.

2.1 General Evidence Requirements

Assessors should seek to identify five key qualities in candidates’ evidence:

Term	Explanation
Valid	The evidence demonstrates competence against the SVQ requirements.
Authentic	The evidence is demonstrably the candidate’s own work. (If it relates to a team activity, the candidate should be able to confirm what their role was within the team.)
Reliable	The total evidence must show genuine and sustained competence against the NOS (not a single occasion — you should be confident that they could demonstrate the same skill levels on a different occasion if required).
Sufficient	There must be enough evidence available against the SVQ requirements for you to make an assessment decision.
Current	The total evidence must show current competence (ie it must not be so old that its presence would lead you to query whether the candidate is still able to perform the task.)

The following general Evidence Requirements apply when assessing SVQ3 Designing Water Networks SCQF level 6:

2.1.1 Coverage of full SVQ requirements

- ◆ The total evidence for each Unit must cover all SVQ requirements for skills and competencies, Knowledge and Understanding (as defined in the NOS), and the scope of the evidence, and must meet any Evidence Requirements specified for that Unit.
- ◆ You must be confident that all of the SVQ Unit requirements are covered before assessing the candidate as 'competent'.

2.1.2 Consistent competence over time

- ◆ The candidate's evidence for each Unit must show that they meet the NOS **consistently** in their work, **over a period of time**.
- ◆ The dates of the evidence provided (whether an observation report, witness testimony or other evidence from the workplace) must allow you to confirm that the candidate has carried out the required tasks on several different occasions.
- ◆ It is helpful if the diverse pieces of evidence are taken from dates that are days, weeks or months apart, to show that the candidate's competent performance is not a singular or unusual occurrence.

(Please note: Assessors may ask how many pieces of evidence are sufficient to show consistent competence against the SVQ requirements. The awarding body recommends that each candidate's competence is judged on its own merits.

It is likely that different candidates will have different amounts of evidence available to satisfy particular SVQ Unit requirements, depending upon their job roles. It is your job as an assessor to decide when a candidate has provided sufficient evidence of competence, and this will vary between candidates.

As a guideline, candidates could consider providing evidence of at least three occasions of performance against the NOS. You must remember, though, that the candidate must cover all SVQ requirements to a sufficient standard, and this could require evidence taken from more than three occasions.)

2.1.3 Varied evidence gathered from different work activities and situations

- ◆ Candidates' performance and Knowledge Evidence must come primarily from their own work activities.
- ◆ Evidence should be **varied** and must arise from **different workplace situations** (ie different activities, undertaken at different times, which demonstrate their ability to meet the standard on a regular basis within their job role, rather than on a single assessment occasion).
- ◆ The mix of evidence must be provided from various sources and assessment methods, which, taken holistically, can be used to determine competence. This diversity will reflect the candidate's job role and act as a measure of authenticity.

- ◆ Assessors and candidates must not rely on a single type or source of evidence for any one Unit — providing diverse evidence is a robust way of demonstrating consistent competence over time, and confirming authenticity.

2.1.4 Evidence that occurs naturally

- ◆ Assessors should make use of candidate's evidence as it occurs naturally. This applies to documentary or product evidence, but also to evidence from observations, line managers'/supervisors' reports, and witness testimonies.
- ◆ One work task undertaken by a candidate can generate evidence for a number of Units. Assessors should be vigilant to this, and be able to identify where a candidate's evidence can be cross-referenced to other parts of the SVQ (eg as the activities covered by successive Units in this SVQ — assessing the factors that impact on designs, assessing options for the design, producing and checking the design, etc — follow on from one another during a water network design job, assessors should be able to identify evidence for most of the Units in the SVQ from the performance and knowledge evidence that a candidate provides from one job. Throughout any water network design job, the candidate will need to liaise with their line manager, with colleagues inside and outside their own department, with other organisations and agencies, eg contractors, site managers, the local authority or local fire service — they should also produce evidence during the course of a job that contributes towards the achievement of Unit FA8E 04 — *Develop productive working relationships with colleagues.*)
- ◆ The more an assessor can identify opportunities for candidates to use one piece of evidence towards a number of Units, the less chance there is of unnecessary repetition of assessment activity or evidence gathering. Where possible, assessors should try to use of this kind of holistic approach, and should encourage candidates to think about how the different tasks they do during the day can relate to different parts of their SVQ.

2.1.5 Witness testimonies

- ◆ Assessors should consider the potential for witness testimony to provide a valuable contribution to the candidate's total evidence. This is particularly useful to confirm employer contribution to the SVQ process, which is recommended for all awards based on NOS developed by Energy & Utility Skills.
- ◆ More detailed notes on witness testimony are provided but assessors must ensure that witness testimonies are subjected to the same level of assessment as any other piece of evidence.
- ◆ There are risks associated with the use of witness testimony as SVQ evidence, and assessors must be aware of these. Please ensure that you read the notes on witness testimony, to ensure that robust procedures are put in place for its use, before you ask your candidates to provide such evidence from managers or colleagues.

2.1.6 Employer involvement and contribution to assessment process

- ◆ In this SVQ3 it is **mandatory** to ensure that there is employer contribution to the assessment process.
- ◆ This can be demonstrated in different ways, although the most likely will be through the use of witness testimonies or other reports from candidates' managers and colleagues.
- ◆ Evidence from managers or colleagues can be useful to provide confirmation of candidates' work as part of a team and to show that their work meets the requirements of their organisation.

2.1.7 Evidence from water network design activities

- ◆ To gain a full SVQ3 Designing Water Networks SCQF level 6, candidates must undertake six Units: FA7W 04, FA7V 04, FA9P 04, FC06 04, FA9X 04 and FA8E 04.
- ◆ Candidates must provide evidence of carrying out the main activities identified in the SVQ consistently, over a period of time.
- ◆ The learner's evidence must be sufficient to meet the full Evidence Requirements for the SVQ, as outlined in the national occupational standards.
- ◆ To gain the SVQ, or one of the water network design technical SVQ Units, the candidate must provide evidence relating to design options covering **at least five** of the following:
 - diversions
 - rehabilitations
 - reinforcement
 - cross-connections
 - security of supply
 - engineering difficulties (eg railways, bridge crossings, river crossings, etc)
 - trenchless technology
 - non-domestic use of water
 - reticulation
 - phasing
 - topography
- ◆ The total evidence for any Unit, and across the SVQ, must include a **minimum of five completed designs**, which must be for different locations or addresses (ie they must not be designs for five phases on the same development).
- ◆ Candidate's evidence should be generated from their normal work activities, which should facilitate demonstration of consistent competence over time against the SVQ requirements. The total evidence for the SVQ should show that the candidate is controlling leakage on the distribution network consistently over a period of several months, and is likely to include both assessor observations and other workplace evidence arising naturally from the candidate's work. (NB The assessor has flexibility to decide when they will carry out any on site observations, as these may be subject to logistical or practical constraints.)

- ◆ Candidates are expected to provide diverse evidence to cover the full requirements of the SVQ in Designing Water Networks. All types of evidence and methods of assessment may be considered for this qualification, and assessors and candidates should design together which sources of evidence are most appropriate to confirm competence against the SVQ requirements. In addition to observation or other assessment reports, evidence to show consistent competence over time can be gathered from other sources if preferable, including:
 - company records of water network design activities undertaken (hard copy or electronic)
 - records (eg photographs) from operational activities
 - marked-up plans, sketches or photographs of the network and its configuration
 - records of how the candidate has selected certain design options, or made decisions regarding the selection of materials and components to be used for water network activities
 - successive iterations of water network designs, marked up and/or altered to meet the requirements of their organisation, their client, etc
 - e-mails, or other records of correspondence, either with the candidate's own department, other departments, or with customers
 - witness testimonies
 - work records
 - assessor questioning and discussion, etc

Please note — There is no requirement for assessors to observe specific NOS. This means that there is more flexibility in the way that observation is used, and is dovetailed with other assessment methods to produce the total mix of evidence for the SVQ. The key is to ensure that observation takes place to cover candidates' regular work activities, as they occur.

2.2 Witness testimony

Witness testimony can contribute significantly to the candidate's mix of evidence and provide external confirmation of different aspects of their work activities. Each testimony, statement or report from a witness can, additionally, provide evidence for several Units, and can be used to confirm current competence or consistency over time, or to provide supporting evidence for workplace documentation and records.

Witness testimonies are not observed assessments, and they must be subjected to the same assessor scrutiny as any other type of performance evidence.

This specific guidance is designed to address the particular risks attached to witness testimony as a type of evidence. Assessors should be aware of these risks, and be able to take action to minimise them.

In discussing requirements for and potential sources of witness testimony with a candidate, you should ensure that they are briefed on good practice for witness testimonies, so that they know what characteristics you are seeking when assessing any witness testimonies that they provide.

Witness credibility

The credibility of the witness is vital to the value of witness testimony as robust evidence. Witnesses can be drawn from a variety of sources, including:

- ◆ the candidate's line manager/supervisor
- ◆ a senior manager with experience of the candidate's work
- ◆ a colleague or associate from their team or another part of the business, or a related business (eg a project manager on site)
- ◆ someone who reports to the candidate
- ◆ a client — either internal or external to the business

The choice of suitable witnesses varies between candidates, and some candidates will have access to more supporting evidence of this kind than others.

The key is to ensure that the witness:

- ◆ understands the context and operations of the candidate's job role, and
- ◆ can contribute detailed and credible information at the appropriate level about the candidate's activities described, in a context that is familiar to them

For example:

- ◆ a candidate's line manager, or a senior network designer could provide considerable information on the technical water network design activities that the candidate undertakes during usual work activities

or

- ◆ a colleague, either internal or external to the candidate's own organisation, could have useful information about how they interact with others and carry out their role as part of a team. This could be particularly useful in the context of Unit FA8E 04 — *Develop Productive Working Relationships with Colleagues*, within this SVQ

It is up to assessors and candidates to identify witnesses who can provide sufficient detail against specific SVQ performance requirements. Assessors should also consider that one testimony can provide evidence for several Units.

It is important to ensure that the witness is working at a level or in a context where they will be able to report meaningfully on the candidate's activities: in an operational context, this means that they are likely to be working at least at the same level as the candidate. Alternatively, where Units relate to the development of productive working relationships, it would be appropriate to seek testimony from witnesses who interact with the candidate at different levels.

Witness testimony content

Assessors must be able to validate and authenticate the content of a report or statement. This means that the witness testimony should:

- ◆ include clear information on the witness's name, job title, relationship to the candidate, and date (and be signed by the witness)
- ◆ include the witness's contact details, to allow for follow-up or authentication of the evidence (the candidate's permission should be sought before contacting a witness)
- ◆ refer to the candidate by name
- ◆ give a meaningful statement that can be used as evidence — ie it must include suitable detail about specific work activities (time, date, location, job instructions, etc) that are witnessed, and must be a statement of fact. A supervisor or line manager may be qualified to comment on the candidate's competent performance in terms of meeting operational and company requirements, for instance, **but** they should not be asked for an opinion on whether the candidate has met the SVQ requirements, that is the assessor's role

There should be sufficient detail in a witness testimony to ensure that the report or statement refers to specific activities that the witness saw that particular candidate undertaking. This enhances witness credibility and provides a potential source of validation (eg through job records showing that the candidate was working in the stated location at the time the activities were witnessed).

Assessors should be alert to the potential for insufficient detail to be provided, or for situations where a witness provides testimony for several candidates, which is identical in each case. Even when working under supervision or as part of a team, the candidate will have a specific contribution to make, and a robust witness statement should be able to identify and confirm the candidate's own activities.

Recording witness testimony

Formats for recording witness testimony vary between witnesses and between centres — some assessment teams have a preferred pro forma that they issue to witnesses, while others prefer to leave the content and expression entirely up to the witness. An example of a witness testimony pro forma is at Appendix 2. A copy is available in MS Word, for centres to adapt as required for their own use.

As a guideline, in developing a more specific witness testimony form for this award, the centre should bear in mind that it is not recommended that a candidate's manager or other potential witness is given a list of statements with which they must agree or disagree. It is preferable to include open questions, which require them to think of specific examples of the candidate's work.

2.3 Knowledge assessment

You (or your centre) must have a strategy for assessing the knowledge and understanding requirements for the SVQ3 Designing Water Networks SCQF level 6. This is likely to involve a combination of evidence generated from performance, during discussions with the assessor, and from assessor questioning (either in written or oral format). It is recommended that the candidate's ability to meet the knowledge requirements is assessed through discussions and oral questioning, during the course of observed assessments or assessment meetings. The awarding body also recommends that, where a candidate demonstrates during assessment that they have knowledge that applies to more than one Unit, the assessor should ensure that they record this coverage, to avoid unnecessary repetition of assessment activity. If candidates have undertaken written assessments that can be related to the knowledge requirements, these may also be used to confirm NOS coverage.

For an assessor to confirm SVQ competence, the candidate must provide evidence against all of the Knowledge and Understanding requirements for a Unit, so any areas that are not initially identified as correct must be revisited elsewhere in the candidate's total evidence. You should also remember that all question banks must be stored securely in the centre, and that candidates must not leave the assessment meeting or test situation with any materials that are used for knowledge assessment in controlled circumstances (question banks, test papers, etc).

General knowledge requirements

The network design specific NOS for the SVQ3 Designing Water Networks SCQF level 6 (ie Units FA7W 04, FA7V 04, FA9P 04, FC06 04 and FA9X 04) include requirements listed as 'Knowledge and Understanding — General'. These requirements are identical within each of the network design Units.

Assessors must ensure that candidates' evidence covers these general Knowledge and Understanding requirements in full, but should be aware that evidence can be provided to meet them from across the whole SVQ (or all SVQ Units that the candidate undertakes) rather than on a Unit-by-Unit basis.

In the sample recording documents, a separate table is provided to cover the general Knowledge and Understanding requirements.

2.4 Approaches to collecting evidence: assessor or candidate-led

Some candidates will relate more easily than others to SVQ terminology, gathering evidence and matching the tasks they do in their daily work to the SVQ requirements. This depends upon candidates' individual aptitudes and preferences, and also on their job role, the amount of responsibility they have within their organisation, and the amount of evidence that they can typically generate from their work activities. Assessment approaches can vary according to each candidate or group of candidates.

Candidates working on the SVQ3 Designing Water Networks SCQF level 6 qualification are likely to carry out their job role under their own initiative and have considerable autonomy to carry out diverse water network design activities. They require the skills and knowledge to identify, consider and produce designs that take account of numerous different circumstances and conditions on the water network.

It is possible that the candidate will be able to provide workplace evidence (documents or products) to supplement assessor observations, discussions and witness testimonies, and some candidates will be happy to adopt a more proactive approach to identifying their own potential sources of evidence against the NOS. Others will be more comfortable if the assessor is more proactive. Either approach is acceptable providing the SVQ requirements are met.

2.5 Types of evidence

Candidates who undertake the Designing Water Networks SVQ will provide evidence from various sources. Assessors should look for a variety of evidence, from different sources, to provide a total picture of candidates' skills.

A table showing the various different types of evidence, their advantages, risks and potential solutions for managing the risks can be found at Appendix 3. This could be useful to you in planning and carrying out your assessments, or as a general reference tool.

As the advantages and risks vary according to the assessment method or type of evidence, it is always appropriate to combine a variety of evidence types in assessing any Unit or full SVQ. This approach:

- ◆ allows evidence to be produced from several different sources, and in different forms, against the SVQ requirements
- ◆ ensures that candidates have the opportunity to use one piece of evidence to meet the NOS for a number of Units, and
- ◆ allows them to make use of the full range of evidence that is available to them in their workplace

In planning assessments with candidates, assessors should encourage them to consider as many possible sources of evidence that they have available to them, and to refer to their assessor if they are unsure about the validity of evidence, rather than assuming that it will have no value.

Graphical items and data in performance evidence

As part of this award, candidates may produce data, graphical information including photographs, or marked up plans, etc that they use while developing water network designs. These are particularly useful for providing additional and detailed information relating to specific locations and jobs covered, and can be used to reinforce authenticity.

As stated at Appendix 3, the risk associated with these types of evidence is that they are not meaningful for the SVQ unless the candidate can explain their relevance (either in a note or through assessor questioning).

The candidate must be able to show how this kind of workplace material relates to their job role and specific work activities, and the assessor must ensure that they satisfy themselves of the authenticity and validity of the evidence against the NOS (eg be able to confirm that a plan or photograph relates to a specific job — and corroborate, if necessary, with reference to other records, eg records on company systems, etc).

Using generic workplace documentation

Candidates may have access to a variety of generic workplace documentation, produced either by their employer or at customer premises (eg company risk assessment formats, health and safety induction details or policies produced at third party premises, information relating to specific locations for which designs are required, specifications and manuals for components and materials to be referenced in designs).

This documentation is valuable as evidence only if a candidate can show how it relates to their particular job role or specific activities, and the assessor must ensure that they review generic documents on this basis. It is not sufficient for candidates to include generic material amongst their evidence without any explanation of its relevance.

For example:

It is more credible if:

- ◆ a candidate provides a generic company risk assessment form that they completed while undertaking a job
- ◆ a candidate can show how they used any generic information or specifications relating to design features, materials and components in preparing water network designs

Specific Evidence Requirements for each Unit from the Designing Water Networks SVQ are found in the Section 3. Most types of evidence are acceptable for any Unit, and candidates should make use of as much evidence as possible that arises naturally from their work activities. The Unit outlines confirm the skills that are covered within each Unit, and identify any particular evidence that is required.

2.6 Recording SVQ evidence

Assessors must ensure that sufficient records are produced to provide an audit trail for the assessment process.

Assessors' records must show:

- ◆ how they confirmed the candidate's competence against the SVQ requirements (NOS and any SVQ Evidence Requirements)
- ◆ that the SVQ assessment process is applied consistently to all of their candidates (assessors are likely to work with other assessors and IVs at the centre to develop systems and processes that allow this to be done)
- ◆ a clear audit trail

It is vital that assessment records are robust, as they provide the starting point for internal and External Verifiers to sample records and monitor the assessment process. Assessors need to ensure that their records allow the IV and EV to follow the audit trail through the SVQ delivery process as applied to your candidates and allow them to drill down into the detail of your assessment decisions during the verification sampling process.

The SVQ audit trail

You must ensure that your records show your involvement in the stages of SVQ delivery. These will include:

- ◆ **Candidate induction and registration** — candidates must be aware that they have been registered with the awarding body, and the induction or first assessment meeting is commonly used to conduct skills scans or otherwise identify how the candidate's job role relates to the SVQ and what Units they will undertake. It is also important, if possible, to identify any particular assessment requirements (eg personal needs relating to language or literacy issues or physical disabilities that could limit access to premises) at this stage, so that you can plan to meet the candidate's needs.
- ◆ **Assessment planning** — the assessment team should have systems in place for assessment planning, relating both to the planning of the SVQ assessment process, and more detailed assessment planning with individual candidates (which is likely to be reviewed at the end of each assessment meeting, so that you and the candidates know what is expected at the next assessment).
- ◆ **Observations and assessment meetings** — each meeting with a candidate should generate some form of assessment record. The type of report can differ depending upon your assessment activity. If you observe a candidate, you may prefer to use a tailored observation report form that allows you to concentrate on the tasks you are watching, while a discussion-based meeting could use a more generic template (see sample generic report at Appendix 4).

Candidates working towards the Designing Water Networks SVQ need to show evidence of specific water network design activities undertaken for particular jobs and to meet specific design briefs. It is therefore important that assessor reports, line managers' reports, witness testimonies, designs produced or other job records confirm details of the location for which designs are being produced. This is useful not only to assessors in ensuring that the evidence is authentic and reflects the candidate's job role, but also to internal and External Verifiers when validating assessment records during the sampling process.

A tailored observation report may assist the SVQ assessor to align the candidate's evidence from specific water network design activities with the NOS requirements, but a more generic report is useful for general assessment discussions or meetings at all levels.

- ◆ **Coverage of the national occupational standards** — it is important as candidates go through the SVQ process that there is a record of how their evidence meets the NOS. This allows assessors to:
 - ensure that any mandatory types of evidence are provided
 - show how far the candidate has progressed for any Unit
 - identify gaps in the evidence and plan how further evidence can be provided
- ◆ **SVQ Unit sign off to confirm coverage** — assessors need to confirm when the Unit requirements have been satisfied, so that they can recommend Unit (and, eventually, full SVQ certification). It could be helpful to provide a cover sheet or overview of how the assessment decision was reached, that can also require the candidate to confirm that the evidence is their own work. This could also act as the starting point for an IV or EV during sampling.

The assessment and verification team must identify how each Unit will be signed off and confirmed.

- ◆ **Feedback to candidates and action planning** — this should be covered in the assessment reports, or potentially through correspondence records between assessors and candidates, but it is an important part of the ongoing SVQ delivery process, as candidates need to be aware of their current progress, and to know what further action or evidence is needed for them to complete the Unit or award. Candidates should also be given the opportunity to provide feedback to their assessors (see sample assessment report, Appendix 4).

2.7 Using the sample recording format

Sample evidence recording documents were produced for each Unit, after consultation with existing assessment centres and EVs. These are provided in separate files with this guidance (in MS Word format). Each Unit document reproduces the NOS and includes a cover sheet that allows the assessor to confirm how the SVQ requirements have been met, and which is tailored to the specific Evidence Requirements for that Unit.

The Unit evidence tables list the skills and competencies, knowledge and understanding items and 'scope of the evidence' specific to each Unit, so that assessors can use them without referring to a separate NOS document.

If using this format, assessors could either:

- ◆ provide a brief description of or reference for the evidence (under 'Evidence Ref/Description'), including a file reference if applicable (eg if the candidate is keeping an evidence file or portfolio), marking where the evidence meets the NOS requirement

or

- ◆ maintain a separate master list of SVQ evidence, giving each piece of evidence a reference number which is then inserted into the table against specific NOS requirements as necessary

The tables are designed to provide an at-a-glance indication for assessors and candidates of the progress made against the NOS for that Unit. Assessors can initial against each NOS requirement when they feel that this has been covered.

The assessor can use the cover sheet to confirm that all Evidence Requirements are met, and both candidate and assessor sign on completion of the Unit. The IV and EV can also sign to show where they have sampled.

A sample Index of Evidence is also included, which allows a master list of evidence for the SVQ to be kept, which can be cross-referenced to the Unit recording tables.

Please note — *The purpose of the tables is to provide a record of the candidate's progress through the SVQ, and it is up to the assessor to confirm completion of a Unit. Some candidates could be comfortable in using the recording tables, but it is not mandatory for the candidates to complete any or all of this information on their own.*

Centres may use the samples exactly as provided (in MS Word), adapt them for the use of their own assessment team, or use their own formats and templates, according to centre requirements.

If the centre wishes to use a different format, the EV will need to see sample documents that the team intends to use for this SVQ at the point of centre approval, to ensure that the proposed recording mechanism shows how the NOS are covered and the SVQ Evidence Requirements are met.

It is not mandatory for candidates to maintain an evidence file or portfolio, but there must be a clear record of where each piece of evidence is located, either in the evidence recording documents or in a separate master list of evidence. Some candidates and centres prefer to use a portfolio or evidence file system, as the supporting evidence is held in one place, but it may not be appropriate to all candidates or situations. If alternative evidence storage methods are used, the centre must maintain a robust record of where evidence is located, because the IV and EV may require access to the original evidence when sampling, in order to validate the evidence and confirm authenticity.

Please note — *The sample recording formats are produced with a view to their use at SVQ centres, and on the basis of feedback provided during delivery of previous water industry SVQs. The joint awarding bodies would like to receive any suggestions from centres about the format of assessment records and reports and how they can be improved, and may update the sample materials during the lifetime of the SVQ, as a result of centre comments. Please advise the external verifier or contact SQA/CABWI direct in order to feed back on the sample recording formats.*

In using or adapting the sample format, the centre must not change the content of the national occupational standards. The NOS are the benchmark that assessors use to ascertain candidates' competence. If they are altered, the candidate's competence may not be fully confirmed.

Section 3 contains details specific to each of SVQ3 Designing Water Networks SCQF level 6 based on the assessment requirements and content of individual Units.

3 Structure for SVQ3 Designing Water Networks SCQF level 6

This section outlines the requirements for SVQ3 Designing Water Networks, based on the assessment requirements and content of individual Units. The generic Evidence Requirements covered in Section B apply across the full award, and most of this information is **not** repeated in the Unit-specific notes that follow. Assessors should be aware of the general requirements covered in Section B, and also of any specific requirements relating to the full SVQ or individual Units.

Please note — *This qualification relates to activities undertaken on the water distribution network. It is therefore imperative that candidates follow the National Water Hygiene code and where appropriate Scottish Water's Distribution Operation and Maintenance Procedures (DOMS) procedures at all times throughout their water network design activities. Their evidence for the SVQ should reflect this.*

SVQ3 Designing Water Networks SCQF level 6 (GA1J 23)

Mandatory Units

SQA ref	SCQF level	SCQF credit points	SSC ref	Title
FA7W 04	7	8	MUND 5	Assess Factors That Impact on Utility Network Designs
FA7V 04	7	6	MUND 6	Assess Design Options for Utility Networks
FA9P 04	6	8	MUND 7	Produce Detailed Drawings to Support Utility Network Activities
FC06 04	6	5	MUND 8	Use Technical Information to Review Utility Network Detailed Drawings
FA9X 04	6	6	MUND 17	Provide Technical Information for the Design of Utility Networks
FA8E 04	5	9	MSC D1	Develop Productive Working Relationships with Colleagues

For a full SVQ3 Designing Water Networks, the candidate must complete all six mandatory Units.

The following pages outline the specific requirements for each Unit from the SVQ3 Designing Water Networks. This includes an overview of the Unit, and identifies any mandatory Evidence Requirements for that Unit.

Please note that the full detail of the national occupational standards is not reproduced in this section, but are reproduced in full for each Unit, in the sample evidence recording documents.

Assessors' Unit Notes: SVQ3 Designing Water Networks SCQF level 6

FA7W 04 Assess Factors that Impact on Utility Network Designs

Unit content

This Unit allows candidates to show that they have the skills and knowledge to assess the factors that impact on water network design.

The candidate will be able to investigate and assess the factors that could affect a water network design. They will use a range of technical information sources and data, and assess the information gathered, collating and presenting it into a format for use in producing a range of design options. The Unit requires an understanding of how to interpret technical data and an ability to use a range of quantitative and qualitative analysis methods and techniques.

The client can be either a 'developer-client' or 'adopting utility-client/asset owner'.

Candidates need to provide evidence that they have the skills and competencies to:

- ◆ research and interrogate technical data and information
- ◆ assess technical data and information
- ◆ interpret technical data and information
- ◆ present technical data and information

Assessor guidance on evidence

- ◆ This NOS Unit includes Skills and Competencies, General Knowledge, Unit-specific Knowledge and Behaviours. Candidates' evidence in total must show that they can cover all of these items consistently over time. Where no direct performance evidence exists from observations or other work records, the assessor needs to use questioning and discussion to ascertain the candidate's competence.
- ◆ The evidence used for this Unit must come from the candidate's own work activities, both in their own 'reporting base' and from site visits associated with their network design activities.
- ◆ The evidence produced for this Unit must show that factors have been assessed for designs covering **at least five** of the following:
 - diversions
 - rehabilitations
 - reinforcement
 - cross-connections
 - security of supply
 - engineering difficulties (eg railways, bridge crossings, river crossings, etc)
 - trenchless technology
 - non-domestic use of water
 - reticulation
 - phasing
 - topography

- ◆ The total evidence produced for this Unit must also show that factors were assessed for **a minimum of five completed designs**, which must be for different locations/addresses (ie not designs for five phases on the same development, etc).
- ◆ Performance evidence must be generated in a realistic working environment or using simulated activities, may not be used to cover this SVQ Unit.
- ◆ The Unit evidence is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, including draft and final network design records, correspondence, reports, or other documentation.
- ◆ The activities covered in Unit FA7W 04 are likely to involve the need for the candidate to work with colleagues, both internal and external to their organisation. Evidence produced for this Unit, that covers interactions with colleagues, may also be used towards the achievement of Unit FA8E 04 (*Develop Productive Working Relationships with Colleagues*). Assessors should be aware of the opportunities that exist to cross-reference both performance and knowledge evidence to other Units, to minimise duplication of assessment activity.
- ◆ **Knowledge and Understanding** — The general and specific knowledge and understanding requirements listed in the NOS must be covered in full for Unit accreditation. The candidate may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met.
- ◆ **Behaviours** — The NOS for this Unit include two items that are classified as ‘Behaviours’. The candidate must provide evidence to show that they work in a manner which:
 - responds positively and creatively to setbacks
 - takes pride in delivering high quality work

Examples of the types of evidence that could cover these requirements may include:

- ◆ **Responding positively and creatively to setbacks:**
 - being responsive to the requirements of line managers, clients, or other stakeholders, who require updates and alterations to be made to their designs
 - adjusting designs to accommodate unexpected circumstances that are encountered when liaising with colleagues on site

(Evidence of both of the above could be found in the evolution of draft to final designs, where changes and updates have been implemented, and in records of correspondence with colleagues.)

- ◆ **Taking pride in delivering high quality work:**
 - following the requirements of the organisation in respect of using design conventions, specifications, components, etc
 - producing neat and clear draft and final network designs and related notes, that meet the requirements of the organisation and can be understood and interpreted clearly by clients, contractors and others who may need to use the designs
 - showing that the designs that they produce pass the inspection of the senior designer or line manager
 - enjoying positive working relationships (eg via correspondence records) with various colleagues, individuals and organisations

Unit FA7W 04 is a **mandatory Unit** in the SVQ3 Designing Water Networks.

FA7V 04 Assess Design Options for Utility Networks

Unit content

This Unit allows candidates to show that they have the skills and knowledge to assess the design options available for water networks.

The candidate will be able to consider a range of water network design options, which may be selected for implementation at a later stage. The requirement may be for a design which is straightforward and follows exactly the client's brief. Other options may be for designs which require compromises to be made in order to meet the design brief or, alternatively, designs created where a modification is not appropriate.

The client can be either a 'developer-client' or an 'adopting utility-client/asset owner'.

The candidate must have a technical understanding of the characteristics of the materials and components which are used in the design and must demonstrate an ability to make accurate and complex calculations. Adoption of water industry requirements is needed and underpinned by strict adherence to UK standards and legislation.

Candidates need to provide evidence that they have the skills and competencies to:

- ◆ interpret design requirements to inform the design process
- ◆ assess a range of network design options

Assessor guidance on evidence

- ◆ This NOS Unit includes Skills and Competencies, General Knowledge, Unit-specific Knowledge and Behaviours. Candidate's evidence in total must show that they can cover all of these items consistently over time. Where no direct performance evidence exists from observations or other work records, the assessor needs to use questioning and discussion to ascertain the candidate's competence.
- ◆ The evidence used for this Unit must come from the candidate's own work activities, both in their own 'reporting base' and from site visits associated with their network design activities.
- ◆ The evidence produced for this Unit must show that design options have been assessed for designs covering at least five of the following:
 - diversions
 - rehabilitations
 - reinforcement
 - cross-connections
 - security of supply
 - engineering difficulties (eg railways, bridge crossings, river crossings, etc)
 - trenchless technology
 - non-domestic use of water
 - reticulation
 - phasing
 - topography
- ◆ The total evidence produced for this Unit must also show that design options were assessed for a minimum of five completed designs, which must be for different locations/addresses (ie not designs for five phases on the same development, etc).
- ◆ Performance evidence generated in a realistic working environment, or using simulated activities, may not be used to cover this SVQ Unit.
- ◆ The Unit evidence is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, including draft and final network design records, correspondence, reports, or other documentation.
- ◆ The activities covered in Unit FA7V 04 are likely to involve the need for the candidate to work with colleagues, both internal and external to their organisation. Evidence produced for this Unit, that covers interactions with colleagues, may also be used towards the achievement of Unit FA8E 04 (Develop Productive Working Relationships with Colleagues). Assessors should be aware of the opportunities that exist to cross-reference both performance and knowledge evidence to other Units, to minimise duplication of assessment activity.
- ◆ **Knowledge and Understanding** — The general and specific knowledge and understanding requirements listed in the NOS must be covered in full for Unit accreditation. The candidate may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met.

- ◆ **Behaviours.** The NOS for this Unit include two items that are classified as 'Behaviours'. The candidate must provide evidence to show that they work in a manner which:
 - responds positively and creatively to setbacks
 - takes pride in delivering high quality work

Examples of the types of evidence that could cover these requirements may include:

- ◆ **Responding positively and creatively to setbacks:**
 - being responsive to the requirements of line managers, clients, or other stakeholders, who require updates and alterations to be made to their designs
 - adjusting designs to accommodate unexpected circumstances that are encountered when liaising with colleagues on site

(Evidence of both of the above could be found in the evolution of draft to final designs, where changes and updates have been implemented, and in records of correspondence with colleagues.)

- ◆ **Taking pride in delivering high quality work:**
 - following the requirements of the organisation in respect of using design conventions, specifications, components, etc
 - producing neat and clear draft and final network designs and related notes, that meet the requirements of the organisation and can be understood and interpreted clearly by clients, contractors and others who may need to use the designs
 - showing that the designs that they produce pass the inspection of the senior designer or line manager
 - enjoying positive working relationships (eg via correspondence records) with various colleagues, individuals and organisations

Unit FA7V 04 is a **mandatory Unit** in the SVQ3 Designing Water Networks.

FA9P 04 Produce Detailed Drawings to Support Utility Network Activities

Unit content

This Unit allows candidates to show that they have the skills and knowledge to produce different types of detailed drawings, in clearly defined formats, that are suitable to support water network activities.

The candidate will be able to apply an understanding of the standards and conventions used in the water industry and interpret them into detailed network drawings. A meticulous attention to detail is required. The candidate will also need to show that they check and gain approval for multiple aspects of the design requirements.

Candidates need to provide evidence that they have the skills and competencies to:

- ◆ produce detailed technical drawings
- ◆ obtain checks and approvals
- ◆ maintain records and document storage

Assessor guidance on evidence

- ◆ This NOS Unit includes Skills and Competencies, General Knowledge, Unit-specific Knowledge and Behaviours. Candidates' evidence in total must show that they can cover all of these items consistently over time. Where no direct performance evidence exists from observations or other work records, the assessor needs to use questioning and discussion to ascertain the candidate's competence.
- ◆ The evidence used for this Unit must come from the candidate's own work activities, both in their own 'reporting base' and from site visits associated with their network design activities.
- ◆ The evidence produced for this Unit must show that detailed drawings are produced for designs covering at least five of the following:
 - diversions
 - rehabilitations
 - reinforcement
 - cross-connections
 - security of supply
 - engineering difficulties (eg railways, bridge crossings, river crossings, etc.)
 - trenchless technology
 - non-domestic use of water
 - reticulation
 - phasing
 - topography.
- ◆ The total evidence produced for this Unit must also show that detailed drawings were produced for a minimum of five completed designs, which must be for different locations/addresses (ie not designs for five phases on the same development, etc).

- ◆ Performance evidence generated in a realistic working environment, or using simulated activities, may not be used to cover this SVQ Unit.
- ◆ The Unit evidence is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, including draft and final network design records, correspondence, reports, or other documentation.
- ◆ The activities covered in Unit FA9P 04 are likely to involve the need for the candidate to work with colleagues, both internal and external to their organisation. Evidence produced for this Unit, that covers interactions with colleagues, may also be used towards the achievement of Unit FA8E 04 (Develop Productive Working Relationships with Colleagues). Assessors should be aware of the opportunities that exist to cross-reference both performance and knowledge evidence to other Units, to minimise duplication of assessment activity.
- ◆ **Knowledge and understanding** — The general and specific knowledge and understanding requirements listed in the NOS must be covered in full for Unit accreditation. The candidate may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met.
- ◆ **Behaviours** — The NOS for this Unit include two items that are classified as 'Behaviours'. The candidate must provide evidence to show that they work in a manner which:
 - responds positively and creatively to setbacks
 - takes pride in delivering high quality work

Examples of the types of evidence that could cover these requirements may include:

- ◆ **Responding positively and creatively to setbacks:**
 - being responsive to the requirements of line managers, clients, or other stakeholders, who require updates and alterations to be made to their designs
 - adjusting designs to accommodate unexpected circumstances that are encountered when liaising with colleagues on site

(Evidence of both of the above could be found in the evolution of draft to final designs, where changes and updates have been implemented, and in records of correspondence with colleagues.)

- ◆ **Taking pride in delivering high quality work:**
 - following the requirements of the organisation in respect of using design conventions, specifications, components, etc
 - producing neat and clear draft and final network designs and related notes, that meet the requirements of the organisation and can be understood and interpreted clearly by clients, contractors and others who may need to use the designs
 - showing that the designs that they produce pass the inspection of the senior designer or line manager
 - enjoying positive working relationships (eg via correspondence records) with various colleagues, individuals and organisations

Unit FA9P 04 is a **mandatory Unit** in the SVQ3 Designing Water Networks.

FC06 04 Use Technical Information to Review Utility Network Detailed Drawings

Unit content

This Unit allows candidates to show that they have the skills and knowledge to review drawings that have been produced by designers. The drawings must meet the technical requirements of the design.

The candidate will be able to access information from a range of sources, and use it to check the accuracy of designs and their conformity to design requirements. The designs and their formats must follow the conventions used in the water industry.

Candidates need to provide evidence that they have the skills and competencies to:

- ◆ review design compliance using utility industry standards and technical information
- ◆ review detailed technical drawings

Assessor guidance on evidence

- ◆ This NOS Unit includes Skills and Competencies, General Knowledge, Unit-specific Knowledge and Behaviours. Candidates' evidence in total must show that they can cover all of these items consistently over time. Where no direct performance evidence exists from observations or other work records, the assessor needs to use questioning and discussion to ascertain the candidate's competence.
- ◆ The evidence used for this Unit must come from the candidate's own work activities, both in their own 'reporting base' and from site visits associated with their network design activities.
- ◆ The evidence produced for this Unit must show that technical information is used to review drawings for designs covering at least five of the following:
 - diversions
 - rehabilitations
 - reinforcement
 - cross-connections
 - security of supply
 - engineering difficulties (eg railways, bridge crossings, river crossings, etc)
 - trenchless technology
 - non-domestic use of water
 - reticulation
 - phasing
 - topography
- ◆ The total evidence produced for this Unit must also show that technical information is used to review drawings for a minimum of five completed designs, which must be for different locations/addresses (ie not designs for five phases on the same development, etc).
- ◆ Performance evidence generated in a realistic working environment, or using simulated activities, may not be used to cover this SVQ Unit.

- ◆ The Unit evidence is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, including draft and final network design records, correspondence, reports, or other documentation.
- ◆ The activities covered in Unit FC06 04 are likely to involve the need for the candidate to work with colleagues, both internal and external to their organisation. Evidence produced for this Unit, that covers interactions with colleagues, may also be used towards the achievement of Unit FA8E04 (Develop Productive Working Relationships with Colleagues). Assessors should be aware of the opportunities that exist to cross-reference both performance and knowledge evidence to other Units, to minimise duplication of assessment activity.
- ◆ **Knowledge and Understanding** — The general and specific knowledge and understanding requirements listed in the NOS must be covered in full for Unit accreditation. The candidate may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met.
- ◆ **Behaviours** — The NOS for this Unit include two items that are classified as 'Behaviours'. The candidate must provide evidence to show that they work in a manner which:
 - responds positively and creatively to setbacks
 - takes pride in delivering high quality work

Examples of the types of evidence that could cover these requirements may include:

- ◆ **Responding positively and creatively to setbacks:**
 - being responsive to the requirements of line managers, clients, or other stakeholders, who require updates and alterations to be made to their designs
 - adjusting designs to accommodate unexpected circumstances that are encountered when liaising with colleagues on site

(Evidence of both of the above could be found in the evolution of draft to final designs, where changes and updates have been implemented, and in records of correspondence with colleagues.)

- ◆ **Taking pride in delivering high quality work:**
 - following the requirements of the organisation in respect of using design conventions, specifications, components, etc
 - producing neat and clear draft and final network designs and related notes, that meet the requirements of the organisation and can be understood and interpreted clearly by clients, contractors and others who may need to use the designs
 - showing that the designs that they produce pass the inspection of the senior designer or line manager
 - enjoying positive working relationships (eg via correspondence records) with various colleagues, individuals and organisations

Unit FC06 04 is a **mandatory Unit** in the SVQ3 Designing Water Networks.

FA9X 04 Provide Technical Information for the Design of Utility Networks

Unit content

This Unit allows candidates to show that they have the skills and knowledge to work with the client and advise them on the technical information within the specification.

The candidate will be able to provide data and information about all the relevant features in the design and ensure the client understands them. They must draw on a wide range of sources of data and information to ensure that the material presented to the client is full and complete. The candidate must provide clear and succinct information to the client. High levels of verbal and textual communication skills are used to give and exchange information.

The client can be either a 'developer-client' or 'adopting utility-client/asset owner'.

Candidates need to provide evidence that they have the skills and competencies to:

- ◆ use data and information from technical documents
- ◆ provide technical information to clients

Assessor guidance on evidence

- ◆ This NOS Unit includes Skills and Competencies, General Knowledge, Unit-specific Knowledge and Behaviours. Candidates' evidence in total must show that they can cover all of these items consistently over time. Where no direct performance evidence exists from observations or other work records, the assessor needs to use questioning and discussion to ascertain the candidate's competence.
- ◆ The evidence used for this Unit must come from the candidate's own work activities, both in their own 'reporting base' and from site visits associated with their network design activities.
- ◆ The evidence produced for this Unit must show that technical information is provided for designs covering at least five of the following:
 - diversions
 - rehabilitations
 - reinforcement
 - cross-connections
 - security of supply
 - engineering difficulties (eg railways, bridge crossings, river crossings, etc)
 - trenchless technology
 - non-domestic use of water
 - reticulation
 - phasing
 - topography
- ◆ The total evidence produced for this Unit must also show that technical information is provided for a minimum of five completed designs, which must be for different locations/addresses (ie not designs for five phases on the same development, etc).

- ◆ Performance evidence generated in a realistic working environment, or using simulated activities, may not be used to cover this SVQ Unit.
- ◆ The Unit evidence is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, including draft and final network design records, correspondence, reports, or other documentation.
- ◆ The activities covered in Unit FC9X 04 are likely to involve the need for the candidate to work with colleagues, both internal and external to their organisation. Evidence produced for this Unit, that covers interactions with colleagues, may also be used towards the achievement of Unit FA8E 04 (Develop Productive Working Relationships with Colleagues). Assessors should be aware of the opportunities that exist to cross-reference both performance and knowledge evidence to other Units, to minimise duplication of assessment activity.
- ◆ **Knowledge and Understanding** — The general and specific knowledge and understanding requirements listed in the NOS must be covered in full for Unit accreditation. The candidate may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met.
- ◆ **Behaviours** — The NOS for this Unit include two items that are classified as 'Behaviours'. The candidate must provide evidence to show that they work in a manner which:
 - responds positively and creatively to setbacks
 - takes pride in delivering high quality work

Examples of the types of evidence that could cover these requirements may include:

- ◆ **Responding positively and creatively to setbacks:**
 - being responsive to the requirements of line managers, clients, or other stakeholders, who require updates and alterations to be made to their designs
 - adjusting designs to accommodate unexpected circumstances that are encountered when liaising with colleagues on site

(Evidence of both of the above could be found in the evolution of draft to final designs, where changes and updates have been implemented, and in records of correspondence with colleagues.)

- ◆ **Taking pride in delivering high quality work:**
 - following the requirements of the organisation in respect of using design conventions, specifications, components, etc
 - producing neat and clear draft and final network designs and related notes, that meet the requirements of the organisation and can be understood and interpreted clearly by clients, contractors and others who may need to use the designs
 - showing that the designs that they produce pass the inspection of the senior designer or line manager
 - enjoying positive working relationships (eg via correspondence records) with various colleagues, individuals and organisations

Unit FA9X 04 is a **mandatory Unit** in the SVQ3 Designing Water Networks.

FA8E 04 **Develop Productive Working Relationships with Colleagues**

Unit content

This Unit is developed from NOS developed by the Management Standards Centre (the standards setting body for Management and Leadership), and uses a slightly different format from the water industry technical Units in the Designing Water Networks SVQ, which are based on NOS developed by Energy & Utility Skills. Instead of **Skills and Competencies**, this Unit has **Outcomes of Effective Performance**, which confirm what the candidate needs to be able to do. There is also an extensive section on **Behaviours which underpin effective performance**, against which the candidate must also provide performance evidence.

The Unit is about developing productive working relationships with colleagues, that enable the candidate to carry out their job role(s) effectively, and support the delivery of the overall aims of their organisation.

- ◆ **Colleagues**, in this Unit, are **anyone** with whom the candidate works. They may be:
 - people with whom they work on a daily basis, on the same team
 - colleagues from other departments (eg engineers, craft technicians, laboratory personnel, etc)
 - people from other organisations (eg visitors, contractors, trade suppliers, etc)
 - people from external agencies or industry regulators (eg HSE, Environment Agency, Fire Service, etc)
- ◆ **Communication** with colleagues may be demonstrated using a variety of sources, including but not limited to:
 - face-to-face communication
 - written communications: letters, e-mails, notes, memos
 - notes of telephone conversations
 - communication with control rooms and other colleagues off site, using organisation's systems

Candidates taking this Unit are likely to have some experience already of working with others, as part of a team. They may be in a team leader role, but this is not necessary to undertake the Unit.

Assessor guidance on evidence

- ◆ All of the evidence for this Unit must come from real work activities.
- ◆ Candidates are likely to generate evidence for this Unit throughout their daily activities, as they will need to interact with colleagues in order to carry out their job role. Assessors who see evidence of the candidate undertaking technical activities (researching and developing water network designs and producing related technical drawings), will also be able to identify coverage of aspects of this Unit. This must be recorded within the assessment reporting process, to minimise duplication of assessment.
- ◆ The evidence for this Unit **must include** valid evidence from those to whom the candidate reports (senior designer/line manager/supervisor) and from those who report to the candidate, if applicable (this does not apply if the candidate does not have anyone reporting to them, but is mandatory in all other cases — if candidates do not have anyone reporting to them, then please ensure that this is validated and clearly recorded in the assessment records). One way to provide this is through witness testimony from the colleagues concerned. (Please note that witness testimonies are not limited to those working at a different level from the candidate — they may also be colleagues working at the same level or in different departments, organisations, etc).
- ◆ Assessors should be aware that candidates may not realise that they carry out some of the activities in this Unit on a regular basis (eg resolving conflicts of interest or disagreements). It could be necessary to question a candidate in some detail to identify less obvious sources of evidence (eg conflicts of interest or disagreements may not revolve around major incidents or issues — they can relate to situations as regular as prioritising work activities, setting up or changing rotas, resolving issues or queries with external parties, such as engineers, clients or representatives of regulatory or local government bodies).
- ◆ The assessment of Units in this format, and in particular, the assessment of behaviours, is new to water industry SVQs, including the Designing Water Networks qualification. In general, evidence for this Unit could be generated from:
 - notes, minutes or records of formal and informal meetings with colleagues, including details of any actions agreed and how the candidate has fulfilled them
 - e-mails, memos and correspondence with colleagues, including details of any actions agreed and how the candidate has met them
 - witness statements from colleagues confirming how the candidate interacts with them and how they fulfil any commitments made
 - notes or other records of feedback given to colleagues by the candidate, or to the candidate by colleagues
 - personal statements by the candidate describing how they have interacted with colleagues and the reasons for action taken
 - successive iterations of designs, including the final approved design, showing that the requirements of colleagues have been used to review designs and make adjustments and updates

- ◆ Candidates working at Level 3 are likely to have access to diverse documentary evidence and records of interactions with colleagues, which reflects the more varied nature of their role. The awarding body has not provided industry-specific examples of evidence that can be used at Level 3 against individual NOS requirements, but assessors should encourage candidates to focus on the different circumstances and ways in which they communicate with colleagues, as these points are likely to generate the most effective workplace evidence for Unit MND1 (eg changes of shift or hand-over situations, where there is a clear requirement to communicate with colleagues in order to provide effective operational updates, are good sources of workplace evidence. At Level 3, there could also be more involvement with other departments, and, particularly, other organisations — contractors, regulatory inspectors, etc — and communications and correspondence with these colleagues is likely to yield robust evidence of developing productive working relationships.)
- ◆ **Knowledge and understanding** — The Knowledge and Understanding for this Unit is split into three sections:
 - general (relating to developing productive working relationships)
 - industry/sector specific (relating to the regulations, codes of practice, performance and behaviour standards and working culture of the industry in which the candidate works), and
 - context specific (relating to the specific work, processes, systems, reporting requirements and circumstances that apply to the candidate’s organisation and particular work situation)

Please remember, as an assessor, that the candidate needs to demonstrate their knowledge and understanding **as it relates to their particular job role**, in water network design.

For example

- ◆ **K2.3 — Working culture of the industry or sector.** The candidate needs to be aware of the working culture in the water industry and their own organisation. Sources of evidence for this could include their knowledge of areas such as equal opportunities and the application of the organisation’s equal opportunities policy; or health, safety and hygiene issues and policies, how these might affect their interactions with colleagues (eg third party visitors to sites, minimising Health and Safety risks, etc).
- ◆ **K3.6 — Power, influence and politics within the organisation.** Here, you could explore the candidate’s knowledge of the organisation’s structure and roles and responsibilities as they relate to their own job role. Who has responsibility for what aspects of treatment operations within their company? Who is able to authorise particular actions (eg in the event of an emergency), or implement changes to processes as a result of operational problems?

Unit FA8E 04 is a **mandatory Unit** in the SVQ3 Designing Water Networks.

This Unit is also a mandatory Unit in the SVQ3 Controlling Process Operations. If a candidate has achieved the Unit while working towards the Controlling Process Operations award, and subsequently changes functions, they may transfer the accreditation to the Designing Water Networks SVQ3. Likewise, if they gain this Unit as part of the Designing Water Networks SVQ and move to a process operations role, they may transfer the accreditation to the other SVQ.

4 Appendices

Appendix 1: Core Skills signposting

Core Skills signposting

SVQ3 Designing Water Networks

During the development of the national occupational standards, Energy & Utility Skills signposted the Units from the SVQ3 multi-utility network design NOS against the Core Skills. This signposting is reproduced here, to show you where candidates undertaking a SVQ3 Designing Water Networks could have opportunities to generate evidence towards Core Skills qualifications, which can be assessed at the same time as the SVQ.

The Core Skills are:

- ◆ Communication (C)
- ◆ Application of Number (AN)
- ◆ Information and Communication Technology (ICT)
- ◆ Working With Others(WO)
- ◆ Problem Solving (PS)

The following table lists the Units from the SVQ3 Designing Water Networks, and shows Core Skills coverage for each Unit. The numerical references show the level of the Core Skill covered.

Unit	Title	Core Skills				
		C	ICT	N	PS	WO
FA7W 04	Assess Factors that Impact on Utility Network Designs	6	6	6	/	6
FA7V 04	Assess Design Options for Utility Networks	6	6	6	/	6
FA9P 04	Produce Detailed Drawings to Support Utility Network Activities	6	6	6	6	6
FC06 04	Use Technical Information to Review Utility Network Detailed Drawings	6	6	6	6	6
FA9X 04	Provide Technical Information for the Design of Utility Networks	6	6	6	/	/
FA8E 04	Develop Productive Working Relationships with Colleagues	5	4	/	6	5

Appendix 2: Sample witness testimony pro forma (Generic)

Witness testimony

Name of the person for whom witness testimony is given:

What is your working relationship with this person?

Describe briefly what water network design activities you have seen them undertaking, and how they undertook the work, giving examples of specific activities that you have witnessed where possible. (NB These activities may include aspects of water network design, or associated activities, such as developing productive working relationships, etc.)

I can confirm the candidate's performance was satisfactory.

Name of witness _____ Job title _____

Contact details _____

Witness's signature _____ Date _____

Note to the assessment team

This is only an example of a witness testimony form. It can be tailored to particular competence requirements. For example, a question on this form could be, '*Give an example of how the candidate has...*', and you could put in a competence, for example, '*identified resource requirements*'. Alternatively, the appropriate Unit or qualification requirements could be photocopied and attached to this form (the competence or knowledge you would like the witness to comment on would need to be highlighted).

Appendix 3: Types of SVQ evidence and associated risks

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
1 Direct assessor observation in the workplace	<ul style="list-style-type: none"> ◆ The most direct form of assessment. ◆ Assessor can observe the candidate carrying out daily work activities. ◆ Observation likely to result in evidence for several Units at once. 	<ul style="list-style-type: none"> ◆ Logistical difficulties — labour and time intensive for assessors. ◆ Candidates may not work at a single site and may be called away to other sites at short notice (difficult to plan and carry out). 	<ul style="list-style-type: none"> ◆ Use of simulated activities in a realistic working environment (see below). ◆ Use of robust witness testimony from candidate's line manager. ◆ Limit mandatory observation and require diverse supporting evidence from workplace.
2 Direct assessor observation (simulated activities/realistic working environment)	<ul style="list-style-type: none"> ◆ Allows direct assessor observation. ◆ The centre has more control over the location and tasks covered — can ensure coverage of qualification requirements. ◆ Can be used to assess activities encountered rarely, or where there are practical or safety considerations (eg health and safety issues; emergency procedures). 	<ul style="list-style-type: none"> ◆ Potential for simulated situation not to reflect the candidate's working practice accurately. ◆ Does not provide evidence from real work activities. 	<ul style="list-style-type: none"> ◆ Robust controls required for the realistic working environment and tasks to be assessed. ◆ Requires robust supporting Performance Evidence from the workplace. ◆ May need further questioning to establish underpinning knowledge, particularly if candidate has difficulty meeting specific Performance Criteria with other workplace evidence (eg responding to emergencies).
3 Witness testimony	<ul style="list-style-type: none"> ◆ Useful record of candidate's work activity, provided by someone who has watched them working. 	<ul style="list-style-type: none"> ◆ Is the witness credible? Do they understand what is required, and do they have the skills and knowledge to provide an accurate witness testimony? ◆ Risks to objectivity of witness — what is their relationship to the candidate 	<ul style="list-style-type: none"> ◆ Need to record details of witnesses, and how their relationship to candidates. ◆ Centres need to brief witnesses clearly on what they should provide in a witness testimony. ◆ Centres may use pro forma, to prompt witnesses to provide an appropriate level of detail about the specific candidate or work activity.

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
3 Witness testimony (cont)	<ul style="list-style-type: none"> ◆ Variety of potential sources can be identified, depending on the skills the candidate needs to cover (eg manager; colleague; associates from other departments; customers — internal or external to employer organisation) — allows for diversity of evidence. ◆ Allows candidate to focus on the work activity, in a familiar environment, without the presence of an assessor observing them. ◆ Can support direct assessor observation evidence by showing consistency over time. 	<ul style="list-style-type: none"> ◆ Need for witnesses to ensure they provide a statement of fact, not an opinion on competence against the qualification requirements. ◆ Insufficient detail provided in reports — risk of statements being too generic. 	<ul style="list-style-type: none"> ◆ The use of witness testimonies from more than one source is recommended, as above. ◆ All witness testimonies must be subject to assessment by an A1 assessor.
4 Documentary evidence or product from the workplace	<ul style="list-style-type: none"> ◆ Useful to confirm detail of jobs undertaken for consistent competence, or varied work activities and to meet qualification requirements in full. ◆ Workplace documentation may provide confirmation of jobs completed, and also of coverage of qualification requirements on completion of appropriate records. 	<ul style="list-style-type: none"> ◆ Authenticity — is this a genuine record that can be verified against other types of evidence or workplace records? ◆ Storage — impracticality of storing large quantities of documentation or workplace products with evidence records. 	<ul style="list-style-type: none"> ◆ Assessors check the authenticity and validity of evidence, by questioning the candidate or corroborating against other records relating to the same job (eg observation reports, witness testimonies). ◆ Centres need to have robust evidence recording system where it is not appropriate to store items of evidence with assessment records, etc (must state location of evidence).

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
4 Documentary evidence or product from the workplace (cont)	<ul style="list-style-type: none"> ◆ Can be used to corroborate information provided in other sources of evidence (eg witness testimonies or reports, candidate's own accounts during discussions with assessors). ◆ Use of products to confirm technical skills (eg beads from completed PE fusion joints). 	<ul style="list-style-type: none"> ◆ Availability of records — some job records are held electronically in employer's IT system, and need to be available to assessors. 	<ul style="list-style-type: none"> ◆ Evidence (including IT records) must be capable of being produced for IV and EV review, until candidate certification is confirmed (otherwise it could be declared invalid).
5 Assessment meetings with candidates (general informal discussions)	<ul style="list-style-type: none"> ◆ Direct evidence from assessor. ◆ Can be used to confirm or discuss candidate's evidence and identify gaps remaining for future action. ◆ Oral questions can be asked of candidates, to confirm performance or Knowledge Evidence. 	<ul style="list-style-type: none"> ◆ Sufficient detail must be recorded to confirm qualification/Unit coverage — particularly if a variety of different Units and requirements are being covered in one meeting. ◆ May confirm candidate's knowledge more readily than performance — how does the assessor ensure that the candidate can apply their knowledge in a workplace situation. 	<ul style="list-style-type: none"> ◆ Assessors can use a pro forma for assessment discussions as required. ◆ Use of audio and video records for assessors to confirm the detail of qualification/Unit coverage — and they can be made available for IV/EV sampling (centre will need to have arrangements for storing audio or video evidence once assessed). ◆ Assessors can use a variety of different types of questions depending on the circumstances, to confirm candidate's performance as well as knowledge (eg questions revolving around a 'What if...?' scenario, or asking the candidate to describe particular mainlaying or servicelaying work they have previously undertaken).

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
6 Professional discussion interview	<ul style="list-style-type: none"> ◆ More formal, structured interview — allows the assessor to guide the discussion and to tailor the subjects covered to gaps in the candidate's evidence. ◆ Candidates have the opportunity to discuss their work in depth. ◆ Can generate a significant amount of evidence against various Units. ◆ Useful mechanism for generating evidence to meet the qualification requirements and fill in gaps towards the end of the assessment process, or complete a candidate's assessment. 	<ul style="list-style-type: none"> ◆ Requires assessor to conduct extensive preparation with close reference to the Unit and qualification requirements and record detail of what is covered. ◆ Not suitable for all candidates, particularly if they become nervous in a more formal assessment environment, or do not respond well to pressure. ◆ Not suitable for all situations, eg at the start of the qualification/assessment process. Candidate may not be comfortable with a more formal, in depth discussions if they are not familiar with assessment processes. 	<ul style="list-style-type: none"> ◆ Robust and detailed recording mechanism is needed — audio or video records, combined with a written pro forma or report could be useful here. ◆ This is not a mandatory form of evidence, but can be very useful: assessors should make sure they use this method with candidates who will benefit from it. ◆ The PDI, if used, should take place at a suitable stage in the assessment process — it is recommended that, if used with candidates who are new to the process, this is not their first experience of assessment. It can, though, be very effective in the later stages.
7 Recognition of prior learning (RPL)	<ul style="list-style-type: none"> ◆ Useful to confirm skills and knowledge that the candidate has already demonstrated (eg through gaining other qualifications). ◆ Useful to confirm experience of previous work undertaken. ◆ Has potential to reduce the assessment burden for both candidate and assessor. 	<ul style="list-style-type: none"> ◆ Requires assessor authentication. ◆ Evidence must be validated against the current qualification requirements. ◆ Age of the previous accreditation is important: it may not confirm the candidate's current competence. 	<ul style="list-style-type: none"> ◆ Centres wishing to use RPL must have a process for authenticating proposed RPL evidence and validating it against the current qualification requirements (including requesting the recognition of equivalence or exemption by the awarding organisation if appropriate).

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
7 Recognition of prior learning (RPL) (cont)	<ul style="list-style-type: none"> ◆ Can be used to request equivalence or exemptions for the qualification being undertaken. 		<ul style="list-style-type: none"> ◆ It is recommended that centres do not use RPL evidence that is too old to confirm current competence. ◆ Supporting evidence (eg witness testimony to confirm current competence) could be used in conjunction with RPL evidence to confirm current competence (depending on the age of the RPL). ◆ Any queries about validity of RPL should be raised with the IV and, if necessary, EV, before undertaking an extensive validation exercise, to agree a suitable solution.
8 Written answers to knowledge questions	<ul style="list-style-type: none"> ◆ Allows centre to assess the knowledge of larger numbers of candidates simultaneously and then concentrate on gaps in knowledge during future observations and assessments. ◆ Robust record of candidate's responses to knowledge questions, capable of being readily stored. 	<ul style="list-style-type: none"> ◆ Not an integrated form of knowledge assessment — a 'test' situation could inhibit candidates unused to academic assessment, and it may not enable candidates to apply knowledge requirements readily to workplace performance. ◆ Rigid format — does not allow assessors to probe a candidate's knowledge further. ◆ Risks to security — candidates must not have sight of question papers prior to assessment. 	<ul style="list-style-type: none"> ◆ It is not recommended as the only form of knowledge assessment used by centres. ◆ Candidates' evidence must cover of all Knowledge and Understanding requirements for each Unit taken. Marking schemes, etc are not suitable for this situation, because the knowledge associated with any 'incorrect' answers will need to be confirmed through other means.

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
8 Written answers to knowledge questions (cont)		<ul style="list-style-type: none"> ◆ Where large numbers of candidates may be involved, multiple versions of question papers could be required. 	<ul style="list-style-type: none"> ◆ If using written questioning, the centre will need to ensure that it has verifiable arrangements for the security of papers, for controlling assessment conditions, for providing for candidates unable to complete written question papers, and for provision of multiple question papers over time.
9 Records of oral questioning and answers given	<ul style="list-style-type: none"> ◆ Allows assessors to explore a candidate's knowledge freely depending upon responses to initial questions. ◆ The assessor is responsible for recording the responses and cross-referencing against Unit and qualification requirements. ◆ Can be used during any assessment discussions or observation to support candidate's Performance Evidence. 	<ul style="list-style-type: none"> ◆ Logistical difficulties for assessors in recording questions and answers in written report form. ◆ Need to ensure consistency of approach to individual candidates in questioning (less obvious than using question papers). ◆ Need to ensure responses are cross-referenced to Unit/qualification requirements. 	<ul style="list-style-type: none"> ◆ Assessors can use a combination of recording methods if required — audio, video and/or written reports. ◆ For written reports, a pro forma covering questions asked and candidates' responses may be advisable. This can also cover cross-referencing to Unit/qualification requirements as necessary.
10 Audio or video evidence, and photographs	<ul style="list-style-type: none"> ◆ Useful to confirm some aspects of authenticity (eg as a record of assessor discussions or interviews). 	<ul style="list-style-type: none"> ◆ Some authenticity issues may be compromised by excessive use of visual (video and particularly photographic evidence) in particular — issues of being able to relate evidence directly to the candidate's work activity. 	<ul style="list-style-type: none"> ◆ Assessors to ensure evidence (particularly photographic evidence) can be authenticated. ◆ Discuss individual photographic or video evidence with the candidate to confirm how it relates to their work activities and the Unit or qualification requirements.

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
10 Audio or video evidence, and photographs (cont)	<ul style="list-style-type: none"> ◆ Avoids need for quantities of physical evidence to be stored — digital storage mechanisms can be used on-site, and stored using IT systems, memory sticks, etc. ◆ Visual evidence in particular can be useful as a starting point for discussions with candidates, etc. ◆ Evidence can readily be made available for IV and EV sampling. ◆ Allows assessor to revisit the evidence after recording to confirm the detail of the Unit/qualification coverage if necessary. 	<ul style="list-style-type: none"> ◆ Secure storage arrangements may be needed to preserve integrity of audio or visual evidence. ◆ It is not sufficient for candidates to provide visual material without any elaboration. ◆ Evidence provided in audio form only (eg recorded discussion with the assessor) may be insufficient to confirm the detail of the physical activities undertaken by the candidate. ◆ Need to be able to relate evidence to the qualification requirements. 	<ul style="list-style-type: none"> ◆ If the candidate intends to make use of video evidence or photographs, it is recommended that they take account of the need to establish a clear link with their own work activities (eg ensuring that the candidate is recorded undertaking their activities, so their involvement in the work situation is clear). ◆ If assessors use audio or visual evidence, a robust audit trail is needed to show where the Unit/qualification requirements are met, and confirm the assessment decision. (This could require some form of report or audit trail document in addition to the audio/visual record.) ◆ For qualifications at levels 1 and 2, where candidates may have access to limited amounts of documentary evidence and records, and work in an environment that requires them to undertake ‘hands-on’ operational work, some visual record of performance — rather than audio only — is likely to be needed to meet the specific qualifications requirements (eg direct assessor observation and report, witness testimony, video recording, etc).

Type of evidence	Advantages	Risks/Disadvantages	Suggested solutions
<p>11 Use of electronic storage media for candidates' evidence</p>	<ul style="list-style-type: none"> ◆ Avoids need for quantities of physical evidence to be stored — digital storage mechanisms can be used on-site and stored using IT systems, CDs, memory sticks, etc. ◆ Potentially allows quick communication of evidence between assessor and candidate (via e-mail). ◆ Allows the candidate to retain scanned or saved soft copies of job-related information easily where the originals may be required to be stored in a central function or elsewhere according to company or regulatory requirements. 	<ul style="list-style-type: none"> ◆ Authenticity issues — if this is a scanned document, can it be authenticated? Where is the original held? Is it evidence of the candidate's own work? ◆ Storage questions — need for candidates, assessors, IVs and EVs to be able to navigate through the stored evidence at different stages of qualifications delivery. 	<ul style="list-style-type: none"> ◆ Assessors to ensure that they validate and authenticate evidence during assessment activity. This could include requesting the original documents or records provided, and questioning the candidate in detail about the particular activities associated with the evidence, so that a decision is made regarding its relevance to the qualification requirements. ◆ Assessors must make the final decision about candidates' competence against the Unit and qualifications requirements: storage mechanisms such as e-portfolios could be very useful, but it is for the assessor to determine when the candidate is competent, and they must also have an audit trail to prove this. ◆ IVs and EVs to ensure that where electronic storage mechanisms are used for assessment, they incorporate authentication of the evidence records into sampling activities (eg by asking for copies of original documents produced by particular candidates to be made available for verification; by discussing some of these aspects in some detail with assessors and with candidates during verification).

Appendix 4: Sample assessor report form (generic)

Detail the outcome of the assessment

Candidate feedback/comments

Action points

Date, time and location of next assessment

What will be assessed

Has a copy of this form been given to the candidate for their evidence? Yes/No

Internal Verifier informed of assessment decision? Yes/No

Assessor's signature _____ **Date** _____

Candidate's signature _____ **Date** _____

If the internal verifier has sampled this report, please complete the details below:

Internal verifier's name _____

Internal verifier's signature _____ **Date** _____

SQA Unit ref	NOS ref	
		Question
		Candidate's response
		Question
		Candidate's response
		Question
		Candidate's response
		Question
		Candidate's response
		Question
		Candidate's response

SQA Unit ref	NOS ref	
		Question
		Candidate's response
		Question
		Candidate's response
		Question
		Candidate's response
		Question
		Candidate's response
		Question
		Candidate's response

5 Recording Documents

Assessment Summary and Confirmation

SVQ3 Designing Water Networks GA1J 23 Cover Sheet

Candidate's name		Candidate's SQA Number	
-------------------------	--	-------------------------------	--

Date registered for qualification		Assessment Centre	
--	--	--------------------------	--

Job Role/Location, or other information relevant to this qualification	
---	--

Unit completion

Unit Title	SQA Ref	Mandatory/Optional	Assessor	Date of final assessment	Internal Verifier
Assess Factors that Impact on Utility Network Designs	FA7W 04	Mandatory			
Assess Design Options for Utility Networks	FA7V 04	Mandatory			
Produce Detailed Drawings to Support Utility Network Activities	FA9P 04	Mandatory			
Use Technical Information to Review Utility Network Detailed Drawings	FC06 04	Mandatory			
Provide Technical Information for the Design of Utility Networks	FA9X 04	Mandatory			
Develop Productive Working Relationships with Colleagues	FA8E 04	Mandatory			

NB For a full qualification, candidates must complete all six mandatory Units.

Candidate declaration

I confirm that the evidence for this **SVQ3 Designing Water Networks** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and I am satisfied that the candidate has demonstrated competence for the Units from the **SVQ3 Designing Water Networks (Water)** as listed previously.

Assessor's signature _____ **Date** _____

Internal verifier confirmation (If sampled)

I confirm that I am satisfied that the evidence has been produced in line with the qualification requirements for **SVQ3 Designing Water Networks (Water)**, and that the certificates may be claimed from SQA.

Internal Verifier's signature _____ **Date** _____

External Verifier's confirmation (If sampled)

External Verifier's signature _____ **Date** _____

Assessment Summary and Confirmation

Unit FA7W 04 Assess Factors that Impact on Utility Network Designs

SCQF level	7	Credit Value	8	GLH	
------------	---	--------------	---	-----	--

Candidate's name		Assessor's name	
------------------	--	-----------------	--

Types of evidence provided for this Unit (please tick as appropriate)	Assessor observation report	<input type="checkbox"/>	Witness testimony	<input type="checkbox"/>
	Workplace records/products (includes designs)	<input type="checkbox"/>	Record of assessor-candidate discussions	<input type="checkbox"/>
	Professional discussion interview	<input type="checkbox"/>	Written knowledge questions	<input type="checkbox"/>
	Records of oral questions and candidate's answers	<input type="checkbox"/>	RPL	<input type="checkbox"/>

Evidence Requirements for Unit FA7W 04 (please tick as appropriate)

Evidence shows that the designs cover — at least five of the items listed must be covered in evidence. (please tick as appropriate)	Diversions	<input type="checkbox"/>	Rehabilitations	<input type="checkbox"/>
	Reinforcements	<input type="checkbox"/>	Cross-connections	<input type="checkbox"/>
	Security of supply	<input type="checkbox"/>	Phasings	<input type="checkbox"/>
	Trenchless technology	<input type="checkbox"/>	Non-domestic use of water	<input type="checkbox"/>
	Reticulation	<input type="checkbox"/>	Engineering difficulties (eg railways — bridge crossings, river crossings, etc)	<input type="checkbox"/>
	Topography	<input type="checkbox"/>		

The evidence is:

	Yes	No		Yes	No
From real work activities — carried out in the candidate's workplace (no simulation or realistic working environment was used)	<input type="checkbox"/>	<input type="checkbox"/>	From at least five different designs — for different locations/addresses	<input type="checkbox"/>	<input type="checkbox"/>
Valid — meets the qualification requirements and demonstrates competence for Unit FA7W 04	<input type="checkbox"/>	<input type="checkbox"/>	Authentic — is the candidate's own work and can be verified as genuine	<input type="checkbox"/>	<input type="checkbox"/>
Reliable — shows genuine sustained competence over a period of time	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient — total evidence covers all Performance Criteria, knowledge and understanding and scope requirements for FA7W 04.	<input type="checkbox"/>	<input type="checkbox"/>
Current — recent enough to show current competence	<input type="checkbox"/>	<input type="checkbox"/>			

Unit FA7W 04 Assess Factors that Impact on Utility Network Designs

Candidate declaration

I confirm that the evidence listed for **Unit FA7W 04** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and am satisfied that the candidate has demonstrated competence against the qualification requirements for **Unit FA7W 04**.

Assessor's signature _____ **Date** _____

Assessor's counter-signature (if appropriate) _____ **Date** _____

If sampled

Internal verifier's name _____

Internal verifier's signature _____ **Date** _____

External Verifier's name _____

External Verifier's signature _____ **Date** _____

Unit FA7W 04 Assess Factors that Impact on Utility Network Designs

Candidate's name _____

1 Research and interrogate technical data and information	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
1.1 Outline the plan for carrying out the research.	
1.2 Use and interpret utility network design specifications to determine where different types of data and information can be obtained.	
1.3 Take into account company policy, procedures and guidelines to inform the data collection and its use.	
1.4 Incorporate information produced by colleagues in other departments.	
1.5 Retrieve data from databases, document control systems, libraries of standards, registers and archives of drawings and supporting documents.	
1.6 Use software packages to store and handle the data collected.	
1.7 Carry out comprehensive research of the legislative, operational, technological and utility implications.	
1.8 Work within the job role and its responsibilities.	

Unit FA7W 04 Assess Factors that Impact on Utility Network Designs

Candidate's name _____

2 Assess technical data and information	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
2.1 Assess the effects of operational implications determined through network models, method statements, work programmes, historical records, risk and operational maintenance cycles, and operating procedures.	
2.2 Assess the effects of technological implications determined through national and international standards, manufacturing and customers' specifications, procedures manuals, and operating parameters.	
2.3 Assess the utility requirements for materials, safety, tolerances, physical dimensions, working and operational characteristics.	
2.4 Assess geotechnical information to ascertain ground conditions and likely areas of contamination.	
2.5 Address any impacts which might arise from future demand on the network.	
2.6 Take into account, during the assessment process, final costs and time to produce.	
2.7 Incorporate the implications of legislative requirements in the assessment equation.	

Unit FA7W 04 Assess Factors that Impact on Utility Network Designs

Candidate's name _____

3 Interpret technical data and information	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
3.1 Interpret the assessments according to the design briefs which will be produced subsequently.	
3.2 Check the interpretation of results is valid.	
3.3 Base the interpretation on results which can be shown to be as reliable as possible.	
3.4 Show any distinction between the results and the interpretation placed upon them.	
3.5 Prioritise the factors that will affect the design specification.	
3.6 Highlight potential risk associated with the factors which impact on the design briefs.	
3.7 Draw attention to any unexpected outcomes.	
4 Present technical data and information	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
4.1 Produce documentary information and offer verbal support where required.	
4.2 Structure and present the information in a format which will be understood by the design team.	
4.3 Support textual information with drawings, calculations, sketches and schedules.	
4.4 Present data and information using word processing and spreadsheet software.	

Unit FA7W 04 Assess Factors that Impact on Utility Network Designs

Candidate's name _____

Behaviour which underpins effective performance — the candidate can:	Evidence or File X-Ref/Coverage
B1 Work in a manner which responds positively and creatively to setbacks.	
B2 Work in a manner which shows pride in achieving high quality work.	

Knowledge and Understanding	Evidence or File X-Ref/Coverage
1 Analysis methods and techniques.	
2 Company lines of communication and reporting procedures.	
3 How to address ethical issues and regulatory constraints.	
4 How to structure and present data and information.	
5 How to test the validity of interpretative techniques.	
6 How to use information sources and document systems.	
7 Methods for confirming reliability of data.	
8 Research methods and investigate techniques used commonly in the utilities industry.	
9 Risks associated with analytical techniques used and how to manage them.	
10 The legislative implications on operational, technological and utility requirements.	

Unit FA7V 04 Assess Design Options for Utility Networks

SCQF level	7	Credit Value	6	GLH	
------------	---	--------------	---	-----	--

Candidate's name		Assessor's name	
------------------	--	-----------------	--

Types of evidence provided for this Unit (please tick as appropriate)	Assessor observation report	<input type="checkbox"/>	Witness testimony	<input type="checkbox"/>
	Workplace records/products (includes designs)	<input type="checkbox"/>	Record of assessor-candidate discussions	<input type="checkbox"/>
	Professional discussion interview	<input type="checkbox"/>	Written knowledge questions	<input type="checkbox"/>
	Records of oral questions and candidate's answers	<input type="checkbox"/>	RPL	<input type="checkbox"/>

Evidence Requirements for Unit FA7V 04 (please tick as appropriate)

Evidence shows that the designs cover: at least five of the items listed must be covered in evidence. (please tick as appropriate)	Diversions	<input type="checkbox"/>	Rehabilitations	<input type="checkbox"/>
	Reinforcements	<input type="checkbox"/>	Cross-connections	<input type="checkbox"/>
	Security of supply	<input type="checkbox"/>	Phasings	<input type="checkbox"/>
	Trenchless technology	<input type="checkbox"/>	Non-domestic use of water	<input type="checkbox"/>
	Reticulation	<input type="checkbox"/>	Engineering difficulties (eg railways — bridge crossings, river crossings, etc)	<input type="checkbox"/>
	Topography	<input type="checkbox"/>		

The evidence is:

	Yes	No		Yes	No
From real work activities — carried out in the candidate's workplace (no simulation or realistic working environment was used).	<input type="checkbox"/>	<input type="checkbox"/>	From at least five different designs — for different locations/addresses.	<input type="checkbox"/>	<input type="checkbox"/>
Valid — meets the qualification requirements and demonstrates competence for Unit FA7V 04.	<input type="checkbox"/>	<input type="checkbox"/>	Authentic — is the candidate's own work and can be verified as genuine.	<input type="checkbox"/>	<input type="checkbox"/>
Reliable — shows genuine sustained competence over a period of time.	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient — total evidence covers all Performance Criteria, knowledge and understanding and scope requirements for FA7V 04.	<input type="checkbox"/>	<input type="checkbox"/>
Current — recent enough to show current competence.	<input type="checkbox"/>	<input type="checkbox"/>			

Unit FA7V 04 Assess Design Options for Utility Networks

Candidate declaration

I confirm that the evidence listed for **Unit FA7V 04** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and am satisfied that the candidate has demonstrated competence against the qualification requirements for **Unit FA7V 04**.

Assessor's signature _____ **Date** _____

Assessor's counter-signature (if appropriate) _____ **Date** _____

If sampled

Internal verifier's name _____

Internal verifier's signature _____ **Date** _____

External Verifier's name _____

External Verifier's signature _____ **Date** _____

Unit FA7V 04 Assess Design Options for Utility Networks

Candidate's name _____

1 Interpret design requirements to inform the design process	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
1.1 Use documentation and discussions with relevant colleagues to check understanding of the design requirements.	
1.2 Agree the design requirements with the person requesting the work.	
1.3 Take into account the implications of technological, operational, legal, environmental and safety factors which need to be incorporated in the design options.	
1.4 Assess which design options will meet requirements and the design specification.	
1.5 Deal with problems relating to the design requirements and agree solutions with technical experts.	
2 Assess a range of network design options	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
2.1 Develop and test out different design options and make sure they will work.	
2.2 Check and confirm the design options are practical, fit-for-purpose, and comply with all safety and ethical requirements.	
2.3 Assess design options which meet different types of purpose.	
2.4 Take into account varying cost implications depending on the design option.	
2.5 Estimate timescales — which would be incurred during the development and production processes — to accompany the different design options.	

Unit FA7V 04 Assess Design Options for Utility Networks

Candidate's name _____

Behaviour which underpins effective performance — the candidate can:	Evidence or File X-Ref/Coverage
B1 Work in a manner which responds positively and creatively to setbacks.	
B2 Work in a manner which shows pride in achieving high quality work.	

Knowledge and Understanding	Evidence or File X-Ref/Coverage
1 Company lines of communication and reporting procedures.	
2 Design calculations for materials, tolerances, physical dimensions and safety.	
3 Design methods and techniques — including software and documentation — used commonly in the utility industry.	
4 How to access and use databases, software packages, the internet, libraries of standards, and relevant information sources and document systems.	
5 How to estimate cost and time to produce.	
6 How to extract information from method statements, work programmes, risk and operational maintenance cycles, and operating procedures.	
7 How to use data and information from feasibility studies, design reports, appraisals, tenders, cost control and quality assurance documents, risk reviews and hazard reports.	
8 How to use evaluation criteria which include space, safety, cost, materials, operability and time to prepare.	

Unit FA7V 04 Assess Design Options for Utility Networks

Candidate's name _____

Knowledge and Understanding (cont)	Evidence or File X-Ref/Coverage
9 Impact of services and mains on the site.	
10 Working and operational characteristics of materials, components, tolerances, and physical dimensions to be specified.	

Unit FA9P 04 Produce Detailed Drawings to Support Utility Network Activities

SCQF level	6	Credit Value	8	GLH	
------------	---	--------------	---	-----	--

Candidate's name		Assessor's name	
------------------	--	-----------------	--

Types of evidence provided for this Unit (please tick as appropriate)	Assessor observation report	<input type="checkbox"/>	Witness testimony	<input type="checkbox"/>
	Workplace records/products (includes designs)	<input type="checkbox"/>	Record of assessor-candidate discussions	<input type="checkbox"/>
	Professional discussion interview	<input type="checkbox"/>	Written knowledge questions	<input type="checkbox"/>
	Records of oral questions and candidate's answers	<input type="checkbox"/>	RPL	<input type="checkbox"/>

Evidence Requirements for Unit FA9P 04 (please tick as appropriate)

Evidence shows that the designs cover: at least five of the items listed must be covered in evidence. (please tick as appropriate)	Diversions	<input type="checkbox"/>	Rehabilitations	<input type="checkbox"/>
	Reinforcements	<input type="checkbox"/>	Cross-connections	<input type="checkbox"/>
	Security of supply	<input type="checkbox"/>	Phasings	<input type="checkbox"/>
	Trenchless technology	<input type="checkbox"/>	Non-domestic use of water	<input type="checkbox"/>
	Reticulation	<input type="checkbox"/>	Engineering difficulties (eg railways — bridge crossings, river crossings, etc)	<input type="checkbox"/>
	Topography	<input type="checkbox"/>		

The evidence is:

	Yes	No		Yes	No
From real work activities — carried out in the candidate's workplace (no simulation or realistic working environment was used).	<input type="checkbox"/>	<input type="checkbox"/>	From at least five different designs — for different locations/addresses.	<input type="checkbox"/>	<input type="checkbox"/>
Valid — meets the qualification requirements and demonstrates competence for Unit FA9P 04.	<input type="checkbox"/>	<input type="checkbox"/>	Authentic — is the candidate's own work and can be verified as genuine.	<input type="checkbox"/>	<input type="checkbox"/>
Reliable — shows genuine sustained competence over a period of time.	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient — total evidence covers all Performance Criteria, knowledge and understanding and scope requirements for FA9P 04.	<input type="checkbox"/>	<input type="checkbox"/>
Current — recent enough to show current competence.	<input type="checkbox"/>	<input type="checkbox"/>			

Unit FA9P 04 Produce Detailed Drawings to Support Utility Network Activities

Candidate declaration

I confirm that the evidence listed for **Unit FA9P 04** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and am satisfied that the candidate has demonstrated competence against the qualification requirements for **Unit FA9P 04**.

Assessor's signature _____ **Date** _____

Assessor's counter-signature (if appropriate) _____ **Date** _____

If sampled

Internal verifier's name _____

Internal verifier's signature _____ **Date** _____

External Verifier's name _____

External Verifier's signature _____ **Date** _____

Unit FA9P 04 Produce Detailed Drawings to Support Utility Network Activities

Candidate's name _____

1 Produce detailed technical drawings	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
1.1 Produce a range of different types of drawings which are two and three dimensional, and which are suitable for the purposes they are to be used for.	
1.2 Produce drawings to support analysis, obtaining consents, site installation, procurement, contract, production, sub-contract and specialist details, and presentation.	
1.3 Produce location, assembly and component drawings which meet the design specification.	
1.4 Produce working drawings which meet the design requirements and will optimise the network's operation.	
1.5 Produce and use sketches to facilitate understanding.	
1.6 Use standard drawing conventions and justify any deviations from them.	
1.7 Select and use manual or electronic media consistent with the resources and time available.	
1.8 Clarify any information to be included which is incomplete and inconsistent, and make accurate amendments.	

Unit FA9P 04 Produce Detailed Drawings to Support Utility Network Activities

Candidate's name _____

2 Obtain checks and approvals	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
2.1 Get all the required checks and approvals for positioning, shape, dimensions, tolerances, composition, fixing, technical content, accuracy and completeness.	
2.2 Get all the required checks and approvals for status, annotation, symbols and conventions, referencing, presentation, cross-referencing and correlation with associated documents, and interoperability of CAD.	
3 Maintain records and document storage	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
3.1 Record document approval and revision in the designated place.	
3.2 Keep incoming and outgoing drawing and document registers up-to-date.	
3.3 Maintain quality assurance documentation and records.	

Unit FA9P 04 Produce Detailed Drawings to Support Utility Network Activities

Candidate's name _____

Behaviour which underpins effective performance — the candidate can:	Evidence or File X-Ref/Coverage
B1 Work in a manner which responds positively and creatively to setbacks.	
B2 Work in a manner which shows pride in achieving high quality work.	

Knowledge and Understanding	Evidence or File X-Ref/Coverage
1 Different types of drawings and their purposes.	
2 How to complete and keep accurate and up-to-date records.	
3 How to identify and justify deviations.	
4 How to maintain consistency with quality assurance procedures.	
5 How to use drawing conventions to comply with standards and regulations.	
6 The industry codes of practice, industry standards and practice, methods of co-ordination.	
7 Types of drawings used in the utility industry.	
8 Types of manual and electronic design media.	
9 When and how to get checks and approvals.	

Unit FC06 04 Use Technical Information to Review Utility Network Detailed Drawings

SCQF level	6	Credit Value	5	GLH	
-------------------	---	---------------------	---	------------	--

Candidate's name		Assessor's name	
-------------------------	--	------------------------	--

Types of evidence provided for this Unit (please tick as appropriate)	Assessor observation report	<input type="checkbox"/>	Witness testimony	<input type="checkbox"/>
	Workplace records/products (includes designs)	<input type="checkbox"/>	Record of assessor-candidate discussions	<input type="checkbox"/>
	Professional discussion interview	<input type="checkbox"/>	Written knowledge questions	<input type="checkbox"/>
	Records of oral questions and candidate's answers	<input type="checkbox"/>	RPL	<input type="checkbox"/>

Evidence Requirements for Unit FC06 04 (please tick as appropriate)

Evidence shows that the designs cover: at least five of the items listed must be covered in evidence. (please tick as appropriate)	Diversions	<input type="checkbox"/>	Rehabilitations	<input type="checkbox"/>
	Reinforcements	<input type="checkbox"/>	Cross-connections	<input type="checkbox"/>
	Security of supply	<input type="checkbox"/>	Phasings	<input type="checkbox"/>
	Trenchless technology	<input type="checkbox"/>	Non-domestic use of water	<input type="checkbox"/>
	Reticulation	<input type="checkbox"/>	Engineering difficulties (eg railways — bridge crossings, river crossings, etc)	<input type="checkbox"/>
	Topography	<input type="checkbox"/>		

The evidence is:

	Yes	No		Yes	No
From real work activities — carried out in the candidate's workplace (no simulation or realistic working environment was used).	<input type="checkbox"/>	<input type="checkbox"/>	From at least five different designs — for different locations/addresses.	<input type="checkbox"/>	<input type="checkbox"/>
Valid — meets the qualification requirements and demonstrates competence for Unit FC06 04.	<input type="checkbox"/>	<input type="checkbox"/>	Authentic — is the candidate's own work and can be verified as genuine.	<input type="checkbox"/>	<input type="checkbox"/>
Reliable — shows genuine sustained competence over a period of time.	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient — total evidence covers all Performance Criteria, knowledge and understanding and scope requirements for FC06 04.	<input type="checkbox"/>	<input type="checkbox"/>
Current — recent enough to show current competence.	<input type="checkbox"/>	<input type="checkbox"/>			

Unit FC06 04 Use Technical Information to Review Utility Network Detailed Drawings

Candidate declaration

I confirm that the evidence listed for **Unit FC06 04** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and am satisfied that the candidate has demonstrated competence against the qualification requirements for **Unit FC06 04**.

Assessor's signature _____ **Date** _____

Assessor's counter-signature (if appropriate) _____ **Date** _____

If sampled

Internal verifier's name _____

Internal verifier's signature _____ **Date** _____

External Verifier's name _____

External Verifier's signature _____ **Date** _____

Unit FC06 04 Use Technical Information to Review Utility Network Detailed Drawings

1 Review design compliance using utility industry standards and technical information	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
1.1 Locate and extract information from up-to-date standards and technical information used within the utility industries.	
1.2 Use the information extracted to determine the features required within drawings.	
1.3 Use the information extracted to determine the materials, formats and conventions which can be used.	
2 Review detailed technical drawings	
2.1 Review the requirements of the detailed drawings.	
2.2 Use up-to-date data storage to keep the technical information secure.	
2.3 Liaise with colleagues, and clients, who have technical expertise and who can provide assistance when required.	
2.4 Deal promptly and effectively with any problems with the technical information and its interpretation.	

Unit FC06 04 Use Technical Information to Review Utility Network Detailed Drawings

Candidate's name _____

Behaviour which underpins effective performance — the candidate can:	Evidence or File X-Ref/Coverage
B1 Work in a manner which responds positively and creatively to setbacks.	
B2 Work in a manner which shows pride in achieving high quality work.	

Knowledge and Understanding	Evidence or File X-Ref/Coverage
1 Company lines of communication and reporting procedures.	
2 How to select data, including loads, lengths, layouts, quantities, materials, scales, dimensions, Units, code references, standards.	
3 How to select features for inclusion in technical information.	
4 How to use electronically generated and paper-based drawings.	
5 How to use technical information document and storage systems.	
6 Standards, materials, formats and conventions used for utility network drawings.	
7 Types and sources of technical information required for drawings, including specifications, manufacturer and vendor bulletins, codes and data sheets.	

Unit FA9X 04 Provide Technical Information for the Design of Utility Networks

SCQF level	6	Credit Value	6	GLH	
------------	---	--------------	---	-----	--

Candidate's name		Assessor's name	
------------------	--	-----------------	--

Types of evidence provided for this Unit (please tick as appropriate)	Assessor observation report	<input type="checkbox"/>	Witness testimony	<input type="checkbox"/>
	Workplace records/products (includes designs)	<input type="checkbox"/>	Record of assessor-candidate discussions	<input type="checkbox"/>
	Professional discussion interview	<input type="checkbox"/>	Written knowledge questions	<input type="checkbox"/>
	Records of oral questions and candidate's answers	<input type="checkbox"/>	RPL	<input type="checkbox"/>

Evidence Requirements for Unit FA9X 04 (please tick as appropriate)

Evidence shows that the designs cover: at least five of the items listed must be covered in evidence. (please tick as appropriate)	Diversions	<input type="checkbox"/>	Rehabilitations	<input type="checkbox"/>
	Reinforcements	<input type="checkbox"/>	Cross-connections	<input type="checkbox"/>
	Security of supply	<input type="checkbox"/>	Phasings	<input type="checkbox"/>
	Trenchless technology	<input type="checkbox"/>	Non-domestic use of water	<input type="checkbox"/>
	Reticulation	<input type="checkbox"/>	Engineering difficulties (eg railways — bridge crossings, river crossings, etc)	<input type="checkbox"/>
	Topography	<input type="checkbox"/>		

The evidence is:

	Yes	No		Yes	No
From real work activities — carried out in the candidate's workplace (no simulation or realistic working environment was used).	<input type="checkbox"/>	<input type="checkbox"/>	From at least five different designs — for different locations/addresses.	<input type="checkbox"/>	<input type="checkbox"/>
Valid — meets the qualification requirements and demonstrates competence for Unit FA9X 04.	<input type="checkbox"/>	<input type="checkbox"/>	Authentic — is the candidate's own work and can be verified as genuine.	<input type="checkbox"/>	<input type="checkbox"/>
Reliable — shows genuine sustained competence over a period of time.	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient — total evidence covers all Performance Criteria, knowledge and understanding and scope requirements for FA9X 04.	<input type="checkbox"/>	<input type="checkbox"/>
Current — recent enough to show current competence.	<input type="checkbox"/>	<input type="checkbox"/>			

Unit FA9X 04 Provide Technical Information for the Design of Utility Networks

Candidate declaration

I confirm that the evidence listed for **Unit FA9X 04** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and am satisfied that the candidate has demonstrated competence against the qualification requirements for **Unit FA9X 04**.

Assessor's signature _____ **Date** _____

Assessor's counter-signature (if appropriate) _____ **Date** _____

If sampled

Internal verifier's name _____

Internal verifier's signature _____ **Date** _____

External Verifier's name _____

External Verifier's signature _____ **Date** _____

Unit FA9X 04 Provide Technical Information for the Design of Utility Networks

Candidate's name _____

1 Confirm the ongoing performance of equipment and take readings	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
1.1 Interpret data and information from technical specifications and design documentation.	
1.2 Use databases, software packages, the internet, and libraries of standards to support preparation of technical information.	
1.3 Draw on information from suppliers to support the preparation process.	
1.4 Follow industry standards and codes of practice.	
2 Provide technical information to clients	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
2.1 Specify the technical requirements accurately.	
2.2 Help clients understand technical specifications and design details.	
2.3 Provide information to the client in ways which use recognised and accepted industry conventions for terms and references.	
2.4 Present information to the client in a user-friendly way which uses both textual and diagrammatic or pictorial methods.	
2.5 Show how quality assurance, risk and cost control data support the technical information.	
2.6 Use up-to-date electronic presentation and data storage methods.	
2.7 Use two-way exchange of information with the client and confirm their final understanding.	

Unit FA9X 04 Provide Technical Information for the Design of Utility Networks

Candidate's name _____

Behaviour which underpins effective performance — the candidate can:	Evidence or File X-Ref/Coverage
B1 Work in a manner which responds positively and creatively to setbacks.	
B2 Work in a manner which shows pride in achieving high quality work.	

Knowledge and Understanding	Evidence or File X-Ref/Coverage
1 Company lines of communication and reporting procedures.	
2 Design, stress and SHA calculations.	
3 Different types of working relationships with clients and colleagues.	
4 How to use presentation methods and techniques which include drawings, calculations, sketches, schedules and spreadsheets.	
5 How to use technical information document and storage systems.	
6 Network and utility assets.	
7 Permit to work systems and method statements.	
8 Regulations, practices and procedures and health and safety codes.	

Unit FA8E 04 Develop Productive Working Relationships with Colleagues

SCQF level	5	Credit Value	9	GLH	
------------	---	--------------	---	-----	--

Candidate's name		Assessor's name	
------------------	--	-----------------	--

Types of evidence provided for this Unit (please tick as appropriate)	Assessor observation report	<input type="checkbox"/>	Witness testimony	<input type="checkbox"/>
	Workplace records/products (includes designs)	<input type="checkbox"/>	Record of assessor-candidate discussions	<input type="checkbox"/>
	Professional discussion interview	<input type="checkbox"/>	Written knowledge questions	<input type="checkbox"/>
	Records of oral questions and candidate's answers	<input type="checkbox"/>	RPL	<input type="checkbox"/>

Evidence Requirements for Unit FA8E 04 (please tick as appropriate)

Evidence shows that the designs cover: at least five of the items listed must be covered in evidence. (please tick as appropriate)	Diversions	<input type="checkbox"/>	Rehabilitations	<input type="checkbox"/>
	Reinforcements	<input type="checkbox"/>	Cross-connections	<input type="checkbox"/>
	Security of supply	<input type="checkbox"/>	Phasings	<input type="checkbox"/>
	Trenchless technology	<input type="checkbox"/>	Non-domestic use of water	<input type="checkbox"/>
	Reticulation	<input type="checkbox"/>	Engineering difficulties (eg railways — bridge crossings, river crossings, etc)	<input type="checkbox"/>
	Topography	<input type="checkbox"/>		

The evidence is:

	Yes	No		Yes	No
From real work activities — carried out in the candidate's workplace (no simulation or realistic working environment was used).	<input type="checkbox"/>	<input type="checkbox"/>	From at least five different designs — for different locations/addresses.	<input type="checkbox"/>	<input type="checkbox"/>
Valid — meets the qualification requirements and demonstrates competence for Unit FA8E 04.	<input type="checkbox"/>	<input type="checkbox"/>	Authentic — is the candidate's own work and can be verified as genuine.	<input type="checkbox"/>	<input type="checkbox"/>
Reliable — shows genuine sustained competence over a period of time.	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient — total evidence covers all Performance Criteria, knowledge and understanding and scope requirements for FA8E 04.	<input type="checkbox"/>	<input type="checkbox"/>
Current — recent enough to show current competence.	<input type="checkbox"/>	<input type="checkbox"/>			

Unit FA8E 04 Develop Productive Working Relationships with Colleagues

Candidate declaration

I confirm that the evidence listed for **Unit FA8E 04** is my own work, and I have collected my evidence in line with the qualification requirements.

Candidate's signature _____ **Date** _____

Assessor confirmation

I confirm that I have assessed the evidence produced and am satisfied that the candidate has demonstrated competence against the qualification requirements for **Unit FA8E 04**.

Assessor's signature _____ **Date** _____
Assessor's counter-signature (if appropriate) _____ **Date** _____

If sampled

Internal verifier's name _____
Internal verifier's signature _____ **Date** _____

External Verifier's name _____
External Verifier's signature _____ **Date** _____

Unit FA8E 04 Develop Productive Working Relationships with Colleagues

Candidate's name _____

1 Outcomes of effective performance — the candidate can:	
Performance Criteria — the candidate can:	Evidence or File X-Ref/Coverage
1.1 Establish working relationships with all colleagues who are relevant to the work being carried out.	
1.2 Recognise, agree and respect the roles and responsibilities of colleagues.	
1.3 Understand and take account of the priorities, expectations, and authority of colleagues in decisions and actions.	
1.4 Fulfil agreements made with colleagues and let them know.	
1.5 Advise colleagues promptly of any difficulties or where it will be impossible to fulfil agreements.	
1.6 Identify and sort out conflicts of interest and disagreements with colleagues in ways that minimise damage to the work being carried out.	
1.7 Exchange information and resources with colleagues to make sure that all parties can work effectively.	
1.8 Provide feedback to colleagues on their performance and seek feedback from colleagues on your own performance in order to identify areas for improvement.	

Unit FA8E 04 Develop Productive Working Relationships with Colleagues

Candidate's name _____

2 Behaviours — the candidate can show that they:	
	Evidence or File X-Ref/Coverage
2.1 Present information clearly, concisely, accurately and in ways that promote understanding.	
2.2 Seek to understand people's needs and motivations.	
2.3 Make time available to support others.	
2.4 Clearly agree what is expected of others and hold them to account.	
2.5 Work to develop and atmosphere of professionalism and mutual support.	
2.6 Model behaviour that shows respect, helpfulness and co-operations.	
2.7 Keep promises and honour commitments.	
2.8 Consider the impact of your own actions on others.	
2.9 Say no to unreasonable requests.	
2.10 Show respect for the views and actions of others.	

Unit FA8E 04 Develop Productive Working Relationships with Colleagues

Candidate's name _____

Knowledge and Understanding	Evidence or File X-Ref/Coverage
General knowledge and understanding	
1 The benefits of developing productive working relationships with colleagues.	
2 Principles of effective communication and how to apply them in order to communicate effectively with colleagues.	
3 How to identify disagreements with colleagues and the techniques for sorting them out.	
4 How to identify conflicts of interest with colleagues and the measure that can be used to manage or remove them.	
5 How to take account of diversity issues when developing working relationships with colleagues.	
6 The importance of exchanging information and resources with colleagues.	
7 How to get and make use of feedback on your performance from colleagues.	
8 How to provide colleagues with useful feedback on their performance.	
Utilities sector specific knowledge and understanding	
1 Regulations and codes of practice that apply in the utilities sector (water industry).	
2 Standards of behaviour and performance in the utilities sector (water industry).	
3 Working culture of the utilities sector (water industry).	

Unit FA8E 04 Develop Productive Working Relationships with Colleagues

Candidate's name _____

Knowledge and Understanding	Evidence or File X-Ref/Coverage
Context specific knowledge and understanding	
1 Current and future work being carried out.	
2 Colleagues who are relevant to the work being carried out.	
3 Processes within the organisation for making decisions.	
4 Line management responsibilities and relationships within the organisation.	
5 The organisation's values and culture.	
6 Power, influence and politics within the organisation.	
7 Standards of behaviour and performance expected in the organisation.	
8 Information and resources that different colleagues might need.	
9 Agreements with colleagues.	