

National Certificate in Water Reticulation (Planned and Reactive Maintenance Technician) (Level 3) with strands in Water, and Wastewater

Level 3

Credits 81-86

This qualification has been **reviewed**. The last date to meet the requirements is 31 December 2018.

Version 7 of this qualification has been republished to extend the last date of enrolment on programmes leading to it from 31 December 2015 to 31 December 2016.

Transition Arrangements

This qualification has been reviewed and replaced by the New Zealand Certificate in Pipe Installations (Level 4) with strands in Trenched, and Trenchless [Ref: 2694] and the New Zealand Certificate in Utilities Maintenance (Level 4) with strands in Water, and Wastewater and Stormwater [Ref: 2695].

The last date for entry into training programmes for the replaced qualification is 31 December 2016. The last date of assessment for the replaced qualification is 31 December 2018.

People currently working towards achievement of this qualification may either complete the requirements for that qualification or transfer their results to the replacement qualification. However there are substantial differences between the new and the replaced qualifications, and it is recommended that candidates complete the qualification in which they are enrolled.

For detailed information see [Review Summaries](#) on the NZQA website.

This qualification contains standards that replace earlier standards. For the purposes of this qualification, people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standards – see table below.

Credit for	Exempt from
19208	24922
23282	27327
23287	25445
24920	27327
25234	27330

Any person who feels disadvantaged by these transition arrangements should contact Infrastructure ITO at the address below.

NZQF National Qualification Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	August 2002	December 2010
Revision	2	March 2003	December 2010
Revision	3	July 2004	December 2010
Revision	4	June 2005	December 2010
Revision	5	May 2010	December 2013
Review	6	October 2011	December 2018
Review	7	February 2015	December 2018
Republication	7	December 2015	December 2018

Standard Setting Body

Infrastructure Industry Training Organisation
PO Box 2759
Wellington 6140

Telephone 0800 486 626
Email qualifications@connexis.org.nz
Website www.connexis.ac.nz

National Certificate in Water Reticulation (Planned and Reactive Maintenance Technician) (Level 3) with strands in Water, and Wastewater

Level	3
Credits	81-86

Purpose

This qualification is part of a qualification pathway for planned and reactive maintenance technicians in the infrastructure sector. It recognises the skills and knowledge required by water reticulation technicians including reacting to system failures – caused by a range of circumstances such as material failure and activity that causes a component(s) in the system to fail – and planned maintenance, which may include such things as installing a permanent solution to a temporary fix, flushing pipe lines to maintain water quality and refurbishing or replacing hydrants and valves.

Please note a separate qualification the National Certificate in Infrastructure Works (Infrastructure Pipelaying Technician) (Level 3) [Ref: 1282] exists for infrastructure pipelaying technicians involved in the installation of new assets and the replacement of existing assets across the water, wastewater and stormwater sectors. Infrastructure pipelaying projects include a number of distinct phases such as excavation, pipe and structure installation, reinstatement and surfacing. The Infrastructure Pipelaying Technician qualification focuses on the installation of pipes and structures phase.

While there are common areas of skills and knowledge shared by Planned and Reactive Maintenance Technicians and Infrastructure Pipelaying Technician the nature and focus of their roles and working environments are very different, hence the two separate qualifications. If you have any questions regarding the most appropriate qualification for you please contact Water Industry Training on 0800 WaterIT (0800 928 374) or email enquiries@waterit.ac.nz.

The strands in the qualification allow people to specialise in water reticulation or wastewater reticulation with the opportunity to achieve both strand endorsements if appropriate. This structure recognises the separation of water and wastewater teams in the field for health and safety reasons. While teams in many organisations may specialise only in one area, some organisations require multi-skilled staff who may work across both areas over a period of time.

The Core Compulsory section of the qualification recognises the technician's ability to produce and use as-built plans, enter, work in, and exit a confined space, install thrust, anti-scour or anchor blocks for water reticulation, notify members of the public affected by civil construction activities, locate and identify services on civil construction sites all within the context of the water industry.

The Core Compulsory section also recognises the technician's knowledge of infrastructure works quality assurance requirements, notifiable works and permits in the civil infrastructure industry, slinging, lifting, moving, hazards associated with confined spaces, operating as a Traffic Controller for low volume and Level 1 roads and placing loads with an excavator or loader and of reticulated services and their location, in the water industry.

People who select the Water Strand will be able to: service, clean, disinfect, and restore reservoirs or reticulation mains; shut down and re-commission a drinking-water supply mains; prepare, install fittings, charge up a pipe line, and check for leaks and operation; and refurbish or replace hydrants and valves for water reticulation.

The Water Strand Compulsory section also recognises the technician's knowledge of: water supply mains materials and fittings; causes and prevention of pipe failure; water supply and reticulation systems; and of water reticulation systems cleaning and disinfection.

The Water Strand Elective section recognises areas of focused skills and knowledge needed in some situations by planned and reactive maintenance technicians in the performance of contract and organisational requirements. Individuals must demonstrate competence in one area of skills or knowledge from the six standards available. These areas include: the rehabilitation and replacement of existing water pipe lines or of pressure zones and backflow prevention in water reticulation;; assessing and reporting on the condition of reticulation infrastructure assets; knowledge of equipment and operations for jointing polyethylene pipe for a distribution network; electrofusion jointing on polyethylene pipe for a distribution network; and butt fusion jointing on polyethylene pipe for a distribution network.

People who select the Wastewater Strand will be able to carry out wastewater pipe unblocking and access chamber maintenance and install pipes and their fittings for infrastructure pipelaying.

The Wastewater Strand Compulsory also recognises the technician's knowledge of wastewater systems and materials, and causes and prevention of pipe failure and of blockage clearance and wastewater maintenance.

The Wastewater Strand Elective section recognises areas of focused skills and knowledge needed by planned and reactive maintenance technicians. Individuals must demonstrate competence in one area of skills or knowledge from the six standards available. These areas include: rehabilitation and replacement of existing wastewater pipe lines; flows in wastewater and flow measurement techniques; the maintenance, management and treatment of stormwater systems; bypass pumping and installation, and commissioning and decommissioning bypasses for infrastructure pipelaying; and assessment and reporting of the condition of reticulation infrastructure assets, preparing for and setting up CCTV equipment and describing procedures for CCTV survey of water reticulation assets.

People who have completed this qualification may continue their learning pathway by entering a programme of study leading to the award of the National Certificate in Water Reticulation (Supervisor) (Level 4) with strands in Water, and Wastewater [Ref: 1259] or the National Certificate in Infrastructure Works Supervision with optional strands in Asphalt

Surfacing, Chipseal Surfacing, Civil Works and Utilities, Road Works, Water, and Wastewater [Ref: 1658].

While not prerequisites to this qualification, the following national certificates provide a learning pathway leading to this qualification. The National Certificate in Infrastructure Works (Level 2) with optional strands in Earthworks, Pavement Surfacing, Roads, Rural Contracting, and Utilities [Ref: 1660] is the entry point for individuals entering the utilities sector.

Core Compulsory credits in the domains of *Civil Infrastructure Health, Safety, and Environment, Generic Infrastructure Works, Infrastructure Works Supervision, Temporary Traffic Management, Water Reticulation* are portable within a wide range of infrastructure sector qualifications.

Credit Range

	Core Compulsory	Water Strand		Wastewater Strand	
		Compulsory	Elective	Compulsory	Elective
Level 2 credits	5	-	-	3	-
Level 3 credits	34	28	0-3	38	0-3
Level 4 credits	-	8	0-4	-	0-4
Level 5 credits	3	-	-	-	-
Minimum totals	42	36	3	41	3
Qualification total with strand		81		86	

Requirements for Award of Qualification

Award of NZQF National Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided on the New Zealand Qualifications Authority (NZQA) website: <http://www.nzqa.govt.nz/qualifications-standards/standards/standards-exclusion-list/>.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Summary of Requirements

- Core Compulsory standards

One of the following strands is required

- Water Strand
- Wastewater Strand

Detailed Requirements

Core Compulsory

The following standards are required

Engineering and Technology > Civil Works and Services > Civil Infrastructure Health, Safety, and Environment

ID	Title	Level	Credit
20869	Demonstrate knowledge of notifiable works and permits in the civil infrastructure industry	3	2

Engineering and Technology > Highway Construction and Maintenance > Temporary Traffic Management

ID	Title	Level	Credit
5627	Operate as a Traffic Controller (TC) for low volume and Level 1 roads	3	4

Engineering and Technology > Infrastructure Works > Generic Infrastructure Works

ID	Title	Level	Credit
6479	Locate and identify services for infrastructure works	3	5
20875	Demonstrate knowledge of slinging, lifting, moving, and placing loads with an excavator or loader	2	5
22290	Demonstrate knowledge of and carry out infrastructure works quality assurance requirements	3	5

Engineering and Technology > Infrastructure Works > Infrastructure Works Supervision

ID	Title	Level	Credit
6435	Implement notification requirements for infrastructure works	5	3

Engineering and Technology > Water Industry > Water Reticulation

ID	Title	Level	Credit
19201	Demonstrate knowledge of reticulated services and their location, in the water industry	3	4
19204	Produce and use as-built plans in the water industry	3	2
19207	Enter, work in, and exit a confined space in the water industry	3	5
27330	Install a thrust, anti-scour or anchor block for water reticulation	3	3

Health > Occupational Health and Safety > Occupational Health and Safety Practice

ID	Title	Level	Credit
18426	Demonstrate knowledge of hazards associated with confined spaces	3	4

Water Strand

Meet the requirements of all of the following sets

- Water Strand Compulsory
- Water Strand Elective

Water Strand Compulsory

The following standards are required

Engineering and Technology > Water Industry > Water Reticulation

ID	Title	Level	Credit
19209	Demonstrate knowledge of water reticulation systems cleaning and disinfection	3	4
19210	Service, clean, disinfect, and restore reservoirs or reticulation mains	3	4
19211	Describe water supply mains materials and fittings, and causes and prevention of pipe failure	3	6
24922	Demonstrate knowledge of water supply and reticulation systems	3	10
24924	Shut down and re-commission a drinking-water supply mains	3	4
24925	Prepare, install fittings, and charge up a pipe line, and check for leaks and operation, for water reticulation	4	4
24926	Refurbish or replace hydrants and valves for water reticulation	4	4

Water Strand Elective

A minimum of 1 standard

Engineering and Technology > Civil Engineering > Civil Engineering - Asset Management

ID	Title	Level	Credit
17291	Report civil engineering infrastructure asset condition and attribute data	3	8

Engineering and Technology > Water Industry > Water Reticulation

ID	Title	Level	Credit
22097	Demonstrate knowledge of rehabilitation and replacement of existing water pipe lines	3	3
22102	Demonstrate knowledge of pressure zones and backflow prevention in water reticulation	4	4

Manufacturing > Plastics Processing Technology > Plastics Fabrication

ID	Title	Level	Credit
10980	Perform electrofusion jointing on polyethylene pipe for a distribution network	4	6

ID	Title	Level	Credit
10987	Perform butt fusion jointing on polyethylene pipe for a distribution network	4	8
25610	Demonstrate knowledge of equipment and operations for jointing polyethylene pipe for a distribution network	3	5

Wastewater Strand

Meet the requirements of all of the following sets

- Wastewater Strand Compulsory
- Wastewater Strand Elective

Wastewater Strand Compulsory

The following standards are required

Engineering and Technology > Infrastructure Works > Generic Infrastructure Works

ID	Title	Level	Credit
27327	Handle and install pipes and fittings for infrastructure pipelaying, and carry out follow-up procedures	3	20

Engineering and Technology > Water Industry > Water Reticulation

ID	Title	Level	Credit
19213	Demonstrate knowledge of blockage clearance and wastewater maintenance	2	3
19214	Carry out wastewater pipe unblocking and access chamber maintenance	3	3
19215	Describe wastewater systems and materials, and causes and prevention of pipe failure	3	6
22111	Demonstrate knowledge of sewer cleaning, blockage removal, overflow management and clean-up	3	3
24923	Demonstrate knowledge of stormwater and drainage systems and their components	3	6

Wastewater Strand Elective

A minimum of 1 standard

Engineering and Technology > Civil Engineering > Civil Engineering - Asset Management

ID	Title	Level	Credit
17291	Report civil engineering infrastructure asset condition and attribute data	3	8

Engineering and Technology > Civil Works and Services > Civil Construction Works

ID	Title	Level	Credit
25445	Describe and explain bypass pumping and install, commission, and decommission bypasses for infrastructure pipelaying	3	4

Engineering and Technology > Water Industry > Water Reticulation

ID	Title	Level	Credit
22098	Demonstrate knowledge of rehabilitation and replacement of existing wastewater pipe lines	3	3
22107	Prepare for and set up CCTV, and describe procedures for CCTV survey of water reticulation assets	4	4
22113	Demonstrate knowledge of flows in wastewater and flow measurement techniques	4	4
22114	Demonstrate knowledge of stormwater systems and their maintenance, management and treatment options	4	5

Transition Arrangements

Version 6 was issued following a review, and there are substantial differences between versions 5 and 6.

Changes to structure and content include

- Total credits were reduced from 105-107 in the replaced qualification to 81-86 depending on strand.
- Expiring standards 24920 from the Core Compulsory section was replaced by standard 27327 and moved to the Wastewater Strand Compulsory.
- Standards 497, 6400, 6401, 6402, 6453, 6457, 6467, 6475, 6477, 9707, 19200, 19205, 24918, 24919 and 24921 were removed from the Core Compulsory section.
- Standard 27330 was added to the Core Compulsory.
- Elective sections were added to both strands.
- Standards 24924, 24925 and 24926 were added to the Water Strand Compulsory section.
- Standard 19212 was removed from the Wastewater Strand Compulsory.
- Standards 22111 and 24923 were added to the Wastewater Strand Compulsory.
- Classification for standard 6479 was updated in the new qualification.
- Title descriptor was changed to better reflect the intended target group of the qualification
- Reverse transition has been added for version 5 to allow existing candidates to complete that version – see table below.

For detailed information see [Review Summaries](#) on the NZQA website.

Previous versions of the qualification

Version 5 was issued following a revision in order to replace standards due to expire in December 2010. Changes to structure and content included: expiring standard 6454 was removed from the qualification as it was classified as Category D and has no direct replacement. Expiring standards 19202, 19203, 19206 and 19208 were replaced by standards 24918 and 24919, 24920, 24921 and 24922. Changes in credit values and titles for standards 497, 6475, 19200, 19201, 19204, 19207, 19209 and 19212 as a result of earlier reviews were incorporated into this qualification. The New Zealand Standard Classification of Education (NZSCED) has been changed from 039901 to 030907. Total credits changed from 87-89 to 105-107 depending on strand.

Version 4 was issued as a revision following review of unit standards 19203, 19210, 19211, 19215 to reflect current technical criteria and industry practices.

Version 3 was issued following revision to update the certificate statement and the purpose statement.

Version 2 was issued to take into account a domain reclassification.

Other standard setting bodies whose standards are included in the qualification

InfraTrain New Zealand
 New Zealand Industry Training Organisation
 NZ Extractive Industries Training Organisation

Certification

This certificate will display the logo of the NZQA, the Agriculture Industry Training Organisation and the organisation that has been granted consent to assess against standards that meet the requirements of the qualification (accredited).

Classification

This qualification is classified according to the classification system listed on the Directory of Assessment Standards (DAS) and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

DAS Classification		NZSCED	
Code	Description	Code	Description
1733	Engineering and Technology > Water Industry > Water Reticulation	030907	Engineering and Related Technologies > Civil Engineering > Water and Sanitary Engineering

Quality Management Systems

Providers and Industry Training Organisations must be granted consent to assess by a recognised Quality Assurance Body before they can register credits from assessment against standards. Organisation with consent to assess and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Consent to assess requirements and the moderation system are outlined in the associated Consent and Moderation Requirements (CMR) for each standard.