

Title	Apply knowledge of design methods to design a farm water reticulation system		
Level	4	Credits	10

Purpose	<p>This unit standard is for people involved with the design of a farm water reticulation system and follows on from unit standard 21659.</p> <p>People credited with this unit standard are able to apply knowledge of design methods to design a farm water reticulation system.</p>
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Classification	Mechanical Engineering > Dairy Systems Engineering
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Available grade	Achieved
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Recommended skills and knowledge	29159, <i>Demonstrate knowledge of farm water reticulation system design methods</i> , or equivalent knowledge and skills.
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Explanatory notes¶

- References.
 - Health Care Act 1956 and subsequent Amendments
 - The Health (Drinking Water) Amendment Act 2007
 - Ministry of Health 2008, Drinking-water Standards for New Zealand 2005. revised 2008. Ministry of Health. ISBN 978-0-478-31809-8 (print) ISBN 978-0-478-318-4 (online)
 - New Zealand Building Code. Clause G12. Water Supplies
 - New Zealand Food Safety Council.
 - NZCP1: *Code of Practice for the Design and Operation of Farm Dairies*. Available at: <http://www.foodsafety.govt.nz/elibrary/industry/dairy-nzcp1-design-code-of-practice/amdt-2.pdf>
 - National Environmental Standard (NES) for Sources of Human Drinking Water. Available at <http://mfe.govt.nz/laws/standards/drinking-water-source-standard.html>
 - AS/NZS 3500.1:2015, *Plumbing and drainage - Water services*
 - AS/NZS 2032:2006, *Installation of PVC pipe systems*
 - AS/NZS 1477:2006, *PVC pipes and fittings for pressure applications*
 - Guidelines for Drinking-water Quality Management for New Zealand. Available at <http://www.health.govt.nz/publication/guidelines-drinking-water-quality-management-new-zealand>

2 Definitions

Farm water reticulation system refers to the circulation of water throughout a farm for the purpose of providing water for farm dairy sheds, rural domestic dwellings, stock, and irrigation requirements; and for effluent and waste water systems.

3 Assessment.

The design brief provides an opportunity for candidates to apply the knowledge from unit standard 29159 to complete a farm water reticulation design.

The design brief should include:

- A farm map showing the general layout of the farm
- Design specifications

The design should meet specifications, be efficient and cost effective.

CAD, other design software and calculators may be used.

Candidates are encouraged to use other literature such as course notes.

Outcomes and evidence requirements

Outcome 1

Apply knowledge of design methods to design a farm water reticulation system.

Evidence requirements

- 1.1 A farm water reticulation system is designed in accordance with the requirements of a design brief.

Range design for water supply to stock, the dairy shed, and farm dwelling

Planned review date	31 December 2020
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	15 October 2015	N/A

Consent and Moderation Requirements (CMR) reference	CMR 0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.