Title	**Describe requirements for operation, monitoring, and maintenance of an on-site wastewater management system**		
Level	**4**	**Credits**	**5**

Purpose	People credited with this unit standard are able to describe: the risks associated with operating, monitoring, and maintaining an on-site wastewater management system; the requirements for desludging and maintenance of primary treatment units and their components; the requirements for maintenance and monitoring of secondary and tertiary treatment units and their components; the management of wastewater land application areas; factors affecting the performance of an on-site wastewater management system; and the identification of, and remedial action for, problems associated with on-site wastewater management systems.

Classification	Water Industry > Wastewater Treatment

Available grade	Achieved

Guidance Information

1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.

2 Legislation, regulations and industry standards relevant to this unit standard include but are not limited to the:
- Resource Management Act 1991;
- Building Act 2004 and relevant Building Codes;
- Health Act 1956;
- Historic Places Act 1993, and subsequent amendments;
- regional and district plans;
- regulatory authority requirements;
- AS/NZS 1547:2012 *On-site domestic wastewater management* available at http://www.standards.co.nz.

3 Definition
Industry requirements include manufacturers' specifications; and enterprise requirements which cover the documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.

4 It is recommended that the assessor uses design guidelines issued by the regional or local authorities in the candidate's locality.

5 Credit for this unit standard does not qualify the candidate to work in a drainlaying situation that comes under the drainlayer's licence requirements issued under the Plumbers, Gasfitters, and Drainlayers Act 2006 and any subsequent amendments.

Outcomes and performance criteria

Outcome 1

Describe the risks associated with operating, monitoring, and maintaining an on-site wastewater management system.

Range risks – wastewater volume, chemical substances, harmful micro-organisms, harmful gases, enclosed space ventilation, live electrical items, moving mechanical parts, empty or full tanks.

Performance criteria

1.1 Risks when operating, monitoring, and maintaining on-site wastewater management system are described in terms of the precautions to take to avoid their occurrence.

Range advice to client, advice to maintenance provider.

1.2 Risks when operating, monitoring, and maintaining on-site wastewater management system are described in terms of the actions to take in the event of their occurrence.

Range advice to client, advice to maintenance provider.

Outcome 2

Describe the requirements for desludging and maintenance of primary treatment units and their components.

Performance criteria

2.1 Monitoring of primary treatment unit performance is described in terms of the procedures for checking scum and sludge levels and relating this to design accumulation rates.

2.2 Frequency of primary treatment unit desludging is described in terms of regional and district council recommendations and in accordance with AS/NZS 1547:2012.

2.3 Maintenance procedures for components of primary treatment units are described in terms of regional and district council requirements and their benefits.

Range effluent outlet filters, siphons, pumps, valves.

Outcome 3

Describe the requirements for maintenance and monitoring of secondary and tertiary treatment units and their components.

Performance criteria

3.1 System maintenance and monitoring requirements are described in terms of manufacturer's and designer's recommendations.

Range includes but is not limited to – primary sludge and scum depth, secondary sludge character, pumps and transfer lines, electrical components, alarm systems, effluent disc filters, disinfection equipment.

3.2 Monitoring of effluent quality is described in terms of manufacturer's and designer's recommendations.

Range includes but is not limited to – sampling procedures, storage and transport of samples, field tests for dissolved oxygen and disinfectant residue, structural integrity of unit and water tightness, venting, odours.

Outcome 4

Describe the management of wastewater land application areas.

Performance criteria

4.1 Chemical components of treated effluent are described in terms of their potential impact on soil treatment processes.

Range impacts on – soil sodicity, nutrient and disinfection, soil ecology.

4.2 Natural water flow impacts are described in terms of their effects on soil treatment processes.

Range flows – surface and groundwater flows from beyond land application area, surface water and groundwater collection and diversion;
soil conditions – unsaturated conditions, saturated conditions.

4.3 Methods to enhance evapotranspiration and nutrient uptake are described in accordance with AS/NZS 1547:2012.

Range landscaping, vegetation management, planting.

4.4 Methods to protect land application areas are described in accordance with AS/NZS 1547:2012.

Range landscaping, signs to protect public health, fencing, barrier planting.

4.5 Distribution system maintenance is described in accordance with AS/NZS 1547:2012.

Range gravity loading, pressure loading.

Outcome 5

Describe factors affecting the performance of an on-site wastewater management system.

Performance criteria

5.1 Chemicals are described in terms of their sources and effects on the efficient operation of an on-site wastewater treatment unit.

Range non-biodegradable chemicals, cleaning chemicals, hygiene products, oil and fat, detergents, laundry powders, dishwashing detergents, garbage disposed through disposal units, hormones, prescription drugs.

5.2 Substitutes for household cleaning chemicals are described in terms of their ingredients and applications.

5.3 Excessive water-flow is described in terms of its sources and its effects on the efficient operation of an on-site wastewater management system.

Range excessive water flow sources – water leaks, stormwater drains, groundwater infiltration, unsealed tanks and pipe joints, excessive water use from baths and showers, wastewater flows from dishwashers and garbage grinders.

Outcome 6

Describe the identification of, and remedial action for, problems associated with on-site wastewater management systems.

Range odour, septic bacterial breakdown, septic tank overflow, blocked filter, clogged land application system, overflow on land application field, excessively high-volume wastewater discharge or unknown usage, rainfall run-off causing waterlogging of land application field;
evidence of four problems is required.

Performance criteria

6.1 Problems associated with on-site wastewater management systems are described in terms of the methods to identify the problem.

6.2 Problems associated with on-site wastewater treatment systems are described in terms of remedial actions.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 October 2008	31 December 2018
Rollover and Revision	2	16 February 2017	31 December 2022
Review	3	23 July 2020	N/A

Consent and Moderation Requirements (CMR) reference	0101

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Connexis - Infrastructure Industry Training Organisation qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.