

Title	Describe and operate wastewater effluent application to land		
Level	4	Credits	6

Purpose	People credited with this unit standard are able to describe the application processes used to apply treated wastewater effluent on to land; monitor and adjust land application processes; carry out maintenance procedures on land application equipment; and describe the storage, handling, and preparation of chemicals, and chemical dosing systems used in land application processes in wastewater treatment.
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Classification	Water Industry > Wastewater Treatment
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Available grade	Achieved
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Guidance Information

- 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. Evidence for assessment of the practical aspects of this unit standard must be gathered using the land application processes in the candidate's own workplace.
- Legislation relevant to this unit standard includes the Health and Safety at Work Act 2015, Water Services Act 2021, Resource Management Act 1991, Hazardous Substances and New Organisms (HSNO) Act 1996, and any subsequent amendments.
- Definitions**

Effluent – treated wastewater which is the used water from domestic, commercial, and industrial activities, which contains contaminants such as nutrients, organic matter, and micro-organisms; and excludes stormwater.

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

Land includes land with or without vegetation.

Land application may include surface irrigation, sub-surface application, grass-plot irrigation, infiltration.

Wastewater may include stormwater and sewage systems.
- Learning and assessment activities for this unit standard must be informed by Te Mana o te Wai (refer to [Taumata Arowai](#)) and the *National Policy Statement for Freshwater Management 2020* available from <https://environment.govt.nz/>.

Outcomes and performance criteria

Outcome 1

Describe the application processes used to apply treated wastewater effluent on to land.

Performance criteria

- 1.1 Process options for land application are described in terms of their application rates, distribution layout options, inputs, advantages, and disadvantages.
- Range two process options.
- 1.2 The land application process is described in terms of the function of its component parts and the identification of process failure.
- 1.3 Land application is described in terms of the process outputs.
- Range may include – odour levels, spray drift, run-off, impact on receiving environment
- 1.4 Legislation and regulations relevant to land application are described in terms of their purpose, effect on the process, and consequences of non-compliance.

Outcome 2

Monitor and adjust land application processes in wastewater treatment.

Performance criteria

- 2.1 Process tests are described for land application.
- Range may include – effluent quality, vegetation growth rates, vegetation diversity and abundance, soil clogging, contaminant accumulation.
- 2.2 The performance measures for land application are described in terms of efficiency and downstream effects.
- Range may include – vegetation growth rates, nutrient levels in groundwater, application rates.
- 2.3 Testing equipment is calibrated, if required, tests or measurements for monitoring process inputs are carried out, and results are recorded.
- Range effluent quality, vegetation growth rates, vegetation diversity and abundance, soil clogging, contaminant accumulation.
- 2.4 Process inputs are adjusted.
- 2.5 Any required consumables are checked and ordered.

Outcome 3

Carry out maintenance procedures on land application equipment in wastewater treatment.

Performance criteria

- 3.1 Preventive maintenance procedures are carried out.
- 3.2 Any required repairs are carried out according to process and/or equipment failure.
- 3.3 Actions for maintaining process continuity are carried out.

Outcome 4

Describe the storage, handling, and preparation of chemicals, and chemical dosing systems used in land application processes in wastewater treatment.

Performance criteria

- 4.1 The storage, handling, and preparation of chemicals used in land application are described in terms of the Hazardous Substances and New Organisms Act 1996.
- 4.2 Chemical use in land application are described in terms of the components, methods, and points of application.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 March 2017	31 December 2023
Review	2	28 April 2022	N/A

Consent and Moderation Requirements (CMR) reference	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihangā Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihanga.nz if you wish to suggest changes to the content of this unit standard.