

Title	Describe and operate effluent disinfection processes in wastewater treatment		
Level	4	Credits	8

Purpose	People credited with this unit standard are able to: describe effluent disinfection processes; monitor and adjust effluent disinfection process; carry out maintenance procedures on effluent disinfection process equipment; and describe the storage, handling, and preparation of chemicals, and any chemical dosing-systems used in effluent disinfection 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

- 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. Evidence for assessment of the practical aspects of this unit standard must be gathered using the disinfection processes in the candidate's own workplace.
- 2 Legislation relevant to this unit standard includes: 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.
- 3 Definitions
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.
Wastewater may include stormwater and sewage systems.
- 4 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 effluent disinfection processes in wastewater treatment.

Range chlorine, ultraviolet.

Performance criteria

- 1.1 Disinfection theory is described in terms of impact of disinfection on wastewater effluent to the environment.
- 1.2 Plant configuration options for effluent disinfection treatment are described in terms of their hydraulic layout options, input methods, advantages, and disadvantages.
- 1.3 Effluent disinfection is described in terms of disinfection methods, their sources, functions of component parts, and identification of process failure.
- 1.4 Effluent disinfection is described in terms of process outputs.
- 1.5 Legislation and regulations relevant to effluent disinfection are described in terms of their purpose, effect on the process, and consequences of non-compliance.

Outcome 2

Monitor and adjust effluent disinfection process inputs in wastewater treatment.

Performance criteria

- 2.1 Process tests are described for effluent disinfection.
Range includes but is not limited to – dose rate.
- 2.2 The performance measures for effluent disinfection are described in terms of efficiency and downstream effects.
Range includes but is not limited to – total suspended solids, indicator organisms.
- 2.3 Testing equipment is calibrated, tests or measurements for monitoring process inputs are carried out, and results are recorded.
- 2.4 Process inputs are adjusted.
Range reasons for adjustment – results of testing, analysis and identification of trends, response to process failure.
- 2.5 Any relevant consumables are checked and ordered.

Outcome 3

Carry out maintenance procedures on effluent disinfection process equipment in wastewater treatment.

Performance criteria

- 3.1 Preventative maintenance procedures are carried out and recorded.
- 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 any chemical dosing systems used in effluent disinfection processes in wastewater treatment.

Performance criteria

- 4.1 The storage, handling, and preparation of chemicals used in effluent disinfection are described in terms of the HSNO Act 1996.
- 4.2 Any chemical dosing systems used in effluent disinfection are described in terms of the components, methods, and purpose of use 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.