Title	**Manage, monitor, and optimise fixed growth reactor processes in wastewater treatment**		
Level	**5**	**Credits**	**12**

Purpose	People credited with this unit standard are able to: manage, monitor, and optimise fixed growth reactor processes in wastewater treatment.

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 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 subsequent amendments.

3 Definitions
Critical control point – specific point, procedure, or step in water treatment processes at which control can be exercised to reduce, eliminate, or prevent the possibility of a public health hazard.
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.
Optimise – adjusting plant input variables to make the process as effective as possible to achieve the desired output, taking into account the constraints of cost, human input, effluent quality, and resource consent requirements.
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

Manage fixed growth reactor processes in wastewater treatment.

Performance criteria

1.1 Process variables are managed to achieve the desired parameters and maintain process performance.

Range uniform liquid application, biomass growth, recirculation; evidence of two variables is required.

Outcome 2

Monitor fixed growth reactor processes in wastewater treatment.

Range includes but is not limited to – inflow/outflow, Biochemical Oxygen Demand (BOD), Suspended Solids (SS), biomass character.

Performance criteria

2.1 Sampling is managed to ensure samples are collected in accordance with organisational procedures.

2.2 Data is collected and interpreted in accordance with fixed growth reactor process requirements.

Outcome 3

Optimise fixed growth reactor processes in wastewater treatment.

Performance criteria

3.1 The critical control points in the fixed growth reactor process are managed.

3.2 Fixed growth reactor process variables are adjusted for optimisation of the process in accordance with the results of monitoring.

Planned review date	31 December 2026

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

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

Comments on this unit standard

Please contact Waihanga 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.