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| Title | Manage, monitor, and optimise activated sludge processes in wastewater treatment | | |
| Level | 5 | Credits | 14 |

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| Purpose | People credited with this unit standard are able to: manage, monitor, and optimise activated sludge 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.
- 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.
- Definitions

Activated sludge processes may include the separation process (settling and flotation).

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.

Sludge – wastewater solids from separation processes including scum.

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

Manage activated sludge processes in wastewater treatment.

Performance criteria

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

Range recycling rates, food: microorganism ratio, Mixed Liquor Suspended Solids (MLSS), sludge volume index, pH and alkalinity, sludge age, Dissolved Oxygen (DO) control.

Outcome 2

Monitor activated sludge processes in wastewater treatment.

Performance criteria

2.1 Sampling is managed to ensure samples are collected.

2.2 Data is collected and interpreted in accordance with activated sludge processes.

Outcome 3

Optimise activated sludge processes in wastewater treatment.

Performance criteria

3.1 The activated sludge process variables and operating factors are adjusted for optimisation of the process in accordance with the results of monitoring.

3.2 The critical control points in activated sludge processes are managed.

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| 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 |

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| 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 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.