

Title	Describe quality sampling techniques and programme design for a water treatment site		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe sampling theory as it relates to water treatment; demonstrate knowledge of the water treatment process procedures for sampling and reporting; and describe sampling programme design for a water treatment site.
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Classification	Water Industry > Water 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 and references relevant to this unit standard include: Water Services Act 2021, Health and Safety at Work Act 2015, Hazardous Substances and New Organisms (HSNO) Act 1996, and subsequent amendments; Ministry of Health, *Drinking-water Standards for New Zealand*, Ministry of Health, Wellington, 2005 (Revised 2018), and subsequent replacements, available at www.taumataarowai.govt.nz.
- Definition
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.
- Learning and assessment activities for this unit standard must be informed by Te Mana o te Wai (refer to [Taumata Arowai](http://www.taumataarowai.govt.nz)) and the *National Policy Statement for Freshwater Management 2020* available from <https://environment.govt.nz/>.

Outcomes and performance criteria

Outcome 1

Describe sampling theory as it relates to water treatment.

Performance criteria

- 1.1 Water quality measurement is described in terms of representative sampling.
- Range daily variation, flow variation, mass curves, sampling other than by time, source (rivers, lakes, reservoirs, bores, distribution systems), surface and depth sampling, water tap sampling, representative sampling.
- 1.2 The confidence level of water quality measurement is described in terms of different sampling frequencies and cost implications.
- 1.3 Standard units of measurement are described in terms of their use in water treatment.

Outcome 2

Demonstrate knowledge of the water treatment process procedures for sampling and reporting.

Performance criteria

- 2.1 The regulatory procedures for sampling are identified and described in accordance with the *Drinking-Water Standards for New Zealand*.
- 2.2 The sampling procedures for process control and monitoring are identified.
- Range includes but is not limited to – chemical dose control, residual measurements, calibration checks.
- 2.3 Reporting procedures are described.

Outcome 3

Describe sampling programme design for a water treatment site.

Performance criteria

- 3.1 The design of the sampling programme is described in accordance with the procedures of the *Drinking-Water Standards for New Zealand*.
- 3.2 The design of the sampling programme is described in terms of the particular treatment process needs.
- Range includes but is not limited to – chemical dose control, residual measurements, calibration checks.
- 3.3 The design of the sampling programme is described in terms of methods to optimise the practicality of sample collection.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	1 February 2001	31 December 2018
Review	2	19 September 2008	31 December 2018
Review	3	16 March 2017	31 December 2024
Review	4	26 May 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@WaihangāAraRau.nz if you wish to suggest changes to the content of this unit standard.