Title	Operate and report on a water treatment plant		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: explain the overall operation of a water treatment plant; complete work routines in a water treatment plant, and complete documentation and report on water treatment plant performance.

Classification	Water Industry > Water 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 and references relevant to this unit standard include:
     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;
     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.

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.
     Water treatment plant – a site where at least two process operations are used to improve raw water quality for the purposes of a drinking-water supply.

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

Explain the overall operation of a water treatment plant.

Performance criteria

1.1   The water flow paths through a water treatment plant are physically identified on site.

           Range   inflow, outflow, storage, flow distribution in tanks.

1.2   The flow control elements are identified and explained on site.

           Range   level, pressure, flow.

1.3   The individual plant process sections are identified, and the function of each is explained on site.

           Range   process objective, inflows, outflows, physical identification, water quality changes.

1.4   All chemical dosing systems components are identified on site and the controls of each chemical dosing system are explained.

           Range   examples – chemical pipework, dosing pumps, speed control, stroke control, flow rate, calibration tests, tank dilution, dosage level, check tests, feedback loops;
                        solid, liquid, gas.

Outcome 2

Complete work routines in a water treatment plant.

Performance criteria

2.1   Routine plant inspections are carried out.

           Range   examples – chemical levels, stock levels, output water quality, process output, vibration, noise, alarm response, manual pump control, valve operation, filter backwash operation, sludge transfer.

2.2   Final water quality is monitored, and plant controls are adjusted to maintain final water quality.

Outcome 3

Complete documentation and report on water treatment plant performance.

Performance criteria

3.1   Process data is collected and recorded.

3.2   Routine reports are compiled from plant and system data.

Replacement information	This unit standard and unit standard 24951 replaced unit standard 17889.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

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