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| Title | Describe and operate inorganics control processes in drinking-water treatment | | |
| Level | 4 | Credits | 12 |

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| Purpose | People credited with this unit standard are able to: describe inorganics control processes; monitor and adjust inorganics control processes; and carry out maintenance procedures on inorganics control equipment, in drinking-water treatment. |
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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: Health and Safety at Work Act 2015, Water Services Act 2021, 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.
- 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.
Inorganics – inorganic compounds which may be present in raw water, that have an aesthetic or public health impact on water quality.
Inorganics control is the control of inorganic compounds in drinking-water which may negatively affect water quality.
- 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 inorganics control processes in water treatment.

Performance criteria

- 1.1 Regulations and drinking-water standards relevant to inorganics control are described in terms of their purpose, requirements, and consequences of non-compliance.
- 1.2 The theory of inorganics control is described in terms of managing public health risk and aesthetics.
- Range includes but is not limited to inorganics – iron, manganese, ammonia, arsenic, boron.
- 1.3 Inorganics control methods are described in terms of operation and factors that affect performance.
- Range includes but is not limited to – aeration, potassium permanganate, ion exchange, pH, ozonation, chlorination.
- 1.4 Inorganics control processes are described in terms of the function of component parts and identification of process failure.
- 1.5 By-products of inorganics control processes are described in terms of the *Drinking-water Standards for New Zealand*.

Outcome 2

Monitor and adjust inorganics control processes in drinking-water treatment.

Performance criteria

- 2.1 Monitoring equipment is calibrated, if required, tests or measurements for monitoring processes are carried out, and results are recorded, in accordance with *Drinking-water Standards for New Zealand* compliance requirements.
- 2.2 Processes are adjusted.
- Range reasons for adjustment may include – results of monitoring and testing, analysis and identification of trends, response to process failure.
- 2.3 Consumables are checked and ordered.

Outcome 3

Carry out maintenance procedures on inorganics control equipment in drinking-water 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, and recorded.
- 3.3 Procedures for maintaining process continuity are carried out.

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| 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 | 16 March 2017 | 31 December 2024 |
| Review | 2 | 26 May 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@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.