

Water Supply

Tuakau and Pookeno Zones

DRINKING WATER SAFETY PLAN

2025



Community Code	TUA002 Tuakau; POK001 Pookeno
Source Code	N/A
Treatment Plant Code	N/A
Zone Code	TUA002TS Tuakau; POK001PO Pookeno



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Table 1: Document Control Record.

Version No.	Description	Author	Reviewer	Date	Authorised
1.0	Drinking Water Safety Plan 2022 update	Grant King Water Quality Scientist	Bliss Pappachan Water Quality Scientist Tatiana Derevianko Water Quality & Science Manager	October 2022	Mathew Telfer Operations Manager Waikato District
2.0	Drinking Water Safety Plan 2023 update	Bliss Pappachan, Water Quality Scientist	Marieka van der Lee Water Quality Scientist Tatiana Derevianko Water Quality & Science Manager	November 2023	Mathew Telfer Operations Manager Waikato District
3.0	Drinking Water Safety Plan 2024 update	Mitchell Adams Water Quality Scientist	Tatiana Derevianko Water Quality Compliance & Science Manager	November 2024	Anin Nama Telfer Operations Manager Waikato District
4.0	Drinking Water Safety Plan 2025 update	Cara Dreyer Water Quality Scientist	Tatiana Derevianko Water Quality Compliance & Science Manager	October 2025	Anin Nama Telfer Operations Manager Waikato District

Table 2: Document Distribution List.

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Executive Summary

This Drinking Water Safety Plan (DWSP) has been developed using the *New Zealand Drinking Water Safety Plan Framework* and provides a comprehensive review of the Tuakau and Pookeno water supply zones. It outlines how public health risks within these zones are managed and summarises compliance requirements necessary to ensure the delivery of safe and reliable drinking water.

The Tuakau and Pookeno supplies are owned by Waikato District Council (WDC) and operated by Watercare Services Limited (Watercare). The abstraction and treatment of water for these zones, along with the associated DWSP, are the responsibility of Watercare Auckland. A formal agreement between Watercare Auckland and WDC governs the supply and acceptance of potable water, with no limits on volume or duration (*Appendix 1: Bulk Supply Variation Agreement*).

WDC and Watercare adhere to the six principles of drinking-water safety, which are embedded into all systems, processes, and behaviours:

- 1) Embrace a high standard of care
- 2) Protect source water
- 3) Maintain multiple barriers against contamination
- 4) Change precedes contamination
- 5) Suppliers must own the safety of drinking-water
- 6) Apply a preventive risk management approach.

This DWSP satisfies the legislative requirements of the *Water Services Act 2021* and must be viewed alongside the *Watercare Waikato General DWSP (Version 1.0; Appendix 2)*. It will be reviewed and updated regularly to reflect changes in infrastructure, operations, or risk profiles, ensuring ongoing compliance and continuous improvement in drinking water safety.

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Amendments

Requests for amendments or revisions of the manual are submitted to the document controller, who is responsible for reviewing requests and implementing changes to the document. Amendments and updates are documented in the *Table 1: Document Control Record*. Amendments or revisions of the document will result in a new version number and updated date in the footer.

1. Assessment of the Tuakau & Pokeno Drinking-Water Supplies

Table 3: Water Supply Details.

Supply Details – Tuakau Zone	
Hinekōrako Community Code	TUA002
Hinekōrako Zone Code	TUA002TS
Supply Owner	Waikato District Council
Population Served by Supply	5,660 (based on 2025 active metered connections)
Supply Details – Pokeno Zone	
Hinekōrako Community Code	POK00
Hinekōrako Zone Code	POK001PO
Supply Owner	Waikato District Council
Population Served by Supply	6,390 (based on 2025 active metered connections)
Source Details – Waikato WTP, Tuakau	
Easting: 1745947	Northing: 3716538
Source	Waikato River
Hinekōrako Code	S00865
Consent	RC held by Watercare Auckland.
Treatment – Waikato WTP, Tuakau	
Hinekōrako Community Code	TP02337
Treatment Processes	Clarification, Membrane Filtration, Biological Activated Carbon (BAC) Filtration, Chlorination

Water Supply System Description

Drinking water for the Tuakau and Pookeno supply zones is sourced from the Waikato River and treated at Watercare Auckland's WTP, located off Trig Road in Tuakau. The treatment process includes coagulation and clarification, membrane filtration, biological activated carbon filtration, and chlorine and fluoride dosing, designed to address key raw water quality concerns such as protozoa, bacteria, viruses, and cyanobacteria. Treated water is distributed via Watercare's trunk main through two separate metered bulk connections: one at 296a Whangarata Road for the Tuakau supply, and one at 118F Barnaby Road for the Pookeno supply.

Tuakau Distribution Zone

Water from the Watercare bulk supply point is fed directly to the Harrisville Road reservoirs, which consist of two treated water storage tanks: a 2,145 m³ above-ground circular steel reservoir and a 260 m³ above-ground circular timber reservoir. From these reservoirs, water gravitates south through the distribution network. Continuity of supply in the event of a Watercare treatment plant failure relies on storage at both Watercare's Redoubt Road reservoirs and the Harrisville Road reservoirs.

Located at the intersection of Ryders and Harrisville Roads, the Railway Booster Pump Station includes two booster pumps controlled by pressure transducers. These transducers regulate pump operation based on demand, ensuring minimum pressure requirements are met in higher elevation areas. The Tuakau distribution network comprises approximately 54 km of pipework, predominantly PE, AC, and PVC materials.

System monitoring includes alarms for reservoir high and low levels, loss of communications, low pressure at the Railway Booster Pump Station, and pump failure. Reservoir details are provided in the *Reservoir Register (Appendix 3)*.

Pookeno Distribution Zone

The Watercare supply point for Pookeno includes a primary pressure regulating valve (PRV), a secondary PRV for bypassing the primary, and a manually operated bypass for both valves. Management of this supply point is the responsibility of Watercare.

The zone consists of a single distribution area supported by a 2,400 m³ above-ground steel reservoir located on Hitchens Road. The distribution network spans approximately 41 km and is composed predominantly of MDPE and PVC pipework.

System monitoring includes alarms for reservoir high and low levels, as well as loss of communications. Further details on reservoirs are provided in the *Reservoir Register (Appendix 3)*.

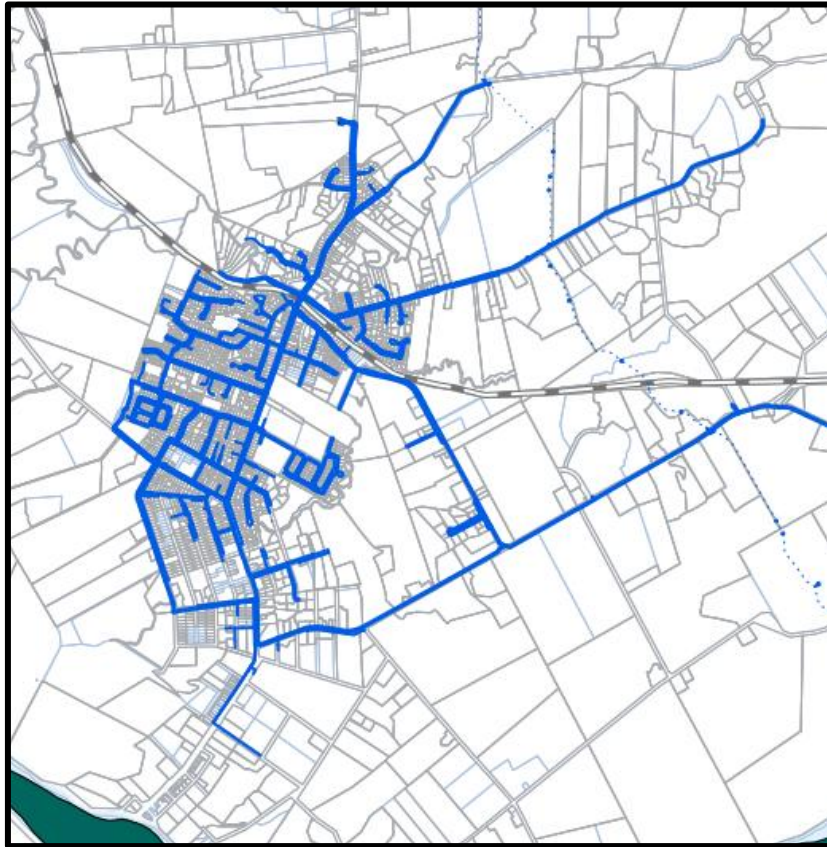


Figure 1: Tuakau Zone Supply Location.

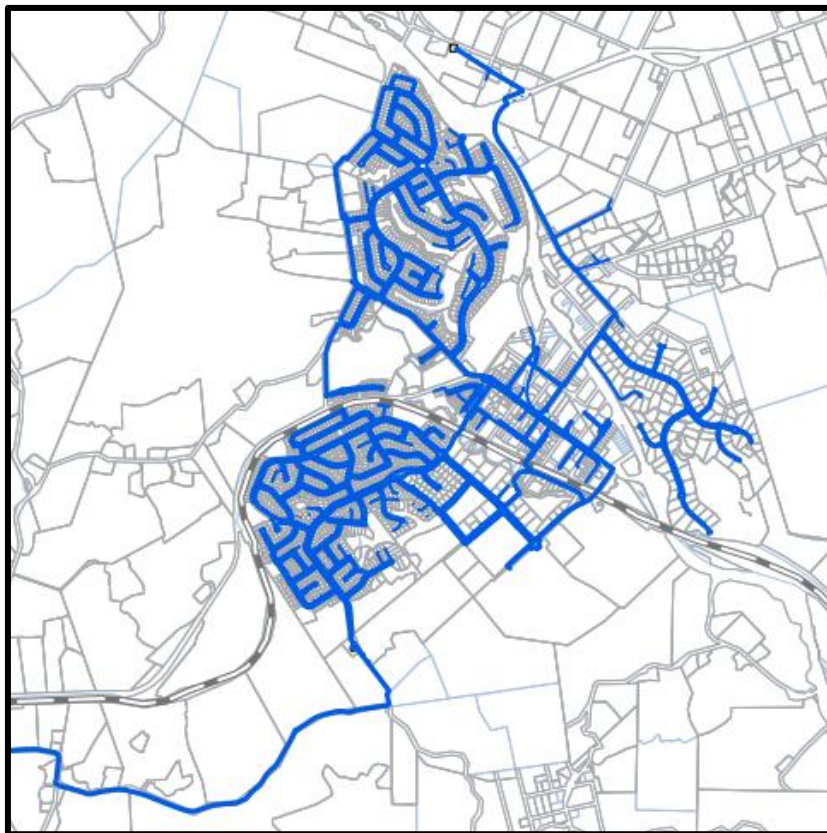


Figure 2: Pookeno Zone Supply Location.

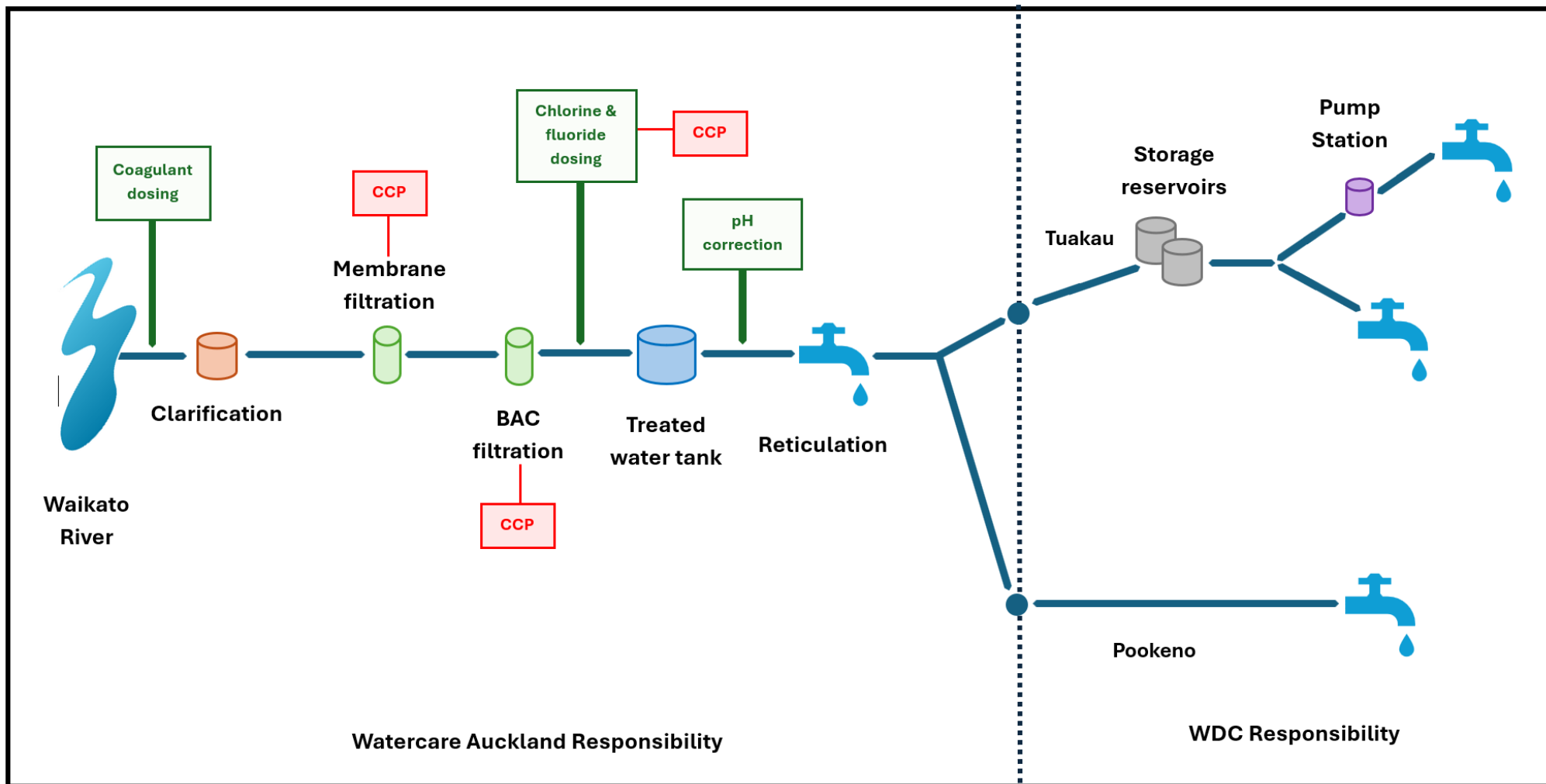


Figure 3: Water Supply Flow Diagram.

2. Risk Identification and Preventive Measures

A qualitative risk assessment of the Tuakau and Pookeno distribution zones is detailed in the *Water Supply Risk Table (Appendix 4)*. The table identifies potential public health risks across the entire supply system, with each hazardous event assessed based on its likelihood and consequence, and includes the following components:

- Supply of Water
- Reticulation
- Other
- Booster Pumps
- Storage Reservoirs

A multiple barrier approach is used to manage these risks. This approach ensures that if one barrier fails, others remain in place to maintain the safety and reliability of the supply. Key barriers include physical treatment processes, chemical dosing, operational monitoring, and system redundancies.

As part of this approach, Critical Control Points (CCPs) are established at key stages of the treatment process. These are process barriers and monitoring points designed to detect and respond to deviations that could compromise water safety. Each CCP has defined operational limits and is monitored at a frequency that ensures timely detection of any failures.

CCPs apply to the Waikato WTP which supplies the Tuakau and Pookeno zones and are detailed in the relevant DWSP overseen by Watercare Auckland.

The location of CCPs are illustrated in the supply flow diagram.

Table 4: Barriers and Preventative Measures in place at the Waikato WTP.

Four Types of Barriers	Existing Preventive Measures Include:
Preventing hazards entering the raw water	<ul style="list-style-type: none">• Wedge wire intake screens - CCP
Removing particles and hazardous chemicals from the water by physical treatment	<ul style="list-style-type: none">• BAC filtration – CCP• Membrane filtration - CCP
Killing or inactivating pathogens in the water by disinfection	<ul style="list-style-type: none">• Chlorination with contact time – CCP
Maintaining the quality of the water in the distribution system	<ul style="list-style-type: none">• Residual disinfection maintained• Hygiene and construction codes of practice• Adequate network pressures maintained• Backflow prevention programme• Reservoirs protected from ingress• Online continuous SCADA monitoring and alarms

3. Compliance Monitoring and Reporting Requirements

The Tuakau and Pookeno distribution zones are required to demonstrate compliance against the Drinking Water Quality Assurance Rules (2022), revised 29 November 2024 (DWQAR) Level 3. The reporting period is monthly, with compliance data submitted to Taumata Arowai within 10 working days following the end of each month. Determinands listed in Table 5 are reported via API transfers from Water Outlook to Taumata Arowai's compliance database, Hinekorako. The sampling plan is detailed in Appendix 5.

Table 5: Monitoring Requirements for the Tuakau and Pookeno distribution zones.

Population	Determinands	Compliance Limit	Hazard	DWQAR	Sampling Frequency	Compliance Period
10,750	FAC	0.2 mg/L	Bacteria	4.11.4 – D3.19 & D3.20	Table 35	1 Month
10,750	THM/HAA5	DWSNZ	DBPs	4.11.4 – D3.22	Table 37	1 Year
10,750	Plumbosolvent Metals	DWSNZ	Plumbosolvent Metals	4.11.4 – D3.24	Table 38	1 Year
10,750	<i>E. coli</i>	> 1.0/100mL	Microbiological	4.11.5 – D3.29	Table 39	1 Month
10,750	Total Coliforms	> 1.0/100mL	Microbiological	4.11.5 – D3.29	Table 39	1 Month

APPENDIX 1: BULK SUPPLY VARIATION AGREEMENT

Outlines the agreed terms for bulk water supply between Watercare Auckland and WDC.

Available at: <O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP Tuakau and Pokeno>

APPENDIX 2: GENERAL WATER SAFETY PLAN (VERSION 1.0)

Addresses the ten fundamental components for the provision of safe and secure drinking water across all WDC-owned water supplies in alignment with the *New Zealand Drinking Water Safety Plan Framework*.

Available at: <O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General>

APPENDIX 3: RESERVOIR STORAGE MANAGEMENT PLAN

Details operational parameters and maintenance requirements for drinking water storage facilities, aligned with the *DWQAR D3.12*.

Available at: <O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP Tuakau and Pokeno>

APPENDIX 4: WATER SUPPLY RISK TABLES

Summarises potential risks to drinking water quality for the Tuakau and Pokeno supply zones, supporting control prioritisation and improvement planning.

Available at: <O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP Tuakau and Pokeno>

APPENDIX 5: DISTRIBUTION NETWORK SAMPLING PLAN

Outlines WDC's distribution network compliance monitoring schedule, reviewed annually per *DWQAR D3.18* and *D3.28*. Available at: <O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP Tuakau and Pokeno>

APPENDIX 6: OPERATOR MONITORING AND MAINTENANCE SCHEDULE

Outlines a defined set of performance criteria used to assess and verify the functionality of key components within the water supply system. The Operator Monitoring and Maintenance Schedule is included in the General Drinking Water Safety Plan.

Available at: <O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP Tuakau and Pokeno>

APPENDIX 7: STANDARD OPERATING PROCEDURES (SOPS)

Step-by-step instructions for routine tasks, maintenance activities, and incident response, ensuring compliance with regulatory requirements and best practice standards.

Available at: <O:\Ops\Watercare Waikato\1. CONTROL of WORKS\CONTROL OF WORKS\SOPs\Production\Water>