Backflow Protection Policy 2026

Team/Directorate	Infrastructure Operations, Property & Infrastructure
Approved/Adopted by	Council Resolution
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CONTENTS

PURPOSE

A fundamental objective for the Queenstown Lakes District Council (QLDC) is to protect the health of our communities through the provision of clean and safe drinking water. This backflow prevention policy will play a pivotal role in ensuring the safety of the drinking water supply by establishing principles to prevent contamination occurring in the reticulated network.

QLDC will utilise this Policy document in combination with the QLDC Integrated 3 Waters Bylaw 2020, the Land Development and Subdivision Code of Practice, and public education in order to achieve its objectives in regard to backflow prevention.

The key outcomes of this Policy are listed below:

- Require that all new connections include appropriate backflow prevention at the point of supply between the customer and the water supplier
- The type of backflow prevention device will be commensurate to the risk to the water supply posed by the customer
  - Domestic/ordinary use connections will require a non-testable dual check device at the point of supply
  - Commercial/extraordinary use customers will likely require a testable backflow prevention device at the point of supply.
- Point of supply or boundary backflow prevention devices will be owned by the property owner, who will then be responsible for their maintenance and replacement as required. This does not include the standard domestic non-testable dual-check value, which is owned by Council.
- Testable backflow prevention devices must be re-tested annually and after any maintenance.
- Existing commercial/extraordinary use connections without adequate backflow prevention will be upgraded at the customer's cost. These will be prioritised according to potential risk.
- Existing domestic/ordinary use connections without backflow prevention will be upgraded when the tobies are replaced.
- Periodic surveying of existing connections will be undertaken to determine any change of use requiring upgrading of backflow prevention.
- Enforcement where necessary will be as set out in the QLDC Integrated 3 Waters Bylaw 2020.

Fundamentally, this Policy will protect the water supply against contamination occurring post treatment by requiring that an appropriate level of backflow prevention is provided on all water connections.

1 INTRODUCTION

Backflow is the term given to the undesirable flow from a customer's connection back into the public drinking water supply. This backflow can carry contaminants that pose a risk to the community served by the drinking water supply. Backflow can happen where there is a differential between the pressure of the public water supply and the customer's reticulation. To prevent this QLDC requires that appropriate backflow prevention devices are installed on all connections at the point of supply, these devices are referred to as boundary backflow devices throughout this Policy.

This document seeks to clearly set out the requirements from both Council and its' Customers in regard to Backflow Prevention.

1.1 DEFINITIONS

Auxiliary Water Supply	Means any water supply on or available to any premises other than a public water supply.
Backflow	Is the undesirable flow of a liquid or a contaminant back into the potable public water supply. There are two types of backflow: Back pressure and back siphonage.
Backflow Prevention Device	Means a device designed to prevent backflow due to back pressure or back siphonage, as defined in ASNZ 2845 Part 1 and NZBC G12.
Back Pressure	Occurs when the pressure in the downstream plumbing is higher than the supply pressure, thus "pushing" the water or other substances back into the supply line.
Back Siphonage	Occurs when a temporary drop in water pressure occurs and water is siphoned into the drinking water pipeline.
Boundary Protection	**(sometimes known as Containment Protection).** A backflow prevention system provided at or near the property boundary to protect the drinking water network from potential contamination.
Certifying Plumber	Registered Plumber who in addition, has successfully completed the requirements of the New Zealand Plumbers, Gasfitters and Drain layers Board for Certifying plumbers.
Contaminant	Any solids, liquids, gases, and micro-organisms and steam with the potential to enter the potable water supply and affect a Health Hazard.
Cross Connection	An actual or potential connection between the drinking water supply and an auxiliary supply or pipework which contains non-drinking water
COP	QLDC Subdivision and Land Development Code of Practice.
Customer	Means owner or occupier of a property who is responsible for the water reticulation within that property.
Domestic	All users of potable water supply described in G12/AS1 for sanitation, human consumption, food preparation, utensil washing, oral hygiene.
Down Stream	Water flow or any fittings after the backflow device.
Drinking Water	Water that is suitable for human consumption. Also referred to as Potable Water.
G12/AS1	Compliance document for NZ Building Code Clause G12 Water Supplies – Third edition. Also referred to as Acceptable Solution G12/AS1 Water supplies.

Hazard	Any condition, device or practice which, in connection with the drinking water supply system, has the potential to: High Hazard: cause death Medium Hazard: injure or endanger health Low Hazard: would constitute a nuisance, by colour, odour or taste, but not injure or endanger health Very Low Hazard: Residential Connections
IQP	Independent Qualified Person under the Building Act 2004. Suitably qualified to test backflow prevention devices, assess hazards and provide written documentation. Wherever this is referenced in the document it shall also be interpreted to mean IQP as per the Backflow Prevention for Water Supplies Code of Practice 2012.
LBP	Licensed Building Practitioner as per Section 298-301 of Building Act 2004.
Level of Protection	A term to reflect the position of the backflow prevention device and its effectiveness in protecting the community or dwelling. The options for Level of Protection are: > Individual/Source > Boundary > Zone
Local Government Act 2002	Defines the purpose of the local authorities as enabling local decision making by and on behalf of the community, and allows local authorities the power of general competence. This Act specifically requires Councils to continue to provide and maintain water and wastewater services if they do so already.
Licensed Plumber	Person with qualifications recognised by the New Zealand Plumbers, Gasfitters and Drain layers Board, working under the supervision of a Certifying Plumber.
MoH	Ministry of Health.
PHRMP	Public Health Risk Management Plan.
Point of Supply	Is that point which marks the boundary of responsibility between the customer and the Water Supplier irrespective of the property boundary.
Potable Water	Water that is suitable for human consumption.
Reticulation	The network of pipes, pumps and service reservoirs that delivers the drinking water from the water treatment plant to the consumer's boundary. Also referred to as Network or Networked System.
Source Protection	Backflow prevention provided at individual fixtures where specific hazards exist.
Specified System	Those systems as specified by SR 2005/32 under the Building Regulations 2004 Schedule 1 and are to appear on properties Compliance Schedule.
Water supplier	Means any organisation that supplies water to another organisation or individual customers as defined as drinking-water supplier in the Health (Drinking Water) Amendment Act 2007.
Potable Water	Is water that is suitable for human consumption and as defined by the Drinking Water Standard of New Zealand 2005 (revised 2018).

2 LEGISLATION

The following are the principle Acts and Regulations that are relevant to the area of backflow prevention and cross connection control.

2.1 THE BUILDING ACT 2004

The Building Act requires that buildings are safe and sanitary and the occupants are safeguarded from possible illness.

The Act requires an annually renewable Building Warrant of Fitness (for non-residential buildings) to ensure the specified systems stated in the compliance schedule are operating correctly. The compliance schedule includes any backflow preventers installed at the source of possible contamination.

The Building Act calls upon the Building Code in the Building Regulations 1992, specifically, Schedule 1, G12 Water Supplies regarding backflow prevention. The code requires that water supply systems be installed in a manner that avoids the likelihood of contamination within both the system and the water main. It also identifies the level of risk for certain hazards and introduces the requirement for IQPs to test backflow prevention devices.

All property owners must take all necessary measures on their side of the point of supply to prevent water which has been drawn from the public water supply or from any other source returning to that supply.

2.2 HEALTH ACT 1956

The Health Act requires that adequate water supplies are provided to communities. Any buildings being built, sold or let must have an adequate and convenient supply of wholesome water.

The Act also provides for Local Council "To make bylaws under and for the purposes of this Act or any other Act authorising the making of bylaws for the protection of public health", refer section 23.

The Act further states that it is an offence to pollute a public drinking water supply under Section 60 and can incur a fine.

2.3 WATER SERVICES ACT 2021

The Acts requires that if a drinking water supply includes reticulation, the drinking water supplier must ensure that the supply arrangements protect against the risk of backflow

The relevant section of the Act Section 21 is reproduced below:

(2) If there is a risk of backflow in a reticulated drinking water supply, the drinking water supplier may—

(a) install a backflow prevention device and require the owner of the premises to reimburse the supplier for the cost of installation, maintenance, and ongoing testing of the device; or

(b) require the owner of the premises to install, maintain, and test a back- flow prevention device that incorporates a verifiable monitoring system in accordance with any requirements imposed by the supplier.

2.4 QLDC INTEGRATED 3 WATERS BYLAW 2020

The bylaw provides the power to QLDC to fit backflow protection at the point of supply where the customer cannot demonstrate that the risk of backflow Is effectively managed and allows the associated costs to be recovered from the property owner.

2.5 HEALTH AND SAFETY AT WORK ACT 2015

This Act provides for prevention of harm to employees at work. It makes the employer responsible for providing and maintaining a safe working environment for employees. The employer must ensure that hazards are identified and eliminated or minimized.

2.6 LOCAL GOVERNMENT ACT 2002

Under the Local Government Act Council may make bylaws as it thinks fit for the purposes of "protecting, promoting, and maintain public health and safety", Section 145.

This Act also states that it is an offence to pollute the water supply of a Local Authority and also gives Council the power to stop the water supply in response to an event that may become a danger to public health.

2.7 OTHER LEGISLATION

Other Acts and Regulations which may impact on the requirements for backflow prevention include:

- Building Act amendments and Building Regulations 1992
- Local Government Act 2002 and subsequent amendments
- Resource Management Act 1991
- Plumbing, Gasfitters and Drainlayers Act 2006
- Food Act 2014
- Camping Ground Regulations 1985

2.8 RELEVANT STANDARDS AND GUIDELINES

- Backflow Prevention for Drinking Water Suppliers Code of Practice 2019, published by NZ Water
- New Zealand Drinking Water Standards 2005 (Revised 2018)
- Public Health Risk Management Plan Guide 'Distribution System – Backflow Prevention', version 1, Ref D2.4 published by Ministry of Health
- Public Health Grading of Community Drinking-Water Supplies and Guidelines
- QLDC Land Development and Subdivision Code of Practice
- AS/NZS 2845.1:2010 Water supply - Backflow prevention devices – Part 1: Materials, design and performance requirements
- AS/NZS 2845.2:2010 Water supply - Backflow preventions devices Registered air gaps and registered break tanks
- AS/NZS 3500.1:2003 National plumbing and drainage – Water Services
- New Zealand Backflow Testing Standard 2019 Field Testing of backflow prevention devices and verification of air gaps
- NZS 4541 Automatic Fire Sprinkler Systems
- ASSE product standards on backflow devices
- Field Testing of Backflow Prevention Devices and Verification of Air Gaps 2011
- Water New Zealand – Boundary Backflow Prevention for Drinking Water Supplies 2019

3 GENERAL REQUIREMENTS

To provide an adequate level of backflow protection, the nature and configuration of the property and its use must be understood. Only then can there be certainty that the backflow prevention device(s) will be installed in the most appropriate locations.

There are two main types of backflow protection, which are described below. Both must be considered to ensure the network is adequately protected and each property connection from the main supply will be assessed on a case-by-case basis:

i. **Source (Point of Risk) protection**

For buildings covered by the Building Act an appropriate backflow prevention device must be installed as close as possible to the source of potential contamination. The type of device used shall be in accordance with the Building Code Approved Document G12.

ii. **Boundary (Containment) protection**

In accordance with the Health (Drinking Water) Amendment Act 2007, an appropriate backflow prevention device must be installed on the supply pipe as close as practicable to the point of supply. QLDC will use the QLDC Boundary Backflow Risk Assessment Approach – Decision Tree to inform what the appropriate device shall be. This Decision Tree is included in Appendix 1.

In most situations where the water connection is for Commercial use, or where a specific risk is identified, the boundary protection device installed shall be fully testable with the minimum standard being a double check valve. Some Industrial uses will require a Reduced Pressure Zone backflow device. For all other properties with ordinary use (domestic) a QLDC approved non-testable dual check valve device will suffice.

All costs associated with the installation, maintenance and testing of boundary backflow preventers shall be met by the customer (excluding non-testable dual check valves on residential connections). The installation of boundary devices shall be organised by the customer. For new connections, it is the responsibility of the property owner to propose the appropriate backflow device in accordance with the guidance set out in this policy. The backflow prevention provisions will be assessed during the Resource Consent or Connection to Council Services application processes.

3.1 OWNERSHIP OF BOUNDARY BACKFLOW DEVICES

The point of supply is the location of change of ownership from Council to the property owner. The point of supply is defined within the QLDC Integrated 3 Waters Bylaw 2020 as being directly downstream of the water meter (or service valve if no meter is fitted). Therefore, as the testable boundary backflow devices are located downstream of the meter these are in private ownership.

3.2 ROLES AND RESPONSIBILITIES

Various departments within Council, as well as customers, have responsibilities under the aforementioned acts and regulations. Council's requirements for backflow prevention and cross connection control fall into three distinct areas; Property and Infrastructure, through the Maintenance and Operations team, and Planning and Development through the Building team and Resource Management (RM) Engineering team.

3.2.1 Maintenance and Operations

The Maintenance and Operations (M&O) team, through the 3 Waters Operations & Contracts Manager, holds responsibility for the operation of the drinking water supply, including the requirements for water safety as governed by the Health (Drinking Water Amendment) Act. Accordingly, under this policy the following responsibilities will be assigned into this team:

- Initial survey of extraordinary use customers and progressive installation of Boundary Backflow devices as required.
- Maintenance of a register of all identified boundary backflow devices, and ensuring testing and certification is carried out as required.
- Undertaking regular surveying, at a frequency not exceeding five years, to re-evaluate changes posed to the water supply by customer activities.
- Ensuring follow up actions identified as a result of the periodic survey are completed.
- Ensure customers meet the requirements to own and maintain non-specified boundary backflow devices (ie. Backflow devices not covered under the Building Act) as outlined in this Policy document. If the customer does not meet this Policy, the M&O team will follow up with the customer to outline what must be rectified. The customer will be given the opportunity to rectify this themselves, or for Council to undertake the work and back-charge the customer.

3.2.2 Building

The Building Department is responsible for ensuring compliance with the Building Act and Building Code. Various Acts of Parliament are focused on protecting the building occupants and users from possible dangers, including cross connections and backflow. It is the customer's responsibility under these regulations to protect the occupants, and they must install and test backflow preventers where required under the Building Act.

If a backflow device is required under the Building Act, it will become a specified system that is required to achieve Building Consent. Regular testing of these devices will be managed by the Building team using the existing Building Warrant of Fitness (BWOF) process. Where a suitable specified system backflow device has not been installed, has the wrong hazard rating or fails a test; the compliance division may issue a Notice To Fix under the Building Act 2004. Failure to comply with a Notice To Fix is an offence and has an infringement fee of $1,000 or if taken to prosecution a maximum fine of $200,000 and $20,000 for every day that the offence continues.

If the backflow preventer forms part of the compliance schedule for the building, the Building Warrant of Fitness cannot be renewed until the required testing (usually annual) has been completed and Form 12A had been completed by a Council approved IQP.

3.2.3 Resource Management (RM) Engineering

The RM Engineering Department is responsible for ensuring compliance with the Resource Management Act and the QLDC CoP, and therefore this Policy as well. The RM Engineering team will focus on ensuring that the water supply network is adequately protected from the risk of a backflow event. This will be carried out during Engineering Approval and Connection to Council Services review using the Decision Tree in Appendix 1.

3.2.4 Customer

The customer (building owner or employer) is responsible for the protection of all employees and visitors to the site as well as protection of the public supply. It is the customer's responsibility to install and maintain all backflow prevention devices as may be required by the relevant Acts, Regulations and Bylaws. The customer and their approved building certifiers shall ensure that on initial construction all necessary backflow preventers are installed and added to the Building Compliances Schedule and QLDC database for boundary devices. The customer shall ensure that the backflow devices installed meet the current standards.

The customer shall be responsible for arranging the required testing of boundary backflow prevention devices in accordance with this Policy, refer to Section 6.3. The customer remains responsible for the testing of internal devices in accordance with the Building Compliance Schedule and the Building Act. The customer shall provide all test reports to Council. Also after any renovations requiring consent the customer shall ensure that cross connections are avoided or backflow preventers installed to conform to the Building Act and Health (Drinking Water) Amendment Act. The customer shall also allow Council staff or appointed representatives access to the site by prior arrangement for the purpose of testing, checking for cross connections, and general compliance with this document. They shall also provide a person knowledgeable in the water layout of the property to assist with any inspection. The customer shall also be responsible for obtaining the necessary permits and consents prior to any plumbing alterations or changes of building or water use.

The customer shall be responsible for the payment of all fees and costs associated with permits, installation, maintenance, testing or removal of devices as may be required in this document.

The consequence of failing to meet the requirements of this document are outlined in Section 5.

4 HAZARD CLASSIFICATION

4.1 LEVEL OF RISK

The level of risk to public health identified relates to the hazard rating assigned to the downstream activity, and are defined below. These definitions are consistent with G12/AS1 of the Building Code.

Hazard Rating	Description
High Hazard	Any condition, device or practice which, in connection with the potable water supply system, has the potential to cause death.
Medium Hazard	Any condition, device or practice which, in connection with the potable water supply system, has the potential to injure or endanger health.
Low Hazard	Any condition, device or practice which, in connection with the potable water supply system, would constitute a nuisance, by colour, odour or taste, but not injure or endanger health.
Very Low Hazard	Residential Connections

Unless otherwise exempted, QLDC require that an appropriate and testable boundary protection device be provided, as close as practicable to the boundary, to any property containing either a high or a medium hazard.

Should a dispute arise over the level of risk, or the backflow prevention device required at the boundary, the Chief Engineer shall nominate the device.

All residential properties shall have non-testable dual check valves incorporated within the water meter installation.

4.2 TYPES OF HAZARDS

The tables below provide examples of typical activities and equipment for each of the backflow hazard rating categories (High, Medium, Low and Very Low). .

HAZARD	COMMENTS	DEVICE REQUIRED
High *Any condition, device or practice which, in connection with the potable water supply system, has the potential to cause death.*	Equipment used for handling, mixing, measuring and processing hazardous chemical or harmful microbiological substances	Reduced pressure zone device, Registered air gap Reduced pressure zone detector for fire systems
ACTIVITY	**EQUIPMENT**	
Medical facilities (includes laboratories, hospitals, pharmacies)	Autoclaves, sterilisers, aspirators, haemodialysis machines, pan washers, bidets, sluice sinks, spittoons/cuspidors	
Air conditioning units, heat exchangers and other water-cooled equipment	If potential connected to the sewage system or treated with chemicals. If not, Medium Risk.	

ACTIVITY	EQUIPMENT
Irrigation	Below ground or pop-up system. If chemicals are added to water or applied to ground it is High risk.
Auxiliary Sources	Storage reservoir. The quality of auxiliary water suppliers will typically not comply with relevant standards of potable for consumption. If chemicals added it is High risk.
Fire Protection Systems	The water in these systems is often poor quality as no usage occurs for months on end.
Various Activities	Hose connections: can become submerged in a contaminated non-potable liquid. Common hazards areas are wash down areas and hose taps close to grease traps.
Fire or cooling systems with chemicals	Systems containing chemicals such as anti-freeze, anticorrosion, biocides, or fungicides
Industrial and trade waste customers	Boiler, chiller, steam calorifier and cooling tower make-up and recycled water; electroplating, degreasing, descaling, pickling, stripping and dipping tanks and vessels
Car and factory washing facilities	Chemical dispensers and chemical injectors (high toxicity)
Water treatment facilities	Chlorinators, demineralising equipment using ion exchange resins with acid/alkali regeneration. Plants with auxiliary supplies. Drinking water in reclaimed water plants.
Dental clinics	Dental equipment
Commercial buildings	Direct heat exchangers (unsealed and toxic environment) Fire sprinkler systems and fire hydrant systems that use toxic or hazardous water.
Commercial laundries	Recirculated or recycled water, venturi detergent and bleach dosing
Mortuaries	Embalming systems
Pest control businesses	Hose taps associated with High hazard situations like mixing of pesticides, aspirators, sprayers
Food preparation facilities	Clean in place tanks, vats and food storage vessels
Photography labs X-ray machines	Developer mixing facilities
Airports, piers and docks	Seawater cross-connections (i.e., hoses on wharves, fire systems using seawater, primed by town supply)

ACTIVITY	EQUIPMENT
Sewage pump stations and sump ejectors	Wash-down hoses and decontamination systems
Horticultural and commercial gardens	Irrigation systems with chemical injection systems
Agriculture	Livestock water supply added chemicals/chemigation (i.e., antibiotic injectors and bloat control), farm irrigation with fertigation systems and cow shed washdowns.
Veterinary clinic	Veterinary equipment
Water filling stations	Water tankers and associated hoses
Schools, universities and polytechnics	Boilers and water based heating systems, laboratories, irrigation systems, swimming pools

HAZARD	COMMENTS	DEVICE REQUIRED
Medium *Any condition, device or practice which, in connection with the potable water supply system, has the potential to injure or endanger health.*	In general, Commercial and residential water uses other than domestic sanitary fixtures.	Reduced pressure zone device, Registered air gap, Testable Double check valve Double check detector for fire systems

ACTIVITY	EQUIPMENT
Beauty salon and hairdresser's sinks	Hairdresser's sinks
Air conditioning units, heat exchangers and other water cooled equipment	This equipment may be contaminated with algae or bacterial slime.
Toilet Connection to sewerage system	Public Toilets and urinals
Irrigation	Below ground or pop-up system. If chemicals are added to water or applied to ground it is High risk.
Auxiliary Sources	Storage reservoir. The quality of auxiliary water suppliers will typically not comply with relevant standards of potable for consumption. If chemicals added it is High risk.
Fire Protection Systems	The water in these systems is often poor quality as no usage occurs for months on end.

ACTIVITY	EQUIPMENT
Various Activities	Hose connections: can become submerged in a contaminated non-potable liquid. Common hazards areas are wash down areas and hose taps close to grease traps.
Commercial car washes or vehicle wash down	Appliances, vehicles or equipment wash-down facilities without chemical additives
Water treatment systems	Deionised water, reverse osmosis units and equipment cooling without chemicals
Auxiliary water supplies such as pumped and non-pumped fire sprinkler secondary water	Fire sprinkler systems and building hydrant systems Hose taps and fire hose reels associated with Medium hazard
Horticultural and commercial gardens	Irrigation systems with underground controllers but without chemicals (includes residential irrigation)
Rural water supply	Livestock water supply without added chemicals; milking sheds
Rainwater collection	Untreated water storage tanks
Recirculated water systems	Water for equipment cooling and steam cleaning
Residential and commercial premises	Swimming pools, spas, fountains and fishponds
Agriculture	Stock water can be contaminated with bacterial slime.

HAZARD	COMMENTS	DEVICE REQUIRED
Low *Any condition, device or practice which, in connection with the potable water supply system, would constitute a nuisance, by colour, odour or taste, but not injure or endanger health*		Testable Double check valve, Hose connection vacuum breaker

ACTIVITY	EQUIPMENT
Commercial premises with potential for change of use.	Domestic sanitary fixtures only
Cafes, restaurants and other facilities used for the storage or preparation of food and beverages	Drink dispensers with carbonators, coffee machines, dishwashers, garbage can washer, retractable hoses, urinal, auto vegetable peeler, ice maker

HAZARD	COMMENTS	DEVICE REQUIRED
Very Low All household units (i.e., residences).	MoH PHRMP Guideline recommends a non-testable dual check valve to be part of meter assembly maintained by water supplier.	Non-testable dual check valve Air gap

ACTIVITY	EQUIPMENT
Residential water connections	Domestic sanitary fixtures only Hose tap used for fixed domestic irrigation systems
Schools and Parks, etc	Drinking water fountains
Retail Shops	Domestic sanitary fixtures only

4.2.1 Further Detail on Specific Systems

4.2.1.1 Fire sprinklers and associated systems

For a fire sprinkler system to comply with NZ Building Code clause G12 Water Supplies and the QLDC backflow policy, backflow protection is required appropriate to the hazard:

1. Fire sprinkler systems fed solely from the water supply without auxiliary water supplies are Medium Risk and must have a testable double check valve assembly installed.
2. Systems containing hazardous additives used for firefighting (foam or antifreeze) are High Risk and must have a reduced pressure zone device installed.

Backflow prevention devices associated with fire systems are to be installed in the sprinkler valve house, or other secured environment as approved by QLDC.

The HDWA Act requires that this device does not compromise the fire sprinkler system.

In accordance with NZS 4541 Automatic Fire Sprinkler Systems, all valves on a connection serving a sprinkler system (other than a domestic sprinkler system) shall be alarmed and/or monitored for unauthorised operation. The exception to this is the underground sluice valve at the public main connection, which does not require monitoring.

Boundary backflow devices shall be installed on fire lines connected to in-ground hydrants. These devices shall be protected against vandalism.

A backflow device incorporating a bypass meter (detector check assembly) to provide backflow protection and to detect any inappropriate use or possible leakage of the fire line may be incorporated on dedicated lines for fire sprinkler systems. Such assemblies shall have a 'producer statement' from the supplier confirming that the device has been built and tested in compliance with relevant standards.

Mechanical flow meters shall not be installed on fire lines, as they could compromise flow under fire conditions.

4.2.1.2 Bore takes

QLDC require that all ground water takes from an aquifer have adequate backflow protection, to ensure no contamination of, or cross-connection with, groundwater aquifers.

Ground water takes for irrigation or stock water with direct injection of chemicals are required as a minimum to be a testable double check backflow device, a higher hazard device (RPZ) will be at QLDC discretion on review of the injection/chemical systems.

4.2.1.3 Fire Hydrant use

Fire Hydrants are for firefighting purposes only – any other use is discretionary and limited by QLDC.

To obtain access to the water network via hydrant prior written approval must be obtained from QLDC, except in the case of Fire and Emergency New Zealand when fighting fires or testing hydrants.

All contractors using hydrant standpipes for water use must use a QLDC approved hydrant standpipe complete with a testable double check valve or approved non-return valve.

The Fire Service is to notify QLDC of routine hydrant testing in case of potential backflow and/or customer complaint.

4.2.1.4 Tanker use

For tankered water intended for human consumption, QLDC requires the water carriers to be registered under the Ministry of Health registration system.

Tank suppliers must have a permanently mounted air gap of no less than 25 mm or twice the nominal diameter of the delivery pipe and should be installed between the pipe outlet and the filling tank.

4.2.2 **Backflow Philosophy**

For all consented works a Backflow Philosophy is required to be submitted by the design professional at the time of consent.

The backflow philosophy shall at a minimum include a desktop review of the proposed water services with a breakdown of how cross-connections and backflow hazards have been addressed to comply with current legislation.

QLDC requires all authors of a backflow philosophy to be appropriately experienced in backflow prevention and at a minimum must have attended and successfully completed/passed a recognised backflow surveyors course.

5 CONSEQUENCES OF NON-CONFORMANCE

Where a hazard or potential hazard to the water supply exists and is not remedied within a reasonable period of time (as specified by QLDC, but not less than 14 days from the date of notification), QLDC may undertake work to remedy the hazard and seek to recover costs from the customer. Where a significant hazard exists, which poses immediate risk to public health, QLDC may undertake work without notification. In such a situation the customer will remain liable for any and all costs associated with rectifying the issue so far as they are attributable to the actions or inactions of the customer.

Instances where QLDC would look to intervene include but are not limited to:

- Unprotected, direct or indirect connection between a contaminant and the public water supply
- Removal or bypassing of a boundary backflow preventer
- Any other situation where QLDC assess that the safety of the drinking water supply is compromised

Alternatively, QLDC may seek to disconnect the water supply should it not be practical to address the hazard directly, or if the likelihood of recovering the associated costs is compromised. Disconnection of the water supply may be undertaken in accordance with the following legislation; The Local Government Act 2002 and QLDC Integrated 3 Waters Bylaw 2020.

QLDC will make every effort to inform customers in advance of disconnection. However, in the event that a potentially serious hazard to the public water supply exists the connection to that property may be disconnected immediately. Reconnection of the supply shall not be undertaken until the appropriate action has been undertaken to the satisfaction of the Chief Engineer. The cost of the disconnection, and reconnection if applicable, shall be met by the consumer.

Failure to provide sufficient backflow prevention inside a premise or building as required under the Building Act or other regulations shall be deemed an offence under those regulations. Any penalties or actions to be taken shall be in accordance with the relevant legislation and at the discretion of the Building Services and/or the Regulatory Department of QLDC, and/or the Medical Officer of Health.

6 BACKFLOW PREVENTION DEVICES

6.1 TYPES OF DEVICES

The types of backflow preventers are categorised in accordance with the level of risk, very low, low, medium or high (refer Section 4). However, certain devices may not be suitable in all situations even if they have the correct hazard rating. For example, an air gap would often be impractical as a boundary device. The types of appropriate devices, dependant on location, are shown in the table below:

Hazard Rating	Boundary Device	Source Device
Very Low Risk	Non-testable dual check valve	Not required
Low Hazard	Testable Double Check Valve	Testable Double Check Valve Testable Double Check Valve with Atmospheric Port Hose Connection with Vacuum Breaker
Medium Hazard	Testable Double Check Valve Double Check Detector	Testable Double check valve Atmospheric Vacuum Breaker Pressure Vacuum Breaker Spill Proof Vacuum Breaker
High Hazard	Reduced Pressure Zone Valve Reduced Pressure Zone Detector Valve	Reduced Pressure Zone Registered Air Gap

A brief description of each device is in Appendix 2.

All backflow prevention devices shall be manufactured in accordance with AS/NZS 2845.1 *Water supply Backflow prevention devices Materials, design and performance requirements*. Refer QLDC Approved Materials List for approved models. Installation should be in accordance with QLDC Code of Practice Standard Drawings, where appropriate.

It is important to ensure that the correct device is chosen for the potential hazard. It is also essential that the installer and tester are fully aware of the installation requirements and operating characteristic of all devices. If in doubt a higher level of protection should be used. QLDC will use the QLDC Boundary Backflow Risk Assessment Approach – Decision Tree to inform what the appropriate device shall be at the boundary. This Decision Tree is included in Appendix 1.

6.2 INSTALLATION REQUIREMENTS

Before a boundary backflow preventer can be installed or removed approval must be obtained from QLDC. Approval shall be sought through either an Engineering Approval application, or a Connection to Council Services Application. QLDC may request the owner to undertake a comprehensive survey of the site by an accredited IQP at their discretion.

Installation of a backflow prevention device may be required following any of the below events:

- A new connection to the QLDC water supply being requested,
- A change to an existing QLDC connection being requested
- As part of a Resource Consent Application or Engineering Approval
- As part of a Building Consent
- Where the property's nature of use changes
- Property inspection by Council's backflow contractor
- A backflow incident

Where the applicant is unsure of the final use of the water supply QLDC may allow a testable double check valve to be installed. This will be determined by following the QLDC Boundary Backflow Risk Assessment Approach – Decision Tree (refer Appendix 1). However, should the water subsequently be used for high hazard activities the backflow preventer shall be upgraded at the customer's expense.

For source backflow preventers as required by the Building Act a building consent will also be required.

All source (point of risk) devices shall be installed as near as practicable to the potential source of contamination (appliance/fixture) while still in an easily accessible and safe position for maintenance and testing.

Where possible, the boundary device will be located just inside the customer's property boundary and just downstream of the water meter (where installed). The installation must comply with QLDC's Land Development and Subdivision Code of Practice, and the manufacturer's recommendations.

The boundary backflow device must be sited so that:

- it can be readily maintained and tested in-line without compromising the health or safety of the individuals involved,
- it should be possible to access the device without the need to climb ladders or scaffolding or enter a confined space,
- it is unlikely to be obstructed or be subject to vibration from heavy vehicular traffic or other loads; and
- it can be readily removed for maintenance or replacement.
- It will be protected from damage and vandalism

Reduced pressure zone backflow prevention devices must be installed above ground (minimum 300mm above 1% AEP flood level) and be protected from vehicular traffic, frost and vandalism. They should be installed in a securely fenced or caged area with a concrete base and a lockable access gate, where possible, with the gate located parallel to the property boundary.

Where testable double check valve devices are installed in an underground chamber, the design must allow for servicing by top entry and the chamber must be well drained. For larger sized testable double check valve devices above 50mm, these shall be installed above ground unless written approval is provided from the Chief Engineer. This is to allow for ease of access and possible future upgrading to reduced pressure zone devices.

New source protection devices will be added to the building's compliance schedule. All boundary protection devices will be added to the QLDC database.

Where it is not possible to shut down the water supply to buildings such as hospitals and 24-hour commercial operations, back flow prevention devices can be installed in parallel. Both devices must be of the same hazard rating.

No device shall be bypassed unless the bypass is also fitted with a device appropriate for the same hazard rating.

The installation of internal backflow prevention devices shall only be undertaken by a certifying plumber, or by a licensed plumber working under the direction of a certifying plumber. The installation of testable boundary devices shall be undertaken by a certifying plumber who is also qualified to work on the QLDC water network. Non-testable (very low risk) devices must be installed by a contractor qualified to work on the QLDC water network.

Existing non-domestic use connections without adequate backflow prevention in place (as determined by QLDC) will require upgrade. The required upgrades will be prioritised according to potential risk posed to the network. QLDC will notify the customer of any deficiencies identified, and the customer will be required to install appropriate backflow prevention at their expense. Any new device must be tested in accordance with Section 6.3.

6.2.1 Removal of a Device

Where a building owner considers that the type of boundary device in use is no longer necessary, they may put a request to QLDC that the device be removed, and another device type (e.g., a non-testable device) installed in its place.

Where the request is approved, the removal and replacement procedures must be approved by QLDC and any costs involved borne by the building owner. Full and appropriate records of the change must be provided to QLDC.

6.3 TESTING

Irrespective of ownership (by the water supplier or the customer), all backflow devices shall be tested at least annually as required by the Building Act 2004 and the Heath (Drinking Water) Amendment Act 2007.

All registered air gaps shall be inspected and verified annually. In the event of a suspected backflow incident, the water supplier may request that an additional test be carried out.

It is a requirement under the Building Act 2004 that all internal backflow preventers are tested within the required time frame by an IQP. This will normally be part of the building's Compliance Schedule. An IQP is defined within the Building Act as being:

> *"a person who:*
>
> *a. has no financial interest in the building, other than as a qualified person; and*
>
> *b. is accepted by the territorial authority as being appropriately qualified to undertake the inspection and maintenance of the feature or system concerned."*

Once installed, boundary devices that are not part of a building compliance schedule shall be tested annually by an IQP, or as directed by the Chief Engineer. The owner/occupier will be responsible for arranging the testing of all backflow prevention devices associated with their property, unless an alternative arrangement is agreed with QLDC. The owner/occupier must provide the test certificate to Council prior to the expiry date of the current certification. In the event test results are not received by the required date QLDC reserves the right to undertake the testing and invoice the owner/occupier.

In all situations the manufacturer's recommendations are to be complied with, and the device shall be tested immediately following installation to prove compliance with all requirements. All testing is to be carried out by a registered IQP.

6.3.1 IQP's Responsibilities

The IQP shall inform both the customer and QLDC if the level of protection offered by the backflow device is at any time found to be insufficient for the highest hazard on the property.

The IQP shall report any unsanitary plumbing practices and report any unprotected backflow risks to both the owner/occupier and QLDC.

6.3.2 Qualifications/Accreditations

Council requires that all approved IQPs have a thorough knowledge of backflow prevention and cross connection control. They must be able to recognise potential backflow hazards in addition to competence in the physical testing of devices. An IQP must be able to advise property owners on backflow requirements and be familiar with all acts and regulations pertaining to backflow and cross connection issues.

The IQP shall have attended and passed a recognised Backflow testers course. Dependant on the year of delivery, New Zealand recognised backflow courses typically assess to unit standards US23847 and US23848. If the IQP is a qualified plumber, they shall have obtained competency in unit standard US2117.

In order to keep up to date with changes in regulations, equipment and procedures, each IQP must also attend a recognised refresher course at least every three years.

6.3.3 Registration

Persons wishing to become registered as an IQP, as specified in the Building Regulations, for Section G – "Any automatic backflow preventer connected to a potable water supply" must be on the IQP Register administered by the Timaru District Council.

Refer to Timaru District Council website for Guidelines, Application Forms, Complaints Procedure and Constitution (https://www.timaru.govt.nz/services/building/independent-qualified-persons).

6.3.4 Company IQP Status

Only individuals are eligible for IQP status. Companies with IQP on their staff may advertise as such but the status is attached to the individual only.

6.3.5 Test Procedures

Testing procedures for backflow preventers shall be in accordance with the New Zealand Industry Standard: *Field testing of backflow prevention devices and verification of air gaps* and/or the American EPA *Cross Connection Control Manual*. In addition, visual checks will also be required for registered break pressure tanks and atmospheric vacuum breakers. Testing shall be done at the following times:

- Immediately after installation
- Annually
- On completion of any maintenance work
- After a backflow or suspected backflow incident
- At the request of the Area Health Officer, Building Control Officer, Dangerous Goods Inspector or the Chief Engineer.

The test procedures shall be as per the New Zealand Industry Standard *Field testing of backflow prevention devices and verification of air gaps.* The test forms for backflow prevention devices shall be as shown in Appendix M of that document. Refer to Appendix 3 of this Policy for test sheets that must be used.

The backflow test kit shall have a maximum working pressure of 1200 kPa and have separately coloured hoses to minimise mistakes being made during use. The test kit used must be certified/recertified every 12 months by an ISO registered laboratory and a copy of the test certification kept with the kit.

For boundary backflow prevention devices, the registration number of the device and the meter number to which it is attached must be included.

Prior to the annual test of a backflow preventer the line strainer must first be cleaned.

Where a device fails to test, the backflow tester should attempt to repair the device while on site and retest. Where it is not possible to repair the device on site, an equivalent substitute device shall be installed (and tested). The failed test report shall be provided along with the subsequent pass test report.

The backflow tester is to provide QLDC, and the customer in the case of a customer owned device, with a test certificate as per the test certificates in the industry standard reference above. The results of all tests shall be sent to QLDC within five working days of the test.

Backflow testers involved with fire lines must understand the protocols of isolating fire protection systems. These protocols address the need to notify the Fire Service, building owners, and insurers before a system is isolated.

6.3.6 Auditing of IQP's:

At QLDC discretion, an audit of an IQP can be undertaken as a means of ensuring all testing (including safety measures) are being conducted in a correct and lawful manner.

If any issues are found this will be managed through the Timaru IQP Complaints Procedure.

7 SURVEYING

To improve the level of understanding of the network and mitigate the level of risk, QLDC will carry out a risk-based backflow survey programme at a frequency not exceeding five years. The survey will involve a desktop assessment with targeted physical site surveys as deemed necessary.

The surveying of properties for cross connections and potential backflow problems shall be undertaken by persons experienced in this field. They shall have attended a recognised backflow survey course satisfactory to QLDC.

Two types of survey may be undertaken:

- A highest hazard survey only determines the highest hazard on a property and is used to determine the level of boundary backflow prevention required.
- A full survey should determine all risks and possible cross connections which may prove hazardous to the occupants.

Typically, the QLDC survey programme will be a highest hazard level survey.

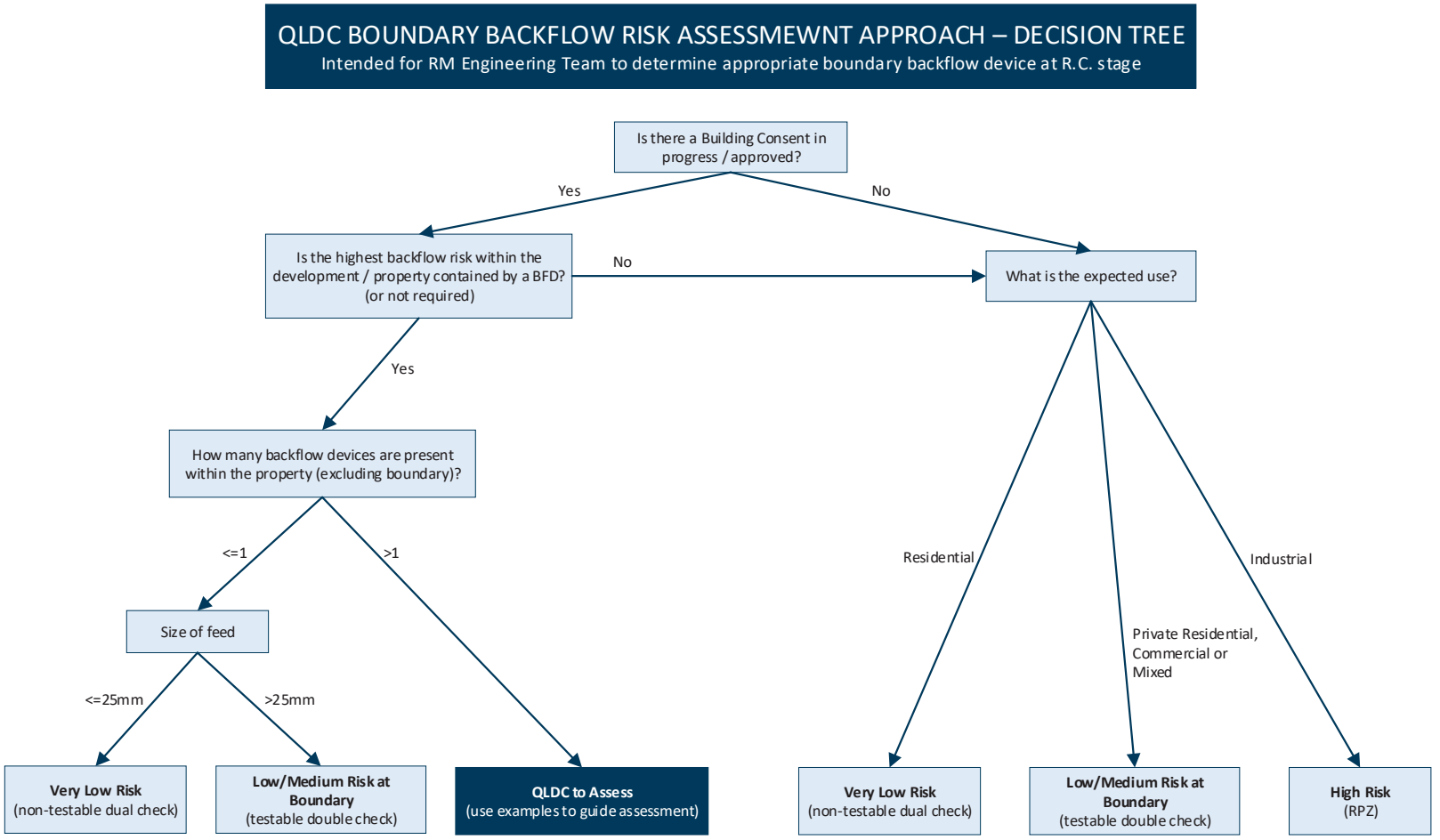
The procedures to be followed when conducting a backflow survey are as follows:

- A letter of intent should be sent to the water customer at least one week prior to the inspection
- Whenever possible the customer or their agent should accompany the surveyor on the inspection. A copy of the drawings of the water layout should also be requested
- The surveyor must carry ID and wear the correct safety gear for the property
- The survey should start at the property boundary and continue to the last free flowing outlet
- The report should be collated during the survey. Notes and sketches (if possible photographs) should be made of all areas requiring backflow protection
- Any existing or potential cross connections should be noted on the report
- Recommendations for corrective actions should also be documented and discussed with the owner
- If the surveyor discovers a situation where contaminants are in the process of or suspected of entering the distribution system, they shall inform QLDC immediately

The highest hazard survey should include as many of the above items as are required to determine the hazard rating of the property.

On completion of a survey, a report shall be submitted to QLDC, a copy shall also be kept by the surveyor. On request a copy will be provided to the owner/occupier. Any unmitigated backflow risks identified through the survey shall be brought to the attention of the owner/occupier and require their action to rectify as soon as possible (refer Section 5).

APPENDIX 1 - QLDC BOUNDARY BACKFLOW RISK ASSESSMENT APPROACH – DECISION TREE



APPENDIX 2 – TYPES OF BACKFLOW PREVENTION DEVICES

Hose Connection Vacuum Breakers

This device can be attached to the outlet of any standard hose bib tap and prevents back siphonage only. It will not work under back pressure or continuous pressure conditions. A similar device is also available for laboratory outlets.

Dual Check Valves

These are in line non testable devices which are suitable for continuous pressure applications in low hazard applications.

Dual Check Valves with Atmospheric Port

As above, but with an atmospheric vent. This allows water to discharge to atmosphere if the second check valve does not close correctly.

Double Check Valve

These are fully testable and can be used for back siphonage and back pressure conditions. They may only be used to protect against a contaminant that could at worst cause illness, hence they are classified as medium hazard devices.

Double Check Detector Assembly

This is specifically designed for fire sprinkler lines where backflow prevention is combined with the need to detect unauthorised water usage or leakage. It incorporates a large and a small double check valve in parallel with a meter on the smaller line. It provides the same level of protection as a double check valve however it will detect small flows. Large flows, such as in the event of a fire, will go through the large line and hence not be recorded. This assembly has carefully matched components and cannot be field assembled from stock double check valves.

Atmospheric Vacuum Breaker

These devices are used to protect against back siphonage of a pollutant only. They should not be subject to back pressure and are therefore only to be used on open ended pipeline such as irrigation systems or garden hoses with no downstream valves. They are not suitable as boundary devices and should be installed a minimum of 150mm above all downstream piping. They may also only be used for a maximum of 12 hours out of any 24 hour period as long usage may cause the seat to stick. Whilst atmospheric vacuum breakers cannot be tested, they can be opened and checked to ensure they are working correctly. This should be done on an annual basis.

Pressure Vacuum Breaker

These devices are similar to the atmospheric vacuum breaker and are only suitable for back siphonage conditions. They can however be used under constant pressure conditions and can be tested in line. They must be installed at least 300mm above all downstream outlets.

Spill Proof Vacuum Breakers

Similar to the pressure vacuum breaker but can be installed in areas where spillage of water from the device is not wanted. They are testable and only suitable for protection against back siphonage. They must be installed in accordance with the manufacturer's recommendations and are not suitable as boundary devices.

Reduced Pressure Zone

These devices are acceptable for contaminants that can cause illness or death as they are rated for high hazards. They will protect against both back pressure and back siphonage and are fully testable. They must be installed above ground in a free draining area.

Reduced Pressure Zone Detector Assembly

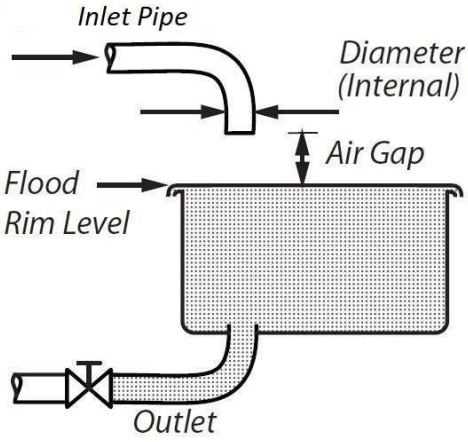
This is specifically designed for fire sprinkler lines which use chemical additives and where backflow prevention is combined with the need to detect unauthorised water usage or leakage. It incorporates a large and a small, reduced pressure zone backflow preventer in parallel with a meter on the smaller line. It provides the same level of protection as a reduced pressure zone device, however it will detect small flows. Large flows, such as in the event of a fire, will go through the large line and hence not be recorded. This assembly has carefully matched components and cannot be field assembled from stock reduced pressure zone valves. This device must be assembled above ground in a free draining area.

Registered Air Gap or Break Tank

Air gaps are non-mechanical devices which when installed correctly offer high hazard protection against both back siphonage and back pressure. The air gap should be at least two times the diameter of the inlet pipe and not less than 25mm. Air gaps are usually used at the end of a service for a reservoir or storage tank. The resultant loss of pressure may mean that a booster pump is required. At an air gap, the potable water is in contact with the surrounding air, so it must not be installed in a toxic environment. Air gaps should be registered and inspected annually to ensure that they have not been bypassed and the overflow capacity is sufficient.

Two types of registered airgaps are accepted by QLDC and depicted below:

(a) Type A – Unobstructed air gap (Figure 2-1) –The air gap is measured from the spill level to the inlet pipe discharge point in accordance with Appendix C.



(b) Type B – Air gap with overflow (Figure 2-2) – The air gap is measured from the highest point of the tank spill level to the inlet pipe discharge point in accordance with Appendix C.

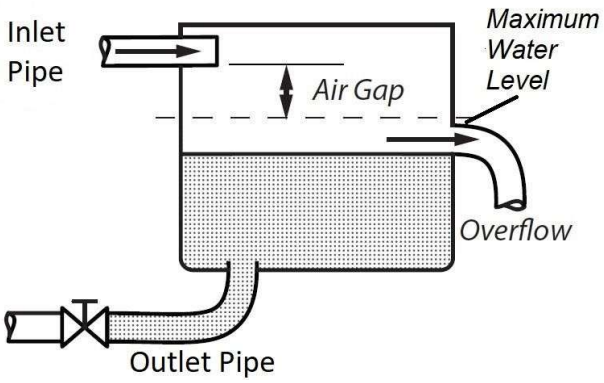


Figure 2-2 Air gap with overflow

Appendix O1 Air Gap

BACKFLOW PREVENTION DEVICE TEST CERTIFICATE

AIR GAP

Use Tab to move to next field.

Building Details:

Building name:	
Block / level / unit number:	
*Street address:	
Suburb:	
Compliance Schedule No.:	
Water meter number:	

Owner:

*Name:	
Contact person:	
*Address:	
Phone number:	

Occupier:

Business name:		Type of business:	
*Contact person:		*Phone number:	

Device Details:

Protection:	Individual source ☐	Zone ☐	Boundary ☐
Location:			
Supply pipe diameter:	mm	Required air gap:	mm
Air gap unobstructed:	Yes ☐ No ☐	Measured air gap:	mm
Overflow type*:	1 ☐ 2 ☐ 3 ☐		
Air gap determined:	by observation of spill ☐	by calculation ☐	

Comments:

Test Result: **Compliant** ☐ **Non – compliant** ☐

Tester Details:

Name of tester:		Company name:	
IQP No:		Company address:	
Signature:			
Date of test:			

NOTE: This test report only constitutes an assessment of existing devices and does not mean ALL cross connections on the site have been addressed. Neither does it mean the existing devices are appropriate for the hazard. This must be addressed by an IQP (Survey). Cross connections are a major PUBLIC HEALTH RISK and are the owner's responsibility to ensure they are addressed.

* required entry
* see NZ backflow testing standard 2011 for definition of overflow types

Appendix O2 Reduce Pressure Zone Device

BACKFLOW PREVENTION DEVICE TEST CERTIFICATE

REDUCED PRESSURE ZONE DEVICE (RPZD)

Use Tab to move to next field.

Building Details:		**Owner:**	
Building name:		*Name:	
Block / level / unit number:		Contact person:	
*Street address:		*Address:	
Suburb:			
Compliance Schedule No.:		Phone number:	
Water meter number:			

Occupier:			
Business name:		Type of business:	
*Contact person:		*Phone number:	

Device Details:

Protection:	Individual source ☐	Zone ☐	Boundary ☐
Location:			
Manufacturer:		Serial number:	
Model:		Nominal Size:	mm
Installation correct:	Yes ☐ No ☐	Strainer installed:	Yes ☐ No ☐
Comments on installation:			

Test Details:

Test kit serial number:			Calibration date:	
	First check valve	Second check valve	Relief valve opening pressure	Downstream isolating valve
Initial test:	tight ☐ leaked ☐	tight ☐ leaked ☐	kPa	tight ☐ leaked ☐
Pressure reading:	kPa	kPa		
Test after repairs:	tight ☐ leaked ☐	tight ☐ leaked ☐	kPa	tight ☐ leaked ☐
Pressure reading:	kPa	kPa		
Repairs and materials used (if applicable):				
Comments:				
Test Result:	**Pass** ☐	**Fail** ☐	Test method:	

Tester Details:

Name of tester:		Company name:	
IQP No:		Company address:	
Signature:			
Date of test:			

NOTE: This test report only constitutes an assessment of existing devices and does not mean ALL cross connections on the site have been addressed. Neither does it mean the existing devices are appropriate for the hazard. This must be addressed by an IQP (Survey). Cross connections are a major PUBLIC HEALTH RISK and are the owner's responsibility to ensure they are addressed.

* required entry

Appendix O3 Double Check Valve

BACKFLOW PREVENTION DEVICE TEST CERTIFICATE

DOUBLE CHECK VALVE (DCV)

Use Tab to move to next field

Building Details:

Building name:	
Block / level / unit number:	
*Street address:	
Suburb:	
Compliance Schedule. No.:	
Water meter number:	

Owner:

*Name:	
Contact person:	
*Address:	
Phone number:	

Occupier:

Business name:		Type of business:	
*Contact person:		*Phone number:	

Device Details:

Protection:	Individual source ☐	Zone ☐	Boundary ☐
Location:			
Manufacturer:		Serial No.:	
Model:		Nominal Size:	mm
Installation correct:	Yes ☐ No ☐	Strainer installed:	Yes ☐ No ☐
Comments on installation:			

Test Details:

Test kit serial number.:		Calibration date:	

	First check valve	Second check valve	Downstream isolating valve
Initial test:	tight ☐ leaked ☐	tight ☐ leaked ☐	tight ☐ leaked ☐
Pressure reading:	kPa	kPa	
Test after repairs:	tight ☐ leaked ☐	tight ☐ leaked ☐	tight ☐ leaked ☐
Pressure reading:	kPa	kPa	

Repairs and materials used (if applicable):	
Comments:	

Test Result: **Pass** ☐ **Fail** ☐ Test method:

Tester Details:

Name of tester:		Company name:	
IQP No:		Company address:	
Signature:			
Date of test:			

NOTE: This test report only constitutes an assessment of existing devices and does not mean ALL cross connections on the site have been addressed. Neither does it mean the existing devices are appropriate for the hazard. This must be addressed by an IQP (Survey). Cross connections are a major PUBLIC HEALTH RISK and are the owner's responsibility to ensure they are addressed.

* required entry

Appendix O4 Pressure Vacuum Breaker

BACKFLOW PREVENTION DEVICE TEST CERTIFICATE

PRESSURE VACUUM BREAKER (PVB)

Use Tab to move to next field

Building Details:

Building name:	
Block / level / unit number:	
*Street address:	
Suburb:	
Compliance Schedule No.:	
Water meter number:	

Owner:

*Name:	
Contact person:	
*Address:	
Phone number:	

Occupier:

Business name:		Type of business:	
*Contact person:		*Phone number:	

Device Details:

Protection:	Individual source ☐	Zone ☐	Boundary ☐
Location:			
Manufacturer:		Serial No.:	
Model:		Nominal Size:	mm
Installation correct:	Yes ☐ No ☐	Strainer installed:	Yes ☐ No ☐
Comments on installation:			

Test Details:

Test kit serial number:				Calibration date:	
	Check valve		Air inlet valve		Downstream isolating valve
Initial test:	opened ☐	did not open ☐	opened ☐	did not open ☐	tight ☐ leaked ☐
Pressure reading:	kPa		kPa		
Test after repairs:	opened ☐	did not open ☐	opened ☐	did not open ☐	tight ☐ leaked ☐
Pressure reading:	kPa		kPa		
Repairs and materials used (if applicable):					
Comments:					

Test Result: **Pass** ☐ **Fail** ☐ Test method:

Tester Details:

Name of tester:		Company name:	
IQP No:		Company address:	
Signature:			
Date of test:			

NOTE: This test report only constitutes an assessment of existing devices and does not mean ALL cross connections on the site have been addressed. Neither does it mean the existing devices are appropriate for the hazard. This must be addressed by an IQP (Survey). Cross connections are a major PUBLIC HEALTH RISK and are the owner's responsibility to ensure they are addressed.

* required entry

Appendix O5 Atmospheric Vacuum Breaker

BACKFLOW PREVENTION DEVICE TEST CERTIFICATE

ATMOSPHERIC VACUUM BREAKER (AVB)

Use Tab to move to next field.

Building Details:

Building name:	
Block / level / unit number:	
*Street address:	
Suburb:	
Compliance Schedule No.:	
Water meter number:	

Owner:

*Name:	
Contact person:	
*Address:	
Phone number:	

Occupier:

Business name:		Type of business:	
*Contact person:		*Phone number:	

Device Details:

Protection:	Individual source ☐	Zone ☐	Boundary ☐
Location:			
Manufacturer:		Serial No.:	
Model:		Nominal Size:	mm
Installation correct:	Yes ☐ No ☐	Strainer installed:	Yes ☐ No ☐
Comments on installation:			

Test Details:

	Poppet closed when pressure increased	Poppet opened when pressure decreased
Initial test:	Yes ☐ No ☐	Yes ☐ No ☐
Test after repairs:	Yes ☐ No ☐	Yes ☐ No ☐
Repairs and materials used (if applicable):		
Comments:		

Test Result: **Pass** ☐ **Fail** ☐ Test method:

Tester Details:

Name of tester:		Company name:	
IQP No:		Company address:	
Signature:			
Date of test:			

NOTE: This test report only constitutes an assessment of existing devices and does not mean ALL cross connections on the site have been addressed. Neither does it mean the existing devices are appropriate for the hazard. This must be addressed by an IQP (Survey). Cross connections are a major PUBLIC HEALTH RISK and are the owner's responsibility to ensure they are addressed.

* required entry

Appendix O6 Hose Connection Vacuum Breaker

BACKFLOW PREVENTION DEVICE TEST CERTIFICATE

HOSE CONNECTION VACUUM BREAKER

Use Tab to move to next field.

Building Details:

Building name:	
Block / level / unit number:	
*Street address:	
Suburb:	
Compliance Schedule No.:	
Water meter number:	

Owner:

*Name:	
Contact person:	
*Address:	
Phone number:	

Occupier:

Business name:		Type of business:	
*Contact person:		*Phone number:	

Device Details:

Protection:	Individual source ☐	Zone ☐	Boundary ☐
Location:		Pass ☐	Fail ☐
		Pass ☐	Fail ☐
		Pass ☐	Fail ☐
		Pass ☐	Fail ☐
		Pass ☐	Fail ☐
		Pass ☐	Fail ☐
		Pass ☐	Fail ☐

Installation:	Atmospheric vacuum breaker connected to hosetaps as a backflow prevention device. Device shall vent through atmospheric ports with 1m head water column. Visual inspection
Comments:	

Tester Details:

Name of tester:		Company name:	
IQP No:		Company address:	
Signature:			
Date of test:			

NOTE: This test report only constitutes an assessment of existing devices and does not mean ALL cross connections on the site have been addressed. Neither does it mean the existing devices are appropriate for the hazard. This must be addressed by an IQP (Survey). Cross connections are a major PUBLIC HEALTH RISK and are the owner's responsibility to ensure they are addressed.