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# GARDNERVILLE WATER COMPANY BACKFLOW POLICY 2019

[GWC Backflow Policy]

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## **SECTION 1 PURPOSE, LEGAL AUTHORITY, and RESPONSIBILITY**

### **PURPOSE**

The purpose of the Gardnerville Water Company (GWC) Backflow Prevention Program is:

1. To protect GWC's potable distribution system against the possibility of contamination or pollution from the commercial customer's private internal water system.
2. To develop and implement an effective, ongoing, consistent backflow prevention program which will comply with Nevada Administrative Codes (NAC) 445A.67185 through NAC 445A.67255, Public Water Systems.
3. To educate customers about health (contamination) and non-health (pollution) hazards associated with their use of water to promote the elimination of actual and potential cross-connections.

### **LEGAL AUTHORITY**

Under Nevada Administrative Code 445A.67185, Public Water Systems, the water purveyor has the primary responsibility for preventing water from unapproved water supplies, or any other substances, from entering the potable public water system. Per NAC 445A.67185, the water purveyor shall:

1. Ensure that there are no unprotected connections between the supplies of water, systems for the pumping, storage, and distribution of the public water system and any source of pollution or contamination pursuant to which any unsafe water or other degrading material can be discharged or drawn into the public water system as a result of backsiphonage or backpressure.
2. Develop and carry out a program for the control of cross-connections that is approved by the health authorities.

### **RESPONSIBILITY**

Pursuant to the NAC, GWC is responsible to develop, implement and maintain an effective backflow prevention and cross-connection control program. An effective backflow prevention program includes; service protection, appropriate protection within the customer's internal system, and safe water use practices conscientiously followed by all customers.

### **GARDNERVILLE WATER COMPANY RESPONSIBILITY**

GWC's responsibilities as a purveyor of drinking water include developing, implementing and maintaining a backflow prevention program consisting of service protection at the point where customer services connect to the distribution system.

1. GWC's Backflow Prevention Group will review all new service connection requests and all existing service connections to determine when a service connection presents an actual or potential hazard to GWC's water distribution system.
2. For the purposes of providing service protection for new or existing water services, GWC will designate the required type of backflow prevention to comply with NAC 445A and GWC's policy.
3. GWC will designate the installation location for backflow prevention installation.

4. GWC will provide backflow prevention installation standards to the customer or his/her representative.
5. GWC will require the customer to install the designated backflow prevention, by and at the customer's expense, within a length of time determined by GWC, as a requirement for water service. [Approved Backflow Device List](#).
6. GWC will not authorize water service turn on until backflow prevention has been satisfactorily installed, inspected by a GWC operator and has been tested by a certified tester. [Local Certified Tester List](#)
7. GWC will terminate an existing water service if, after a reasonable attempt, compliance with this policy is not achieved. A satisfactory compliance includes installation which has been inspected and approved by a GWC operator and has been tested by a certified backflow tester with passing results.
8. GWC will notify customers of testing requirements and test due dates.
9. GWC will maintain records and monitor that backflow prevention is properly installed, maintained and tested.
10. GWC will periodically reevaluate service connections to assess the degree of hazard posed by the water customer's premise. This will be done by a GWC operator whenever there is a change in ownership at a premise or if GWC determines reevaluation to be necessary.
11. GWC will define enforcement actions for any customers that fail to comply with the Backflow Prevention Program.
12. GWC is not responsible for detecting, eliminating or controlling cross-connections within a customer's water system.

## CUSTOMER RESPONSIBILITY

Customers have very clear responsibilities for backflow prevention and cross-connection control. The following measures ensure the quality of the community's water supply as well as ensuring water quality within internal plumbing.

1. Customers have ownership, or custody, of potable water once it passes the point of connection to GWC's distribution system. Furthermore, customers have the prime responsibility to maintain their internal water piping to ensure that "used water" shall not reverse back into GWC's distribution system.
2. All costs associated with backflow prevention assemblies shall be borne by the water customer.
3. It is the water customer's responsibility to design the backflow prevention installation to meet all of GWC's requirements and to conform with other applicable codes, such as the Uniform Plumbing Code (UPC), the National Fire Protection Association (NFPA) and all city or building codes. Customers have a responsibility to design, build and maintain their internal private water system per County Building NFPA and UPC codes.
4. The customer shall design his water system (either a new water service or the retrofit of an existing water service) to accommodate pressure losses attributed to the installation of backflow prevention assemblies. This may include, but is not limited to, installing pumps or renovating existing private water systems with thermal expansion tanks.
5. Upon notification from GWC, the customer shall install, repair, replace or test the backflow prevention assembly within a length of time determined by GWC.

6. When it is not practical for the backflow prevention assembly to be installed immediately after the point of connection, the customer shall provide annually in writing to GWC a declaration that no connections exist, or will be made, between the point of connection and the backflow prevention assembly. This declaration shall be prepared by a Certified Specialist.
7. The customer shall make all installations and repairs to ensure that the assembly remains in factory working condition.
8. The customer shall have the assembly tested per the requirements in this policy.
9. The customer is responsible for any loss or damage resulting from the installation, repair, maintenance, operation, malfunction or vandalism of a backflow prevention assembly.
10. Customers are responsible to notify GWC immediately of any possible hazards, pollutants or contaminants which may have entered GWC's distribution system from the customer's internal system.
11. If service protection does not exist or has been installed internal to a customer's system, the customer's system shall be available at all reasonable times for inspection by GWC to determine the existence of unprotected cross-connections.
12. Customers have the responsibility to notify the GWC of the intent to use non-potable water on the same premise where GWC water is being delivered.
13. If non-potable water is being used on the customer's premise, the customer's water system shall be available at all reasonable times for a shutdown inspection and test by GWC to determine the existence of cross-connections.

#### **REFERENCES TO OTHER DOCUMENTS**

[Approved Backflow Device List](#)

[Local Certified Tester List](#)

## SECTION 2 DEFINITIONS

The following terms are relevant to GWC's backflow prevention and cross-connection control program. Any term not specifically defined in this section shall revert to the meaning as defined by the Nevada Administrative Code (NAC) 445A – Public Water Systems – and subsequent revisions thereof.

**AIR GAP SEPARATION:** A physical break between the free-flowing end of the supply pipe and the overflow rim of a receiving vessel. The air-gap shall be at least double the diameter of the supply pipe measured vertically above the top rim of the vessel, in no case less than one inch. In certain proximity to walls, the Air Gap Separation shall be three times the diameter of the supply pipe.

**APPROVED BACKFLOW PREVENTION ASSEMBLY/BACKFLOW ASSEMBLY or DEVICE:** A device or device assembly which has passed laboratory and field evaluation tests performed by the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research.

**APPROVED WATER SUPPLY:** The water supplied by GWC, the water quality of which is regulated by the Nevada Department of Environmental Protection, Bureau of Safe Drinking Water and the District Health Department.

**ATMOSPHERIC VACUUM BREAKER (AVB):** A vacuum breaker that contains an air inlet valve, a check seat and one or more air inlet ports, in which: 1) The flow of water causes the air inlet valve to close the air inlet ports, and 2) When the flow of water stops: (a) the air inlet valve falls and forms a check valve against backsiphonage and (b) the air inlet ports open to allow air to enter and satisfy the vacuum.

**AUXILIARY WATER SUPPLY:** Any water supply on or available to the premise other than the approved water supply.

**AWWA STANDARD:** An official standard developed by the American Water Works Association (AWWA).

**AWWA TEST:** Synonymous with the term "test".

**BACKFLOW:** An undesirable flow condition, caused by a differential in pressure, which causes the flow of water or other liquids, gases, mixtures or substances into the distribution system of a potable supply of water from any source or sources other than an approved water supply source. Backsiphonage is one cause of backflow. Backpressure is the other cause.

**BACKFLOW PREVENTION GROUP:** The personnel charged with administration of GWC's Backflow Prevention Program.

**CALIFORNIA-NEVADA SECTION OF THE AMERICAN WATER WORKS ASSOCIATION:** Synonymous with "CA-NV AWWA".

**CERTIFIED SPECIALIST:** An individual who is certified to perform cross-connection control and backflow prevention surveys. Certification shall be obtained through the CA-NV AWWA. Cross-Connection Control Specialist is synonymous with Certified Specialist.



**CERTIFIED TESTER:** An individual who is certified by the CA-NV AWWA, to perform tests on backflow prevention assemblies in Douglas County, Nevada. The GWC website, [www.gardnervillewater.org](http://www.gardnervillewater.org) maintains a current list of certified testers.

**COMMUNITY'S DRINKING WATER OR COMMUNITY'S WATER DISTRIBUTION SYSTEM:** The potable water in GWC's Water Distribution System.

**CONSTRUCTION WATER:** Any water, potable or otherwise, which may be used for any construction activity, i.e., dust control and grading purposes, mixing concrete, etc. Potable water supplied by GWC for construction purposes shall be protected with backflow prevention as determined by GWC's Backflow Prevention Group.

**CONTAMINATION:** A degradation of the quality of water by any foreign substance which creates a hazard to the public health, or which may impair the usefulness or quality of the water.

**CROSS-CONNECTION:** Any unprotected actual or potential connection between a potable water system and any source or system containing water or a substance that is not or cannot be approved as safe and potable. By-pass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or other assemblies through which backflow could occur, shall be considered cross-connections.

**CUSTOMER'S PRIVATE WATER SYSTEM:** All piping from the service connection, including the irrigation and private plumbing system within the customer's premise.

**DIRECT CROSS-CONNECTION:** A cross-connection which is subject to both backsiphonage and backpressure.

**DISTRIBUTION SYSTEM:** GWC's Water Distribution System.

**DOUBLE CHECK VALVE ASSEMBLY (DC):** An assembly of two internally loaded, independently acting check valves, including tightly closing, resilient seated shut-off valves on each end of the assembly and four properly located resilient seated test cocks.

**DOUBLE CHECK DETECTOR ASSEMBLY (DCDA):** A Double Check Valve with a smaller sized approved bypass containing a specific water meter and an approved double check valve assembly.

**FREEZE PROTECTION:** An above or below ground enclosure designed with sufficient insulation and heat to prevent the water in a backflow prevention assembly from freezing. Such enclosure shall also allow ready access for maintenance and testing purposes and provide clearances as defined by GWC Installation Standards.

**GARDNERVILLE WATER COMPANY (GWC):** Synonymous with GWC.

**HEALTH AGENCY:** The Nevada Department of Environmental Protection, Bureau of Safe Drinking Water.

**HEALTH HAZARD:** Actual or potential threat of contamination to the approved water supply.

**INDIRECT CROSS-CONNECTION:** A cross-connection which is subject to backsiphonage only.

**INSTALLATION INSPECTION:** An inspection by a member of GWC's Backflow Prevention Group of a newly installed backflow prevention assembly providing service protection.

**INSTALLATION STANDARDS:** GWC's Installation Requirements and Standards and this policy as developed by GWC. These standards are consistent with the Nevada Administrative Code and other recognized experts in the backflow prevention field, such as the USC Foundation for Cross-Connection Control and Hydraulic Research. These standards can be found in Appendix 10A of GWC's Construction and Design Standards.

**INTERNAL BACKFLOW PREVENTION OR INTERNAL BACKFLOW PROTECTION:** Backflow prevention used for the purpose of isolation on a piece of equipment or use of water within a water customer's private plumbing system.

**INTERNAL WATER SYSTEM:** The private water piping and appurtenances on a water customer's premises.

**NON HEALTH HAZARD:** Actual or potential threat of pollution to the approved water supply.

**NON-POTABLE WATER:** A water supply which has not been approved for human consumption by the health agency having jurisdiction.

**POINT OF CONNECTION (POC):** Synonymous with Service Connection.

**POLICY:** The term "policy" or "GWC policy" or "GWC's backflow policy" shall refer to the document titled "GARDNERVILLE WATER COMPANY - BACKFLOW POLICY 2019 ©" and its contents.

**POLLUTION:** A degradation of the quality of water by any foreign substance which would not constitute a health hazard to the public health, but which would adversely and unreasonably affect the aesthetic qualities of water for domestic uses.

**PRESSURE VACUUM BREAKER (PVB):** An assembly containing an independently operating internally loaded check valve and an independently operating, loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located resilient seated test cocks and tightly closing, resilient seated shut-off valves at each end of the assembly. This assembly is designed to protect against non-health or health hazards under a backsiphonage condition only. Approved for residential services separating the irrigation from the domestic irrigation. *NOT TO BE USED IN NEW CONSTRUCTION/NEW SERVICES FOR COMMERCIAL, IRRIGATION, OR FIRE.*

**PRIVATE WATER SYSTEM:** See the definition under "Customer's Private Water System".

**PREMISE(S):** Any and all areas on a water customer's property which are served or have the potential to be served by GWC's water system.

**RECLAIMED WATER:** Effluent derived from wastewater treatment system, which as a result of treatment, is suitable for uses other than potable use.

**REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP):** An assembly incorporating two internally loaded, independently operating check valves and an automatically operating differential pressure relief valve located between the two checks, with resilient seated shut-off valves on each end of the assembly, and equipped with four properly located, resilient seated test cocks.

**REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY:** A reduced pressure principle assembly with a smaller sized approved bypass containing a specific water meter and an approved reduced pressure principle assembly.

**RETROFIT:** Installation of backflow prevention assemblies, for the purpose of providing service protection, on existing water services.

**SERVICE CONNECTION:** The point of connection of the customer's (or water user's) piping to GWC's facilities, as determined by the GWC, usually located within a public utility easement or other public easement or right-of-way.

**SERVICE PROTECTION:** The installation of backflow prevention on the water service connection, just downstream of the service connection, the purpose of which is to protect GWC's distribution system from cross-connections or potential cross-connections within the customer's piping system. A synonym is containment. NAC 445A defines the service connection as the point at which the water purveyor loses its authority and control over water.

**TEST:** A functional test of a USC approved backflow prevention assembly. This test shall be conducted by a CA-NV AWWA Certified Backflow Prevention Tester, per procedures adopted by AWWA.

**TESTING MONTH:** The month that the testing data is due, which is determined by previous years' data or by the GWC's Backflow Prevention Group.

**THERMAL EXPANSION:** The increase in water pressure within a customer's water system due to thermal affects. Thermal expansion is a potential problem within a customer's system which has been equipped with a backflow prevention assembly. Appropriate measures shall be taken by the customer, i.e., properly designed and sized thermal expansion tanks.

**USED WATER:** Water which has passed the point of connection and therefore has left the control of GWC.

**UTILITY:** GWC, which is responsible for the operation of the water distribution system.

**WATER CUSTOMER:** Any person (or that person's representative) or agency (or that agency's representative) obtaining or using water from GWC's water distribution system.

**WATER DISTRIBUTION SYSTEM:** GWC's water distribution system.

**WATER SUPPLIER:** The water supplier in this policy is GWC.

## SECTION 3 GENERAL BACKFLOW PREVENTION REQUIREMENTS

### CURRENT INSTALLATION REQUIREMENTS

Backflow prevention assemblies are required by GWC (on all commercial services including commercial irrigation) to provide service protection for GWC's distribution system. This backflow prevention shall be installed per GWC's Backflow Prevention Installation Requirements and Standards and this policy as a condition for new water service or continuation of existing service. Any proposed deviation from these requirements and standards will require approval from the members of the GWC Backflow Prevention Group.

GWC's Backflow Prevention Installation Requirements and Standards may change over time. It is the responsibility of the customer to ensure compliance with the current version of these standards and this policy. These requirements refer to both new and existing water services, and for domestic, irrigation and fire services, unless specified otherwise by GWC's Backflow Prevention Group.

Retrofits of existing services may present some special circumstances that will be dealt with on a case-by-case basis. For additional information on retrofits of existing services, please refer to those sections of this policy.

Refer to Appendix 10A of GWC's Construction and Design Standards for detailed installation, inspection, testing and design requirements.

### DESIGN CONSIDERATIONS

The installation of backflow prevention requires a number of considerations be reviewed prior to installation. Of particular importance in the design of a system incorporating a backflow prevention assembly are provisions:

1. For thermal expansion of downstream water or fluids
2. For drainage systems to handle full port discharges from the relief valves of reduced pressure principle backflow prevention assemblies
3. To prevent freezing of the backflow prevention assembly and the water service
4. To prevent submergence of internally or externally installed backflow prevention assemblies
5. To accommodate additional pressure losses that will occur through the backflow assembly

### APPROVED ASSEMBLIES

Pursuant to NAC 445A, any backflow prevention assembly installed for service protection on GWC water services shall be on the current University of Southern California (USC) List of Approved Backflow Prevention Assemblies. GWC maintains a current USC list of the approved assemblies.

Backflow prevention assemblies are approved by USC as an integral unit beginning with the #1 shut-off valve, through the assembly body and through the #2 shut-off valve. Any modification, including use of spare parts other than those of the original manufacturer or using a non-USC-approved shut-off valve, invalidates the USC approval, thus, invalidates the approval of GWC as an acceptable assembly.

## TYPES AND METHODS OF BACKFLOW PREVENTION

Types and methods of backflow prevention that are acceptable to GWC for providing service protection include the following:

1. Pressure Vacuum Breaker or Spill Prevention Pressure Vacuum Breaker - only for Single Family Residential use to separate the domestic yard line from the irrigation line
2. Double Check Valve Assembly and Double Check Valve Detector Assembly
3. Reduced Pressure Principle Assembly and Reduced Pressure Principle Detector Assembly
4. Air Gap Separation

GWC's Backflow Prevention Group shall specify the required type of protection based on NAC 445A and GWC's policies, and to be commensurate with the assessed degree of hazard on the customer's premise. In situations that are not covered in NAC 445A, GWC shall evaluate each situation on a case-by-case basis and will determine the required type of backflow prevention. The customer may at his/her discretion choose a higher level of protection than the minimum required by GWC.

Per NAC 445A.6721, GWC reserves the right to require more stringent requirements than that set forth in NAC 445A.

## DOMESTIC, IRRIGATION

DC, RP or Air Gap, to be determined by GWC's Backflow Prevention Group.

## FIRE

1. Dry systems also require double check valve assemblies due to the potential of contamination when non-potable water is introduced through the fire pumper connection.
2. NFPA Class 1, 2 and 3 systems require the installation of an approved double check valve assembly.
3. NFPA Class 4, 5 or 6 systems require the installation of an approved reduced pressure principal assembly.
4. At its discretion GWC may require detector check assemblies.

## SPECIAL CIRCUMSTANCES

The normal types of backflow prevention required for a water service are listed above. However, a retrofit situation or any special circumstances listed below (or not listed) may require an exception to the norm.

1. Where access to a premise is denied by the customer to GWC's Backflow Prevention Group, GWC's distribution system shall be protected with an Air Gap.
2. Where there is one contaminant (health) hazard, GWC's distribution system shall be protected with a Reduced Pressure Principle Assembly, to be determined by GWC's Backflow Prevention Group.
3. If it is impossible or impractical to make a cross-connection survey, GWC's distribution system shall be protected with an Air Gap Separation or a Reduced Pressure Principle Assembly, to be determined by GWC's Backflow Prevention Group.

**ATMOSPHERIC VACUUM BREAKER (AVB)**

The use of atmospheric vacuum breakers for service protection is prohibited.

**INSPECTIONS**

All inspections shall be performed by GWC's Backflow Prevention Group unless otherwise assigned by mutual agreement to another department of GWC. All backflow prevention assemblies will be inspected by a GWC Backflow Prevention Group member as a condition for new water service or continuation of existing service.

If an inspection is not performed, GWC may require the service trench be excavated and/or the backflow prevention assembly moved to the meter or the point of connection.

**BACKFLOW PREVENTION ASSEMBLY TESTS**

The customer shall have each installed assembly, tested by a certified tester as a condition for new water service or continuation of existing service. Upon conclusion of the test, it is the customer's responsibility to submit a copy of the written test report to GWC. Assembly tests are required: [GWC Assembly Test Sheet](#), available online (testers may use any standardized test sheet).

1. After installation of a new assembly
2. After repair, replacement, or relocation of an assembly
3. After a backflow incident
4. Annually; or more frequently as required by GWC for the purpose of monitoring cross-connection hazards; or more frequently for the purpose of reviewing assemblies that repeatedly fail the tests.

***Water service will be terminated if tests are not performed as required by GWC.***

Refer to the portion of this section titled "Repair or Replacement of Assemblies" regarding when a test is not successfully completed.

**INITIAL TESTS**

Each newly installed backflow prevention assembly installed on a new domestic or irrigation service will have the initial test completed by a certified backflow tester. It is the responsibility of the owner or owner's representative to have the assembly re-tested if the initial test fails.

The successful test results are required by GWC within seven (7) days of the initial failed test. If a GWC operator has inspected the premises and determined that there is not an immediate potential for risk, passing results will be due within fourteen (14) days of the failed test report.

Any newly installed backflow assembly on a fire service or a backflow prevention assembly which has been repaired, replaced or relocated, shall be tested and the successful test results shall be received by GWC within seven (7) days of the water meter turn on or repair of the assembly. If the passing test is not successfully completed in this period, the procedure to terminate water service, based on Section 9, ENFORCEMENT ACTION, BASIS FOR WATER SERVICE TERMINATION, Item 3 (Refusal or unapproved delay to test a backflow prevention assembly), will be instituted. Extensions will only be granted for good cause.

## **ANNUAL TESTS - NOTIFICATION SCHEDULE**

GWC will notify customers by mail when the periodic (usually annual) testing of the assembly providing service protection is required. GWC may require certain assemblies be tested more frequently and will notify the customer of this requirement. The following communication process will be used:

1. The customer will be notified (by mail) of the required backflow prevention test 30 days prior to the month that the test is due. The customer will be required to have their device(s) tested within their testing month (determined by previous years) and have the test results provided to GWC within the testing month to be in compliance.
2. A second notice will be sent to the customer that has not met the testing month deadline. The second notice will be sent the first working day after the required testing month by mail and will allow a thirty (30) day time frame to comply.
3. The third notice will be a 'door hanger' which will notify the customer and/or occupant of the customer's premises of a Disconnect of Water Services to be carried out within 7 days. This notice includes a non-compliance fee (refer to fee schedule).
4. After 7 days GWC will terminate water supply and lock the service valve. The water service will remain inactive until all violations have been corrected, inspected and approved by GWC and any applicable re-connection fees have been collected in accordance with GWC's Rules and Rates (refer to fee schedule).
5. A delayed test in the current year will not change the next year's test date to the later date when the test was actually done. For example, a test is due in August 2018, but is not performed until October 2018. The next test will be due in August 2019, not in October 2019.

## **REPAIR OR REPLACEMENT OF ASSEMBLIES**

An assembly may be removed by the customer for repair provided the unprotected water service is not used until the repair is completed. A re-test of the repaired assembly will be required after the repair is complete.

An assembly may be removed by the customer for replacement provided the unprotected water service is not used until the replacement assembly is installed. All assemblies used as replacements shall be installed per GWC's Backflow Prevention Installation Requirements and Standards and this policy and shall be tested by a certified tester after installation. The manufacturer, serial number, and size of the replaced assembly shall be noted on the test form and shall be noted as being replaced.

GWC may notify the customer of required repairs to a backflow prevention assembly or replacement of a backflow prevention assembly. GWC will notify customers by mail regarding repair or replacement requirements.

## **REMOVAL OR RELOCATION OF ASSEMBLIES**

Approval shall be obtained from GWC's Backflow Prevention Group before a backflow prevention assembly, which was installed for service protection, can be permanently removed or relocated. Relocation, inspections and tests of the relocated assembly shall be completed as noted in the GWC Backflow Prevention Installation Requirements and Standards and this policy.



### INSTALLATION LOCATION

The location of backflow prevention for service protection shall be designated by the GWC Backflow Prevention Group. The normal installation locations are listed below; however, a retrofit situation or any special circumstances listed below (or not listed) may cause an exception to the norm.

### SPECIAL CIRCUMSTANCES

The backflow prevention assembly for all water services to a premise shall be installed at the meter or point of connection to GWC's main if any of the following apply:

1. An auxiliary water supply or non-potable water supply (recycled, ditch, well, surface, etc.) is on the premises.
2. Entry to any portion of the premises is not available for inspection by GWC.
3. Any customer cannot or will not allow an on premise inspection of his private internal water system.
4. All conditions for an internal installation as noted in the GWC Backflow Prevention Installation Requirements and Standards or this policy are not met, including approval by GWC's Backflow Prevention Group for an internal installation.

### DOMESTIC, IRRIGATION

Domestic and irrigation services shall have the backflow assembly located downstream of the meter.

### FIRE SERVICES

Fire Services Definitions.

The following definition system is used by GWC for determining the appropriate installation location for backflow prevention on a private fire protection system for new or existing services. It is not to be confused with the NFPA fire system classification system.

1. **Type A System** - Single Fire Service exhibits all of the following characteristics:
  - a. A single fire service line (one point of connection to GWC's main) that serves one fire suppression system in one building with one riser, and
  - b. the fire suppression system is not directly or indirectly connected to any other fire suppression system, and
  - c. is not a looped system, and
  - d. has no fire hydrants on the fire service line.
2. **Type B System** - defined as any configuration of fire service not designated as Type A system. Type B systems may include, but are not limited to, the following characteristics:
  - a. Multiple points of connection to GWC's main.
  - b. Looped systems with one point of connection.
  - c. One fire service line provides water suppression to more than one building.
  - d. Fire hydrants are on the fire service line.
  - e. Private fire hydrants with a lateral greater than fifty (50) feet in length



## **SECTION 4 RETROFIT PROCEDURE FOR EXISTING SERVICE CONNECTIONS**

GWC shall review all existing water service connections to assess the degree of hazard within a premise to designate the required backflow prevention. All existing domestic, irrigation and fire service connections will be reviewed. The retrofit program will be carried out:

1. Through mailings to specific customers,
2. During remodels, tenant improvements, expansions, or construction projects; or
3. Through other methods deemed necessary by GWC.

### **REMODELS, TENANT IMPROVEMENTS, OTHER CONSTRUCTION**

Retrofits which are initiated in conjunction with a building permit for remodels, tenant improvements, building additions, etc., may not require the detailed survey discussed below. GWC's Backflow Prevention Group will review the construction project and water use and will determine the appropriate type of backflow assembly and location. These retrofits shall be completed during the course of the construction project and are required for continuing water service.

### **NON CONSTRUCTION RELATED RETROFITS**

GWC will contact other customers for retrofit of their domestic, irrigation and fire water services without the stimulus of a construction project. Upon being contacted by GWC, a customer of an existing service connection may have two options (and will be notified of the available options):

1. The customer shall install the required backflow prevention in conformance with NAC 445A and GWC policy, and per GWC's Backflow Prevention Installation Requirements and Standards. Backflow prevention, commensurate with the degree of hazard per NAC 445A, shall be installed for service protection if GWC, in its sole discretion, determines that one of more of the following characteristics exist:
  - a. Premise with complex plumbing arrangements which make it impractical to assess whether cross-connection hazards exist,
  - b. Premise with a repeated history of cross-connections being established or reestablished, or
  - c. Premise where cross-connections are unavoidable, or not corrected, or where there is a high potential for change in the plumbing system.
2. If the customer wishes to install backflow protection internal to his plumbing system, or if petition is being made with GWC to lower the level of backflow prevention for service protection, the customer shall contract with a Certified Specialist to perform a detailed survey of the premise. GWC strongly encourages customers to conduct cross-connection control surveys to provide internal protection.
  - a. The survey will list the hazards associated with the water use on the premise and will recommend the proper level of backflow prevention for these hazards for internal protection. The survey will also list backflow prevention requirements for service protection.
  - b. A copy of the survey will be forwarded by the Certified Specialist to GWC's Backflow Prevention Group.
  - c. GWC will evaluate this survey; review, approve or change requirements and locations for internal protection; and may make additional requirements for internal protection.

- d. Having a survey performed will not eliminate, and may not reduce the service protection requirement designated by NAC 445A or GWC Policy.
- e. The retrofit will be carried out as noted in this section under Retrofit Steps.

### RETROFIT STEPS

After it has been determined which step above will be followed, the following is a brief description of the next steps in the retrofit.

1. The type of backflow prevention for service protection and its location will be determined by a member of GWC's Backflow Prevention Group. The level of protection listed in NAC 445A will be the minimum requirement for service protection. Any water use not listed in this detail will be reviewed on a case-by-case basis for service protection requirements.
2. GWC recognizes the hardships that may be imposed on a customer through this retrofit program. Therefore, the schedule for implementation of the backflow prevention improvements may be flexible, provided GWC determines there is no immediate risk. GWC will determine completion date after consultation with the customer. General time frames for completion of installation follow:
  - a. Where GWC identifies a potential contaminant (health) hazard, service protection shall be completed within 30 days.
  - b. Where GWC identifies a pollutant (non-health) hazard, service protection shall be completed within 60 days.
3. After the final determination is made, a letter will be mailed to the customer describing in detail the improvements to be made and a schedule by which the improvements shall be completed.
4. If the retrofit is not completed within the time allowed, the procedure to terminate water service, based on Section 9, ENFORCEMENT ACTION, BASIS FOR WATER SERVICE TERMINATION, Item 3 will be instituted. If the customer is experiencing genuine extenuating circumstances a request may be made to GWC's Backflow Prevention Group for an extension to complete the work.

## **SECTION 5 REQUIREMENTS FOR RETROFITS**

### **GENERAL BACKFLOW PREVENTION REQUIREMENTS**

As a general rule, backflow prevention assembly installations shall be per the requirements in this policy and GWC's Backflow Prevention Installation Requirements and Standards. This section covers only items which may be exceptions to these standards or requirements set forth in Section 3, General Backflow Prevention Requirements.

If, in the original utility plans for the project, a backflow prevention assembly was called for but not installed, the backflow prevention assembly as called for on the utility plans shall be installed.

### **EXISTING BACKFLOW PREVENTION ASSEMBLIES**

Regarding any presently existing backflow prevention assembly which was a USC approved assembly at the time of installation but is not currently on the USC Approved Assemblies list.

If the assembly passes the annual AWWA standard functional test; has been maintained and/or repaired to meet original factory working conditions; and is commensurate with GWC's assessed degree of hazard, the assembly will be accepted as an approved assembly for service protection.

It shall be replaced with an approved assembly at the point when it is either moved or can no longer meet the specifications listed above.

### **REDUCED LEVEL OF SERVICE PROTECTION**

This section is applicable to domestic water services. GWC recognizes that, on occasion during a retrofit, the installation of the proper backflow prevention assembly may be difficult due to space, drainage constraints or the physical configuration of the water customer's premise. In these situations, at the water customer's request, GWC may consider a reduced level of protection. As a requirement for a reduced level of service protection, the customer shall commit in writing to the following:

1. In the event a customer requests a reduced level of service protection, the owner accepts liability for installing the pollutant (non-health) hazard level type of assembly to protect against a contaminant (health) hazard.
2. The customer shall have a Certified Specialist perform a detailed cross-connection survey of the premise as noted in the section titled Procedure for Retrofit of Existing Services.
3. The customer shall complete installation of internal protection improvements as outlined in the survey and approved by GWC to provide a level of protection commensurate with the assessed degree of hazard.
4. GWC will require the customer to maintain an aggressive, on-going internal backflow prevention program.
5. The backflow prevention for internal protection shall be installed per GWC's Backflow Prevention Installation Requirements and Standards and this policy, inspected by GWC's Backflow Prevention Group, maintained or repaired to original factory working condition, and tested by a certified tester at an interval to be determined by GWC.
6. An increased frequency of testing of service protection assemblies as determined by GWC may be required.

7. For reduced service protection on a domestic service, some additional requirements are noted in the Domestic Service, Backflow Prevention Options, noted below.
8. Records detailing the internal protection, the repair and maintenance, and tests shall be maintained by the customer and will be submitted to GWC on an annual basis.
9. Each year, a written cross-connection survey shall be required of the owner or property manager containing details regarding the items listed below. After receipt and review of the survey, GWC's Backflow Prevention Group shall then determine if the reduced service protection is still adequate. Should the level of service protection not be adequate for the level of hazard, the customer shall be required to upgrade the service protection backflow prevention assembly to the proper type as a requirement for continued water service. The following will be included in the survey:
  - a. Changes in tenancy
  - b. Changes in water use
  - c. Plumbing changes
  - d. Use of non-potable water
10. GWC shall require reasonable access to the premise to conduct an initial cursory survey and periodic re-evaluations to determine if the internal protection is adequate to protect the GWC distribution system.
11. GWC may also require the customer have additional detailed surveys performed by a Certified Specialist.

## **INSTALLATION LOCATION**

### **SPECIAL CIRCUMSTANCES**

The backflow prevention assembly for all water services to a premise shall be installed at the meter or point of connection to GWC's main if any of the following apply:

1. A water customer's premise has internal cross-connections that cannot be permanently corrected or controlled.
2. A water customer's premise has intricate internal plumbing and piping.
3. The water service laterals between the point of connection and the water use cannot be located or defined to the satisfaction of GWC.
4. Any conditions listed in the section General Backflow Prevention Requirements, Installation Location, Special Circumstances apply.

### **DOMESTIC SERVICES**

Backflow prevention shall be as close as possible to the meter.

GWC may consider allowing the backflow prevention assembly to be located internally at the water riser if physical space is limited for an exterior installation, if proof is provided through a Cross-Connection Survey that no lateral taps exist prior to the proposed installation location inside the building, and if all requirements are met for an internal installation including sufficient access to the assembly for testing and maintenance purposes.

**IRRIGATION SERVICES**

Backflow prevention shall be immediately downstream of the meter. Installations shall be per the GWC Backflow Prevention Standards and this policy.

**FIRE SERVICES**

Backflow prevention shall be located at the point of connection. If the assembly is a double check it shall be located in a vault just inside the curb/sidewalk; if the assembly is an RP it shall be located in a heated enclosure just inside the curb/sidewalk. The fire hydrants, number of fire risers, and the fire department pumper connection will be a consideration during placement of the backflow prevention assembly.

GWC may consider allowing the backflow prevention assembly to be located internally at the fire system riser if physical space is limited for an exterior installation, if proof is provided through a Cross-Connection Survey that no lateral taps exist prior to the proposed installation location inside the building, and if all requirements are met for an internal installation including sufficient access to the assembly for testing and maintenance purposes

**TYPES AND METHODS OF BACKFLOW PREVENTION****DOMESTIC SERVICES**

Double Check Valve In Lieu Of Reduced Pressure Principle Assembly – With approval from GWC's Backflow Prevention Group, a DC may be used in lieu of an RP. All requirements noted above in the section titled Reduced Level of Service Protection shall be met by the water customer. In addition, the DC requires a minimum of annual testing and a possible higher level of testing as directed by GWC or the District Health Department. This substitution may be considered for retrofit situations only under the following exclusive conditions:

1. Where retrofit of an RP induces pressure losses which render the existing domestic system inoperable and there is not space for installation of a pump. The owner of the domestic system shall submit to GWC photos, sketches, calculations and a detailed flow and pressure report to substantiate this claim. The calculations and report shall be provided by a licensed plumber or engineer. GWC reserves the right to inspect the premises to verify the constraints.
2. Where safety or drainage problems exist with the installation of an RP which cannot be reasonably corrected. The owner of the system shall provide a written report which details the problems or logistics of installing the RP.

**IRRIGATION SERVICES**

Stop And Waste Valves – NAC 445A.67255 specifically defines stop and waste valves as a potential source of contamination to a distribution system and prohibits their use upstream of a backflow prevention assembly. Any existing irrigation system with a stop and waste valve between the meter (or point of connection) and the backflow prevention assembly shall be changed to meet current GWC Backflow Prevention Standards as a requirement for continued water service.

Double Check Valve – GWC may accept the use of the existing double check (DC) as system protection if it can be demonstrated that:

1. The DC passes the periodic functional test
2. The DC is installed correctly including the proper shut-off and drain system
3. No stop and waste valve is installed upstream of the DC.

At the time that a DC no longer passes the test, it shall be replaced with an assembly currently approved for service protection.

## **FIRE SERVICES**

Regulatory Requirements And Water Quality Issues – NAC 445A requires that all fire sprinkler systems be equipped with a backflow prevention assembly. The type of backflow prevention assembly is based upon the NFPA Classification of the particular fire sprinkler system.

Research and testing conducted by the Water Research Foundation (The Foundation) has established that fire sprinkler systems constitute a contaminant (health) hazard to the distribution system and shall be equipped with appropriate backflow prevention assemblies. However, since installation of a backflow prevention assembly will reduce the water pressure and may affect sprinkler performance, care must be exercised when installing backflow prevention, to not jeopardize a critical public safety requirement while providing for a public health concern. The fire sprinkler system must continue to perform hydraulically during a fire event. Therefore, any retrofit shall equally address public health (backflow prevention) and public safety (maintaining reliable fire flow).

Other issues that are a concern in retrofitting existing fire sprinkler systems are inadequate space and, in the case of reduced pressure principle assemblies, no drainage system or an inadequate drainage system necessary to handle full discharge from the relief valve. Another issue encountered in GWC's Backflow Prevention Program includes the safety issue of installing a reduced pressure principle assembly near electrical equipment. Safety requirements dictate that a reduced pressure principle assembly be installed away from electrical equipment.

## **FIRE SYSTEM BACKFLOW PREVENTION OPTIONS**

1. No Backflow Prevention Assembly. GWC specifies that all fire services be equipped with backflow prevention assemblies consistent with NAC 445A. Based upon the water quality data presented in The Foundation study and the potential acute and chronic health effects associated with backflow from fire sprinkler systems, the "no backflow prevention option" is not an option.
2. Installation of Required Backflow Prevention. This shall be per the requirements listed in the section titled General Backflow Prevention Requirements.
3. Delayed Installation Of Double Check Valves. In situations where the retrofit is extremely difficult due to space limitations or where the backflow prevention assembly adversely affects sprinkler system operation, GWC will consider an extended installation schedule under the following conditions:
  - a. The existing system is equipped with at least a non-testable single check valve.

- b. The owner of the system shall submit a report prepared by a licensed fire contractor or engineer which adequately describes the space or hydraulic problems and provides the flow and pressure requirements of the jurisdictional fire agency.
- c. The owner of the premise consents to a prescribed plan and schedule for eventual retrofit of the fire sprinkler system with a double check valve assembly and a tank-pump installation, if necessary, for pressure and flow. Such plan and schedule shall be with the approval of the District Health Department and the jurisdictional fire agency.
4. Double Check Valve In Lieu Of Reduced Pressure Principle Assembly. With approval from GWC's Backflow Prevention Group, and the jurisdictional fire agency, a DC may be used in lieu of an RP on certain NFPA Class 4, 5 & 6 fire sprinkler systems. All requirements noted above in the section titled Reduced Level of Service Protection shall be met by the water customer. In addition, the DC requires a minimum of semi-annual testing and a possible higher level of testing as directed by GWC. This substitution may be considered for retrofit situations only under the following exclusive conditions:
  - a. Where retrofit of an RP induces pressure losses which render the existing fire system inoperable and there is not space for installation of a pump. The owner of the fire system shall submit to GWC photos, sketches, calculations and a detailed flow and pressure report to substantiate this claim. The calculations and report shall be provided by a licensed fire contractor or engineer. A letter from the jurisdictional fire agency listing required pressures and flows shall be provided to GWC.
  - b. Where safety or drainage problems exist with the installation of an RP which cannot be reasonably corrected, the owner of the system shall provide a written report which details the problems or logistics of installing the RP.

## SECTION 6 CONSTRUCTION WATER & FIRE HYDRANT USAGE

### CONSTRUCTION WATER DEFINITION

Backflow prevention is required by GWC on all methods of using potable water for construction. During the course of construction for a particular premise, water may be used for various construction activities. Such activities include, but are not limited to, water used for dust control, site grading and compaction, on-site mixing of concrete and cement, water used for the pressure testing of pipes, and water used in the cleaning of tools and equipment.

### CONSTRUCTION WATER SUPPLY

Several options available for construction water are as follows:

**Truck Fill Sites.** GWC encourages the use of non-potable supplies for construction water needs, particularly water used for dust control. GWC has provided a fill station at their facilities on Virginia Ranch Road. The fill station is equipped with metering and an appropriate backflow prevention assembly. GWC encourages contractors and developers to utilize the fill station, and arrangements can be made with GWC for its use, including after hours and weekends.

**Permanent Domestic or Irrigation Water Meter.** Another source of potable construction water is to use the permanent domestic or irrigation water service for that property. The meter box shall be set to subgrade in the final permanent location, the permanent backflow prevention assembly installed (with a hose bib at the downstream end of the backflow prevention assembly), inspected by GWC's Backflow Prevention Group, and tested by a certified tester. At the end of the construction project, the only change required is for the developer to remove the hose bib from the end of the backflow prevention assembly and notify the GWC customer service department to change the service into the appropriate customer's name. All installation requirements and inspections shall be performed as noted in GWC's Backflow Prevention Standards and this policy.

### FIRE HYDRANT AND FIRE WATER SERVICE USE

At no time shall a private entity utilize water from a public or private fire hydrant or from a fire sprinkler water service inside a facility for any purpose other than firefighting (Please refer to pages 31-32 of GWC Rules and Regulations for further information). GWC has a designated fill station at 1579 Virginia Ranch Rd. that shall be utilized by private entities (including contractors) for construction, or any, purposes. Any municipal agency that uses water from a private or public fire hydrant or other water outlet shall:

1. Have written approval from GWC for use of water from this non metered supply.
2. Have the Air Gap Separation on those vehicles and equipment approved by GWC's Backflow Prevention Group before water fill.



## SECTION 7 CERTIFIED BACKFLOW ASSEMBLY TESTERS

### TESTER CERTIFICATION

Persons wishing to perform tests on backflow prevention assemblies in Nevada shall have a CA-NV AWWA Backflow Prevention Assembly Tester Certification pursuant to NAC 445A. Certification requires passing a tester class resulting in a certificate from the CA-NV AWWA. Re-certification shall be obtained as required.

All testers who perform tests on backflow prevention assemblies which provide service protection for GWC shall be on the approved List of CA-NV AWWA Certified Testers. The tester's name will be automatically removed from the list if proof of re-certification has not been provided by the tester to the District Health Department.

GWC reserves the right to remove any tester from the approved list for GWC testing due to non-performance reasons or for performing the tests in a method not consistent with GWC, AWWA and NAC 445A standards or requirements.

### TESTER RESPONSIBILITIES AND TESTING REQUIREMENTS

1. A successful, operational function test by a certified tester shall be completed and submitted to GWC within seven (7) days after the assembly is installed and water service is set and/or water service is established. Water service will be terminated after the meter is set if this requirement is not met.
2. Any tester who conducts tests of backflow prevention assemblies which protect fire service connections shall also be a Nevada licensed fire contractor or work under the direct supervision of a licensed fire contractor.
3. GWC may request the tester perform the test in the presence of a GWC Backflow Prevention Group member.
4. GWC may conduct periodic spot checks of a tester's work using the tester's own gauge.
5. NAC 445A.67245 requires all test gauges to be calibrated at least annually by a qualified firm capable of such calibration. The calibration certification forms, for any test gage used to test backflow prevention assemblies on GWC water services, shall be provided to GWC's Backflow Prevention Group annually.
6. Both backflow prevention assemblies on a Detector Check assembly shall be tested. Designate the test for the bypass assembly as such on the test form. Read the bypass meter and record it on the test form.
7. Place in the comment field any items such as and including:
  - a. An incorrectly installed assembly (per GWC Installation Standards)
  - b. An assembly which has been modified from the original factory configuration such as having a #1 shut-off valve without a test cock or one in which a shut-off valve has been detached from the body of the backflow assembly.
  - c. An installation which has a stop and waste valve between the meter and the assembly
  - d. An installation which has a water outlet, tap, tee, etc., upstream of the backflow prevention assembly
  - e. Use of a test cock for water supply

- f. A fire service which has a tap for non-fire services upstream or downstream of the backflow prevention assembly
- 8. Test criteria for a passing test for an RP:
  - a. Minimum 2.0 pounds per square inch differential (PSID) on relief valve opening
  - b. Minimum 1.0 PSID on check valve #1
  - c. Minimum 3.0 PSID buffer between relief valve opening and check valve #1
  - d. Both shut-off valves shall not leak
- 9. Test criteria for a passing test for a DC:
  - a. Minimum 1.0 PSID on check valve #1 and check valve #2
  - b. Both shut-off valves shall not leak
- 10. Test criteria for a passing test for a PVB:
  - a. The air inlet shall open at a minimum 1.0 PSID
  - b. Minimum 1.0 PSID on check valve #1
  - c. Both shut-off valves shall not leak

## SECTION 8 CROSS-CONNECTION CONTROL SPECIALISTS

### SPECIALIST CERTIFICATION

Any person who wishes to conduct Cross-Connection Surveys for GWC customers shall be a Cross-Connection Control Specialist (“Certified Specialist”). This certification shall be obtained through successful completion of the specialist class presented by the CA-NV AWWA.

### SURVEY REQUIREMENTS

Surveys conducted for GWC water users shall be complete, well written and concise. Surveys shall include the following minimum information:

1. A clear and complete description of the water service connections at the premise being surveyed including, but not limited to:
  - a. Types of services
  - b. Service address
  - c. Owner name and address
2. A recommendation for type of backflow prevention for service protection that is consistent with requirements of NAC 445A. Describe potential external and internal installation locations. Describe locations and sizes of drains, and locations of electric panels and/or electric equipment. Describe any logistical problems, such as space problems, meters in driveways, lack of drains, high water tables, water run-off problems, etc.
3. A detailed review of the on-site water use and the health or pollutant level hazards associated with such use. List backflow prevention that exists on internal plumbing hazards.
4. A physical description of the facility and premise including a map showing pertinent data such as buildings and where water services are located in relation to buildings and parking lots, location of the service connection and description of the area immediately around and downstream of the service connection, location of sewer mains or laterals, location of on-site sewage treatment/disposal facilities, etc.
5. Note any special factors such as:
  - a. Auxiliary approved potable water supplies on the premise.
  - b. Non-potable auxiliary water supplies being used (seasonal or year round) on, adjacent to, or close to the premise: recycled, reclaimed, well, ditch, surface water.
  - c. Actual or possible unauthorized water taps or usage upstream of any backflow prevention assembly for service protection.
  - d. Existing backflow prevention assemblies, their purpose, general condition, size, manufacturer, model, serial number and any test history.
  - e. Relationships to other properties relating to water services or private water mains.
6. Surveys that address internal protection should also include the following:
  - a. A detailed description of internal plumbing, including existing or potential cross-connections.
  - b. A recommendation for “internal protection” consistent with industry codes and references including but not limited to: the Uniform Plumbing Code, city building codes, NAC 445A, ‘Orange Book’, etc.

## SECTION 9 ENFORCEMENT ACTION

### GENERAL

If, in the opinion of GWC, it is found that a customer is not meeting its responsibilities relative to service protection backflow prevention, GWC may implement enforcement actions. Enforcement may include:

1. Denying or terminating water service to a customer's premise.
2. Other action as GWC may deem necessary to eliminate existing or likely backflow conditions.

### BASIS FOR WATER SERVICE TERMINATION

When GWC encounters a water use that represents a clear and immediate hazard to the potable water supply that cannot be immediately abated, GWC will institute a procedure for discontinuing the water service. Conditions or water uses that create a basis for water service termination shall include, but are not limited to, the following:

- A. Direct or indirect cross-connection between GWC's water system and a sewer line.
- B. Unprotected direct or indirect connection between the public water system and an unapproved auxiliary water system or source.
- C. Refusal to install a required backflow prevention assembly. Unapproved delays by the customer to install backflow prevention assemblies shall constitute such a refusal.
- D. Refusal or unapproved delay to test a backflow prevention assembly.
- E. Refusal or unapproved delay to repair a faulty backflow prevention assembly.
- F. Refusal or unapproved delay to replace a faulty backflow prevention assembly.
- G. Unprotected direct or indirect connection between the public water system and a system or equipment containing contaminants.
- H. If a backflow prevention assembly has been removed, bypassed or disabled without prior approval from GWC's Backflow Prevention Group.
- I. If a cross-connection exists that is not controlled commensurate to the degree of hazard as assessed by GWC's Backflow Prevention Group.

### TERMINATION PROCEDURE

In the case of A or B, water service to a customer's premise will be terminated immediately if a potential hazard to the potable water supply is determined and cannot be immediately abated.

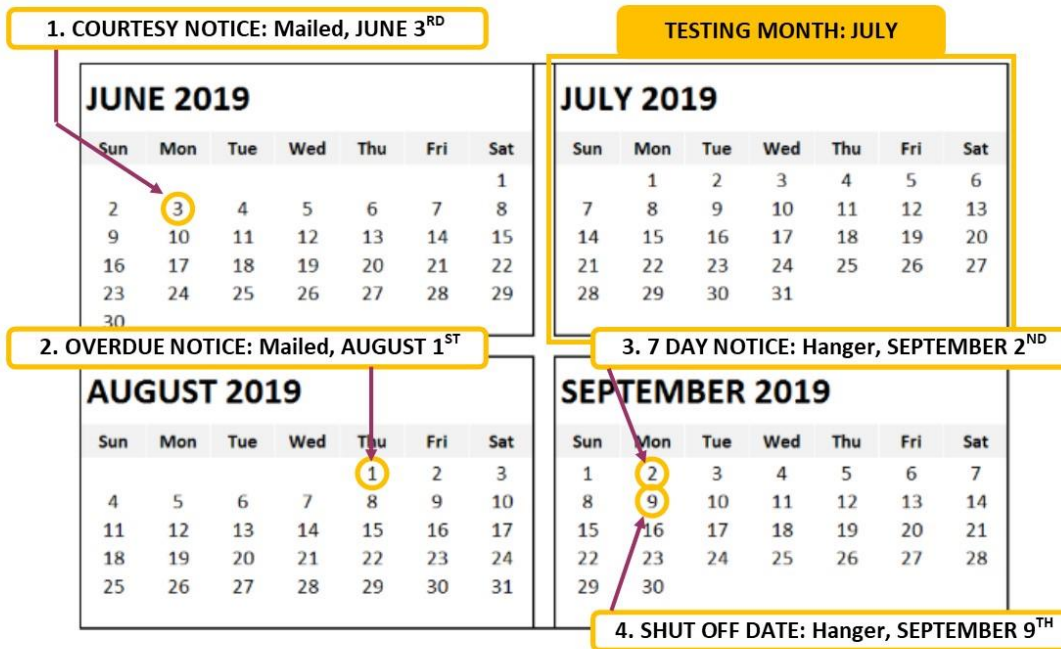
For all other conditions, GWC will terminate service to a customer's premise after the listed in steps 1 through 4 below have been completed.

1. **Courtesy Notice;** GWC shall notify the customer (by mail approx. 30 days before the testing month) of the requirements related to backflow prevention (installation, maintenance, relocation, testing, etc.). The customer shall be given the full testing month (determined by prior years testing, exception: new installation), to comply and have their passing testing results submitted to the GWC.
2. **Overdue Notice;** GWC shall send a second notice to the customer (by mail the first working day after the testing month) who does not provide testing results within the designated testing month. The second notice shall allow the month following their testing month as a grace period to comply before receiving the shut-off notice.

3. **7 DAY NOTICE WATER SHUT-OFF;** GWC shall provide a third notice directly to the premises which will be a Disconnect Notice to be carried out within 7 days. Non-compliance fees may be applied to this notice as determined by GWC’s Rules and Rates.
4. **TERMINATION OF SERVICE;** GWC will terminate water supply and lock the service valve. The water service will remain inactive until all violations have been corrected, inspected and approved by GWC and any applicable re-connect charges have been collected in accordance with GWC’s Rules and Rates.
5. **Failed Test Reports;** GWC shall notify customers via mail of a failed test report. Repairs are required to be made within seven (7) days of a failed report if a location is determined to have the potential for a cross-connection health hazard. Otherwise the same time frame as not receiving the test results will be allowed following steps 2-4. If the passing test report is not received within the time frame allocated the location will have services discontinued.

## EXAMPLE TIMEFRAME

**Overdue; 1 Month, 7 Days to Shut-Off** approx.



## **SECTION 10 PROCEDURE FOR A BACKFLOW OR CROSS-CONNECTION INCIDENT**

### **GENERAL**

Whenever backflow occurs (either from backpressure or backsiphonage) the potential exists for contamination of GWC's distribution system. Backflow incidents may be confined on site to a particular premise or may be more widespread in the event of sudden pressure loss in GWC's distribution system. The following procedures shall be used for responding to backflow incidents:

### **BACKFLOW EVENT CONFINED TO A PARTICULAR PREMISE OR PROPERTY**

This type of backflow event will be communicated to the Bureau of Safe Drinking Water and GWC. The following will be the procedure followed by GWC for an event isolated to a single property.

1. GWC's Backflow Prevention Group or water production staff will notify the District Health Department of the event and the nature of the event. Based upon the particular circumstances and with consultation with the Bureau of Safe Drinking Water, GWC may immediately implement one or more of the following actions: water quality testing, flushing of services and mains, and/or boil water order to customers or areas of the system affected by the event. Water service may be terminated to the premise suspected of being the source of the backflow until corrective actions are completed.
2. The owner of the premise allowing (or suspected of allowing) the backflow to occur shall be required to install or repair and test backflow prevention equipment on the water service. Backflow prevention measures will be specified by GWC's Backflow Prevention Group. Such backflow prevention equipment will be installed and tested before service is restored.
3. GWC will require the owner of the premise to complete a detailed cross-connection control survey of the premise by a Certified Specialist. GWC and the Bureau of Safe Drinking Water will determine the scope of the survey and will utilize the survey to determine additional internal backflow prevention measures required of the affected premise.

### **BACKFLOW EVENT CAUSED BY A SYSTEM LOSS OF PRESSURE**

1. GWC will determine the extent of the incident and notify the Bureau of Safe Drinking Water as soon as possible. After consultation with the Bureau of Safe Drinking Water, a boil water order may be issued by GWC to the media or door to door identifying the area affected by the event and those customers which should immediately boil their domestic water.
2. GWC will isolate the area affected by the backflow event and will notify the jurisdictional fire department of curtailment of fire protection service to the affected area. GWC will continue to communicate with affected customers through use of the media, direct contact, telephone, door hangers and/or other methods.
3. Immediately after isolating the area affected by the backflow event, GWC will initiate corrective action to restore service. This will include system repairs, flushing of mains and services and water quality sampling and monitoring.
4. After service is restored (mains and services are fully pressurized and flushed), the boil water order will be lifted upon receiving satisfactory results from water quality testing.

## SECTION 11 NON-POTABLE WATER USAGE & AUXILIARY WATER

Non-potable water includes water from ditches, surface water, unapproved wells, reclaimed water, recycled water, gray water or any non-approved water supply.

Any premise on which both GWC water supply and a non-potable water supply exist will be subject to an annual shutdown test.

GWC will not provide potable irrigation to a premise that is supplied with non-potable water for that use.

### TYPE OF BACKFLOW PREVENTION REQUIRED

1. An RP backflow prevention assembly is required at the GWC meter or point of connection on all domestic water services which enters a property in which a non-potable water supply is used.
2. A DC assembly is required at the point of connection on all fire services in a vault just inside the curb/sidewalk. GWC may, at its discretion, allow the DC to be installed in the fire riser room. Where the backflow assembly installation is allowed in the fire riser room, the fire service must have a concrete slurry encasement with warning tape along the entire length of the fire service trench.
3. An Air Gap Separation backflow prevention method is required at the GWC meter or point of connection for any plumbing system which will have a direct or indirect cross-connection between both GWC water and a non-potable water supply.
4. For a potable water service which enters a RESIDENTIAL property which is adjacent to a property where non-potable water is used for irrigation: See Section 8A of GWC'S engineering and Construction Standards for separation and backflow requirements.

### CONSTRUCTION REQUIREMENTS

Requirements during the construction phase of both potable and non-potable facilities include the following:

1. GWC will require "special inspection" of the on-site facilities to ensure that design/facility requirements are being met. Special inspection services will be paid for by the developer. The developer shall select the inspector from a list of Certified Specialists provided by GWC. If available, GWC may provide special inspection from staff personnel who are Certified Specialist. The special inspector will coordinate with GWC's normal on-site facilities inspector and will provide a report to GWC at the conclusion of construction confirming that all design facility requirements have been met.
2. An initial shutdown test will be completed before the occupancy of any structure or residence.

### QUALIFICATIONS FOR WATER USER AGENT

The WATER USER AGENT of a premise shall be a Certified Specialist through CA-NV AWWA.

### **WATER SERVICE TERMINATION**

If any cross-connections are detected between the potable water supply and the non-potable water during the shutdown test, potable water service will be terminated to the facility immediately and remain off until the cross-connection problem is located and removed to the satisfaction of GWC.

### **AUXILIARY APPROVED WATER SUPPLY**

If GWC supplies water to a premise with an approved auxiliary water supply, backflow prevention shall be required at the point of connection. GWC's Backflow Prevention Group will specify the required type and location of backflow prevention assemblies for all GWC water supply.

### **WELL ABANDONMENT**

When a well is abandoned, the owner shall submit to GWC's Backflow Prevention Group a certified copy of the well plugging report prepared by the licensed driller in accordance with NAC 534.420. This report shall be recorded by the District Health Department.

### **REFERENCES TO OTHER SECTIONS OF THIS POLICY**

Enforcement Action



## APPENDIX A RESIDENTIAL FIRE SPRINKLER SYSTEMS

### BACKGROUND

Local fire jurisdictions may require the installation of fire sprinkler systems for certain single family homes. Single family homes that are far removed from a hydrant, a fire station, or because of their size or nature, may require the installation of such a system.

The owner or developer of a single/multi family residence requiring a fire sprinkler system shall install a backflow prevention assembly (double check valve assembly or a reduced pressure backflow prevention assembly) where the fire suppression system branches off of a single service line.

### BACKFLOW PREVENTION ASSEMBLY REQUIREMENTS

1. The backflow prevention assembly shall meet all requirements for installation noted in the GWC Backflow Prevention Standards and this policy.
2. The type of assembly and location will be designated by GWC's Backflow Prevention Group.
3. The installation shall be inspected by GWC's Backflow Prevention Group.
4. The backflow prevention assembly shall be tested upon installation and annually thereafter.
5. The backflow prevention assembly shall be maintained in factory working condition.

## APPENDIX B UNIFORM PLUMBING CODE: INTERNAL BACKFLOW PREVENTION REQUIREMENTS

Refer to Chapter 6 of the UPC, Water Supply and Distribution, for internal backflow prevention requirements for the adopted version specific to the city or jurisdiction in question.

Backflow prevention and cross-connection requirements are detailed in sections 602 through 603.

## APPENDIX C NAC 445A EXCERPT NEVADA ADMINISTRATIVE CODE

Containing All Permanent Regulations of State Agencies Adopted under chapter 233B of NRS Classified, Arranged, Revised, Indexed and Published (Pursuant to NRS 233B.062 to 233B.065 inclusive) by the LEGISLATIVE COUNSEL STATE OF NEVADA

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Please see the link below

<https://www.leg.state.nv.us/nac/nac-445a.html>