Location ID _____

Site Number _____

Acknowledgment of Receipt of Reclaimed Water Information Packet

____ I have received a Reclaimed Water Information Packet containing the information below.

____ I have previously received a Reclaimed Water Information Packet and decline receipt of another packet.

Welcome Letter

Forms

- Application for Use of Reclaimed Water
- Reclaimed Water User Agreement

General Information

- Cross Connection Control Specialist Zones & Contact Information
- Things to Consider About Reclaimed Water Use
- Brochure - *Reclaimed Water Reclaimed Water Basics for Residential Customers*
- *Video - Reclaimed Water Basics for Residential Customers -* http://www.youtube.com/watch?v=60UcLGcDR9E
- *What You Should Know About Reclaimed Water & Backflow Prevention*
- *Reclaimed Water Quality* Information Sheet

Regulations

- ADEQ Regulations for Reuse of Wastewater

Site Preparation

- Getting Ready for Reclaimed Water
- Reclaimed Water Customer Checklist
- Site Plan Sheet

For additional information about reclaimed water, including the materials listed below, go to www.tucsonaz.gov/water/reclaimed:

- Frequently Asked Questions
- List of Who Uses Reclaimed Water
- Working in Gardens Irrigated with Reclaimed Water
- Annual Reclaimed Water Customer Newsletters

_____	_____
Customer/Authorized Agent	Tucson Water Representative
_____	_____
Printed Name	Printed Name
_____	_____
Date	Date

TUCSON WATER

RECLAIMED WATER

Dear Reclaimed Water Customer,

Thank you for choosing to use reclaimed water. You are joining the growing number of homes, schools, parks and golf courses that use reclaimed water for irrigation. Reclaimed water plays an important role in maintaining sustainable water supply for Tucson. Your use of this important resource is appreciated.

Tucson Water has been operating a reclaimed water system since 1983 and today we deliver reclaimed water to more than 900 sites. Among them are 47 schools, including the University of Arizona, the West and East Campuses of Pima Community College, and many Tucson Unified School District Schools. Thirty-eight City and County parks and five of the six City of Tucson public golf courses irrigate with reclaimed water.

To learn more about reclaimed water, please read the materials included in this package and go to our website at www.tucsonaz.gov/water/reclaimed.htm. If you would like this information in Spanish, please call 791-4331. *Si usted desea información en Español, por favor, llame 791-4331.*

If you have questions about getting your site ready for reclaimed water, contact the inspector for your area. You will find the inspector's contact information in this information package and at www.tucsonaz.gov/water/reclaimed.htm in the "Information for Customer's" Section.

Welcome to the family of reclaimed water customers.

Sincerely,

Tucson Water

Reclaimed Site Preparation Checklist

- ❑ **1. Contact the Backflow Prevention/Reclaimed Water Inspector –** Contact the Specialist for your area (see enclosed business card) before you apply for reclaimed water service or begin preparing your site. S/he will guide you through the process and help assure that reclaimed water is available when you are ready.

- ❑ **2. Read the ADEQ Reuse Rules and Reclaimed Water User Agreement (enclosed) –** As a reclaimed water customer, you are responsible for ensuring that your site is in compliance with the ADEQ Reuse rules.

You are required to visit our Tucson Water office,
New Services Counter, at 310 W. Alameda, to complete items 3-6.

- ❑ **3. Apply for Reclaimed Water Service –** A completed application form must be filled out. It includes property address, how reclaimed water will be used, and an estimate of annually usage.

- ❑ **4. Sign the Reclaimed Water User Agreement** - You must sign a Reclaimed Water User Agreement. This is a contract between the reclaimed water customer and Tucson Water and covers rules and responsibilities.

- ❑ **5. Purchase Reclaimed Water Meter** - Tucson Water will assist you in determining the size meter needed and location. The price of the meter is based on the size. Payment of the meter is required before an installation date is scheduled. Because meters are installed on a first come, first serve basis, there may be a wait of several weeks before installation.

- ❑ **6. Purchase Backflow Installation Permit –** An Installation Permit is required prior to installation of the backflow prevention assembly. **Backflow Installation Permits shall be purchased at TW Backflow Office.**

- ❑ **7. Install Backflow Prevention Assembly –** All sites having reclaimed water service are required to have a backflow prevention assembly to protect the drinking water supply.

- ❑ **8. Identify and Label Irrigation System –** Reclaimed water irrigation systems must be identified with purple pipe or pipe labeled as "reclaimed water" pipe. Control valves and valve boxes must also be identified.

- ❑ **9. Check Operation of Irrigation System** - Ensures that there is no ponding, or overspray from the irrigation system.

- ❑ **10. Draw a Conceptual Plan of the Irrigation System –** Plans of your reclaimed water system must be kept on-site and available for inspection. Draw your own (professional plans not required) or use the form in Informational Packet. Laminating the plans will minimize wear.

- ❑ **11. Ask about Thermal Expansion Protection –** Ask a qualified plumber about thermal expansion due to the closed plumbing system that is created when a backflow prevention assembly is installed.

- ❑ **12. Schedule Site Inspection and Dye Test** - Contact Specialist to schedule an appointment.

- ❑ **13. Install Signs –** The Specialist will provide the signs and assist in determing the correct location(s).

- ❑ **14. Reclaimed Water Service Begins –** After the Specialist approves the site, the meter will be unlocked. It is the customer's responsibility to connect the irrigation system to the meter.

- ❑ **15. Report Reclaimed Water Discharges –** You must report when reclaimed water leaves your property (i.e. an irrigation line breaks) by using the form at http://www.tucsonaz.gov/water/report_recl.htm.

Tucson Water Application for Use of Reclaimed Water

Site ID No. :_____
(OFFICIAL USE ONLY)

Date: _____

Service Address: _____

I

Customer: _____ Phone: _____

Address: _____

City: _____ State: _____ Zip: _____

II

Authorized Agent: _____ Phone: _____

Address: _____

City: _____ State: _____ Zip: _____

III

Architect/ Engineer: _____ Phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Proposed Reclaimed Water Site Information (complete questions A, B and C)

A. Date Reclaimed Water Service is Required: _____

B. Type of Reclaimed Water System: Conversion of Existing Piping System New System

C. Site Use: Golf Course School Grounds Park Cemetery Residential

Specify Other: _____

Proposed Reclaimed Water Use (choose one and complete the associated questions)

Irrigation	Toilet Flushing	Construction/Dust Control	Cooling Tower
Annual Use _____	Annual Use _____	Annual Use _____	Annual Use _____
Acres Irrigated _____		Estimated Daily Use _____	Estimated Peak Day Use (GPM) _____
*Peak Day (MGD)_____ *Not required for residential customers			

Tucson Water Approval of Reclaimed Water Use Application

Date Approved:_____

Comments/additional requirements:_____

Tucson Water_____

Check one: Initial		Location ID:	
Existing		Site Number:	

TUCSON WATER
RECLAIMED WATER USER AGREEMENT

Tucson Water's reclaimed water is a valuable renewable water resource that originates as treated wastewater from the Tucson metropolitan area's wastewater treatment plants. The treated wastewater is then filtered and chlorinated before it is delivered as reclaimed water. It is subject to a variety of federal, state, and local regulations that protect the safety of the public and the integrity of the potable water supply system. This Reclaimed Water User Agreement establishes terms and conditions that apply to the ultimate user of Tucson's reclaimed water, or Customer, and the City Of Tucson.

1. **Place of Use.** Tucson Water will deliver to a meter reclaimed water in accordance with the open access reuse standards established in Tucson Water's ADEQ Reuse Permit. Reclaimed water delivered under this agreement can be stored and used only at the following location:

2. **Resale of Reclaimed Water.** Customer may not resell reclaimed water to any other person or legal entity. Customer is also prohibited from conveying reclaimed water delivered under this Agreement to any other premises or location.

3. **Commodity Rate.** Customer will pay for reclaimed water delivered under this Agreement according to the rate schedule established in the Tucson City Code during the term of this Agreement. If the City establishes rate classifications applicable to reclaimed water, Customer will pay the rate established by the Code that applies to Customer's particular circumstances. If the rate to be paid by Customer is specified by other Agreement(s), such agreements shall be noted in Section 18 below. Nothing herein shall excuse Customer from payment of service or other charges as are applicable to the time, place, or manner of the Customer's reclaimed water service and delivery.

4. **Costs of Customer.** The City's reclaimed water distribution system commonly terminates after the meter. Customer is solely responsible for any private delivery system costs, including the initial construction cost of valve stations for automated control of storage facilities by Tucson Water arising out of Customer's use of reclaimed water and from the construction, maintenance or operations of the private reclaimed water delivery system on Customer's property.

5. **Compliance with Regulations.** Customer agrees to obey any state, federal, and local laws, regulations, and standards that may apply to Customer's use of reclaimed water during the term of this Agreement. Such laws, regulations, and standards may include:
   - requirements and restrictions governing use of reclaimed water
   - application methods that reasonably preclude certain kinds of human contact with reclaimed water
   - control of access to the reclaimed water, its delivery system, and the area of storage and use
   - requirements to prevent reclaimed water from standing on open areas during normal periods of use
   - requirements to prevent reclaimed water from coming into contact with drinking fountains, water coolers, or eating areas
   - requirements to identify certain components on the reclaimed water delivery system, including the installation of purple pipe, and to provide public notices that reclaimed water is used on Customer's premises
   - reporting any off-site discharges of reclaimed water to Tucson Water and ADEQ

6. **Hose Bibs.** Unless Customer has a recorded User Agreement for this site dated prior to 1/1/97, Customer agrees to remove any existing hose bibs and agrees not to install hose bibs on any component of the private reclaimed water delivery system.

7. **Signs.** Upon the commencement of reclaimed water service, the City will provide Customer with an appropriate number of signs to inform the public that reclaimed water is used on Customer's premises. Customer shall post such signs at all entrances to the premises where reclaimed water is used. Customer may also be responsible for posting other signs that may be required under the State of Arizona's Administrative Code or that may be established by City of Tucson regulation. Customer will be responsible for the maintenance and replacement of reclaimed water signs.

8. **Backflow Prevention.** Customer will install a reduced pressure backflow assembly on all potable water services at the site, as required by City Ordinance, before receiving reclaimed water service from the City. Customer is responsible for the maintenance and testing of all backflow protection.

9. **Thermal Expansion Control.** Customer agrees to install and maintain any thermal expansion control, as may be required by the adopted Uniform Plumbing Code.

10. **Toilets.** Customer acknowledges that reclaimed water can be used for toilet flushing only in non-residential buildings. Customer also acknowledges that variations in reclaimed water system pressure may affect the operation of toilets and that reclaimed water may not be odorless and may discolor fixtures. In addition to all other conditions of reclaimed water use, Customer agrees to comply with the requirements listed in the Uniform Plumbing Code as adopted by the City of Tucson, including annually conducting the cross-connection test described therein in the presence of a Tucson Water Cross-connection Control Specialist.

11. **Inspection.** Customer agrees that the City of Tucson or any other public agency with the authority to verify compliance with reclaimed water use regulations may inspect Customer's premises to verify compliance with the applicable reclaimed water use regulations. Customer further acknowledges the responsibility to inform, notify, and request inspection and approvals from various agencies, including Tucson Water, City of Tucson Development Services, and Pima County permitting agencies, for certain activities relating to the construction, maintenance, and operation of its private reclaimed water delivery system, including, but not necessarily limited to, materials, construction, facility testing, violations, and emergency situations.

12. **Plans.** Customer acknowledges that it has the responsibility to maintain a copy of the conceptual plans of the on-site reclaimed water system at the premises on which reclaimed water is being used. These plans will show the locations of the property lines, all structures on the site, reclaimed water lines, and turn-off valves.

13. **Potential Disruption of Service.** Customer accepts the possibility that the City may be required to disrupt reclaimed water services to Customer's premises due to emergency conditions, peak demands, or planned system maintenance. Customer shall be responsible for any damage that may be caused to Customer-owned facilities by such disruptions.

- When there is an unforeseen emergency relating to the City's Reclaimed Water delivery system, The City may terminate deliveries of reclaimed water without notice. When notice of an emergency is given, Customer agrees to reduce or cease usage of reclaimed water service upon the City's request.
- In order to accommodate peak demand periods or planned maintenance of its reclaimed water system, the City shall provide Customer with twenty-four (24) hour notice of the need to cease reclaimed water usage altogether, or to reduce the volume of reclaimed water used. Upon being provided such notice, customer will alter its reclaimed water usage according to the City's request.

14. **Site Testing Requirement.** Customer understands that all reclaimed water sites, except residential sites, must be inspected and tested annually by a certified Reclaimed Water Site Tester registered with Tucson Water. Residential sites must be inspected and tested ever five (5) years.

15. **Lease (Rental) of Property.** Customer agrees that all leases of the premises described herein shall be in writing, and must be made expressly subject to this Agreement.

16. **Transfer of Property.** Should Customer sell the premises described herein or otherwise transfer the financial responsibility for the premise's reclaimed water bills, Tucson Water shall not be obligated to provide reclaimed water to any subsequent owner or user of the premises unless any successors sign a new Reclaimed Water User Agreement and meet all other conditions of reclaimed water use. Customer will close its account with Tucson Water and pay fees or charges incurred by Customer before the disposition of Customer's property is effective.

17. **Termination of Service.** Customer acknowledges that reclaimed water may be discontinued for failure to comply with the terms and conditions of this agreement.

18. **Other Agreements.** Unless expressly listed below, this Agreement constitutes the complete and entire Agreement between the parties. If applicable, list other Agreements:

ATTEST:

_____ _____
Customer/Authorized Agent (Signature) Date

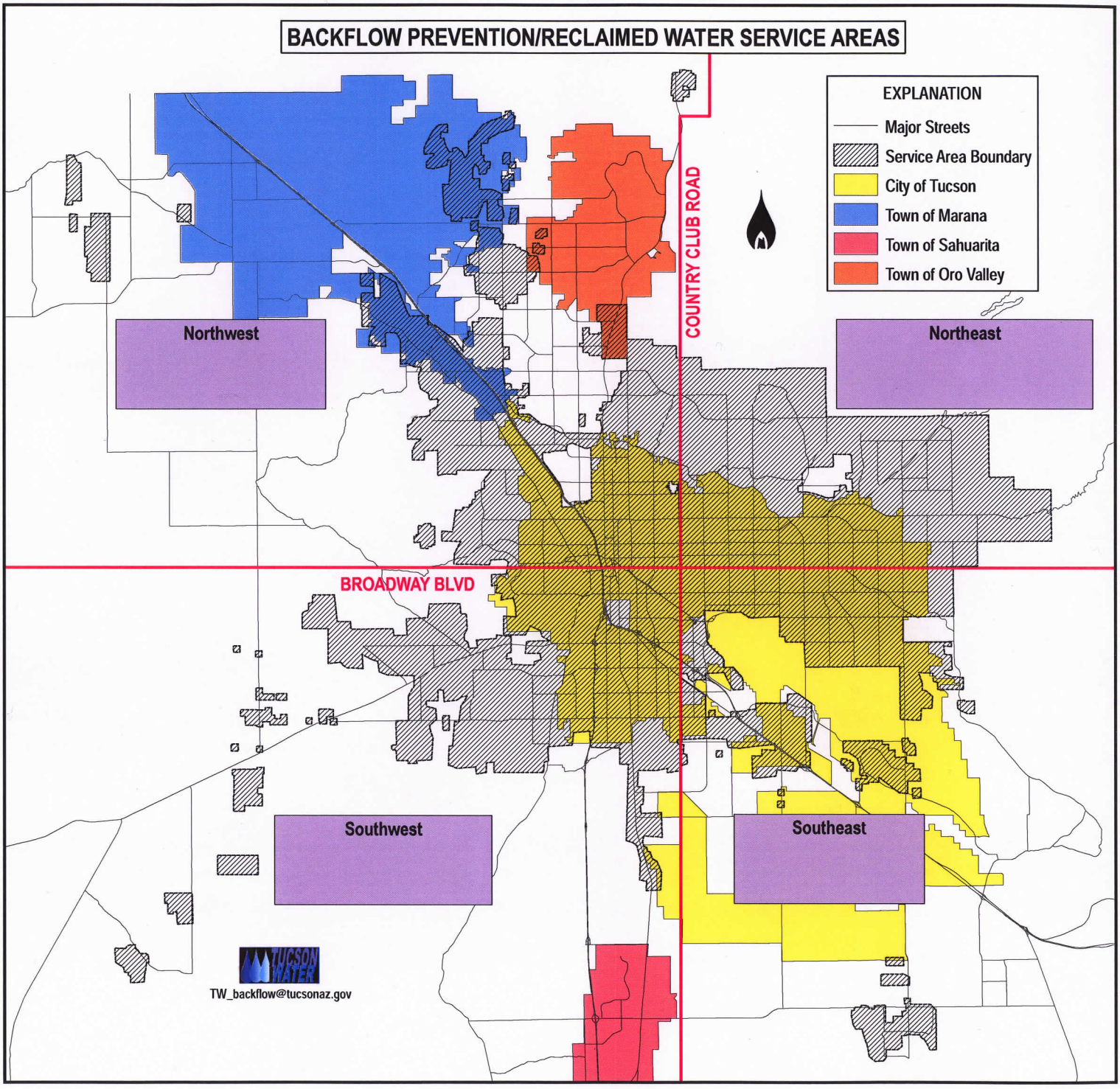
_____
Customer/Authorized Agent (Printed Name)

_____
Customer email address

APPROVED AS TO FORM:

_____ _____ _____
City Attorney Tucson Water Director/Authorized Signature Date

REVISED 4/12



CONTACT INFO:
NW: RANDY PURDY ------ 349-1478
NE: JEFF BRITT ---------- 349-3605
SW: JOE OLIVA ---------- 279-6808
SE: ROB RICH ---------- 349-9138
RC: CRAIG GROETHE --- 349-1475

TUCSON WATER

RECLAIMED WATER

THINGS TO CONSIDER ABOUT USING RECLAIMED WATER

Tucson Water uses some of its recycled water to produce reclaimed water, which is specially treated for applications such as irrigation, dust control, firefighting, and industrial uses. Reclaimed water is not treated to be used for drinking or bathing.

Because reclaimed water is recycled water, its use has some special requirements. The information below is provided to assist you in deciding whether using reclaimed water is right for you.

Proximity to the Reclaimed Water System: Unlike the drinking water system, reclaimed water is not available in all parts of the Tucson Water Service Area. Check the map to determine whether your property is within 1/8 mile of an existing reclaimed water main. If your property is located within this corridor, it may be cost-effective for you to obtain reclaimed water service. For assistance in determining the cost of extending a reclaimed water main, contact New Services at 520.791.5164. Please note: it is the City's policy that the customer pays for all extensions of the reclaimed water system.

Conservation Ethic: Using reclaimed water is a good way to recycle water that is available locally. Recycling saves our high quality water supplies for drinking. Tucson Water's goal is to continue to add customers to the reclaimed water system.

Irrigation System Upgrades: In order to use reclaimed water for irrigation, your irrigation system must be completely separate from the drinking water system. It must be designed so that there is no ponding of reclaimed water and reclaimed water does not overspray onto eating areas, sidewalks, or neighboring properties. All new irrigation pipes must be purple. For more information about irrigation system requirements, see "Getting Ready for Reclaimed Water.

Backflow Prevention Assembly and Thermal Expansion Control Device: The Uniform Plumbing Code and Arizona Department of Environmental Quality require a backflow prevention assembly be installed on the potable water service to protect the drinking water supply in the event there is ever a cross-connection between the reclaimed and drinking water systems. The installation of a backflow prevention assembly may necessitate the installation of a thermal expansion control device. Both are the responsibility of the homeowner. For more information on thermal expansion, see the Reclaimed & Backflow Prevention brochure.

A permit is required to install the backflow prevention assembly. The backflow prevention assembly must be inspected annually by a certified backflow prevention tester.

TUCSON WATER

RECLAIMED WATER

Price of Reclaimed Water: Reclaimed water costs less than most of Tucson Water's drinking water rate blocks. For more information, go to https://www.tucsonaz.gov/water/reclaimed-rates.

Economics: Some people find the savings from converting to reclaimed water will pay for the improvements required to use this water in a fairly short period of time. Others, who use a minimum amount of water for outdoor irrigation, may find the payback period too long to make a conversion feasible. For more information, go to https://www.tucsonaz.gov/files/water/docs/Reclaimed_Water_Rates_About.pdf.

Reclaimed Water Meter: In addition to the initial purchase price of the reclaimed water meter, there is a monthly service charge on the meter. The size of the meter determines the monthly service charge. Most single family homes have one 3/4 inch meter.

SIGN: A sign must be posted at the entry to every site where reclaimed water is in use. The sign for residential properties is small (9 in. x 12 in.) with an attractive design. For more information, go to https://www.tucsonaz.gov/water/reclaimed-signs.

Pressure: Reclaimed water pressure may be different from the drinking water pressure you currently have. It is the responsibility of the property owner to raise or lower the pressure, as necessary.

How it's Delivered

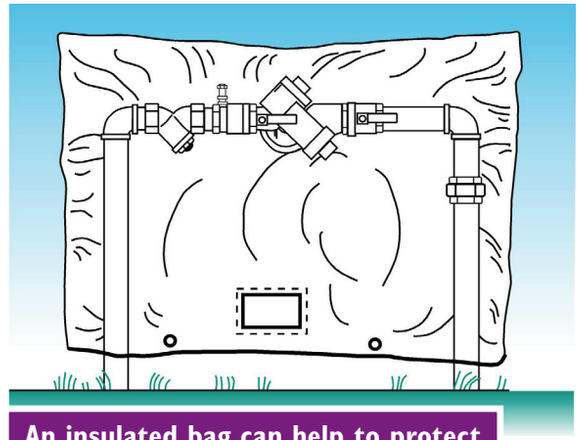
Tucson Water delivers reclaimed water through pipes and facilities that are separate from our drinking water supply system. The reclaimed system includes 160 miles of pipe and 15 million gallons of storage in enclosed reservoirs. Since 1984 Tucson Water has been recycling water for irrigation and other uses.

Purple is the internationally recognized color used to identify a reclaimed water delivery system.

Tucson Water delivers reclaimed water to more than 700 homes in our community as well as to golf courses, parks, and schools. Using reclaimed water to irrigate plants and landscaping saves more than six billion gallons of drinking water a year – enough to supply more than 60,000 families.

Preventing Reclaimed Water Backflow

The Arizona Department of Environmental Quality (ADEQ) requires all sites having reclaimed water service to have a backflow prevention assembly on the drinking water service. For more information about backflow prevention requirements, click on **tucsonaz.gov/water/backflow**.



An insulated bag can help to protect the backflow prevention assembly from damage caused by freezing.

Call (520) 791-2650 for reclaimed water information and signs.

tucsonaz.gov/water/reclaimed

TUCSON WATER

For accommodations, materials in accessible formats, foreign language interpreters, and/or materials in a language other than English, please contact Tucson Water at (520) 791-4331 or (520) 791-2639 for TDD.

Printed on Recycled Paper 11/28/11

Reclaimed Water Basics

RECLAIMED WATER – A Recycled Resource –

For Residential Customers

What is Reclaimed Water?

Water is Tucson's most precious natural resource. Today we are more fortunate than many southwestern cities because we have three sources of water: groundwater, Colorado River water, and recycled water.

Recycled water is an important water resource today and for the future. Tucson Water uses some of its recycled water to produce reclaimed water. Reclaimed water is specially treated for irrigation and a variety of other uses, but is not treated to be used for drinking and bathing. The nitrogen and phosphorus in reclaimed water provide fertilizer for plants and grass.

The Benefits of Using Reclaimed Water

Recycling water for use as reclaimed water:

1. Uses a local renewable water source,
2. Helps to ensure reliable water supplies today and in the future,
3. Has a variety of targeted applications such as irrigation, dust control, industrial uses and more,
4. Can save customers money because the rates are lower than most of the large volume rates for drinking water.

Reclaimed Water Basics – Do:

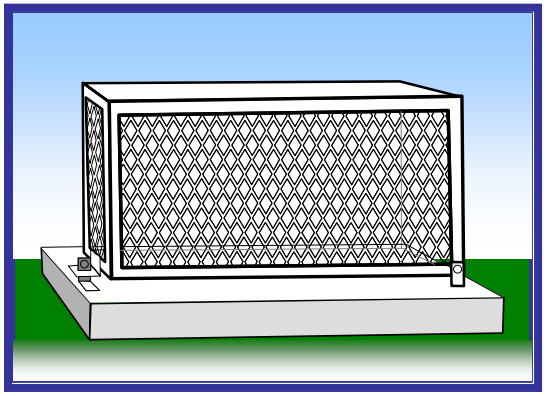
- ☑ Wash with soap and drinking water if you have come into contact with reclaimed water.
- ☑ Review the ***Reclaimed Water Customer Information*** Packet.
- ☑ Using the checklist provided in your ***Reclaimed Water Customer Information Packet,*** conduct an annual inspection of your property.
- ☑ Promptly report any reclaimed water discharges that leave your property to Tucson Water by completing an online form at **tucsonaz.gov/water/report_recl** or by calling (520) 791-2650.
- ☑ Ask a qualified plumber about thermal expansion protection for your hot water heater. For more information go to **tucsonaz.gov/water/reclaimed** and scroll down to the 'thermal expansion' link.

Reclaimed Water Special Requirements:

- ⊘ Do not allow human or house pet consumption of reclaimed water.
- ⊘ Do not connect the reclaimed water system to the drinking water system.
- ⊘ Do not bathe in reclaimed water.
- ⊘ Do not use reclaimed water in swimming pools or spas.
- ⊘ Never use reclaimed water in aquariums.
- ⊘ Do not use reclaimed water in evaporative cooling equipment or misting systems.
- ⊘ Do not use reclaimed water in fountains.
- ⊘ Do not wash vehicles, play equipment, driveways, or sidewalks with reclaimed water.

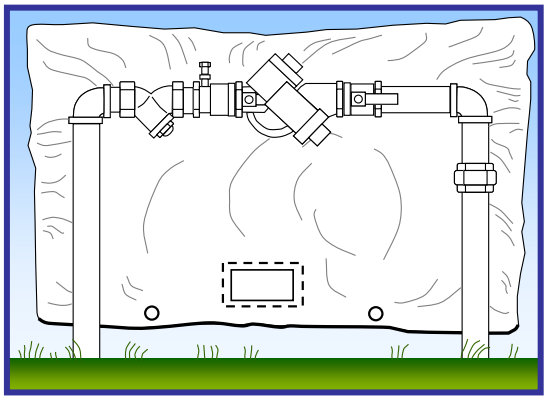
Guard Against Theft

What's the chance that your backflow prevention assembly will disappear into thin air? Assemblies are being stolen more often than ever due to the increasing prices of scrap brass and copper. When your assembly is stolen, not only do you lose the assembly and potentially have damage to your plumbing system, the water is often left on, creating damage and a large water bill.



Metal security cage

The most common way to protect your assembly is by placing it in a metal security cage (shown above) that is set on a concrete pad. There are also other types of locking devices available. Although none of these devices can ensure 100% protection against theft, they usually are effective deterrents to thieves.



Insulation bag

Don't Let Your Backflow Prevention Assembly Freeze

Every winter the temperatures dip below freezing. Inevitably, some backflow prevention assemblies freeze and are damaged. Don't let this happen. Freeze protection is easy and inexpensive.

A temporary solution is to wrap a blanket or a towel around the assembly on cold nights.

An insulation bag (shown above), a covered enclosure, or pipe insulation wrap can protect your assemblies.

TUCSON WATER

If you require materials in accessible format or in a language other than English, call Tucson Water's Public Information Conservation Office at (520) 791-4331.

City of Tucson TDD#: (520)-791-2639

MJM:06/2011

Printed on recycled paper

CITY OF TUCSON

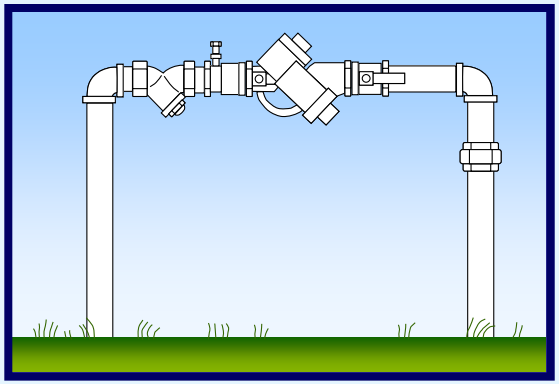
WHAT YOU SHOULD KNOW ABOUT…

RECLAIMED WATER – A Recycled Resource –

Reclaimed Water & BACKFLOW PREVENTION

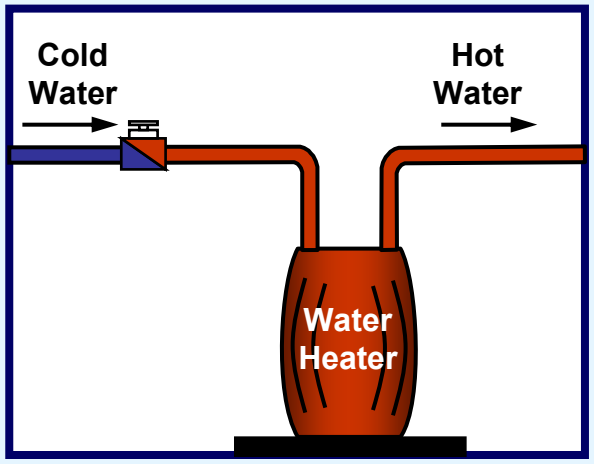
Reclaimed Water & BACKFLOW PREVENTION

Reclaimed water is recycled water that Tucson Water treats for turf and ornamental landscape irrigation and other uses. Because reclaimed water is not treated to drinking water standards, it cannot be allowed to enter the public drinking water system. The Arizona Department of Environmental Quality (ADEQ) requires all properties having reclaimed water service to have a backflow prevention assembly on the drinking water service.



The reduced pressure assembly is the most commonly used backflow prevention assembly

A reduced pressure principle backflow prevention assembly protects the public drinking water system. In the event that the reclaimed water and drinking water systems are interconnected, the backflow prevention assembly prevents reclaimed water from being drawn into the public drinking water system.



Water heater may expand without a thermal expansion tank

Thermal Expansion

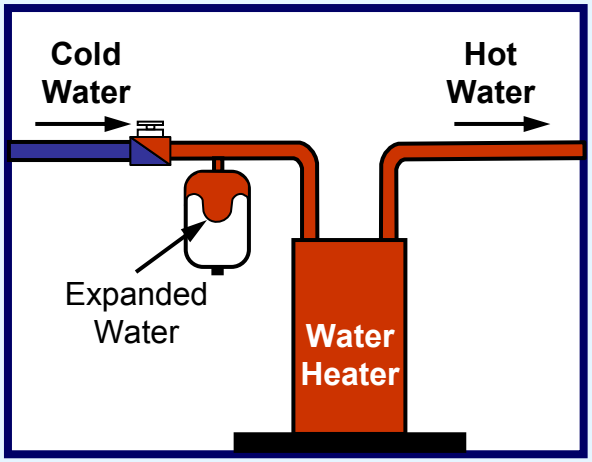
Owners and occupants of properties that have backflow prevention assemblies need to be aware that additional plumbing adjustments may be required to prevent thermal expansion damage. When a backflow prevention assembly is installed, a "closed" plumbing system is created.

This means that any increased pressure caused by the expansion of heated water from the hot water tank or attic pipes heated by the sun has nowhere to escape.

This can lead to serious consequences such as a ruptured or distorted hot water tank or a collapsed flue within the tank which can lead to the releases of toxic gases, such as carbon monoxide.

A small tank, called a thermal expansion tank, is usually installed near the hot water tank. The thermal expansion tank has a built-in bladder that absorbs any excess pressure and then gradually releases it back into the plumbing system. The Uniform Plumbing Code requires all plumbing systems that are classified as "closed" systems to install thermal expansion tanks.

To ensure that your home is safe, ask a qualified plumber about thermal expansion protection.



Water heater with a thermal expansion tank

Backflow prevention assemblies must be tested annually and kept in good working order.
For more information about backflow protection go to www.tucsonaz.gov/water/backflow

TUCSON WATER

RECLAIMED WATER

Getting Ready for Reclaimed Water

Reclaimed Water Irrigation System Labeling Requirements

Existing Irrigation Systems

1. Existing systems are not required to replace the existing irrigation system piping with impregnated purple pipe except when an existing irrigation system is expanded, repaired, or modified.

2. All existing reclaimed water irrigation system piping that is not identified and is exposed for any reason must be wrapped with identification tape or replaced with impregnated purple pipe.

3. Existing systems are not required to replace control boxes on irrigation systems; however, control boxes must be painted purple and identified with a reclaimed identification tag (available from Tucson Water inspectors). Single family residential boxes are not required to have identification tags.

4. All replacement control boxes must be made of impregnated purple material.

5. All existing and replacement control valves must be marked with a reclaimed identification tag (available from Tucson Water).

New Irrigation Systems/Replacement Components

1. All new reclaimed water irrigation systems are required to use impregnated purple pipe.

2. All new control boxes must to be made of impregnated purple material.

3. All new control valves must be marked with a reclaimed identification tag (available from Tucson Water).

4. All new sprinkler heads must be made of impregnated purple material.

TUCSON WATER

RECLAIMED WATER

Installation of Identification Tags

(ask Tucson Water inspector for tags)

Control Value Identification Tags

1. Install on the irrigation system pipe located in the control valve box.
2. Use only one (1) tag per box, regardless of the number of valves in the box.
3. Insert a plastic wire tie through the hole in the tag.
4. Strap the self-locking tie around the irrigation system pipe.

Control Valve Box Identification Nameplates (not required for single family residences)

1. Install on the reclaimed water irrigation valve box cover.
2. Paint valve box cover purple before attaching identification nameplates.
3. Use identification nameplate as a template to locate the installation area and hole alignment.
4. Use a 3/16" drill bit to drill holes (approximately ¾" deep).
5. Press "tamper proof" rivet through the identification nameplates and drive the expansion nail to secure.

Backflow Prevention

All sites that have a reclaimed water meter are required by the Arizona Department of Environmental Quality to have a reduced pressure backflow prevention assembly installed on the potable water service. This backflow prevention assembly is there to protect the public water system. In the event that there is a cross-connection between your reclaimed and potable water systems, the backflow prevention assembly stops reclaimed water from entering the potable water system.

Backflow prevention assemblies can be installed by homeowners on their residential services; however, businesses and other reclaimed water customers must have the assemblies installed by a licensed contractor. A permit must be purchased from Tucson Water prior to installation of the assembly.

All assemblies must be tested annually by a certified backflow tester who is registered with Tucson Water. A list of these testers is at https://www.tucsonaz.gov/files/water/docs/Backflow_Tester_List.pdf.

TUCSON WATER

RECLAIMED WATER

Protect Your Hot Water Heater and Structures

(Thermal Protection)

Owners and occupants of sites that have backflow prevention assemblies need to be aware that additional plumbing adjustments may be required to prevent thermal expansion damage. When a backflow prevention assembly is installed, a "closed" plumbing system is created. This means that any increased pressure caused by the expansion of heated water from the hot water tank or attic pipes heated by the sun has nowhere to escape. This can lead to serious consequences such as a ruptured or distorted hot water tank or a collapsed flue within the tank which can lead to the release of toxic gases, such as carbon monoxide.

A small tank, called a thermal expansion tank, is usually installed near the hot water tank. The thermal expansion tank has a built-in bladder that absorbs any excess pressure and then gradually releases it back into the plumbing system. The Uniform Plumbing Code requires all plumbing systems that are classified as "closed" systems to install thermal expansion tanks.

To ensure that your home is safe, ask a qualified plumber about thermal expansion protection.

Site Inspection and Dye Test

The inspector will inspect the site to ensure that it conforms with all Reuse Rules. The inspector will check the site for ponding, runoff, and overspray.

The dye test is conducted after the reclaimed meter and backflow prevention assembly are installed. Dye is added to the irrigation system on the customer's side of the new reclaimed water meter. At this time, the irrigation system is not connected to the reclaimed water meter. Drinking water is used to conduct the test. The inspector will turn on each drinking water faucet. If there is dye in the water, this indicates a cross-connection. All cross-connections must be eliminated prior to the initiation of reclaimed water service.

The inspector will provide you with signs for the property and assist you in determining the locations for these signs. Replacement of worn, damaged, or lost signs is the responsibility of the customer.

APPENDIX A

Arizona Revised Statutes

ARTICLE 6. RECLAIMED WATER CONVEYANCES

R18-9-601. Definitions

In addition to the definitions provided in R18-9-701, the following terms apply to this Article:

1. "Open water conveyance" means any constructed open waterway, including canals and laterals that transports reclaimed water from a sewage treatment facility to a reclaimed water blending facility or from a sewage treatment facility or reclaimed water blending facility to the point of land application or end use. An open water conveyance does not include waters of the United States.
2. "Pipeline conveyance" means any system of pipelines that transports reclaimed water from a sewage treatment facility to a reclaimed water blending facility or from a sewage treatment facility or reclaimed water blending facility to the point of land application or end use.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-602. Pipeline Conveyances of Reclaimed Water

A. Applicability.

1. Any person constructing a pipeline conveyance on or after January 1, 2001, whether new or a replacement of an existing pipeline shall meet the requirements of this Article.
2. Any person who has constructed a pipeline conveyance before January 1, 2001, is considered to be in compliance with this Article.

B. A person shall design and construct a pipeline conveyance system using good engineering judgement following standards of practice.

C. A person shall construct a pipeline conveyance so that:

1. Reclaimed water does not find its way into, or otherwise contaminate, a potable water system;
2. System structural integrity is maintained; and
3. The capability for inspection, maintenance, and testing is maintained.

D. A person shall construct a pipeline conveyance and all appurtenances conducting reclaimed water to withstand a static pressure of at least 50 pounds per square inch greater than the design working pressure without leakage as determined in A.A.C. R18-9-E301(D)(2)(j).

E. A person shall provide a pipeline conveyance with thrust blocks or restrained joints where needed to prevent excessive movement of the pipeline.

F. The following requirements for minimum separation distance apply. A person shall:

1. Locate a pipeline conveyance no closer than 50 feet from a drinking water well unless the pipeline conveyance is constructed as specified under subsection (F)(3);
2. Locate a pipeline conveyance no closer than two feet vertically nor six feet horizontally from a potable water pipeline unless the pipeline conveyance is constructed as specified under subsection (F)(3);
3. Construct a pipeline conveyance that does not meet the minimum separation distances specified in subsections (F)(1) and (F)(2) by encasing the pipeline conveyance in at least six inches of concrete or using mechanical joint ductile iron pipe or other materials of equivalent or greater tensile and compressive strength at least 10 feet beyond any point on the pipeline conveyance within the specified minimum separation distance; and
4. If a reclaimed water system is supplemented with water from a potable water system, separate the potable water system from the pipeline conveyance by an air gap.

G. A person shall:

1. For a pipeline conveyance, eight inches in diameter or less, use pipe marked on opposite sides in English: "CAUTION: RECLAIMED WATER, DO NOT DRINK" in intervals of three feet or less and colored purple or wrapped with durable purple tape.
2. For a mechanical appurtenance to a pipeline conveyance, ensure that the mechanical appurtenance is colored purple or legibly marked to identify it as part of the reclaimed water distribution system and distinguish it from systems for potable water distribution and sewage collection.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-603. Open Water Conveyances of Reclaimed Water

A. This Article applies to an open water conveyance, regardless of the date of construction.

B. A person shall maintain an open water conveyance to prevent release of reclaimed water except as allowed under federal and state regulations. The maintenance program shall include periodic inspections and follow-up corrective measures to ensure the integrity of conveyance banks and capacity of the conveyance to safely carry operational flows.

C. Signage for Class B+, B, and C Reclaimed Water. A person shall:

1. Ensure that signs state: "CAUTION: RECLAIMED WATER, DO NOT DRINK," and display the international "do not drink" symbol;
2. Place signs at all points of ingress and, if the open water conveyance is operated with open access, at least every 1/4-mile along the length of the open water conveyance; and
3. Ensure that signs are visible and legible from both sides of the open water conveyance.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

ARTICLE 7. DIRECT REUSE OF RECLAIMED WATER

R18-9-701. Definitions

Unless provided otherwise, the definitions provided in A.R.S. § 49-201, A.A.C. R18-9-101, R18-9-601, R18-11-301, and the following terms apply to this Article:

1. "Direct reuse" means the beneficial use of reclaimed water for a purpose allowed by this Article. The following is not a direct reuse of reclaimed water:
   a. The use of water subsequent to its discharge under the conditions of a National Pollutant Discharge Elimination System permit;
   b. The use of water subsequent to discharge under the conditions of an Aquifer Protection Permit issued under 18 A.A.C. 9, Articles 1 through 3; or
   c. The use of industrial wastewater or reclaimed water, or both, in a workplace subject to a federal program that protects workers from workplace exposures.
2. "Direct reuse site" means an area permitted for the application or impoundment of reclaimed water. An impoundment operated for disposal under an Aquifer Protection Permit is not a direct reuse site.
3. "End user" means a person who directly reuses reclaimed water meeting the standards for Classes A+, A, B+, B, and C, established under 18 A.A.C. 11, Article 3.
4. "Gray water" means wastewater collected separately from a sewage flow that originates from a clothes washer, bathtub, shower, and sink, but does not include wastewater from a kitchen sink, dishwasher, or toilet.
5. "Industrial wastewater" means wastewater generated from an industrial process.
6. "Irrigation" means the beneficial use of water or reclaimed water, or both, for growing crops, turf, or silviculture, or for landscaping.
7. "Open access" means that access to reclaimed water by the general public is uncontrolled.
8. "Reclaimed water" means water that has been treated or processed by a wastewater treatment plant or an on-site wastewater treatment facility. A.R.S. § 49-201(31).
9. "Reclaimed water agent" means a person who holds a permit to distribute reclaimed water to more than one end user.
10. "Reclaimed water blending facility" means an installation or method of operation that receives reclaimed water from a sewage treatment facility or other reclaimed water blending facility classified to produce Class C or better reclaimed water and blends it with other water so that the produced water may be used for a higher-class purpose listed in 18 A.A.C. 11, Article 3, Appendix A.
11. "Restricted access" means that access to reclaimed water by the general public is controlled.

Historical Note

Former Section R9-20-401 repealed, new Section R9-20-401 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-401 renumbered without change as Section R18-9-701 (Supp. 87-3). Amended by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-702. Applicability and Standards for Reclaimed Water Classes

A. This Article applies to:

1. An owner or operator of a sewage treatment facility that generates reclaimed water for direct reuse,
2. An owner or operator of a reclaimed water blending facility,
3. A reclaimed water agent,
4. An end user,
5. A person who uses gray water,
6. A person who directly reuses reclaimed water from a sewage treatment facility combined with industrial wastewater or combined with reclaimed water from an industrial wastewater treatment facility, and
7. A person who directly reuses reclaimed water from an industrial wastewater treatment facility in the production or processing of a crop or substance that may be used as human or animal food.

B. Reclaimed water classes A+, A, B+, B, and C specified in this Article shall meet the standards established in 18 A.A.C. 11, Article 3.

C. Nothing in this Article exempts the disposal of reclaimed water from the Aquifer Protection Permit requirements under A.R.S. Title 49, Chapter 2, Articles 1, 2, and 3.

Historical Note

Former Section R9-20-402 repealed, new Section R9-20-402 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-402 renumbered without change as Section R18-9-702 (Supp. 87-3). Section repealed; new Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-703. Transition of Permits

A. A person may directly reuse reclaimed water under an individual Aquifer Protection Permit or a Permit for the Reuse of Reclaimed Wastewater issued by the Department before January 1, 2001 if the person meets the conditions of the permit and the permit does not expire.

B. A person meeting the requirements of subsection (A) may apply for a new reclaimed water permit under this Article.

1. To obtain a reclaimed water permit, a person shall submit a Reclaimed Water Individual Permit application, required under R18-9-705(B), a Notice of Intent for Direct Reuse of Reclaimed Water, required under R18-9-708(B)(2), or a Notice of Intent to Operate, required under R18-9-708(C)(1) to the Department at least 120 days before the current permit expires.
2. The Department shall continue the terms of the individual Aquifer Protection Permit or the Permit for the Reuse of Reclaimed Wastewater beyond the stated date of expiration if:

a. The permitted direct reuse is of a continuing nature; and
b. The permittee submits a timely and complete application for a new permit.

C. Sewage treatment facility generating reclaimed water.
1. At the request of a permittee, the Department shall amend an individual Aquifer Protection Permit issued before January 1, 2001 if the permittee adequately demonstrates that the applicable quality of reclaimed water produced for direct reuse is achieved. The Department shall review:
a. The information in the individual Aquifer Protection Permit application and the water quality test results from the previous two years to determine the classification of reclaimed water generated by the sewage treatment facility; and
b. The available water quality data if the sewage treatment facility has operated for less than two years.
2. The Department shall ensure that an amended individual Aquifer Protection Permit contains:
a. Identification of the class of reclaimed water generated by the facility;
b. Requirements for monitoring reclaimed water quality and flow at a frequency appropriate to demonstrate compliance with this Article and 18 A.A.C. 11, Article 3;
c. Requirements for quarterly reporting of the following data to the Department, any reclaimed water agent who has contracted for delivery of reclaimed water from the facility, and any end user who has not waived interest in receiving this information:
i. Water quality test results demonstrating that reclaimed water produced by the facility meets the applicable standards for the class of water identified in subsection (C)(2)(a), and
ii. The total volume of reclaimed water generated for direct reuse.
d. Provision for cessation of delivery, if necessary, and storage or disposal if reclaimed water cannot be delivered for direct reuse.

Historical Note

Former Section R9-20-403 repealed, new Section R9-20-403 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-403 renumbered without change as Section R18-9-703 (Supp. 87-3). Editorial change to labels in subsection (c)(8) (Supp. 89-4). Section repealed; new Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-704. General Requirements

A. Sewage treatment facility. Except for permits continued under R18-9-703(A), a sewage treatment facility owner or operator shall provide reclaimed water for direct reuse only under an individual Aquifer Protection Permit amended under R18-9-703(C)(2).

B. Additional treatment. If an owner or operator of a facility accepts reclaimed water and provides additional treatment for a higher quality direct reuse, the facility is considered a sewage treatment facility and shall operate under the requirements of an individual Aquifer Protection Permit amended under R18-9-703(C)(2).

C. Reclaimed water blending facility. An owner or operator of a reclaimed water blending facility shall not conduct blending operations without obtaining a Reclaimed Water Individual Permit or Reclaimed Water General Permit.

D. Reclaimed water agent. A person shall not operate as a reclaimed water agent without obtaining a Reclaimed Water Individual Permit or a Reclaimed Water General Permit.

E. End user. A person shall not directly reuse reclaimed water unless permitted under this Article.

F. Irrigating with reclaimed water. A permittee irrigating with reclaimed water shall:
1. Use application methods that reasonably preclude human contact with reclaimed water;
2. Prevent reclaimed water from standing on open access areas during normal periods of use;
3. Prevent reclaimed water from coming into contact with drinking fountains, water coolers, or eating areas; and
4. Secure hose bibbs discharging reclaimed water to prevent use by the public.

G. Prohibited activities.
1. Irrigating with untreated sewage;
2. Providing or using reclaimed water for any of the following activities:
a. Direct reuse for human consumption;
b. Direct reuse for swimming, wind surfing, water skiing, or other full-immersion water activity with a potential of ingestion; or
c. Direct reuse for evaporative cooling or misting.
3. Misapplying reclaimed water for any of the following reasons:
a. Application of a stated class of reclaimed water that is of lesser quality than allowed by this Article for the type of direct reuse application;
b. Application of reclaimed water to any area other than a direct reuse site; or
c. Allowing runoff of reclaimed water or reclaimed water mixed with stormwater from a direct reuse site, except for agricultural return flow that is directed onto an adjacent field or returned to an open water conveyance.

H. A permittee shall place and maintain signage at locations specified in Table 1 so the public is informed that reclaimed water is in use and that no one should drink from the system.

Table 1. Signage Requirements for Direct Reuse Sites

Reclaimed Water Class	Hose Bibbs	Residential Irrigation	Schoolground Irrigation	Other Open Access Irrigation	Restricted Access Irrigation	Mobile Reclaimed Water Dispersal
A+	Each bibb	Front yard, or all entrances to a subdivision if the signage is supplemented by written yearly notification to individual homeowners by the homeowner's association.	On premises visible to staff and students	None	None	Back of truck or on tank
A	Each bibb	Front yard, or all entrances to a subdivision if the signage is supplemented by written yearly notification to individual homeowners by the homeowner's association.	On premises visible to staff and students	None	None	Back of truck or on tank
B+	Each bibb	Direct Reuse Not Allowed	Direct Reuse Not Allowed	Direct Reuse Not Allowed	1. Ingress points 2. On premises or at reasonably spaced intervals not more than 1/4 mile, as applicable to the use 3. Notice on golf score cards, if applicable	Back of truck or on tank
B	Each bibb	Direct Reuse Not Allowed	Direct Reuse Not Allowed	Direct Reuse Not Allowed	1. Ingress points 2. On premises or at reasonably spaced intervals not more than 1/4 mile, as applicable to the use 3. Notice on golf score cards, if applicable	Back of truck or on tank
C	Each bibb	Direct Reuse Not Allowed	Direct Reuse Not Allowed	Direct Reuse Not Allowed	1. Ingress points 2. On premises or at reasonably spaced intervals not more than 1/4 mile, as applicable to the use	Back of truck or on tank

Note: All impoundments with open access including lakes, ponds, ornamental fountains, waterfalls, and other water features shall be posted with signs regardless of the class of reclaimed water.

Historical Note

Former Section R9-20-404 repealed, new Section R9-20-404 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-404 renumbered without change as Section R18-9-704 (Supp. 87-3). Section repealed; new Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-705. Reclaimed Water Individual Permit Application

A. Pre-application conference. Upon request of an applicant, the Department shall schedule and hold a pre-application conference with the applicant to discuss any requirements in this Article.

B. To apply for a Reclaimed Water Individual Permit, a person shall provide the Department with:

1. The following information on a form provided by the Department:
   a. The name and mailing address of the owner or operator of the facility or the reclaimed water agent;
   b. The social security number of the applicant, if the applicant is an individual;
   c. The legal description of the direct reuse site, including latitude and longitude coordinates;
   d. Any other federal or state environmental permits issued to the applicant;
   e. Source of reclaimed water to be directly reused;
   f. Volume of reclaimed water to be directly reused on an annual basis;
   g. Class of reclaimed water to be directly reused;
   h. Description of the direct reuse activity; and
   i. The applicant's signature certifying that the information submitted in the application is true and accurate to the best of the applicant's knowledge.
2. A copy of the certificate of disclosure of violations required under A.R.S. § 49-109; and
3. The applicable permit fee specified under 18 A.A.C. 14.

C. Administrative completeness review. Upon receipt, the Department shall review the Reclaimed Water Individual Permit application to determine its administrative completeness under A.R.S. § 41-1074 and A.A.C. R18-1-503.

D. Substantive review. Upon receipt of a complete Reclaimed Water Individual Permit application, the Department shall review the application to determine its substantive adequacy under A.R.S. § 41-1075 and A.A.C. R18-1-504.

E. Draft permit. The Department shall provide the applicant a copy of a draft of the Reclaimed Water Individual Permit before the notice specified in subsection (F) is published.

F. Public participation.

1. Notice of Preliminary Decision.
   a. The Department shall publish a Notice of Preliminary Decision to issue or deny a Reclaimed Water Individual Permit within a period of time that allows the Department to meet the licensing time-frame requirements under 18 A.A.C. 5.
   b. The Department shall publish the Notice of Preliminary Decision regarding the issuance or denial of a final permit determination in one or more newspapers of general circulation where the facility is located.
   c. The Department shall accept written comments from the public before a Reclaimed Water Individual Permit is issued or denied.
   d. The written public comment period begins on the publication date of the Notice of Preliminary Decision and extends for 30 calendar days.
2. After publishing the notice specified in subsection (F)(1)(a), the Department shall hold a public hearing to address the Notice of Preliminary Decision if the Department determines that:
   a. Public interest in a public hearing exists, or
   b. Issues or information have been brought to the attention of the Department that are relevant to the permitting decision and have not been considered previously in the permitting process.
3. If the Department determines that a public hearing is necessary and a public hearing has not already been noticed under subsection (F)(1)(a), the Department shall schedule a public hearing and republish the Notice of Preliminary Decision as a legal notice at least once, in one or more newspapers of general circulation where the facility is located.
4. The Department shall accept written public comment until the close of the hearing record as specified by the person presiding at the public hearing.

G. Final permit issuance or denial.

1. The Department shall give the applicant written notification of its final decision to issue or deny the permit application within the overall licensing time-frame requirements in 18 A.A.C. 5.
2. The Department may deny a Reclaimed Water Individual Permit if the Department determines upon completion of the application process that the applicant has:
   a. Failed or refused to correct a deficiency in the permit application;
   b. Failed to demonstrate that the facility and the operation will protect public health and water quality. This determination shall be based on:
      i. The information submitted in the permit application,
      ii. Any information submitted to the Department as written public comment or following a public hearing; or
      iii. Any information relevant to the demonstration that is developed or acquired by the Department, or
   c. Provided false or misleading information.
3. If the Department denies a Reclaimed Water Individual Permit the Department shall provide the applicant with written notification that explains the following:
   a. The reasons for the denial with references to the statutes or rules on which the denial is based.
   b. The applicant's right to appeal the denial, including the number of days the applicant has to file a notice of appeal, and the name and telephone number of the Department contact person who can answer questions regarding the appeals process.
   c. The applicant's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.

Historical Note

Former Section R9-20-405 repealed, new Section R9-20-405 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-405 renumbered without change as Section R18-9-705 (Supp. 87-3). Section repealed; new Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-706. Reclaimed Water Individual Permit General Provisions

A. A Reclaimed Water Individual Permit obtained under R18-9-705:

1. Is valid for five years;
2. May be amended, transferred, reissued, or revoked by the Director based on whether the permittee meets the terms of the individual permit and the requirements of this Article; and
3. Continues, pending the issuance of a new permit, with the same terms following its expiration if the following are met:
   a. The permittee submits an application for a new permit at least 120 days before the expiration of the existing permit; and
   b. The permitted activity is of a continuing nature.

B. A Reclaimed Water Individual Permit shall contain, if applicable:

1. The class of reclaimed water to be applied for direct reuse;
2. Specific reuse applications or limitations on reuse;
3. Requirements for monitoring reclaimed water quality and flow to demonstrate compliance with this Article and 18 A.A.C. 11, Article 3;
4. Requirements for reporting the following data to demonstrate compliance with this Article and 18 A.A.C. 11, Article 3:
   a. Water quality test results demonstrating that the reclaimed water meets the applicable standards for the class of water identified in subsection (B)(1), and
   b. The total volume of reclaimed water generated for direct reuse.

5. Requirements for maintaining records of all monitoring information and monitoring activities that include:
    a. The date, description of sampling location, and time of sampling or measurement;
    b. The name of the person who performed the sampling or measurement;
    c. The date the analyses were performed;
    d. The name of the person who performed the analyses;
    e. The analytical techniques or methods used;
    f. The results of the analyses; and
    g. Documentation of sampling technique, sample preservation, and transportation, including chain-of-custody forms.
6. Requirements to retain all monitoring activity records and results, including all original strip chart recordings for continuous monitoring instrumentation, and calibration and maintenance records for five years from the date of sampling or analysis. The Director shall extend the five-year retention period:
    a. During the course of an unresolved litigation regarding compliance with the permit conditions, or
    b. For any other justifiable cause.
7. A requirement to allow all end users access to the records of physical, chemical, and biological quality of the reclaimed water.

C. Permit transfer. A permittee may transfer a Reclaimed Water Individual Permit to another person if the following conditions are met:
1. The permittee notifies the Director of the proposed transfer.
2. The permittee submits a written agreement containing a specific date for the transfer of permit responsibility and coverage between the current permittee and the proposed new permittee, including an acknowledgment that the existing permittee is liable for violations up to the date of transfer and that the proposed new permittee will be liable for violations from that date forward.
3. The notice specified in subsection (C)(1) contains any information for the proposed new permittee that is changed from the information submitted under R18-9-705(B).
4. The Director, within 30 days of receiving a transfer notice from the permittee, does not notify both the current permittee and proposed new permittee of the intent to amend, revoke, or reissue the permit or require the proposed new permittee to file an application for a new permit rather than agreeing to transfer the current permit.

Historical Note

Former Section R9-20-406 repealed, new Section R9-20-406 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-406 renumbered without change as Section R18-9-706 (Supp. 87-3). Amended effective December 1, 1988 (Supp. 88-4). Section repealed; new Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-707. Reclaimed Water Individual Permit Where Industrial Wastewater Influences the Characteristics of Reclaimed Water

A. The following activities are prohibited unless a Reclaimed Water Individual Permit is obtained under R18-9-705:
1. Direct reuse of reclaimed water from a sewage treatment facility that is combined with industrial wastewater or that is combined with reclaimed water from an industrial wastewater treatment facility.
2. Direct reuse of reclaimed water from an industrial wastewater treatment facility for production or processing of a crop or substance that may be used as human or animal food.

B. In addition to the requirements in R18-9-705(B), an application for a Reclaimed Water Individual Permit shall include:
1. Each source of the industrial wastewater with Standard Industrial Code, and the projected rates and volumes from each source;
2. The chemical, biological, and physical characteristics of the industrial wastewater from each source; and
3. If reclaimed water will be used in the processing of any crop or substance that may be used as human or animal food, the information regarding food safety and any potential adverse health effects of this direct reuse.

Historical Note

Former Section R9-20-407 repealed, new Section R9-30-407 adopted effective May 24, 1985 (Supp. 85-3). Former Section R9-20-407 renumbered without change as Section R18-9-707 (Supp. 87-3). Section repealed; new Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-708. Reusing Reclaimed Water Under a General Permit

A. Type 1 Reclaimed Water General Permit. A person may directly reuse reclaimed water without notice to the Department if:
1. The direct reuse is specifically authorized by and meets the requirements of this Article, and
2. Complies with the requirements of the Type 1 Reclaimed Water General Permit under R18-9-711.

B. Type 2 Reclaimed Water General Permit.
1. A person may directly reuse reclaimed water under a Type 2 Reclaimed Water General Permit if:
    a. The direct reuse is authorized by and meets the requirements of this Article;
    b. The direct reuse meets all the conditions of the applicable Type 2 Reclaimed Water General Permit under R18-9-712 through R18-9-716;
    c. The person files a Notice of Intent for Direct Reuse of Reclaimed Water under subsection (B)(2); and
    d. The person submits the applicable fee established in 18 A.A.C. 14.
2. Notice of Intent for Direct Reuse of Reclaimed Water.
    a. A person shall submit, by certified mail, in person, or by another method approved by the Department, the Notice of Intent for Direct Reuse of Reclaimed Water on a form provided by the Department.
    b. The Notice of Intent for Direct Reuse of Reclaimed Water shall include;
        i. The name, address, and telephone number of the applicant;
        ii. The social security number of the applicant, if the applicant is an individual;
        iii. The name, address, and telephone number of the contact person;

iv. The source, volume, and class of reclaimed water to be directly reused;
v. A legal description of the direct reuse site, including latitude and longitude coordinates;
vi. The description of the direct reuse activity, including a description of acreage and the type of vegetation to be irrigated, if applicable to the type of direct reuse activity; and
vii. The permittee's signature certifying that the permittee agrees to comply with all requirements of this Article, including specific terms of the applicable Reclaimed Water General Permit.

C. Type 3 Reclaimed Water General Permit. A person may operate under a Type 3 Reclaimed Water General Permit after filing an applicable Notice of Intent to Operate with the Department and receiving a written Verification of General Permit Conformance for the operation.
1. Application submittal. The applicant shall submit, either by certified mail, in person at the Department, or by another method approved by the Department:
a. The Notice of Intent to Operate on a form provided by the Department containing the information specified in the applicable Type 3 Reclaimed Water General Permit under R18-9-717(B), R18-9-718(C), or R18-9-719(B), and
b. The applicable fee established in 18 A.A.C. 14.
2. Verification issuance. If, after reviewing the Notice of Intent to Operate, the Department determines that the direct reuse conforms with the conditions of a Type 3 Reclaimed Water General Permit and all other applicable requirements of this Article, the Department shall issue the Verification of General Permit Conformance.
3. Verification denial.
a. If the Department determines on the basis of its review or an inspection that the direct reuse does not conform to the conditions of the applicable Type 3 Reclaimed Water General Permit or other applicable requirements of this Article, the Department shall notify the applicant of its decision not to issue the Verification of General Permit Conformance.
b. If an application is denied, the applicant shall not operate under a Type 3 Reclaimed Water General Permit.
c. The applicant may appeal the decision not to issue a Verification of General Permit Conformance under A.R.S. §§ 41-1092 through 41-1092.12.
4. Automatic issuance. If the Department does not issue the Verification of General Permit Conformance within the time-frame specified under 18 A.A.C. 1, Article 5, and does not notify the applicant that it will not issue the verification, the verification automatically becomes effective upon expiration of the overall time-frame.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-709. Reclaimed Water General Permit Renewal and Transfer

A. General permit renewal. A permittee shall renew a Reclaimed Water General Permit at least 90 days before the permit expires by following the procedure described in either R18-9-708(B) or (C) and include the applicable fee established in 18 A.A.C. 14.
1. A Type 1 Reclaimed Water General Permit is valid as long as the conditions of the general permit and the requirements of this Article are met. No renewal is required;
2. A Type 2 Reclaimed Water General Permit is valid for five years from the date the Department receives the Notice of Intent for Direct Reuse of Reclaimed Water;
3. A Type 3 Reclaimed Water General Permit is valid for five years from the date the Verification of General Permit Conformance becomes effective.

B. General permit transfer. A permittee shall provide notice to the Department by certified mail within 15 days following the transfer of a Type 2 or Type 3 Reclaimed Water General Permit. The Notice of Transfer shall:
1. Contain any information that has changed from the original Notice of Intent for Direct Reuse of Reclaimed Water or the Notice of Intent to Operate, including all information on the proposed new permittee, and
2. Include the applicable fee established in 18 A.A.C. 14.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-710. Reclaimed Water General Permit Revocation

A. The Director may revoke a Reclaimed Water General Permit if the permittee fails to comply with any requirement in this Article, including a condition specified in the applicable Reclaimed Water General Permit. The Director shall make the determination based on the risk to public health and safety or a threat to waters of the state.
1. Before revoking a general permit, the Department shall provide notice to the permittee by certified mail of the Department's intent to revoke the Reclaimed Water General Permit. The notice of intent to revoke the general permit shall provide the permittee a reasonable opportunity to correct any noncompliance and specify a time-frame within which the permittee shall achieve compliance.
2. If the permittee fails to correct the noncompliance within the specified time-frame, the Department shall notify the permittee, by certified mail, of the Director's decision to revoke the Reclaimed Water General Permit.

B. The Director shall revoke a Reclaimed Water General Permit for any or all facilities located within a specific geographic area, if, due to a geologic or hydrologic condition, the cumulative effect of the facilities subject to the Reclaimed Water General Permit has violated or will violate a Water Quality Standard established under A.R.S. §§ 49-221 and 49-223.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-711. Type 1 Reclaimed Water General Permit for Gray Water

A. A Type 1 Reclaimed Water General Permit allows private residential direct reuse of gray water for a flow of less than 400 gallons per day if all the following conditions are met:
1. Human contact with gray water and soil irrigated by gray water is avoided;

2. Gray water originating from the residence is used and contained within the property boundary for household gardening, composting, lawn watering, or landscape irrigation;
3. Surface application of gray water is not used for irrigation of food plants, except for citrus and nut trees;
4. The gray water does not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities;
5. The application of gray water is managed to minimize standing water on the surface;
6. The gray water system is constructed so that if blockage, plugging, or backup of the system occurs, gray water can be directed into the sewage collection system or on-site wastewater treatment and disposal system, as applicable. The gray water system may include a means of filtration to reduce plugging and extend system lifetime;
7. Any gray water storage tank is covered to restrict access and to eliminate habitat for mosquitoes or other vectors;
8. The gray water system is sited outside of a floodway;
9. The gray water system is operated to maintain a minimum vertical separation distance of at least five feet from the point of gray water application to the top of the seasonally high groundwater table;
10. For residences using an on-site wastewater treatment facility for black water treatment and disposal, the use of a gray water system does not change the design, capacity, or reserve area requirements for the on-site wastewater treatment facility at the residence, and ensures that the facility can handle the combined black water and gray water flow if the gray water system fails or is not fully used;
11. Any pressure piping used in a gray water system that may be susceptible to cross connection with a potable water system clearly indicates that the piping does not carry potable water;
12. Gray water applied by surface irrigation does not contain water used to wash diapers or similarly soiled or infectious garments unless the gray water is disinfected before irrigation; and
13. Surface irrigation by gray water is only by flood or drip irrigation.

B. Prohibitions. The following are prohibited:
1. Gray water use for purposes other than irrigation, and
2. Spray irrigation.

C. Towns, cities, or counties may further limit the use of gray water described in this Section by rule or ordinance.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-712. Type 2 Reclaimed Water General Permit for Direct Reuse of Class A+ Reclaimed Water

A. A Type 2 Reclaimed Water General Permit for Direct Reuse of Class A+ Reclaimed Water allows any direct reuse application of reclaimed water listed in 18 A.A.C. 11, Article 3, Appendix A, if the conditions in this Article are met.

B. Record maintenance. A permittee shall maintain records for five years that describe the direct reuse site and the total amount of reclaimed water used annually for the permitted direct reuse activity. The records shall be made available to the Department upon request.

C. A permittee shall post signs as specified in R18-9-704(H).

D. No lining is required for an impoundment storing Class A+ reclaimed water.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-713. Type 2 Reclaimed Water General Permit for Direct Reuse of Class A Reclaimed Water

A. A Type 2 Reclaimed Water General Permit for the Direct Reuse of Class A Reclaimed Water allows any direct reuse application of reclaimed water listed in 18 A.A.C. 11, Article 3, Appendix A, if the conditions in this Article are met.

B. Records and reporting. A permittee shall:
1. Maintain records containing the following information for five years, and make them available to the Department upon request:
a. The direct reuse site,
b. The volume of reclaimed water applied monthly for each category of direct reuse activity listed in 18 A.A.C. 11, Article 3, Appendix A,
c. The total nitrogen concentration of the reclaimed water applied, and
d. The acreage and type of vegetation to which the reclaimed water is applied.
2. Report annually to the Department on or before the anniversary date of the Notice of Intent:
a. The volume of reclaimed water received,
b. The type of reclaimed water application, and
c. If used for irrigation, the vegetation and acreage irrigated.

C. Nitrogen management. A permittee shall ensure that:
1. Impoundments storing reclaimed water allowed by the general permit are lined using a low-hydraulic conductivity artificial or site-specific liner material achieving a calculated discharge rate less than 550 gallons per acre per day; and
2. The application rates of the reclaimed water are based on one of the following:
a. The water allotment assigned by the Arizona Department of Water Resources;
b. A water balance that considers consumptive use of water by the crop, turf, or landscape vegetation; or
c. An alternative method approved by the Department.

D. In addition to the Notice of Intent for Direct Reuse of Reclaimed Water specified in R18-9-708(B)(2), the applicant shall provide a list of impoundments and the liner characteristics and the method chosen from the list in subsection (C)(2).

E. The permittee shall post signs as specified in R18-9-704(H).

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-714. Type 2 Reclaimed Water General Permit for Direct Reuse of Class B+ Reclaimed Water

A. A Type 2 Reclaimed Water General Permit for Direct Reuse of Class B+ Reclaimed Water allows any direct reuse application of Class B and Class C reclaimed water listed in 18 A.A.C. 11, Article 3, Appendix A, if the conditions in this Article are met.
B. A permittee shall comply with the record maintenance and posting requirements established under R18-9-712 and make records available to the Department upon request.
C. No lining is required for an impoundment storing Class B+ reclaimed water.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-715. Type 2 Reclaimed Water General Permit for Direct Reuse of Class B Reclaimed Water

A. A Type 2 Reclaimed Water General Permit for the Direct Reuse of Class B Reclaimed Water allows the direct reuse application of Class B and Class C reclaimed water listed in 18 A.A.C. 11, Article 3, Appendix A, if conditions in this Article are met.
B. A permittee shall comply with the requirements established under R18-9-713(B), (C), (D), and (E).

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-716. Type 2 Reclaimed Water General Permit for Direct Reuse of Class C Reclaimed Water

A. A Type 2 Reclaimed Water General Permit for the Direct Reuse of Class C Reclaimed Water allows the direct reuse application of Class C reclaimed water listed in 18 A.A.C. 11, Article 3, Appendix A, if conditions in this Article are met.
B. A permittee shall comply with the requirements established under R18-9-713(B), (C), (D), and (E).

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-717. Type 3 Reclaimed Water General Permit for a Reclaimed Water Blending Facility

A. Permit conditions.
   1. A Type 3 Reclaimed Water General Permit for a Reclaimed Water Blending Facility allows the blending of reclaimed water with other water, if the conditions in this Article are met.
   2. Blending reclaimed water with industrial wastewater or with reclaimed water from an industrial wastewater treatment plant is not authorized by this general permit.

B. A person shall file with the Department a Notice of Intent to Operate a reclaimed water blending facility at least 90 days before the date the proposed activity will start. The Notice of Intent to Operate shall include:
   1. The name, address, and telephone number of the applicant;
   2. The social security number of the applicant, if the applicant is an individual;
   3. The name, address, and telephone number of a contact person;
   4. The source and volume of reclaimed water to be blended;
   5. The class of reclaimed water to be blended;
   6. The source, volume, and quality of other water to be blended;
   7. A legal description of the reclaimed water blending facility, including latitude and longitude coordinates;
   8. A description of the reclaimed water blending facility, including a demonstration that the proposed blending methodology will meet the standards established in 18 A.A.C. 11, Article 3 for the class of reclaimed water the facility will produce;
   9. A signature on the notice of intent certifying that the applicant agrees to comply with the requirements of this Article, 18 A.A.C. 11, Article 3, and the terms of this reclaimed water general permit; and
   10. The applicable permit fee specified under 18 A.A.C. 14.

C. A person shall not operate a reclaimed water blending facility until the Department issues a written Verification of General Permit Conformance under R18-9-708(C).
D. A permittee shall monitor:
   1. The blended water quality for total nitrogen and fecal coliform at frequencies specified by the class of reclaimed water in 18 A.A.C. 11, Article 3.
      a. If the concentration of either total nitrogen or fecal coliform, as applicable, exceeds the limits for the reclaimed water class established in 18 A.A.C. 11, Article 3, the permittee shall submit a report to the Department within 30 days with a proposal to change the blending process. The permittee shall also double the monitoring frequency for the next two months.
      b. If another exceedance occurs within the interval of increased monitoring, the permittee shall submit an application within 45 days for a Reclaimed Water Individual Permit.
   2. The volume of reclaimed water, the volume of the other water, and the total volume of blended water delivered for direct reuse on a monthly basis.

E. The permittee shall report the results of the monitoring under subsection (D) to the Department on or before the anniversary date of the verification approval and shall make this information available to the end users.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-718. Type 3 Reclaimed Water General Permit for a Reclaimed Water Agent

A. A Type 3 Reclaimed Water General Permit allows a person to operate as a Reclaimed Water Agent if that the conditions of this Article are met, and the following conditions are met for the class of reclaimed water delivered by the Reclaimed Water Agent:
   1. Signage requirements specified under R18-9-704(H), as applicable;
   2. Impoundment liner requirements specified under R18-9-712(D), R18-9-713(C), R18-9-714(C), R18-9-715(B), or R18-9-716(B), as applicable; and

3. Nitrogen management requirements specified under R18-9-713(C), R18-9-715(B), and R18-9-716(B), as applicable.

B. A person holding a Type 3 Reclaimed Water Permit for a Reclaimed Water Agent:
1. Is responsible for the direct reuse of reclaimed water by more than one end user instead of direct reuse by the end users under separate Type 2 Reclaimed Water General Permits, and
2. Shall maintain a contractual agreement with each end user stipulating any end user responsibilities for the requirements specified under subsection (A).

C. A person shall file with the Department a Notice of Intent to Operate as a reclaimed water agent at least 90 days before the date the proposed activity will start. The Notice of Intent to Operate shall include:
1. The name, address, and telephone number of the applicant;
2. The social security number of the applicant, if the applicant is an individual;
3. The name, address, and telephone number of a contact person;
4. The following information for each end user to be supplied reclaimed water by the applicant:
a. The name, address and telephone number of the end user;
b. A legal description of each direct reuse site, including latitude and longitude coordinates; and
c. A description of each direct reuse activity, including the type of vegetation, acreage, and annual volume of reclaimed water to be used, unless Class A+ or Class B+ reclaimed water is delivered.
5. The source, class, and annual volume of reclaimed water to be delivered by the applicant;
6. A description of the contractual arrangement between the applicant and each end user, including any end user responsibilities for the requirements specified under subsection (A); and
7. The applicable permit fee specified under 18 A.A.C. 14.

D. A proposed reclaimed water agent shall not distribute reclaimed water to end users until the Department issues a written Verification of General Permit Conformance issued under R18-9-708(C).

E. A reclaimed water agent shall record and annually report the following information to the Department, on or before each anniversary date of the verification approval:
1. The total volume of reclaimed water delivered by the reclaimed water agent;
2. The volume of reclaimed water delivered to each end user for Class A, Class B, and Class C reclaimed water; and
3. Any change in the information submitted under subsection (C).

F. The reclaimed water agent shall notify the Department before the end of each calendar year of any changes in the information submitted under subsection (C).

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-719. Type 3 Reclaimed Water General Permit for Gray Water

A. A Type 3 Reclaimed Water General Permit allows a gray water irrigation system if:
1. The general permit described in R18-9-711 does not apply,
2. The flow is not more than 3000 gallons per day, and
3. The gray water system satisfies the notification, design, and installation requirements specified in subsection (C).

B. A person shall file a Notice of Intent to Operate a Gray Water Irrigation System with the Department at least 90 days before the date the proposed activity will start. The Notice of Intent to Operate shall include:
1. The name, address and telephone number of the applicant;
2. The social security number of the applicant, if the applicant is an individual;
3. A legal description of the direct reuse site, including latitude and longitude coordinates;
4. The design plans for the gray water irrigation system;
5. A signature on the Notice of Intent to Operate certifying that the applicant agrees to comply with the requirements of this Article and the terms of this Reclaimed Water General Permit; and
6. The applicable permit fee specified under 18 A.A.C. 14.

C. The following technical requirements apply to the design and installation of a gray water irrigation system allowed under this Reclaimed Water General Permit:
1. Design of the gray water irrigation system shall meet the on-site wastewater treatment facility requirements under R18-9-A312(C), (D)(1), (D)(2), (E)(1), (G), and R18-9-E302(C)(1), except the septic tank specified in R18-9-E302(C)(1) is not required if pretreatment of gray water is not necessary for the intended application;
2. Design of the dispersal trenches for the gray water irrigation system shall meet the on-site wastewater treatment facility requirements for shallow trenches specified in R18-9-E302(C)(2);
3. The depth of the gray water dispersal trenches shall be appropriate for the intended irrigation use but not more than 5 feet below the finished grade of the native soil; and
4. The void space volume of the aggregate fill in the gray water dispersal trench below the bottom of the distribution pipe shall have enough capacity to contain two days of gray water at the design flow.

D. The Department may review design plans and details and accept a gray water irrigation system that differs from the requirements specified in subsection (C) if the system provides equivalent performance and protection of human health and water quality.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

R18-9-720. Enforcement and Penalties

Any person who violates a condition specified in a permit issued under this Article, falsifies data or information submitted to the Department as required under Articles 6 or 7 of this Chapter, or violates a provision of Article 6 or 7 of this Chapter, is subject to the enforcement actions prescribed under A.R.S. §§ 49-261 and 49-262.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

ARTICLE 3. RECLAIMED WATER QUALITY STANDARDS

R18-11-301. Definitions

The terms in this Article have the following meanings:

"Direct reuse" has the meaning prescribed in R18-9-701(1).

"Disinfection" means a treatment process that uses oxidants, ultraviolet light, or other agents to kill or inactivate pathogenic organisms in wastewater.

"Filtration" means a treatment process that removes particulate matter from wastewater by passage through porous media.

"Gray water" means wastewater, collected separately from a sewage flow, that originates from a clothes washer, bathtub, shower, or sink, but it does not include wastewater from a kitchen sink, dishwasher, or a toilet.

"Industrial wastewater" means wastewater generated from an industrial process.

"Landscape impoundment" means a manmade lake, pond, or impoundment of reclaimed water where swimming, wading, boating, fishing, and other water-based recreational activities are prohibited. A landscape impoundment is created for storage, landscaping, or for aesthetic purposes only.

"NTU" means nepholometric turbidity unit.

"On-site wastewater treatment facility" has the meaning prescribed in A.R.S. § 49-201(24).

"Open access" means that access to reclaimed water by the general public is uncontrolled.

"Reclaimed water" has the meaning prescribed in A.R.S. § 49-201(31).

"Recreational impoundment" means a manmade lake, pond, or impoundment of reclaimed water where boating or fishing is an intended use of the impoundment. Swimming and other full-body recreation activities (for example, water-skiing) are prohibited in a recreational impoundment.

"Restricted access" means that access to reclaimed water by the general public is controlled.

"Secondary treatment" means a biological treatment process that achieves the minimum level of effluent quality defined by the federal secondary treatment regulation at 40 CFR § 133.102.

"Sewage" means untreated wastes from toilets, baths, sinks, lavatories, laundries, and other plumbing fixtures in places of human habitation, employment, or recreation.

Historical Note

Adopted effective July 9, 1981 (Supp. 81-4). Former Section R9-21-301 renumbered without change as Section R18-11-301 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-302. Applicability

This Article applies to the direct reuse of reclaimed water, except for:

1. The direct reuse of gray water, or
2. The direct reuse of reclaimed water from an onsite wastewater treatment facility regulated by a general Aquifer Protection Permit under 18 A.A.C. 9, Article 3.

Historical Note

Adopted effective June 8, 1981 (Supp. 81-3). Amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-302 renumbered without change as Section R18-11-302 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-303. Class A+ Reclaimed Water

A. Class A+ reclaimed water is wastewater that has undergone secondary treatment, filtration, nitrogen removal treatment, and disinfection. Chemical feed facilities to add coagulants or polymers are required to ensure that filtered effluent before disinfection complies with the 24-hour average turbidity criterion prescribed in subsection (B)(1). Chemical feed facilities may remain idle if the 24-hour average turbidity criterion in (B)(1) is achieved without chemical addition.

B. An owner of a facility shall ensure that:

1. The turbidity of Class A+ reclaimed water at a point in the wastewater treatment process after filtration and immediately before disinfection complies with the following:
   a. The 24-hour average turbidity of filtered effluent is two NTUs or less, and
   b. The turbidity of filtered effluent does not exceed five NTUs at any time.
2. Class A+ reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
   a. There are no detectable fecal coliform organisms in four of the last seven daily reclaimed water samples taken, and
   b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 23 / 100 ml.
   c. If alternative treatment processes or alternative turbidity criteria are used, or reclaimed water is blended with other water to produce Class A+ reclaimed water under subsection (C), there are no detectable enteric virus in four of the last seven monthly reclaimed water samples taken.
3. The 5-sample geometric mean concentration of total nitrogen in a reclaimed water sample is less than 10 mg / L.

C. An owner of a facility may use alternative treatment methods other than those required by subsection (A), or comply with alternative turbidity criteria other than those required by subsection (B)(1), or blend reclaimed water with other water to produce Class A+ reclaimed water provided the owner demonstrates through pilot plant testing, existing water quality data, or other means that the alternative treatment methods, alternative turbidity criteria, or blending reliably produces a reclaimed water that meets the disinfection criteria in subsection (B)(2) and the total nitrogen criteria in subsection (B)(3) before discharge to a reclaimed water distribution system.

D. Class A+ reclaimed water is not required for any type of direct reuse. A person may use Class A+ reclaimed water for any type of direct reuse listed in Table A.

Historical Note

Adopted effective January 7, 1985 (Supp. 85-1). Amended effective August 12, 1986 (Supp. 86-4). Former Section R9-21-303 renumbered without change as Section R18-11-303 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-304. Class A Reclaimed Water

A. Class A reclaimed water is wastewater that has undergone secondary treatment, filtration, and disinfection. Chemical feed facilities to add coagulants or polymers are required to ensure that filtered effluent before disinfection complies with the 24-hour average turbidity criterion prescribed in subsection (B)(1). Chemical feed facilities may remain idle if the 24-hour average turbidity criterion in subsection (B)(1) is achieved without chemical addition.

B. An owner of a facility shall ensure that:

1. The turbidity of Class A reclaimed water at a point in the wastewater treatment process after filtration and immediately before disinfection complies with the following:
   a. The 24-hour average turbidity of filtered effluent is two NTUs or less, and
   b. The turbidity of filtered effluent does not exceed five NTUs at any time.
2. Class A reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
   a. There are no detectable fecal coliform organisms in four of the last seven daily reclaimed water samples taken, and
   b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 23 / 100 ml.
   c. If alternative treatment processes or alternative turbidity criteria are used, or reclaimed water is blended with other water to produce Class A reclaimed water under subsection (C), there are no detectable enteric virus in four of the last seven monthly reclaimed water samples taken.

C. An owner of a facility may use alternative treatment methods other than those required by subsection (A), or comply with alternative turbidity criteria other than those required by subsection (B)(1), or blend reclaimed water with other water to produce Class A reclaimed water provided the owner demonstrates through pilot plant testing, existing water quality data, or other means that the alternative treatment methods, alternative turbidity criteria, or blending reliably produces a reclaimed water that meets the disinfection criteria in subsection (B)(2) before discharge to a reclaimed water distribution system.

D. A person shall use Class A reclaimed water for a type of direct reuse listed as Class A in Table A. A person may use Class A reclaimed water for a type of direct reuse listed as Class B or Class C in Table A.

Historical Note

Adopted effective January 7, 1985 (Supp. 85-1). Amended effective August 12, 1986 (Supp. 86-4). Former Section R9-21-304 renumbered without change as Section R18-11-304 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-305. Class B+ Reclaimed Water

A. Class B+ reclaimed water is wastewater that has undergone secondary treatment, nitrogen removal treatment, and disinfection.

B. An owner of a facility shall ensure that:

1. Class B+ reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
   a. The concentration of fecal coliform organisms in four of the last seven daily reclaimed water samples is less than 200 / 100 ml.
   b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 800 / 100 ml.
2. The 5-sample geometric mean concentration of total nitrogen in a reclaimed water sample is less than 10 mg / L.

C. Class B+ reclaimed water is not required for a type of direct reuse. A person may use Class B+ reclaimed water for a type of direct reuse listed as Class B or Class C in Table A. A person shall not use Class B+ reclaimed water for a type of direct reuse listed as Class A in Table A.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-306. Class B Reclaimed Water

A. Class B reclaimed water is wastewater that has undergone secondary treatment and disinfection.

B. An owner of a facility shall ensure that Class B reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:

1. The concentration of fecal coliform organisms in four of the last seven daily reclaimed water samples is less than 200 / 100 ml.
2. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 800 / 100 ml.

C. A person shall use a minimum of Class B reclaimed water for a type of direct reuse listed as Class B in Table A. A person may use Class B reclaimed water for a type of direct reuse listed as Class C in Table A. A person shall not use Class B reclaimed water for a type of direct reuse listed as Class A in Table A.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-307. Class C Reclaimed Water

A. Class C reclaimed water is wastewater that has undergone secondary treatment in a series of wastewater stabilization ponds, including aeration, with or without disinfection.
B. The owner of a facility shall ensure that:
    1. The total retention time of Class C reclaimed water in wastewater stabilization ponds is at least 20 days.
    2. Class C reclaimed water meets the following criteria after treatment and before discharge to a reclaimed water distribution system:
        a. The concentration of fecal coliform organisms in four of the last seven reclaimed water samples taken is less than 1000 / 100 ml.
        b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 4000 / 100 ml.
C. A person shall use a minimum of Class C reclaimed water for a type of direct reuse listed as Class C in Table A. A person shall not use Class C reclaimed water for a type of direct reuse listed as Class A or Class B in Table A.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-308. Industrial Reuse

A. The reclaimed water quality requirements for the following direct reuse applications are industry-specific and shall be determined by the Department on a case-by-case basis in a reclaimed water permit issued by the Department under 18 A.A.C. 9, Article 7:
    1. Direct reuse of industrial wastewater containing sewage.
    2. Direct reuse of industrial wastewater for the production or processing of any crop used as human or animal food.
B. The Department shall use best professional judgment to determine the reclaimed water quality requirements needed to protect public health and the environment for a type of direct reuse specified in subsection (A).

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

R18-11-309. Reclaimed Water Quality Standards for an Unlisted Type of Direct Reuse

A. The Department may prescribe in an individual reclaimed water permit issued under 18 A.A.C. 9, Article 7, reclaimed water quality requirements for a type of direct reuse not listed in Table A. Before permitting a direct reuse of reclaimed water not listed in Table A, the Department shall, using its best professional judgment, determine and require compliance with reclaimed water quality requirements needed to protect public health and the environment.
B. Department may determine that Class A+, A, B+, B, or C reclaimed water is appropriate for a new type of direct reuse.
C. The Department shall consider the following factors when prescribing reclaimed water quality requirements for a new type of direct reuse:
    1. The risk to public health;
    2. The degree of public access to the site where the reclaimed water is reused and human exposure to the reclaimed water;
    3. The level of treatment necessary to ensure that the reclaimed water is aesthetically acceptable;
    4. The level of treatment necessary to prevent nuisance conditions;
    5. Specific water quality requirements for the intended type of direct reuse;
    6. The means of application of the reclaimed water;
    7. The degree of treatment necessary to avoid a violation of surface water quality standards or aquifer water quality standards;
    8. The potential for improper or unintended use of the reclaimed water;
    9. The reuse guidelines, criteria, or standards adopted or recommended by the U.S. Environmental Protection Agency or other federal or state agencies that apply to the new type of direct reuse; and
    10. Similar wastewater reclamation experience of reclaimed water providers in the United States.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

Table A. Minimum Reclaimed Water Quality Requirements for Direct Reuse

Type of Direct Reuse	Minimum Class of Reclaimed Water Required
Irrigation of food crops	A
Recreational impoundments	A
Residential landscape irrigation	A
Schoolground landscape irrigation	A
Open access landscape irrigation	A
Toilet and urinal flushing	A
Fire protection systems	A
Spray irrigation of an orchard or vineyard	A
Commercial closed loop air conditioning systems	A
Vehicle and equipment washing (does not include self-service vehicle washes)	A
Snowmaking	A
Surface irrigation of an orchard or vineyard	B
Golf course irrigation	B
Restricted access landscape irrigation	B
Landscape impoundment	B
Dust control	B
Soil compaction and similar construction activities	B
Pasture for milking animals	B
Livestock watering (dairy animals)	B
Concrete and cement mixing	B
Materials washing and sieving	B
Street cleaning	B
Pasture for non-dairy animals	C
Livestock watering (non-dairy animals)	C
Irrigation of sod farms	C
Irrigation of fiber, seed, forage, and similar crops	C
Silviculture	C

Note: Nothing in this Article prevents a wastewater treatment plant from using a higher quality reclaimed water for a type of direct reuse than the minimum class of reclaimed water listed in Table A. For example, a wastewater treatment plant may provide Class A reclaimed water for a type of direct reuse where Class B or Class C reclaimed water is acceptable.

Historical Note

New Table adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

APPENDIX B

Arizona Revised Statutes - R18-4-215

R18-4-115. Renumbered

Historical Note

Former Section R9-20-520 repealed, new Section R9-20-520 adopted effective November 1, 1979 (Supp. 79-6). Former Section R9-20-520 amended, renumbered as Section R9-20-515, then renumbered as Section R18-4-115 effective October 23, 1987 (Supp. 87-4). R18-4-115 recodified to R18-5-115 (Supp. 95-2). New Section adopted effective April 28, 1995 (Supp. 95-2). Amended by final rulemaking at 8 A.A.R. 973, effective February 19, 2002 (Supp. 02-1). Section R18-4-115 renumbered to R18-4-215 by final rulemaking at 14 A.A.R. 2978, effective August 30, 2008 (Supp. 08-3).

R18-4-215. Backflow Prevention

A. A public water system shall protect its system from contamination caused by backflow through unprotected cross-connections by requiring the installation and periodic testing of backflow-prevention assemblies. Required backflow-prevention assemblies shall be installed as close as practicable to the service connection.

B. A public water system shall ensure that a backflow-prevention assembly is installed whenever any of the following occur:

1. A substance harmful to human health is handled in a manner that could permit its entry into the public water system. These substances include chemicals, chemical or biological process waters, water from public water supplies that has deteriorated in sanitary quality, and water that has entered a fire sprinkler system. A Class 1 or Class 2 fire sprinkler system is exempt from the requirements of this Section;
2. A source of water supply exists on the user's premises that is not accepted as an additional source by the public water system or is not approved by the Department;
3. An unprotected cross-connection exists or a cross-connection problem has previously occurred within a user's premises; or
4. There is a significant possibility that a cross-connection problem will occur and entry to the premises is restricted to the extent that cross-connection inspections cannot be made with sufficient frequency or on sufficiently short notice to ***ensure*** that unprotected cross-connections do not exist.

C. Unless a cross-connection problem is specifically identified, or as otherwise provided in this Section, the requirements of this Section shall not apply to single - family residences used solely for residential purposes.

D. A backflow-prevention assembly required by this Section shall comply with the following:

1. If equipped with test cocks, it shall have been issued a certificate of approval by:
   a. The University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR), or
   b. A third-party certifying entity that is unrelated to the product's manufacturer or vendor, and is approved by the Department.
2. If not equipped with test cocks, it shall be approved by a third-party certifying entity that is unrelated to the product's manufacturer or vendor and is approved by the Department.

E. The minimum level of backflow protection that is provided to protect a public water system shall be the level recommended in Section 7.2 of the Manual of Cross-Connection Control, Ninth Edition, USC-FCCCHR, KAP-200 University Park MC-2531, Los Angeles, ***CA*** , 90089-2531, December 1993, (and no future editions or amendments), incorporated by reference and on file with the Department. The types of backflow prevention that may be required, listed in decreasing order according to the level of protection they provide, include: an air-gap separation (AG), a reduced pressure principle backflow prevention (RP) assembly, a pressure vacuum breaker (PVB) assembly, and a double check valve (DC) assembly. Nothing contained in this Section shall prevent ***a*** public water system from requiring the use of a higher level of protection than ***the level*** required by this subsection.

1. A public water system may make installation of a required backflow-prevention assembly a condition of service. A user's failure to comply with this requirement shall be sufficient cause for the public water system to terminate water service.
2. Specific installation requirements for backflow prevention include the following:
   a. Any backflow prevention required by this Section shall be installed in accordance with the manufacturer's specifications.
   b. For an AG installation, all piping between the user's connection and the receiving tank shall be entirely visible unless otherwise approved in writing by the public water system.
   c. An RP assembly shall not be installed in a meter box, pit, or vault unless adequate drainage is provided.
   d. A PVB assembly may be installed for use on a landscape water irrigation system if the irrigation system conforms to all of the criteria listed below. An RP assembly is required whenever any of the criteria are not met.
      i. The water use beyond the assembly is for irrigation purposes only;
      ii. The PVB is installed in accordance with the manufacturer's specifications;
      iii. The irrigation system is designed and constructed to be incapable of inducing backpressure; and
      iv. ***The*** injection of chemical pesticides and fertilizers, ***chemigation,*** is not used or provided in the irrigation system.

F. Each backflow-prevention assembly required by this Section shall be tested at least annually, or more frequently if directed by the public water system or the Department. Each assembly shall also be tested after installation, relocation, or repair. An assembly shall not be placed in service unless it has been tested and is functioning as designed. The following provisions shall apply to the testing of backflow-prevention assemblies:

1. Testing shall be in accordance with procedures described in Section 9 of the Manual of Cross-Connection Control. The public water system shall notify the water user when testing of backflow-prevention assemblies is needed. The notice shall specify the date by which the testing must be completed and the results forwarded to the public water system.
2. Testing shall be performed by a person who is currently certified as a "general" tester by the California-Nevada Section of the American Water Works Association (CA-NV Section, AWWA), the Arizona State Environmental Technical Training (ASETT) Center, or other certifying authority approved by the Department.
3. When a backflow-prevention assembly is tested and found to be defective, it shall be repaired or replaced in accordance with the provisions of this Section.

G. A public water system shall maintain records of backflow-prevention assembly installations and tests performed on backflow-prevention assemblies in its service area. Records shall be retained by the public water system for at least three years and shall be made available for review by the Department upon request. These records shall include an inventory of backflow-prevention assemblies required by this Section and, for each assembly, all of the following information:
   1. Assembly identification number and description,
   2. Location,
   3. Date of tests,
   4. Description of repairs and recommendations for repairs made by the tester, and
   5. The tester's name and certificate number.

H. A public water system shall submit a written cross-connection incident report to the Department and the local health authority within five business days after a cross-connection problem occurs that results in contamination of the public water system. The report shall address all of the following:
   1. Date and time of discovery of the unprotected cross-connection,
   2. Nature of the cross-connection problem,
   3. Affected area,
   4. Cause of the cross-connection problem,
   5. Public health impact,
   6. Date and text of any public health advisory issued,
   7. Each corrective action taken, and
   8. Date of completion of each corrective action.

I. An individual with direct responsibility for implementing a backflow prevention program for a water system serving more than 50,000 persons, or ***an individual with direct responsibility for implementing a backflow prevention program for a for a water system serving 50,000 or fewer persons*** if the Department has determined that such a need exists, shall be licensed as a "cross-connection control program specialist" by the CA-NV Section, AWWA, the ASETT Center, or ***another*** certifying authority approved by the Department.

Historical Note

Adopted effective August 8, 1991 (Supp. 91-3). Section repealed, new Section adopted effective April 28, 1995 (Supp. 95-2). Amended effective June 3, 1998 (Supp. 98-3). Section R18-4-215 repealed; new Section renumbered from R18-4-115 and amended by final rulemaking at 14 A.A.R. 2978, effective August 30, 2008 (Supp. 08-3).

Part II

1613.0 Reclaimed Water Systems – General.

(A) The provisions of Part II of this chapter shall apply to the installation, construction, alteration, and repair of reclaimed water systems intended to supply uses such as water closets, urinals, trap primers for floor drains, floor sinks, irrigation, industrial processes, water features and other uses approved by the Authority Having Jurisdiction. Potable water supplied as makeup water in these systems shall be protected against back-pressure and back-siphonage in accordance with Sections 602.0 and 603.0

(B) No permit for any reclaimed water system shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the reclaimed water system or the potable water system within any site containing a reclaimed water system without approval by the Authority Having Jurisdiction.

(C) Before the building is occupied, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

(D) A reclaimed water system shall be designed by a person registered or licensed to perform plumbing design work.

1614.0 Definitions.

Reclaimed Water - Nonpotable water the meets or as a result of treatment, meets federal requirements for its intended uses. The level of treatment and quality of the reclaimed water shall be approved by the Authority Having Jurisdiction.

1615.0 Permit.

It shall be unlawful for any person to construct, install, alter, or cause to be constructed, installed, or altered any reclaimed water system within a building or on a premises without first obtaining a permit to do such work from the Authority Having Jurisdiction.

1616.0 Drawings and Specifications.

The Authority Having Jurisdiction shall be permitted to require any or all of the following information to be included with or in the plot plan before a permit is issued for a reclaimed water system.

(A) A plot plan drawn to scale and completely dimensioned, showing lot lines and structures, location of present and proposed potable water supplies and meters, water wells, streams, auxiliary water supply and systems, reclaimed water supply and meters, drain lines, locations of private sewage disposal systems and 100 percent expansion areas or building sewer connected to the public sewer.

(B) Details of construction including riser diagrams or isometrics and a full description of the complete installation, including installation methods, construction, and materials as required by the Authority Having Jurisdiction. To the extent permitted by structural conditions, reclaimed water risers within the toilet room, including appurtenances such as air/vacuum relief valves, pressure reducing valves, etc., shall be installed in the opposite end of the room containing the served fixtures from the potable water risers or opposite walls, as applicable. To the extent permitted by structural conditions, reclaimed water headers and branches off risers shall not be run in the same wall or ceiling cavity of the toilet room where potable water piping is run.

(C) Detailed initial and annual testing requirements as outlined elsewhere in this chapter.

1617.0 Pipe Material/Pipe Identification.

Reclaimed water systems shall comply with Sections 1617.1 and 1617.2.

1617.1 Pipe Materials. Reclaimed water pipe, valves and fittings shall conform to the requirements of Sections 604.0, 605.0 and 606.0.

1617.2 Color and Information. Reclaimed water systems shall have a purple background with black uppercase lettering with the words "CAUTION: NONPOTABLE RECLAIMED WATER, DO NOT DRINK."

The minimum size of the letters and length of the color field shall conform to Table 6–1. Where used, a colored identification band shall be indicated every twenty (20) feet (6,096 mm) not less than once per room, and shall be visible from the floor level. Marking is not required for pipe manufactured with purple color integral to the pipe and marked with black uppercase lettering to read "CAUTION: NONPOTABLE RECLAIMED WATER, DO NOT DRINK" in intervals not to exceed five (5) feet (1,524 mm). All valves, except fixture supply control valves shall be equipped with a locking feature. All mechanical equipment that is appurtenant to the reclaimed water system shall be painted purple.

1618.0 Installation.

(A) Hose bibbs shall not be allowed on reclaimed water piping systems.

(B) The reclaimed water system and the potable water system within the building shall be provided with the required appurtenances (valves, air/vacuum relief valves, etc.) to allow for deactivation or drainage as required for cross connection test in Section 1620.0.

(C) Reclaimed water pipes shall not be run or laid in the same trench as potable water pipes. A ten (10) foot (3,048 mm) horizontal separation shall be maintained between pressurized, buried reclaimed and potable water piping. Buried potable water pipes crossing pressurized reclaimed water pipes shall be laid not less than twelve (12) inches (305 mm) above the reclaimed water pipes. Reclaimed water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in compliance with Sections 609.0 and 720.0 of this code. Reclaimed water pipes shall be protected similar to potable water pipes.

1619.0 Signs.

(A) Commercial, Industrial and institutional Room Entrance Signs. All rooms in commercial, industrial, and institutional occupancies using reclaimed water for water closets and/or urinals shall be identified with signs. Each sign shall contain one-half (1/2) inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to all users. The number and location of the signs shall be approved by the Authority Having Jurisdiction and shall contain the following text:

TO CONSERVE WATER,
THIS BUILDING USES RECLAIMED
WATER TO FLUSH TOILETS AND URINALS.

(B) Room Signs. Each room containing reclaimed water equipment shall have a sign posted with the following wording in one (1) inch (25.4 mm) letters on a purple background:

CAUTION
NONPOTABLE RECLAIMED WATER,
DO NOT DRINK.
DO NOT CONNECT TO DRINKING
WATER SYSTEM.

NOTICE
CONTACT BUILDING MANAGEMENT
BEFORE PERFORMING ANY WORK ON
THIS WATER SYSTEM.

This sign shall be posted in a location that is visible to anyone working on or near reclaimed water equipment.

(C) Where tank-type water closets are flushed with reclaimed water, the tank shall be labeled:

NONPOTABLE RECLAIMED WATER,
DO NOT DRINK

(D) Valve Access Door Signs. Each reclaimed water valve within a wall shall have its access door into the wall equipped with a warning sign approximately six (6) inches by six (6) inches (152 mm x 152 mm) with wording in one-half (1/2) inch (12.7 mm) letters on a purple background. The size, shape, and format of the sign shall be substantially the same as that specified in subsection (B) above. The signs shall be attached inside the access door frame and shall hang in the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to reclaimed water piping and appurtenances.

1620.0 Inspection and Testing.

(A) Reclaimed water piping shall be inspected and tested as outlined in this code for testing of potable water piping.

(B) An initial and subsequent annual inspection and test shall be performed on both the potable and reclaimed water systems. The potable and reclaimed water system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection as follows:

(1) Visual Dual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction.

(i) Meter locations of the reclaimed water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.

(ii) Pumps and equipment, equipment room signs, and exposed piping in the equipment room shall be checked.

(iii) Valves shall be checked to ensure that valve lock seals are still in place and intact. Valve control door signs shall be checked to verify that no signs have been removed.

(2) Cross-Connection Test. The following procedure shall be followed by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction to determine whether a cross-connection occurred.

(i) The potable water system shall be activated and pressurized. The reclaimed water system shall be shut down and completely drained.

(ii) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the reclaimed water system is empty. The minimum period the reclaimed water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and reclaimed water distribution systems, but in no case shall that period be less than one (1) hour.

(iii) Fixtures, potable and reclaimed, shall be tested and inspected for flow. Flow from any reclaimed water system outlet shall indicate a cross-connection. No flow from a potable water outlet would indicate that it is connected to the reclaimed water system.

(iv) The drain on the reclaimed water system shall be checked for flow during the test and at the end of the period.

(v) The potable water system shall then be completely drained.

(vi) The reclaimed water system shall then be activated and pressurized.

(vii) The reclaimed water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than one (1) hour.

(viii) Fixtures, potable and reclaimed, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow from a reclaimed water outlet would indicate that it is connected to the potable water system.

(ix) The drain on the potable water system shall be checked for flow during the test and at the end of the period.

(x) If there is no flow detected in any of the fixtures that would have indicated a cross-connection, the potable water system shall be repressurized.

(3) Cross-Connection Discovered. In the event that a cross-connection is discovered, the following procedure, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

(i) Reclaimed water piping to the building shall be shut down at the meter, and the reclaimed water riser shall be drained.

(ii) Potable water piping to the building shall be shut down at the meter.

(iii) The cross-connection shall be uncovered and disconnected.

(iv) The building shall be retested following procedures listed in subsections (B)(1) and (B)(2) above.

(v) The potable water system shall be chlorinated with fifty (50) ppm chlorine for twenty-four (24) hours.

(vi) The potable water system shall be flushed after twenty-four (24) hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system shall be permitted to be recharged.

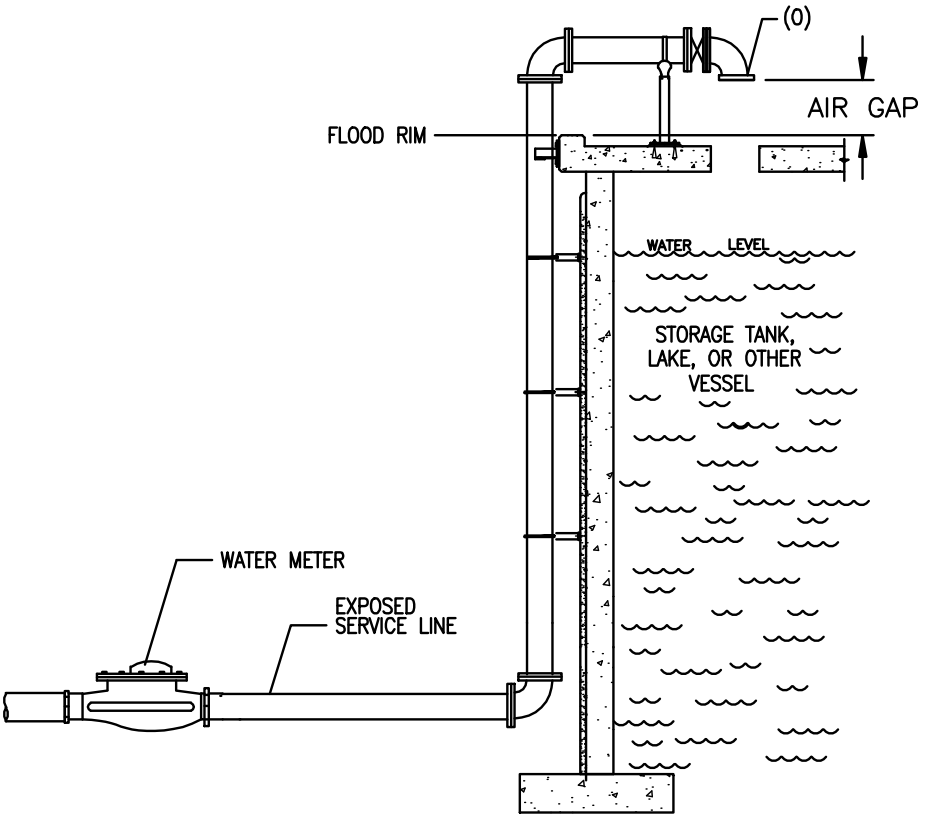
(C) An annual inspection of the reclaimed water system, following the procedures listed in subsection 1620.0 (B)(1), shall be required. Annual cross-connection testing, following the procedures listed in subsection 1620.0 (B)(2), shall be required by the Authority Having Jurisdiction, unless site conditions do not require it. In no event shall the test occur less often than once in four (4) years.

Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.

1621.0 Sizing.

Reclaimed water piping shall be sized as outlined in this code for sizing potable water piping.

APPENDIX D



The prevention of backflow in a potable water supply system is necessary to prevent contamination or pollution of the water supply. Prevention is accomplished by the use of air–gap separations or by mechanical backflow prevention assemblies. Air–gap separations and backflow prevention assemblies shall be installed according to current Tucson Water Standard Details to assure protection of the public water supply system.

An air gap is not generally utilized for water service line protection since all supply pressure is lost. A water service line to a lake, tank or other vessel is generally where an air gap is used. However, for service protection, another deterrent is that all piping to the air gap must remain exposed.

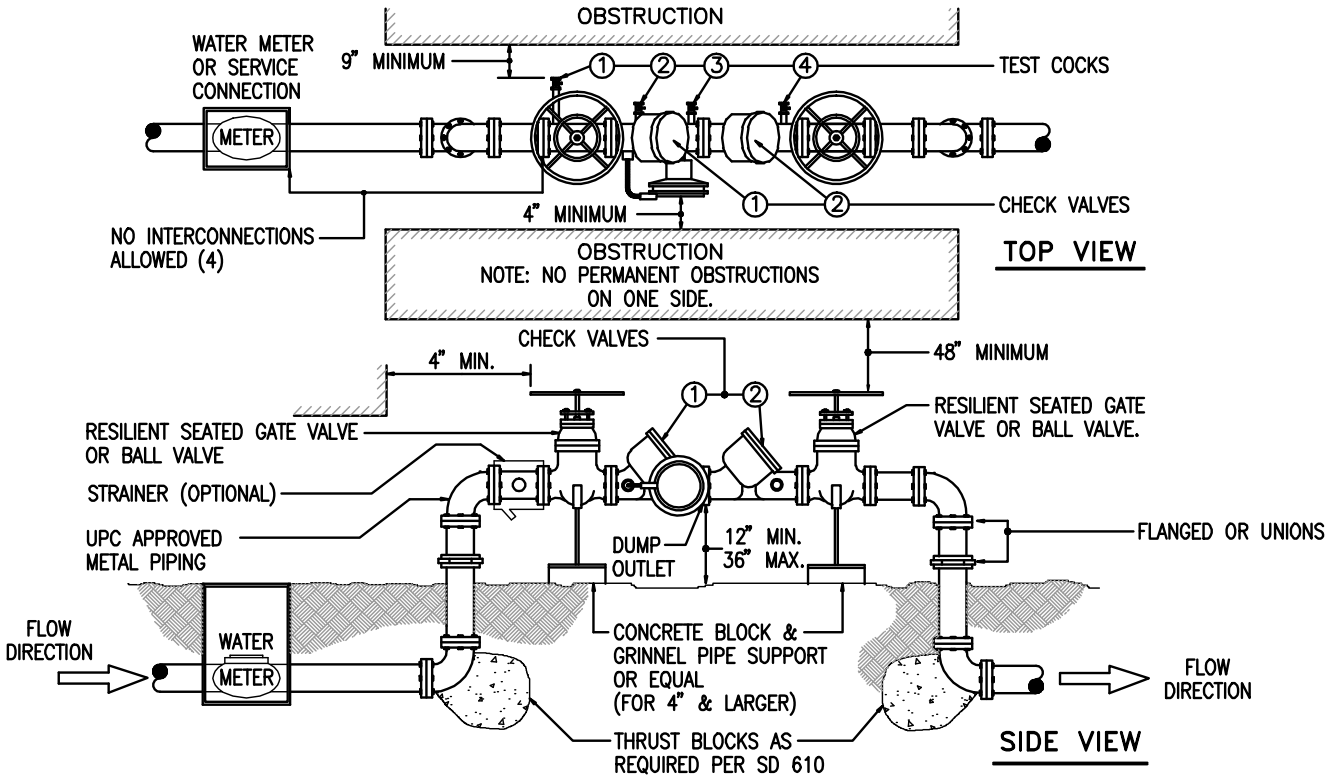
The minimum required air–gap separation shall be measured vertically from the lowest end of the potable water outlet to the flood rim of the receptacle into which the potable water discharges. This air–gap distance shall be a minimum of twice the effective opening (0) of the potable water outlet. If the water outlet is located at a distance less than three times the effective opening (0) away from a wall or similar vertical surface, the minimum air–gap shall be three times the effective opening (0) of the outlet. In no case may the minimum required air–gap be less than one inch.

There shall not be any provisions for extending the fixture below the flood level rim. If the end of the potable water pipe or fixture outlet is threaded or allows for any type of extension by any means, a properly installed and approved backflow preventer shall be installed.

Note: the air gap may be screened or shielded with a perforated material for protection.

For additional information contact the Backflow Prevention Section at (520) 791–2650.

ISSUED:		STANDARD DETAIL		DETAIL NO.
6/97	TUCSON WATER	BACKFLOW PREVENTION AIR GAP SEPARATION INSTALLATION	TUCSON WATER	SD-1800
REVISED:				
9/08				SHEET 1 OF 1

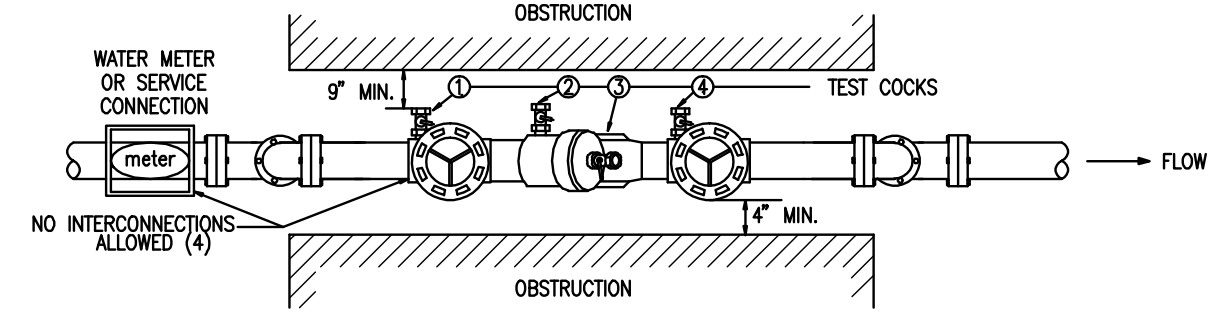


SD–1802 – REDUCED PRESSURE ASSEMBLY (RPA) INSTALLATION

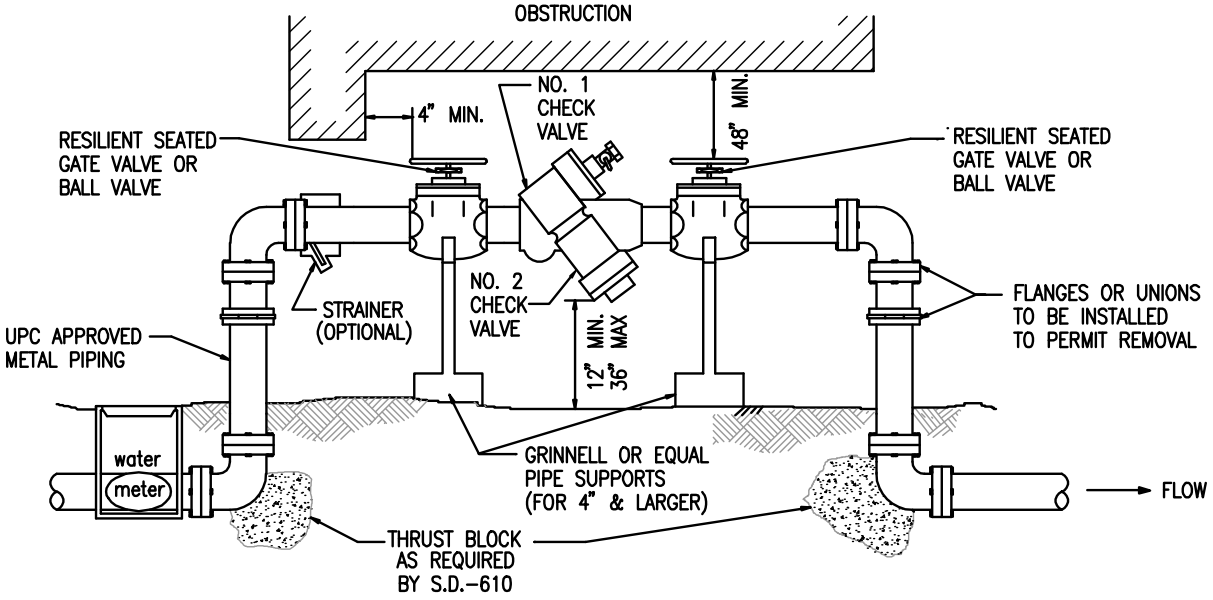
These specifications are to be followed for all water service protection installations utilizing a RPA.

1. A permit is required before installing or replacing a backflow assembly. Permits shall be obtained at Tucson Water, 310 W. Alameda.
2. The RPA shall be installed outside, above ground, as close to the water meter as possible and on private property unless otherwise authorized. (Right–of–ways are not private property.)
3. There shall be no other piping connected to the piping between the meter and the backflow assembly except for parallel assembly installations.
4. Installations shall meet current uniform plumbing codes in addition to Tucson Water's Standard Details.
5. Installations shall be left exposed until inspected and approved by Tucson Water.
6. Protective cages are optional, and will meet clearance, access and drainage requirements.
7. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder operation of the assembly.
8. Before installing a backflow assembly on any fire system, consult with the fire authority for additional requirements.
9. The installation of a backflow assembly may create a closed system. Consult local plumbing codes for pressure relief valve and thermal expansion requirements.
10. For additional information contact the Backflow Prevention Section at (520) 791–2650.

ISSUED:		STANDARD DETAIL		DETAIL NO.
12/97	TUCSON WATER	BACKFLOW PREVENTION REDUCED PRESSURE ASSEMBLY (RPA) INSTALLATION	TUCSON WATER	SD-1802
REVISED: 9/08				SHEET 1 OF 1



NOTE: NO PERMANENT OBSTRUCTIONS ON ONE SIDE



DOUBLE CHECK VALVE ASSEMBLY (DCVA) INSTALLATION

These specifications are to be followed for all water service protection installations utilizing a DCVA.

1. A permit is required before installing or replacing a backflow assembly. Permits shall be obtained at Tucson Water, 310 W. Alameda.
2. The DCVA shall be installed outside, above ground, as close to the water meter as possible and on private property unless otherwise authorized. (Right-of-ways are not private property.)
3. There shall be no other piping connected to the piping between the meter and the backflow assembly except for parallel assembly installations.
4. Installations shall meet current uniform plumbing codes in addition to Tucson Water's Standard Details.
5. Installations shall be left exposed until inspected and approved by Tucson Water.
6. Protective cages are optional, and will meet clearance, access and drainage requirements.
7. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder operation of the assembly.
8. Before installing a backflow assembly on any fire system, consult with the fire authority for additional requirements.
9. The installation of a backflow assembly may create a closed system. Consult local plumbing codes for pressure relief valve and thermal expansion requirements.
10. For additional information contact the Backflow Prevention Section at (520) 791-2650.

ISSUED:		STANDARD DETAIL		DETAIL NO.
6/97	TUCSON WATER	BACKFLOW PREVENTION DOUBLE CHECK VALVE ASSEMBLY (DCVA) INSTALLATION	TUCSON WATER	SD-1805
REVISED: 9/08				SHEET 1 OF 1