



Reclaimed Water Information Packet

January 2024

Contractor's Reclaimed Water FAQ

How is reclaimed water different from potable water?



Reclaimed water is highly treated wastewater that is distributed to consumers for non-potable uses instead of being discharged into the river after treatment. Reclaimed water can be used for industrial cooling, irrigation, and a variety of construction activities.

How is installing a reclaimed water main different than installing a potable water main?



When installing reclaimed water mains you need to follow the labeling and identification standards set forth by the Virginia Department of Environmental Quality (VA DEQ). These standards are outlined on the attached sheet. In general, all piping must be purple or made to be purple by painting or wrapping the pipe. The pipe and all appurtenances must be labeled as reclaimed water either by sticker, stencil or other permanent marking. All appurtenances to the main must be purple and labeled. If the appurtenance is accessible to the public, it must have a sign on it which reads "Caution: Reclaimed Water Do Not Drink."

Is the pipe different and how long will it take to get the pipes?

Typically, regular ductile iron pipe is used. However, the pipes need to be wrapped with purple polyethylene encasement. Additional time may be required to order the wrapping.

Are there special requirements to identify the reclaimed water?

Yes. Please see the attached pictures and signage and labeling summary page for more information on exactly how reclaimed water piping systems need to be identified.



How do I know what purple materials to use?

Please visit the Loudoun Water website

<http://www.loudounwater.org/Developers-and-New-Construction/Engineering-Design-Manual/> and find the link to the approved materials list at the bottom of the page and go to pages 69-85.

Where can I find purple materials?



Please visit the Loudoun Water website and follow the path to "Engineering Design Manual" and find the link to the approved materials list at the bottom of the page. The approved materials list has all materials to be used on the reclaimed system. If you have any questions please forward them to your Loudoun Water project engineer or inspector.

What are the testing requirements for reclaimed water?

The reclaimed main is subject to purity and pressure testing exactly the same way a potable main is tested. The only exception is reclaimed water **must be flushed to a sanitary manhole**; it may not be flushed to the ground. In addition to the normal meter inspections, a reclaimed system must have the following tests before a meter will be released:

1. **Labeling and Identification Inspection** – This is the first inspection performed within the building and will check that all labeling and identification measures are correct and complete.
2. **Backflow Prevention Inspection** – A backflow prevention inspection shall be performed to ensure that the system has the proper separation between the private and public system and between the reclaimed and potable system. Back flow test sheets may be submitted to Loudoun Water online. For additional backflow information visit: <https://www.loudounwater.org/residential-customers/cross-connection-backflow>
3. **Pressure Test** – A pressure test will be performed after all other testing as a final check that the reclaimed system and the potable system are separate from one another. This is usually performed by opening the bypass on the reclaimed system before the meter is set. Please do not run this test without a Loudoun Water employee present. If a pressure test cannot be performed then a dye test must be used to demonstrate separation between reclaimed water and potable water systems.

What are the requirements to obtain a meter?

In order to obtain a reclaimed meter you must have the following:

1. An executed reclaimed use agreement for each building being served by reclaimed water
2. The lot, lateral and service inspections that every meter must pass
3. Reclaimed water labeling inspection and differential pressure test
4. Submitted backflow inspection test sheets to Loudoun Water
5. Payment of the availability fee (if applicable), meter cost and permit fees



For a step by step process please see the preconstruction meeting packet.

Are there additional design/installation requirements?

Yes, an air gap is required. An air gap is a physical gap between the potable water system and a private water system. The air gap required at buildings with both reclaimed and potable water systems is between the potable water system and where it mixes with the reclaimed system. The air gap must be at least 8" or two pipe diameters, whichever is larger, at the atmospheric overflow point of the system, usually at a tank. Please see the sketch below.

Do I need a backflow preventer?

Yes. An RPZ backflow preventer is required.

LOUDOUN WATER
Reclaimed Water Pictures and Labeling



PVC Pipe Installation



Reclaimed Pipe



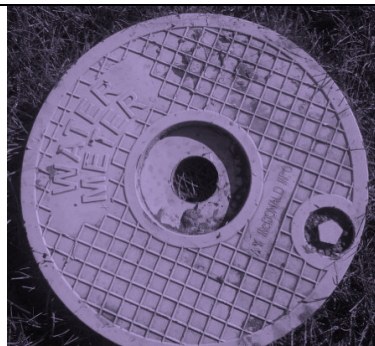
Reclaimed Water and Irrigation Signs



DIP Installation



Meter Pit With Low Rise Setter



Reclaimed Meter Crock Cover



Use octagon shape outside of roadways.



Reclaimed Water Valve Cover vs. Potable Water Valve Cover. Use square shape in roadways.

LOUDOUN WATER
Reclaimed Water Pictures and Labeling



Irrigation Cover

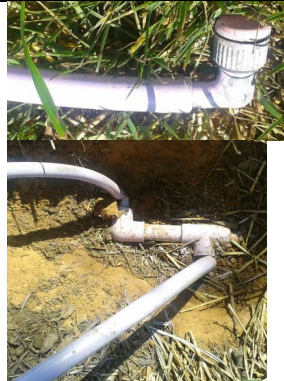
Must be



Irrigation Cover



Reclaimed Water RPZ Enclosure



Irrigation Piping



Interior Labeling With Insulation



Label for Insulated Pipe



Painted DIP



Must be purple, labeled and locked

Reclaimed Flushing Hydrant



RECLAIMED WATER SERVICE COMMUNICATION FORM

Address: _____

Meter Size: _____

Meter Number: _____

Reclaimed Water Use:

Loudoun Water Engineer _____ Loudoun Water Project ID: _____

Construction Contact:

Name: _____

Phone Number: _____

Email Address: _____

24 Hour Emergency Contact*:

Name: _____

Phone Number: _____

Email Address: _____

Operations/Facilities Manager (if different from above):

Name: _____

Phone Number: _____

Email Address: _____

Billing Contact:

Name: _____ Mailing Address: _____

Phone Number: _____

Email Address: _____

Written Notification Contact:

Name: _____ Mailing Address: _____

Phone Number: _____

Email Address: _____

To contact Loudoun Water in case of emergency please call Micah Vieux at 571-291-7847, for customer service please call 571-291-7700, for plant operations please contact the Broad Run Shift Supervisor at 703-623-4039

* If contacts on this form change please contact Micah Vieux, mvieux@loudounwater.org, to update the form as soon as possible.

Responsibilities for reclaimed meter set:

LOUDOUN WATER

ENGINEERING

- Reclaimed regulations
- Reclaimed uses
- Meter sizing
- Writes and receives Reclaimed Use Agreement
- Checks for payment
- Interior signage and labeling inspection
- Witnesses differential pressure test

INSPECTIONS

- Verify approved materials
- Confirm flushing
- Chlorine residual check
- Inspect exterior signage and labeling
- Meter crotch inspections
 - Pressure Testing of service line
 - Water quality testing
 - Lot
 - Lateral
 - Service
- Beneficial use inspection

FIELD SERVICE

- Meter setter / yoke inspection
- Meter installation(if 1" or less)
- Meter delivery
- MIU installation
- Register installation
- Account set up

CONTRACTOR

- Submit Certificate of Insurance (COI)
- Perform installation after construction permit issued
- Provide signage and labeling
- Perform pressure differential test and back flow test
- Request meter online to receive meter

DEVELOPER

- Submit signed agreement and permit
- Submit inspection fees
- Submit signed easement deed and record after execution
- Submit bond
- Submit signed reclaimed use agreement
- Request connection permit online to receive an invoice
- Pay for meter and any availability fees

For installation information please see the Loudoun Water Engineering Design Manual Standard Details.
 For materials information please see the Loudoun Water Engineering Design Manual Approved Materials List.
 The Loudoun Water Engineering Design Manual can be found on our website at www.loudounwater.org.

Reclaimed Water Signage and Labeling Standards Summary from 9VAC25-740*

	Size	Material	Identifier	Statement	Letter Height	Frequency	Striping
OUTDOOR PIPING UNDERGROUND	1" diameter and larger	DIP	Purple Polyethylene Encasement with caution statement stamped on bag or stickers applied to bag	Caution: Reclaimed Water Do Not Drink	2" - 3"	Every 10' on top side of the pipe	N/A
		PVC	Use purple PVC. If purple PVC is not used, follow encasement standards above for DIP	Caution: Reclaimed Water Do Not Drink	2" - 3"	Every 10' on top side of the pipe	N/A
	Smaller than 1" diameter	Copper	The pipe shall be painted, wrapped or taped purple.	Labeling not required.			A taped purple stripe that is at least 25% the width of the diameter may be applied if pipe is not painted or purple.
		PVC		Labeling not required.			
OUTDOOR PIPING ABOVEGROUND	1" diameter and larger	DIP	Purple Polyethylene Encasement with caution statement stamped on bag or stickers applied to bag	Caution: Reclaimed Water Do Not Drink	2" - 3"	Every 3' - 4' on both (opposite) sides of the pipe	N/A
		PVC	Use purple PVC. If purple PVC is not used, follow encasement standards above for DIP	Caution: Reclaimed Water Do Not Drink	2" - 3"	Every 3' - 4' on both (opposite) sides of the pipe	N/A
	Smaller than 1" diameter	Copper	The pipe shall be painted, wrapped or taped purple.	Labeling not required.			A taped purple stripe that is at least 25% the width of the diameter may be applied if pipe is not painted or purple.
		PVC		Labeling not required.			
I N D O O R P I P I N G		DIP	The pipe shall be painted, wrapped or taped purple.	Caution: Reclaimed Water Do Not Drink	2" - 3"	Every 3' - 4' on both (opposite) sides of the pipe	Purple Vertical Stripes surrounding the statement if using insulation
		PVC		Caution: Reclaimed Water Do Not Drink	2" - 3"	Every 3' - 4' on both (opposite) sides of the pipe	
	Smaller than 1" diameter	Metal		Caution: Reclaimed Water Do Not Drink	Easily read from a distance of 2'	Every 1' on both sides of the pipe	
		Plastic		Caution: Reclaimed Water Do Not Drink	Easily read from a distance of 2'	Every 1' on both sides of the pipe	
A P P U R T E A B O V E G R O U N D S I G N S	Valve covers, meter crocks, hose bibs, RPZ enclosure, flushing hydrants		Shall be purple, by paint, tape or other permanent means. The cover of valves and crocks shall be painted purple and all piping within the crock shall be purple. The valve body or other moving part does not need to be painted. All appurtenances that would allow the reclaimed water to exit the pipe and are accessible to the public need to have a tag attached that reads: Reclaimed Water. The tag shall be purple with contrasting black or white text. Where public access is not possible a sign may be hung on the entrance to the restricted area. See the requirements for signage below. Valve covers shall be a square shape and be painted purple. All above ground hose bibs or hand operated connections must differ materially from potable connections and be clearly tagged as reclaimed.				
S I G N S			Sign must be purple. The sign must read: Caution: Reclaimed Water Do Not Drink If the sign is for an irrigation system the wording must be changed to: "This Area Irrigated with Reclaimed Water. Do Not Drink." The sign must have the international symbol for non-potable water. The sign must be able to be read by a person of normal vision at a distance of 50'. Signs will be posted at the access points of the area to be irrigated.				

* These labeling rules apply to all reclaimed water pipes, not just pipes owned by Loudoun Water. This includes process piping and irrigation.



Guidance for Reclaimed Water Irrigation Projects

Reclaimed Water Quality

Loudoun Water's reclaimed water meets Level 1 Standards, the highest standard in reclaimed water product quality in Virginia. Because our treatment process utilizes Biological Nutrient Removal, reclaimed water irrigation projects in our service area are not required to submit Nutrient Management Plans.

State and Local Requirements

All irrigation reuse of reclaimed water must be supplemental irrigation. This is defined in 9VAC25-740-10 as irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation. To ensure supplemental irrigation, Loudoun Water requires a soil moisture sensor or rain gauge to be used in combination with an irrigation controller. Please reference the following guidance to ensure that your design and materials selection meets state and local requirements:

- Requirements Applicable to Irrigation Reuse of Reclaimed Water (DEQ, 2014)
- Reclaimed Water Information Packet (Loudoun Water, 2020)

General Requirements

- There must be no overspray of surface waters, including wetlands, with reclaimed water.
- There must be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, or during periods of rainfall.
- There must be no application of reclaimed water during winds of sufficient strength to cause overspray or aerosol drift into or beyond setback areas around the irrigation specified in the regulation.
- The method of irrigation must minimize human contact with reclaimed water.
- Reclaimed water must be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.
- There must be no nuisance conditions resulting from irrigation reuse of reclaimed water.

Identification of Reclaimed Water Distribution Components

- Labeling, color coding, taping, tagging or other identification for reclaimed water distribution components is required. These components include piping, valves and valve boxes, above-ground, hand-operated connections (e.g., hose-bibs, spigots, etc.), outlets (e.g., fire hydrants, etc.), and appurtenances (e.g., pumps, etc.).
- All outlets must be tagged and materially different from potable components.
- All reclaimed water piping (above and below ground) must display the warning statement "CAUTION: RECLAIMED WATER - DO NOT DRINK" and be identified by one or more methods described in 9VAC25-740-110 .B.8. Written identification is also required for all mechanical



appurtenances of a reclaimed water distribution system, stating, at a minimum, "RECLAIMED WATER".

Required Submittals: Contractors must submit an irrigation system design and materials list to Loudoun Water for approval. Installation shall not commence until approval is granted.

Irrigation System Design

- The system design must describe locations for:
 - Area Irrigated
 - Water Meter
 - Backflow Preventer
 - Irrigation Controller
 - Valves
 - Rotor Heads
 - Piping

Materials

- Contractors must submit cut-sheets or manufacturer's product description for the following materials:
 - Irrigation Controller
 - Soil Moisture Sensor or Rain Sensor
 - Piping
 - Rotor Heads
 - Control Valves
 - Valve Boxes
 - Meter Crock and Cover
 - Notification Signs

Questions and Retrofit Assistance

- If you have questions regarding state or local reclaimed water requirements, or you are retrofitting an existing potable water irrigation system, then please contact Micah Vieux, Business Programs Manager, at 571-291-7847.