



## Proposed Regulation Agency Background Document

<b>Agency name</b>	State Water Control Board
<b>Virginia Administrative Code (VAC) citation</b>	9 VAC 25-740-10 et seq.
<b>Regulation title</b>	Water Reclamation and Reuse Regulation
<b>Action title</b>	Amendment to the Water Reclamation and Reuse Regulation to promote enhance program implementation
<b>Date this document prepared</b>	July 14, 2011

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 14 (2010) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

### Brief summary

*In a short paragraph, please summarize all substantive provisions of new regulations or changes to existing regulations that are being proposed in this regulatory action.*

Amendments to the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.) are needed primarily to address issues that would improve the Board's ability to effectively promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health. Two amendments that would allow (i) design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health, and (ii) temporary authorization of water reclamation and reuse without a permit during periods of significant drought, are needed to improve implementation of the regulation and to further promote and encourage water reclamation and reuse. These amendments meet the purpose of State Water Control Law and are within the authority of the Board to establish pursuant to §§ 62.1-44.2 and 62.1-44.15(15) of the Code of Virginia.

The following are being addressed as part of this regulatory action:

1. Amendments to the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.)
  - a. Add provisions to allow design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health.

- b. Add provisions for an emergency authorization to reclaim and reuse wastewater without a permit during periods of significant drought.
- c. Add a requirement for an auxiliary or backup plan for conjunctive wastewater treatment works and reclamation systems that rely primarily or completely on water reuse for elimination of wastewater.
- d. Modify and add requirements to manage pollutants of concern from significant industrial users for reclamation systems and satellite reclamation systems that will produce Level 1 reclaimed water, and for reclamation systems that are part of an indirect potable reuse project.
- e. Add design and operational requirements for UV disinfection of Level 1 and Level 2 reclaimed water.
- f. Add or modify several terms and their associated definitions related to the use of these terms within the context of the regulation.
- g. Modify language to clarify service agreement or contract requirements for end users of reclaimed water, and alternative permitting options for reclaimed water distribution systems.
- h. Modify activities excluded from the requirements of the regulation related to alternative onsite sewage systems permitted by the Virginia Department of Health, utilization of harvested rainwater and storm water, and indirect non-potable reuse of reclaimed water.
- i. Add the Water Withdrawal Reporting Regulation (9 VAC 25-200) to the list of other Board regulations with which the Water Reclamation and Reuse Regulation has a relationship.
- j. Modify the point of compliance (POC) for reclaimed water standards to include POCs for certain system storage facilities and reclaimed water distribution systems, in addition to POCs required for reclamation systems and satellite reclamation systems.
- k. Add reclaimed water monitoring requirements for certain system storage facilities and reclaimed water distribution systems where determined necessary by the board.
- l. Modify reuses listed in regulation to include "irrigation to establish erosion control" and move "ship ballast" to industrial reuses requiring a minimum of Level 1 reclaimed water.
- m. Modify the description of unlisted reuses and add all reuses of reclaimed industrial wastewater that will require reclaimed water standards and monitoring requirements developed on a case-by-case basis.
- n. Add permit application, design, construction, and operation requirements that are specific to indirect potable reuse projects.
- o. Add a provision that allows reclaimed water agents to inspect end users' reuses and storage facilities as part of the service agreement or contract between the reclaimed water agent and an end user.
- p. Modify cross-connection and backflow prevention requirements for reclaimed water distribution systems to be consistent with regulations of other state agencies (e.g., Uniform State Building Code).
- q. Clarify that the requirement for reclaimed water distribution systems to maintain reclaimed water standards for intended reuses does not apply to Corrective Action Thresholds, which are operational standards for only reclamation systems and satellite reclamation systems.

- r. Modify Class I reliability requirements for Level 1 reclamation systems and satellite reclamation systems to include associated pump stations not addressed by the Sewage Collection and Treatment Regulations, 9 VAC 25-790.
- s. Add requirement prohibiting application of reclaimed water during winds that would cause overspray or aerosol drift into or beyond buffer zones of setbacks. This requirement is consistent with the prohibition of reclaimed water runoff from irrigation sites.
- t. Revise an existing prohibition that will allow the reuse of reclaimed water inside residential buildings and structures that are other than one or two family dwellings.
- u. Revise an existing design requirement that allows non-system storage facilities of reclaimed water to discharge under less restrictive circumstances.
- v. Add provisions to prevent unauthorized discharges and to recover flush water or reclaimed water for use or reuse from the maintenance of reclaimed water distribution systems.
- w. Add a prohibition against significant adverse impacts to other beneficial uses that may result from the diversion of source water from a VPDES permitted surface water discharge to water reclamation and reuse.
- x. Add a provision to submit information necessary for an impact analysis for each VPDES permitted treatment works that proposes a new or increased diversion of its discharge to reclamation and reuse.
- y. Make minor changes to:
  - (1) Clarify or make more specific the language of the regulation,
  - (2) Eliminate redundancy,
  - (3) Relate separate sections or subdivisions of the regulation, and
  - (4) Correct grammatical and typographical errors.

**Legal basis**

*Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly chapter number(s), if applicable, and (2) promulgating entity, i.e., the agency, board, or person. Describe the legal authority and the extent to which the authority is mandatory or discretionary.*

The legal basis for the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.) is the State Water Control Law (Law) (Chapter 3.1 of Title 62.1 of the Code of Virginia). § 62.1-44.15 authorizes the State Water Control Board (Board) to promulgate regulations necessary to carry out its powers and duties.

Specific to water reclamation and reuse, § 62.1-44.2 establishes the purpose of the Law, among other things, to promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health. More specifically, § 62.1-44.15(10) and § 62.1-44.15(15), give authority to the Board to adopt regulations as it deems necessary to enforce the general water quality management program, and to promote and establish requirements for the reclamation and reuse of wastewater that are protective of state waters and public health as an alternative to directly discharging pollutants into state waters.

**Purpose**

*Please explain the need for the new or amended regulation by (1) detailing the specific reasons why this regulatory action is essential to protect the health, safety, or welfare of citizens, and (2) discussing the goals of the proposal, the environmental benefits, and the problems the proposal is intended to solve.*

The primary purpose of this regulatory action is to amend the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.), which became effective October 1, 2008. Since its implementation, both the Department of Environmental Quality (DEQ) and the public have identified needed changes to the regulation that would improve the State Water Control Board's ability to implement a more effective water reclamation and reuse regulatory program for the protection of public health and safety. Two items that will be addressed among other changes to improve implementation of the regulation are (i) the inflexibility of the regulation to accept deviations from design or operational requirements that may discourage projects capable of producing or distributing reclaimed water suitable for reuse in a manner protective of the environment and public health; and (ii) the lack of provisions to authorize temporary water reclamation and reuse without a permit during periods of significant drought to conserve potable water supply.

**Substance**

*Please briefly identify and explain the new substantive provisions (for new regulations), the substantive changes to existing sections, or both where appropriate. (More detail about these changes is requested in the "Detail of changes" section.)*

The amendments to the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.) identified in the NOIRA included the following proposed changes:

<b>Proposed Change</b>	<b>Reason for Change</b>	<b>End Result</b>
a. Add provisions to allow design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health.	Applicants/permittees have requested exceptions to design or operational requirements of the regulation, but DEQ was unable to grant such exceptions or variances without the authority established in law or regulation.	Will give the agency flexibility to approve projects that may not conform to all design requirements of the regulation but are still protective of the environment and public health.
b. Add provisions for an emergency authorization to reclaim and reuse wastewater without a permit during periods of significant drought	VPDES permittee requested temporary emergency authorization to reuse reclaimed water during a severe drought without permit coverage. DEQ does not currently have the authority established in regulation to allow this.	Will provide DEQ flexibility to temporarily authorize reclamation and reuse of reclaimed wastewater without a permit during periods of significant drought.
c. Add a requirement for an auxiliary or backup plan for conjunctive wastewater treatment works and reclamation systems that rely primarily or completely on water reuse for elimination of wastewater	Needed to ensure combined wastewater treatment facilities and reclamation systems that (i) have no or limited options to manage wastewater other than water reclamation and reuse, and (ii) rely mostly on one or two major end users	Will help permittees under these circumstances to reduce their vulnerability to a crisis situation in the event that their primary end users of reclaimed water cease or fail.

Proposed Change	Reason for Change	End Result
	to take the majority of the reclaimed water, will have an auxiliary or backup plan to manage unused reclaimed water.	
d. Modify and add requirements to manage pollutants of concern from significant industrial users (SIUs) for reclamation systems and satellite reclamation systems that will produce Level 1 reclaimed water, and for reclamation systems that are part of an indirect potable reuse (IPR) project.	Needed to clarify and simplify requirements to manage pollutants of concern from SIUs for reclamation systems, and to provide similar but less comprehensive requirements for satellite reclamation systems also affected by pollutants of concern from SIUs. Also necessary to provide an additional barrier for the protection of public health where reclaimed water is produced for IPR.	Will simplify and allow greater flexibility in the management of pollutants of concern from SIUs for the purpose of producing Level 1 reclaimed water. Will ensure greater protection of public health where wastewater reclaimed for IPR has inputs from SIUs.
e. Add standards for UV disinfection to Level 1 and Level 2 reclaimed water standards with associated monitoring requirements.	Some of these standards are already used by the DEQ and would not change disinfection requirements for reclaimed water.	Will formalize DEQ's acceptance of ultraviolet disinfection (UV) standards for reclaimed water already contained in other state regulations (i.e., SCAT Regulations) and model national standards (i.e., NWRI UV Disinfection Guidelines for Drinking Water Reuse, 2 <sup>nd</sup> Ed., 2003).
f. Add or modify several terms and their associated definitions related to the use of these terms within the context of the regulation	Needed to reduce confusion or to provide new information regarding existing or proposed terms used in the regulation.	Will improve clarity and comprehension of the requirements in the regulation.
g. Modify language to clarify service agreement or contract requirements for end users of reclaimed water, and alternative permitting options for reclaimed water distribution systems.	Needed to (i) clarify vague or confusing language and requirements pertaining to service agreements or contracts between providers of reclaimed water and end users, and (ii) allow DEQ to issue a permit to reclaimed water distribution systems on a case-by-case basis under specific distribution system ownership and end user circumstances.	Will improve comprehension of existing regulatory requirements and will ensure that reclaimed water distribution systems are properly constructed, maintained and operated for the protection of the environment and public health.
h. Modify activities excluded from the requirements of the regulation related to alternative onsite sewage systems permitted by the Virginia Department of Health, utilization of harvested rainwater and storm water, and intentional indirect reuse of reclaimed water.	Needed to address or clarify the applicability of the regulation to VDH permitted alternative onsite sewage systems (AOSSs), reuse of harvested rainwater, reclamation & reuse of storm water, and intentional indirect reuse of reclaimed water proposed after the effective date of the amendment.	Will extend requirements of the regulation to all treatment works/reclamation systems capable of producing reclaimed water meeting the standards of 9VAC25-740, and to specific proposals of intentional indirect reuse of reclaimed water. Will also reduce confusion between the types of non-potable water reuses regulated by DEQ versus those regulated by other agencies (e.g., VDH and DCR).
i. Add the Water Withdrawal Reporting Regulation (9 VAC 25-200) to the list of other Board regulations with which the Water Reclamation and Reuse Regulation has a	Needed to explain the relationship between the Water Reclamation and Reuse Regulation and the Water Withdrawal Reporting Regulation. Would not add any new regulatory	Will clarify for industrial VPDES permittees with water withdrawals and implementing water reclamation and reuse that the affect of water reclamation and reuse on their

Proposed Change	Reason for Change	End Result
relationship	requirements.	annually reported withdrawals must be accounted for.
j. Modify the point of compliance (POC) for reclaimed water standards to include POCs for certain system storage facilities and reclaimed water distribution systems, in addition to POCs required for reclamation systems and satellite reclamation systems	Needed to verify that reclaimed water following specific system storage conditions and in the distribution system prior to delivery to end users, would continue to meet applicable standards.	Will allow the consistency, quality and safety of the reclaimed water for the protection of the environment and public health to be verified prior to reuse.
k. Add reclaimed water monitoring requirements for system storage that is either seasonal or greater than 24 hours with exceptions	Needed to address reclaimed water degradation during longer term storage to ensure environmental and public health protection.	Will verify the consistency, quality and safety of the reclaimed water for the protection of the environment and public health.
l. Add reclaimed water monitoring to maintenance requirements for reclaimed water distribution systems included in the Reclaimed Water Management plan	Needed to address reclaimed water degradation within the reclaimed water distribution system to ensure environmental and public health protection.	Will verify the consistency, quality and safety of the reclaimed water during distribution and prior to receipt by end users for the protection of the environment and public health.
m. Modify reuses listed in regulation to include "irrigation to establish erosion control" and move "ship ballast" to industrial reuses requiring a minimum of Level 1 reclaimed water	Needed to expand the list of approved reuses not requiring case-by-case approval by the DEQ and to make the minimum standard requirements for ship ballast reuse, which may involve a subsequent discharge, comparable to US Coast Guard proposed standards for ship ballast discharges within US waters.	Will reduce the time to review and approve reuse involving irrigation to establish erosion control, and will make reclaimed water standards required for ship ballast reuse consistent with federal requirements for ship ballast discharges.
n. Modify the description of unlisted reuses and add all reuses of reclaimed industrial wastewater that will require reclaimed water standards and monitoring requirements developed on a case-by-case basis.	Needed to expand the types of unlisted reuses of reclaimed water that may be approved by DEQ, and to clarify that the same process would be used to approve any reuse of reclaimed industrial wastewater.	Will allow a greater variety of reclaimed water reuses and will encourage more reuse of reclaimed industrial wastewater.
o. Add permit application, design, construction, and operation requirements that are specific to indirect potable reuse (IPR) projects.	Needed to clarify the minimum information required by DEQ to review IPR projects.	By establishing the minimum information required for an IPR project, this will, in most cases, expedite DEQ's process to review permit applications for IPR projects.
p. Add a provision that allows reclaimed water agents to inspect end users' reuses and storage facilities as part of the service agreement or contract between the reclaimed water agent and an end user	Although DEQ may inspect reuses and storage facilities of an end user, most end users will not be issued a permit by or have a relationship with DEQ. This modification provides reclaimed water agents the authority to inspect reuses and storage facilities of end users with whom they have a service agreement or contract.	Will allow reclaimed water agents to be more aware of and responsive to problems with end users, and to exercise more control in the management of reclaimed water within their service areas.
q. Add a requirement to place valves and outlets on reclaimed water distribution system pipelines that allow access or isolation of pipe sections for maintenance activities	Needed to allow greater access or isolation of reclaimed water distribution system sections to perform required maintenance.	Will improve maintenance and compliance with operational requirements of the regulation for reclaimed water distribution systems.
r. Modify cross-connection and	Needed to correct language that,	Will not result in any new cross-

Proposed Change	Reason for Change	End Result
backflow prevention requirements for reclaimed water distribution systems to be consistent with regulations of other state agencies (e.g., DHCD - Uniform Statewide Building Code)	according to the Dept. of Housing and Community Development, is incorrect or inconsistent with the Uniform Statewide Building Code.	connection and backflow prevention requirements for reclaimed water distribution systems.
s. Clarify that the requirement for reclaimed water distribution systems to maintain reclaimed water standards for intended reuses does not apply to Corrective Action Thresholds (CATs), which are operational standards for only reclamation systems and satellite reclamation systems.	Needed to eliminate unnecessary and confusing monitoring requirements for reclaimed water distribution systems.	Will improve applicability and implementation of the regulation related to reclaimed water distribution systems.
t. Modify Class I reliability requirements for Level 1 reclamation systems and satellite reclamation systems to include associated pump stations not addressed by the Sewage Collection and Treatment Regulations, 9 VAC 25-790.	Needed to ensure that all components of Level 1 reclamation systems, including pump stations, will perform reliably or will initiate other contingencies in the event of power failure or other disruption at the facility.	Will reduce the potential discharge of substandard reclaimed water to reuses, thereby providing an additional barrier to protect the environment and public health.
u. Add requirement prohibiting application of reclaimed water during winds that would cause overspray or aerosol drift into or beyond buffer zones of setbacks.	Needed to avoid potential adverse environmental and public health impacts that may be associated with overspray or aerosol drift from the application of reclaimed water, such as for irrigation. This proposed provision is consistent with the prohibition of reclaimed water runoff from irrigation sites currently in the regulation.	Will provide greater protection of the environment and public health for spray irrigation reuse of reclaimed water, thereby improving consumer confidence and acceptance for this reuse.
v. Make minor changes to:  (1) Clarify or make more specific the language of the regulation, (2) Eliminate redundancy, (3) Relate separate sections or subdivisions of the regulation, and (4) Correct grammatical and typographical errors.	Needed to ensure consistency with Virginia Register style guidelines for regulations, and to improve readability.	Will improve comprehension of requirements in the regulation.

The 17 members of the Regulatory Advisory Panel (RAP) with the assistance of technical support staff from DEQ; DCR and VDH discussed and considered several minor amendments and the following significant amendments to the Water Reclamation and Reuse Regulation:

- Including indirect non-potable reuse as an unlisted reuse;
- Prohibition on reclaimed water reuse inside domestic dwellings;
- Ultraviolet disinfection requirements for Level 1 and Level 2 reclaimed water;
- Monitoring and points of compliance for specific system storage facilities and reclaimed water distribution systems;
- Auxiliary or backup plan to manage wastewater;
- Design requirements for reclaimed water distribution systems to ensure proper maintenance;

- Reclaimed water distribution system maintenance to prevent unauthorized discharges and to recover flush water or reclaimed water for use or reuse;
- Reliability Class I for pump stations that are part of Level 1 reclamation systems and satellite reclamation systems;
- Reclaimed water agent (provider) inspection of end users' reuses and storage facilities;
- Identification, labeling and signage requirements for new reclaimed water distribution systems and for systems converted to reclaimed water distribution systems;
- No discharge requirement for all reclaimed water storage;
- Emergency authorization for the production, distribution or reuse of reclaimed water;
- Management of pollutants from significant industrial users;
- Permit application, design, construction and operation requirements for indirect potable reuse; and
- Notification of an application for water reclamation and reuse to owners of downstream water withdrawals

## Issues

*Please identify the issues associated with the proposed regulatory action, including:*

- 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;*
- 2) the primary advantages and disadvantages to the agency or the Commonwealth; and*
- 3) other pertinent matters of interest to the regulated community, government officials, and the public.*

*If the regulatory action poses no disadvantages to the public or the Commonwealth, please so indicate.*

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The proposed amendments are not expected to result in any disadvantages to the public, the regulated community, the agency or the Commonwealth. The proposal should have advantages for the regulated community and the agency through improved implementation of the program.

As stated in the NOIRA for this regulatory action, the Board studied the possible reuse of reclaimed water for groundwater recharge and presented its findings in a report to the RAP with points for discussion by the panel. Based on discussions of the RAP and comments received from individual RAP members, there appears to be general support by the RAP for groundwater recharge with reclaimed water for subsequent reuse. While DEQ appreciates the input of the RAP and recognizes the benefits of groundwater recharge with reclaimed water for reuse, the agency has determined that amendments to the Water Regulation and Reuse Regulation to address groundwater recharge should follow the establishment of a new or revised Board policy on groundwater recharge, and should be part of or follow a regulatory action to amend the Groundwater Regulations (9VAC25-280). Input received from the RAP will provide useful information to support these efforts in the future.

## Requirements more restrictive than federal

*Please identify and describe any requirement of the proposal which are more restrictive than applicable federal requirements. Include a rationale for the need for the more restrictive requirements. If there are no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.*

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While the US EPA has developed guidelines for water reuse, published most recently in 2004, there are no federal requirements for water reuse. Requirements of the proposed Water Reclamation and Reuse Regulation do include many of the EPA water reuse guidelines.

**Localities particularly affected**

*Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.*

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The proposed action is statewide in application and will not affect one locality more than another.

**Public participation**

*Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal, the impacts on the regulated community and the impacts of the regulation on farm or forest land preservation.*

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In addition to any other comments, the board/agency is seeking comments on the costs and benefits of the proposal, the potential impacts of this regulatory proposal and any impacts of the regulation on farm and forest land preservation. Also, the agency/board is seeking information on impacts on small businesses as defined in § 2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) probable effect of the regulation on affected small businesses, and 3) description of less intrusive or costly alternative methods of achieving the purpose of the regulation.

Anyone wishing to submit written comments may do so at the public hearing or by mail, email or fax to William Norris, Office of Regulatory Affairs, Department of Environmental Quality, 629 East Main Street, PO Box 1105, Richmond, Virginia 23218; e-mail address [william.norris@deq.virginia.gov](mailto:william.norris@deq.virginia.gov). Comments may also be submitted through the Public Forum feature of the Virginia Regulatory Town Hall web site at [www.townhall.virginia.gov](http://www.townhall.virginia.gov). Written comments must include the name and address of the commenter. In order to be considered comments must be received by the last date of the comment period.

A public hearing will be held and notice of the public hearing will appear on the Virginia Regulatory Town Hall website ([www.townhall.virginia.gov](http://www.townhall.virginia.gov)) and in the Virginia Register of Regulations. Both oral and written comments may be submitted at that time.

**Economic impact**

*Please identify the anticipated economic impact of the proposed new regulations or amendments to the existing regulation. When describing a particular economic impact, please specify which new requirement or change in requirement creates the anticipated economic impact.*

<p><b>Projected cost to the state to implement and enforce the proposed regulation, including (a) fund source / fund detail, and (b) a delineation of one-time versus on-going expenditures</b></p>	<p>Projected costs to the state resulting from these amendments to the regulation are anticipated to be negligible as this is a technical program that has been implemented through existing permit programs, specifically the Virginia Pollution Abatement (VPA) or Virginia Pollutant Discharge Elimination system (VPDES) permit programs. The program provides technical assistance to existing wastewater treatment facilities and/or a new reclamation systems or reclaimed water distribution system, interested in wastewater reclamation and /or reuse on a voluntary basis. To date, no significant costs have been incurred by the agency to annually implement the technical regulation.</p>
<p><b>Projected cost of the new regulations or changes to existing regulations on localities</b></p>	<p>Water reclamation and reuse is voluntary and each locality will have varying requirements and/or needs to implement water reuse. Thus, predicting the costs to localities could also vary widely. The majority of proposed amendments to the regulation will minimally change the cost to apply for a permit, and to construct, operate and maintain a water reclamation and reuse project for most localities.</p> <p>A proposed amendment requiring information to perform a cumulative impact analysis for a VPDES permitted wastewater treatment works or a sewage collection system proposing a new or increased diversion of source water to reclamation and reuse, may ultimately limit the amount of source water diverted by such facilities or systems under very limited conditions affecting minimum instream flow and downstream beneficial uses of the surface water to which treated source water would be discharged when not diverted to reclamation and reuse. Where the locality generates revenues from the sale of reclaimed water, reductions in the amount of source water that can be diverted to reclamation and reuse may have the potential to reduce revenues. However, such circumstances are anticipated to be rare, limited to severe droughts, and can be offset by collection and storage of source water or reclaimed water during non-drought conditions in anticipation of drought conditions.</p> <p>Another amendment that proposes to allow design or operational deviations or variances for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health may provide significant cost savings to localities. The savings realized by such variances will vary from project to project.</p>

<p><b>Description of the individuals, businesses or other entities likely to be affected by the new regulations or changes to existing regulations</b></p>	<p>Proposed amendments to this regulation will, in most cases, affect water reclamation systems, satellite reclamation systems and reclaimed water distribution systems that are both publicly and privately owned.</p> <p>While most end users of reclaimed water, including individuals and businesses, will not be affected by these amendments, end users most likely to see reduced economic impacts will be those owning non-system storage of reclaimed water, and irrigation distribution systems not under common ownership or management with reclamation systems, satellite reclamation systems or reclaimed water distribution systems providing reclaimed water to the irrigation distribution systems. A more detailed description of these impacts is provided under the section entitled "Regulatory flexibility analysis" of this document.</p>
<p><b>Agency's best estimate of the number of such entities that will be affected. Please include an estimate of the number of small businesses affected.</b> Small business means a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.</p>	<p>There are presently 23 facilities authorized by individual VPA permits and 1033 facilities authorized by individual VPDES permits that are capable of providing source water for and/or implementing water reclamation and reuse. Among the VPA permitted facilities, 13 are privately owned and may be considered small businesses. Among the VPDES permitted facilities, 299 are privately owned and may be considered small businesses. Seven water reclamation and reuse projects currently authorized by either a VPDES or VPA permit within the state provide reclaimed water to a variety of end users that range from small to large businesses for cooling, irrigation, fire suppression, toilet flushing, and car washing. While the need and demand for reclaimed water in Virginia is anticipated to grow, there is insufficient data and no clear trends to extrapolate the number and frequency of water reclamation and reuse projects that will be proposed, and the number and type of end users that will served by these projects.</p>
<p><b>All projected costs of the new regulations or changes to existing regulations for affected individuals, businesses, or other entities. Please be specific and do include all costs. Be sure to include the projected reporting, recordkeeping, and other administrative costs required for compliance by small businesses. Specify any costs related to the development of real estate for commercial or residential purposes that are a consequence of the proposed regulatory changes or new regulations.</b></p>	<p>Most proposed amendments to the regulation will result in no or minimal changes in cost for affected individuals, businesses and other entities. Amendments that may result in either an increase or decrease in cost to the same parties include the following:</p> <ol style="list-style-type: none"> <li>1. May reduce the cost of a project where the proposed variance procedures allow certain design, construction, operation or maintenance requirements contained in the regulation to be waived where approved by the board.</li> </ol>

	<p>2. Will increase costs for owners of alternative onsite sewage systems that are jointly permitted by DEQ and VDH to both reclaim and disposal of sewage onsite. Increased costs will result from the fee of a second permit and costs for additional monitoring, reporting and record keeping required for reclamation and reuse.</p> <p>3. May require monitoring, reporting and record keeping for certain system storage facilities and reclaimed water distribution systems where there is potential for reclaimed water in these facilities and systems to degrade below reclaimed water standards. The type and extent of this monitoring will be determined on a case-by-case basis, which may increase costs for reclamation systems and reclaimed water distribution systems.</p> <p>4. Will reduce the minimum capacity at which non-system storage of reclaimed water may be allowed to discharge (for storms greater than the 10-year, 24-hour storm), which then reduces construction and maintenance costs for these facilities.</p> <p>5. May increase costs for reclaimed water distribution systems depending on how the flush water from maintenance activities for these systems will be managed.</p>
<p><b>Beneficial impact the regulation is designed to produce.</b></p>	<p>Beneficial impacts anticipated by proposed amendments to the regulation are described: (1) under "End Result" for each amendment listed in the table provided in the section entitled "Substance", and (2) in the section entitled "Regulatory flexibility analysis" of this document.</p>

**Alternatives**

*Please describe any viable alternatives to the proposal considered and the rationale used by the agency to select the least burdensome or intrusive alternative that meets the essential purpose of the action. Also, include discussion of less intrusive or less costly alternatives for small businesses, as defined in §2.2-4007.1 of the Code of Virginia, of achieving the purpose of the regulation.*

The Board could take no regulatory action at this time and address implementation deficiencies of the Water Reclamation and Reuse Regulation in guidance. This would diminish the ability of the Board to effectively promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health, and would result in confusion to the public. Other amendments as discussed under "Need" of this document can not be addressed in guidance without a legal basis established in law or regulation, thereby precluding further opportunities to promote and encourage water reclamation and reuse contrary to the purpose of State Water Control Law stated in § 62.1-44.2.

## Regulatory flexibility analysis

*Please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.*

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Proposed amendments to the regulation will, in most cases, impact publicly owned treatment works, reclamation systems, satellite reclamation systems and reclaimed water distribution systems. Similar privately owned systems that are less common, may be impacted by the amendments to the regulation when considered a small business. End users of reclaimed water, which are more likely to include small businesses, would either be positively affected or minimally affected by amendments to the regulation.

The following proposed amendments to the regulation will accomplish the objects of the applicable law while minimizing the adverse impact on treatment works, reclamation systems, satellite reclamation systems, reclaimed water distribution systems and end users that are considered small businesses:

1. An amendment is proposed to add provisions that would allow design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health. For applicants/permittees, including small businesses, that previously requested exceptions to design or operational requirements of the regulation, DEQ was unable to grant such exceptions or variances without the authority established in law or regulation. This amendment will give the agency the authority and flexibility to approve projects that may not conform to all design requirements of the regulation but are still protective of the environment and public health.
2. An amendment is proposed to add provisions for an emergency authorization to reclaim and reuse wastewater without a permit during periods of significant drought. DEQ had in the past received requests to temporarily authorize emergency reuse of reclaimed water during severe droughts without permit coverage, but was unable to grant such authorization without the authority to do so established in regulation. The amendment will provide DEQ the authority and flexibility to temporarily authorize reclamation and specific reuses of reclaimed wastewater without a permit during periods of significant drought.
3. An amendment is proposed to simplify procedures for Level 1 reclamation systems to manage pollutants of concern from treatment works that provide source water to the reclamation system, have significant industrial users (SIUs), and are not required to have pretreatment programs. These treatment works will include privately owned facilities that may be considered small businesses.
4. An amendment is proposed to revise an existing design requirement that would allow non-system storage facilities of reclaimed water to discharge only in the event of a 10-year, 24-hour storm. Currently, all reclaimed water storage cannot discharge except in the event of a 25-year, 24-hour storm, requiring much more storage capacity. This amendment will have the greatest positive economic effect on end users of reclaimed water that must store the reclaimed water between periods of reuse, such as for irrigation (e.g., at golf courses), utilizing existing ponds that predate the design requirements of the current regulation.

5. An amendment is proposed that would exclude existing irrigation distribution systems converted to reclaimed water distribution systems from requirements to provide conversion plans, O&M manuals, and identification and notification for in-ground piping where the irrigation distribution systems are not under common ownership or management with reclamation systems, satellite reclamation systems or reclaimed water distribution systems providing reclaimed water to the irrigation distribution systems. This amendment will have the greatest positive economic effect on end users of reclaimed water with existing in-ground irrigation systems that predate design requirements of the current regulation.

**Public comment**

*Please summarize all comments received during public comment period following the publication of the NOIRA, and provide the agency response.*

During the public comment period for the NOIRA, one person submitted comments by electronic mail and one person submitted comments through the Virginia Regulatory Town Hall.

Below is a summary of comments received during the NOIRA public comment period for the proposed regulation:

Committer	Comment	Agency response
Bernard C. Nagelvoort – Lord Fairfax Soil and Water Conservation District	<p><b>Some potential economic and environmental benefits of reuse of BNR system effluents</b> - I do not find where current Wastewater Reclamation and Reuse Regulations provide specifically for the utilization of BNR system effluents on croplands during periods of drought or otherwise. Use of such effluents could contribute substantially to the utilization of fertilizers applied by farmers to grow crops. Such fertilizers underutilized because of drought may be lost to surface waters following the crop season during periods of substantial precipitation and runoff. At the same time, timely application of such irrigation water could further reduce the nitrogen and phosphorus otherwise being discharged directly to surface waters. Since dry periods are very common during the growing season in Virginia, crop production (read economic benefit) would also likely be substantially enhanced if the use of BNR quality effluent in this manner were to be encouraged by these regulations.</p> <p>Case in point: the pipeline being installed at the new Berryville BNR</p>	Comment taken into consideration by staff during development of the proposed amendments.

	<p>system now under construction will include potential withdrawal fixtures at certain locations. Farmer utilization of such treated wastewater suitable for discharge to the Shenandoah River could provide both an economic and an environmental benefit and should be encouraged by these regulations.</p>	
<p>Charles M. Murray, General Manager – Fairfax Water</p>	<p><u>Public Notice of Reclamation and Reuse Projects:</u> The current regulation, 9VAC25-740-40, allows DEQ to administratively authorize water reclamation and reuse projects through modification of VPDES permits. Fairfax Water respectfully requests that the regulation be modified to require all water reuse project applications be publicly announced and open for public comment before they are authorized by DEQ. Under the current regulation, there is no means for the public to identify which projects have a water reuse and reclamation component and provide comment.</p>	<p>Comment taken into consideration by staff during development of the proposed amendments.</p>
	<p><u>Downstream Notification:</u> The current regulation needs to be amended to require notice of any application for water reclamation or reuse to any water supplier that withdraws water downstream from the point of the proposed water reclamation and reuse project.</p>	<p>Comment taken into consideration by staff during development of the proposed amendments.</p>
	<p><u>Consumptive Use Impacts:</u> The regulations should be amended to require a cumulative impact analysis for discharging wastewater treatment facilities that plan to divert all or a portion of their discharge to water reclamation and reuse. The analysis needs to be performed as part of the initial planning for projects where water reclamation and reuse is being considered and must be done in consultation with downstream water suppliers. The downstream impacts must be comprehensively evaluated, and when appropriate, the regulations must include a requirement that the reuse system owner provide adequate water storage to mitigate the impact of consumptive use or</p>	<p>Comment taken into consideration by staff during development of the proposed amendments.</p>

	<p>eliminate the consumptive use during low-flow periods. Alternatively, the regulation could be modified to require the end-user to mitigate the impact or eliminate their consumptive use during periods of low-flow according to their contract.</p>	
	<p><u>Reclaimed Flow Water Monitoring:</u> Fairfax Water supports the provisions to add water flow monitoring requirements for reclaimed water distribution systems. We respectfully request that this information be included in water balance calculations required the reclaimed water management plan so that the amount of consumptive water use is clearly identified. This information should be included as part of the owner's annual reporting requirements and reflected in the local or regional Water supply Plan as appropriate.</p>	<p>Comment taken into consideration by staff during development of the proposed amendments.</p>
	<p><u>Emergency Authorization:</u> Fairfax Water is very concerned with the potential to add a provision to these regulations to allow emergency authorization to reclaim and reuse water without a permit during a period of drought. Emergency use of reclaimed water is not an appropriate substitute for adequate water supply planning. DEQ must not include provisions in this regulation that will increase the number of un-permitted water users, particularly during periods of drought. During these periods, the un-permitted diversion of water has the potential to significantly decrease both the water availability for downstream water suppliers and the reliability of flow and stream monitoring gages.</p>	<p>Comment taken into consideration by staff during development of the proposed amendments.</p>

As part of the public participation process, DEQ formed a Regulatory Advisory Panel (RAP) of stakeholders to assist in the development and consideration of the proposed amendments to the Water Reclamation and Reuse Regulation. A RAP consisting of representatives from the Upper Occoquan Service Authority; the VA AWWA/VWEA – Water Reuse Committee; New Kent County; Virginia Tech; the Williamsburg Environmental Group, Inc.; the Rappahannock River Basin Commission; the Virginia Department of Health; the Golf Course Superintendents Association; Malcolm Pirnie; the Alexandria Sanitation Authority and VAMWA; the Hampton Roads Sanitation District; Fairfax Water; the Virginia Manufacturers Association; the Virginia Association of Municipal Wastewater Agencies, Inc.; the Virginia Farm Bureau; the Hampton Roads Planning District Commission and Mission H<sub>2</sub>O met a total of four



times (April 21, 2011; May 2, 2011; June 2, 2011; and July 7, 2011) and with the help of technical support from DEQ; DCR and VDH staff reviewed and finalized the proposed amendments to the regulations.

**Family impact**

*Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one’s spouse, and one’s children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

It is not anticipated that this regulation will have a direct impact on the institution of the family or family stability.

**Detail of changes**

*Please detail all changes that are being proposed and the consequences of the proposed changes. If the proposed regulation is a new chapter, describe the intent of the language and the expected impact if implemented in each section. Please detail the difference between the requirements of the new provisions and the current practice or if applicable, the requirements of other existing regulations in place.*

*If the proposed regulation is intended to replace an emergency regulation, please list separately (1) all provisions of the new regulation or changes to existing regulations between the pre-emergency regulation and the proposed regulation, and (2) only changes made since the publication of the emergency regulation.*

For changes to existing regulations, use this chart:

<b>Section number</b>	<b>Description of Requirement</b>	<b>What has changed</b>	<b>Rationale for change</b>
10	Definition for beneficial use	Added new term, “Beneficial use”, and the definition for this term.	A definition for this term was added because it is used in proposed amendments to 9VAC25-740-50.B.
10	Definition of Class I reliability	Definition renamed "Reliability Class I" and moved.	Change was made to make terminology in 9VAC25-740 consistent with terminology in the Sewage Collection and Treatment Regulations (9VAC25-790) for two terms having essentially the same meaning.
10	Definition of Conjunctive system	Added new term, “Conjunctive system”, and the definition for this term. See also changes to definition of “Satellite reclamation systems”.	The definition of this term was removed from the definition of “Satellite reclamation system” as it now applies to facilities in addition to satellite reclamation systems mentioned in new subdivision 9VAC25-740-100.C.10.

Section number	Description of Requirement	What has changed	Rationale for change
10	Definition for corrective action threshold	Inserted "(CAT)" after "Corrective action threshold"	Change was made to acknowledge substitution of "corrective action threshold" with its acronym "CAT" where used in subsequent sections to reduce unnecessary text.
10	Definition for design flow	Added definition for existing term, "Design flow".	A definition for this term was needed as it is currently used in the regulation without a definition, and is subsequently used to define the new term "designated design flow".
10	Definition for designated design flow	Added new term, "Designated design flow", and the definition for the term.	This is a new term used in amendments to subdivisions 9VAC25-740-80.A.3.b, 4, 5.a and 5.b; 9VAC25-740-100.B.5.c; 9VAC25-740-110.C.8.a and 8.b (1), and 9VAC25-740-180.A; and was not previously defined in the regulation. This term distinguishes the design flow of reclamation systems from design flows of WWTFs typically at the same location, and is used to determine monitoring frequency for certain reclaimed water standards.
10	Definition for direct injection	Added new term, "Direct injection", and the definition for this term.	A definition for this term was added because it is currently used in the regulation without a definition and was needed to distinguish this method of groundwater recharge from other methods.
10	Definition for groundwater	Deleted the term "Ground water" and replaced with the word "groundwater" throughout the proposed amendments.	Change was made to be consistent with proposed amendments to 9VAC25-610 (Groundwater Withdrawal Regulation).
10	Definition for harvested rainwater	Added new term, "Harvested rainwater", and the definition for this term.	A definition for this term was added because it is used in proposed amendments to 9VAC25-740-50.A.
10	Definition for indirect non-potable reuse	Added new term, "Indirect non-potable reuse", and definition for this term.	A definition for this term was added because it is used in current amendments to 9VAC25-740-50.A.7 and 9VAC25-740-90.B, and was not previously defined in the regulation.
10	Definition for indirect potable reuse	Inserted "(IPR)" after "Indirect potable reuse", and	Change was made to acknowledge the substitution of "indirect potable reuse" with its acronym "IPR" in subsequent sections to reduce unnecessary text.
10	Definition for indirect reuse	Deleted definition of "indirect reuse". Term renamed "unintentional reuse" and revised to add "unintentional or unplanned" to the original definition.	Changes were made to reduce confusion of this term with indirect non-potable reuse" and "indirect potable reuse" and to further clarify the difference between indirect reuse and intentional indirect reuse in

Section number	Description of Requirement	What has changed	Rationale for change
			9VAC25-740-10.
10	Definition of "Nonbulk irrigation reuse"	Term revised to read "Non-bulk irrigation reuse".	Grammatical correction.
10	Definition of "Nonpotable water"	Term revised to read "Non-potable water".	Grammatical correction.
10	Definition of "Nonsystem storage".	Term revised to read "Non-system storage".	Grammatical correction.
10	Definition for nutrient management plan (NMP)	Revised term to read "Nutrient management plan" or "NMP".	Change was made to be consistent with Virginia Register style guidelines for regulations.
10	Definition for point of compliance	Added an acronym "POC" to the definition and thereafter replaced the term "point of compliance" with "POC" in most places where the term appears throughout the regulation.	Changes were made to minimize unnecessary text throughout the regulation and to improve readability.
10	Definition for reclamation	Deleted definition. Moved term and associated definition to follow definition for "Reclaimed water distribution system".	Change was made to arrange terms that are defined in alphabetical order.
10	Definition for reclamation system	Deleted definition. Moved term and associated definition to follow relocated definition for "Reclamation".	Change was made to arrange terms that are defined in alphabetical order.
10	Definition for reclaimed water	Revised definition of "reclaimed water" to additionally exclude harvested rainwater and stormwater. Added new terms, "Harvested rainwater" and "Stormwater", and definitions for these terms.	Use or reuse of gray water and harvested rainwater is or will be subject to guidelines developed by VDH pursuant to §32.1-248.2. The reclamation and reuse of stormwater will be subject to regulations developed by DCR pursuant to §10.1-603.4. Therefore, the definition of reclaimed water for the purposes of this regulation was revised to exclude harvested rainwater and stormwater in addition to gray water.
10	Definition of reclamation	Added term "reclamation" and associated definition from previous location in definition listing.	Change was made to arrange terms that are defined in alphabetical order.
10	Definition of	Added term "reclamation"	Change was made to arrange terms

Section number	Description of Requirement	What has changed	Rationale for change
	reclamation system	system" and associated definition from previous location in definition listing.	that are defined in alphabetical order.
10	Definition of "Reliability Class I	Changed "Class I reliability" to "Reliability Class I" and added a statement indicating that the definition of Reliability Class I in 9VAC25-740 is in addition to but does not supersede the definition of the same term used in 9VAC25-790.	Change was made to make terminology in 9VAC25-740 consistent with terminology in the Sewage Collection and Treatment Regulations (9VAC25-790) for two terms having essentially the same meaning.
10	Definition for reuse or water reuse	Inserted phrase "an indirect non-potable reuse," after "an indirect potable reuse," in the definition.	Change was made to ensure that all requirements of the regulation that apply to reuse or water reuse, would apply to intentional indirect reuse.
10	Definition of restricted access	Revised definition of "restricted access" to correct the term "nonpotable" to read "non-potable".	Grammatical correction.
10	Definition for satellite reclamation system	(1) Added an acronym "SRS" to the definition and thereafter replaced the term "satellite reclamation system" with "SRS" in most places where the term appears throughout the regulation. (2) Deleted "wastewater treatment works and reclamation" after "conjunctive".	(1) Change was made to minimize unnecessary text throughout the regulation and to improve readability. (2) Change was made to eliminate the definition of "conjunctive system" within the definition of "satellite reclamation system". See change regarding the addition of "conjunctive system" to 9VAC25-740-10.
10	Definition for significant industrial user	Added definition and acronym "SIU" for the term "significant industrial user" currently used in the regulation. Thereafter, replaced the term "significant industrial user" with "SIU" and deleted duplicate definitions of the term in most places where it appeared throughout the regulation.	Changes were made to minimize unnecessary text and to improve readability.
10	Definition for source water	Added definition for existing term, "Source water".	A definition for this term was needed as it is currently used in the regulation without a definition.
10	Definition for stormwater	Added the term "stormwater" and associated definition.	A definition for this term was needed as it is currently used in the regulation without a definition.
10	Definition of surface waters	Replaced the phrase "ground water" with the term "groundwater".	Change was made to be consistent with proposed amendments to 9VAC25-610 (Groundwater Withdrawal Regulation).
10	Definition of system storage	Replaced the phrase "satellite reclamation system" with the	Change was made to minimize unnecessary text throughout the

Section number	Description of Requirement	What has changed	Rationale for change
		acronym "SRS".	regulation and to improve readability.
10	Definition for Total Maximum Daily Load or TMDL	Added new term with acronym, "Total Maximum Daily Load" and "TMDL", and the definition of this term.	A definition for this term was added because it is used in newly proposed subsection 9VAC25-740-90.C.
10	Definition for underground aquifer	Added new term, "Underground aquifer", and the definition for this term.	A definition for this term was added because it is currently used in the regulation without a definition and describes a specific type of groundwater recharge excluded from the requirements of the regulation.
10	Definition for unintentional reuse	Added term "unintentional reuse" and the definition for this term. Previously included as "indirect reuse".	Changes were made to reduce confusion of this term with indirect non-potable reuse" and "indirect potable reuse" and to further clarify the difference between indirect reuse and intentional indirect reuse in 9VAC25-740-10.
10	Definition of unrestricted access	Replaced the term "nonpotable" with the term "non-potable".	Grammatical correction.
10	Definition for Virginia Pollution Abatement (VPA) Permit	Revised definition of "Virginia Pollution Abatement (VPA) Permit" to read "Virginia Pollution Abatement Permit" or VPA Permit".	Change was made to be consistent with Virginia Register style guidelines for regulations.
10	Definition for Virginia Pollutant Discharge Elimination System (VPDES) Permit	Revised definition of "Virginia Pollutant Discharge Elimination (VPDES) Permit" to read "Virginia Pollutant Discharge Elimination System Permit" or "VPDES Permit".	Change was made to be consistent with Virginia Register style guidelines for regulations.
10	Definition of water reclamation	Replaced the phrase "water carried" with the term "water-carried".	Grammatical correction.
10	Definition for waterworks	Added new term, "Waterworks", and definition for this term.	A definition for this term was added because it is used in new subsection 9VAC25-740-100.D and subdivisions 9VAC25-740-170.A.2.a (2) (a) and 9VAC25-740-170.A.2.b (2), and was not previously defined in the regulation. The definition is that contained in the VDH Waterworks Regulations (12VAC5-590) for the same term.
30, subdivision B 2	Applicability and transition of the regulation, and application requirements for existing permitted facilities	Deleted hanging bracket.	Grammatical correction.

Section number	Description of Requirement	What has changed	Rationale for change
30, subdivision B 3	Applicability and transition of the regulation, and application requirements for existing permitted facilities	Revised the language in subdivision B.3 as follows: <del>“Minor modification</del> <u>Modification of a VPA or VPDES permit or the issuance of an administrative authorization associated with a VPDES permit described in subdivisions 1 and 2 B 1 and B 2 of this subsection, shall require an application for a water reclamation and reuse project in accordance with 9VAC25-740-100.”</u>	Changes were made: (i) to acknowledge that a permit application as described in 9VAC25-740-100 shall be required for all modifications (minor or major) of VPA or VPDES permits, in addition to administrative authorizations associated with VPDES permits; and (ii) to eliminate unnecessary and confusing language.
40, subsection B	Permitting requirements	Added the acronym "SRS" in the first sentence and then replaced the phrase "satellite reclamation system" throughout the remainder of the subdivision.	Change was made to minimize unnecessary text throughout the regulation and to improve readability.
40, subsection C	Permittee requirements for service agreements or contracts with end users	(1) Inserted at beginning of subsection “Each end user shall enter into a service agreement or contract with all reclaimed water agents from which the end user receives reclaimed water prior to receipt of such water.” (2) Deleted the phrase "of reclaimed water" in the second sentence. (3) Replaced “permittee” with “reclaimed water agent” throughout the definition. (4) Added the word "the" before the phrase "service agreements or contracts" in the second sentence. (5) Added at end of subsection “unless affected by a permit issued to an end user as described in subsection F of this section.”	(1) Change was made to clarify that a service agreement or contract with a reclaimed water agent is not optional for end users. (2) Phrase deleted to clarify requirements and to improve readability. (3) Not all reclamation and reuse permittees are reclaimed water agents that distribute reclaimed water to end user. This change was made to clarify that end users must have a service agreements or contract with a reclaimed water agent instead of a permittee. (4) Grammatical correction. (5) Change was made to acknowledge that it may not be necessary for an end user to have a service agreement or contract with a reclaimed water agent where the DEQ has permitted the end user.
40, subsection D	Permitting requirements	(1) Replaced the word "shall" with "may". (2) Added the phrase "or contract" after "provided a service agreement".	(1) Clarification of requirements - Change was made to acknowledge circumstances where DEQ may need to issue a permit to reclaimed water distribution systems described in 9VAC25-740-40.D due, for example, to environmental or public health issues resulting from the construction, operation or maintenance of the system. (2) Clarification that either a service

Section number	Description of Requirement	What has changed	Rationale for change
			agreement or a contract could be used to satisfy the requirements and to be consistent with current practices.
40, subsection E	Alternative permitting option for reclaimed water distribution systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Change was made to minimize unnecessary text throughout the regulation and to improve readability.
40, subsection F	Alternative permitting option for reclaimed water distribution systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Change was made to minimize unnecessary text throughout the regulation and to improve readability.
45, subsections A through F	Emergency authorization for the production, distribution or reuse of reclaimed water	Inserted new section 9VAC25-740-45 that describes circumstances under which the board (or DEQ) can issue an emergency authorization, projects that are or are not eligible for emergency authorization, VPDES or VPA permit application requirements following the issuance of an emergency authorization, the effective duration of the emergency authorization and public participation requirements for an emergency authorization.	Change was made to allow the production, distribution and reuse of reclaimed water without a permit when the board finds that due to drought there is insufficient public water supply that may result in a substantial threat to public safety
50, subsection A	Exclusions from 9VAC25-740	Moved the last sentence within 9VAC25-740-50 A to the first paragraph of the subsection	Change was made to eliminate a hanging sentence, thereby improving organization and readability of subsection.
50, subdivision A.1	Exclusions for activities permitted by the VDH	(1) Inserted "(VDH)" after "Virginia Department of Health". (2) Added "This exclusion does not apply to alternative onsite sewage systems defined in 12VAC5-613 with an average daily sewage flow in excess of 1,000 gallons per day that are concurrently permitted by the board and VDH to allow sewage reclamation and reuse in addition to on-site sewage treatment and disposal."	(1) Because the Virginia Department of Health is mentioned more than once in the same paragraph, the acronym for the Virginia Department of Health (VDH) was added to make the language concise. (2) Other language was added to allow DEQ and VDH to jointly permit alternative onsite sewage systems (AOSSs) that are capable of producing reclaimed water suitable for reuses in accordance with 9VAC25-740. The VDH Regulations for AOSSs (12VAC5-613) do not have provisions for the reclamation and reuse of domestic wastewater or sewage.
50, subdivision A.2	Exclusion for utilization of gray water	Added to exclusion utilization of harvested rainwater and stormwater.	Use or reuse of gray water and harvested rainwater is or will be subject to guidelines developed by

Section number	Description of Requirement	What has changed	Rationale for change
			VDH pursuant to §32.1-248.2. The reclamation and reuse of stormwater will be subject to regulations developed by DCR pursuant to §10.1-603.4. Therefore, the reclamation and/or reuse of harvested rainwater and stormwater should not be addressed by this regulation and were excluded in 9VAC25-740-50.A.2.
50, subdivision A 3	Exclusions and prohibitions	Replaced the term "nonpotable" with "non-potable" throughout the subdivision.	Grammatical correction.
50, subdivision A.7	Exclusion for unintentional reuse with the exception of indirect potable reuse projects after 10/1/08	Changed "Indirect" to "Unintentional" and added "and indirect non-potable reuse projects proposed after <b>[effective date of amended regulation]</b> ".	Changes were made to be consistent with changes to the term "Indirect reuse" under Section 10 and to clarify that indirect non-potable reuse projects, as defined in the regulation, will not be excluded in the future from the requirements of the regulation.
50, subdivision A 9	Exclusions and prohibitions	Deleted the last sentence within 9VAC25-740-50 A. Sentence moved to first part of 9VAC25-740-50 A.	Change was made to eliminate a hanging sentence, thereby improving organization and readability of subsection.
50, subdivision B 2	Prohibition for reuse of reclaimed water inside a residential or domestic dwelling or a building containing a residential or domestic unit	Revised language as follows: <del>"The reuse of reclaimed water for any purpose inside a residential or domestic dwelling or a building containing a residential or domestic unit distributed to one or two family dwellings. This prohibition does not apply to reuses of reclaimed water outside of and on the same property as one or two family dwellings where the reclaimed water is not distributed to such reuses by way of plumbing within the dwellings;"</del>	Changes were made to: (i) narrow the type of dwellings (i.e., to single family homes, townhouses and duplexes) that would be subject to this prohibition in order to be consistent with Virginia's Uniform Statewide Building Code, and (ii) clarify circumstances where the prohibition would not apply to reuses of reclaimed water outside of and on the same property of one or two family dwellings.
50, subdivision B 6	Prohibitions.	Insert the word "and" at the end of the subdivision.	Change made to add an subdivision to subsection B.
50, subdivision B 7	Prohibition for significant adverse impacts to downstream beneficial uses resulting from the diversion of VPDES permitted	Added new prohibition under subdivision B.7 as follows: "7. Reduction of the discharge from a VPDES permitted treatment works due to diversion of source water flow for reclamation and reuse such that the	Change was made to protect beneficial uses in proximity of and reliant upon the discharge of a treatment works from significant adverse impacts resulting primarily from reduced flow where the treatment works or a sewage collection system providing influent to



Section number	Description of Requirement	What has changed	Rationale for change
	discharges to reclamation and reuse	physical, chemical or biological properties of the receiving state waters are affected in a manner that would cause a significant adverse impact to other beneficial uses.”	the treatment will divert all or a portion of its discharge or flow to reclamation and reuse.
55, subsections A through G	Procedures to grant variances from design, construction, operation or maintenance requirements of the regulation	Inserted new section 9VAC25-740-55 that allows variances for design, construction, operation or maintenance requirements of this regulation. This section describes circumstances for which a variance may be considered, information to be included in an application for a variance, period within which the board must act on a variance request, minimum factors to be considered by the board when acting upon a variance request, the board's disposition of a variance request, effective date of a variance request when granted, variance non-transferability and incorporation into the project permit, and circumstances where variance procedures contained in the SCAT Regulations (9VAC25-790) may apply in lieu of the variance procedures contained in this regulation.	Change was made to give the regulation greater flexibility where the design, construction, operation or maintenance of a water reclamation and reuse proposal may not conform to specific requirements of the regulation but will still be protective of the environment and public health.
60, subsections A and B	Brief descriptions of VPA and VPDES Permit Regulations (9VAC25-32 and 9VAC25-31, respectively) as they relate to the Water Reclamation & Reuse Regulation	(1) In subsection A, revised language of second sentence as follows: <del>“While any</del> <u>Any</u> treatment works treating domestic, municipal or industrial wastewater that produces reclaimed water or a facility that distributes reclaimed water in a manner that does not result in a discharge to surface waters <del>is required to</del> <u>shall</u> obtain a VPA permit, <del>this chapter prescribes design</del> <u>Design</u> , operation and maintenance standards <u>prescribed by this chapter</u> for water reclamation and <del>water reuse. These</del>	(1) Changes were made to improve the grammar and readability of the two subsections, and do not change any requirements of the regulation. (2) Changes were made to better clarify what facilities related to water reclamation and reuse would need a VPDES permit.

Section number	Description of Requirement	What has changed	Rationale for change
		<p><del>requirements shall be incorporated into the VPA permit application and the VPA permit when applicable. Water reclamation and reuse requirements contained in a VPA permit shall be enforced through existing enforcement mechanisms of the VPA permit.</del></p> <p>(2) In subsection B, made similar changes to those in subsection A, except that "VPDES" rather than "VPA" was deleted in the last sentence. Also changed the 2<sup>nd</sup> sentence as follows:  <del>" While any Any treatment works treating domestic, municipal or industrial wastewater that produces reclaimed water and has a discharge to a surface, or a facility that distributes reclaimed water in a manner that results in distribution system that has a discharge to surface waters is required to shall obtain a VPDES permit, this chapter prescribed design.</del> Design, operation and maintenance standards for water reclamation and reuse. <del>These requirements shall be incorporated into the VPDES permit...existing enforcement mechanisms of the VPDES permit".</del></p>	
60, subsection G	Brief description of Water Withdrawal Reporting Regulation (9VAC25-200) as it relates to the Water Reclamation & Reuse Regulation	Added Water Withdrawal Reporting Regulation to list of other DEQ regulations with a relationship to the Water Reclamation & Reuse Regulation.	Language was added to identify and describe the existing relationship between the Water Reclamation and Reuse Regulation and the Water Withdrawal Reporting Regulation.
Part II	Reclaimed Water Standards, Monitoring Requirements and Reuses	Inserted "Treatment" before "Standards" in the title of Part II.	Change was made to acknowledge that Part II of the regulation, specifically 9VAC25-740-70 under Part II, contains treatment requirements in addition to standards for reclaimed water.

Section number	Description of Requirement	What has changed	Rationale for change
70	Standards for reclaimed water	Revised title of section to "Treatment and standards for reclaimed water".	Change was made to acknowledge that Part II of the regulation, specifically 9VAC25-740-70 under Part II, contains treatment requirements in addition to standards for reclaimed water.
70, subsection A	Treatment and standards for reclaimed water	(1) Added "Treatment" before "Standards" in the title of 9VAC25-740-70 subsection A (2) Placed the treatment and standards for reclaimed water described under subsection A into a table "Table 70-A", including footnotes. Asterisks for footnotes were replaced with numbers. (3) Changed the "TSS" standard for Level 2 reclaimed water to "Total Suspended Solids (TSS)"	(1) Change was made to acknowledge that 9VAC25-740-70 and subsection A of this section contain treatment requirements in addition to standards for reclaimed water. (2) Changes were made to improve organization and readability of information in this subsection. (3) Change was made to be consistent with other terms having acronyms in the table.
70, subdivision A.1.f	Turbidity standard for Level 1 reclaimed water	Added a new footnote notation "6" to the Turbidity standard for Level 1 and inserted a corresponding footnote below Level 1 and 2 standards that states "Where ultraviolet radiation will be used for disinfection of Level 1 reclaimed water, other turbidity standards may apply in accordance with 9VAC25-740-110 A 2 a."	Change was made in relation to the addition of new UV disinfection requirements to 9VAC25-740-110 A allowing the board to authorize lower UV disinfection dosages for Level 1 reclaimed and to develop, as needed and on a case-by-case, reclaimed water turbidity standards and UV transmittance requirements for the specific UV disinfection process.
70, subdivision B 1	Point of compliance for reclaimed water standards	(1) Added subdivision notation; (2) In subdivision B.1 – (i) inserted "(POC)" after "point of compliance" in first line of subsection and replaced "point of compliance" with "POC" throughout B.1; (ii) revised first sentence to read: " <del>Excluding the turbidity standard for Level 4 treatment, reclaimed</del> <u>Reclaimed water produced by reclamation systems and SRSs for reuse shall meet all other applicable standards in accordance with this chapter, excluding the turbidity standard for Level 1 treatment, at the point of compliance-POC.</u> " and (iii) added a sentence regarding	(1) Change made to account for the addition of a new subdivision and to improve readability. (2) Changes were made to (i) reduce unnecessary text, and (ii) clarify that the POC for the TRC reclaimed water standard and the monitoring location for TRC specified in 9VAC25-740-80.A.2, are the same.

Section number	Description of Requirement	What has changed	Rationale for change
		the POC for the TRC standard where chlorination is used for disinfection.	
70, subdivision B 2	Point of compliance for reclaimed water standards	Added subdivision B.2 describing POC requirements for system storage facilities and reclaimed water distribution systems when reclaimed water monitoring is required by the board for these facilities, and identifying where information on the POCs must be maintained by the permittee.	Change was made to establish locations for new monitoring requirements where deemed necessary by the board in accordance with new subsection 9VAC25-740-80.D for certain system storage facilities, and amended subdivision 9VAC25-740-100.C.1.h for reclaimed water distribution systems.
70, subdivision C 3	Reclaimed water that fails to comply with the standards	Deleted hanging bracket and added subdivision reference.	Grammatical correction and clarification of requirements.
70, subsection D	Additional or different reclaimed water treatment or standards	Revised language as follows: <u>Treatment or standards other than or in addition to the treatment and standards of 9VAC25-740-70 in subsection A of this section</u> may be necessary based on the quality and character of the wastewater to be reclaimed or the intended reuse or reuses of the reclaimed water. Such alternative or additional treatment <u>or standards</u> may be exempt from this chapter unless required by the board to protect public health and the environment.	Change was made to acknowledge that there may be acceptable alternatives to some of the reclaimed water treatment standards (e.g., COD or TOC in lieu of BOD <sub>5</sub> or CBOD <sub>5</sub> ) in addition to alternative or other treatment that should be allowed. Change regarding reference to 9VAC25-740-70 A was made to be consistent with Virginia Register style guidelines for regulations.
80, subdivisions A.1 and A.2	Reclaimed water monitoring requirements for turbidity and residual disinfectants	Created additional subdivisions 9VAC25-740-80.A.1 a and 1 b, and subdivisions 9VAC25-740-80.A.2.a (1) and (2) with minimal change to text.	Changes were made to eliminate hanging paragraphs and to be consistent with Virginia Register style guidelines for regulations.
80, subdivisions A.2.b, A.3 and A.4.a and b	Reclaimed water monitoring requirements for residual disinfectants; BOD <sub>5</sub> , TSS, and CBOD <sub>5</sub> ; and bacteria	Inserted "designated" before "design flow".	Changes were needed to distinguish design flow of a reclamation system from the design flow of a WWTF. See also changes to Section 10 regarding the addition of a new term, "Designated design flow", and the definition for the term.
80, subdivision A.2.b	Reclaimed water monitoring requirements for residual	Revised language as follows: "For chemical disinfectants other than TRC, monitoring shall be provided at the point	Change was made to better clarify POC monitoring requirements for chemical disinfectants other than TRC.

Section number	Description of Requirement	What has changed	Rationale for change
	disinfectants	of compliance <del>monitoring in accordance with 9VAC25-740-70 B</del> .	
80, subdivision A.3	Reclaimed water monitoring requirements for reuse – Sampling for residual disinfectants; BOD <sub>5</sub> , TSS, and CBOD <sub>5</sub> ; and bacteria	Inserted “designated” before “design flow”.	Change was needed to distinguish design flow of a reclamation system from the design flow of a WWTF.
80, subdivision A.4.a and Table 80-A	Sampling for fecal coliform, E. Coli and enterococci	(1) Deleted “following” and inserted “provided in Table 80-A” after “frequencies”. (2) Labeled table as “Table 80-A” and incorporated footnotes below table into the table. (3) Moved and consolidated paragraph below the table with the paragraph above the table.	(1) Change was made to be consistent with other changes made in the regulation when referencing information contained in tables. (2) Change was made to conform to Virginia Register style guidelines and to be consistent with other tables in the regulation. (3) Change was made to improve continuity and readability of information provided in this subdivision.
80, subdivision A.4.b	Sampling for fecal coliform, E. Coli and enterococci	In first sentence, inserted “designated” before “design flow”.  In second sentence, replaced “section” with “subsection”.	Change was needed to distinguish design flow of a reclamation system from the design flow of a WWTF.  Change was made to be consistent with Virginia Register style guidelines for regulations.
80, subsection D	Reclaimed water monitoring for specific system storage facilities	Inserted the following new paragraph as subsection D and changed existing subsection D to E: “Monitoring of reclaimed water held in system storage for a period greater than 24 hours at a reclamation system or SRS may be required by the board where the system storage facility discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse; and conditions exist at the facility to degrade the reclaimed water to a quality failing to comply with applicable minimum reclaimed water standards for the intended reuses of that water. When monitoring of reclaimed water in or from system storage is	Change was made to address reclaimed water monitoring that may be required for specific system storage facilities where there is potential for the quality of the water to degrade below minimum reclaimed water standards in storage and prior to discharge to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.

Section number	Description of Requirement	What has changed	Rationale for change
		required, monitoring parameters and frequencies shall be determined by the board on a case-by-case basis.”	
80, subsection E	Reclaimed water monitoring for specific system storage facilities	Revised 80, subsection D to read 80, subdivision E.	Revised to account for the addition of a new subsection.
90, subsection A, subdivisions A.1 through A.6, and footnotes a through k	Minimum standard requirements for reuses of reclaimed water within specific reuse categories	<p>(1) In subsection A, replaced “as follows:” with “provided in Table 90-A.”</p> <p>(2) In subsection A, labeled table as “Table 90-A Minimum Standard Requirements for Reuses of Reclaimed Water” and incorporated footnotes below table into the table.</p> <p>(3) For listed reuses in subdivision A.1 (Urban – Unrestricted Access Reuse Category), deleted references to “non-residential”, “in non-residential buildings” and “domestic or residential”, and added a footnote notation “b” to “Toilet Flushing”, “Fire fighting or protection and fire suppression” and “Outdoor reuse”.</p> <p>(4) Inserted corresponding footnote “b” that prohibits these reuses “where they would involve the distribution of reclaimed water to a one or two family dwelling in order to occur.”</p> <p>(5) In subdivision A.5 (Construction Reuse Category), added new reuse – “Irrigation to establish vegetative erosion control” with footnote notation “g”.</p> <p>(6) Inserted corresponding footnote “g” that describes irrigation requirements applicable to this reuse and minimum standard requirements of subsection 90.A that may apply if irrigation of the site with reclaimed water continues following construction</p>	<p>(1) Change was made to be consistent with other changes made in the regulation when referencing information contained in tables.</p> <p>(2) Change was made to conform to Virginia Register style guidelines and to be consistent with other tables in the regulation.</p> <p>(3) Changes were made in relation to changes made to 9VAC25-740-50.B.2.</p> <p>(4) Change was made to be consistent with the prohibition of reclaimed water reuse in accordance with 9VAC25-740-50.B.2</p> <p>(5) Change was made to avoid unnecessary case-by-case development of standards and monitoring requirements for a reuse that would have minimum standards and management requirements similar to other types of irrigation reuse listed in 9VAC25-740-90.A.</p> <p>(6) New footnote clarifies that although this particular irrigation reuse falls under the Construction Reuse Category due to its initial relationship to construction, it can change to another Reuse Category upon construction completion and continued irrigation reuse at the site.</p> <p>(7) A comparison of the reclaimed water bacteria standards in the Water Reclamation and Reuse Regulation with the US Coast Guard’s proposed “Standards for Living Organisms in Ships’ Ballast Water Discharged in U.S. Waters” (Fed. Register, Vol. 74, No. 166, 8/28/09), indicated that Level 2 reclaimed water would not meet the Coast Guard’s standards if adopted, while Level 1 would. For consistency, it is likely that EPA will at some point include standards similar to those of the Coast Guard in the</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>completion.                      (7) In subdivision A.6 (Industrial Reuse Category), moved "Ship ballast" to industrial reuses requiring a minimum of Level 1 reclaimed water and added a footnote notation "h".                      (8) Inserted corresponding footnote "h" that states "Reuse of reclaimed water for ship ballast shall also comply with applicable federal regulations and standards governing the use and discharge of ship ballast."                      (9) Reversed the order of former footnotes "d" and "e".                      (10) Following the addition of new footnotes "b", "g" and "h", relabeled footnote notations in subdivisions A.1 through A.6 and relabeled corresponding footnotes.</p>	<p>NPDES Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels. Therefore, EPA recommended that Level 1 reclaimed water be required for ship ballast instead of Level 2.                      (8) This footnote was added to acknowledge that the use of reclaimed water for ship ballast may be subject to federal regulations under agencies such as the US EPA and the US Coast Guard.                      (9) Change in footnote sequence corresponds with changes to footnote notations in subdivisions A.3 and A.4.                      (10) Changed were made to ensure that footnote notations and corresponding footnotes were labeled according to the new sequence in which they appeared in subdivisions A.1 through A.6.</p>
90, subsection B	Establishing reclaimed water standards and monitoring requirements for reuses not listed in the regulation	<p>Revised language as follows: For any type of reuse not <del>addressed in this chapter</del> listed in subsection A, including, but not limited to, indirect potable reuse and below-ground drip irrigation reuse, that is newly proposed after October 1, 2008, <u>indirect non-potable reuse that is newly proposed after <b>[effective date of amended regulation]</b>; or any reuse of reclaimed industrial wastewater, including reuses listed in subsection A of this section</u>, the board may prescribe specific reclaimed water standards and monitoring requirements needed to protect public health and the environment.</p>	<p>Changes were made to:                      (1) More concisely define the scope of reuses to which subsection B applies.                      (2) Recognize indirect non-potable reuse as an unlisted reuse that may require reclaimed water standards and monitoring requirements developed on a case-by-case basis. This change is also consistent with changes to 9VAC25-740-50.A.7, which eliminates the exclusion of indirect non-potable reuse from the requirements of the regulation.                      (3) Recognize the need to develop reclaimed water standards and monitoring requirements on a case-by-case basis for listed reuses of reclaimed industrial wastewater consistent with 9VAC25-740-90.A, as well as for unlisted reuses of reclaimed industrial wastewater.</p>
90, subsection C	Minimum standard requirements specific to indirect potable reuse	<p>Added new subsection C for exclusively indirect potable reuse (IPR). Subdivisions C.1 through C.5 require for each IPR project:                      (1) A multiple barrier approach to be implemented through all stages of and</p>	<p>Changes were made to identify and describe in more detail the minimum items required for an IPR project to ensure protection of the environment and public health as affected by this reuse.</p>

Section number	Description of Requirement	What has changed	Rationale for change
		described in the permit application for the project; (2) Compliance by the reclamation system of the project to meet reclaimed water standards and other applicable water quality standards; (3) Re-evaluation of public health risks and standards imposed on the reclamation system of the project with each reissuance of the permit issued to the reclamation system; (4) Specific reliability requirements for reclamation systems and associated pump stations; (5) Pretreatment programs or programs equivalent to pretreatment programs for VPDES permitted treatment works with significant industrial users that provide source water for reclamation and subsequent IPR, if required in accordance with 9VAC25-740-150.E.	
100, subsection A	Application for permit.	Added the acronym "SRS" to first sentence.	Revised to be consistent with proposed regulatory language and previous edits.
100, subsection B	General information required to permit a reclamation system or reclaimed water distribution system.	1. Moved the last sentence within 9VAC25-740-100 B to the first paragraph of the subsection. 2. Inserted a subsection designation to the last sentence of the paragraph.	1. Change was made to eliminate a hanging sentence, thereby improving organization and readability of subsection. 2. Clarification of requirements.
100, subdivision B 3	Information on wastewater treatment works diverting source water to a reclamation system	In subdivision B 3, deleted "effluent or" before "source water".	Changes were made to eliminate terminology that is redundant of and captured by "source water" within the same sentences.
100, subdivision B 3 b	Information on wastewater treatment works diverting source water to a reclamation system	Replaced the phrase "significant industrial users defined in 9VAC25-31-10" with the acronym "SIUs".	Correction made to be consistent with other changes made in the proposed regulations.
100, subdivision B 3 c	Information on wastewater treatment works	In subdivision B 3 c, deleted "effluent or" before "source water".	Changes were made to eliminate terminology that is redundant of and captured by "source water" within the



Section number	Description of Requirement	What has changed	Rationale for change
	diverting source water to a reclamation system		same sentences.
100, subdivision B 4	Information regarding the sewage collection system that diverts or will divert sewage to the satellite reclamation system	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	To be consistent with changes made throughout the regulation.
100, subdivision B 4 b	Information regarding the sewage collection system that diverts or will divert sewage to the satellite reclamation system	Replaced the phrase "significant industrial users (SIUs) defined in 9VAC25-31-10 with the acronym "SIUs" and the phrase "satellite reclamation system" with the acronym "SRS".	To be consistent with changes made throughout the regulation.
100, subdivision B 4 c	Information regarding the sewage collection system that diverts or will divert sewage to the satellite reclamation system	1. Replaced the phrase "satellite reclamation system" with the acronym "SRS". 2. Added section notation.	1. To be consistent with changes made throughout the regulation. 2. To clarify requirements.
100, subdivision B 5	Permit application information regarding reclamation systems and satellite reclamation systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	To be consistent with changes made throughout the regulation.
100, subdivision B 5 c	Permit application information regarding reclamation systems and satellite reclamation systems	Replaced "Design" with "Designated design".	Change was made to distinguish design flow of a reclamation system from the design flow of a WWTF. See also changes to Section 10 regarding the addition of a new term, "Designated design flow", and the definition for the term.
100, subdivisions B.6	Information needed to perform cumulative impact analyses for diversions of source water from discharging treatment works and sewage collection systems for reclamation and reuse	Added new subdivision, 9VAC25-740-100.B.6, describing information that must be submitted for VPDES permitted treatment works and sewage collection systems proposing new or increased diversions of source water to reclamation systems or satellite reclamation systems (SRSs) for the production of reclaimed water, including: (1) Latitude and longitude of the treatment works or SRS	Changes (1) through (5) were made to provide DEQ the information necessary to perform a cumulative impact analysis of consumptive use by water reclamation and reuse for each VPDES permitted treatment works or sewage collection system that proposes a new or increased diversion of source water to a reclamation system or SRS. This change is consistent and in conjunction with the new provision under 9VAC25-740-50.B.7 prohibiting significant adverse impacts to other beneficial uses.

Section number	Description of Requirement	What has changed	Rationale for change
		discharge, (2) Mean monthly discharges of the treatment works or SRS for 60 consecutive months, (3) Maximum monthly diversion of source water from the treatment works or sewage collection system for 12 consecutive months, (4) The name of the treatment works at the end of the sewage collection system, and (5) Information required for multiple phased increases of source water diverted from treatment works and sewage collection systems for reclamation and reuse.	
100, subdivisions B.7, 8 and 9	Alternative wastewater and reclaimed water management options for specific conjunctive systems	(1) Added new subdivision 9VAC25-740-100.B.7 requiring application information for specific conjunctive systems on measures to be immediately implemented for the management of wastewater and reclaimed water in the event that primary reuses of reclaimed water generated by the system cease or fail. (2) Added new subdivision 9VAC25-740-100.B.8 requiring information submitted for 9VAC25-740-100.B.7 to be included in the Reclaimed Water Management plan (9VAC25-740-100.C where the conjunctive system is acting as a reclaimed water agent. (3) Existing subdivision 9VAC25-740-100.B.6 was changed to 9VAC25-740-100.B.9 and revised to delete the word "and" at the end of the subdivision.	(1) Change was made to address the vulnerability of specific conjunctive systems with no or limited wastewater management options other than water reuse in the event that primary reuses of reclaimed water cease or fail. (2) Change was made to ensure that application information related to or affecting the distribution of reclaimed water to end users is included in the Reclaimed Water Management plan. (3) With the addition of new subdivisions 9VAC25-740-100.B.6, 7 and 8, change was made to avoid redundant subdivision numbering. Change made to account for moving of the last sentence of the subdivision to subdivision 100 B.
100, subdivision C.1	RWM Plan requirements for reclamation systems, satellite reclamation systems and	Revised language as follows: "A RWM plan shall be submitted in support of <u>a permit application</u> <u>application</u> for <u>a new or</u>	Changes were made to use the term already defined in the regulation, "reclaimed water agent", for systems permitted to distribute reclaimed to end users, and to improve grammar of the language. Second sentence

Section number	Description of Requirement	What has changed	Rationale for change
	reclaimed distribution systems that provide reclaimed water to end users	expanded reclamation <del>systems</del> <u>system, satellite reclamation systems-SRS</u> or reclaimed water distribution <del>systems that provide system acting as a</del> <u>reclaimed water agent by directly distributing reclaimed water</u> to an end user or end users, including an end user that is also the applicant or permittee. <u>A RWM plan shall not be required for a reclamation system that distributes reclaimed water exclusively for indirect potable reuse.</u> The RWM plan shall contain the following:"	was added to acknowledge that for those circumstance where the only reuse of reclaimed water distributed by a reclamation system will be IPR, much of the information required for a RWM plan would not apply to the IPR project and the ultimate end users of the reclaimed water would be connected to a waterworks that is regulated by the Virginia Department of Health, not DEQ.
100, subdivision C 1 b	Reclaimed water management plan requirements.	Replaced term "nonsystem" with the term "non-system".	To be consistent with changes made throughout the regulation.
100, subdivision C.1.d	Example service agreements or contracts between the applicant or permittee and prospective end users to include in the RWM plan	1. Added subsection notation in second sentence. 2. Replaced the term "nonpotable" with the term "non-potable" 3. In last sentence, changed the language as follows: "Within the agreement or contract, the applicant or permittee shall also reserve the right to <u>perform routine or periodic inspections of an end user's reclaimed water reuses and storage facilities, and to terminate the agreement or contract and withdraw service for any failure by the end user to ...</u> "	1. Clarification of requirements 2. To be consistent with changes made throughout the regulation. 3. Changes were made to make it possible for reclaimed water agents to monitor end users through the terms of the service agreement or contract and in accordance with 9VAC25-740-40.C, and to be consistent with the names of the legal documents.
100, subdivision C.1.g	Cross-connection and backflow prevention program for the distribution of reclaimed water	In the last paragraph under subdivision 9VAC25-740-100.C.1.g, revised language of the first sentence as follows: " <u>(5) A Requires a backflow prevention device shall be required on the reclaimed water service connection ...</u> "	Change was made to eliminate a hanging paragraph and to be consistent with Virginia Register style guidelines for regulations.

Section number	Description of Requirement	What has changed	Rationale for change
100, subdivision C.1.h	Maintenance of reclaimed water quality within reclaimed water distribution system to meet standards for intended reuse of reclaimed water	Revised language as follows: "A description of how the quality of reclaimed water in the reclaimed water distribution system shall be maintained to meet <u>and, if determined necessary by the board, monitored to verify compliance with the standards-minimum standard requirements specified in 9VAC25-740-90</u> for the intended reuse or reuses of the reclaimed water <del>in accordance with 9VAC25-740-90.</del> , <u>excluding CAT standards. Where monitoring of reclaimed water in the distribution system is required, monitoring parameters and frequencies shall be determined by the board on a case-by-case basis.</u> "	Changes were made to be consistent with changes to design requirements for reclaimed water distribution systems in 9VAC25-740-110.B.9 that exclude maintenance of CAT standards and new point of compliance (POC) requirements for reclaimed water distribution systems in 9VAC25-740-70.B.
100, subdivision C.1.i	Information for specific conjunctive systems acting as reclaimed water agents	Inserted the following new language under subdivision 9VAC25-740-100.C.1.i and changed existing subdivision C.1.i to C.1.j: "Information specified in subdivision B 7 of this section for conjunctive systems described in subdivision B 8 of this section."	Change was made to provide a "cross-walk" between new language inserted under subdivisions 9VAC25-740-100.B.7 and 8 regarding information that may be included in the Reclaimed Water Management plan for specific conjunctive systems.
100, subdivision C.1.j	Reduced application information requirements for the distribution of reclaimed water	Replaced "section" with "subsection".	Change was made to identify the correct location of the regulation referenced, consistent with the Virginia Register style guidelines for regulations.
100, subdivision C 3 a	Nutrient management requirements for irrigation reuse	Added a subsection notation.	To clarify requirements.
100, subdivision C 3 b (2)	Nutrient management requirements for bulk and non-bulk irrigation reuse with non-BNR reclaimed water	Replaced "section" with "subsection".	Change was made to identify the correct location of the regulation referenced, consistent with the Virginia Register style guidelines for regulations.
100, subdivision C 3 c	Nutrient management requirements for	Replaced the term "nonbulk" with the term "non-bulk".	Grammatical correction. Change made to be consistent with other changes made to the regulations.

Section number	Description of Requirement	What has changed	Rationale for change
	bulk and non-bulk irrigation reuse with non-BNR reclaimed water		
100, subdivision C 3 c (1)	Nutrient management requirements for bulk and non-bulk irrigation reuse with non-BNR reclaimed water	Replaced "section" with "subsection".	Change was made to identify the correct location of the regulation referenced, consistent with the Virginia Register style guidelines for regulations.
100, subdivision C.3.c(2)	Metering of non-bulk irrigation end users of reclaimed water	Deleted "Reclaimed water metering of individual non-bulk irrigation end users;"	Requirement deleted because it is redundant of 9VAC25-740-100.C.1.e, which requires the provider of reclaimed water to meter all end users, not just non-bulk irrigation end users.
100, subdivision C 3 c (3)	Routine distribution of literature	Subdivision renumbered as 100 C 3 c (2).  Replace the term "nonbulk" with the term "non-bulk".	Subdivision renumbered to account for deletion of original subdivision 100 C 3 c (2).  Grammatical correction.
100, subdivision C.3.c(4)	Monitoring and reporting of N & P loads from non-bulk irrigation reuse with non-BNR reclaimed water	Subdivision renumbered as 100 C 3 c (3).  Inserted "non-bulk irrigation reuse" after "metered" and added 2 <sup>nd</sup> sentence – "Results of this monitoring shall be included in the annual report to the Board submitted in accordance with 9VAC25-740-200 C."	Subdivision renumbered to account for deletion of original subdivision 100 C 3 c (2).  Language was changed to make it consistent with annual reporting requirements for non-bulk irrigation reuse of non-BNR reclaimed water specified in 9VAC25-740-200.C
100, subdivision C 4 a	NMP requirements for bulk irrigation reuse site	Replace phrase "satellite reclamation system" with the acronym "SRS".	Change made to be consistent with other changes made to the regulations.
100, subdivisions C.4 and 5	NMP requirements for bulk irrigation reuse independent of reclaimed water nutrient content and DCR approval of such NMPs	(1) Changed last paragraph under 9VAC25-740-100.C.4 to a new subdivision, 9VAC25-740-100.C.5, and changed existing subdivisions C.5 through C.8 to C.6 through C.9.  (2) In new subdivision C.5, changed the language in the 1 <sup>st</sup> sentence as follows: "The A NMP required per subdivision C 4 of this subsection shall ..."	Changes were made to (1) eliminate a hanging paragraph, and (2) properly identify the applicable subdivisions and subsections consistent with the Virginia Register style guidelines for regulations.
100, subdivision C 5	NMP Requirements for specific irrigation reuse	Subdivision renumbered to C 6.	Change made to account for revised numbering.

Section number	Description of Requirement	What has changed	Rationale for change
100, subdivision C.6	Content of site plan for bulk irrigation reuse sites	<p>Subdivision renumbered to C 7.</p> <p>Moved and incorporated last sentence of 9VAC25-740-100.C.7 to first sentence of subdivision as follows:                      “A site plan is required for each bulk irrigation reuse site and area of proposed expansion to an existing irrigation reuse site, displayed ...”</p> <p>Replaced term "nonpotable" with "non-potable".</p>	<p>Change made to account for revised numbering.</p> <p>Change was made to eliminate hanging sentence consistent with Virginia Register style guidelines for regulations.</p> <p>Change made to be consistent with other changes made to the regulation.</p>
100, subdivisions C 7 a and b	Parties responsible for preparation and submission of site plans for bulk irrigation reuse sites	<p>Subdivisions renumbered to C 8 a and b.</p> <p>Replaced “or” with a comma following “reclamation system”; replace the phrase "satellite reclamation system" with the acronym "SRS" and added “or reclaimed water distribution system” after “SRS”.</p>	<p>Change made to account for revised numbering of subdivision.</p> <p>Changes made to be consistent with other changes made in the regulation.</p> <p>Added an applicable facility type to those listed in 9VAC25-740-100.C.7.a and b that was unintentionally omitted in the original regulation.</p>
100, subdivision C 8	Amendment of the RWM Plan to add new end users	<p>Subdivision renumbered to C 9.</p> <p>(1) Added “or new reuses” following “new end users” throughout the paragraph.                      (2) Inserted “for approval” after “board”                      (3) Deleted “not less than 30 days” in first sentence.</p>	<p>Changes made to account for revised numbering of subdivision.</p> <p>(1) New reuses may have similar or greater impact on reclaimed water standards, monitoring requirements and special conditions contained in the permit. Therefore, new reuses were added to RWM plan amendment procedures in 9VAC25-740-100.C.8.                      (2) Board (or DEQ) approval of amendments to the RWM plan is consistent with board approval of amendments to other similar types of plans or manuals. Also, if a proposed reuse is not listed in the regulation or involves the reuse of reclaimed industrial wastewater, it must be reviewed and approved by the board (or DEQ) on a case-by-case basis. This applies any time such reuses are included in the RWM plan.                      (3) Depending on the type of new reuses to be added to the RWM plan, DEQ’s review and approval of the new reuse may require more than 30</p>

Section number	Description of Requirement	What has changed	Rationale for change
			days. Therefore, the minimum 30-day submission period for new reuses prior to connection to reclaimed water service was deleted.
100, subdivision D	Permit application requirements specific to indirect potable reuse projects	<p>Added new subsection D for exclusively indirect potable reuse (IPR) proposals. Subdivisions D.1 through D.8 require for each proposal:</p> <ul style="list-style-type: none"> <li>(1) Identification of the 3 major components of an IPR project;</li> <li>(2) Identification of all uses in addition to IPR of the water supply source (WSS) considered part of the IPR project;</li> <li>(3) A description of multiple barriers to be implemented as part of an IPR project to ensure the production of water suitable for IPR. Multiple barriers shall include, at a minimum, source control and protection, effective and reliable treatment, environmental buffers and natural attenuation, monitoring programs, and responses to adverse conditions;</li> <li>(4) An evaluation of the effectiveness of multiple barriers combined to produce water of quality suitable for IPR;</li> <li>(5) Any information deemed necessary by DEQ to establish reclaimed water standards and monitoring requirements for the IPR project in accordance with 9VAC25-740-90 B.</li> <li>(6) A water balance for the reclamation system of the IPR project;</li> <li>(7) A reclaimed water management plan and associated water balance for specific changes to the reclamation system considered part of the IPR project; and</li> <li>(8) A copy of the contractual</li> </ul>	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.

Section number	Description of Requirement	What has changed	Rationale for change
		agreement, when required, between the reclamation system and waterworks of an IPR project, establishing responsibilities of two parties.	
105	Application for an emergency authorization	Added new section 9VAC25-740-105 that describes items needed in an application for an emergency authorization (subdivisions A.1 through A.15) to produce, distribute and reuse reclaimed water. Also includes a provision that allows submission of a permit application in lieu of an emergency authorization application where information required by the emergency authorization application can be provided in the permit application.	Change was made in conjunction with the addition of new section 9VAC25-740-45 (Emergency authorization for the production, distribution or reuse of reclaimed water). The information required in the application for an emergency authorization is needed by the board or DEQ to determine if the authorization is feasible and warranted in lieu of the conventional permit application and issuance process.
110, subdivision A	Reclamation system	Subdivision A 1 notation added to existing language.	Changes made to clarify requirements and to improve readability.
110, subdivision A.1	Design criteria for reclamation systems	Replaced “the effluent” with “source water” throughout paragraph.	Change was made to use terminology that applies to untreated, as well as treated wastewater.
110, subdivision A.2	Design criteria of UV disinfection for reclamation systems	Added new subdivision A.2 that describes UV disinfection design requirements for both Level 1 and Level 2 reclamation systems, and describes an option to allow lower UV disinfection dosages for Level 1 reclamation systems.	The Sewage Collection and Treatment (SCAT) Regulations (9VAC25-790) provide the design and operational requirements for UV disinfection of water comparable in quality to Level 2 reclaimed water, but not for water meeting Level 1 reclaimed water standards. Because the current regulatory action does not include amendment of the SCAT Regulations, changes were made to 9VAC25-740-110.A of the Water Reclamation and Reuse Regulation to address UV disinfection design requirements for both Level 1 and Level 2 reclamation systems.
110, subdivision B.2.b	Requirements of the cross-connection and backflow prevention program for reclaimed water distribution systems	Changed the language as follows: The reclaimed water distribution system shall be in compliance with the cross connection control and backflow prevention requirements of the Article 3 (12VAC5-590-580 et seq.) of	Changes were made to address the fact that: (1) The USB Code regulates reclaimed water distribution systems that are part of the construction of a building, but not systems outside buildings; and (2) Localities are not permitted to have local building and plumbing



Section number	Description of Requirement	What has changed	Rationale for change
		<p>Part II of the Commonwealth of Virginia Waterworks Regulations; <u>and, when applicable, the reclaimed water distribution system shall also be in compliance with the Uniform Statewide Building Code (13VAC5-63), and local building and plumbing codes.</u></p>	<p>codes.</p>
<p>110, subdivisions B 6; B 6 a and B 6 b</p>	<p>Information to be submitted for conversion of potable water distribution systems, sewer and wastewater collection systems, and irrigation distribution systems to reclaimed water distribution systems</p>	<p>(1) Changed first paragraph of B.6 as follows: <u>“Existing potable water distribution systems, sewer and wastewater pipelines collections systems, and irrigation distribution systems may be converted for use as reclaimed water distribution pipelines systems. The Not less than 90 days prior to such conversions, excluding the conversion of irrigation distribution systems that are not under common ownership or management with reclamation systems, SRSs or reclaimed water distribution systems providing reclaimed water to the irrigation distribution systems, the following information shall be submitted to the board for approval of the conversion:</u>                      (2) Created new subdivisions B.6.a and B.6.b that describe submittals for a “system conversion plan” and an “operations and maintenance manual”, respectively, for the converted system. Existing B.6.a through B.6.h were placed under new subdivision B.6.a and numbered B.6.a (1) through B.6.a (7) and revised accordingly or in some cases deleted.                      (3) Deleted former B.6.c – “A description of measures to be taken to ensure that existing connections will be eliminated.”                      (4) Replaced former B.6.e - “Description of marking,</p>	<p>(1) Changes were made: (i) to acknowledge that mechanical appurtenances and storage facilities in addition to piping can be converted, (ii) to correct descriptions of different facilities to be converted, (iii) to include existing irrigation distribution systems among systems that can be converted, and (iv) to establish when a conversion plan and operations &amp; maintenance (O&amp;M) manual for a converted system, excluding certain irrigation distribution systems, must be submitted for approval.                      (2) Change was made (with the addition of an O&amp;M manual requirement) to identify the conversion plan and O&amp;M manual as two separate documents.                      (3) Change was made to delete and consolidate language that is redundant of what is now 9VAC25-740-110.B.6.a (3).                      (4) Changes were made: (i) to include converted pipe identification among physical and operational modifications to the entire system that will be converted to a reclaimed water distribution system, and (ii) to demonstrate that the converted system complies with design and maintenance requirements contained in other provisions of the regulation.                      (5) Changes were made to improve grammar and readability of the subdivisions.                      (6) Changes were made to: (i) require cleaning and disinfection according to an ANSI/AWWA standard for the conversion of sewer and wastewater collection systems to reclaimed water distribution systems, and (ii) ensure the proper disposal of</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>signing, labeling, or color coding to be used to identify the converted facility as a reclaimed water transmission facility;" with B.6.a(4) – "A description of the physical and operational modifications necessary to convert the existing system to a reclaimed water distribution system that shall comply with applicable design criteria in subsections B and C of this section, and the operations and maintenance requirements of 9VAC25-740-140 D 2;"</p> <p>(5) Replaced "The" with "Information on the" in B.6.a(1) and (2), replaced "Description" with "A description" in B.6.A(3) and (5), and replaced "Assessment" with "An assessment" in B.6.A(6).</p> <p>(6) Added requirements to B.6.a(5): (i) to perform cleaning and disinfection of converted sewer and wastewater collection systems according to specific AWWA standards, and (ii) for the proper disposal of flush waters from any system converted to a reclaimed water distribution system in accordance with the operations &amp; maintenance (O&amp;M) manual for the converted system.</p> <p>(7) Under B.6.b, inserted requirements for and minimum content of the O&amp;M manual for the converted system.</p>	<p>flush water from converted systems.</p> <p>(7) Change was made to ensure that converted systems will have O&amp;M manuals consistent with the requirements of 9VAC25-740-140 for all reclaimed water distribution systems.</p>
<p>110, subdivisions B.8.a and b</p>	<p>Identification and notification requirements for reclaimed water piping – outer diameter greater than or equal to one inch</p>	<p>(1) Changed language in subdivision 9VAC25-740-110.B.8.a as follows:  <del>"All reclaimed</del> <u>Reclaimed</u> water piping <u>with an outer diameter greater than or equal to one inch, installed in-ground after [effective date of amended regulation] or above</u></p>	<p>(1) Changes were made: (i) to make identification and notification requirements of 9VAC25-740-110.B.8.a applicable to only larger diameter distribution pipes (<math>\geq 1</math>" outer diameter), and (ii) to eliminate redundant language.</p> <p>(2) Change was made to make color coding an optional identification</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p><del>ground shall have display</del> the words "CAUTION: RECLAIMED WATER - DO NOT DRINK" <del>embossed, integrally stamped, or otherwise affixed to the piping, and shall be identified</del> by one or more of the following methods:"</p> <p>(2) Revised and moved color coding option from subdivision B.8.a(1) to new subdivisions B.8.b and c, and renumbered B.8.a(2) through (4) to B.8.a(1) through (3)</p> <p>(3) In B.8.a(1), replaced "pipe" with "piping" throughout, 1<sup>st</sup> sentence - replaced "Using stenciled" with "Stenciling or stamping the"; and 2<sup>nd</sup> sentence - replaced "in" with "and greater than or equal to one inch outer [diameter]".</p> <p>(4) In B.8.a(3), 1<sup>st</sup> sentence – replaced "pipe" with "piping", and 2<sup>nd</sup> sentence -revised language as follows: "<u>The width of the tape shall be at least three inches, and shall display the required caution statement in either white or black lettering.</u>"</p> <p>(5) Added new subdivision B.8.a (4) that states "Using an alternate method that assures the caution statement will be displayed to provide an equivalent degree of public notification and protection if approved by the board."</p> <p>(6) Inserted new subdivision B.8.b that allows additional methods to be used for identification of reclaimed water piping with an outer diameter greater than or equal to one inch provided they do not obscure the caution statement on the piping.</p>	<p>method for larger pipes (<math>\geq 1</math>" outer diameter) but required for smaller pipes (<math>&lt; 1</math>" outer diameter).</p> <p>(3) Changes were made to be consistent with existing terminology and changes in 9VAC25-740-110.B.8.a.</p> <p>(4) Changes were made: (i) to be consistent with existing terminology used in 9VAC25-740-110.B.8.a, and (ii) to be consistent with specifications for tape used to identify reclaimed water piping described in 9VAC25-740-110.B.8.a(2).</p> <p>(5) Change was made to provide greater flexibility in the options that may be used to display the caution statement on larger reclaimed water piping (<math>\geq 1</math>" outer diameter).</p> <p>(6) Change was made to allow the use of additional options that may improve the identification of larger (<math>\geq 1</math>" outer diameter) reclaimed water piping.</p>
110, subdivision B.8.c	Identification and notification requirements for	Inserted new subdivision B.8.c that describes color coding and caution statement	Changes were made to make color-coding mandatory for the identification of smaller ( $< 1$ " outer

Section number	Description of Requirement	What has changed	Rationale for change
	reclaimed water piping – outer diameter less than one inch	requirements for reclaimed water piping less than one inch outer diameter.	diameter) reclaimed water piping, and to distinguish this same piping from other non-potable water piping (e.g., for recycled gray water and harvested rainwater) inside buildings and structures that in accordance with Virginia’s Uniform Statewide Building Codes must also be color-coded purple.
110, subdivisions B.8.d, e and f	Identification and notification requirements for above-ground portions, mechanical appurtenances and valve boxes of reclaimed water distribution systems	(1) Modified and moved existing subdivision B.8.d to B.8.g (2) Changed existing subdivisions B.8.b, c and e to B.8.d, e and f, respectively. (3) In the first sentence of B.8.d, replaced “visible,” with “other”, deleted “piping”, and changed “colored coded” to “color coded”.	(1) Change was made to address identification and notification requirements for new reclaimed water distribution systems before addressing the same for systems converted to reclaimed water distribution systems (2) Changes were made to ensure the proper identification of remaining subdivisions following the deletion of former 9VAC25-740-110.B.8.d. (3) Changes were made: (i) to clarify that this provision applies to all above-ground portions of reclaimed water systems not addressed in 9VAC25-740-110.B.8.a, b and c and regardless of whether they are or are not visible, (ii) to make language consistent throughout 9VAC25-740-110.B.8 with regard to reclaimed water “piping”, and (iii) to correct a grammatical error.
110, subdivision B.8.g	Identification, notification and signage requirements for systems converted to reclaimed water distribution systems	Former subdivision B.8.d was modified and moved to B.8.g, which describes identification, notification and signage requirements for systems converted to reclaimed water distribution systems and identifies some exceptions for certain existing underground piping and exclusion for certain converted irrigation distribution systems.	Change was made to address identification, notification and signage requirements for systems converted to reclaimed water distribution systems not addressed in 9VAC25-740-110.B.6, and circumstance under which these requirements would not apply.
110, subdivision B.9	Maintenance of reclaimed water distribution systems to minimize loss, ensure safe, reliable conveyance; and maintain quality of reclaimed water	Inserted “, excluding CAT standards,” after “below the standards”.	Revised the language to exclude maintenance of CAT standards in the reclaimed water distribution system since these standards only apply to operation of treatment process at the reclamation system.
110, subdivision C.2	Circumstances requiring reclaimed water storage	Changed language in 9VAC25-740-110.C.2 as follows:	Changes were made to correct a typographical error and to properly identify the applicable subdivisions

Section number	Description of Requirement	What has changed	Rationale for change
		"Storage for reclaimed water shall be required only when subdivisions <u>C 1 b, c, or d</u> of this subsection or, as applicable, subdivision <u>C 1 e</u> of ..."	referenced within this subsection consistent with the Virginia Register style guidelines for regulations.
110, subdivision C 4	Option to use reject water storage as emergency storage to meet reliability requirements of 9VAC25-740-130	Changed "Class I reliability" to "Reliability Class I"	Change was made to be consistent with changes to the terminology in 9VAC25-740-10.
110, subdivision C 5	Reject water and reclaimed water	Replaced term "nonsystem" with "non-system".	Change was made to be consistent with previous changes to the regulations.
110, subdivision C 6	Design requirements for reject water storage and system storage	Added subdivision notation.	Clarification of requirements.
110, subdivision C 6 d	Design requirements for reject water storage and system storage	Changed language in 9VAC25-740-110.C.6.d as follows: "If the requirements of <del>subdivision</del> <u>subdivisions C 6 b or c</u> of this subsection cannot be met, the ..."	Changes were made to correct a typographical error and to properly identify the applicable subdivisions within this subsection consistent with the Virginia Register style guidelines for regulations.
110, subdivision C 8 a; C 8 b and 8 b (1)	Capacity requirements for reject water storage and reclaimed water system storage facilities	(1) In subdivision C.8.a, revised the language as follows: "For reject water, the capacity of the storage facility shall, at a minimum, be the volume equal to the <del>average daily permitted</del> <u>designated design</u> flow of the reclamation system..." (2) Subdivision notation added. (3.a and 3.b) In subdivision C.8.b(1), revised the language as follows: Where there is no or minimal seasonal variability in demand and no other options are available for alternative generation or management of all or a portion of the reclaimed water, the capacity of the storage facility shall, at a minimum, be the volume equal to three times that portion of <del>reclaimed water</del> <u>the reclamation system designated design</u>	(1) Change was made to allow capacity requirements for reject water storage facilities to address worst case scenarios requiring the most storage. (2) Clarification of regulations. (3.a) Change was made to allow capacity requirements for reclaimed water system storage facilities to address worst case scenarios requiring the most storage. (3.b) Change was made to clarify that the reclaimed water to be managed is from the reclamation system and not the storage facility

Section number	Description of Requirement	What has changed	Rationale for change
		flow for which no other options to generate or manage the reclaimed water from the reclamation system are permitted.	
110, subdivisions C 9; C 10; C 11; C 12; C 12 b	Design requirements and setbacks distances for non-system storage of reclaimed water	Added subdivision notations.  Replaced term "nonsystem" with the term "non-system".	Clarification of requirements.  Changes made to be consistent with changes made to the regulation.
110, subdivisions C.9, C.12 and C.12.a	Design requirements and setbacks distances for non-system storage of reclaimed water	Deleted "Lake" and "lake" from 9VAC25-740-110.C.9, 12 and 12.a.	"Lake" and "impoundment" are used together in all these subdivisions. Because the vast majority of lakes in Virginia are impoundments, "lake" in the context of the language in these subdivisions is redundant of "impoundment". Therefore, "lake" was not considered necessary.
110, subdivision C.14	Discharge prohibitions for reclaimed water storage facilities	(1) In 1 <sup>st</sup> sentence, replaced "All" with "Reclaimed water system", deleted ", including landscape impoundments used for nonsystem storage," and inserted a comma after "25-year". (2) Added a sentence that states "Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage, shall be designed and operated to prevent a discharge to surface waters of the state except in the event of a storm greater than the 10-year, 24-hour storm."	(1) Changes were made to limit this requirement to only <u>system</u> storage facilities of reclaimed water and to correct a grammatical error. (2) Change was made to differentiate and describe discharge prohibitions for <u>non-system</u> storage of reclaimed water.
110, subdivision C 15	Inventories	Replaced the term "nonsystem" with the term "non-system" in the subdivision.	Changes made to be consistent with other changes in the regulation.
120, subdivision A; A 1; and A 2	Preliminary engineering report and pilot study requirements	In subsection A, added "and pilot study" to title of subsection, divided subsection into two subdivisions addressing separately the requirements for preliminary engineering reports and pilot studies, and added new language on pilot study requirements for only the treatment of reclamation systems that are part of IPR	Changes were made in conjunction with the addition of new subsection 9VAC25-740-90.C regarding minimum items required for IPR projects. Because treatment technologies typically required for IPR projects continue to evolve and improve, pilot studies are needed to verify that these new technologies will provide the level of treatment proposed, or to identify areas of correction and adjustment prior to full

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		projects.	scale construction of the treatment facilities.
120, subdivision A 1	Preliminary engineering report and pilot study	Replaced phrase "satellite reclamation systems" with "SRSs" and "satellite reclamation system" with "SRS".	Changes made to be consistent with other changes in the regulations.
120, subdivision A 2	Pilot study requirements	New subdivisions A 2 and A 2 a; b and c added.	Changes made to clarify the requirements for pilot studies.
120, subdivision B 1	Certificate to construct and certificate to operate	Replace the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120, subdivision B 2	CTC requirements	Replace the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120, subdivision B 3	CTO requirements	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120, subdivision B 3 a	CTO requirements	Added subdivision notation.	Clarification of requirements.
120, subdivision B 3 c	CTO requirements	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120, subdivision B.3.d	Interim CTO issuance procedures	In the first sentence, deleted "Consideration will be given to issuance of" and inserted "may be issued".	Revised language to describe more clearly interim CTO issuance procedures.
120, subdivision B.3.e	CTO monitoring requirement for reclamation systems and satellite reclamation systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".  In the first sentence, inserted "board may require" after "into operation, the" and replaced "should" with "by the system to".	Changes made to be consistent with other changes in the regulations.  Revised language to clarify that sampling and testing by the reclamation system or satellite reclamation system is not required unless determined necessary by the board; and reclaimed water sampling and testing, when required, must be performed by the systems producing that water.
120, subdivision B.3.f	CTO operations & maintenance manual submission requirement for reclamation systems and satellite reclamation systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".  Replaced ", as applicable, to be" with "if" in first sentence.	Changes made to be consistent with other changes in the regulations.  Revised language to be more concise without changing the requirement of the provision.
130, subsection B	Class I Reliability requirements for Level 1 reclamation	Revised language as follows: "Reliability Class I <del>reliability</del> as defined in 9VAC25-740-10	(1) Change to "Reliability Class I" was made to be consistent with change made to the term in 9VAC25-

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	systems and satellite reclamation systems	is required for Level 1 reclamation systems and satellite reclamation systems <u>and for pump stations considered part of these systems</u> , unless there is a permitted alternate treatment <del>or</del> discharge or disposal system available <del>which has</del> with sufficient capacity to handle any reclaimed water flows which do not meet the reclaimed water standards of this chapter or performance criteria established in the operations and maintenance manual.”	740-10. (2) Pump stations that are part of reclamation systems or satellite reclamation systems are not subject to requirements of the Sewage Collection and Treatment Regulations. Therefore, added pump stations to facilities subject to Reliability Class I requirements of the Water Reclamation and Reuse Regulation. (3) Added “or disposal” (i.e., through land treatment) as another alternate to requiring Reliability Class 1 for Level 1 reclamation systems. (4) Revised language to be more concise without changing the requirement of the provision.
130, subsection C	Reliability requirement for reclamation systems and pump stations of IPR projects	(1) Added new subsection C as follows: “Reliability Class I as defined in 9VAC25-740-10 is required for a reclamation system identified as a component of an IPR project in accordance with 9VAC25-740-100 D 1, including pump stations that are part of the reclamations system. No exception or variance shall be granted for this requirement.” (2) Existing subsections C and D were changed to D and E.	Per 9VAC25-740-90.C, reclamation systems of an IPR project are required to produce reclaimed water meeting Level 1 standards, applicable Water Quality Standards and any other standards developed in accordance with 9VAC25-740-90.B. Because reclamation systems of IPR projects must meet Level 1 reclaimed water standards among others, 9VAC25-740-130.B would normally apply. However, 9VAC25-740-130.C differs from 9VAC25-740-130.B in that it requires Reliability Class I for the reclamation system and its associated pump stations when identified as a component of an IPR project, regardless of the availability of an alternate disposal system and without exception or variance. This is due to the greater human health risks associated with a treatment failure and subsequent discharge of substandard water to the public water supply of an IPR project.
130, subsection D	Reliability requirements for independent reclamation systems and conjunctive industrial WWTFs and reclamation systems	Changed “Class I reliability” to “Reliability Class I”.	Change was made to be consistent with changes to “Class I reliability” 9VAC25-740-10.
130, subsection	Board approval of alternative measure	(1) Changed “Class I reliability” to “Reliability Class	(1) Change was made to be consistent with changes to “Class I



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E	to achieve Reliability Class I	l". (2) Inserted "and this chapter" after "Sewage Collection and Treatment Regulations (9VAC25-790)	reliability" 9VAC25-740-10. (2) Change was made to acknowledge that the Water Reclamation Regulation also specifies requirements to achieve Reliability Class I".
140, subdivision A	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140, subdivision B	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140, subdivision D	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140, subdivision D 1	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140, subdivision D 1 a	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140, subdivision D.2.a	Information to be contained in the operation maintenance manual for a reclaimed water distribution system	Inserted "map of the distribution system, a" after "A", and inserted a comma after "within the distribution system".	Change was made to ensure that the location and identification of reclaimed water distribution system components may be readily determined by mapping to avoid cross connections with other types of distribution or collection systems, or damage from excavation or other activities near the reclaimed water distribution system.
140, subdivision D.2.d	Procedures to handle and dispose of waste and wastewater generated by maintenance of the reclaimed water distribution system	Revised language as follows: "2. For a reclaimed water distribution system, the operations and maintenance manual shall, at a minimum, contain the following: d. Procedures to: <del>(1) handle</del> <u>Handle and dispose of any wastes or wastewater generated by maintenance of the distribution system in a manner protective of the environment;</u> <u>(2) Prevent the discharge of reclaimed or flush water from distribution system maintenance activities to:</u> <u>(a) Storm drains,</u> <u>(b) State waters unless otherwise authorized by the</u>	Changes were made related to maintenance activities for reclaimed water distribution systems to: (i) describe separately the handling of wastes and wastewaters (or flush waters) resulting from these activities, (ii) clarify inappropriate vs. appropriate discharges of reclaimed or flush water, and (iii) provide an option to recover reclaimed or flush water from maintenance activities for other subsequent reuse or use.

Section number	Description of Requirement	What has changed	Rationale for change
		<p><u>board, and</u>  <u>(c) Sanitary sewers unless allowed under local sewer use ordinances and authorized by the board; and</u>  <u>(3) Collect and, as applicable, retreat reclaimed water or treat flush water from distribution system maintenance activities for a subsequent reuse or use approved by the board."</u></p>	
140, subdivision F	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140, subsection G	O&M manual content for bulk irrigation reuse sites under common ownership or management with a reclamation system or satellite reclamation system.	<p>Replaced the phrase "satellite reclamation system" with the acronym "SRS".</p> <p>Revised language as follows: <del>"Where a reclamation system or satellite reclamation system and a bulk irrigation reuse site or sites are is</del> under common ownership or management <u>with a reclamation system or SRS that generates reclaimed water applied to the site, the operations and maintenance manual for the reclamation system or satellite reclamation system SRS shall include the following:"</u></p>	<p>Changes made to be consistent with other changes in the regulations.</p> <p>Change was made to clarify that this requirement is applicable when the bulk irrigation site also <u>applies</u> the reclaimed water received from a reclamation system or satellite reclamation system under common ownership or management with the site.</p>
150, subsections A through E	Requirements to manage pollutants of concern from SIUs	(1) In subsection A, replaced "effluent" with "source water"; replaced the phrase "significant industrial users (SIUs) as defined by the VPDES Permit Regulation (9VAC25-31-10) with the acronym SIUs; replaced the phrase "treated to" with the term "meeting"; added the word "standards"; deleted "or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely" and moved "the wastewater treatment works providing source water to the reclamation system is" to the beginning of	<p>(1) Changes were made: (a) to use terminology that applies to untreated, as well as treated wastewater, and (b) to eliminate language for which there are no standards and to consolidate related language segments into the appropriate subdivision.</p> <p>(2) Changes were made to eliminate an unnecessary acronym and to make language of this subdivision consistent with similar requirements under subdivision E.1.</p> <p>(3) Changes were made to simplify procedures for Level 1 reclamation systems to manage pollutants from treatment works with SIUs but without approved pretreatment programs that provide source water to the</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>subdivision A.1.</p> <p>(2) In subdivision A.1, revised language as follows: <u>“A-The wastewater treatment works providing source water to the reclamation system is a publicly owned treatment works (POTW), as defined in the VPDES Permit Regulation (9VAC25-31-10), that and has a pretreatment program required by and developed, approved and maintained in accordance with procedures described in Part VII of the VPDES Permit Regulation (9VAC25-31-730 through 9VAC25-31-900);”</u>.</p> <p>(3) In subdivision A.2, for all other treatment works with SIUs not described in A.1, replaced requirement for a program equivalent to a pretreatment program with an evaluation (by the reclamation system) of the source water “from the treatment works for pollutants of concern discharge by SIUs to the treatment works”.</p> <p>(4) In subsection B, deleted the phrase “or effluent”, modified language regarding the contractual agreement between a reclamation system and treatment works with SIUs providing source water to the reclamation system, and eliminated requirement for the board to review and approve such contractual agreements.</p> <p>(5) Added new subsection C that describes management of pollutants from SIUs by satellite reclamation systems (SRSs).</p> <p>(6) Added new subsection D to establish contractual agreement between SRSs and sewage collection system requiring the sewage collection system to notify the SRS of all SIUs discharging</p>	<p>reclamation systems.</p> <p>(4) Changes were made to: (a) use terminology that applies to untreated, as well as treated wastewater, (b) make the language more concise and clear, and (c) eliminate unnecessary reviews and approvals by the board.</p> <p>(5) Because of their relation to sewage collection systems, SRSs are particularly vulnerable to adverse impacts by SIU discharges. Therefore, language was added to protect SRSs from SIU discharges.</p> <p>(6) Contractual agreement requirement between SRSs and sewage collection systems with SIU discharges is similar and serves a similar purpose as the contractual agreement between reclamation systems and treatment works with SIUs.</p> <p>(7) Language was added to provide an additional barrier for the protection of public health where the reclaimed water is produced for indirect potable reuse.</p>

Section number	Description of Requirement	What has changed	Rationale for change
		to the collection system. (7) Added new subsection E requiring most VPDES permitted treatment works with SIUs to have a pretreatment program or program equivalent to a pretreatment program where the treatment works provides source water for indirect potable reuse.	
160, subsection A	Access control and advisory signs.	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
160, subsection B	Warning statement and specifications for advisory signs or placards	Added "or 9VAC25-740-110.C.5 for above-ground storage facilities".	9VAC25-740-110.C.5 refers to the requirements of 9VAC25-740-160.B. Reciprocal language was added to 9VAC25-740-160.B to clarify that this provision applies to above-ground storage tanks.
160, subsections C and D	Advisory signage requirements for reuses of Level 2 and Level 1, respectively.	Rearranged existing language in both subsections.	The content of 9VAC25-740-160.C and D was not changed, but the language was rearranged to better emphasize the difference between the two subsections.
160, subdivision E	Advisory signs	Replaced term "nonsystem" with "non-system".	Changes made to be consistent with other changes in the regulations.
170, subsection A and subdivisions A.1 and A.2	Education and notification program for reclaimed water reuse	(1) In 9VAC25-750-170.A, clarified submittal requirements for the education and notification (E&N) program of indirect potable reuse (IPR) vs. non-IPR projects. (2) Rearranged existing language with no change in requirements, and added new language to subdivision A.1 describing education requirements for IPR projects. (3) Added new language to subdivision A.2 describing notification requirements for discharges of substandard reclaimed to reuse or loss of service for IPR, and requiring modes of communication for notifications to be described.	Changes were made in conjunction with new subsection 9VAC25-740-100.D regarding permit application requirements for IPR projects. Due to the greater public health implications of IPR and other features unique to this reuse, education and notification requirements for IPR projects were described separately from those of non-IPR projects.
170, subsection C	Quality of reclaimed water delivered to end users	Replaced "be of acceptable quality" with "comply with reclaimed water standards required".	Changed language to clarify that "acceptable quality" with regard to the regulation is limited to the appropriate reclaimed water standards for the

Section number	Description of Requirement	What has changed	Rationale for change
			intended reuses.
170, subdivisions H.1 and H.3	Setbacks for irrigation reuse of Level 1 and Level 2 reclaimed water, respectively	Moved setback information in 9VAC25-740-170.H.1 and H.3 into Tables 170-H1 and 170-H2, respectively. Also changed language in 9VAC25-740-170.H.1 as follows: "... the following setback distances provided in Table 170-H1 are required: ..." Similar, changes were made to the language in 9VAC25-740-170.H.3.	Changes were made to improve readability of information in these subsections and to be consistent with referencing tables throughout the regulation.
170, subdivisions H.4.a and b	Reduction of setbacks for irrigation with Level 2 reclaimed water	Replaced "%" with "percent".	Change was made to be consistent with Virginia Register style guidelines for regulations.
170, subdivisions H.5, 6 and 7	Setback distances and requirements for irrigation reuse of reclaimed water	Inserted new subdivision for H.5 that states "Application of reclaimed water shall not occur during winds of sufficient strength to cause overspray or aerosol drift into or beyond the buffer zones of setbacks specified in subdivisions H 1, 2, 3 and 4 of this subsection." Existing subdivisions H.5 and H.6 were changed to H.6 and H.7, respectively.	Change was made to be consistent with other management requirements for irrigation reuse of reclaimed water. Just as reclaimed water runoff must be confined to the irrigation reuse site per 9VAC25-740-170.F.3, reclaimed water sprays and aerosols must also be confined to the irrigation reuse sites for the protection of human health and the environment.
180, subsection A	Operational flow requirements	(1) Replaced the phrase "satellite reclamation system" with the acronym "SRS"; (2) Replaced "%" with "percent." (3) Inserted "designated" before "design", and replaced "capacity" with "flow" after "design".	(1) Change made to be consistent with other changes in the regulation. (2) Change was made to be consistent with Virginia Register style guidelines for regulations. (3) Change is consistent with changes made in relation to the addition of the new term "designated design flow" and associated definition.
180, subsections B through E	Operational flow requirements	Converted 9VAC25-740-180.A.1 through 4 to 9VAC25-740-180.B through E, inserted "of action described in subsection A of this section" after "plan" in subsection B, inserted "described in subsection A of this section" after "plan of action" in subsection C, and inserted "of action in accordance with subsection A of this section" after "plan" in	Changes were made to be consistent with Virginia Register style guidelines for regulations.  Changes made to be consistent with changes in the regulations.

Section number	Description of Requirement	What has changed	Rationale for change
		subsection D.  Replaced phrase "satellite reclamation system" with the acronym "SRS".	
200, subsection A	Monthly Monitoring Report	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
200, subdivision C 2	Annual Reporting Requirement	Replaced the term "nonbulk" with the term "non-bulk".	Grammatical corrections to be consistent with other changes in the regulations.

**Acronyms and Definitions**

*Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the "Definition" section of the regulations.*

The following acronyms are used in the Agency Background Document:

- AOSS – "alternate onsite sewage system"
- APA – "Administrative Process Act"
- AWWA – "American Waterworks Association"
- BNR – "Biological Nutrient Removal"
- CAT – "corrective action threshold"
- DCR – "Department of Conservation and Recreation"
- DEQ – "Department of Environmental Quality"
- DHCD – "Department of Housing and Community Development"
- E&N – "education and notification"
- EPA – "Environmental Protection Agency"
- IPR – "indirect potable reuse"
- N – "nitrogen"
- NOIRA – "Notice of Intended Regulatory Action"
- NMP – "Nutrient Management Plan"
- NWRI – "National Wildlife Resources Inventory"
- O&M – "operation and maintenance"
- P – "phosphorus"
- POC – "point of compliance"
- RAP – "regulatory advisory panel"
- RWM – "reclaimed water management"
- SCAT – "Sewage Collection and Treatment Regulation"
- SIUs – "Significant industrial users"
- SRS – "satellite reclamation system"
- TAC – "Technical Advisory Committee"
- TMDL – "Total Maximum Daily Load"
- US – "United States"
- UV – "ultra-violet"
- VA – "Virginia"
- VDH – "Virginia Department of Health"
- VPA – "Virginia Pollution Abatement Permit Regulation"

- VPDES – "Virginia Pollutant Discharge Elimination System Permit Regulation"
- VWEA – "Virginia Water Environment Association"
- WSS – "water supply source"