

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER PERMITTING**

**P.O. Box 1105**

**Richmond, VA 23218**

**Subject:** Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation,  
9VAC25-740-10 et seq.

**To:** Regional Directors

**From:** Melanie D. Davenport, Director



**Date:** September 10, 2018

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**Summary:**

The purpose of this guidance is to assist DEQ regional water permit staff in consistently implementing requirements of the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.) through the existing VPDES and VPA Permit Programs. This guidance contains information on water reclamation and reuse related to permitting requirements, application for a permit and associated fees, permit drafting, management of pollutants from significant industrial users, coordination within DEQ and with other state agencies, CEDS records, compliance and enforcement, and other miscellaneous technical issues; and supersedes the original Water Guidance Memo No. 10-2001.

**Electronic Copy:**

An electronic copy of this guidance in PDF format is available for staff internally on DEQNET, and for the general public on the [Virginia Regulatory Town Hall website](#).

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**Disclaimer:**

**This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate or prohibit any particular action not otherwise required or prohibited by law or regulation. If alternative proposals are made, such proposals will be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.**

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## List of Acronyms

AOSS	Alternative Onsite Sewage System
BNR	Biological Nutrient Removal
BOD <sub>5</sub>	Biochemical Oxygen Demand, 5-day
CAT	Corrective Action Threshold
CBOD <sub>5</sub>	Carbonaceous Biochemical Oxygen Demand, 5-day
CC&BP	Cross-Connection and Backflow Prevention
CIA	Cumulative Impact Analysis
COSS	Conventional Onsite Sewage System
CSEs	Compliance Schedule Events
CTC	Certificate to Construct
CTO	Certificate to Operate
DCR	Department of Conservation and Recreation
DDF	Designated Design Flow
DEQ	Department of Environmental Quality
DHCD	Department of Housing and Community Development
E&N program	Education and Notification program
eDMR	Electronic Discharge Monitoring Report
EPA	United States Environmental Protection Agency
IPR	Indirect potable reuse
INPR	Indirect nonpotable reuse
MOA	Memorandum of Agreement
NMP	Nutrient Management Plan
NTU	Nephelometric Turbidity Unit
NWRI	National Water Research Institute
OLAP	Office of Land Application Programs (DEQ)
O&M Manual	Operation and Maintenance Manual
OSS	Onsite Sewage System
OWS	Office of Water Supply (DEQ)
POC	Point of Compliance
POTW	Publicly owned treatment works
PVOTW	Privately owned treatment works
RBIS	Risk-Based Inspection Strategy
RO	Regional Office (DEQ)
RWM plan	Reclaimed water management plan
SH&D Regulations	Sewage Handling and Disposal Regulations
SIUs	Significant Industrial Users
SRS	Satellite reclamation system
SCAT Regulations	Sewage Collection and Treatment Regulations
TMDL	Total Maximum Daily Load
UIC Program	Underground Injection Control Program
USBC	Uniform Statewide Building Code
VDH	Virginia Department of Health
VDH-DOSWS	VDH, Division of Onsite Sewage and Water Services

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VDH-ODW	VDH, Office of Drinking Water
VDH-OEHS	VDH, Office of Environmental Health Services
VPA	Virginia Pollution Abatement
VPDES	Virginia Pollutant Discharge Elimination System
VWP Permit	Virginia Water Protection Permit
WWTW	Wastewater treatment works

## **I. Introduction**

The purpose of this guidance is to assist DEQ regional water permit staff in consistently implementing the [Water Reclamation and Reuse Regulation \(9VAC25-740-10 et seq.\)](#). The guidance also builds upon existing guidance for Virginia Pollutant Discharge Elimination System (VPDES) and Virginia Pollution Abatement (VPA) permits to authorize water reclamation and reuse projects through these permit programs. Therefore, regional water permit staff should always refer to the most current guidance and permit manuals posted on the [DEQNET](#).

## **II. Authority**

The authority for promulgation of the Water Reclamation and Reuse Regulation (9VAC25-740) is contained in §§ 62.1-44.2 et seq. of the Code of Virginia. Specifically, § 62.1-44.2 establishes the purpose of State Water Control Law to, among other things, promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health; and § 62.1-44.15(15) authorizes the State Water Control Board (Board) 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. The Water Reclamation and Reuse Regulation became effective October 1, 2008, and subsequent amendments to the regulation became effective January 29, 2014.

## **III. Implementation of the Regulation**

### **A. What is water reclamation and reuse?**

Reclamation or water reclamation, reuse or water reuse, and reclaimed water are defined in 9VAC25-740-10 of the Water Reclamation and Reuse Regulation as follows:

“Reclamation” means the treatment of domestic, municipal or industrial wastewater or sewage to produce reclaimed water for a water reuse that would not otherwise occur.

“Reclaimed water” means water resulting from the treatment of domestic, municipal or industrial wastewater that is suitable for water reuse that would not otherwise occur. Specifically excluded from this definition is “gray water.” For the purposes of this chapter, “harvested rainwater” and “stormwater” are also excluded from this definition.

“Reuse” or “water reuse” means the use of reclaimed water for a direct beneficial use, an indirect potable reuse, an indirect nonpotable reuse, or a controlled use in accordance with this regulation.

“Water reclamation” means the reclamation of wastewater or treated effluent for reuse.

Based on these definitions, treatment of wastewater or sewage does not constitute water reclamation unless the reclaimed water is for a subsequent reuse. Disposal of reclaimed water is not a reuse. These definitions also limit the applicability of the Water Reclamation and Reuse

Regulation to the reclamation and reuse of domestic, municipal and industrial wastewater, specifically excluding gray water, harvested rainwater and stormwater. Definitions for gray water, harvested rainwater and stormwater are contained in [9VAC25-740-10](#) to distinguish them from domestic, municipal or industrial wastewater, the reclamation and reuse of which may be subject to the requirements of the Water Reclamation and Reuse Regulation. Refer to subsection [III.N](#) for information regarding other state programs affecting or regulating to the reclamation, recycle and reuse of gray water, harvested rainwater and stormwater.

Water reclamation and reuse is voluntary, not mandatory in Virginia. However, DEQ regional water permit staff should encourage applicants or permittees to consider water reclamation and reuse where it would benefit water quality and supply, be protective of public health, and is practical and feasible for an applicant or permittee to implement.

## **B. Permitting requirements for water reclamation and reuse**

### **1. General**

Because the Water Reclamation and Reuse Regulation is a technical regulation, requirements of the regulation will be implemented through existing water permit programs, such as those for VPDES and VPA permits. In most cases, permits will be issued to reclamation systems, satellite reclamation systems (SRSs), reclaimed water distribution systems, and reclaimed water agents, for applications received after October 1, 2008. Requirements of the regulation may also be applied to existing permitted facilities that began producing, distributing or using reclaimed water prior to October 1, 2008, through permit modifications or reissuances when such facilities are to be modified or expanded unless specifically excluded under [9VAC25-740-50.A](#) of the regulation.

Reclamation systems, SRSs, reclaimed water distribution systems, conjunctive systems (as defined in [9VAC25-740-10](#)), and irrigation reuse sites under common ownership or management may be covered by one permit with some restrictions. Although there are numerous examples of common ownership or management, for the purposes of implementing this regulation, two facilities or properties owned by separate corporations that are subsidiaries of a common holding company are considered to be under common ownership or management.

Most end users of reclaimed water will not be required to obtain a permit, but will be required to enter into a service agreement or contract with all reclaimed water agents from which the end user will receive reclaimed water prior to receipt of such water. End users that receive reclaimed water from more than one provider or reclaimed water agent may be required to obtain a permit from DEQ (See subdivision [III.B.4](#)).

Existing VPDES or VPA permit coverage is required to issue a temporary emergency authorization for the production, distribution or reuse of reclaimed. Refer to subdivision [III.E](#) for more details regarding emergency authorizations.

### **2. Permitting options for reclaimed water distribution systems**



Per [9VAC25-740-40.A](#), owners of reclamation systems and reclaimed water distribution systems, and reclaimed water agents are required to obtain a VPDES or VPA permit to produce and distribute reclaimed water, unless otherwise excluded from the requirements of the regulation per [9VAC25-740-50.A](#). Where a reclamation system and reclaimed water distribution system are under common ownership or management, one permit may be issued to cover both.

**a. Alternative to permitting reclaimed water distribution systems**

There is an exception to VPDES or VPA permitting requirements for reclaimed water distribution systems where all of the following apply ([9VAC25-740-40.D](#)):

- (i) The distribution system is not under common ownership or management with the reclamation system that provides water to the distribution system,
- (ii) The distribution system does not distribute reclaimed water to any end user other than the owner or management of that distribution system, and
- (iii) A service agreement or contract is established between the reclamation system and the reclaimed water distribution system (see subdivision [III.C.4.d](#) for details regarding service agreements or contracts).

An example of this may be a distribution system owned or managed by an industry that conveys reclaimed water directly from a municipally owned reclamation system to reuses only at the industrial facility.

For this alternative to permitting reclaimed water distribution systems, the reclamation system, which holds the DEQ permit or authorization (see subdivision [III.D](#)), is responsible for ensuring that the distribution system complies with the requirements of the regulation and permit or authorization. These responsibilities are extended to the distribution system through the terms and conditions of the service agreement or contract between the reclamation system and distribution system. Therefore, conditions related to the proper monitoring, operation and maintenance of the reclaimed water distribution system must be included in the permit or authorization issued to the reclamation system, and subsequently included in the service agreement or contract between the reclamation system and the distribution system. An example or copy of the service agreement or contract is to be included in the reclaimed water management plan (see subdivision [III.C.4](#)), which is to be submitted to the DEQ Regional Office (RO) in the Application Addendum (see subdivision [III.C.1](#)) or through a condition of the permit or authorization issued to the reclamation system (see [Attachment A](#)). The RO is responsible for verifying the adequacy of the service agreement or contract upon receipt.

Note that DEQ still has the option to issue a permit to the reclaimed water distribution system where, for example, the agency finds that the terms and conditions of the service agreement or contract between the reclamation system, which holds the DEQ permit or authorization, and the reclaimed water distribution system are inadequate to ensure the protection of public health and the environment, or the reclamation system is unable to enforce the terms and conditions of the service agreement or contract. This may also involve a modification to the permit or

authorization issued to the reclamation system to remove conditions related to the proper monitoring, operation and maintenance of the reclaimed water distribution system.

**b. Reclaimed water hauling operations**

A reclaimed water hauling operation transports and distributes reclaimed water to one or more end users, including an end user that is also the hauling operation, and is considered a type of reclaimed water distribution system. Components of a reclaimed water hauling operation include, at a minimum, tank trucks or other equipment used to haul reclaimed water; may additionally include reclaimed water storage facilities, reclaimed water filling stations, and facilities or equipment considered necessary to maintain the quality of reclaimed water distributed by the hauling operation; and must comply with applicable design criteria specified in [9VAC 25-740-110](#).B and C.

Reclaimed water hauling operations may be independent of or under common ownership or management with reclamation systems that supply reclaimed water to these operations. This, in turn, affects permit coverage and application submittals for hauling operations.

An independent reclaimed water hauling operation may not require a separate permit where the RO determines that the operation qualifies for the alternative to permitting reclaimed water distribution systems described in subdivision [III.B.2.a](#). In this case, the hauling operation will not distribute reclaimed water to end users other than the owner or management of that hauling operation ([9VAC25-740-40.D](#)), or the hauling operation will at all times maintain control over all direct reuse of reclaimed water that it delivers to any site or facility regardless of who owns or manages the site or facility. In either circumstance, the owner or management of the hauling operation is the only “end user”, as defined in [9VAC25-740-10](#), of reclaimed water distributed by the hauling operation. Also, conditions related to the proper monitoring, operation and maintenance of the hauling operation must be included in the permit or authorization issued to the reclamation system, and subsequently included in the service agreement or contract (see subdivision [III.C.4](#)) between the reclamation system and the hauling operation.

Where an independent hauling operation will not qualify for the alternative to permitting reclaimed water distribution systems, the hauling operation must be covered by a separate permit.

Separate permit coverage may also be required for an independent hauling operation that would not under most circumstances require a permit except where the RO determines that reclaimed water monitoring by the operation is necessary. This might apply, for example, where the hauling operation does not distribute reclaimed water received from a reclamation system within 24 hours of receipt, or transfers reclaimed water received among tank trucks and/or storage facilities where the duration and conditions of storage degrade or are likely to degrade the reclaimed water quality below applicable standards. Refer to reclaimed water distribution system monitoring in subdivision [III.G.6.1](#) for applicable monitoring of reclaimed water hauling operations.

For an independent reclaimed water hauling operation that will require separate permit coverage,

the applicant is to complete and submit the [VPA Permit Application Form A](#) and the Application for Reclaimed Water Hauling Operations. Where the same hauling operation will qualify for the alternative to permitting reclaimed water distribution systems, the applicant is to complete and attach the Application for Reclaimed Water Hauling Operations to the [Application Addendum](#) submitted for the reclamation system that will supply reclaimed water to the operation.

Where a reclaimed water hauling operation will be under common ownership or management with a reclamation system that will supply reclaimed water to the operation, the hauling operation is to be covered by the permit or authorization issued to the reclamation system, and no service agreement or contract is required between the hauling operation and the system. In this case, the applicant is to complete and attach the Application for Reclaimed Water Hauling Operations to the [Application Addendum](#) submitted for the reclamation system.

Where an independent reclaimed water hauling operation will require separate permit coverage, one or more permits may be required for the same operation determined on a case-by-case basis. Circumstances where the hauling operation may require multiple permits include, but are not limited to, the following:

- (i) The hauling operation will have multiple locations for equipment and facilities, or multiple reclaimed water service areas (see [III.C.4.a](#)) within the jurisdiction of more than one DEQ RO. In this case, each RO may issue a separate permit to cover the hauling operation.
- (ii) The hauling operation will have multiple locations for equipment and facilities, or multiple reclaimed water service areas (see [III.C.4.a](#)) within the jurisdiction of one RO. In this case, the RO may issue separate permits to cover individual locations or large discrete reclaimed water service areas rather than a single permit to cover all locations and all reclaimed water service areas of the hauling operation.

In these situations, the RO is responsible for determining the number of permits that may be required for an independent reclaimed water hauling operation, but may request assistance from the Office of Land Application Programs (OLAP) when making the determination. ROs are not to issue a permit providing state-wide coverage for all locations and reclaimed water service areas of any independent reclaimed water hauling operation.

Reclaimed water standards pages and special conditions for hauling operations are provided in [Attachment A](#). Reclaimed water standards pages will typically apply where an hauling operation owns and/or manages facilities used to store reclaimed water distributed by the operation (i.e., system storage) as discussed in subdivision [III.G.6.k](#). Although conditions for reclaimed water hauling operations are included among “Conditions applicable to reclaimed water distribution systems”, not all conditions applicable to reclaimed water distribution systems will apply to reclaimed water hauling operations. For example, the need for a condition to submit an operations and maintenance (O&M) manual will vary for each hauling operation based on the size and complexity of the operation. An operation that consist of only one reclaimed water tank truck may not need an O&M Manual, while an operation that consists of several reclaimed water tank trucks, a reclaimed water storage facility and retreatment units may need a detailed O&M

Manual.

### **3. Activities excluded or prohibited by the regulation**

The regulation identifies activities that are either excluded from the requirements of the regulation (under [9VAC 25-740-50.A](#)) or prohibited (under [9VAC25-740-50.B](#)). The following is a more detailed discussion of some exclusions and prohibitions warranting further explanation beyond that provided in the regulation.

#### **a. Activities permitted by the Virginia Department of Health (VDH)**

Activities permitted by VDH, such as, but not limited to, septic tank drainfields and other on-site sewage treatment and disposal systems, are excluded from the requirements of the Water Reclamation and Reuse Regulation. However, this exclusion does not apply to alternative onsite sewage systems (AOSSs) with an average daily sewage flow greater than 1,000 gpd that are concurrently permitted by DEQ and VDH to allow sewage reclamation and reuse in addition to onsite sewage treatment and disposal. See subdivision [III.K.2.d \(1\)](#) for information regarding DEQ and VDH joint permitting of onsite sewage systems.

#### **b. Non-potable water produced and utilized by the same treatment works**

Activities excluded from the requirements of the regulation include “Nonpotable water produced and utilized on-site by the same treatment works for facilities permitted through the VPDES or VPA permit.” This includes, among other nonpotable water uses at the treatment works site, incidental landscape irrigation that is not identified as land treatment described in the Sewage Collection and Treatment (SCAT) Regulations ([9VAC25-790](#)). The Water Reclamation and Reuse Regulation further states that for this exclusion “The treatment works site shall include property that is either contiguous to or in the immediate vicinity of the parcel of land upon which the treatment works is located, provided such property is under common ownership or management with the treatment works.”

“Incidental landscape irrigation” used in the context of this exclusion refers to irrigation that is not the primary means of disposal or use of nonpotable water produced by the treatment works and authorized by the VPDES or VPA permit.

Other uses of nonpotable water in addition to incidental landscape irrigation at the treatment works may be excluded from the requirements of the regulation, including but not limited to, car or truck washing, wash down of paved surfaces, and flushing of pipes and tanks. However, the greater the potential for worker contact with the nonpotable water for these and other onsite uses, the more highly treated and disinfected the nonpotable water should be. In this case, federal and state occupational safety and health standards and requirements may apply to protect employees from pathogens and other constituents that may be harmful to human health in the nonpotable water.

Although [9VAC25-740-50.A.3](#) states that the treatment works site includes property that is either

contiguous to or in the immediate vicinity of the parcel of land upon which the treatment works is located and under common ownership or management with the treatment works, the definition of “treatment works” under [9VAC25-740-10](#) limits what “land” can be considered part of a treatment works to that which “will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment”. Therefore, [9VAC25-740-50.A.3](#) does not exclude from the requirements of the regulation the use or reuse of nonpotable water on land contiguous to or in the immediate vicinity of the parcel of land upon which the treatment works is located and under common ownership or management with the treatment works, unless it can be demonstrated by the applicant or permittee that such land is part of the treatment works as defined in [9VAC25-740-10](#). This applies, but is not limited to, the following circumstances:

- The use or reuse of nonpotable water to irrigate indoor and outdoor landscaping at a high-rise building that receives the nonpotable water from a VPDES or VPA permitted conjunctive system or SRS located in the basement of the building. Although the building is on land contiguous to the land upon which the “treatment works” is located and may be under common ownership or management with the treatment works, the building is not considered part of the treatment works.
- The use or reuse of nonpotable water to irrigate common areas owned or managed by a homeowners association that receive the nonpotable water from a VPDES or VPA permitted wastewater treatment works (WWTW) owned by the association. Although the common areas to be irrigated may be on land in the immediate vicinity of land upon which the “treatment works” is located and may be under common ownership or management with the treatment works, the common areas are not considered part of the treatment works.

### **c. Specific reclamation and reuse activities related to industrial facilities**

Industrial effluents or other industrial water streams created prior to final treatment and used in water re-circulation, recycle, or reuse systems located on the same property as the industrial facility, may also be excluded from the requirements of the regulation provided:

- (i) The water used in these systems does not contain or is not expected to contain pathogens or other constituents in sufficient quantities and with a potential for human contact as may be harmful to human health;
- (ii) These systems are closed or isolated to prevent worker contact with the water of the systems; or
- (iii) Other measures are in place, including but not limited to, applicable federal and state occupational safety and health standards and requirements, to adequately inform and protect employees from pathogens or other constituents that may be harmful to human health in the water to be re-circulated, recycled or reused at the facility.

If an industrial facility does not meet any of these criteria, the industry must apply for a VPDES or VPA permit to reclaim and reuse the industrial wastewater on site.

Note that although an industry may be excluded from the requirements of the Water Reclamation

and Reuse Regulation per [9VAC25-740-50.A](#), the same industry may be subject to the requirements of the VPDES or VPA Permit Regulations and may still require a permit. For example, irrigation reuse of reclaimed industrial wastewater on the same property as the industry that produces the reclaimed water may be excluded from the requirements of the Water Reclamation and Reuse Regulation. However, the same activity may be considered land treatment requiring a VPA permit to manage pollutants with the potential to impact groundwater.

Where an industrial facility reclaims industrial wastewater for reuses off the property of the facility, the industrial facility will require a permit. Standards for the reclamation of industrial wastewater are discussed in subdivision [III.G.2.b](#) of the guidance.

An industrial facility that receives reclaimed water for reuse from a reclaimed water agent not under common ownership or management with the industrial facility will not require a permit, provided the industrial facility establishes a service agreement or contract with the reclaimed water agent.

#### **d. Unintentional reuse**

Unintentional reuse is the unintentional or unplanned use of reclaimed water after it is discharged through a VPDES permitted outfall to surface waters of the state, including wetlands, and is excluded from the requirements of the regulation. In most cases, unintentional reuse will be an incidental use of surface waters that occurs whether or not the reclaimed water is present. Indirect potable reuse and indirect nonpotable reuse differ from unintentional reuse in that both are intentional or planned reuse of the discharged reclaimed water, and are not excluded from the requirements of the regulation with the exception of projects that existed prior to the effective date of the regulation. Refer to subdivision [III.G.3.e](#) for more information regarding indirect potable reuse and indirect nonpotable reuse.

#### **e. Groundwater recharge and land treatment of wastewater**

Groundwater recharge with reclaimed water may be approved on a case-by-case basis in accordance with and subject to the requirements of the Water Reclamation and Reuse Regulation where the method of recharge is not subject to other state or federal regulations and/or otherwise excluded. For example, groundwater recharge by rapid infiltration is regulated in accordance with the SCAT Regulations ([9VAC25-790](#)) as a category of land treatment, and is specifically excluded from the requirements of the Water Reclamation and Reuse Regulation per [9VAC25-740-50.A.6](#). Recharge of an aquifer with reclaimed water that is authorized by the EPA Underground Injection Control (UIC) Program is excluded from the requirements of the Water Reclamation and Reuse Regulation per [9VAC25-740-50.A.10](#). This exclusion, however, applies to only *direct* injection wells of reclaimed water in Virginia. Groundwater recharge with reclaimed water by other methods that do not involve direct injection or rapid infiltration, such as, but not limited to, vadose zone wells, may be subject to the requirements of the Water Reclamation and Reuse Regulation.

Irrigation reuse in accordance with the Water Reclamation and Reuse Regulation and land treatment in accordance with the SCAT Regulations are often confused with each other as they

both use water derived from wastewater. However, the two are not the same. Irrigation reuse utilizes only reclaimed water meeting the standards of the Water Reclamation and Reuse Regulation, and is primarily intended to meet the water demands of the irrigated vegetation but may have the secondary benefit of providing some nutrients. Lastly, irrigation reuse sites are not intended to provide any additional treatment of the reclaimed water applied to them. Therefore, no groundwater monitoring is required at these sites.

Land treatment via slow rate irrigation designed and operated in accordance with the SCAT Regulations ([9VAC25-790-880](#)), must utilize wastewater that has received secondary or better treatment determined by site conditions. Unlike irrigation reuse, land treatment irrigation is first and foremost a method of treating and disposing of wastewater, and the rate of application is intended, in most cases, to meet the nutrient demands of the irrigated vegetation within maximum limits that prevent runoff. Because the land treatment site is considered part of the wastewater treatment process, groundwater monitoring will, in most cases, be required to verify that any discharge to groundwater from the site complies with applicable Ground Water Standards ([9VAC25-280](#)).

Land treatment systems, particularly those that employ slow rate irrigation, may be converted to irrigation reuse sites as discussed in subdivision [III.O.3](#).

**f. Distribution to one or two family dwellings**

Per [9VAC25-740-50.B.2](#), the reuse of reclaimed water distributed to one or two family dwellings is prohibited. However, this prohibition does not apply to reuses outside of and on the same property as the one or two family dwellings (e.g., landscape irrigation), provided the reclaimed water is not distributed by way of plumbing within the dwellings. The rationale for this prohibition is due to the greater potential for plumbing cross-connections between potable or sewer piping and reclaimed water piping by persons that are not professional plumbers. The plumbing at other short or longer term places of residence, such as hotels and dormitories, will typically be serviced by professional plumbers, thereby reducing the potential for cross connections. Consequently, the use of reclaimed water inside these dwellings is not prohibited.

**g. Significant adverse impact to other beneficial uses**

Where a WWTW diverts “source water” or untreated or partially treated wastewater to reclamation and non-discharging reuse(s), this may result in a consumptive use of water that would otherwise be discharged and, thereby, support flow in the receiving state water of the discharge. In some cases, this reduction in the discharge could adversely impact beneficial uses (as defined in [9VAC25-740-10](#)) that rely, in part, on water from the discharge of the WWTW, particularly under low flow conditions. Consequently, [9VAC25-740-50.B.7](#) prohibits the reduction of a discharge from a VPDES permitted WWTW due to water reclamation and reuse that could affect physical, chemical or biological properties of receiving state waters, resulting in a *significant* adverse impact to other beneficial uses. To avoid this situation, a cumulative impact analysis may be required for a reclamation system or a SRS that will result in a new diversion of source water for reclamation and reuse, or an increased diversion that is greater than the previously authorized diversion in the VPDES or VPA permit (see subdivision [III.C.2](#)).

#### **4. End users to be permitted**

Although the vast majority of reclaimed water end users will not require a permit from DEQ, an end user may require an individual permit when the end user is not under common ownership or management with any reclaimed water agent(s) providing reclaimed water to the end user, and:

- (i) The end user intends to act as a reclaimed water agent by redistributing the reclaimed water it has received (with or without blending by the end user before redistribution) to other end users; or
- (ii) The end user has a history of chronic failure to comply with the terms and conditions of the service agreement or contract with any reclaimed water agent from which it receives reclaimed water, and the end user consumes a significant portion of the reclaimed water distributed, such that operations of the reclaimed water agent(s) may be adversely impacted or jeopardized by terminating service to the end user per the terms of the service agreement or contract.

### **C. Application for a permit**

#### **1. Application Addendum**

Nonemergency water reclamation and reuse projects may be authorized by a VPA permit, a VPDES permit or an administrative authorization in association with VPDES permit. See subsection [III.D](#) for a discussion of minor VPA permit modifications, major VPDES and VPA permit modifications and administrative authorizations in association with VPDES permits. An [Application Addendum](#) must be submitted for all nonemergency water reclamation and reuse projects either with the appropriate VPDES or VPA permit application forms for issuances and reissuances, or separately for modifications of VPA permits or administrative authorizations associated with VPDES permits for water reclamation and reuse. When submitted with a VPDES or VPA permit application, the Application Addendum is considered part of application and must be completed in order to deem the application complete.

The [Application Addendum](#) consists of six sections and instructions. The sections include the following:

- A - Applicant Information
- B - Permitting Information
- C - General Project Information
- D - Reclaimed Water Management Plan
- E - Consent to Receive and Certify Receipt of Electronic Mail
- F - Certification Statement

Information provided by the applicant or permittee in the [Application Addendum](#) and associated VPDES or VPA permit application forms and attachments, is needed to assemble the appropriate reclaimed water standards, monitoring requirements and special conditions for the permit or



administrative authorization. Although [9VAC25-740-100.B](#) requires an applicant to submit specific information regarding reclamation systems and reclaimed water distribution systems, it also allows the applicant to provide this information by referencing information previously submitted to the board or DEQ unless changes have occurred that require the submission of new or more current information. Most reclamation systems of wastewater (municipal and industrial) will be conjunctive systems consisting of an existing permitted WWTW and a reclamation system added to the WWTW with no or minimal separation between the two facilities. If information required in the Application Addendum pertaining to a reclamation system is already provided in the associated VPDES or VPA permit application forms pertaining to the WWTW, the applicant may reference the VPDES or VPA application forms in the Application Addendum.

The [Application Addendum](#) should minimally reference VPDES and VPA permit application forms for information regarding reclaimed water distribution, non-system storage and reuse.

When reviewing the [Application Addendum](#), it is particularly important to note the distinction between irrigation reuse of reclaimed water and land treatment or land application of treated or partially treated wastewater. All irrigation with reclaimed water must be supplemental, and supplemental irrigation is not by definition the same as land application or land treatment described in the SCAT Regulations (see subdivision [III.C.5](#)). Therefore, parts of the VPA Permit Application Forms pertaining to the land application of wastewater should not be referenced to complete sections of the Application Addendum pertaining to supplemental irrigation reuse of reclaimed water (Section D). For example, VPA Permit Application [Form C](#), Part C-II and the Authorization to Land Apply Waste should not be referenced in the Application Addendum for irrigation reuse of reclaimed industrial wastewater, and Form D, Part D-I, limited to only subsections on land application requirements, site characterization and crop and site management, should not be referenced in the Application Addendum for irrigation reuse of reclaimed municipal wastewater.

Where the rate of irrigation with reclaimed water exceeds supplemental, this is land treatment or land application and cannot be authorized as irrigation reuse. Land treatment or land application sites may be converted to supplemental irrigation reuse sites, in which case subsection D.3 of the [Application Addendum](#) should be completed. For the conversion of a land treatment system to irrigation reuse, request additional supporting information as discussed in subdivision [III.O.3](#).

A separate application form is required for an emergency authorization for the production, distribution and reuse of reclaimed water as discussed under subsection [III.E](#).

#### **a. Compliance history**

When reviewing an application for a reclamation system, regional water permit writers should review the most recent five years of monitoring reports and coordinate with regional water inspectors to check the compliance history of each WWTW that will provide source water to the reclamation system. The compliance history of the WWTWs can indicate the potential to discharge non-compliant water to reclamation and reuse, particularly for projects that involve a conjunctive system as defined in [9VAC25-740-10](#). This becomes increasingly significant when the reclamation system proposes to produce reclaimed water for reuses with potential for public

contact. Where any of the WWTWs are unable to consistently meet their permit effluent limits, the permit writer may include project-specific conditions in the permit to ensure that reclamation and reuse of wastewater will be performed in a manner protective of the environment and public health. In some cases, the reclamation and reuse project may require a compliance schedule or be part of a corrective action plan to address the treatment deficiencies of a WWTW. Where these circumstances occur, they should be noted in the fact sheet of the permit action authorizing the reclamation system (see subdivision [III.G.9](#)).

#### **b. Application requirements for reclamation systems of industrial wastewater**

Reclamation systems of industrial process wastewater that are not excluded from the requirements of the Water Reclamation and Reuse Regulation (see subdivision [III.B.3.c](#)) must apply for a VPDES or VPA permit or an administrative authorization in association with an existing VPDES permit. Where an industrial WWTW will have or maintain a point source discharge and reclaim a portion of the wastewater that it treats for reuse, the applicant must complete the appropriate VPDES permit application forms for the discharge and the [Application Addendum](#) for reclamation and reuse of the industry's process wastewater. For the reclamation and reuse of an industrial wastewater that does not involve a discharge to surface waters, a VPA permit will be required. At a minimum, the applicant must complete VPA permit application [Form A](#) and [Form C](#), Part C-I and the Application Addendum. The applicant may also be required to complete [Form C](#), Part C-II of the VPA permit application for sites that:

- (i) Will be irrigated with reclaimed industrial wastewater produced and distributed by the applicant, and
- (ii) Are under common ownership or management with the applicant.

#### **2. Cumulative impact analysis**

As discussed in subdivision [III.B.3.g](#), [9VAC25-740-50.B.7](#) prohibits the reduction of a discharge from a VPDES permitted WWTW due to water reclamation and reuse that could affect physical, chemical or biological properties of receiving state waters in a manner resulting in *significant* adverse impacts to beneficial uses of such waters. To avoid this situation, the applicant of any project proposing a reclamation system or SRS that will result in a new or increased diversion of source for reclamation and reuse must request a cumulative impact analysis (CIA) from the DEQ Office of Water Supply (OWS). The CIA assesses the potential of the project to cause significant adverse impacts to beneficial uses of the receiving water for the VPDES permitted WWTW discharge. Upon receipt of a CIA request, OWS will notify the appropriate RO and staff in OLAP of the request, determine the need for a CIA, and, if needed, perform the CIA. This applies to (i) a reclamation system or conjunctive system that will divert a portion or all of the discharge from a VPDES permitted WWTW to reclamation and reuse, and (ii) an SRS that proposes to withdraw source water (as sewage) for reclamation and reuse from a sewage collection system that also delivers sewage to a VPDES permitted WWTW.

When a CIA is required for a proposed water reclamation and reuse project, it should be completed prior to and for submission with the [Application Addendum](#) of the project. The party

requesting the CIA for the project (or requester) is responsible for providing OWS the information required per [9VAC25-740-100.B.6](#) and any other information that OWS may need to perform the CIA. Refer to subdivision [III.K.1](#) for more details regarding coordination between the requester and OWS.

Upon receiving the results summary of a completed CIA or other correspondence indicating that a CIA is not required from OWS, it is the responsibility of the requester/applicant to submit this information to the RO in the [Application Addendum](#) for the project. If neither item is included in the Application Addendum, the RO should deem the VPDES or VPA permit application incomplete and suspend further processing of the application until this information is provided by the requester/applicant.

When a CIA is performed, the RO is to use the CIA results summary, among other things, to determine the appropriate permit action (e.g., major permit modification, administrative authorization or emergency authorization (see subdivision [III.E](#))), CEDS data entries, permit application fees, and public notice requirements for the project. The CIA results summary also determines the need for the RO to coordinate the project with OWS and other entities. If the CIA results summary indicates that the project does not have the potential to cause significant adverse impacts to beneficial uses of the receiving water, no coordination by the RO with OWS is necessary. If, however, the CIA results summary indicates that the project has the potential to cause such impacts, the RO must coordinate the project with OWS, and provide notice of the [Application Addendum](#), including the CIA results summary, for comment to other agencies (state and, as applicable, federal) and entities representing beneficial uses of the receiving water that may experience significant adverse impacts due to the project. To date, most CIAs conducted for reclamation and reuse projects have indicated the potential for significant adverse impacts, specifically during periods of severe drought.

Notifications that may be required by the RO in conjunction with CIA results for a project are considered part of application review. Comments received by the RO are submitted to OWS and OWS further coordinates with commenting agencies and parties, the applicant and the RO to develop permit conditions that will avoid significant adverse impacts to beneficial uses. OWS provides these conditions to the RO to include in the draft permit for the project. OWS coordination to develop the permit conditions at this stage is considered part of permit processing. Refer to subdivision [III.K.1](#) for more detailed procedures on RO and OWS coordination related to CIA results summaries for water reclamation and reuse projects.

More than one CIA may be required for the same reclamation and reuse project within the same permit action or under separate permit actions over the life of the project. If, for example, the initial CIA for a new water reclamation and reuse project indicated that it had the potential to cause significant adverse impacts to beneficial uses of the receiving water for the affected VPDES permitted discharge, the requester could choose to make changes to the project during the application process to avoid such impacts, and request another CIA to verify that the project impacts were avoided or reduced. During or after the permit action for the project, another CIA must be requested for each increase in the amount of source water diverted to reclamation and reuse. In any case, the requester (e.g., the applicant or permittee) is allowed a maximum of two new requests for CIAs per year for the same project.

A CIA is not required for a water reclamation and reuse project that existed prior to January 29, 2014 unless the project is modified to increase the amount of source that it diverts from a VPDES permitted WWTW. It will not be necessary to repeat or revise a CIA for the reissuance of a VPDES or VPA permitted water reclamation and reuse project where there will be no changes to the project that could potentially reduce the discharge of a VPDES permitted WWTW.

Where a water reclamation and reuse project is under common ownership or management with the VPDES permitted WWTW whose discharge will be affected by the project, and where the CIA results summary indicates that the project has the potential to cause significant adverse impacts to beneficial uses of the receiving water for the VPDES permitted discharge, the water reclamation and reuse project must be covered by a major modification of the VPDES permit ([9VAC25-740-30.B.2.a](#)) if not part of an action to reissue the permit. Given the same scenario but where the CIA results summary indicates that the project will not have the potential to cause such impacts, the project may be covered by an administrative authorization associated with the VPDES permit as discussed in subdivision [III.D](#).

A CIA may also be required for an emergency authorization to produce, distribute or reuse reclaimed water (see subsection [III.E](#)) where the existing municipal WWTW to be issued the emergency authorization has a VPDES permitted discharge. Like CIAs for non-emergency permits or administrative authorizations of water reclamation and reuse projects, the CIA for emergency authorizations should be completed prior to and for submission with the application for the emergency authorization. Note that due to the short-term nature of an emergency authorization and the limited number of reuses that it may allow, the CIA for the emergency authorization will, in most cases, be an abbreviated version. Consequently, a new CIA may be required for submission with the [Application Addendum](#) for permit coverage to replace the emergency authorization. More information regarding CIAs for emergency authorizations is provided in subsection [III.E](#) and subdivision [III.K.1](#).

### **3. Auxiliary plan**

Conjunctive systems, as defined in [9VAC25-740-10](#), are systems consisting of a WWTW and reclamation system having no or minimal separation of treatment processes between the WWTW and the reclamation system. This includes SRSs that are a type of conjunctive system. Per [9VAC25-740-100.B.7](#), a conjunctive system is required to submit specific application information, referred to as an auxiliary plan in this guidance and the [Application Addendum](#). The auxiliary plan must describe measures to be immediately implemented for the management of wastewater and reclaimed water by the system in the event that the primary reuses of reclaimed water generated by the system cease or fail, and where the system:

- a. Relies primarily or completely on water reclamation and reuse to eliminate wastewater;
- b. Relies on:
  - (1) Irrigation as the primary or only reuse of reclaimed water, or

(2) One or more large end users, each consuming a significant volume of reclaimed water, such that the ability of the conjunctive system to manage wastewater would be adversely impacted if any such end user were to discontinue receiving reclaimed water from the conjunctive system; *and*

c. Does not have the ability to implement two or more of the following:

- Store reclaimed water,
- Discharge reclaimed water to another permitted reuse system, if applicable (e.g., discharge Level 1 reclaimed water to a separate Level 2 reclaimed water distribution system where both levels of reclaimed water are produced by the same conjunctive system),
- Discharge reclaimed water to surface waters of the state under a VPDES permit,
- Suspending all or a portion of water reclamation for planned periods, or
- In the case of a SRS, discharge reclaimed water into the sewage collection system from which it received source water for reclamation.

When required for a conjunctive system, an auxiliary plan is to be submitted as part of “General Project Information” under section C of the [Application Addendum](#). Where the applicant or permittee of such a conjunctive system will also act as a reclaimed water agent by directly distributing reclaimed water to one or more end users, including an end user that is also the applicant or permittee, the auxiliary plan under section C must also be incorporated by reference into the RWM plan covering the conjunctive system under section D of the Application Addendum to comply with [9VAC25-740-100.B.8](#) and to reduce unnecessary, redundant application information.

Where an applicant or permittee is required but unable to provide an adequate auxiliary plan at the time of application, the regional water permit staff may either not permit the conjunctive system or include a compliance schedule in the permit.

Where an auxiliary plan for a conjunctive system has been submitted by the applicant or permittee and approved by the RO, include a condition in the permit or authorization requiring the permittee to report implementation of the plan (see [Attachment A](#)). If the same conjunctive system will have system storage that (i) is part of the conjunctive system and (ii) will discharge to a reclaimed water distribution system, a nonsystem storage facility, or directly to a reuse, include a reclaimed water standards page in the permit or authorization requiring monitoring and reporting of the system storage when the auxiliary plan is implemented by the permittee. Most system storage facilities, with some exceptions, must maintain a minimum 2-foot freeboard ([9VAC25-740-110.C.6](#) and 7) and a volume of reclaimed water less than the design capacity of the facility to reduce the potential for unauthorized discharges. Where there is a difference in the storage volume to meet freeboard and the design capacity of the facility, the lesser volume should prevail to avoid overflows from or damage to the facility. Because these problems are more likely to occur during implementation of the auxiliary plan, require the permittee to monitor and report, at a minimum, the freeboard and net volume of reclaimed water in the storage facility while the plan is implemented. Monitoring may be monthly or more frequent,

determined by the overall condition and compliance history of the storage facility, and other factors, as applicable that may increase the potential for unauthorized discharges from the facility. Monitoring of system storage during implementation of the auxiliary plans is non-routine and should not be combined with routine monitoring that may be required for the same storage facility.

#### **4. Reclaimed water management plan**

Under Section D of the [Application Addendum](#), providers of reclaimed water or reclaimed water agents are to submit a reclaimed water management (RWM) plan. Where a reclamation system and a distribution system that receives reclaimed water from the reclamation system are permitted separately, both systems will be required to submit a separate RWM plan if both systems act as reclaimed water agents by distributing reclaimed water to one or more end users.

For a new or expanding reclamation system that will distribute reclaimed water to exclusively indirect *potable* reuse (IPR), application information specified in [9VAC25-740-100.D](#) is required in lieu of a RWM plan. For a new or expanding reclamation system that will distribute reclaimed water to exclusively indirect *nonpotable* reuse (INPR), the need for a RWM plan, information specified in [9VAC25-740-100.D](#), or a combination thereof must be determined on a case-by-case basis by the RO, taking into consideration the potential for public contact with the proposed INPR. Where, for example, it is determined that in accordance with [9VAC25-740-90.B](#), Level 1 reclaimed water is required for a particular INPR (e.g., due to a high potential for public contact), it may be more appropriate to require submission of the information specified in [9VAC25-740-100.D](#) instead of a RWM plan. Given a similar situation but where Level 2 reclaimed water is required for a particular INPR (e.g., due to a low potential for public contact) (see subdivision [III.G.3.e\(2\)](#)), it may be more appropriate to require submission of the RWM plan. For a new or expanding reclamation system that will distribute reclaimed water to IPR and to other reuses or end users in addition to IPR, both a RWM plan and application information specified in [9VAC25-740-100.D](#) for IPR are required.

The content of the RWM plan will be significantly affected by the relationship of the reclaimed water agent and end users that receive reclaimed water from the agent. For example, where the applicant or permittee is the provider and exclusive end user of the reclaimed water that it provides, and is not otherwise excluded from the requirements of the regulation per [9VAC25-740-50.A](#), the applicant or permittee may submit an abbreviated RWM plan consisting of only a description and map of the service area, an inventory of reclaimed water and reject water storage, and a water balance (see subdivisions [III.C.4.a-c](#)). In all other cases where the applicant or permittee provides reclaimed water to end users in addition to or other than itself, and is not otherwise excluded from the requirements of the regulation, the applicant or permittee must provide more information in the RWM plan as described in subdivisions [III.C.4.d through h](#). Subdivision [III.C.4.i](#) discusses amendment of a RWM plan for the addition of new end users and reuses.

Like other reclaimed water distribution systems, a reclaimed water hauling operation (see subdivision [III.B.2.b](#)) acting as a reclaimed water agent must have a RWM plan, but the RWM plan in this case is to be included in an Application for Reclaimed Water Hauling Operations and

not an [Application Addendum](#). A reclaimed water hauling operation may also submit an abbreviated RWM plan if determined to be an exclusive end user. An hauling operation will be considered an “exclusive” end user if it will not distribute reclaimed water to end users in addition to or other than the owner or management of the operation. Unlike other reclaimed water distribution system, an hauling operation will be also be considered an “exclusive” end user if it will at all times maintain control over all direct reuse of reclaimed water that it delivers to any site or facility regardless of who owns or manages the site or facility.

Both the RO water permit writer and RO water compliance inspector should review the RWM plan. Inspectors should focus their review on items of the plan that they will need to refer to for future inspections. All identified deficiencies of the RWM plan should be included in the deficiency letter prepared by the permit writer to the applicant or permittee. Refer to subdivision [III.M.1.b \(1\)](#) for more information regarding inspector review of Application Addendums, including RWM plans.

Under certain circumstances, the applicant or permittee may be unable to submit a complete RWM plan at the time of application (e.g., systems and equipment that will provide reclaimed water to end users are not yet in place or operational, end users are not yet secured, etc.). In this case, a condition may be included in the permit or authorization issued to the project, requiring the submission of a complete RWM plan at a future date (see [Attachment A](#)).

**a. Description and map of service area**

All RWM plans must contain a description and map of the reclaimed water service area or the area to receive reclaimed water directly from the project acting as the reclaimed water agent. The description of the service area is to include general details, and the current and projected number of end users that will received reclaimed water from the project for the term of the permit issued to the project (i.e., five years for a VPDES or ten years for a VPA permit).

The service area map in most RWM plans is to display the location of all reclaimed water reuses according to the reuse categories listed in [9VAC25-740-90.A](#), including urban-unrestricted access, irrigation-unrestricted access, irrigation-restricted access, landscape impoundments, construction and/or industrial. A reuse not listed in [9VAC25-740-90.A](#) may be included in a reuse category listed above where the reuse has been approved in accordance with [9VAC25-740-90.B](#) (see subdivision [III.G.3](#)) and is similar to other reuses within the reuse category. A reuse not listed in [9VAC25-740-90.A](#) that is unlike other reuses of any reuse category listed above, is to be added as a new and separate reuse category to display on the map, regardless of whether it has or has not been approved in accordance with [9VAC25-740-90.B](#).

The service area map must also identify and show the location of all public potable water supply wells and springs, and surface water withdrawal intakes for public water supply within the boundaries of the service area.

Due to the mobile nature of reclaimed water hauling operations and the varying, less predictable number of end users that they will have within their service areas, hauling operations will not be required to display the location of all reclaimed water reuses according to reuse categories on

their service area maps. Instead, the service area description for each hauling operation is to include approximate percentages of the total reclaimed water delivered by the operation to each reuse identified in the application for the operation and within the service area. Also, where an Application for Reclaimed Water Hauling Operations must be submitted with an [Application Addendum](#) (see subdivision [III.B.2.b](#)) for reclaimed water agents that will provide reclaimed water to the hauling operation, the service area description for each such agent contained in the RWM plan of the Application Addendum is to reference the RWM plan in the application for the hauling operation for additional information regarding the agent's service area.

All service area descriptions and maps of the RWM plan must be updated by the permittee with each permit renewal.

#### **b. Inventory of reclaimed water and reject water storage**

All RWM plans must have a current inventory of impoundments, ponds or tanks that are used for reject water storage, system storage and non-system storage. Only those reject water storage and system storage facilities that are under common ownership or management with the applicant or permittee are to be included in the inventory. For example, a generator of reclaimed water with reject water storage and system storage that is also acting as a reclaimed water agent must include these facilities in the inventory. A reclaimed water distribution system acting as a reclaimed water agent is not likely to have reject water storage but may have system storage that must be included in the inventory.

Independent of who owns or manages nonsystem storage facilities, they are to be included in the inventory if they will be located within the service area of the RWM plan (see subdivision [III.C.4.a](#)) and will receive reclaimed water directly from the applicant or permittee.

For each storage facility contained in the inventory, the applicant or permittee must provide the following information:

- Name or identifier of the facility,
- Location of the facility (including latitude and longitude),
- Function of the facility (i.e., reject water storage, system storage or non-system storage),
- Type of the facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
- Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to each storage facility within 450 feet of that facility.

Per [9VAC25-740-100.C.1.b](#), the storage facility inventory must be current. While a revised inventory for the RWM plan should be submitted with each subsequent permit reissuance, revisions to the inventory may also be made independent of a permit action. For the addition of new storage facilities to an inventory after permit issuance or reissuance, the permittee must submit to the RO an amended inventory at least 30 days before reject water or reclaimed water



will be introduced into the new storage facilities. Where applicable, the permittee should submit a revised storage facility inventory following the submission of a preliminary engineering report and obtaining certificates to construct and operate, if required, for new reject water or reclaimed water storage facilities that are to be part of a reclamation system, SRS or reclaimed water distribution system (see subsection [III.H](#)).

### c. Water balance

The RWM plan must include a water balance for each system covered by the plan that accounts for all annual average and monthly average inputs and outputs (by volume) of reclaimed water by the system. Inputs and outputs of each water balance are to include the following:

- Reclaimed water to be **generated** by the system, **received** by the system from other systems (e.g., reclamation systems, conjunctive systems, SRSs and reclaimed water distribution systems), or both. Other systems in this case, may or may not be under common ownership or management with the system.
- Reclaimed water to be **stored** in facilities that are included in the storage inventory of the RWM plan (see subdivision [III.C.4.b](#)) and are considered part of or under common ownership or management with the system. This does not include storage for substandard reclaimed water in reject water storage facilities.

System storage is a particularly important component of the water balance where there is seasonal variability in reclaimed water demand and no other options are available for alternative generation or management of all or a portion of the reclaimed water (e.g., planned suspension of reclaimed water production, discharge of the reclaimed water through a VPDES permitted outfall, etc.). For these circumstance, [9VAC25-740-110.C.8.b](#) (2) contains specific design capacity requirements for only system storage of reclaimed water. Precipitation data used to design uncovered system storage facilities should be based on the wettest growing season over the most recent 25-year interval.

- Reclaimed water to be **reused** by all end users that will receive reclaimed water directly from the system, including but not limited to, an end user that is the system. Reuse must include projected reclaimed water demands for each reuse category that is displayed on the service area map of the RWM plan (see subdivision [III.C.4.a](#)). Reclaimed water to be distributed to IPR is not to be included in this water balance.
- Reclaimed water to be **discharged** or **disposed** by the system in lieu of or in addition to other management options (e.g., storage or retreatment). A discharge of reclaimed water may be, for example, to a surface water from a VPDES permitted conjunctive system, or to a sewage collection system from a VPDES or VPA permitted SRS. An example of reclaimed water disposal may be via a land treatment system described in the SCAT Regulations ([9VAC25-790](#)). Where the system will be a conjunctive system, only that portion of the system's effluent diverted to reclamation and subsequently discharged by the system to surface waters is to be considered discharged in the water balance. This would apply, for example, where the quality of the reclaimed water produced by the

system is found to be substandard for the intended reuses but complies with the effluent limits of the discharge.

Discharge or disposal of reclaimed water included in the water balance must be authorized by a DEQ permit. Leaks of reclaimed water in storage or distribution are not authorized discharges or disposal, and are not to be included in the water balance as an output.

For discharging WWTWs that will rely on water reclamation and reuse to meet a waste load allocation (WLA), the water balance may also be used to demonstrate that a facility is designed to comply with the WLA for its discharge.

The water balance for a system covered by the RWM plan is not the same as a water balance that may be needed to demonstrate supplemental irrigation at a bulk irrigation reuse site. However, water balances for the RWM plan are to include bulk irrigation reuse as an output where this reuse is included in any of the reuse categories displayed on the service area map of the RWM plan (see subdivision [III.C.4.a](#)).

Where a system will distribute reclaimed water to IPR and to other reuses or end users in addition to IPR, the system will be required to submit (i) application information specified in [9VAC25-740-100.D](#) for IPR, including a water balance, and (ii) a RWM plan. In this case, however, the water balance required for the IPR must be included in the water balance for the RWM plan ([9VAC25-740-100.D.7](#)).

#### **d. Service agreements or contracts**

Where the applicant or permittee is acting as a reclaimed water agent that provides reclaimed water to end users other than or in addition to the applicant or permittee, the RWM plan must include examples of service agreements or contracts between the reclaimed water agent and end users. [Attachment C](#) contains the minimum water reclamation and reuse conditions for service agreements or contracts. These include general conditions, followed by other conditions that are specific to reuse categories (i.e., urban unrestricted access, irrigation-unrestricted access, irrigation-restricted access, landscape impoundments, construction, industrial, and others established on a case-by-case basis). Conditions specific to a reuse category will apply when the corresponding reuse category is identified in the RWM plan service area (see subdivision [III.C.4.a](#)). Where reuses of more than one reuse category will occur within the same service area, more than one example service agreement or contract may be necessary. Optionally, one example service agreement or contract may be developed that includes general conditions and divides all other conditions into modules according to reuse categories. The modules can then be included in or removed from an actual service agreement or contract determined by the applicability of the conditions in each module to the particular reuses of the end user. For reuses of reclaimed water that are listed in reuse categories other than urban-unrestricted access, irrigation-unrestricted access, irrigation-restricted access, landscape impoundments, construction or industrial as discussed in subdivision [III.C.4.a](#), the RO may require the inclusion of additional or modified conditions in the service agreement or contract that are consistent with requirements contained in the permit or authorization that is or will be issued to the reclaimed water agent.

[Attachment C](#) includes general conditions that are to be included in most service agreements or contracts with some exceptions noted. It is particularly important that a service agreement or contract contain the condition that reserves the right of an applicant or permittee to (i) perform routine or periodic inspections of an end user's reclaimed water reuses and storage facilities, and (ii) terminate the agreement or contract and withdraw service for any failure by the end user to comply with the terms and conditions of the agreement or contract if corrective action for such failure is not taken by the end user.

#### **e. Monitoring of end users**

Where the applicant or permittee will be a reclaimed water agent, providing reclaimed water to end users other than an end user that is the applicant or permittee, the RWM plan must contain a description of how the applicant or permittee will monitor end users to verify that they are complying with the terms and conditions of their service agreements or contracts. To accomplish this, the regulation requires that, at a minimum, the volume of reclaimed water consumed by end users be metered ([9VAC25-740-100.C.1.e](#)). This information is to be provided in Section D of the [Application Addendum](#). Reclaimed water agents also have the authority per [9VAC25-740-100.C.1.d](#) to inspect end users' reclaimed water reuses and storage facilities, which may be included as a means to monitor end user compliance.

#### **f. Education and notification program**

An education and notification (E&N) program must be developed and submitted in:

- (i) A RWM plan for reuses that are other than IPR, and will require Level 1 reclaimed water, be in areas accessible to the public or be likely to have human contact ([9VAC25-740-170.A](#)). This could apply to water reclaimed from domestic, municipal or industrial wastewater. This would not apply, for example, to reuses typically requiring a minimum of Level 2 reclaimed water (e.g., reuses with little or no potential for human contact) that use Level 1 reclaimed water instead.
- (ii) The application for a permit to authorize an IPR project ([9VAC25-740-100.D.3.a](#) and e). Information regarding the E&N program for IPR projects will be addressed in a subsequent addendum to this guidance.

Each E&N program must contain components describing the education and notification of end users and, as applicable, the affected public within the service area indicated in the RWM plan.

#### **(1) Education**

The education component of the E&N program must describe how and when information will be provided by the reclaimed water agent to end users and the public likely to have contact with reclaimed water about its origin, nature, and characteristics; the manner in which the reclaimed water can be used safely; and uses for which the reclaimed water is prohibited or limited. Individual end users must receive this information at the time of their initial connection to the

reclaimed water distribution system, which may be provided in the service agreement or contract between the reclaimed water agent and the end user. When a reclaimed water agent is not required to have an E&N program, it is recommended that the reclaimed water agent still include this information in the service agreement or contract between the reclaimed water agent and the end user. In conjunction with or, in some cases, independent of the need for an E&N program, the RWM plan may be required to include procedures to inform and educate end users about supplemental irrigation and nutrient management related to irrigation reuse of reclaimed water. This is discussed in more detail in subdivisions [III.C.5](#) and [6](#).

## **(2) Notification**

The notification component of the E&N program must describe procedures to notify end users and, as applicable, the affected public of noncompliant reclaimed water discharges to reuse that can adversely impact human health, and loss of reclaimed water service due to planned or unplanned causes. Notification requirements may also apply to systems that are not required to have an E&N program. These notifications, when they occur, are to be reported to DEQ by the permitted systems (see also subdivision [III.M.1.a \(2\)](#)).

### **(a) Noncompliant reclaimed water discharges to reuse that can adversely impact human health**

Per [9VAC25-740-170.A.2.a \(1\)](#), if treatment at a reclamation system fails more than once during a seven-day period to comply with Level 1 disinfection or other standards developed in accordance with [9VAC25-740-70.D](#) (additional standards for the reclamation of municipal wastewater) or [9VAC25-740-70.E](#) (standards for the reclamation of industrial wastewater) specifically for the protection of human health, and the noncompliant reclaimed water has been discharged to a reclaimed water distribution system or directly to a reuse, the permittee is required to notify end users of the treatment failures and advise the end users of precautions to be taken to protect human health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions must be implemented for a period of seven days or greater depending on the frequency and magnitude of the treatment failure.

Notification for the discharge of noncompliant reclaimed water to a reclaimed water distribution system must be given by the reclamation system providing reclaimed water to the distribution system. Notification for the discharge of noncompliant reclaimed water to an end user must be given by the reclaimed water agent (e.g., reclamation system, SRS or reclaimed water distribution system) providing reclaimed water directly to the end user for reuse. Such notifications, when they occur, must be reported to DEQ. Where a reclamation system discharges noncompliant reclaimed water to an independently permitted reclaimed water distribution system and the distribution system subsequently discharges the noncompliant reclaimed water to an end user for reuse, both systems must report these discharges to DEQ through their respective permits. Refer to [Attachment A](#) for permit special conditions containing the above notification and reporting requirements.

In a scenario where noncompliant reclaimed water is discharged from a reclamation system to an independently permitted reclaimed water distribution system and there is no subsequent discharge of the noncompliant reclaimed water to end users for reuse from the distribution system, notification by the distribution system to end users will not be required. Given the same scenario but where noncompliant water is discharged from a reclaimed water distribution system to end users for reuse, notification by the distribution system to end users will be required. In both scenarios described above, the reclaimed water distribution system is to report to DEQ the disposition of noncompliant water from the reclamation system. Refer to [Attachment A](#) for permit special conditions containing these reporting and notification requirements.

A permittee will also be required to provide notification to end users when reclaimed water within the reclaimed water distribution system fails at any time to comply with Level 1 disinfection (excluding CAT standards), or other standards developed in accordance with [9VAC25-740-70.D](#) or [E](#) for the protection of human health, and the distribution system is identified as the source or cause of the noncompliant reclaimed water and has discharged the noncompliant reclaimed water to a reuse. This notification will, in most cases, be based on the results of monitoring, when required, for the reclaimed water distribution system (see subdivision [III.G.6.1](#)).

Given the same scenario but where noncompliant water is not discharged from the distribution system to a reuse, notification by the distribution to end users will not be required. In both scenarios described above, the reclaimed water distribution system is to report to DEQ the disposition of noncompliant water from the distribution system. Refer to [Attachment A](#) for permit special conditions containing notification and reporting requirements.

Failure to provide notification of a discharge of noncompliant reclaimed water that can adversely impact human health to a reclaimed water distribution system or directly to a reuse is a violation.

#### **(b) Loss of reclaimed water service due to planned or unplanned causes**

The notification component of the E&N program must describe procedures to notify end users of loss of reclaimed water service due to planned or unplanned causes. Where reclaimed water service to end users will be interrupted due to planned causes, such as scheduled maintenance or repairs, the permittee must provide advance notice to end users of the anticipated date and duration of the interrupted service. Where reclaimed water service to end users is interrupted by unplanned causes, such as an upset at the reclamation system, the permittee must notify end users and the affected public of the interrupted service if it cannot or will not be restored within eight hours of discovery.

Notification for the loss of reclaimed water service to end users and, as applicable, the affected public must be given by the reclaimed water agent providing reclaimed water to the end users. A reclaimed water agent may be a reclamation system, SRS or reclaimed water distribution system, provided the system directly distributes reclaimed water to one or more end users. Notification for loss of reclaimed water service must be reported by the reclaimed water agent to DEQ. Where a reclaimed water distribution system acting as a reclaimed water agent and a reclamation system that provides reclaimed water to the distribution system are independently permitted, it

will be the responsibility of the reclamation system to notify the distribution system of any planned or unplanned loss of reclaimed water service to the distribution system. The distribution system, in turn, will be responsible for notifying end users and the affected public of loss of reclaimed water service. In this scenario, both the reclamation system and the distribution system must report notifications for the loss of reclaimed water service to DEQ through their respective permits. Refer to [Attachment A](#) for permit conditions containing the above notification and reporting requirements.

### **(3) Modes of communication**

Both the education and notification components of the E&N program must also describe all modes of communication to educate, inform, and notify end users as described in (1) and (2) of this subdivision. Modes of communication may include, but are not limited to, meetings, distribution of written information, the news media (i.e., newspapers, radio, television or the internet), and advisory signs as described in [9VAC25-740-160](#).

#### **g. Cross-connection and backflow prevention program**

Where the applicant or permittee is required to submit a RWM plan and is the owner or manager of a reclaimed water distribution system, the RWM plan must include a cross-connection and backflow prevention (CC&BP) program that:

1. Evaluates the potential for cross-connections of the reclaimed water distribution system to a potable water system. Although the regulation does not require a similar evaluation for potential cross-connection of the reclaimed water distribution system to a sewage collection system, it is recommended where any portion of a sewage collection system will be located near a reclaimed water distribution system;
2. Evaluates the potential for backflow and the public health risks associated with such backflow from industrial end users to the reclaimed water distribution system;
3. Describes inspections to be performed by the applicant or permittee at the time end users connect to the reclaimed water distribution system and periodically thereafter to prevent cross-connections to a potable water system or, if applicable, a sewage collection system, and to prevent backflow from industrial end users. These inspections are only required where evaluations performed per items 1 and 2 above determine that there exists the potential for (i) cross-connection between the reclaimed water distribution system and a potable water system or sewage collection system, or (ii) back flow to the reclaimed water distribution system from industrial users with public health risks. For periodic inspections of the reclaimed water distribution system following the initial connection inspection, the CC&BP program should specify a minimum frequency of not less than annually (or at least once per year);
4. Insures that cross-connection and backflow prevention design criteria specified in the regulation for reclaimed water distribution systems are implemented; and

5. Requires a backflow prevention device on the reclaimed water service connection to an industrial end user, unless evaluations performed per items 1 and 2 above determine that there is minimal risk to public health associated with possible backflow from the industrial end user or that there will be no backflow from the industrial end user capable of contaminating the reclaimed water supply.

The CC&BP design criteria contained in [9VAC25-740-110.B.2](#) for reclaimed water distribution systems prohibits the return of reclaimed water to a reclaimed water distribution system after the water has been delivered to an end user. There can be no direct cross-connections between a reclaimed water distribution system and a potable water supply system. However, potable water may be used to supplement reclaimed water for a reuse, provided there is an air gap separation of at least eight inches between the potable water and the reclaimed water or a reduced pressure principle backflow prevention device installed at the potable water service connection to the reuse. Lastly, the reclaimed water distribution system must also comply with applicable cross-connection and backflow requirements of other state regulations, such as the Virginia Waterworks Regulations ([12VAC5-590-590](#)) and the Virginia Statewide Building Code ([13VAC5-63](#)).

#### **h. Distribution system maintenance of reclaimed water quality and quantity**

In accordance with [9VAC25-740-110.B.9](#), “All reclaimed water distribution systems shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water such that the reclaimed water will not be degraded below the standards, excluding CAT standards, required for the intended reuse or reuses in accordance with [9VAC25-740-90](#).” To comply with this provision of the regulation, [9VAC25-740-100.C.1.h](#) requires that the RWM plan submitted for a reclaimed water distribution system provide a description of how reclaimed water quality in the system will be maintained to meet and, if determined necessary by DEQ, monitored to verify compliance with minimum standard requirements specified in [9VAC25-740-90](#), excluding CAT standards, for the intended reuse(s) of the reclaimed water. Therefore, the RO must evaluate each reclaimed water distribution system on a case-by-case basis to determine the need for monitoring. See subdivision [III.G.6.i](#) for more information regarding monitoring of reclaimed water distribution systems.

The number and location of points of compliance (POCs) for monitoring within a reclaimed water distribution system must be described by the applicant or permittee in the RWM plan and approved by DEQ ([9VAC25-740-70.B.2](#)). See also subdivision [III.G.6.b](#) for more information regarding POCs in distribution systems.

Reclaimed water distribution systems must maintain the quality of the reclaimed water that they convey to ensure that it meets the reclaimed water standards for the approved reuses. Where a reclaimed water distribution system receives substandard reclaimed water from a reclamation system or SRS, the distribution system is not responsible for correcting treatment failures of the reclamation system or SRS, but is required as the reclaimed water agent to notify end users of specific treatment failures and precautions to be taken as described in the E&N program (see subdivision [III.C.4.f](#)). Where the reclaimed water distribution system (rather than the reclamation system) is the cause of substandard reclaimed discharged to reuse, the same

notification to end users should be provided by the distribution system through the E&N program. The distribution system should also implement contingency measures to eliminate or minimize the potential to distribute substandard reclaimed water from the system to reuse for the protection of human health. See subdivision [III.G.6.1](#) for information regarding contingency plans to address substandard reclaimed water in distribution systems.

**i. RWM plan amendment for new end users and reuses**

After the issuance or reissuance of a permit to authorize water reclamation and reuse, the RWM plan is considered part of the permit. However, amendment of the RWM plan to add new end users or new reuses is not a modification of the permit unless the new end users or new reuses will require the addition of different reclaimed water standards, monitoring requirements and conditions not contained in the permit ([9VAC25-740-100.C.9](#)). If a permit modification is required as a result of modifications to the RWM plan, refer to subsection [III.D](#) of the guidance for the appropriate permit modification procedures.

Amendments to an existing approved RWM plan to add new end users or new reuses may occur independent of or as part of an action to reissue or modify the permit authorizing the system that will distribute reclaimed water to the new end users or new reuses. Such amendments must be approved by the RO before the system connects and provides reclaimed water service to the new end users or new reuses.

For amendments to a RWM plan that are submitted independent of a permit action, the RO should review and make a decision to approve, conditionally approve or not approve the amendments within 30 days of receipt. Certain amendments to the RWM may also require VDH review (see subdivision [III.K.2](#)), in which case, the RO is to coordinate VDH review (typically for a period of 14 days) to meet the 30-day decision period.

A reclaimed water agent (or permittee) who proposes amendments to a RWM plan to add new end users or new reuses is responsible for providing information demonstrating that an existing authorized system identified in the RWM plan will be able to provide the quality and quantity of reclaimed water needed for both existing and new end users and reuses. When determining the volume of reclaimed water an authorized system has or may have available to distribute to existing and new end users and reuses, various factors should be considered, including but not limited to, the type of system distributing the reclaimed water, common or separate ownership or management of connected systems, and reclaimed water storage in the system(s). For example, where the system is a reclamation system, the designated design flow (DDF) of the reclamation system (see subdivision [III.G.6.i](#)) will represent, in many cases, the maximum reclaimed water available for existing and new end users and reuses. Where the system is a reclaimed water distribution system and under separate ownership or management from the reclamation system that provides reclaimed water to the distribution system, the maximum amount of available reclaimed water for existing and new end users and reuses may be some percentage of the reclamation system's DDF. The reclaimed water distribution system may also receive reclaimed water from more than one reclamation system and from other reclaimed water distribution systems. A reclamation system or reclaimed water distribution system may have additional available reclaimed water in storage that is part of the system. All this should be accounted for



by the permittee in order to demonstrate adequate available reclaimed water for existing and new end users and reuses.

If the system that proposes to distribute reclaimed water to new end users or new reuses cannot provide the quantity of reclaimed water needed for both existing and new end users and reuses, amendments to the RWM plan to add new end users or new reuses cannot be approved. Optionally, these amendments may be conditionally approved where a compliance schedule to increase the available reclaimed water in the system is included in the permit. Where the system in this case is a reclamation system and the DDF of that system will be increased to meet the reclaimed water demands of existing and new end users and reuses, the CIAs, if previously required for WWTWs that provide source water to the reclamation system (see subdivision [III.C.2](#)), may need to be updated or revised.

If the system that proposes to distribute reclaimed water to new reuses cannot provide the quality of reclaimed water needed for both existing and new reuses (i.e., the reclaimed water cannot meet the minimum standard requirements specified in [9VAC25-740-90.A](#) or standards determined necessary on a case-by-case basis per [9VAC25-740-90.B](#) for all reuses), amendments to the RWM plan to add the new reuses cannot be approved. For example, if a proposed new reuse involves irrigation of a golf course, this would require, at a minimum, Level 1 reclaimed water. This reuse cannot be approved where the system is only capable of providing Level 2 reclaimed water. Optionally, amendments to the RWM plan to add new reuses may be conditionally approved where a compliance schedule for the system to meet the reclaimed water quality needed for all reuses (existing and new) with interim and final reclaimed water standards is included in the permit.

## **5. Supplemental irrigation**

In accordance with [9VAC25-740-100.C.2](#) of the Water Reclamation and Reuse Regulation, all irrigation reuse of reclaimed water must be supplemental. Supplemental irrigation is defined in the regulation as “irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation”. This definition distinguishes irrigation reuse of reclaimed water from land treatment of wastewater in that the primary function of irrigation at supplemental rates is reuse without further need to treat the reclaimed water at the site of application. Land treatment as described in the SCAT Regulations ([9VAC25-790-880](#)), is first and foremost a method of treating and disposing of wastewater that includes the application site as a component of the treatment process, and may secondarily provide some reuse. Consequently, land treatment designed and operated in accordance with the SCAT Regulations is specifically excluded from the requirements of the Water Reclamation and Reuse Regulation per [9VAC25-740-50.A.6](#).

Irrigation reuse with reclaimed water will also be either bulk or nonbulk. Bulk irrigation reuse refers to irrigation of a total area greater than five acres on one contiguous property, while nonbulk irrigation refers to irrigation of individual areas less than or equal to five acres. Multiple individual irrigation reuse sites on one contiguous property with a total area less than or equal to five acres is also considered nonbulk irrigation reuse.

In the [Application Addendum](#), applicants are asked if irrigation reuse (bulk and nonbulk) with reclaimed water within the service area will be supplemental irrigation. If not, the regional water permit writer should inform the applicant that irrigation with reclaimed water at rates greater than supplemental cannot be permitted as irrigation reuse, but may be permitted as land treatment in accordance with design criteria of the SCAT Regulations. Where the applicant indicates that irrigation reuse of reclaimed water within the service area will be supplemental irrigation, the applicant must provide the following information in the RWM plan:

- (1) For *nonbulk* irrigation reuse, a description of educational materials and instructions for end users explaining how supplemental irrigation is to be achieved in a manner protective of the environment and public health, and how this information will be distributed to end users. At a minimum, this information is to be provided to end users at the time of their initial connection to the system for reclaimed water service (e.g., in the service agreement or contract between the system and end user). This information may also be provided with other information that the reclaimed water agent is required to give individual nonbulk irrigation end users of non-biological nutrient removal (non-BNR) reclaimed water per [9VAC25-740-100.C.3.c](#) (see subdivision [III.C.6.a \(2\)](#)). See [Attachment C](#) for the minimum conditions that apply to nonbulk irrigation reuse of non-BNR reclaimed water for inclusion in a service agreement or contract.
- (2) For *bulk* irrigation reuse by the applicant and end users other than the applicant, a description of methodology(s) that will be used to calculate supplemental irrigation. By definition, supplemental irrigation allows the application of water up to but not in excess of the amount necessary to “maximize production or optimize growth of the irrigated vegetation”. Therefore, supplemental irrigation is based largely on the water demands of the irrigated vegetation and is most often correlated with the evapotranspiration rate of the irrigated vegetation minus inputs from rainfall. Soil moisture monitoring frequently used for land treatment systems to determine application timing and rates, provides a measure of water available for plant uptake. Because many factors, including soil moisture, may affect the water demand of irrigated vegetation, soil moisture alone cannot be used to determine supplemental irrigation. Factors affecting the water demand of the irrigated vegetation also vary from day to day. Therefore, the rate of supplemental irrigation must be calculated for every day that bulk irrigation reuse with reclaimed water occurs. Supplemental irrigation may be calculated manually or with use of automated weather-based irrigation controllers.

As defined in [9VAC25-740-10](#), supplemental irrigation may allow the application of water (reclaimed or other) in addition to that volume lost to evapotranspiration by the crop where the additional water “maximizes production or optimizes growth of the irrigated vegetation.” This may be necessary to leach salts that have accumulated in the soil from reclaimed water or other sources when the concentrations of the salts adversely affect the productivity or growth of the irrigated vegetation. Where a permittee or an end user other than the permittee demonstrates that (i) salts will accumulate or have accumulated to undesirable levels in the soil of the irrigation reuse site, and (ii) the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to ten percent of the water lost to evapotranspiration by the irrigated vegetation may be used for

leaching and is to be added to evapotranspiration losses to calculate supplemental irrigation. Given a similar scenario but where the application of reclaimed water will contribute or has contributed significantly to the salts problem, no volume of reclaimed water in addition to that lost to evapotranspiration by the irrigated vegetation may be used to leach salts from soils at the irrigation reuse site. In this case, any additional volume of water required for leaching must be provided from sources other than reclaimed water that are low in salts (e.g., rainwater, potable water, etc.), and included as an input in the calculation of supplemental irrigation.

#### **a. Methods to calculate supplemental irrigation**

There are numerous methods available to calculate water demand and, thereby, supplemental irrigation for irrigated vegetation. These include but are not limited to:

- Allen, R.G., Periera, L.S., Raes, D., Smith, M., 1998. Crop evapotranspiration: Guidelines for computing crop requirements. Irrigation and Drainage Paper No. 56, FAO, Rome, Italy, 300 pp. A combined radiation-temperature approach.
- Blaney-Criddle Method (former Soil Conservation Service, 1993). USDA National Engineering Handbook, Part 623 - Irrigation water requirements (p. 2-i to 2-284). Uses percent of daylight hours per month and mean monthly temperature.
- Doorenbos, J., Pruitt, W.O., 1977. Crop water requirements. Irrigation and Drainage Paper No. 24, (rev.) FAO, Rome, Italy, 144 pp. A combined radiation-temperature approach.
- Hargreaves, G. H. and Z. A. Samani, 1985. Reference Crop Evapotranspiration from Temperature. Applied Engr. Agric. 1(2):96-99. This is basically a radiation approach that uses some temperature data.
- Jensen, M.E., Burman, R.D., Allen, R.G., 1990. Evapotranspiration and irrigation water requirements. ASCE Manuals and Reports on Engineering Practices No. 70., ASCE, New York, NY, 360 pp. A combined radiation-temperature approach.
- Jones, J.W., Allen, L.H., Shih, S.F., Rogers, J.S., Hammond, L.C., Smajstrla, A.G., Martsof, J.D., 1984. Estimated and measured evapotranspiration for Florida climate, crops and soils. Bulletin 840 (Tech.), IFAS, University of Florida, Gainesville, FL.
- Linacre, E. T., 1977. A Simple Formula for Estimating Evaporation Rates in Various Climates, Using Temperature Data Alone, Agricultural Meteorology, Vol. 18, pp. 409-424. This approach is also known as modified Penman-Monteith approach and uses only temperature data.
- Monteith J. L. (1973). Principle of Environmental Physics. Arnold Ed., London, 241 pp. A combined radiation-temperature approach, it also depends on plant cover type.
- McCloud, D.E., 1955. Water requirements of field crops in Florida as influenced by

climate. Proc. Soil Sci. Soc. Fla. 15:165-172. A temperature approach.

- Penman, H. L., 1948. Natural Evapotranspiration from Open Water, Bare Soil and Grass. Proc. Roy. Soc. London, A193:120-146. This is a combined radiation-temperature approach, requiring temperature, relative humidity, wind speed, saturation vapor pressure, and net radiation. It also uses complicated unit conversions and lengthy calculations.
- Penman, H.L., 1963. Vegetation and Hydrology. Tech. Comm. No. 53, Commonwealth Bureau of Soils, Harpenden, England. 125 pp. A combined radiation-temperature approach.
- Priestly, C. H. B. and R. J. Taylor, 1972. On the Assessment of Surface Heat Flux and Evapotranspiration Using Large Scale Parameters. Mon. Weath. Rev. 100:81-92.
- Smith, M., 2000. CROPWAT: A computer program for irrigation planning and management, FAO, ISBN 92-5-103106 ISSN-1. This is a computer program that can be downloaded from the FAO website to determine the water requirements of various crops from climatic data of almost every continent. The program was recently updated in 2005.
- Thornthwaite, C.W., 1948. An approach toward a rational classification of climate. The Geogr. Rev. 38:55-94. Using a temperature based model, Thornwaite developed a monthly regional water balance model with 3 components (precipitation, overland runoff, evaporation) and comprised of 4 parameters (precipitation, temperature, latitude, soil water holding capacity). This model was used as the basis for the development of many regional water balance models. Thornwaite is known to systematically underestimate potential evapotranspiration (PET) in more arid regions and seasons.
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Some ROs have successfully used the Blaney-Criddle method to calculate irrigation rates at or approaching supplemental irrigation for land treatment systems having very restrictive site

conditions. The Blaney-Criddle method modified by the former Soil Conservation Service (1993) is a relatively simple method, using percent of daylight hours per month and mean monthly temperature to calculate water demand of the irrigated vegetation. This method allows the use of growing season dates for specific crops and locations, and requires data that is readily available for most irrigation sites.

Where an applicant proposes to use a method other than any of those listed above to calculate supplemental irrigation, regional water permit staff are encouraged to contact staff in OLAP to determine the applicability of that method. Formulas to calculate irrigation rates for land treatment sites contained in the SCAT Regulations, specifically 9VAC25-790-880, should not be used to calculate supplemental rates for irrigation reuse of reclaimed water.

Many golf courses and agricultural operations now use preprogrammed, automated systems that receive daily data to calculate and irrigate at supplemental rates. Although not required for nonbulk irrigation, similar systems are also available for residential irrigation or lawn watering.

## **6. Nutrient management, site plans and minimum reclaimed water standards for irrigation reuse**

### **a. Nutrient management requirements**

Nutrient management requirements of the Water Reclamation and Reuse Regulation apply, in most cases, to irrigation reuse of reclaimed water having concentrations of total nitrogen (N) or total phosphorus (P) greater than BNR. BNR (or Biological Nutrient Removal) is defined in [9VAC25-740-10](#) as treatment which achieves an annual average of 8.0 mg/l total N and 1.0 mg/l total P. For the purposes of this guidance, reclaimed water having calendar year average concentrations of total N and total P less than or equal to BNR will be referred to as BNR reclaimed water, and calendar year average concentrations of total N or total P greater than BNR will be referred to as non-BNR reclaimed water. While there are no nutrient management requirements for irrigation reuse of BNR reclaimed water, there are nutrient management plan (NMP) requirements for bulk irrigation reuse and other requirements to manage nutrients in lieu of NMPs for nonbulk irrigation reuse of non-BNR reclaimed water.

#### **(1) Bulk irrigation reuse**

Bulk irrigation reuse of reclaimed water refers to irrigation of a total area greater than five acres on one contiguous property. NMPs that are required for bulk irrigation reuse sites must be prepared by a nutrient management planner certified by the Department of Conservation and Recreation (DCR), and are the responsibility of the owner or manager of the site to obtain and implement. Where a bulk irrigation reuse site requiring a NMP is under common ownership or management with the applicant or permittee providing reclaimed water to the site, the NMP must be submitted with the RWM plan in the [Application Addendum](#).

Per [9VAC25-740-100.C.4](#) of the regulation, a bulk irrigation reuse site shall also require a NMP independent of the nutrient of the reclaimed water applied to the site, where:

“a. A wastewater treatment works, a reclamation system, SRS or reclaimed water distribution system and the irrigation reuse site or sites are under common ownership or management, and

b. In addition to irrigation reuse:

- (1) There is no option to dispose of the reclaimed water through a VPDES permitted discharge, or
- (2) There is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow (e.g., a treatment works with a VPDES permitted discharge implements water reclamation and reuse in lieu of providing treatment to meet nutrient effluent limits at design flow).”

#### **(a) DCR approval of NMP**

Only NMPs prepared for bulk irrigation reuse sites under the circumstances described in [9VAC25-740-100.C.4](#) must be approved by the DCR ([9VAC25-740-100.C.5](#)). The applicant or permittee is responsible for submitting the NMP to the DCR for approval and must provide a copy of DCR’s approval letter and the NMP with the RWM plan.

Further details regarding NMPs for bulk irrigation reuse sites of reclaimed water and coordination with DCR for NMP approval, when required, are provided in subdivision [III.K.3](#).

#### **(2) Nonbulk irrigation reuse**

Nonbulk irrigation reuse of reclaimed water refers to irrigation of a total area less than or equal to five acres on one contiguous property. A NMP is not required for nonbulk irrigation reuse of non-BNR reclaimed water. However, [9VAC25-740-100.C.3.c](#) requires that the RWM plan describe other measures to be implemented by the applicant or permittee to manage nutrient loads from nonbulk irrigation reuse of non-BNR reclaimed water within the service area. The service area includes nonbulk irrigation reuse sites under common ownership or management with the applicant or permittee. Other measures to manage nutrient loads from nonbulk irrigation reuse of non-BNR reclaimed water must include, at a minimum, the following:

- (i) The inclusion of language in the example service agreement or contract between the reclaimed water agent and end users (see subdivision [III.C.4.d](#)) explaining proper use of the reclaimed water by the end user for the purpose of managing nutrients. See also [Attachment C](#) for items with the note “Applicable only to nonbulk irrigation reuse of non-BNR reclaimed water” that are to be included in service agreements or contracts.
- (ii) Routine distribution of literature (not less than annually) to individual nonbulk irrigation end users describing the proper use of reclaimed water for irrigation in accordance with [9VAC25-740-170.A.1](#). This applies only to reuses that require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact.

- (iii) Monthly monitoring of nitrogen (N) and phosphorus (P) loads from nonbulk irrigation reuses to the service area of the RWM plan based on the total monthly metered consumption of reclaimed water for nonbulk irrigation reuse within the service area and the monthly average concentrations of total N and total P in the reclaimed water.

#### **b. Site plans for bulk irrigation reuse sites**

Per [9VAC25-740-100.C.7](#), a site plan is required for each bulk irrigation site that receives reclaimed water. Where the bulk irrigation reuse site will receive reclaimed water from and is under common ownership or management with the applicant or permittee, the applicant or permittee must prepare and submit the site plan with the RWM plan in the [Application Addendum](#). Site plans for bulk irrigation reuse sites owned or managed by an end user other than the applicant or permittee, must be prepared and submitted by the end user with the service agreement or contract between the end user and the applicant or permittee. Items to be included in the site plan for a bulk irrigation reuse site are contained in [9VAC25-740-100.C.7](#) of the regulation and instructions for item D.3.f of the Application Addendum.

Where a bulk irrigation reuse site is to be added to or expanded in an approved RWM plan, the same site plan information for the new site or expansion area of an existing site must be submitted to:

- (i) The DEQ RO where the permittee owns or manages the site, or
- (ii) The permittee where an end user other than the permittee owns or manages the site.

See [Attachment A](#) for a permit special condition that addresses site plan requirements for bulk irrigation reuse sites under common ownership or management with the permittee.

#### **c. Different reclaimed water standards for different irrigation reuses**

There are different types of irrigation reuse having different minimum reclaimed water standard requirements contained in [9VAC25-740-90.A](#) of the regulation. For example, irrigation reuses in the reuse categories of Urban –Unrestricted Access and Irrigation – Unrestricted Access will require a minimum of Level 1 reclaimed water, while irrigation reuses in the Irrigation – Restricted Access reuse category will require a minimum of Level 2 reclaimed water. Therefore, the RO water permit writer must ensure that the appropriate reclaimed water standards are applied for a particular proposed irrigation reuse.

### **7. Requesting additional information**

For some water reclamation and reuse projects, it may be necessary to obtain more information than that specifically requested and provided in the [Application Addendum](#) or VPDES and VPA permit application forms. The VPDES and VPA Permit Regulations under [9VAC25-31-100.F.1](#) and [9VAC25-32-60.A.1.b](#), respectively, provide DEQ the authority to request additional information considered necessary by the agency to complete an application and issue a permit.

For any type of reuse proposed in the [Application Addendum](#) that is not listed in the Water Reclamation and Reuse Regulation, [9VAC25-740-100.B.9](#) provides DEQ the authority to request information by which the agency can evaluate the need to prescribe specific reclaimed water treatment and monitoring requirements in accordance with [9VAC25-740-90.B](#). This also applies to the addition of such reuses to an existing approved RWM plan independent of a permit action (see subdivision [III.C.4.i](#)).

Per [9VAC25-740-100.B.3.c](#), an applicant is required to submit analyses of the source water to be diverted by a WWTW to the reclamation system. Because this provision does not specify the parameters to be analyzed, it gives DEQ staff the authority to request additional analyses where, based on their best professional judgment, such analyses are needed to determine the appropriate reclaimed water standards, monitoring requirements and conditions for the permit. This may be appropriate where, for example, a conjunctive system that will produce Level 2 reclaimed water has significant industrial users but no approved pretreatment plan to ensure that contaminants from the industrial discharge do not pass through or disrupt treatment processes at the system.

However, [9VAC25-740-100.B](#) also states that “general information” to be submitted with a permit application for projects that involve water reclamation and the distribution of reclaimed water may be provided by referencing specific information previously submitted to the board (or DEQ) unless changes have occurred that require the submission of new or more current information. This has been expanded in the instructions of the [Application Addendum](#) to apply to more than general information requested by the Application Addendum.

#### **D. Permit modifications and administrative authorizations for water reclamation and reuse**

In accordance with [9VAC25-740-30.B.1](#), the incorporation of standards, monitoring requirements and special conditions for water reclamation and reuse into an existing VPA permit for other than the reissuance or major modification of the permit shall be considered a minor modification. Following this initial action and for subsequent changes to a VPA permit to add more or edit existing water reclamation and reuse standards, monitoring requirements and special conditions, it is recommended that the RO, at its discretion, incorporate the changes through a board initiated modification where (i) such changes might otherwise be considered a major modification of the VPA permit if they were not related to water reclamation and reuse, or (ii) there is significant public interest in the water reclamation and reuse project. In this case, the intent of using a board initiated modification is to ensure greater transparency of DEQ’s permitting activities and to provide opportunity for public participation in the State Water Control Board’s permitting decision process.

For existing VPDES permitted facilities, water reclamation and reuse standards, monitoring requirements and special conditions are not to be incorporated into the VPDES permit but are to be contained in an administrative authorization that is separate from but associated with the VPDES permit. Use of an administrative authorization applies when a CIA is not required for a water reclamation and reuse project, or if required, the CIA determines that the project does not have the potential to cause significant adverse impacts to beneficial uses of a receiving state water (see subdivision [III.C.2](#)) ([9VAC25-740-30.B.2](#)). The administrative authorization is not a minor modification but is a temporary document that has the full effect of the VPDES permit and



is to be incorporated into the body of the permit at reissuance or major modification. There is no fee or public participation process for the administrative authorization.

Once an administrative authorization associated with a VPDES permit is incorporated into the permit, it is recommended that the RO, at its discretion, make changes to add more or edit existing water reclamation and reuse standards, monitoring requirements and special conditions through a board initiated modification of the permit in lieu of issuing another administrative authorization where (i) such changes might otherwise be considered a major modification of the VPDES permit if they were not related to water reclamation and reuse, or (ii) there is significant public interest in the water reclamation and reuse project. In this case, the intent of using a board initiated modification is to ensure greater transparency of DEQ's permitting activities and to provide opportunity for public participation in the State Water Control Board's permitting decision process.

A major modification of either a VPA or VPDES permit is required to add water reclamation and reuse standards, monitoring requirements and special conditions where doing so would alter other conditions specifically related to the pollutant management activity or effluent discharge for which the permit was originally issued. A major modification of a VPA or VPDES is also required for a water reclamation and reuse project where a CIA determines that the project has the potential to cause significant adverse impacts to beneficial uses of a receiving state water (see subdivision [III.C.2](#)).

The permittee must complete the [Application Addendum](#) for a minor modification of a VPA permit, a major modification of a VPA or VPDES permit, or an administrative authorization associated with an existing VPDES permit that is related to water reclamation and reuse. It is not necessary for the permittee to submit a new permit application in addition to the Application Addendum unless new information is required to permit or authorize the reclamation and reuse project that was not provided on the application forms for the issuance or reissuance of the VPDES or VPA permit.

For only a minor modification of a VPA permit and an administrative authorization associated with an existing VPDES permit, the RO is to complete review of the [Application Addendum](#) submitted with or separate from the VPDES or VPA permit application forms within 60 days of initial receipt. Upon receipt of a complete Application Addendum, preparation of a minor VPA permit modification or an administrative authorization associated with an existing VPDES permit is to be completed within 30 days but may vary depending on the complexity of a reclamation and reuse project.

To prepare these permit modifications (major and minor) or an administrative authorization, refer to [Attachment A](#) for "General Instructions" and applicable cover pages, reclaimed water standards pages (e.g., for Level 1 or Level 2) and special conditions. Refer also to [Attachment D](#) for the transmittal letters of these documents.

#### **E. Application for an emergency authorization to produce, distribute or reuse reclaimed water**

In accordance with [9VAC25-740-45](#), DEQ may issue an emergency authorization for the production, distribution or reuse of reclaimed water when it finds that due to drought there is

insufficient public water supply that may result in a substantial threat to public safety, and for only those reuses that the agency deems necessary to avert this threat. For example, the reuse of reclaimed water to irrigate landscaping would not be considered necessary to avert a substantial threat to public safety, while the reuse of reclaimed water for fire fighting and protection would be. An emergency authorization may be issued only after conservation measures mandated by local or state authorities have failed to protect public safety, and VDH has been provided the opportunity to review and submit comments or recommendations to DEQ on the application for the authorization (see subdivision [III.K.2](#)).

An emergency authorization may be issued to only existing VPDES or VPA permitted *municipal* treatment works that:

1. Are not currently authorized by DEQ to produce, distribute or reuse reclaimed water.
2. Are currently capable of producing reclaimed water meeting minimum standard requirements of [9VAC25-740-90](#) for proposed reuses listed in the application for an emergency authorization. Minimum standard requirements are specified for only reuses listed under [9VAC25-740-90.A](#). Other reuses that would require the development of minimum standard requirements on a case-by-case basis per [9VAC25-740-90.B](#) are not eligible for an emergency authorization, unless minimum standard requirements for similar reuses listed under [9VAC25-740-90.A](#) could reasonably be expected to provide an equivalent degree of environmental and public health protection if applied to such reuses without further RO evaluation. For example, an emergency authorization would not be appropriate for IPR.
3. Do not have significant industrial users (SIUs) as defined in [9VAC25-31-10](#), or in the case of a VPDES permitted municipal treatment works, do have SIUs but also have a pretreatment program developed, approved and maintained in accordance with Part VII of the VPDES Permit Regulation ([9VAC25-31-730 et seq.](#)).

An emergency authorization may only be issued to a municipal WWTW covered by a VPDES or VPA permit, and will authorize both the production and distribution of the reclaimed water by the WWTW. An entity not under common ownership or management with the WWTW, such as a reclaimed water hauling operation, may distribute reclaimed water for the WWTW provided such an entity is permitted or otherwise authorized by the DEQ to distributed reclaimed water. Optionally, the same hauling operation may be covered by the emergency authorization issued to the WWTW to distribute reclaimed water where specific criteria are met as discussed in subdivisions [III.B.2.a](#) and [b](#).

An emergency authorization may be issued in addition to an Emergency Virginia Water Protection (VWP) Permit ([9VAC25-210](#)) for a new or increased surface water withdrawal for public water supply. In no case can an emergency authorization be issued in lieu of a VPDES permit action for a reuse that involves a discharge of reclaimed water to surface waters ([9VAC25-740-45.D](#)).

To apply for an emergency authorization, a VPDES or VPA permittee must submit to the RO a complete Application for an Emergency Authorization to Produce, Distribute and Reuse Reclaimed Water (hereafter referred to as [Emergency Authorization Application](#)). Due to the critical circumstances under which an emergency authorization will be sought, the RO should make a decision to issue an emergency authorization within *30 days* of receiving a complete Emergency Authorization Application. The application is considered complete if it provides items and information specified in [9VAC25-740-105.A](#), excluding [9VAC25-740-105.A.12](#), and the results summary of a completed CIA if determined necessary. Information for [9VAC25-740-105.A.12](#) will have been submitted to perform the CIA prior to applying for the emergency authorization (see subdivision [III.C.2](#) and discussion below).

Note that when establishing the timeline to issue an emergency authorization, there is no public comment period requirement for this action ([9VAC25-740-45.F](#)). Where the RO determines that it will be unable to issue an emergency authorization within the 30-day time period following review of the application, the RO should contact OLAP as soon as possible to discuss potential changes to the scope of the project that will allow the emergency authorization to be issued within 30 days, or alternatives to issuing an emergency authorization.

An emergency authorization is one option, among others, to supplement a community's overall water supply under specific emergency conditions due to drought. Significant portions of the [Emergency Authorization Application](#) require information and documentation regarding the community's public water supply and usage, efforts to manage this supply during the drought (e.g., conservation, watering restrictions, etc.), and all measures to minimize the threat of water supply shortages to public welfare, safety and health that were implemented prior to applying for the emergency authorization. The VPDES or VPA permittee applying for an emergency authorization should obtain this information from the water utility or authority of the locality in which activities to be covered by the emergency authorization are proposed as part of a larger coordinated effort to manage the stressed public water supply. Much of this information is similar to information required to complete an application for an Emergency VWP Permit. Therefore, the Emergency Authorization Application may reference information in an application for an Emergency VWP Permit where both are submitted to DEQ as part of a community's plan to address the same public water supply emergency.

Prior to applying for an emergency authorization for an existing VPDES or VPA permitted municipal WWTW to perform water reclamation and reuse, the permittee should contact OWS to request a CIA and inform OWS that an application for an emergency authorization will be submitted for the project. If OWS determines that a CIA is required based on the information provided by the permittee, OWS will perform the CIA (see subdivision [III.C.2](#)), and provide a CIA results summary to the permittee to submit with the [Emergency Authorization Application](#). The RO is to use the CIA results summary, among other items, to determine the eligibility of a proposed project for an emergency authorization (see below). Completion of the CIA prior to submission of the Emergency Authorization Application is highly encouraged to expedite application review and issuance of the emergency authorization.

After the RO has reviewed an [Emergency Authorization Application](#), including, if applicable, a CIA results summary, the RO must determine the eligibility of the proposed project for an emergency authorization. The RO should not issue an emergency authorization where:

- (i) The CIA results summary indicates that the proposed water reclamation and reuse project has the potential to cause significant adverse impacts to beneficial uses of the receiving state water (see subdivision [III.C.2](#)), and/or
- (ii) Water reclamation and reuse requirements to be included in the emergency authorization could effectively alter other conditions of the VPDES or VPA permit with which the emergency authorization is associated, specifically related to the effluent discharge or pollution management activity for which the permit was originally issued. Such changes to the permit are more appropriately addressed by a major modification of the permit, requiring public notice of the draft modified permit.

Upon the RO determining that the [Emergency Authorization Application](#) is complete and the proposed water reclamation and reuse project is eligible for an emergency authorization, the RO is required by [9VAC25-740-45.A](#) to coordinate review of the Emergency Authorization Application with VDH (see subdivision [III.K.2.a](#)). With the Emergency Authorization Application, the RO should provide a copy of the applicable VPDES or VPA permit issued to the WWTW proposing the project. In response, VDH should provide comments to the RO on the application within 14 days. The RO, if requested by VDH, may extend this review period. In an effort to expedite and ensure the timely issuance of an emergency authorization, the RO should coordinate as early as possible with VDH, and contact VDH if greater than 14 days have elapsed without a response following the date of application transmittal. Comments and recommendations provided by VDH, particularly those pertaining to the protection of public health, should be given full consideration and addressed, as appropriate, in the emergency authorization.

The emergency authorization is similar to an administrative authorization for water reclamation and reuse in that it must be associated with an existing permit, it is not a minor modification of the permit, it will have the full effect of the permit with which it is associated, and it is a temporary document. Unlike the administrative authorization, the emergency authorization can be associated with a VPA permit in addition to a VPDES permit. To prepare the emergency authorization, refer to the “General Instructions” and applicable cover page, reclaimed water standards pages (e.g., for Level 1 or Level 2) and special conditions in [Attachment A](#). Refer also to [Attachment D](#) for the transmittal letter of both administrative and emergency authorizations.

No later than 180 days after the issuance of an emergency authorization, the holder of the authorization must submit a complete [Application Addendum](#) for coverage under a VPA permit, a VPDES permit or an administrative authorization associated with a VPDES permit (see subdivision [III.C.1](#) and subsection [III.D](#)). There are no exceptions and failure to submit a complete Application Addendum within this time frame will be a violation. With the Application Addendum, it may also be necessary for the holder of the emergency authorization to submit a new VPDES or VPA permit application where the deadline for submission of the Application Addendum and an application to reissue the VPDES or VPA permit adequately

coincide. Thereafter, the emergency authorization will remain in effect until the RO completes the action to modify or reissue the VPA or VPDES permit, or issue an administrative authorization associated with a VPDES permit to cover, at a minimum, the production, distribution or reuse of reclaimed water previously covered by the emergency authorization.

To expedite the process to replace an emergency authorization with coverage under a VPDES permit, VPA permit or an administrative authorization associated with a VPDES permit, the holder of the emergency authorization also has the option to submit an [Application Addendum](#) with the [Emergency Authorization Application](#). In this case, the RO should give greater priority to reviewing the Emergency Authorization Application over the entire Application Addendum in order to issue the emergency authorization as quickly as possible. Information contained in a complete Emergency Authorization Application may be used to complete the Application Addendum. Due to the short term nature of an emergency authorization and the limited number of reuses that it may allow, the CIA for an emergency authorization will typically be an abbreviated version. Consequently, a revised or more comprehensive CIA may be required for submittal with the Application Addendum in lieu of the CIA for the emergency authorization.

#### **F. Fees for permit actions and authorizations associated with permits**

Water reclamation systems, SRSs, reclaimed water distribution systems and, as applicable, certain end users of reclaimed water (see subsection [III.B](#)), are required by the regulation to obtain coverage under a VPA permit, a VPDES permit, an administrative authorization associated with a VPDES permit, or an emergency authorization associated with an existing VPA or VPDES permit. One permit or associated authorization may be issued to each of the above or to any combination of the same, including WWTWs and irrigation reuse sites, under common ownership or management. Consolidation of permit coverage for these facilities and operations under common ownership or management is encouraged to reduce permit fees for the applicant or permittee.

Standards, monitoring requirements and special conditions for water reclamation and reuse may be added to individual VPDES and VPA permits at issuance and reissuance, or through major modification (as applicable per subsection [III.D](#)) with no change to the application fee, annual permit maintenance fee, or permit modification fee, as applicable.

A fee will not be required when the addition of water reclamation and reuse standards, monitoring requirements and special conditions to a VPA or VPDES permit will involve a minor modification of a VPA permit, an administrative authorization associated with an existing VPDES permit, or an emergency authorization associated with an existing VPA or VPDES permit. However, permittees are still required to pay annual maintenance fees for the existing VPA or VPDES permit.

Fees for the application, annual maintenance or major modification of a VPDES or VPA permit issued to reclamation systems, SRSs, reclaimed water distribution systems or, as applicable, end user of reclaimed water, shall be the same fees for the following individual VPDES and VPA permit categories specified in 9VAC25-20 (Fees for Permits and Certifications):

<b>Water reclamation and reuse systems and end users requiring a VPDES or VPA permit</b>	<b>Corresponding individual permit fee category</b>
<b>VPDES</b>	
Reclamation system of municipal wastewater	Municipal major or minor - based on design flow of the municipal WWTW adjoining the reclamation system. <sup>a</sup>
Reclamation system of industrial wastewater	Industrial major, industrial minor/standard limits <sup>b</sup> , or industrial minor/no standard limits - based on NPDES Permit Rating Work Sheet score of the industrial WWTW adjoining the reclamation system. <sup>a</sup>
<b>VPA</b>	
Reclamation system of municipal wastewater independent of or adjoining a WWTW	Municipal wastewater treatment operation
SRS	Municipal wastewater treatment operation
Reclamation system of industrial wastewater adjoining an industrial WWTW	All other operations not specified above
Distribution system of reclaimed water <sup>c</sup> (municipal or industrial)	All other operations not specified above
End user of reclaimed water (municipal or industrial) where required to have a permit per subdivision <a href="#">III.B.4</a>	All other operations not specified above

- <sup>a</sup> Reclamation and reuse of stormwater is excluded from the requirements of the Water Reclamation and Reuse Regulation (9VAC25-740-50.A.2). Therefore, individual permit fee categories for VPDES Municipal (Major and Minor) Stormwater/MS4 and VPDES Industrial Stormwater are not included in this table.
- <sup>b</sup> Standard limits for minor industrial WWTWs apply exclusively to the surface water discharge of these facilities and are not standards for reclaimed industrial wastewater.
- <sup>c</sup> Reclamation systems of reclaimed water include but are not limited to, reclaimed water hauling operations.

**G. Permit cover pages, standards, monitoring requirements, special conditions and fact sheet**

Permit cover pages, standards, monitoring requirements and conditions to be included in VPDES or VPA permits for reclamation and reuse projects are contained in [Attachment A](#) of this guidance.

**1. Cover pages for permits and an administrative authorization**

[Attachment A](#) contains cover pages for the issuance or reissuance of VPA and VPDES permits, minor or major modification of a VPA permit, major modification of a VPDES permit, an administrative authorization in association with a VPDES permit, and emergency authorizations in association with VPDES and VPA permits. These cover pages are designed for the variety of permitting and permit modification options specific to water reclamation and reuse that are discussed in subsections [III.D](#) and [III.E](#) of this guidance

## 2. Standards for reclaimed municipal and industrial wastewater

There are specific treatment requirements and “standards” for the reclamation and reuse of municipal wastewater contained in the regulation. For most reuses, the reclaimed water standards will not be the same as effluent limits that are based on federal and other state regulations that affect the discharge of effluent to state waters. However, [9VAC25-740-90.B](#) allows reclaimed water standards to be developed on a case-by-case basis for reuses not listed in the regulation, including those, such as indirect potable or non-potable reuse, that involve a discharge to surface waters. In these cases, the reclaimed water standards may be the equivalent of effluent limits. Standards may also be developed for reclaimed industrial wastewater as discussed in subdivision [III.G.2.b](#). Although parameters to be monitored for water reclaimed from industrial wastewater may differ from those for water reclaimed from municipal wastewater, they are all referred to as “standards” in the regulation. Therefore, [Attachment A](#) contains standards pages for reclaimed water rather than effluent limits pages to be inserted into Part I.A of a VPA or VPDES permit, or an administrative authorization associated with a VPDES permit.

### a. Municipal wastewater

For the reclamation of municipal wastewater, there are two sets of reclaimed water standards referred to as Level 1 and Level 2 ([9VAC25-740-70.A](#)). Generally speaking, Level 1 reclaimed water is suitable for reuses with potential for human or public contact, while Level 2 reclaimed water is suitable for reuses with no or minimal potential for human or public contact. Reuses of reclaimed water that are listed in the regulation are divided among six general reuse categories shown in [9VAC25-740-90.A](#) and for each category, a minimum reclaimed water standard (either Level 1 or Level 2) is required.

The appropriate standards to include in the permit for a reclamation system will depend on the intended reuses of reclaimed water from that system. Use the table in [9VAC25-740-90.A](#) to determine if a standards page for Level 1, Level 2 or both should be included in the permit based on the reuses of the reclaimed water specified in the [Application Addendum](#). Among the three bacterial standards listed for Level 1 or Level 2, only one is to be included in the permit under Part I.A. Refer to subdivision [III.G.6.d](#) for selection of the appropriate bacterial standard.

Monitoring frequency and sample type for each parameter on the standards page (Part I.A) of the permit are contained in [Attachment A](#) and are based on reclaimed water monitoring requirements specified in [9VAC25-740-80](#) of the regulation. Monitoring frequency and sample type for Level 1 and Level 2 BOD<sub>5</sub> or CBOD<sub>5</sub>, Level 2 TSS, and Level 2 residual disinfectants, including TRC and bacteria, are based on the DDF (see subdivision [III.G.6.i](#)) of the reclamation system and shall be that specified in the SCAT Regulations, 9VAC25-790, to monitor the same parameters for sewage treatment works or municipal WWTWs.

Per [9VAC25-740-70.D](#), Treatment and standards other than or in addition to Level 1 and Level 2 for the reclamation and reuse of municipal wastewater may be necessary based on the quality and character of the wastewater to be reclaimed, or the intended reuses of the reclaimed water. In this case, “necessary” treatment and standards are for the protection of public health and the

environment, and “intended reuses” may be listed in the regulation under [9VAC25-740-90.A](#) or unlisted (see [III.G.3](#)).

#### **b. Industrial wastewater**

The SCAT Regulations ([9VAC25-790-460.B](#)) identify an industrial WWTW as a treatment works with a combined average daily influent flow of greater than 90 percent industrial wastewater. Due to their variable character and composition, it was not possible to develop general reclaimed water standards and monitoring requirements that would apply to all industrial wastewaters in the Water Reclamation and Reuse Regulation. Therefore, [9VAC25-740-70.E](#) of the regulation requires that standards for the reclamation of industrial wastewater be developed “on a case-by-case basis relative to the proposed reuse or reuses of the reclaimed water and for the purpose of protecting public health and the environment.” Per [9VAC25-740-90.B](#), standards, as well as monitoring requirements, may be developed on a case-by-case basis for reuses of reclaimed industrial wastewater that are listed in the regulation under [9VAC25-740-90.A](#) or unlisted (see [III.G.3](#)). Reclaimed water standards for municipal wastewater, specifically those used to monitor disinfection, may also apply to industrial wastewaters that contain sewage or other wastes containing organisms pathogenic to humans, particularly where reuses of the reclaimed industrial wastewater have potential for human contact.

Requirements of the Water Reclamation and Reuse Regulation do not apply to the reclamation and reuse of industrial wastewater used on the same property as long as it meets one or more of the qualifying factors for exclusion under [9VAC25-740-50.A](#) (see subdivision [III.B.3.c](#)). In those rare cases where a RO receives an application for the reclamation and reuse of an industrial wastewater that does not qualify for exclusion under [9VAC25-740-50.A](#), refer to subdivision [III.G.3](#) below for information regarding the development of minimum standards for reclaimed industrial wastewater. Regional water permit staff should also contact staff in OLAP for assistance developing reclaimed water standards, monitoring requirements and special conditions for the permit of the industrial facility.

### **3. Minimum standards for reuses not listed or reuses of reclaimed industrial wastewater**

#### **a. Determination of appropriate standards**

When an applicant or permittee proposes a reuse of reclaimed water (reclaimed from municipal or industrial wastewater) that is not listed in [9VAC25-740-90.A](#) of the Water Reclamation and Reuse Regulation or a reuse of reclaimed industrial wastewater, whether listed or not listed in [9VAC25-740-90.A](#), the regional water permit staff must evaluate the proposed reuse on a case-by-case basis to determine if and what minimum reclaimed water standards (i.e., Level 1, Level 2, and/or other) are needed for that reuse in the permit. A fundamental criterion to apply when determining the appropriate standards for such a reuse is that each standard must be for the protection of the environment and public health ([9VAC25-740-70.D](#) and [9VAC25-740-70.E](#)), including worker health. In a situation where an end user may require the reclaimed water to meet specifications for other purposes (e.g., to protect equipment from corrosion or scale, to meet product specifications, etc.), this is a matter to be addressed independent of the permit.



Factors that must be evaluated to determine the minimum reclaimed water standards for an unlisted reuse of reclaimed water are specified in [9VAC25-740-90.B](#) of the regulation. Evaluate the same factors to determine minimum reclaimed water standards for all reuses (listed and unlisted) of reclaimed industrial wastewater. When making these evaluations, regional water permit writers should apply a common sense approach. First, verify that the reuse is not excluded or prohibited by [9VAC25-740-50](#). If not, consider the applicability of other federal or state laws, regulations or guidelines to the proposed reuse; the reclaimed water treatment necessary for the proposed reuse to comply with the Water Reclamation and Reuse Regulation and other applicable regulations of the State Water Control Board, and the similarity of the reuse to reuses that are listed in the regulation under [9VAC25-740-90.A](#). Also consider information provided by the applicant or permittee in items C.6 and C.8 of the [Application Addendum](#) for each proposed unlisted reuse of reclaimed water or reuse of reclaimed industrial wastewater, describing any known risks to human health associated with the reuse, public access and human exposure to reclaimed water that will be caused by the reuse, the reclaimed water treatment necessary to prevent nuisance conditions by the reuse, and the potential for improper or unintended use of reclaimed water related to the reuse.

Generally, reclaimed water standards required for a proposed unlisted reuse of reclaimed municipal wastewater are:

- (i) Level 1 where there is potential for public contact with reclaimed water for the unlisted reuse; or
- (ii) Level 2 where there is no or minimal potential for public contact with reclaimed water for the unlisted reuse.

Where only worker contact is likely with reclaimed municipal wastewater for a particular unlisted reuse, a minimum of Level 2 reclaimed water standards are allowed but Level 1 disinfections standards (i.e., for bacteria and turbidity) are required.

#### **b. Coordination with the VDH**

For proposed reuses of reclaimed municipal wastewater that are not listed in the regulation and for proposed reuses of reclaimed industrial wastewater (listed and unlisted), RO coordination with VDH is required per [9VAC25-740-90.B](#) to obtain recommendations on appropriate minimum reclaimed water standards needed to protect public health. All circumstances requiring coordination of water reclamation and reuse proposals with VDH and the specific VDH offices and departments with which the ROs should coordinate are discussed in more detail under subdivision [III.K.2](#).

For some unlisted reuses of reclaimed municipal water, such as, but not limited to filling public swimming pools, VDH may recommend disinfection more stringent than the Level 1 reclaimed water standards. Note that the use of reclaimed water to fill residential swimming pools, hot tubs or wading pools is prohibited per [9VAC25-740-50.B](#).

**c. Below-ground drip irrigation reuse**

Subsection [9VAC25-740-90.B](#) gives authority to DEQ, where jurisdictionally appropriate, to regulate below-ground drip irrigation reuse of reclaimed water, but requires DEQ to coordinate with VDH for input on the public health risks of this proposed reuse. VDH may regulate a below-ground drip system that uses sewage treated by an onsite sewage system for disposal through the Sewage Handling and Disposal Regulations ([12VAC5-610-690](#)). The regulatory jurisdiction of DEQ and VDH regarding below-ground drip irrigation is more complicated for large alternative onsite sewage systems ([12VAC5-613](#)). These systems may be jointly permitted by DEQ and VDH where they provide both sewage reclamation and reuse, and onsite sewage treatment and disposal. Refer to subdivision [III.K.2.d \(2\)](#) for more information regarding RO coordination with VDH on proposals for below-ground drip irrigation, and DEQ or VDH regulatory jurisdiction for below-ground drip irrigation reuse by alternative onsite sewage systems.

Important to note is that all irrigation reuse of reclaimed water subject to the requirements of the Water Reclamation and Reuse Regulation, including below-ground drip irrigation, must be supplemental irrigation (see subdivision [III.C.5](#)).

**(1) Ponding and pooling**

The potential for ponding and pooling of reclaimed water at an irrigation reuse site authorized by DEQ, particularly a nonbulk irrigation reuse site, is anticipated to be greater than at a disposal or dispersal site authorized by VDH for an onsite sewage system in accordance with the Sewage Handling and Disposal Regulations ([12VAC5-610](#)) or the Regulations for Alternative Onsite Sewage Systems ([12VAC5-613](#)). This is due to the fact that the Water Reclamation and Reuse Regulation does not require the same level of soils evaluation for an irrigation reuse site and allows a higher loading rate. Therefore, the following have been recommended by VDH, Division of Onsite Sewage and Water Services (DOSWS) for below-ground drip irrigation reuse sites that will be authorized by DEQ:

- (i) Where the minimum in-ground depth of burial for the irrigation system piping is less than six inches below the soil surface, reclaimed water meeting a minimum of Level 1 standards should be required; and
- (ii) Where the minimum in-ground depth of burial for the irrigation system piping is greater than or equal to six inches below the soil surface, reclaimed water meeting a minimum of Level 2 standards should be required.

A permit special condition that includes this recommendation is contained in [Attachment A](#) and applies only when below-ground drip irrigation is proposed as a reclaimed water reuse in the [Application Addendum](#).

All bulk irrigation reuse sites must prevent the ponding or pooling of reclaimed water per [9VAC25-740-170.F](#) of the regulation. For bulk irrigation reuse sites that propose to use below-ground drip irrigation, particularly those under common ownership or management with the

reclamation system or reclaimed water distribution system that provides reclaimed water to the irrigation sites, DEQ regional water permit staff should verify that the applicant or permittee has evaluated the soils of the sites and confirmed that they are suitable for the vegetation to be grown and are sufficiently permeable to receive reclaimed water applied at supplemental irrigation rates (see subdivision [III.C.5](#)).

**d. Firefighting or protection and fire suppression**

In the original Water Reclamation and Reuse Regulation that went into effect on October 1, 2008, 9VAC25-740-50.B specifically prohibited the “reuse of reclaimed water for any purpose *inside a residential or domestic dwelling or a building containing a residential or domestic unit*”, while 9VAC25-740-90.A listed “Firefighting or protection and fire suppression *in non-residential buildings*” as a reuse of Level 1 reclaimed water. Consequently, the indoor reuse of reclaimed water, specifically Level 1, for firefighting or protection and fire suppression was limited to only non-residential buildings. The basis for the language in both 9VAC25-740-50.B and 9VAC25-740-90.A was to address concerns about cross-connections between reclaimed water and potable water piping inside residential buildings. Although these concerns still remain, it was later acknowledged that the plumbing inside hotels, dormitories and other similar buildings is typically maintained by trained professionals knowledgeable of indoor plumbing systems and state plumbing codes, and would be less likely to have cross-connection issues. Subsequent amendments to the regulation that went into effect on January 29, 2014 allowed the reuse of Level 1 reclaimed water inside these types of residential dwellings for toilet flushing, fire fighting, and other reuses listed in [9VAC25-740-90.A](#). However, the reuse of any reclaimed water inside one-family or two-family dwellings remains prohibited ([9VAC25-740-50.B](#)).

An unintended consequence of the changes that removed “in non-residential buildings” from the reuse “Firefighting or protection and fire suppression” listed under [9VAC25-740-90.A](#), is that the applicability of the language has been subject to misinterpretation. While the amended language continues to apply to only firefighting or protection and fire suppression inside buildings other than one-family or two-family dwellings, it does not apply to firefighting or protection and fire suppression outside of buildings, which may include but is not limited to, fighting wildfires (e.g., bush fire, forest fire, desert fire, grass fire, hill fire, peat fire, and vegetation fire), shipboard fires, airport fires, and hazardous materials fires. There are obvious public health and environmental concerns that may be associated with the reuse of reclaimed water for these types of outdoor fire fighting activities. Therefore, they must be evaluated and approved by DEQ on a case-by-case basis in accordance with [9VAC25-740-90.B](#). Reuse of Level 1 reclaimed water for firefighting or protection and fire suppression inside buildings (non-residential and residential other than one-family or two-family dwellings) may continue to be approved as a “listed” reuse without a case-by-case evaluation.

**e. Indirect potable, indirect non-potable, unintentional and undefined reuse**

**(1) Indirect potable reuse (IPR)**

IPR is defined in the regulation as a “discharge of reclaimed water to a receiving surface water for the purpose of intentionally augmenting a water supply source, with subsequent withdrawal

after mixing with the ambient surface water and transport to the withdrawal location, followed by treatment and distribution for drinking water and other potable water purposes.” Development of minimum reclaimed water standards for IPR will be addressed in a subsequent addendum to this guidance.

## **(2) Indirect nonpotable reuse (INPR)**

INPR is similar to IPR in that INPR involves the intentional augmentation of a surface water with reclaimed water for subsequent withdrawal and reuse. INPR differs from IPR in that the water withdrawn for INPR is for indirect “nonpotable” rather than indirect “potable” reuses. INPR also differs from unintentional reuse (see subdivision [III.B.3.d](#)) in that INPR involves the discharge of reclaimed water to a receiving surface water for the purpose of intentionally augmenting that water source for subsequent reuse, while unintentional reuse may involve a similar discharge that results in unintended or unplanned reuses of the reclaimed water that are typically incidental to another primary purpose or reuse for the discharge. Note that unintentional reuse is excluded from the requirements of the regulation, while only INPR that existed prior to January 29, 2014 is excluded per [9VAC25-740-50.A.7](#) and 8.

Like IPR, INPR is not a reuse listed in [9VAC25-740-90.A](#) of the regulation, and reclaimed water standards and monitoring requirements for this reuse must be developed on a case-by-case basis in accordance with [9VAC25-740-90.B](#). INPR will typically not require as many or more stringent reclaimed water standards than IPR, and will not require joint DEQ-VDH re-evaluation of public health risks associated with the project at the time of permit reissuance. However, the regional water permit writer should perform a new or expanded evaluation of an existing permitted INPR project in accordance with [9VAC25-740-90.B](#) where changes to the project are proposed that would warrant this, such as, but not limited to, expansion or relocation of the INPR project.

## **(3) Unintentional reuse**

There are numerous cases of unintentional reuse among WWTWs in Virginia that discharge to streams or impoundments located upstream or in proximity of downstream water withdrawals. Unintentional reuse differs from IPR and INPR in that it involves the unintentional or unplanned use of reclaimed water subsequent to a WWTW discharge to surface water. The primary concerns regarding unintentional reuse are potential public health impacts. Although unintentional reuse is excluded from the requirements of the regulation, VDH may provide comments on a WWTW’s discharge for the protection of public health where any portion of the discharge may be withdrawn for an unintentional reuse, particularly where the reuse has potential for human consumption or contact. VDH comments may be addressed in the VPDES permit for the discharge where the RO believes they are appropriate.

Whenever a WWTW proposes to locate or relocate its effluent discharge to a surface water that is likely to be withdrawn by an existing beneficial use of the surface water (e.g., golf course irrigation, public water supply, etc.), and the VPDES permit applicant or permittee confirms that beneficial use of the discharge is unintentional or unplanned reuse, the regional water permit staff should consult with VDH per the procedures discussed in subdivision III.K.2 to determine

the safety of the proposed discharge relative to the unintentional reuse, and establish the level of wastewater treatment required to protect public health. Should VDH recommend more stringent disinfection requirements based on the potential for public health impacts, regional water permit staff should consider (in consultation with VDH) whether or not to include monitoring of surrogate parameters to verify adequate disinfection of the effluent more quickly than can be achieved through the use of bacteria standards alone. These may include more stringent TSS limits, turbidity monitoring and limits in lieu of TSS limits, more stringent TRC limits prior to dechlorination, and more frequent TRC monitoring. Upon reissuance of a VPDES permit for a discharge with an unintentional reuse, VDH re-evaluation of the discharge should not be necessary provided there are no changes to the location or volume of the discharge, or to the type, number and location of unintentional reuses following the initial VDH evaluation.

#### **(4) Undefined reuse**

There is also a category of reuse associated with a discharge from a WWTW that is undefined by the Water Reclamation and Reuse Regulation. An undefined reuse will be, in most cases, a new water withdrawal placed intentionally downstream and in proximity of an existing WWTW discharge for the purpose of reusing water from the WWTW's discharge. In this case, the discharge of the WWTW is not IPR or INPR as it was not constructed for the purpose of intentionally augmenting a surface water with reclaimed water for withdrawal and reuse by a future unknown end user.

As with unintentional reuse, the primary concern for undefined reuse is protection of public health. However, procedures to address undefined reuse will vary from project to project based on a variety of factors, and will require case-by-case evaluation. Upon the RO's first knowledge and confirmation of an undefined reuse project through, for example, receipt of a VWP permit application for the surface water withdrawal of the project, the RO is to contact OLAP for assistance evaluating and, if applicable, determining appropriate actions to permit the undefined reuse.

### **4. Operator requirements and reliability classification**

#### **a. Operator requirements**

Where a reclamation system of municipal wastewater is independent of a WWTW, or is associated with a municipal WWTW but consists predominantly of a treatment train separate from that of the WWTW, the reclamation system must be assigned a classification based on the treatment processes that it uses and the DDF (see subdivision [III.G.6.i](#)) of the facility ([9VAC25-740-130.A](#) and [18VAC160-20](#)). Refer to the SCAT Regulations, specifically [9VAC25-790-300.D](#), to determine the classification and operator in responsible charge of the reclamation system to include in the permit or authorization (see [Attachment A](#)). Where the reclamation system is a conjunctive system, as defined in [9VAC25-740-10](#), and consists predominately of the treatment train for the municipal WWTW, the classification and operator in responsible charge of the reclamation system will be that of the WWTW. All SRSs will require a classification and assignment of an operator in responsible charge.

## **b. Reliability classification**

Reliability Class I, as defined in the Water Reclamation and Reuse Regulation, is required for all Level 1 reclamation systems and SRSs, and pump stations considered part of these systems “unless there is a permitted alternate treatment, discharge or dispersal system available with sufficient capacity to handle any reclaimed water flows which do not meet the reclaimed water standards of [the regulation] or performance criteria established in the operations and maintenance manual” ([9VAC25-740-130.B](#)).

Conjunctive systems may have different Reliability Class designations than stand-alone reclamation systems. Because the definition of Reliability Class I in the Water Reclamation and Reuse Regulation is in addition to but does not supersede the definition of this term in the SCAT Regulations, a conjunctive system may be required to comply with Reliability Class I requirements of both regulations. Although there are no Reliability Classes II or III for reclamation systems in the Water Reclamation and Reuse Regulation, a conjunctive system may still have a Reliability Class II or III designation in accordance with the SCAT Regulations for the wastewater treatment facility components of the system.

For independent reclamation systems that are not conjunctive systems, and for systems consisting of an industrial WWTW and reclamation system, the applicability of Reliability Class I requirements as specified in the SCAT Regulations must be determined by the RO for each proposed or existing system ([9VAC25-740-130.D](#)).

The RO may approve alternative measures to achieve Reliability Class I specified in the SCAT Regulations and the Water Reclamation and Reuse Regulation if the applicant or permittee can demonstrate in the engineering report for the project that the alternative measures will achieve a level of reliability equivalent to Reliability Class I ([9VAC25-740-130.E](#)).

The VDH, Office of Drinking Water will not provide Reliability Class recommendations for any DEQ water permitted facilities. If the ROs need assistance determining the Reliability Class for a reclamation system, SRS, conjunctive system, or a pump station considered part of these systems, the RO may contact the wastewater engineer in either the Office of Clean Water Financing and Assistance or the Office of VPDES Permits for assistance.

## **5. Operations and maintenance (O&M) manual**

All reclamation systems, SRSs and reclaimed water distribution systems are required to have an O&M Manual ([9VAC25-740-140](#)). Where any combination of a reclamation system, SRS or reclaimed water distribution system is covered by the same permit or authorization, one O&M manual for the combination of systems may be prepared and submitted to DEQ. Where a reclamation system is part of a conjunctive system, the O&M manual for the reclamation system may be made part of the O&M manual for the WWTW.

Permittees are required to submit an O&M manual for a new or modified reclamation system and SRS to DEQ within 90 days of initiating operation of the system ([9VAC25-740-120.B.3.f](#)).

Permittees are not required to submit an O&M manual for a reclaimed water distribution system to DEQ, except where a permittee proposes to convert an existing potable water distribution system, sewer or wastewater collection system, or irrigation distribution system to a reclaimed water distribution system. In this case, the permittee must submit an O&M manual for the reclaimed water distribution system to DEQ not less than 90 days prior to the conversion ([9VAC25-740-110.B.6](#)). This does not apply to irrigation distribution systems to be converted to reclaimed water distribution systems that will not be under common ownership or management with reclamation systems, SRSs, or reclaimed water distributions systems to provide reclaimed water to the converted distribution systems.

Upon receipt of an O&M manual for a reclamation system, SRS or a system converted to a reclaimed water distribution system as described above, the RO is to review and approve the manual. This is particularly important for reclamation systems and SRSs that will produce, and converted systems that will distribute Level 1 reclaimed water for reuses where there exists the potential for human contact.

Permittees are also required to maintain the O&M manuals for reclamation systems, SRSs and reclaimed water distribution systems current. Any changes to practices and procedures followed by a permittee to operate and maintain a reclamation system, SRS or reclaimed water distribution system must be included in the manual. Per [9VAC25-740-140.A](#), such changes to an O&M manual for a reclamation system or SRS must be submitted by the permittee to DEQ within 90 days of the effective date of the changes. Furthermore, [9VAC25-740-140.E](#) requires that any revision to an O&M manual be reviewed and approved by DEQ, which will be the responsibility of the RO. This is interpreted to apply to only revisions of O&M manuals previously submitted to DEQ for review and approval, excluding O&M manuals for systems converted to reclaimed water distribution systems unless revisions to the manuals are related to the expansion of these systems by the addition of more systems newly converted to reclaimed water distribution systems. In this case, the permittee must submit revisions of the O&M manual for the existing distribution system to DEQ for review and approval not less than 90 days prior to the conversion of the added distribution systems.

The minimum required content of O&M manuals for reclamation systems, SRSs and reclaimed water distribution systems is specified in [9VAC25-740-140](#) and contained in permit special conditions provided in [Attachment A](#). Note that where the O&M manual for a reclaimed water distribution system will be included in the O&M manual for a reclamation system or SRS, the O&M manual permit condition for the reclaimed water distribution system may be consolidated with the O&M manual permit condition for the reclamation system or SRS.

The RO is to enter due dates in CEDS for O&M manuals or changes to O&M manuals that must be submitted to DEQ. The due date for an O&M manual of a new or modified reclamation system or SRS is to be within 90 days of placing such systems into operation. The due date for changes to the O&M manual regarding practices and procedures followed by the permittee to operate and maintain the reclamation system or SRS is to be within 90 days of the effective date of the changes. Refer to [Attachment A](#) for appropriate special conditions to include in the permit or authorization regarding O&M manual submittal requirements. Where such changes have occurred but were not submitted by the permittee and are discovered by the RO through, for

example, RO inspection of the facility, the submittal date for the changes is to be within 90 days of the date of discovery. In this case, the RO water inspector that discovers the unreported O&M manual changes is to notify the (i) RO water permit writer to establish a due for the O&M manual changes in CEDS, and (ii) RO compliance auditor to track the violation of the permit or authorization.

A due date in CEDS for the O&M manual of a reclaimed water distribution system is only required where the system will be converted from an existing potable water distribution system, sewer or wastewater collection system, or irrigation distribution system (excluding specific irrigation distribution systems noted above in this subdivision) to distribute reclaimed water. In this case, the due date for the O&M manual cannot be less than 90 days prior to the conversion the existing system to a reclaimed water distribution system. This would also apply to the modification of an O&M for an existing reclaimed water distribution where, for example, the system is to be expanded by the addition of an existing, converted potable water distribution system, sewer or wastewater collection system, or irrigation distribution system. Refer to [Attachment A](#) for appropriate special conditions to include in the permit or authorization regarding O&M manual submittal requirements.

## **6. Monitoring**

### **a. Reporting of monitoring results**

Monitoring and reporting of monitoring results are required for all permittees that produces reclaimed water for reuse, including reclamation systems and SRSs. Monitoring may also be required for system storage facilities and reclaimed water distribution systems as discussed in subdivisions [III.G.6.k](#) and [III.G.6.l](#), respectively. Monitoring results for a system storage facility must be submitted with the monitoring report of the reclamation system, SRS or reclaimed water distribution system of which the system storage is considered a part. Monitoring results for a reclaimed water distribution system must be (i) submitted with the monitoring report of a reclamation system or SRS where the reclaimed water distribution system is covered by the same permit or authorization (administrative or emergency) issued to one these systems, or (ii) reported separately where the reclaimed water distribution system is permitted or otherwise authorized independent of a reclamation system or SRS.

### **b. Point of compliance (POC)**

A POC is a point at which standards of the Water Reclamation and Reuse Regulation, including standards established on a case-by-case basis, must be met. POCs are required for reclamation systems and SRSs, and may be required for system storage facilities and reclaimed water distributions systems ([9VAC25-740-70.B](#)).

Reclaimed water generated by a reclamation system or SRS must be monitored at a POC to verify that it meets the appropriate reclaimed water standards and to determine if the total N and total P content of the reclaimed water will meet BNR related to nutrient management requirements for irrigation reuses. The POC for most Level 1 and Level 2 reclaimed water standards shall be after all treatment and prior to discharge to a reclaimed water distribution



system. Exceptions to this are POCs for the turbidity standard of Level 1 and the TRC standard of Level 1 and Level 2 when chlorine is used for disinfection. The POC for turbidity must be just upstream of disinfection ([9VAC25-740-70.B.1](#)) and the POC for TRC must be at the end of the chlorine contact tank or contact period ([9VAC25-740-80.A.2](#)). The exact monitoring locations of POCs for all standards are to be specified in the operations and maintenance manual for the reclamation system or SRS.

Where reclaimed water monitoring is determined necessary for a system storage facility or a reclaimed water distribution system as discussed in subdivision [III.G.6.k](#) and subdivision [III.G.6.l](#), respectively, [9VAC25-740-70.B.2](#) requires the permittee to determine the number and location of POCs for the facility or system, described in one of the following documents for approval by the RO:

- (i) For system storage facilities other than those considered part of the reclaimed water distribution system, in the O&M Manual of the reclamation system or SRS where the facility is located; or
- (ii) For reclaimed water distribution systems, including system storage facilities considered part of these systems, in the RWM plan of the distribution system.

When reviewing the number and location of POCs for a system storage facility or reclaimed water distribution system, the RO should identify and establish locations where degradation of reclaimed water below required standards for the intended reuse is most likely to occur either in storage or during distribution. For a system storage facility, at least one POC must be located prior to the discharge of reclaimed water from the facility to a reclaimed water distribution system or directly to a reuse, and preferably within and at the outlet of the storage facility. The number and location of POCs for a reclaimed water distribution system will typically vary according to the size of the system, the residence time of reclaimed water in the system, maintenance treatment within the system, and the level of reclaimed water (i.e., Level 1 or Level 2) to be delivered by the system. Larger distribution systems will, in most cases, require more monitoring locations compared to smaller distribution systems. Where there is only one end user on a distribution system, at least one POC should be located close to and before the end user's service connection. The more end users that are connected to the distribution system, the more strategically POCs will need to be located to minimize the number while still ensuring reclaimed water in the system meets the standards for the intended reuses. Distribution systems installed in flatter areas that rely solely on gravity flow to distribute the reclaimed water may experience slower flow rates and possibly dead zones with potential for regrowth of bacteria. Such systems should have more POCs than distribution systems installed in areas with a higher gradient on the distribution lines or with pump stations to move reclaimed water more quickly through the system. At least one POC should follow each location where, for example, additional chlorination or other disinfectant is added during distribution to ensure that reclaimed water quality in the distribution system is maintained to meet the standards for the intended reuses. Distribution systems that deliver Level 1 reclaimed water specifically to reuses where public contact with the reclaimed water is likely, may require more POCs than would normally be required for a distribution system that delivers Level 2 reclaimed water to reuses where there will be little or no potential for public contact.

### c. CEDS

CEDS can generate reclaimed water monitoring reports for VPDES permits or authorizations (administrative or emergency) associated with existing VPDES permits for water reclamation and reuse projects. In the CEDS VPDES permit module, a reclaimed water POC for a reclamation system, reclaimed water distribution system or system storage considered part of these facilities is considered an internal outfall. The internal outfall is created under the Outfalls sub tab of the Outfall/Limits tab, and applicable limits are added to the outfall. For the purposes of CEDS, reclaimed water standards are considered the equivalent of limits.

Alphabetical characters cannot be used in the identification number of an outfall where the permittee will be submitting monitoring results associated with the outfall via electronic discharge monitoring reports or eDMRs. Unique identification numbers are to be used for reclaimed water internal outfalls to clearly distinguish them from other types of outfalls (internal or external) covered by the same permit. Where reclaimed water to be monitored at the outfall will be produced from municipal wastewater, treated to meet Level 1 or Level 2 standards, and distributed to reuses that are listed in the regulation ([9VAC25-740-90.A](#)), choose one identification number for the outfall from the following ranges:

<b>Reclaimed Water Treatment Level</b>	<b>Internal Outfall Identification Number</b>
Level 1	650 – 675
Level 2	676 - 699

Where reclaimed water standards must be developed on a case-by-case basis for unlisted reuses of any reclaimed wastewater or for all reuses of reclaimed industrial wastewater (see subdivision [III.G.3](#)), contact OLAP staff for assistance determining an appropriate identification number for the reclaimed water internal outfall.

Although CEDS cannot generate monitoring reports for VPA permits at this time, CEDS is to be used to track the submission of monitoring reports for VPA permitted reclamation systems, SRSs, reclaimed water distribution systems and system storage considered part of these facilities (see subdivision [III.L](#)). A template of a reclaimed water monitoring report for a VPA permit is provided in [Attachment B](#). POCs for reclaimed water monitoring required by a VPA permit are not internal outfalls but are referred to as “Sampling Locations” shown in the upper left corner of the monitoring report page. Use the same POC numbering procedures described above for reclaimed water internal outfalls of VPDES permits to number reclaimed water POCs for VPA permits. This is particularly important where other treatment streams (e.g., partially treated wastewater for disposal) are authorized by the same VPA permit.

### d. Bacteria monitoring

Both Level 1 and Level 2 reclaimed water have monthly geometric mean and corrective action threshold standards for each of three different bacteria: fecal coliform, E. coli and enterococci. However, standards for only one of the three bacteria will apply to each permittee and will

correspond, in most cases, to the effluent bacteria monitoring parameter of the point source discharge for a WWTW that is part of conjunctive system, and has the option to discharge. For a non-discharging reclamation system, the bacteria standard will typically be that required for a discharge to the nearest surface water had there been a discharge from the reclamation system or conjunctive system. Where the nearest surface water is a shellfish water, only fecal coliform or enterococci would be used as the effluent bacteria monitoring parameter for a point source discharge. Therefore, only one reclaimed water bacteria standard corresponding to either of these effluent bacteria monitoring parameters should be included in the permit or authorization. For any water reclamation system, whether discharging or non-discharging, the permittee may also request a specific bacteria standard based on other factors, such as cost where the analysis for one bacteria standard may be less expensive than that of another.

### **(1) Level 1 bacteria monitoring - requirements and reduction**

Bacteria monitoring requirements for Level 1 reclaimed water are specified in [9VAC25-740-80.A.4.a](#) of the Water Reclamation and Reuse Regulation. For existing Level 1 reclamation systems with a DDF equal to or greater than 0.05 mgd, it may be possible to reduce the reclaimed water bacteria sampling frequency where the permittee can demonstrate the following:

- (i) Less than 10 percent of the monthly geometric mean values derived from bacteria monitoring of reclaimed water from the reclamation system and performed in accordance with [9VAC25-740-80.A.4](#) over the most recent 12 consecutive month period are not in violation of the monthly geometric mean bacteria standard in the permit or authorization issued to the system. This threshold is consistent with other DEQ water programs to establish acceptable or unacceptable compliance (e.g., GM 11-2007, 2012 Water Quality Assessment Guidance Manual, Rule #1).
- (ii) There is an adequate correlation between the bacteria monitoring results and measurements for surrogate disinfection parameters, such as TRC and turbidity, and expected bacteria counts based on regressions of actual bacteria and surrogate monitoring data comply with the bacteria standards in the permit or authorization.

For every bacteria monitoring result that is evaluated, a corresponding instantaneous TRC or turbidity measurement recorded at the same time the bacteria grab sample was collected must also be evaluated. Monitoring results of all reclaimed water bacteria sampling for a period of 365 consecutive days should be evaluated. Per [9VAC25-740-80.A.4.a](#), reclamation systems with a DDF of > 0.500 mgd must sample bacteria daily, yielding a minimum of 365 bacteria monitoring results; and reclamation systems with a DDF of 0.050 to 0.500 mgd must sample bacteria four days per week, yielding a minimum of 208 bacteria monitoring results. Using all bacteria monitoring data and corresponding TRC or turbidity data, the permittee must calculate the correlation coefficient ( $r$  or  $r$  value) and coefficient of determination ( $r^2$ ) to evaluate the correlation between the bacteria monitoring results and measurements of the surrogate monitoring parameter. The  $r$  can be either a positive or negative value between 0 and 1. However, the closer the  $r$  is to 1, the stronger the correlation between the bacteria monitoring results and the surrogate monitoring parameter. The coefficient of determination or  $r^2$  indicates

the degree to which bacteria monitoring results are related to variations in the disinfection surrogates, TRC or turbidity. Equations to determine the  $r$  and  $r^2$  are provided below.

**Independent and dependent variables:**

The independent variable is either TRC or turbidity concentration, and the dependent variable is bacteria count. These variables are expressed as follows:

Independent variable       $X_i$  = an observed TRC or turbidity value  
     $x_i$  = the deviation of  $X_i$  from the mean  $X$  value

$$x_i = (X_i - \bar{X})$$

Dependent variable       $Y_i$  = an observed bacteria count  
     $y_i$  = the deviation of  $Y_i$  from the mean  $Y$  value

$$y_i = (Y_i - \bar{Y})$$

**Correlation coefficient (r)\*:**

Given  $n$  pairs of observations for variables  $X$  and  $Y$  where “ $X$ ” is the TRC or turbidity measurement and “ $Y$ ” is the bacteria monitoring result, the correlation coefficient ( $r$ ) is calculated as:

$$r_n = S_{xy} / \sqrt{S_{xx} S_{yy}}$$

where:

$$\text{lin}S_{xy} = \sum (X - \bar{X})(Y - \bar{Y})$$

$$S_{xx} = \sum X^2 - \frac{(\sum X)^2}{n} = \sum (X - \bar{X})^2 = \sum x_i^2$$

$$S_{yy} = \sum Y^2 - \frac{(\sum Y)^2}{n} = \sum (Y - \bar{Y})^2 = \sum y_i^2$$

**Coefficient of determination (r<sup>2</sup>)\*:**

When there is only one independent variable (TRC or turbidity), the coefficient of determination is the square of the correlation coefficient ( $r$  value or  $r$ ) between bacteria monitoring results and the independent variable.

\* Ref.: Ott, Lyman. 1984. An Introduction to Statistical Methods and Data Analysis, 2<sup>nd</sup> Ed., Duxberry Press, Boston.

The correlation between bacteria monitoring results and measurements for TRC or turbidity should be considered acceptable when the  $r$  value is negative for the correlation

between bacteria monitoring results and TRC measurements ( $-1.00 \leq r \leq 0.00$ ) or positive for the same correlation between bacteria monitoring results and turbidity measurements ( $0.00 \leq r \leq +1.00$ ), and the  $r^2$  is greater than or equal to 0.9.

With the same data used to calculate the  $r$  value and  $r^2$ , the permittee should develop a regression equation that models the relationship between the bacteria monitoring results and the disinfection surrogate measurements. The regression equation, in turn, should be used by the permittee to determine if expected bacteria counts based on observed concentrations of the disinfection surrogate over an additional 30-day period, will comply with the CAT bacteria standard in the permit or authorization. Where the expected bacteria counts comply with the bacteria standard, the bacteria monitoring frequency for Level 1 reclaimed water may be reduced to the frequency specified in [9VAC25-740-80.A.4.a](#). Where the expected counts of bacteria do not comply with the bacteria standard, no reduction in the bacteria monitoring frequency for Level 1 reclaimed water should be authorized.

Because Level 1 reclaimed water is intended for reuses where there exists the potential for public contact with the reclaimed water, bacteria monitoring requirements for Level 1 reclaimed water cannot be completely eliminated or waived.

## **(2) Level 2 bacteria monitoring – requirements and waiver**

Bacteria monitoring for Level 2 reclaimed water is based on the design flow of the reclamation system and the SCAT Regulations for WWTWs of similar capacity ([9VAC25-740-80.A.4.b](#)). However, [9VAC25-740-70.D](#) gives DEQ the authority to require treatment and standards other than those specified in [9VAC25-740-70.A.2](#) for Level 2 reclaimed water. This could apply, for example, to the elimination of a bacteria standard for Level 2 reclamation systems using chlorine for disinfection where it may be possible for them to monitor only TRC rather than both bacteria and TRC at the end of the chlorine contact tank to verify adequate disinfection. Although not specifically developed for discharges from reclamation systems, the principles and procedures of [GM 03-2007](#) may also be used to waive bacteria monitoring for reclamation systems that will produce Level 2 reclaimed water where the facility has completed a demonstration study in accordance with [GM 03-2007](#) to verify that TRC is a suitable surrogate for a given reclaimed water bacteria standard. Such waivers should be noted in the fact sheet of the permit or authorization for the reclamation system.

Where a WWTW proposes to produce Level 2 reclaimed water with little or no change in its existing treatment processes (i.e., the WWTW and the reclamation system are a conjunctive system), bacteria monitoring in accordance with the Water Reclamation and Reuse Regulation may or may not be waived based on any one of the following circumstances:

- (1) If, for any reason, an existing or proposed permit for a surface water discharge (VPDES) or land application (VPA) includes limits and monitoring requirements for bacteria (e.g., e.coli, enterococci, or fecal coliform), then a demonstration study and bacteria sampling waiver for reclamation and reuse should not be considered;

- (2) If a current or previous bacteria demonstration study performed in accordance with [GM 03-2007](#) for an individual or group of facilities did not successfully establish TRC as a monitoring surrogate for bacteria, then a bacteria sampling waiver for water reclamation and reuse should not be considered; or
- (3) If bacteria limits or monitoring are not warranted for inclusion in an existing or proposed VPDES permitted discharge or VPA permitted land application operation, then the RO may choose to:
  - (a) Include special conditions from [GM 03-2007](#) in the permit or authorization allowing for a bacteria demonstration study to be performed for water reclamation and reuse; and/or
  - (b) Consider the results of a successful bacteria demonstration study to waive the need to monitor bacteria in the reclaimed water.

Given a scenario where (i) an existing major VPDES permitted WWTW proposes to produce Level 2 reclaimed water under an authorization, (ii) the WWTW and the reclamation system will be a conjunctive system, and (iii) the WWTW has not yet received effluent bacteria monitoring requirements, the reclaimed water bacteria monitoring in this case should not be waived.

Where bacteria monitoring is waived for a conjunctive WWTW and reclamation system, the more stringent of the minimum TRC concentrations at the end of the chlorine contact tank (effluent disinfection requirement vs. reclamation and reuse disinfection requirement) should apply to the reclamation system.

#### **e. Oxygen demand monitoring**

The Water Reclamation and Reuse Regulation requires BOD<sub>5</sub> or CBOD<sub>5</sub> monitoring of reclaimed water. Many reclamation systems will be conjunctive systems, combined with WWTWs. Therefore, the reclaimed water standard of either BOD<sub>5</sub> or CBOD<sub>5</sub> that corresponds with the effluent monitoring parameter in the WWTW's VPDES or VPA permit should be selected. Some conjunctive systems that reclaim wastewater for reuse may have effluent limits and monitoring requirements for Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC) in lieu of BOD<sub>5</sub> or CBOD<sub>5</sub>. Per [9VAC25-740-70.D](#), treatment or standards other than or in addition to the treatment and standards in [9VAC25-740-70.A](#), which include BOD<sub>5</sub> or CBOD<sub>5</sub>, may be necessary based on the quality and character of the wastewater to be reclaimed or the intended reuses of the reclaimed water. Therefore, COD or TOC may be used as reclaimed water standards in lieu of BOD<sub>5</sub> or CBOD<sub>5</sub> to correspond with effluent limits and monitoring requirements of a conjunctive system where appropriate. However, numerical reclaimed water standards for COD or TOC must be determined on a case-by-case basis, using the more conservative factors specified in laboratory methods or wastewater engineering references accepted by the DEQ to convert numerical BOD<sub>5</sub> or CBOD<sub>5</sub> reclaimed water standards to COD or TOC. In these situations, regional water permit staff should contact OLAP staff for assistance developing the standards.

**f. Nutrient monitoring**

There are no nutrient standards for reclaimed water reclaimed. However, monitoring for total N and total P is required in the permit (without a limit) where reuses of the reclaimed water will include irrigation (e.g., of residential lawns, golf courses, agricultural crops, etc.) to determine whether the reclaimed water is BNR or non-BNR. This distinction is significant because there are no nutrient management requirements for irrigation reuse of BNR reclaimed water, while there are nutrient management requirements for bulk and nonbulk irrigation reuse of non-BNR reclaimed water as discussed in subdivision [III.C.6.a](#). Monitoring for total N and total P on the reclaimed water standards page in Part I.A of a VPDES permit is not necessary if these parameters are to be monitored in the effluent discharged by a conjunctive WWTW and reclamation system, and there is no difference in the nutrient removal treatment for the reclaimed water and the effluent that is discharged. However, where reclaimed water from such facilities will be reused for irrigation, the fact sheet should note that nutrient monitoring for reclaimed water is addressed in the monitoring requirements for the discharged effluent, and the permit or authorization should include, if applicable, nutrient management conditions provided in [Attachment A](#) for irrigation reuse of non-BNR reclaimed water.

**g. Monitoring for additional parameters**

Reclaimed water monitoring for additional parameters, such as, but not limited to sodium, may be required where the permittee of the reclamation system will also be the end user of the reclaimed water and the permittee’s reuse includes irrigation. Sodium can adversely impact soil properties affecting plant growth or may be directly toxic to the vegetation irrigated with the reclaimed water. Additional parameters may be those similarly monitored for wastewater land treatment systems that utilize irrigated vegetation as part of the treatment process. Note that the vegetation at an irrigation reuse site is not part of treatment for the reclaimed water that is applied to that site.

**h. Parameter codes**

The same non-seasonal parameter codes used for effluent outfalls in CEDS will be used for the following parameters when included in the monitoring reports for either VPDES or VPA permitted reclamation systems:

Parameter	Code	Parameter	Code
Flow	001	Fecal coliform	006
pH	002	E. coli	120
BOD <sub>5</sub>	003	Enterococci	140
CBOD <sub>5</sub>	159	Total Phosphorus (P)*	012
TSS	004	Total Nitrogen (N)*	013
TRC	157	Total N – Calendar Year Average*	792
Turbidity	798	Total P – Calendar Year	794

		Average*	
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\* Applicable only where reuses of the reclaimed water will include irrigation

Total P (012) and total N (013) are to be reported as monthly average concentrations (mg/l). Calendar year average total N (792) and total P (794) are to be calculated using monthly averages concentrations of total N and total P for each calendar year (January – December) and submitted by January 10<sup>th</sup> of the following year. Refer to [Attachment A](#) of this guidance for a modified version of the permit special condition in Guidance Memo No. 07-2008, Amendment No. 1 for the calculation of calendar year average total N and total P.

### **i. Designated design flow (DDF)**

The monitoring frequency for certain reclaimed water standards specified in Part I.A of a VPDES or VPA permit and the associated monitoring report will be based on the designated design flow of the reclamation system or SRS. The standards include TRC and TSS for Level 2, and BOD<sub>5</sub> (or CBOD<sub>5</sub>) and bacteria (fecal coliform, E. coli or enterococci) for both Level 1 and Level 2.

The designated design flow (DDF) is defined as the design flow of a reclamation system or SRS that may be some percentage of or equal to the design flow of a WWTW providing source water to the reclamation system or SRS to produce reclaimed water ([9VAC25-740-10](#)). The permitted design flow of a WWTW is the capacity at which the WWTW is designed to reliably treat an average 24-hour influent flow rate, assessed over a period of a month for all months of operation within a year, including appropriate peak factors provided to meet applicable reliability and redundancy requirements. The average 24-hour influent flow rate is based on projected estimates of influent flow to be received by the WWTW.

#### **(1) DDF based on WWTW flow**

The DDF of a conjunctive system or a SRS, a type of conjunctive system, is the design flow of the WWTW. By definition, these systems consist of a WWTW and reclamation system having no or minimal separation of treatment processes between the treatment works and the reclamation system.

#### **(2) DDF based on separate treatment**

The DDF of a reclamation system is the design flow of only the reclamation system treatment train where such treatment will be separate from and frequently in addition to the treatment train of the WWTW. The DDF of the reclamation system, in this case, will normally be less than the design flow of the WWTW where reclamation and reuse of the WWTW's effluent will be secondary to other options to eliminate the effluent (e.g., by discharge to surface water or land treatment), but may be equal to the design flow of the WWTW where reclamation and reuse is or may at any time become the primary option to eliminate the WWTW's effluent.

Example #1: A WWTW with a permitted discharge to surface waters and a design flow of 2.0 MGD is a conjunctive system capable of producing Level 2 reclaimed water with no or



minimal additional treatment. In this scenario, the DDF of the conjunctive system is the same as the design flow of the WWTW (2.0 MGD).

Example #2: Where the WWTW described in Example 1 diverts a portion of its flow to a separate reclamation system treatment train (e.g., additional filtration and higher level disinfection) to produce Level 1 reclaimed water for reuse, the DDF of the reclamation system is the design flow of the additional separate treatment needed to produce Level 1 reclaimed water.

Example #3: Where the WWTW described in Example 1 does not have a permitted discharge to surface waters and diverts all of its flow to additional separate filtration and higher level disinfection to produce Level 1 reclaimed water for exclusively reuse, the DDF of the reclamation system must be the design flow of the WWTW, 2.0 MGD.

### **(3) Capacity of regional reclamation systems**

A regional reclamation system that receives source water from more than one WWTW for the production of reclaimed water will not, in most cases, have a DDF but will have a design flow the same as that required for WWTWs.

#### **j. Operational flow monitoring**

A WWTW is required in accordance with either [9VAC25-31-200.B.4](#) or [9VAC25-32-90.B](#) to maintain a “monthly average flow influent” to the facility that will not exceed the design capacity of the facility. Similarly, a reclamation system is required in accordance with [9VAC25-740-180](#) to maintain a “monthly average flow into” the system that will not exceed the DDF of the system. Flows to be reported for a water reclamation and reuse project will vary based on what WWTWs and reclamation systems are included in the project and their relationship to each other. The following are examples of different flow reporting requirements for water reclamation and reuse projects:

Example #1: Where a reclamation system will be owned and/or operated independent of all WWTWs that will provide source water for reclamation to the system (e.g., a regionalized reclamation system), include the monitoring and reporting of flow (referring to flow as described in [9VAC25-740-180](#)) and the 95% Capacity Reopener condition for reclamation systems and SRS (see [Attachment A](#)) in the permit covering the system.

Example #2: Where a reclamation system will be combined with and under common ownership or management with a WWTW that will provide source water to the system (i.e., a conjunctive system, including but limited to, a SRS), and all effluent from the WWTW will be diverted to water reclamation and reuse under normal operating conditions, include the monitoring and reporting of flow (referring to flow as described in [9VAC25-31-200.B.4](#) or, as applicable, [9VAC25-32-90.B](#)) in the permit covering the WWTW and reclamation system.

Example #3: Where a reclamation system will be under common ownership or management with a WWTW that will provide source water to the system, and there exists the

option to divert all or a portion of source water from the WWTW to either disposal (e.g., a surface water discharge or land treatment) or separate additional treatment for water reclamation and reuse, it may be appropriate to include monitoring and reporting of flow for the WWTW (referring to flow as described in [9VAC25-31-200.B.4](#) or, as applicable, [9VAC25-32-90.B](#)) and flow for the reclamation system (referring to flow as described in [9VAC25-740-180](#)) within the same permit, particularly where a DDF has been established for the reclamation system (see subdivision [III.G.6.i \(2\)](#)). Flow monitoring and reporting requirements included in the permit for the reclamation system are to be displayed on the reclaimed water standards and monitoring requirements page of the permit.

Example #4: Given the same scenario described in Example #3, but where water reclamation and reuse standards, monitoring requirements and special conditions will be associated with an existing permit through an authorization (administrative or emergency), include monitoring and reporting of flow for the reclamation system (referring to flow as described in [9VAC25-740-180](#)) on the reclaimed water standards and monitoring requirements page and the 95% Capacity Reopener condition for reclamation systems and SRS (see [Attachment A](#)) in the administrative authorization. Upon reissuance or major modification of the permit with which the authorization is associated, flow monitoring and reporting requirements and the 95% Capacity Reopener condition in the authorization are to be transferred to the permit.

Measured or estimated influent flow, discharge flow(s), or both may be used to determine and monitor the flows of both WWTWs and reclamation systems. Where discharge flows of a reclamation system will be used to determine the system's flow as described in [9VAC25-740-180](#), all flows from all discharges of the system must be accounted for, including but limited to, flows from discharges to reclaimed water distribution systems, storage facilities (system or non-system) and directly to reuses. Where discharge flows of a WWTW will be used to determine the facility's flows as described in [9VAC25-31-200.B.4](#) or, as applicable, [9VAC25-32-90.B](#)), and the WWTW will discharge a portion of its effluent to disposal (e.g., surface water discharge or land treatment) and another portion to water reclamation and reuse, all flows from all discharges of the WWTW must be accounted for.

Procedures to either estimate or measure reportable flows should be provided in the O&M manual of the WWTW and, as applicable, the reclamation system.

#### **k. System storage facility monitoring and contingency plans**

System storage is defined in the regulation as storage on or off the site and considered part of a reclamation system, SRS, or reclaimed water distribution system that is used to store reclaimed water produced by the reclamation system or SRS, and to equalize flow to or within a reclaimed water distribution system. Per [9VAC25-740-80.D](#), DEQ may require monitoring of reclaimed water in or from a system storage facility at a reclamation system or SRS where:

- (i) The reclaimed water will be held in the facility for a period greater than 24 hours;
- (ii) The facility will discharge reclaimed water to a reclaimed water distribution system, a

non-system storage facility, or directly to a reuse; and

(iii) Conditions exist at the facility to degrade the reclaimed water to a quality that fails to comply with applicable minimum reclaimed water standards for the intended reuses of that water.

In accordance with [9VAC25-740-100.C.1.h](#), a distribution systems that delivers reclaimed water directly to end users must include in the RWM plan, submitted as part of the [Application Addendum](#), a description of how the quality of reclaimed water in the distribution system will be maintained to meet and, if determined necessary by DEQ, monitored to verify compliance with minimum standard requirements specified in [9VAC25-740-90](#) (excluding CAT standards) for the intended reuses of the reclaimed water. This provision also applies to system storage facilities that are part of a reclaimed water distribution system.

The RO is responsible for determining the need to monitor reclaimed water in or from a system storage facility, but may request assistance from OLAP when making this determination. Reclaimed water quality in system storage will degrade most often due to lack of cover or containment to prevent the introduction of bacteria or pollutants into the facility, or where no or inadequate disinfection is maintained in storage to prevent bacteria regrowth.

When the RO determines that monitoring is required for a system storage facility, the RO will need to: (i) establish appropriate reclaimed water standards, monitoring frequencies and sample types to include in the permit or authorization covering the facility (see [Attachment A](#)); and (ii) develop the corresponding reclaimed water monitoring report form (see subdivisions [III.G.6.a](#), [III.G.6.c](#) and [III.G.6.o](#), and [Attachment B](#)). In most cases, it will not be necessary to require monitoring of reclaimed water in or from system storage for all Level 1 or Level 2 standards specified in [9VAC25-740-70.A](#).

Monitoring when required for any system storage facility should include, at a minimum, bacterium of the same type monitored by the reclamation system or SRS that produced the reclaimed water stored by the facility. Where reclaimed water in a system storage facility will be chlorinated during reclamation, during distribution and prior to reaching the storage facility, or within the storage facility, monitoring should also include TRC. All monitoring should occur in or from a system storage facility. Monitoring for TRC must also follow all chlorination and mixing up to and including that which occurs before and/or within the storage facility. For example, if reclaimed water is chlorinated by a reclamation system and then in a system storage facility that is part of the reclamation system, TRC monitoring of reclaimed water in the storage facility should follow chlorination and mixing that occurs in the storage facility.

For system storage facilities that will have reclaimed water monitoring for bacteria and, if applicable, TRC, include a maximum bacterium standard and instantaneous minimum TRC standard in the permit or authorization. Also, include a monthly geometric mean bacteria standard where bacteria will be monitored more often than once per month. Although CAT standards for bacteria and TRC apply to only monitoring during the production of reclaimed water, the RO may consider using the numerical thresholds of these standards on a case-by-case basis to establish non-CAT standards for reclaimed water monitoring of system storage facilities

(see [Attachment A](#)).

The reclaimed water monitoring frequency for all system storage facilities should be based on the consistency of discharge flow from the storage facility to a reclaimed water distribution system or directly to a reuse. When the discharge will be at a consistent flow or regular time interval, the monitoring frequency of reclaimed water in or from the storage facility should also follow a consistent schedule. Under these circumstances, sampling frequencies for reclaimed water monitoring described in [9VAC25-740-80](#), excluding continuous online monitoring for turbidity and TRC, may be applied. When the discharge will be at an inconsistent flow or time interval (e.g., for seasonal demand such as irrigation), reclaimed water in the storage facility should be sampled no more than 24 hours prior to discharge for reuse.

Monitoring POCs for system storage facilities must also be established and documented as discussed in subdivision [III.G.6.b](#).

Where a system storage facility is (i) part of a reclamation system or SRS, (ii) required to perform reclaimed water monitoring, and (iii) fails to comply with reclaimed water standards developed for the storage facility, the contingency plan of the reclamation system or SRS must be implemented. In accordance with [9VAC25-740-140.D.1.i](#), the O&M Manual for a reclamation system or SRS is required to include a contingency plan “to eliminate or minimize the potential for untreated or inadequately treated water to be delivered to reuse areas.” Contingency plan measures to address substandard reclaimed water in system storage may include, but are not limited to, adding a treatment or retreatment step in or after storage (e.g., additional disinfection), diverting the water from system storage to reject water storage for subsequent treatment or retreatment, discharging to another permitted reuse system requiring a lower level of treatment not less than Level 2 and the substandard reclaimed water meets a minimum of Level 2 standards (e.g., applicable where the facility will store Level 1 or better reclaimed water), or discharging to a VPDES or VPA permitted effluent disposal system provided the water meets the effluent limits of the permit.

Contingency measures to address substandard reclaimed water in system storage facilities that are part of reclaimed water distribution systems are discussed in subdivision [III.G.6.1](#).

#### **I. Reclaimed water distribution system monitoring and contingency measures**

Per [9VAC25-740-110.B.9](#), all reclaimed water distribution systems must be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water such that the reclaimed water will not be degraded below the standards, excluding CAT standards, required for the intended reuses in accordance with [9VAC25-740-90](#). In addition, [9VAC25-740-100.C.1.h](#) requires that the RWM plan, submitted as part of the [Application Addendum](#), contain a description of how the quality of reclaimed water in a reclaimed water distribution system will be maintained to meet and, if determined necessary by DEQ, monitored to verify compliance with minimum standard requirements specified in [9VAC25-740-90](#) for the intended reuses of the reclaimed water, excluding CAT standards.

The RO is responsible for determining the need to monitor reclaimed water within a reclaimed

water distribution system, but may request assistance from OLAP when making this determination. Distribution systems that do not maintain or have difficulty maintaining reclaimed water quality that meets applicable standards for the intended reuses should be required to monitor the reclaimed water they distribute and, as applicable, store. This will apply most often to distribution systems that have: (i) a higher potential for bacteria regrowth and/or scum buildup (e.g., systems that have low velocity or pressure, have dead ends or dead zones, distribute non-BNR reclaimed water, etc.); (ii) infiltration and inflow of stormwater, sewage or other contaminant sources into the system; or (iii) uncovered system storage that is part of the distribution system. See subdivision [III.G.6.k](#) for monitoring requirements of system storage facilities, particularly those that will be part of a reclaimed water distribution system and used for storage of blended reclaimed water produced by the distribution system (see subdivisions [III.B.4](#) and [III.M.1.a](#)). Reclaimed water monitoring should also be required for distribution systems that provide additional treatment of reclaimed water during transport to verify that such treatment is maintaining or, in some cases, restoring the quality of the reclaimed water to meet standards for the intended reuses.

When the RO determines that monitoring is required for a reclaimed water distribution system, the RO will need to: (i) establish appropriate reclaimed water standards, monitoring frequencies and sample types to include in the permit or authorization covering the system (see [Attachment A](#)); and (ii) develop the corresponding reclaimed water monitoring report form (see subdivisions [III.G.6.a](#), [III.G.6.c](#) and [III.G.6.o](#), and [Attachment B](#)). Monitoring of a reclaimed water distribution system may be applied to the entire system or specific components of the system, and different monitoring may be applied to different components, including but not limited to, reclaimed water mains, lateral pipelines, and pump stations; tank trucks used to haul reclaimed water; and system storage that is part of the distribution system. For example, monitoring may be required for a system storage facility but not other components of the same distribution system where the storage facility is identified as the sole source or cause of reclaimed water degradation in the distribution system. This may be the case where, for example, the storage facility is not covered to prevent the entry of contaminants that would degrade the reclaimed water to substandard quality. See subdivision [III.G.6.k](#) for more information regarding monitoring of system storage facilities.

Monitoring within the distribution system is to verify, at a minimum, continued compliance with applicable disinfection standards for Level 1 and Level 2 reclaimed water specified in [9VAC25-740-70.A](#) (e.g., bacteria). Only reclaimed water standards other than CAT standards may be used for distribution systems ([9VAC25-740-100.C.1.h](#) and [9VAC25-740-110.B.9](#)). Because TRC has only a CAT standard, monitoring for an instantaneous minimum TRC of 1.0 mg/l is recommended in addition to bacteria monitoring, and where chlorination will be used for disinfection during reclamation. A lower instantaneous minimum TRC standard for the distribution system may be approved by the RO where demonstrated by the permittee to reliably comply with disinfection standards for intended reuses of the reclaimed water. Where UV will be used in lieu of chlorination for disinfection during reclamation, TRC monitoring in the distribution system is not recommended unless the reclaimed water is chlorinated after reclamation and prior to discharge to the distribution system (e.g., in storage at the reclamation system), or within the distribution system, including system storage that is part of the distribution system. In this case, apply a maximum bacterium standard that corresponds with the bacterium

monitored by the reclamation system or SRS providing reclaimed water to the distribution system, and an instantaneous minimum TRC standard (see [Attachment A](#)).

The higher the nutrient content of reclaimed water, the greater the potential for scum build up in the distribution system, particularly where the flow velocity in the system is slower (e.g., in larger systems, systems located in low relief areas without pump stations, etc.). This may increase solids and reduce, if applicable, TRC in the reclaimed water of the distribution system to concentrations that no longer comply with applicable reclaimed water standards. Uncovered system storage that is part of the distribution system, or infiltration and inflow into the distribution system due to improper installation and/or poor maintenance may also increase the reclaimed water solids concentrations in the system. Under these circumstances, require TSS monitoring for the distribution system with a provision to allow reduced monitoring frequency where monitoring results over a representative period consistently demonstrate that TSS concentrations in the system comply with the standards contained in the permit or authorization (see [Attachment A](#)). A “representative period” for monitoring, in this case, will vary based on the source of solids in the distribution system and any known or scheduled corrective action that will be taken to mitigate the source (e.g., repairs, system storage cover, etc.). Turbidity monitoring, required for the production of Level 1 reclaimed water per [9VAC25-740-80.A.1](#), may be used to monitor solids during the distribution of the same water, but will not be practical where continuous monitoring of the distribution system is not required. Under these circumstances, which are anticipated to be the norm, use TSS standards in lieu of turbidity standards for monitoring Level 1 reclaimed water in the distribution system (see [Attachment A](#)).

Monitoring for additional parameters may be required, determined on a case-by-case basis.

Where a reclaimed water distribution system will maintain a consistent level of flow, continuously or at regular time intervals to meet peak demand (e.g., daily, seasonal, etc.), reclaimed water monitoring of the system should follow a regular or routine schedule. Under these circumstances, sampling frequencies for reclaimed water monitoring described in [9VAC25-740-80](#), excluding continuous online monitoring for turbidity and TRC, may be applied. Where a distribution system will have levels of flow that are inconsistent and sporadic, reclaimed water in the system should be sampled no more than 48 hours prior to discharge for reuse.

Monitoring POCs for a reclaimed water distribution system, including system storage that is part of the distribution system, must also be developed and documented as discussed in subdivision [III.G.6.b](#).

In accordance with [9VAC25-740-100.C.1.h](#), the RWM plan for a reclaimed water distribution system must contain a description of how reclaimed water quality in the system, including storage that is part of the system, will be maintained to meet minimum standards for the intended reuses of that water (see subdivision [III.C.4.h](#)). Contingency measures that eliminate or minimize the potential to deliver substandard reclaimed water from the distribution system to intended reuses, also maintain reclaimed water quality in the distribution system and are to be included among other measures in the RWM plan to satisfy [9VAC25-740-100.C.1.h](#). Where reclaimed water quality in the distribution system, including system storage that is part of the

distribution system, does not meet minimum standards for the intended and authorized reuses of that water, the distribution system is to implement contingency measures. Contingency measures to address substandard reclaimed water in the distribution system are typically short term actions not intended to replace routine maintenance or a compliance schedule, and may include but are not limited to, emergency repairs, a supplemental treatment or retreatment step (e.g., additional disinfection) at those locations where degradation of the reclaimed water is occurring, diverting to only reuses for which Level 2 reclaimed water is authorized and the substandard reclaimed water meets a minimum of Level 2 standards (e.g., applicable where the distribution system is authorized to deliver Level 1 reclaimed water under non-contingency circumstances), or diverting to a VPDES or VPA permitted effluent disposal system provided the water meets the effluent limits of the permit. A discharge of substandard reclaimed water from the distribution system to a sanitary sewer may be another acceptable contingency measure where allowed under local sewer use ordinances and authorized by DEQ. A discharge of substandard reclaimed water from a distribution system to a storm drain is not an acceptable contingency measure.

#### **m. Ground water monitoring**

All irrigation reuse of reclaimed water must be supplemental ([9VAC25-740-100.C.2](#)). Supplemental irrigation is defined in [9VAC25-740-10](#) as irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation. At supplemental irrigation rates, a very small portion of the reclaimed water applied may reach ground water. Therefore, ground water monitoring for irrigation reuses is not required.

Land treatment and the direct injection into an underground aquifer of wastewater are activities that will typically require groundwater monitoring. Because these activities are covered by other regulations of the DEQ or EPA, they are excluded from the requirements of the Water Reclamation and Reuse Regulation under [9VAC25-740-50.A](#). As a result, there will seldom, if ever, be a “reuse” of reclaimed water requiring ground water monitoring.

#### **n. Corrective action threshold**

Unique to the Water Reclamation and Reuse Regulation are corrective action thresholds (CATs). CATs are operational reclaimed water standards used to monitor and adjust, as necessary, the treatment processes that occur at a reclamation system or SRS. They do not apply to reclaimed water quality in storage, including system storage, or distribution. CATs replace an instantaneous minimum, instantaneous maximum and maximum value for TRC, turbidity and bacteria, respectively. Once TRC drops below its CAT or turbidity exceeds its CAT, the permittee has one hour within which to bring the water back into compliance with the CAT standards in the permit. If this is not possible, the permittee must then implement other options, such as diverting the water to storage for retreatment, discharging to another permitted reuse requiring a lower level of treatment but not less than Level 2, or discharging to a permitted outfall provided the reject water meets effluent limits of the VPDES permit. The bacteria CATs are used primarily to verify that the TRC and turbidity CATs are working properly. Two consecutive routine bacterial monitoring results that reach the bacteria CAT will be considered a violation of the regulation in accordance with [9VAC25-740-70.C.2](#).

CATs and their associated monitoring requirements are to be included on the reclaimed water standards page in Part I.A of the permit. Templates of the standards pages for both Level 1 and Level 2 reclaimed water are provided in [Attachment A](#). Although the CAT for TRC is the same for both Level 1 and Level 2, there is no turbidity CAT for Level 2 and all bacteria CATs for Level 1 are more stringent than those for Level 2. There are also differences between Level 1 and Level 2 regarding the monitoring frequency and sample types for the CAT standards. Regulatory references are provided in the template to help the permit writer complete this information in the reclaimed water standards page.

Where ultraviolet (UV) radiation will be used for disinfection in lieu of chlorination during reclamation, the TRC CAT will not apply. For Level 1 reclaimed water, a turbidity CAT unique to the UV disinfection process may be required as discussed in [9VAC25-740-110.A.2.a](#).

### **(1) CAT reporting requirements**

CAT events and diversions must be reported for VPDES and VPA permitted reclamation systems and SRSs. There are no CATs and reporting requirements for reclaimed water distribution systems and storage facilities. CAT reporting requirements are included in the template of the monitoring report for a VPA permit, and in the attachment to the monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit”. A “Monthly Log Sheet for Reclaimed Water Bacteria Monitoring” must also be submitted with each monitoring report for a VPDES or VPA permitted reclamation systems or SRS to verify compliance with the bacteria CAT of the permit. The above monitoring report and attachments are provided in [Attachment B](#). See also subdivision [III.M.1.a \(1\)\(b\)](#) for more details regarding CAT reporting requirements.

#### **o. Additional instructions for preparation and distribution of monitoring reports**

Additional general instructions to customize the monitoring report template for a VPA permit and attachments to monitoring reports for VPA and/or VPDES permits are provided in [Attachment B](#). Information in the monitoring report template for a VPA permit may also be used to prepare a monitoring report in CEDS for a VPDES permitted reclamation system. Provide paper copies and, if requested by the permittee, electronic copies of the monitoring report and appropriate attachments with the transmittal letter for a VPDES or VPA permit issuance, reissuance, modification or an authorization (administrative or emergency) related to water reclamation and reuse. See [Attachment D](#) for example transmittal letters.

## **7. Special Conditions**

Special conditions for water reclamation and reuse are contained in [Attachment A](#) and are to be inserted into Part I.B of an administrative authorization in association with a VPDES permit (see subdivision [III.D](#)) or an emergency authorization in association with a VPDES or VPA permit (see subdivision [III.E](#)). Special conditions for water reclamation and reuse added directly to a VPDES or VPA permit are to be included in a new Part other than Part I or II (e.g., Part III, Part



IV, etc.) of the permit. Immediately following each special condition is the “Basis” for the condition, which is to be placed in the fact sheet, not in the permit or authorization (administrative or emergency). The basis of only those conditions used in the permit or authorization should be included in the fact sheet. Additional instructions regarding the use of these conditions are provided in [Attachment A](#).

Many of the special permit conditions contained in [Attachment A](#) may apply more to the reclamation and reuse of municipal wastewater or sewage than industrial wastewater due to the differing pollutant content and character of industrial wastewaters. For example, irrigation reuse of a reclaimed industrial wastewater may require no or minimal setbacks from the irrigation reuse sites where the industrial wastewater does not contain any pathogens or other constituents that may be harmful to human health. Therefore, the RO must evaluate the applicability of these conditions on a case-by-case basis for each project that involves the reclamation and reuse of industrial wastewater.

Modification of a special condition contained in [Attachment A](#) may be made if determined appropriate and necessary, but may require a different basis to support the condition than that provided in this guidance.

## **8. Permits for end users**

As noted in subdivision [III.B.4](#), specific end users may require an individual permit from DEQ when the end user is not under common ownership or management with any reclaimed water agent(s) providing reclaimed water to the end user, and:

- (i) The end user intends to act as a reclaimed water agent by redistributing the reclaimed water it has received (with or without blending by the end user before redistribution) to end users other than or in addition to the end user/reclaimed water agent; or
- (ii) The end user has a history of chronic failure to comply with the terms and conditions of the service agreement or contract between the end user and any reclaimed water agent from which it receives reclaimed water, and the end user consumes a significant portion of the reclaimed water distributed by the reclaimed water agent(s) such that the reclaimed water agent(s) operations may be adversely impacted or jeopardized by terminating service to the end user per the terms of the service agreement or contract with the end user.

When required, a VPA permit should be issued to either type of end user provided the end user will not have a discharge to surface waters.

The permit for a non-compliant end user will not have reclaimed water standards and monitoring requirements, but should include applicable conditions from the following special condition categories in [Attachment A](#):

- Conditions applicable to all water reclamation and reuse projects

- Conditions applicable to reject water and reclaimed water storage facilities (including reclaimed water non-system storage)
- Conditions related to design and construction of water reclamation and reuse projects
- Conditions requiring access control and advisory signs
- Conditions applicable to irrigation reuses of reclaimed water
- Conditions applicable to non-irrigation reuses of reclaimed water
- Conditions applicable to notification, record keeping and reporting.

An end user acting as a reclaimed water agent will have a reclaimed water distribution system to deliver the reclaimed water. Therefore, the permit for the end user, in this case, should include conditions, and, if applicable, monitoring requirements from [Attachment A](#) specifically for reclaimed water distribution systems. Where the end user blends reclaimed water that it receives from more than one reclaimed water agent, include reclaimed water standards appropriate for the intended reuses of the blended reclaimed water and monitoring requirements in the permit. Where irrigation reuse of the blended reclaimed water will be involved, include monitoring requirements for monthly average concentrations of total N and total P. Where the blended reclaimed water for this purpose is further expected to meet BNR (i.e., annual average total N  $\leq$  8.0 mg/l, annual average total P  $\leq$  1.0 mg/l), also include monitoring requirements for annual average concentrations of total N and total P in the permit (see [Attachment A](#)).

## 9. Fact sheets

A fact sheet is required for the issuance or reissuance of each VPDES or VPA permit. For a major modification of either a VPDES or VPA permit, or minor modification of a VPA permit to add water reclamation and reuse standards, monitoring requirements and special conditions, the existing fact sheet of the permit should be amended to address the modifications. A fact sheet will also be required for an administrative authorization in association with a VPDES permit and an emergency authorization in association with a VPDES or VPA permit for water reclamation and reuse projects.

A fact sheet for an authorization (administrative or emergency) should have the same format as the fact sheet of the permit with which the authorization is associated. However, the content of the fact sheet for the authorization should, as much as possible, be limited to only the basis for water reclamation and reuse standards, monitoring requirements and special conditions contained in the authorization. Upon the reissuance of a permit with an administrative or emergency authorization for water reclamation and reuse, the authorization and the fact sheet of the authorization are to be incorporated into the permit and fact sheet of the permit, respectively.

## H. Preliminary engineering report, pilot study, certificate to construct and certificate to operate

### **1. Preliminary engineering report**

Per [9VAC25-740-120.A](#), a preliminary engineering report (PER) must be submitted by an applicant or permittee for a new reclamation system, SRS or reclaimed water distribution system, including pump stations, storage facilities and force mains of these systems; or for the modification or expansion of the same facilities where they already exist. An applicant or permittee may also ask the RO to waive the need for a PER or portions of the PER for modification or expansion of an existing reclamation system, SRS or reclaimed water distribution system determined by the scope of the proposed project. For example, an expansion to add a unit process or a modification to increase the design flow of the system would require a PER, while replacement of equipment for maintenance purposes should not.

### **2. Pilot study**

For a reclamation system that is part of an IPR project, a pilot study of the reclamation system is required ([9VAC25-740-110.A.2](#)) and must be performed prior to the issuance of certificates to construct and operate the full-scale reclamation system. Information regarding pilot studies for IPR projects will be addressed in a subsequent addendum to this guidance.

### **3. Certificate to construct and certificate to operate**

The construction, expansion or modification, and operation of a reclamation system or a SRS cannot proceed until a certificate to construct (CTC) and a certificate to operate (CTO) are issued to the facility ([9VAC25-740-120.B](#)). CTCs and CTOs are not required for the construction, expansion or modification of reclaimed water distribution systems, or for water reclamation and reuse facilities owned and/or operated by end users not directly permitted by DEQ.

The need to modify a CTC or CTO should be determined by the RO based on the proposed change to the original scope of work. For example, an expansion to add a unit process or a modification to increase the design flow of the system would require a modification to the CTC and CTO, while replacement of equipment for maintenance purposes should not require a modification to the CTC and CTO.

Note that by definition in [9VAC25-740-10](#), system storage is “considered part of a reclamation system, SRS, or reclaimed water distribution system that is used to store reclaimed water produced by the reclamation system or SRS, and to equalize flow to or within the reclaimed water distribution system.” Therefore, PER, CTC and CTO requirements for the construction, expansion or modification of a system storage facility will be the same as those for the reclamation system, SRS or reclaimed water distribution system of which the storage facility is a part.

### **4. DEQ review and approval of Construction Documents**

CTCs and CTOs for reclamation systems, SRSs or components thereof, are to be administratively approved by the RO upon receipt of the appropriate and complete CTC and CTO request forms available at [DEQ's Wastewater Engineering - Regulations and Certificates](#)

[webpage](#). All administratively approved CTCs and CTOs must be signed by appropriate DEQ personnel specified in the agency's most current Delegation of Authority Policy Statement.

In accordance with [9VAC25-740-120](#).B.1, conditions may be imposed on the issuance of a CTO to a reclamation system or SRS.

## **I. Variances**

Under [9VAC25-740-55](#) of the Water Reclamation and Reuse Regulation, an applicant or permittee who wishes to initiate a project for the production, distribution, or reuse reclaimed water that is not excluded from the requirements of the regulation, may apply for a variance from design, construction, operation or maintenance requirements of the regulation where complying with such requirement(s) would not promote or encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health (§ [62.1-44.2](#)). DEQ may grant such a variance if it finds that the hardship imposed by design, construction, operation or maintenance requirements of the regulation, which may be economic, outweighs the benefits of the project and that the granting of the variance would not adversely impact public health or the environment.

The owner of a permitted water reclamation and reuse project may apply for a variance at any time by completing and submitting to the RO the [Water Reclamation and Reuse Variance Application](#) or other written application that contains, at a minimum, the information specified [9VAC25-740-55](#).C. For a new or previously unpermitted water reclamation and reuse project, an application for a variance may be submitted to the RO with an [Application Addendum](#) for the same project. Due to the compressed schedule to issue an emergency authorization (see subdivision [III.E](#)), submission of an application for a variance with an [Emergency Authorization Application](#) should be discouraged unless the RO can issue the variance concurrent with or prior to the issuance of the emergency authorization.

Within 60 days of receiving an application for a variance, the RO must review the application, and grant or deny the variance. During this period, the RO should coordinate review of the application with (i) VDH (see subdivision [III.K.2](#)) to receive input on any potential impacts to public health that may result by granting the requested variance; and (ii) staff in OLAP to assist with evaluating the weight of hardships imposed by requirements indicated in the variance application relative to the benefit of the project, and to receive input on any potential impacts to the environment that may result by granting the requested variance.

Where the RO proposes to deny an application for a variance, the RO must provide the applicant an opportunity to an informal fact-finding proceeding in accordance with § [2.2-4019](#) of the Code of Virginia ([9VAC25-740-55](#).E), and should schedule the proceeding to comply with the 60-day timeline to issue the variance decision. Following the proceeding or notice by the applicant to waive the proceeding, the RO must provide written notice to the applicant of its decision to deny the variance application and the basis for this decision.

Where the RO decides to approve an application for a variance, the RO must provide notice of its decision and other information specified in [9VAC25-740-55](#).E to the applicant in writing. See

[Attachment D](#) for examples of variance approval and denial letters.

All variances approved for a water reclamation and reuse project in accordance with [9VAC25-740-55](#) are nontransferable, and any requirements or conditions imposed on approved variances, including but not limited to, those which limit anticipated detrimental impacts to public health or the environment, must become part of the permit or authorization covering the project with the subsequent issuance, reissuance or modification of that permit or authorization.

Although the variance procedures described in [9VAC25-740-55](#) are very similar to those described in the SCAT Regulations ([9VAC25-790](#)), these procedures should not be used interchangeably with only one exception. Where the Water Reclamation and Reuse Regulation references the SCAT Regulations for design, construction, operation or maintenance requirements affecting components of a project to produce, distribute or reuse reclaimed water, an application for a variance to such requirements must be in accordance with variance procedures described in the SCAT Regulations.

## **J. Management of pollutants from significant industrial users**

### **1. Requirements for reclamation systems and SRSs**

Requirements in the regulation to manage pollutants of concern from significant industrial users (SIUs), as defined in [9VAC25-31-10](#), apply only to reclamation systems and SRSs that will produce reclaimed water treated to Level 1 standards ([9VAC25-740-150](#)) and to reclamation systems of IPR projects. All requirements related to IPR projects will be addressed in a subsequent addendum to this guidance.

#### **a. Reclamation systems**

Per [9VAC25-740-150.A](#), a reclamation system that receives source water from a WWTW with SIU inputs cannot be permitted to produce Level 1 reclaimed water unless:

- “1. The wastewater treatment works providing source water to the reclamation system is a publicly owned treatment works, as defined in the VPDES Permit Regulation ([9VAC25-31-10](#)), and has a pretreatment program required by and developed in accordance with procedures described in Part VII of the VPDES Permit Regulation ([9VAC25-31-730](#) et seq.); or
2. The reclamation system has evaluated source water from the treatment works for pollutants of concern discharged by SIUs to the treatment works, and has confirmed that such pollutants shall not interfere with the ability of the wastewater treatment works to produce source water suitable for the production of reclaimed water meeting Level 1 standards and any other standards required in accordance with [9VAC25-740-70 D](#).” See subdivision [III.J.2](#) below for a more detailed discussion of reclamation system evaluations of source water from treatment works with SIU inputs.

The applicant or permittee of a reclamation system is required to provide information in the

[Application Addendum](#) about all WWTWs that will provide source water to the reclamation system. This information includes the names of all SIUs indirectly discharging to these WWTWs, and whether each WWTW has or does not have a pretreatment program to address the indirect discharges of its SIUs. Where all WWTWs in this case have a pretreatment program and a good history of compliance with their program, the reclamation system may be authorized to produce reclaimed water treated to meet Level 1 standards. Given a similar situation but where any of the WWTWs do not have a pretreatment program or have a pretreatment program but do not have a good history of compliance with their program, evaluations of source water from these WWTWs must be performed and submitted by the applicant or permittee of the reclamation system to DEQ as discussed in subdivision [III.J.2](#).

Source water evaluations, when necessary, and contractual agreements (see subdivision [III.J.3](#)) are to be submitted by the applicant or permittee with the [Application Addendum](#). When these items cannot be submitted with the Application Addendum, include a condition in the permit or authorization covering the reclamation system that prohibits the production of Level 1 reclaimed water until the source water evaluations and/or contractual agreement are submitted by the permittee and, as applicable, approved by the DEQ RO (see [Attachment A](#)).

**b. Satellite reclamation systems (SRSs)**

Per [9VAC25-740-150.C](#), a SRS that receives source water (e.g., municipal wastewater or sewage) from a sewage collection system pipeline with SIU inputs, excluding any SIU whose discharge has no potential to reach the SRS intake, will not be permitted to produce Level 1 reclaimed water, unless the SRS has evaluated pollutants of concern discharged by the SIUs to the sewage collection system and has confirmed that these pollutants will not interfere with the ability of the SRS to produce reclaimed water meeting Level 1 standards and other additional standards required in accordance with [9VAC25-740-70.D](#). SRS evaluations of source water from sewage collection system pipelines with SIU inputs are discussed in more detail in subdivision [III.J.2](#) below.

The applicant or permittee of an SRS is required to provide information in the [Application Addendum](#) about the sewage collection system that will divert source water to the SRS. This includes information about each SIU that discharges directly or indirectly to the sewage collection pipeline from which source water will be diverted to the SRS. This does not include information about downstream SIUs whose discharge has no potential to backflow to the SRS. The Application Addendum also requires analyses and characterization of source water from the sewage collection system with or without SIU inputs at the point where source water will be diverted to the SRS ([9VAC25-740-100.B.4.c](#)).

Source water evaluations and a contractual agreement (see subdivisions [III.J.2](#) and [III.J.3](#)), if required, are also to be submitted by the applicant or permittee with the [Application Addendum](#). When these items cannot be submitted with the Application Addendum, include a condition in the permit or authorization covering the SRS that prohibits the production of Level 1 reclaimed water until the source water evaluations and/or contractual agreement are submitted by the permittee and, as applicable, approved by the DEQ RO (see [Attachment A](#)).

## 2. Source water evaluations

Where source water from a WWTW or sewage collection system with SIU discharges must be evaluated as described in subdivision [III.J.1](#), the evaluation, hereafter referred to as a “source water evaluation”, must confirm that pollutants of concern from the SIUs will not interfere with the ability of the WWTW or the sewage collection system to provide source water to a reclamation system or SRS, respectively, that is suitable for the production of reclaimed water meeting Level 1 standards and, as applicable, other additional standards developed in accordance with [9VAC25-740-70.D](#). When required, source water evaluations must be submitted to the DEQ RO for review and approval prior to the production of reclaimed water meeting the standards noted above ([9VAC25-740-150.A.2](#) and C). Therefore, source water evaluations are to be prepared prior to and for submission with the [Application Addendum](#) for the proposed reclamation system or SRS.

Other standards in addition to Level 1 standards that apply to source water evaluations may be developed on a case-by-case basis by DEQ where due to the quality and character of the wastewater to be reclaimed or the intended reuses of the reclaimed water, the agency deems that they are necessary for the protection of public health and the environment ([9VAC25-740-70.D](#)). For projects that involve the reclamation of sewage or municipal wastewater for proposed reuses that are not listed in [9VAC25-740-90.A](#), Level 1 standards and other additional standards may also be applied and approved on a case-by-case basis in accordance with [9VAC25-740-90.B](#). Where no other standards in addition to Level 1 standards are established at the time of a source water evaluation for pollutants of concern from SIU discharges, the evaluation must demonstrate that pollutants of concern will not interfere with ability of the WWTW or sewage collection system to provide source water suitable for the production of reclaimed water meeting Level 1 standards. Where other additional standards have been developed in accordance with [9VAC25-740-70.D](#) or [9VAC25-740-90.B](#) and are contained in an existing permit or authorization covering the reclamation system or SRS receiving source water from the WWTW or sewage collection system, respectively, the source water evaluation must demonstrate that pollutants of concern from SIU discharges will not interfere with the ability of the WWTW or sewage collection system to provide source water suitable for the production of reclaimed water meeting Level 1 standards and the other additional standards. In any case, the production of Level 1 reclaimed water may not commence where the source water evaluation determines that a WWTW or sewage collection system is unable to provide source water suitable for the production of reclaimed water meeting Level 1 standards and, as applicable, other additional standards.

Additional source water evaluations will be required after the authorization of a reclamation system or SRS for each new SIU that proposes a discharge to a WWTW providing source water to the authorized reclamation system, or to a sewage collection system providing source water to the authorized SRS where pollutants of concern in the new SIU discharge are capable of reaching the intake of the SRS. These source water evaluations are to be submitted by the permittee as a condition of the permit or authorization covering the reclamation system or SRS, for DEQ RO review and approval prior to the new SIU commencing discharge (see [Attachment A](#)). To increase the likelihood of a source water evaluation being completed and approved prior to commencing the new SIU discharge, owners or managers of WWTWs and sewage collection systems that will provide source water containing pollutants of concern from the new SIU, must

give the permittee of the reclamation system or SRS sufficient advance notice of the new SIU discharge. Requirements for such notification must be established, as applicable, in the contractual agreement discussed in subdivision [III.J.3](#) between reclamation systems and WWTWs, or between SRSs and sewage collection systems.

A reclamation system is required to maintain a current inventory of SIUs, including associated source water evaluations, discharging pollutant of concern to WWTWs that provide source water to the reclamation system. A SRS is required to maintain a similar inventory of all SIUs discharging pollutants of concern to the sewage collection system that are capable of reaching the intake of the SRS.

### **3. Contractual agreements**

The applicant or permittee of a reclamation system or SRS that will produce Level 1 reclaimed water is required to establish a contractual agreement with a WWTW or sewage collection system that will have SIU inputs and will provide source water to the reclamation system or SRS, respectively ([9VAC25-740-150.B](#) and [D](#)). The contractual agreement in this case, is not required where the reclamation system and WWTW are covered by the same permit or authorization, but will be required between the SRS and sewage collection system regardless of their permitting relationship relative to each other.

In accordance with [9VAC25-740-150.B](#) and [D](#), the contractual agreement must, at a minimum, require the WWTW or sewage collection system to notify the reclamation system or SRS, respectively, of all SIUs that will discharge to the WWTW or sewage collection system. The contractual agreement should also require that such notifications allow the reclamation system or SRS enough time prior to the anticipated start date of a new SIU discharge to adequately perform source water evaluations for pollutants of concern from the SIU discharge.

Upon execution of the contractual agreement, a copy of the agreement must be submitted to the RO. The contractual agreement is to be provided with the [Application Addendum](#), or may be obtained at a later date through a condition of the permit (see [Attachment A](#)). This would apply, for example, when the reclamation system or SRSs does not plan to receive source water from a WWTW or sewage collection system, respectively, on or soon after the effective date of the permit or authorization issued to the project. In any case, a copy of the executed contractual agreement is to be submitted to the RO before the reclamation system or SRS may receive source water from the WWTW or sewage collection system, respectively.

### **4. Coordination with Pretreatment Program staff**

Where a pretreatment program is required for WWTWs that will provide source water for reclamation and reuse, routine coordination between regional water permit staff and pretreatment program staff is necessary to communicate any problems with pretreatment at the WWTWs that could impact the quality and safety of reclaimed water produced by the reclamation system. WWTWs with a pretreatment program may be subject to requirements of the Water Reclamation and Reuse Regulation, specifically [9VAC25-740-150](#), in addition to pretreatment requirements of the VPDES Permit Regulation. Where the [Application Addendum](#) indicates that a WWTW



has a pretreatment program for its SIUs in accordance with the VPDES Permit Regulation, the water permit staff is to consult with the pretreatment program staff to verify that this information is correct and to obtain information on any problems that the WWTW has had to comply with its pretreatment program.

Reclamation systems and SRS that are required to submit source water evaluations and contractual agreements as discussed in subdivisions [III.J.2](#) and [III.J.3](#), will be subject to only requirements of [9VAC25-740-150](#). At the request of the regional water permit staff, the regional pretreatment program staff may also review and provide input on these documents.

## **K. Coordination with DEQ Office of Water Supply and other state agencies**

### **1. DEQ Office of Water Supply**

A CIA may be required for any project proposing a reclamation system or SRS that will result in a new or increased diversion of source water for reclamation and reuse, and has the potential to reduce the discharge of a VPDES permitted WWTW to surface waters. This applies to: (i) a reclamation system or conjunctive system that will divert a portion or all of the discharge from a VPDES permitted WWTW to reclamation and reuse, and (ii) an SRS that proposes to withdraw source water (as sewage) for reclamation and reuse from a sewage collection system that also delivers sewage to a VPDES permitted WWTW (see subdivision [III.C.2](#)).

All CIAs, when required, are to be performed by the DEQ Office of Water Supply (OWS). However, it is the responsibility of the party requesting the CIA (or requester) to provide information needed by OWS to perform a CIA. To avoid delays processing an application for a water reclamation and reuse project, the project requester should initiate and complete the CIA process prior to submitting the application. Details regarding coordination between a requester and OWS are provided in Figure 1 (Applicant Coordination with OWS for a CIA) below. Instructions to request a CIA are also provided for requesters on the [Water Reclamation and Reuse program page](#) of the agency's external website.

For an emergency authorization (see subsection [III.E](#)), a requester will need to coordinate with OWS for a CIA. The CIA, if determined necessary for the emergency authorization, will typically be an abbreviated version. After the emergency authorization has been issued, the requester must coordinate with OWS again to determine the need for a new CIA that, if required, must be submitted with the [Application Addendum](#) to replace the emergency authorization.

Upon receipt of a CIA request, OWS will notify the appropriate RO and staff in OLAP of the request, and determine the need for a CIA in consultation with the requester. If OWS determines that a CIA is needed for a project, OWS will perform a CIA, coordinate review of the draft CIA results summary with the RO and OLAP, and provide the requester and RO a finalized CIA results summary. If OWS determines that a CIA is not needed for a project, OWS will provide a written response to the requester stating this. It is the responsibility of the requester/applicant to submit to the RO with the application for the project, the CIA results summary or other documentation from OWS stating that a CIA is not required.

When performing a CIA that is required for a water reclamation and reuse project, OWS will consider a variety of factors that include the following:

- Potential withdrawals from known existing legal (permitted or excluded) surface water withdrawals upstream of the point where an existing discharge may be impacted by the proposed reuse project, including those located upstream of the mouth of a tributary if the discharge point is located on a tributary
- Known upstream point-source discharges
- Hydrologic input/output (rainfall, ET) representing the drought period of record for the basin
- All known storage facilities in the basin upstream of the point where an existing discharge would be reduced by the proposed reuse project (including those located upstream of the mouth of a tributary if the discharge point is located on a tributary) operating according to their established operational rules
- Other information concerning historical discharges to the receiving stream and/or water quality data that may be made available by the RO

Two evaluation scenarios will be compared:

- Scenario 1 contains the above factors for an evaluation period equal to the drought of record for the basin
- Scenario 2 contains the same factors for the same evaluation period, except that the proposed new or revised point-source discharge(s) will be incorporated
- The differences in the time series of stream flow at the associated discharge point and/or selected downstream locations, will be compared between scenarios 1 & 2

Impacts (changes in flows at the point of comparison between scenario 1 and scenario 2) will be evaluated for significance for each of the following downstream beneficial uses ([§62.1-44.3](#)) based upon data and criteria specific to each use type, downstream user or group of downstream users:

- Fish and wildlife habitat
- Maintenance of waste assimilation
- Navigation
- Recreation
- Cultural and aesthetic values
- Domestic (including public) water supply
- Industrial and commercial water supply
- Agricultural water supply
- Electric power generation

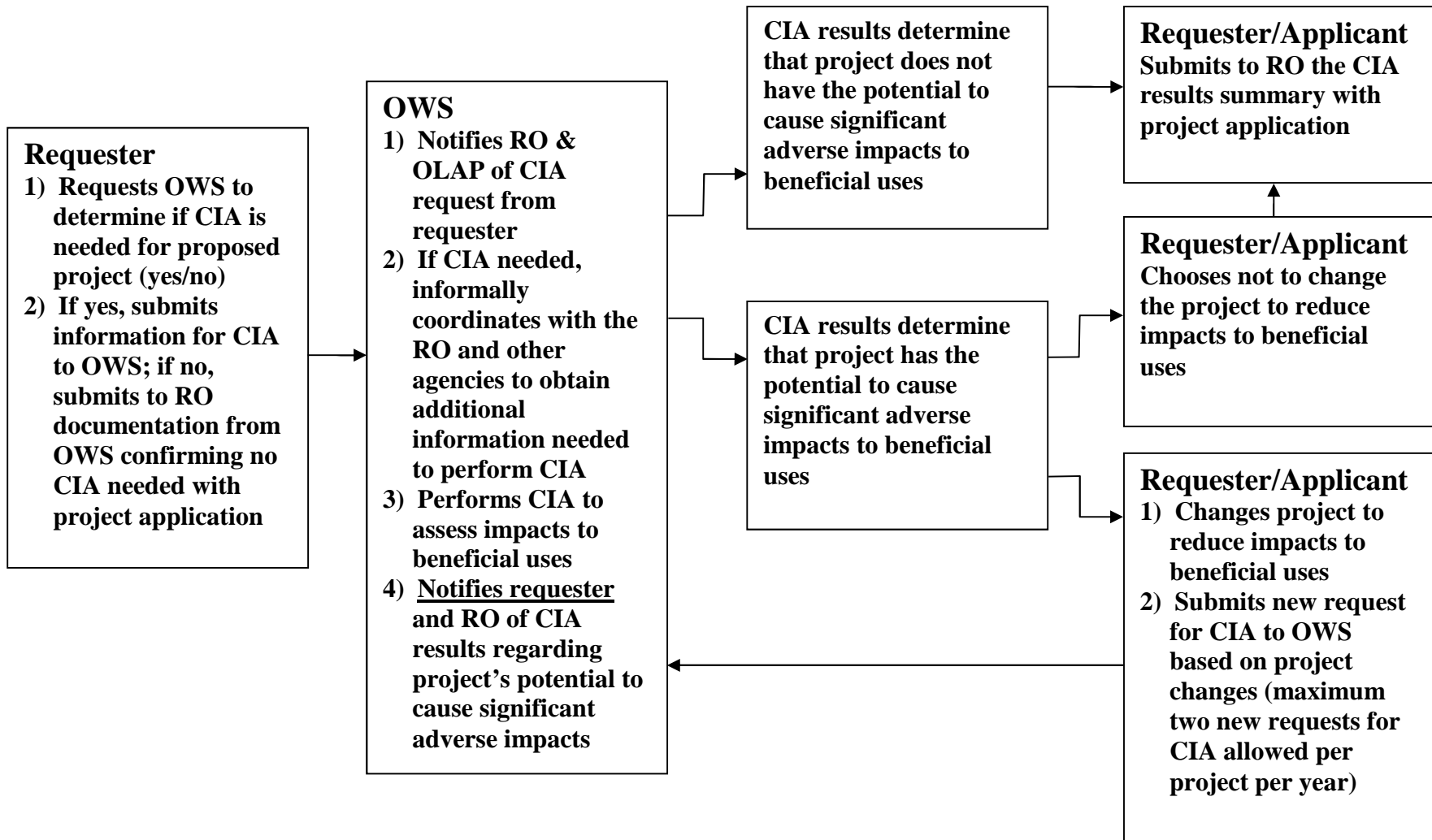
If a CIA results summary indicates that a water reclamation and reuse project has the potential to cause significant adverse impacts to beneficial uses of the receiving water for the affected VPDES permitted discharge, the requester may make changes to the project to avoid these impacts and submit a new request for a CIA to OWS based on the changes. The requester is

allowed a maximum of two new requests for CIAs per year for the same project.

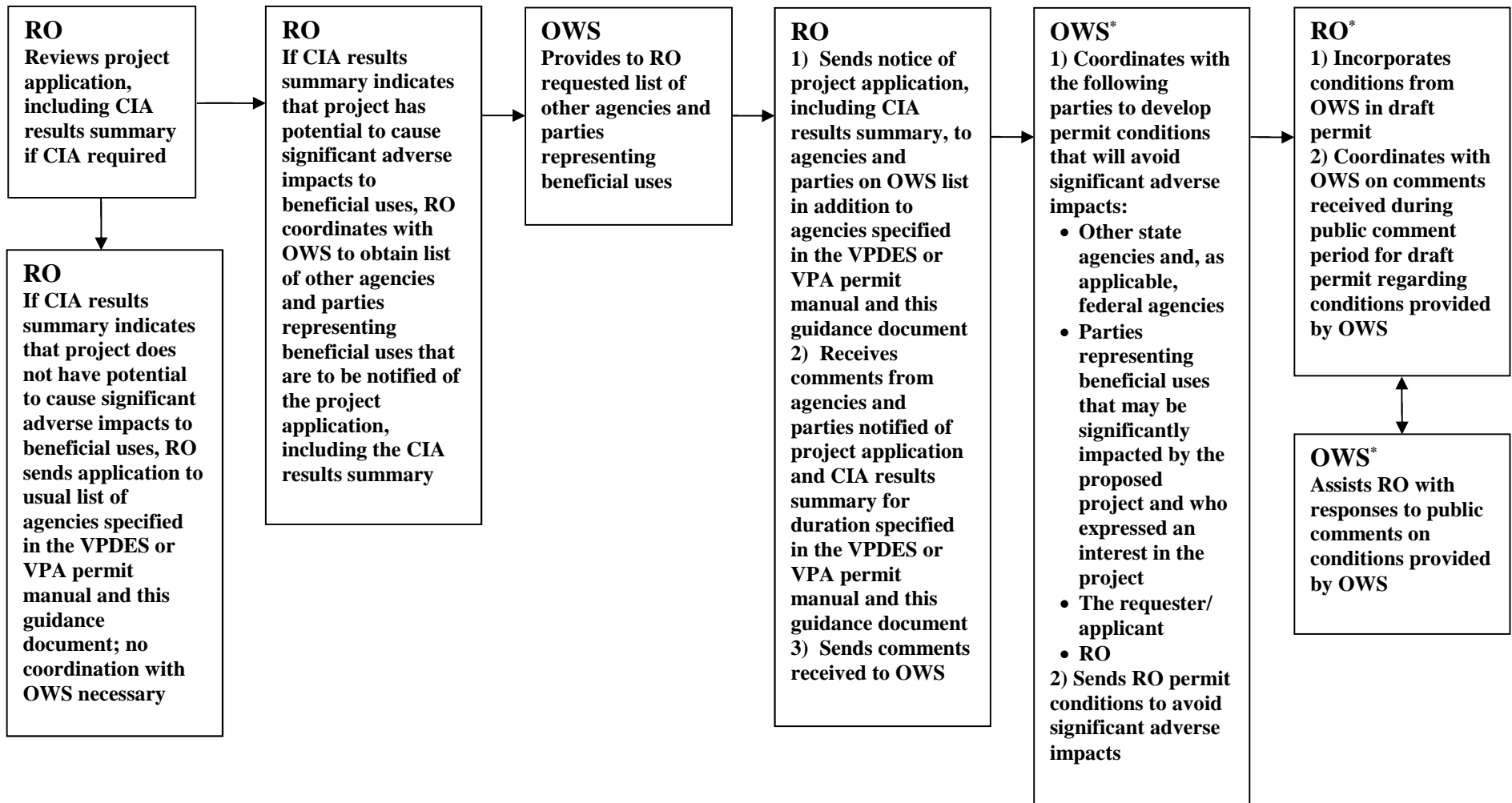
When the RO receives an application for a proposed water reclamation and reuse project that may require a CIA, the RO should, as early as possible during application review: (i) verify that the application contains either a CIA results summary or a written response from OWS indicating that a CIA is not required; and (ii) determine the need to coordinate the project with OWS based on the findings of the CIA results summary. If the CIA results summary indicates that the project does *not* have the potential to cause significant adverse impacts to beneficial uses of the receiving water for the affected VPDES permitted discharge, no coordination between the RO and OWS is necessary. If the CIA results summary indicates that the project has the potential to cause significant adverse impacts and the project is not applying for an emergency authorization, the RO is to coordinate the project with OWS and provide notice of the [Application Addendum](#), including the CIA results summary, for comment to other agencies (state and, as applicable, federal) and parties representing beneficial uses of the receiving water evaluated in the CIA (see [Attachment D](#) for CIA Notification Letter to Other Agencies and Parties). The RO is to obtain the names and contact information of agencies and parties to be notified from OWS. Note that a water reclamation and reuse project is not eligible to apply for an emergency authorization if the CIA results summary indicates that the project has the potential to cause significant adverse impacts.

Remaining steps and additional information regarding coordination between the RO, OWS, other agencies and parties, and the requester or requester/applicant for water reclamation and reuse projects with the potential to cause significant adverse impacts to beneficial uses, are provided in Figure 2 (Coordination between the RO, OWS and Other Entities Based on CIA Results).

**Figure 1. Applicant Coordination with OWS for a CIA**



**Figure 2. Coordination between the RO, OWS and Other Entities Based on CIA Results**



\* These steps are considered part of permit processing and not permit application review. review.

## 2. VDH

ROs will need to provide specific water reclamation and reuse project information to VDH for review and comment on issues concerning public health. VDH review will involve VDH Office of Drinking Water (ODW) Field Offices, VDH Office of Environmental Health Services (OEHS), and VDH Local Health Districts and/or Local Health Departments as needed.

### a. General coordination procedures

Water reclamation and reuse regulated in accordance with [9VAC25-740](#) is administered through the VPDES and VPA permit programs. Determined by the type of VPDES or VPA permit action involved, an [Application Addendum](#) and/or an [Emergency Authorization Application](#) for a water reclamation and reuse proposal may be submitted with or without an application for a VPDES or VPA permit. Pursuant to [9 VAC25-740-100.B](#) and [9VAC25-740-105.B](#), an applicant or permittee may complete parts of an Application Addendum and/or an Emergency Authorization Application by referencing specific information previously submitted and on file at the RO, provided no changes have occurred that would require submission of new or more current information. Because VDH reviewing offices may not have referenced information in their records, the ROs should provide a copy of this information to VDH with the Application Addendum and/or an Emergency Authorization Application as applicable.

Pursuant to § [10.1-1183](#), DEQ must implement electronic document transmittal to increase transaction efficiency and further conserve agency resources. Therefore, ROs should transmit application information for water reclamation and reuse proposals electronically to VDH unless otherwise requested by VDH staff to send hard copies. Contact information to coordinate application reviews with the VDH-ODW Central and Field Offices, VDH Local Health Districts, or VDH-OEHS is available on their respective websites. Application information transmitted to VDH-OEHS should be sent specifically to the Technical Services Engineer Supervisor. Where an electronic application package is small enough (e.g.,  $\leq 2$  MB), it may be attached to and transmitted by email. For larger electronic application packages (e.g.,  $> 2$  MB), the email from the ROs to VDH should provide a link to the appropriate File Share subfolder for either VPDES or VPA permits where VDH reviewing personnel can download the application package.

Because water reclamation and reuse projects are authorized by or associated with VPDES or VPA permits, the timeline for VDH review and comment on most applications for these projects will be the same as that for VPDES or VPA permit applications to cover any other facility or activity (i.e., within 14 days). For only applications to issue emergency authorizations, the RO must allow VDH not less than 14 days to submit comments ([9VAC25-740-45.A](#)). Therefore, the RO should request comments from VDH on all applications for water reclamation and reuse proposals (emergency or non-emergency) within 14 days, but allow VDH additional time to comment if requested and if doing so would not prevent the RO from processing the application and issuing permit coverage in a timely manner.

Note that this guidance applies to allowable periods for VDH review and comment on only those parts of a VPDES or VPA permit application pertaining to water reclamation and reuse (e.g., [Application Addendum](#) and/or [Emergency Authorization Application](#)). It does not supersede

[Guidance Memo No. 04-2012](#) (Guidance on Coordination of Water Permit Programs with the VDH) or other applicable programmatic guidance regarding DEQ coordination of VPDES and VPA permit application reviews with VDH.

Comments and recommendations provided by VDH to the RO on an application for a water reclamation and reuse proposal, particularly those pertaining to the protection of public health, should be given full consideration and addressed, as appropriate, in the permit, administrative authorization or emergency authorization for the proposal.

For water reclamation and reuse projects with existing permit coverage and an approved RWM plan, the RO must coordinate VDH review of amendments to the RWM plan where the amendments propose to expand the plan's service area and/or add new reuses that, in accordance with [9VAC25-740-90.B](#), are (i) not listed in [9VAC25-740-90.A](#), including but not limited to, IPR and below-ground drip irrigation reuse newly proposed after October 1, 2008, and INPR newly proposed after January 29, 2014; or (ii) any reuse of reclaimed industrial wastewater, whether listed or not listed in [9VAC25-740-90.A](#), that is not excluded from the requirements of the regulation per [9VAC25-740-50.A](#) (see subdivisions [III.B.3.c](#) and [III.G.3.a](#)). The timeline for VDH review and comment on these amendments is 14 days, but may be extended if requested by VDH. This is consistent with timelines to review the same information submitted as part of an application to authorize a water reclamation and reuse project. VDH comments, particularly those pertaining to the protection of public health, should be given full consideration in the process to approve, conditionally approve, or not approve the amendments. In some cases, such amendments to the RWM plan may also require modification of the permit or authorization covering the water reclamation and reuse project (see subdivision [III.C.4.i](#)). When this occurs, comments and recommendations provided by VDH are to be addressed by the process to modify the permit or authorization.

#### **b. Coordination with VDH-ODW Field Offices**

Application information for a water reclamation and reuse proposal that is to be provided by the RO to a VDH-ODW Field Office will be determined by the type of permit (VPDES or VPA) and the action involved (i.e., issuance, reissuance, modification, administrative authorization or emergency authorization) as follows:

- For the issuance or reissuance of a VPDES or VPA permit, the major modification of a VPDES permit, or the modification (major or minor) of a VPA permit to include water reclamation and reuse, provide the VPDES or VPA permit application, the [Application Addendum](#) and, if applicable, the CIA results summary;
- For an administrative authorization associated with an existing VPDES permit to include water reclamation and reuse, provide the existing VPDES permit, the [Application Addendum](#) and, if applicable, the CIA results summary; or
- For an emergency authorization associated with an existing VPDES or VPA permit, provide the existing VPDES or VPA permit, the [Emergency Authorization Application](#) or the [Application Addendum](#) including the Emergency Authorization Application and, if applicable, the CIA results summary.

The ROs must request comments from the VDH-ODW Field Offices on public health risks associated with specific items when included in any of the above application information. These items may include one or more of the following:

1. A CIA results summary indicating that the proposed water reclamation and reuse project has the potential to cause significant adverse impacts to beneficial uses of the receiving stream for a VPDES permitted discharge (see subdivision [III.K.1](#)).
2. A reuse of reclaimed water that in accordance with [9VAC25-740-90.B](#):
  - (a) Is not listed in [9VAC25-740-90.A](#), including but not limited to, IPR and below-ground drip irrigation reuse newly proposed after October 1, 2008, and INPR newly proposed after January 29, 2014; or
  - (b) Involves the reuse of a reclaimed industrial wastewater, whether listed or not listed in [9VAC25-740-90.A](#), that is not excluded from the requirements of the regulation per [9VAC25-740-50.A](#) (see subdivisions [III.B.3.c](#) and [III.G.3.a](#)).
3. An emergency authorization for the production, distribution, or reuse of reclaimed water under specific drought conditions (see subsection [III.E](#)).

A checklist to coordinate review by VDH-ODW Field Offices and VDH Local Health Districts contains the above items, excluding IPR, and is included in [Attachment D](#). Coordination of IPR projects with VDH will be addressed in a subsequent addendum to this guidance. ROs may send VDH-ODW Field Offices the checklist with the application transmittal letter, or incorporate only applicable items of the checklist into the letter.

When the RO receives an application to issue, reissue or modify (major) a VPDES permit without an [Application Addendum](#), [Emergency Authorization Application](#) or CIA results summary, and determines that there is or will be a an unintentional reuse associated with the permitted discharge (see subdivision [III.G.3.e \(3\)](#)), the RO should notify the appropriate VDH-ODW Field Office and request input (e.g., comments, recommendations, etc.) on public health risks associated with this reuse in the VPDES permit application transmittal letter (see [Attachment D](#) – Application Coordination and Review Checklist for VDH-ODW Field Offices and VDH Local Health Districts).

### **c. Coordination with VDH Local Health Districts**

Application information for a water reclamation and reuse proposal that is to be provided by the RO to a VDH Local Health District will be determined by the type of permit (VPDES or VPA) and the action involved (i.e., issuance, reissuance, modification, administrative authorization or emergency authorization).

For the issuance, reissuance or modification (major or minor) of a VPA permit to include water reclamation and reuse, provide the VPA permit application and the [Application Addendum](#) to the



VDH Local Health District. For an emergency authorization (to produce, distribute and reuse reclaimed water) associated with an existing VPA permit, provide the existing VPA permit and the [Emergency Authorization Application](#) or the Application Addendum including the Emergency Authorization Application.

Generally, VPDES permit applications are not reviewed by VDH Local Health Districts. However, where a water reclamation and reuse proposal will be covered by a VPDES permit, coordinate review of application information for such proposals with the VDH Local Health Districts. For the issuance, reissuance or major modification of a VPDES permit to include water reclamation and reuse, send the VDH Local Health District the VPDES permit application, the [Application Addendum](#) and, if applicable, the CIA results summary. For an administrative authorization associated with an existing VPDES permit to include water reclamation and reuse, send the existing VPDES permit, the Application Addendum and, if applicable, the CIA results summary. For an emergency authorization associated with a VPDES permit, send the existing permit, the [Emergency Authorization Application](#) or the Application Addendum including the Emergency Authorization Application and, if applicable, the CIA results summary.

Coordinate review of the application information described above with the [VDH Local Health District](#) having jurisdiction over the location of the water reclamation and reuse proposal. Application information for the proposal must be sent specifically to the District Director and to the District Environmental Health Manager (by copy of the transmittal letter to the Director). The District Director is to then coordinate review of the application information by appropriate staff in the VDH Local Health District office and/or Local Health Department.

The ROs must request comments from VDH Local Health District Directors on public health risks associated with specific items in the application information for a water reclamation and reuse proposal, including one or more of the following:

- i. A reuse of reclaimed water that in accordance with [9VAC25-740-90.B](#), is not listed in [9VAC25-740-90.A](#), including but not limited to, below-ground drip irrigation reuse newly proposed after October 1, 2008; or
- ii. An emergency authorization for the production, distribution, or reuse of reclaimed water under specific drought conditions (see subsection [III.E](#)).

A checklist to coordinate review by VDH-ODW Field Offices and VDH Local Health Districts contains the above items and is included in [Attachment D](#). ROs may send VDH Local Health Districts the checklist with the VPA or VPDES permit application transmittal letter, or incorporate only applicable items of the checklist into the letter.

#### **d. Coordination with VDH-OEHS**

The ROs must request comments from the VDH-OEHS on public health risks associated with specific items in the application information for a water reclamation and reuse proposal. This includes reuses of reclaimed water that in accordance with [9VAC25-740-90.B](#), are (i) not listed in [9VAC25-740-90.A](#), including but not limited to, IPR and below-ground drip irrigation reuse

newly proposed after October 1, 2008, and INPR newly proposed after January 29, 2014; or (ii) any reuse of a reclaimed industrial wastewater, whether listed or not listed in [9VAC25-740-90.A](#) that is not excluded from the requirements of the regulation per [9VAC25-740-50.A](#) (see subdivision [III.B.3.c](#)).

Application information for a water reclamation and reuse proposal that is to be provided by the RO to VDH-OEHS will be determined by the type of permit (VPDES or VPA) and the action involved (i.e., issuance, reissuance, modification, or administrative authorization) as follows:

- For the issuance or reissuance of a VPDES or VPA permit, the major modification of a VPDES permit, or the modification (major or minor) of a VPA permit to include water reclamation and reuse, provide the VPDES or VPA permit application, the [Application Addendum](#) and, if applicable, the CIA results summary; or
- For an administrative authorization associated with an existing VPDES permit to include water reclamation and reuse, provide the existing VPDES permit, the [Application Addendum](#) and, if applicable, the CIA results summary.

### **(1) Permitting of onsite sewage systems for both disposal and water reuse**

The VDH Division of Onsite Sewage and Water Services (VDH-DOSWS) regulates both conventional and alternative onsite sewage systems. The Regulations for Alternative Onsite Sewage Systems ([12VAC5-613](#)) define conventional onsite sewage systems (COSSs) as treatment works consisting of one or more septic tanks with gravity, pumped or siphoned conveyance to a gravity distributed subsurface drainfield. The regulations also define alternative onsite sewage systems (AOSSs) as treatment works that are not a COSS and do not result in a point source discharge. While onsite sewage systems (OSSs), both AOSSs and COSSs, are designed primarily to provide onsite treatment and disposal or dispersal of sewage, AOSSs can be designed to produce an effluent capable of meeting either Level 1 or Level 2 reclaimed water standards.

According to [9VAC25-740-50.A.1](#), activities permitted by VDH, such as, but not limited to, septic tank drainfields and other on-site sewage treatment and disposal systems, are excluded from the requirements of the Water Reclamation and Reuse Regulation. This exclusion may not apply to large AOSSs with an average daily sewage flow greater than 1,000 gpd that are concurrently permitted by DEQ and VDH to allow sewage reclamation and reuse in addition to onsite sewage treatment and disposal. Concurrently permitted large AOSSs will most often be covered, in part, by DEQ's VPA permit, but may alternatively require DEQ's VPDES permit where the project involves a discharge to surface waters.

Although small AOSSs (AOSSs with an average daily sewage flow less than or equal to 1,000 gpd) proposing to reclaim and reuse sewage are excluded from the requirements of the Water Reclamation and Regulation, they may be subject to the requirements of the Sewage Handling and Disposal Regulations ([12VAC5-610](#)), which allow them to reclaim or recycle sewage under certain conditions. See also subsection [III.N](#) regarding other regulations that may apply to sewage reclamation and reuse by small AOSSs.

Not all large AOSSs that propose sewage reclamation and reuse will be subject to the requirements of the Water Reclamation and Reuse Regulation ([9VAC25-740](#)). Per [9VAC25-740-50.A.3](#), nonpotable water (including reclaimed water) produced and utilized onsite by the same treatment works for facilities permitted through a VPDES or VPA permit may be excluded from the requirements of [9VAC25-740](#). Where a large AOSS will be covered by a VPDES or VPA permit for reasons that may or may not be related to water reuse, and the AOSS proposes to reuse reclaimed water it produces on property that is (i) contiguous to or in the immediate vicinity of the parcel of land upon which the “treatment works” (as defined in [9VAC25-740-10](#)) is located, and (ii) under common ownership or management with the treatment works, the AOSS will, in most cases, be exempt from the requirements of [9VAC25-740](#). If the same AOSS proposes reuse of the reclaimed water it produces on land other than that described above, the AOSS will not be exempt from the requirements of [9VAC25-740](#) and will require a modification of or an administrative authorization associated with the existing DEQ permit to add reclaimed water standards, monitoring requirements and special conditions. See also subdivision [III.B.3.b](#) for a more detailed discussion of exceptions to this exclusion.

Most COSSs will be regulated by VDH in accordance with the Sewage Handling and Disposal (SH&D) Regulations ([12VAC5-610](#)), and are excluded from the requirements of the Water Reclamation and Reuse Regulation. However, DEQ and VDH may concurrently permit an OSS having a design capacity greater than 1,000 gpd and consisting of components (e.g., septic tank and drainfield) designed and operated in accordance with the SH&D Regulations and a land treatment system designed and operated in accordance with the SCAT Regulations ([9VAC25-790](#)), not the Water Reclamation and Reuse Regulation. Such an OSS may, for example, dispose of partially treated sewage by land treatment during the summer months and dispersal through a drainfield during the winter months. In this scenario, the treatment works and land treatment system could be covered by a DEQ permit and the drainfield, by a VDH permit. Where there is potential for public access or contact with treated sewage applied to the land treatment site, the ROs may include Level 1 reclaimed water treatment requirements and standards in the DEQ permit for only that portion of the treated sewage to be delivered to the land treatment system. Such a decision should consider the risk to public health in consultation with VDH.

The need for DEQ and VDH to concurrently permit an OSS (AOSS or COSS) will be evaluated on a case-by-case basis. Where DEQ and VDH determine that concurrent permitting is necessary, the VDH Local Health District will take the lead to coordinate the project and will recommend a preliminary engineering conference to include the applicant, and representatives from the DEQ RO and the VDH Local Health District. Issuance of a DEQ permit to authorize reclamation and reuse or land treatment by an OSS will be contingent upon the issuance of a VDH permit for the drainfield or disposal area of the OSS. The disposal area must be capable of handling the full design flow of the OSS unless storage or an alternate disposal or reuse option for the treated wastewater is available and permitted by either VDH or DEQ. Therefore, DEQ regional water permit staff should obtain a copy of the VDH permit for the OSS disposal area and, as applicable, verify that the disposal area has sufficient capacity. The DEQ permit should incorporate effluent limits for the discharge to the OSS disposal area that are recommended by VDH, or in the case of AOSSs, may be required per [12VAC5-613](#) (See also subdivision [III.K.2.d \(3\)](#) below). VDH may also request the addition of special conditions to DEQ’s permit related to land treatment by the

system during DEQ's permit application review and draft permit public participation processes. VDH will maintain regulatory jurisdiction over the disposal area and will be responsible for monitoring the compliance of only this component of the OSS.

## **(2) Below-ground drip**

DEQ has the authority provided in [9VAC25-740-90.B](#) to prescribe reclaimed water standards and monitoring requirements that are protective of the environment and public health for reuses not listed in the Water Reclamation and Reuse regulation, specifically mentioning below-ground drip irrigation. DEQ ROs will need to review all proposed reuses of reclaimed water involving below-ground drip irrigation on a case-by-case basis and must coordinate with and receive input from VDH-ODW Field Offices and VDH Local Health Districts on public health risks associated with this reuse (see subdivisions [III.K.2.b](#) and [c](#) above). VDH regulates onsite below-ground drip dispersal systems that are used for the disposal of treated sewage from AOSSs in accordance with [12VAC5-610-955](#) of the SH&D Regulations and the Regulations for AOSSs ([12VAC5-613](#)). Below ground drip dispersal systems cannot be used for both disposal and irrigation reuse (e.g., via drip irrigation) because supplemental irrigation rates allowed for irrigation reuse in [9VAC25-740](#) can far exceed the hydraulic loading rates required for drip dispersal systems in [12VAC5-613](#) during certain times of the year.

In a scenario where, for example, a large AOSS is "concurrently permitted" by VDH and DEQ to do both onsite sewage disposal and water reclamation and reuse, a below-ground drip system designed and installed to dispose of treated effluent from the AOSS in accordance with [12VAC5-610-955](#) and [12VAC5-613](#) must be permitted by VDH Local Health Districts. In this case, send all application information for the proposed project to the VDH Local Health District Director with a request to forward the application to appropriate staff in the VDH Local Health District or Local Health Department for specific review and approval of the water reclamation and reuse components of the project. Given a similar scenario but where the below-ground drip system is designed to meet only the use area requirements and supplement irrigation rates specified in [9VAC25-740](#), the drip system must be permitted by DEQ. Although below-ground drip dispersal systems permitted by VDH may provide some incidental irrigation in addition to effluent disposal, particularly when placed at shallow depths, this is not considered irrigation reuse regulated in accordance with [9VAC25-740](#).

## **(3) Limitations and monitoring requirements**

Where a WWTW will utilize an irrigation reuse or land treatment system and an OSS to manage its treated wastewater, water discharged to the irrigation reuse or land treatment system and to the OSS must be monitored to verify compliance with reclaimed water standards or effluent limits contained in the permit. Where the two discharges have the same or non-conflicting limitations and monitoring requirements, one monitoring location representative of both discharges and one monitoring report may be used. Where the two discharges have differing limitations and monitoring requirements, it may be necessary to have separate monitoring locations and monitoring reports for each. This applies, but is not limited to, the following circumstances:

- Reclaimed or treated wastewater sent to all irrigation reuse or land treatment sites must be

disinfected, while disinfection of treated wastewater sent to an OSS disposal or dispersal area is not required in all cases.

- All AOSSs within the Chesapeake Bay Watershed are required to comply with specific total N effluent limits, while only monitoring for nutrients (i.e., nitrogen and phosphorus) with no limits is required for reclaimed or treated wastewater sent to irrigation reuse or land treatment sites.

#### **(4) CTCs and CTOs for concurrently permitted OSSs**

Where an OSS will be concurrently permitted by DEQ and VDH to allow sewage reclamation and reuse or land treatment in addition to onsite sewage treatment and disposal, the permit issued by DEQ will cover the treatment facility, excluding the dispersal/disposal area, of the OSS. Under these circumstances, DEQ will also issue the CTC and CTO for the treatment facility covered by the DEQ permit. The DEQ ROs should provide a copy of the permit, CTCs and CTOs issued to the treatment facility to the Local Health Department that concurrently permits the OSS.

### **3. DCR**

A nutrient management plan (NMP) prepared by a DCR certified nutrient management planner is required for all bulk irrigation reuse sites that receive non-BNR reclaimed water (see subdivision [III.C.6.a](#)), and for other bulk irrigation reuse sites under limited circumstances unrelated to the nutrient content of the reclaimed water. The latter sites will also require DCR approval of the NMP. DEQ regional water permit staff should verify that NMPs and, as applicable, DCR approval letters for NMPs are submitted with the [Application Addendum](#) when required.

Because all irrigation reuse of reclaimed water must be supplemental irrigation (see [III.C.5](#)), the rate at which reclaimed water is applied to an irrigation reuse site will typically be more variable and less predictable than the rate of wastewater application to a land treatment site. Therefore, nutrient management planners must consider more carefully the effect that supplemental irrigation, influenced by changing weather conditions and precipitation, will have on the quantity and timing of nutrients applied from reclaimed water relative to the operator's goals for the irrigated vegetation.

#### **a. NMPs required for bulk irrigation reuse sites of non-BNR reclaimed water**

Bulk irrigation reuse of non-BNR reclaimed water, which is limited to supplemental irrigation rates, will vary according to the seasons. In addition, the timing of bulk irrigation with non-BNR reclaimed water related to its nutrient content and the nutrient demand of the irrigated vegetation must be consistent with the [Virginia Nutrient Management Standards and Criteria, revised July 2014](#) and [4VAC5-15-140](#).

For NMPs of bulk irrigation reuse sites receiving non-BNR reclaimed water, split applications of nutrients shall be required on environmentally sensitive sites and should be recommended by the planner on other sites. If the spring application of nutrients in combination with bulk irrigation reuse of non-BNR reclaimed water does not meet the nutrient recommendations required by the

irrigated vegetation, particularly during periods of normal or excessive rainfall, other additional sources of fertilizer may be applied to meet the nutrient recommendations. Supplemental nutrients should be applied within the appropriate application window to achieve the expected crop yield determined by [Virginia Nutrient Management Standards and Criteria, revised July 2014](#).

In anticipation of those circumstances where an operator has: (i) applied nitrogen and phosphorus required by the irrigated vegetation via bulk irrigation reuse of non-BNR reclaimed water alone or in combination with a spring application of these nutrients from other sources, and (ii) met the nitrogen and/or phosphorus recommendations of the irrigated vegetation for the growing season but has additional need for irrigation water due to drier than normal growing conditions, the planner should include the following conditions in the NMP:

- (i) The operator shall monitor the amount of nitrogen applied via bulk irrigation reuse of non-BNR reclaimed water throughout a single growing season such that no over application of nitrogen occurs. Once the nitrogen recommendation for the irrigated vegetation is met and there is additional need for irrigation water, the operator must switch to another source of water that does not contain nitrogen to irrigate the site.
- (ii) Additional phosphorus may be applied to the bulk irrigation reuse site in any one year from any nutrient source, including reclaimed water, but the total P applied cannot exceed the sum of phosphorus recommendations shown in the plan for any field within the bulk irrigation reuse site.

A comparable permit condition that may apply to bulk irrigation reuse sites is included in [Attachment A](#) of this guidance.

**b. NMPs required for bulk irrigation reuse sites independent of reclaimed water nutrient content**

Per [9VAC25-740-100.C.4](#) of the regulation, a bulk irrigation reuse site shall require a NMP independent of the nutrient content of the reclaimed water applied to the site, where:

“a. A wastewater treatment works, a reclamation system, satellite reclamation system or reclaimed water distribution system and the irrigation reuse site or sites are under common ownership or management, and

b. In addition to irrigation reuse:

- (1) There is no option to dispose of the reclaimed water through a VPDES permitted discharge, or
- (2) There is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow (e.g., a treatment works with a VPDES permitted discharge implements water reclamation and reuse in lieu of providing treatment to meet nutrient effluent limits at design flow).”

NMPs prepared for these bulk irrigation reuse sites must be approved by DCR ([9VAC25-740-](#)

[100.C.5](#)). The applicant or permittee is responsible for submitting the NMP to DCR, and for obtaining a copy of DCR's approval letter for submission with the NMP to the DEQ RO as part of the RWM plan. The RO should advise applicants and permittees to contact the appropriate [DCR NMP Specialist](#) (i.e., the specialist that also reviews and approves NMPs for biosolids land application).

## L. CEDS

A record of each water reclamation and reuse project must be created and tracked in the CEDS VPDES or VPA individual permit (IP) module for the following:

- (i) Any VPDES or VPA permit that is issued or reissued with water reclamation and reuse standards, monitoring requirements and special conditions.
- (ii) The minor modification of an existing VPA permit to add water reclamation and reuse standards, monitoring requirements and special conditions.
- (iii) An administrative authorization for water reclamation and reuse that is associated with an existing VPDES permit (see subdivision [III.D](#)). This authorization is not a modification (major or minor) of a VPDES.
- (iv) An emergency authorization for water reclamation and reuse that is associated with an existing VPDES or VPA permit (see subdivision [III.E](#)). This authorization is not a modification (major or minor) of a VPDES or VPA permit.
- (v) A major modification of an existing VPDES or VPA permit to add water reclamation and reuse standards, monitoring requirements and special conditions. Such a modification will be required in lieu of other permit actions (i.e., an administrative or emergency authorization associated with a VPDES permit, and a minor modification of or an emergency authorization associated with a VPA permit) where the following apply:
  - For a VPDES permit where changes to the permit related to water reclamation and reuse effectively alter other conditions of the permit specifically related to the effluent discharge for which the permit was originally issued, and/or where the diversion of source water from the VPDES permitted discharge to water reclamation and reuse has the potential to cause a significant adverse impact to other uses of the receiving state water based on the results of a CIA (see subdivision [III.C.2](#)).
  - For a VPA permit where changes to the permit related to water reclamation and reuse effectively alter other conditions of the permit specifically related to the pollutant management activity for which the permit was originally issued, and/or where the diversion of source water from a VPDES permitted discharge to water reclamation and reuse activities or facilities authorized by a VPA permit has the potential to cause a significant adverse impact to other uses of the receiving state water of the VPDES permitted discharge based on the results of a CIA (see

subdivision [III.C.2](#)).

To create and edit permit application and active records in CEDS for the water reclamation and reuse actions described above, refer to the instructions in the latest CEDS User Manual for VPDES or VPA IPs available on the DEQnet. In most cases, it will be necessary to complete information under the General, Events, App Fee, CSEs and Limits (or Outfall/Limits) tabs of the application or active permit record. Unique to the CEDS VPA IP module is the Wastewater tab that includes a Recl & Reuse sub tab where detailed information regarding VPA authorized water reclamation and reuse projects is to be entered. A similar tab and sub tab does not exist in the VPDES IP module but will be added in the future to collect the same information on VPDES authorized water reclamation and reuse projects.

CEDS can track the submission of reclaimed water monitoring reports for water reclamation systems, reclaimed water distribution systems, or system storage facilities that are covered by a VPDES permit or an administrative or emergency authorization associated with a VPDES permit, through the creation of internal outfalls in the CEDS VPDES IP module. See subdivision [III.G.6.c](#) for more information regarding the creation of internal outfalls for water reclamation and reuse. Submission of other reports related to VPDES authorized water reclamation and reuse, such as but not limited to, the annual report for reclaimed water distribution systems, are to be tracked through compliance schedule events under the CSEs tab of the VPDES IP module.

CEDS can track the submission of all reports, including but not limited to, reclaimed water monitoring reports, for water reclamation systems, SRSs, reclaimed water distribution systems, or system storage facilities that are covered by a VPA permit or an emergency authorization associated with a VPA permit through compliance schedule events under the CSEs tab of the VPA IP module.

There are 22 compliance schedule events for water reclamation and reuse under the CSEs tab of both the VDPDES and VPA IP modules, and all begin with “Water R&R”. If a new compliance schedule event is needed related to a water reclamation and reuse project, contact OLAP staff for assistance developing and adding the event to the CSEs tab.

## **M. Compliance and Enforcement**

### **1. Compliance**

Major components of permit compliance for water reclamation and reuse include monitoring and reporting by the permittee, permit application reviews and facility inspections by RO water compliance inspectors, inspections by permittees, compliance tracking and auditing by RO compliance auditors and water permit writers.

#### **a. Monitoring and reporting by the permittee**

Permitted generators and distributors of reclaimed water are required to monitor and report on the performance of their reclamation systems, SRSs, and/or reclaimed water distribution systems to verify compliance with water reclamation and reuse standards and conditions in their permits.



This may include monitoring for certain system storage facilities determined on a case-by-case basis (see subdivisions [III.G.6.k](#) and [l](#)). Most end users of reclaimed water will not be required to have a permit and will not, therefore, have compliance monitoring and reporting requirements. However, end users that act as reclaimed water agents and blend reclaimed water prior to distribution to end users other than or in addition to themselves may be required to obtain an individual permit that includes monitoring and reporting of the blended reclaimed water quality (see subdivision [III.G.8](#)).

Monitoring includes sampling and analyses. Per [9VAC25-740-80.B](#), “Samples collected for TSS, BOD<sub>5</sub> or CBOD<sub>5</sub>, and fecal coliform, *E. coli* or enterococci analyses, shall be analyzed by laboratory methods accepted by the board.” “Methods accepted by the board” shall be test procedures approved under 40 CFR Part 136 or alternative EPA approved methods used to analyze these parameters in effluent discharged to surface waters (authorized by a VPDES permit) or in wastewater applied to land treatment systems (typically authorized by a VPA permit).

Reporting required by the permit for water reclamation and reuse will be either routine or episodic. See also subdivision [III.G.6.a](#) regarding reporting of monitoring results.

### **(1) Routine reporting**

Routine reporting involves the reporting of monitoring results for specific parameters or the status of particular activities and operations according to schedules contained in the permit. Routine reporting will typically be required at regular intervals (e.g., monthly, bimonthly, quarterly, semiannually or annually), and must, in most cases, be submitted by the 10<sup>th</sup> of the month following the corresponding routine monitoring period or interval.

Reporting is required for reclamation systems and SRSs that will produce and discharge reclaimed water to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse; and may be required for reclaimed water distribution systems, system storage facilities and certain end users. Monitoring reports and associated attachments must be submitted to the DEQ ROs. VPDES permitted reclamation systems and SRSs will also have the option to submit monitoring reports via e-DMR.

Reporting by reclamation systems and SRSs is required whether they do or do not perform routine monitoring during the monitoring period. Per [9VAC25-740-80.C](#), permittees of reclamation systems that produce reclaimed water intermittently or seasonally are required to monitor “only when the reclamation system discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.” This provision also applies to reclamation systems that produce reclaimed water throughout the year but discharge only intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse. An example of this would be a VPA permitted reclamation system that produces reclaimed water 12 months out of the year but sends part of the reclaimed water to seasonal storage during the winter months rather than discharging it. However, any time and for any duration within a period of a month that a VPDES or VPA permitted reclamation system or SRS discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse, the reclamation system or SRS must monitor the reclaimed water in accordance with the permit. When reclaimed

water monitoring at a reclamation system or SRS does not occur due to a lack of any of the above discharges during the monitoring period, for a VPA permit, the permittee must submit a monitoring report for that period with “No Discharge” noted in the “Comments” box of the report. For a VPDES permit, the permittee must check the “No Discharge” box on the DMR (paper or e-DMR) to indicate no discharge occurred during the monitoring period.

Daily and monthly averages for reclaimed water standards are not flow-weighted averages. They are to be calculated using monitoring data available for the monitoring period, similar to daily and monthly average calculations for effluent limits. For the purpose of calculating monthly geometric means for bacteria reclaimed water standards, bacteria monitoring results below the detection level of the analytical method used are to be treated as values equal to the detection level.

Annual reporting is required for distributors of reclaimed water or reclaimed water agents, in accordance with [9VAC25-740-200.C](#). An annual report is also required for bulk irrigation reuse sites and associated storage that are owned or operated by the permittee. Items to be included in annual reports are specified in permit special conditions of [Attachment A](#). All annual reports are to be submitted on or before February 10 of the following year. Failure to submit an annual report is a violation of the permit special condition that will be tracked in CEDS.

#### **(a) POCs**

Routine monitoring to verify compliance with reclaimed water standards must be conducted at POCs. See subdivision [III.G.6.b](#) for a more detailed description of reclaimed water monitoring POCs. For reclamation systems and SRSs, the number and location of POCs are to be specified in the O&M manual of the system. For system storage that is part of a reclamation system or SRS and requires reclaimed water monitoring determined on a case-by-case basis (see subdivision [III.G.6.k](#)), the same POC information must be specified in the O&M manual of the reclamation system or SRS where the system storage is located ([9VAC25-740-70.B.2.a](#)). For reclaimed water distribution systems (including system storage that may be part of reclaimed water distribution systems) that are determined on a case-by-case basis to require reclaimed water monitoring (see subdivision [III.G.5.k](#) and [I](#)), the number and location of POCs must be specified in the RWM plan of the reclaimed water distribution system ([9VAC25-740-70.B.2.b](#))

#### **(b) Corrective action thresholds**

Both Level 1 and Level 2 reclaimed water standards have corrective action thresholds (CATs) for bacteria and TRC, while only Level 1 has a CAT for turbidity. TRC, turbidity and bacteria CATs for a reclamation system or SRS are to be included in the reclaimed water standards page of Part I.A in the permit. The TRC CAT does not apply when chlorination is not used for disinfection during reclamation. Also, CATs do not apply to reclaimed water distribution systems and storage facilities. See also subdivision [III.G.6.n](#) for more information about CATs.

When monitoring results for TRC, turbidity or bacteria fail to comply with the CATs for these parameters in the permit, the operator of the reclamation system or SRS must immediately initiate a review of treatment operations and data to identify the cause of the non-compliant monitoring

results to bring the TRC, turbidity or bacteria back into compliance with their CATs. Procedures for the operational review of CAT non-compliances must be described in the O&M manual for the reclamation system or SRS.

Within one hour of the first monitoring result falling below the CAT for TRC or exceeding the CAT for turbidity, the operator of the reclamation system must resample the water undergoing reclamation to verify that it complies with the TRC or turbidity CAT in the permit. If the water remains out of compliance with the TRC or turbidity CAT, the operator must:

- (i) divert the substandard (or reject) water to storage for subsequent additional treatment (or retreatment) or to another permitted reuse system requiring a lower level of treatment not less than Level 2, **OR**
- (ii) discharge the reject water through a VPDES permitted effluent disposal system provided the reject water meets the effluent limits of the permit.

If the reclamation system is unattended, the diversion of reject water must be initiated and performed with automatic equipment. However, automatic restarts are not permitted to distribute reclaimed water to reuses until the treatment problem is corrected.

If after one hour the water undergoing reclamation remains out of compliance with the TRC or turbidity CAT and the operator fails to divert or discharge the reject water, this will be considered a violation of the regulation. Permittees are required to report the number of turbidity and TRC CAT events and the number of reject water diversions associated with these events on either the monitoring report for a VPA permit or an attachment to the monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit” (see [Attachment B](#)). For each diversion associated with a TRC or turbidity CAT event, the permittee must also report:

- (i) The date, time and reading of the first measurement initiating the CAT event;
- (ii) The date, time and reading of all subsequent measurements made during the CAT event, including measurements made during the diversion; and
- (iii) The date, time, duration and volume of the diversion.

This information must be attached to all monitoring reports for reclamation systems or SRSs.

The bacteria CAT serves to verify the results of the TRC and turbidity CATs for the same sampling period. Water undergoing reclamation that fails to meet the bacteria CAT is not diverted or discharged as this should occur in response to non-compliant CAT monitoring results for TRC and/or turbidity long before non-compliant CAT monitoring results for bacteria are obtained. All permittees of reclamation systems or SRSs must attach to their monitoring report a “Monthly Log Sheet for Reclaimed Water Bacteria Monitoring” (see [Attachment B](#)). Based on information contained in the Log Sheet, the permittee must report the number of all bacteria CAT events, and the number of bacteria CAT events where two or more consecutive monitoring results

reached the bacteria CAT, on the monitoring report for a VPA permit or an attachment to the monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit”. Two consecutive routine bacteria monitoring results that reach the bacteria CAT will be a violation.

Applicable only to reclamation systems or SRSs that will produce Level 1 reclaimed water, permittees must also indicate whether or not bacterial monitoring occurred outside the period of 10:00 a.m. to 4:00 p.m. as part of their reporting. This period may differ for permittees who have been granted an exception by DEQ to monitor outside the period of 10:00 a.m. to 4:00 p.m. and will be indicated on the appropriate reporting forms.

Per [9VAC25-740-70.C.3](#), repeated, although temporary, failure to comply with all other standards by the reclamation system may be considered a violation of the regulation determined by the frequency and magnitude of the non-compliant monitoring results and other relevant factors. It is a violation of the regulation for a failure to:

- (i) Resample after determining that monitoring results are not in compliance with the standards in order to make adjustments to the treatment process and, thereby, bring the reclaimed water back into compliance with the standards; or
- (ii) Divert water determined to be substandard based on TRC or turbidity CAT monitoring results.

### **(c) Bypasses**

Per [9VAC25-740-50.B](#), bypasses “of untreated or partially treated wastewater from a reclamation system or any intermediate unit process to the point of reuse” are prohibited. However, a bypass for essential maintenance to assure efficient operation is not prohibited provided the bypass complies with the reclaimed water standards of the permit. Reclamation systems and SRSs must report the total number of bypass occurrences (both allowed and prohibited) and the total flow of all bypasses occurrences. Reclaimed water distribution systems that provide an “intermediate unit process to the point of reuse” must report the same information for bypasses of the process. An intermediate unit process within a distribution system may be physical, such as a pump station that would avoid dead zones and bacteria regrowth, or chemical, such as the addition of chlorine to maintain disinfection. Bypasses must be reported on either the monitoring report for a VPA permit or an attachment to the monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit”. Attached to all monitoring reports, the permittee must also provide supplemental information for each bypass occurrence generally describing:

- (i) The circumstances resulting in the bypass of the reclamation system, SRS, or as applicable, an intermediate unit process of the reclaimed water distribution system;
- (ii) The flow of the bypass;
- (iii) The duration of the bypass; and

- (iv) Whether the bypass water did or did not comply with the reclaimed water standards of the permit.

A bypass is presumed to reach “the point of reuse”. Therefore, any bypass of water that does not comply with the reclaimed water standards of the permit is a violation.

## **(2) Reporting of episodic incidents**

Permittees are required to report incidents involving the interruption or loss of reclaimed water supply, and noncompliant or unauthorized discharges to the ROs. These incidents will, in most cases, be unplanned and episodic, and may also include violations related to CAT monitoring and prohibited bypasses already discussed in subdivisions [III.M.1.a \(1\)\(b\)](#) and [\(c\)](#).

### **(a) Reporting requirements of 9VAC25-740-200.B**

Per [9VAC25-740-200.B](#), “Interruption or loss of reclaimed water supply or discharge of any untreated or partially treated water that fails to comply with standards specified in the VPDES or VPA permit to the service area of intended reuse, shall be reported in accordance with procedures specified in the permit. This report shall also contain a description of any notification provided in accordance with [9VAC25-740-170.A.2](#)” (see subdivision [III.M.1.a \(2\)\(b\)](#)). Failure to report these incidents is a violation.

For each interruption or loss of reclaimed water supply or service, the permittee must report:

- (i) The service area affected by the incident;
- (ii) The initial date and time, and duration of the incident;
- (iii) The cause of the incident and whether the cause was planned or unplanned; and
- (iv) A description of steps taken to correct and to prevent recurrence of the incident.

Where a discharge of noncompliant water to the service area of intended reuse may adversely affect state waters or may endanger public health, reporting requirements in both VPDES and VPA permits under Part II, “Reports of Noncompliance” shall apply. Reports of such noncompliant discharges are to be submitted with the reclamation and reuse monitoring report and must contain the same information as a five-day report.

Reporting required by [9VAC25-740-200.B](#) also includes reporting of notifications provided in accordance with [9VAC25-740-170.A.2](#) for interruption or loss of reclaimed water service and for discharges of substandard or noncompliant reclaimed water to reuse. Under [9VAC25-740-170.A.2](#), the regulation describes more specifically the notification requirements and conditions under which permittees of water reclamation and reuse projects must notify end users and, as applicable, the affected public of these particular incidents. In a situation where all the facilities involved in the production and delivery of reclaimed water to end users are not authorized by the

same permit, additional notification among these facilities may be necessary to ensure that end users receive notifications required by [9VAC25-740-170.A.2](#). Refer to subdivision [III.C.4.f](#) for more information regarding notification requirements for and associated with [9VAC25-740-170.A.2](#).

**(b) Reports of unauthorized discharges or noncompliances for reclaimed water distribution systems**

Unauthorized discharges by or noncompliances of reclaimed water distribution systems will typically be caused by leaks and main breaks, but may also result from improper maintenance activities. Per [9VAC25-740-140.D.2](#), the O&M manual for a reclaimed water distribution system must contain procedures to:

- “(1) Handle and dispose of any wastes generated by maintenance of the distribution system in a manner protective of the environment;
- (2) Prevent the discharge of reclaimed or flush water from distribution system maintenance activities to:
  - (a) Storm drains;
  - (b) State waters unless otherwise authorized by the board; and
  - (c) Sanitary sewers unless allowed under local sewer use ordinances and authorized by the board; and
- (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.”

Where a leak, main break, or maintenance activity discharges or causes or allows a discharge of reclaimed water or flush water that may reasonably be expected to enter state waters (surface or ground water), reporting requirements in both VPDES and VPA permits under Part II, “Reports of Unauthorized Discharges” shall apply. Where the leak, main break, or maintenance activity does not discharge or cause or allow a discharge of reclaimed water or flush water that may reasonably be expected to enter state waters, but may adversely affect state waters or may endanger public health, reporting requirements under Part II, “Reports of Noncompliance” shall apply. Reports of unauthorized discharges and noncompliance have 24-hour and five day reporting requirements. Reports of noncompliance for leaks and main breaks of reclaimed water distribution systems are to be submitted only with the monitoring report and shall contain the same information as a five-day report. Failure to report leaks and main breaks under the circumstances described above is a violation.

Where reclaimed water is to be reused for fire fighting or other pre-authorized emergency reuses, the disposition of spent water from such reuse would not be subject to the reporting requirements for unauthorized discharges and noncompliances in the VPDES or VPA permit issued to the reclaimed water distribution system. This is consistent with the DEQ’s current policy related to

discharges to state waters from fire fighting with potable water. Where an emergency activity, such as fire fighting, is necessary for the protection of human health but may cause environmental harm, DEQ acknowledges that human health is the higher priority and does not generally pursue enforcement action for the environmental harm in this case.

## **b. RO water compliance reviews and inspections**

RO water compliance inspectors play an important role to ensure the proper operation and maintenance of water reclamation and reuse projects by reviewing permit applications and conducting inspections of the projects.

### **(1) Project permit application reviews**

After initial receipt of an [Application Addendum](#) for a water reclamation and reuse project, the Addendum and associated VPDES or VPA permit application should be reviewed by a RO water compliance inspector. The water permit writer is responsible for coordinating review of the Application Addendum by the water compliance inspector. Deficiencies of the Application Addendum identified by the water compliance inspector should be included in the deficiency letter prepared by the water permit writer to the applicant or permittee. Where the reclamation and reuse project will include a reclamation system or SRS, the water compliance inspector should also notify the water permit writer of any compliance problems associated with the WWTW(s) that will provide source water to the system.

For providers of reclaimed water (or reclaimed water agents), the [Application Addendum](#) must include a RWM plan (see subdivision [III.C.4](#)). A significant component of a RWM plan that should be reviewed by RO water compliance inspectors is the cross-connection and backflow prevention (CC&BP) program for reclaimed water distribution systems (See subdivision [III.C.4.g](#)). Per [9VAC25-740-100.C.1.g](#), the CC&BP must describe inspections to be performed by the permitted reclaimed water agent at the time end users connect to the reclaimed water distribution system and periodically thereafter. The purpose of these inspections is to prevent cross-connections to a potable water system and backflow from industrial end users as determined necessary through an evaluation that assesses the potential for such incidents to occur. At a minimum, the CC&BP program should specify a frequency of not less than annually (or at least once per year) for periodic inspections of the reclaimed water distribution system. Where the CC&BP program specifies a lesser periodic inspection frequency, the water compliance inspector should note this as a deficiency of the Application Addendum provided the RWM plan is submitted with the Application Addendum.

### **(2) Project inspections**

All water reclamation and reuse projects that are permitted by DEQ are to be inspected by RO water compliance inspection personnel. These projects may include reclamation systems, SRSs, reclaimed water distribution systems, and/or associated system storage facilities and pump stations. Similar unpermitted facilities may also be inspected by DEQ upon discovery or in response to complaints.

**(a) Inspection priority**

Most inspections of VPDES or VPA permitted water reclamation and reuse projects will be scheduled and at a frequency based on priority. RO water compliance personnel determine the inspection priority and, subsequently, the inspection schedule for each project. For only water reclamation and reuse projects, the inspection priority is determined by the following hierarchy:

- (i) Intended reuse of reclaimed water produced.

All reclamation systems or SRSs authorized to produce reclaimed water intended for reuses that require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact, are a high inspection priority. The basis for this priority ranking is that treatment failures at these systems have the greatest potential to cause significant adverse impacts to public health.

- (ii) Type of project to be authorized.

Where a reclamation system or SRS that reclaims municipal wastewater is authorized by or associated with a VPDES or VPA permit and is not a high inspection priority based on the intended reuse of reclaimed water produced by that system, the inspection priority will be based on the design flow of the system or the design flow of the wastewater treatment works where the system is a conjunctive system as defined in [9VAC25-740-10](#). Reclamation systems or SRSs with a design flow greater than or equal to 1.0 MGD are a high inspection priority, while systems with a design flow less than 1.0 MGD are a low inspection priority. For example, a reclamation system or SRS that produces Level 2 reclaimed water with a design flow of 2.0 MGD would be a high inspection priority based on design flow, not the intended reuse of reclaimed water produced by the system.

Where a reclamation system that reclaims industrial wastewater is (i) not excluded from the requirements of the Water Reclamation and Reuse Regulation per [9VAC25-740-50.A.5](#) (see also subdivision [III.B.3.c](#)), (ii) is authorized by or associated with a VPDES or VPA permit, and (iii) is not a high inspection priority based on the intended reuse of reclaimed water produced by that system, the inspection priority of the reclamation system will be based on the type and size of industrial facility providing industrial wastewater to the system, characteristics of the industrial wastewater to be reclaimed, and the type of treatment provided by the reclamation system alone or as part of a conjunctive system.

Reclaimed water distribution systems that are authorized by a permit separate from that issued to a reclamation system or SRS will typically be authorized by or associated with a VPA permit. Reclaimed water distribution systems that have pump stations, maintenance disinfection (e.g., addition of chlorine to the distribution to maintain reclaimed water quality), and permit requirements for reclaimed water monitoring and reporting are a high inspection priority. All other reclaimed water distribution systems are a low inspection priority but may have varying inspection frequencies as discussed below (see subdivision [III.M.1.b.\(2\)\(b\)](#)). The inspection priority of a reclaimed water



distribution system may be changed typically at the time the permit covering the system undergoes a major modification or is reissued.

### **(b) Inspection frequency**

RO water compliance inspectors are to inspect reclamation systems, SRSs and reclaimed water distribution systems at a frequency based on the inspection priority of these systems. The inspection frequency can be additionally adjusted (e.g., increased or decreased) according to the Risk-Based Inspection Strategy (RBIS) and, in the case of distribution systems, by other factors that may or may not be considered by RBIS. Systems that are a high inspection priority are to be inspected not less than once per two years. This frequency may be reduced to not less than once per three years by RBIS for systems that have a good compliance record. Systems that are a low inspection priority are to be inspected not less than once per five years. This frequency may be augmented by RBIS for systems that have a less than good compliance record, and for reclaimed water distribution systems that have one or more of the following:

- pump stations,
- maintenance disinfection, and/or
- permit requirements for reclaimed water monitoring and reporting.

Recall that reclaimed water distribution systems having all these items are high inspection priorities (see subdivision [III.M.1.b.\(2\)\(a\)](#)) and are to be inspected at the frequency specified above for such systems.

Inspection frequency for a reclamation system, SRS or reclaimed water distribution system will change, in most cases, when the inspection priority for the system changes.

### **c. Inspections by permittees**

In accordance with [9VAC25-740-100.C.1.d](#) of the Water Reclamation and Reuse Regulation, providers of reclaimed water (or reclaimed water agents) have the right to perform routine or periodic inspections of their end users' reuses and storage facilities. This must be stated in the service agreement or contract between the reclaimed water agent and end user (See [Attachment C](#), Conditions required for all service agreements or contracts). Although end users of reclaimed water will not typically be issued a permit by DEQ, the agency may also inspect end users' reuses and storage facilities in accordance with [§ 62.1-44.15\(6\)](#). Per this provision of the law, the State Water Control Board has the authority to "... make investigations and inspections, to ensure compliance with any certificates, standards, policies, rules, regulations, rulings and special orders which it may adopt, issue or establish and to furnish advice, recommendations, or instructions for the purpose of obtaining such compliance". When it is necessary for DEQ inspectors to access an end user's property, they should attempt to do so with the reclaimed water agent that has a service agreement or contract with the particular end user. For incidents that may require immediate response, such as a complaint or an observed unauthorized activity, DEQ inspectors may access the end user's property independently. Before doing so, DEQ inspectors should check in with the property owner, property management or on-site staff, and provide credentials with an explanation of the purpose or need to access the property.

#### **d. RO water compliance tracking auditing**

Non-compliance with statutory, regulatory or permit requirements for water reclamation and reuse should be assigned points according to the Water Compliance Auditing Manual for potential referral to enforcement.

Because reclaimed water standards, excluding CAT standards, for VPDES permitted reclamation systems will be entered into CEDS to generate monitoring reports, points for violations of these standards will be automatically generated. However, the automatic points are for effluent limits violations that differ from those for violations of reclaimed water standards. Until points for reclaimed water standards violations can be programmed into CEDS, RO compliance auditors will need to overwrite the automatic points with the correct points for reclaimed water standards violations.

Points for reclaimed water standards violations by VPA permitted reclamation systems and SRSs are not automatically generated by CEDS. Therefore, the RO compliance auditor must manually enter the points into CEDS for these violations pertaining to VPA permits.

For VPDES and VPA permitted water reclamation and reuse projects, points for violations of the CAT standards for turbidity, TRC and bacteria must be manually entered by the RO compliance auditor. RO water permit writers are responsible for reviewing any CAT information submitted in or with the monitoring report for a reclamation system to identify any CAT violations, and for referring these violations to the compliance auditor for data entry in CEDS.

In both the VPDES and VPA permit modules of CEDS, there are compliance schedule events (CSEs) requiring specific submittals with due dates for water reclamation and reuse projects (see subdivision [III.L](#)). As with all VPDES and VPA permits, RO water permit writers are responsible for selecting the applicable CSEs and entering the due date for under the CSEs tab. Points for late CSE submittals will be automatically assigned by CEDS in the VPDES IP module, and will not require correction by the RO compliance auditor. Points for late CSE submittals related to VPA permits must be entered manually in the CEDS VPA IP module by the RO compliance auditor.

Lastly, RO water permit writers will need to coordinate with the RO compliance auditor on reclaimed water standards for permitted reclamation of industrial wastewater. Standards for each reclaimed industrial wastewater will be developed on a case-by-case basis and may be assigned different violation points where a standard is established for the protection of human health, particularly for reuses of the reclaimed industrial wastewater that have potential for public or worker contact. RO water permit writers should inform the RO compliance auditor of standards that are for the protection of human health to ensure that appropriate points are assigned for violations of reclaimed industrial wastewater standards.

## **2. Enforcement**

Referral of noncompliant water reclamation and reuse projects or activities to enforcement should adhere to existing procedures established for other activities covered by VPDES or VPA permits.

## **N. Other state programs affecting or related to water reclamation and reuse**

### **1. DEQ regulations for stormwater**

The reclamation and reuse of harvested rainwater and stormwater is specifically excluded from the requirements of the Water Reclamation and Reuse Regulation per [9VAC25-740-50.A.2](#). Prior to July 1, 2013, DCR had the statutory authority to develop regulations for the reclamation and reuse of stormwater but chose, instead, to include the following statement in the Virginia Stormwater Management Program Regulation:

“In accordance with § [62.1-44.15:28](#) of the Code of Virginia, stormwater harvesting is encouraged for the purposes of landscape irrigation systems, fire protection systems, flushing water closets and urinals, and other water handling systems to the extent such systems are consistent with federal, state, and local regulations.”

Note that “stormwater harvesting” used in the context of the above statement refers to stormwater reclamation and reuse.

On July 1, 2013, the statutory authority and attending regulations for stormwater permitting were transferred from DCR to DEQ, including the Virginia Stormwater Management Program Regulation (now under [9VAC25-870](#)).

Currently, there are no federal regulations, nor state and local regulations in Virginia governing “stormwater harvesting” or stormwater reclamation and reuse. In the future, further development of the Virginia Stormwater Management Program Regulation, specifically 9VAC25-870-74, will be evaluated by the DEQ Water Division. If the regulation is to be amended, the ROs will be informed of this action and provided implementation guidance, as necessary.

### **2. Department of Housing and Community Development, Uniform Statewide Building Code**

The Uniform Statewide Building Code (USBC) administered by the Department of Housing and Community Development (DHCD), contains requirements for the design, construction, operation and maintenance of nonpotable water systems and their associated storage facilities, primarily inside buildings and structure with some exceptions. Nonpotable water systems are defined in the USBC to be systems for the collection, treatment, storage, distribution, and use or reuse of nonpotable water, including harvested rainwater, gray water and reclaimed water. The USBC does not regulate the reclamation and reuse of stormwater inside buildings and structures, but does regulate the plumbing that conveys reclaimed stormwater to indoor reuses. The appropriate plumbing codes of the USBC that will apply to an indoor stormwater system must be determined on a case-by-case basis by the local building inspector.

There are no USBC requirements for nonpotable water systems of reclaimed water inside *residential* buildings and structures. USBC requirements for nonpotable water systems of reclaimed water apply to only systems inside *non-residential* buildings and structures, and include

exceptions to avoid redundancy or conflicts with DEQ's Water Reclamation and Reuse Regulation. To further delineate and clarify the regulatory jurisdiction of DHCD and DEQ regarding systems that distribute reclaimed water to reuse DEQ and DHCD entered into a memorandum of agreement (MOA) (see [MOA on Uniform Statewide Building Code vs. SCAT Regulations and Water Reclamation and Reuse Regulation](#)).

### **3. VDH regulations and guidelines for onsite sewage, gray water and harvested rainwater**

#### **a. VDH Sewage Handling and Disposal Regulations**

Pursuant to [12VAC5-610-690](#) of the SH&D Regulations, VDH has the authority to regulate recycle and reuse systems of onsite sewage. These systems are considered experimental unless they have been previously deemed to be satisfactory in accordance with the provisions of [12VAC5-610-441](#) and/or, at a minimum, certified by the National Sanitation Foundation as meeting the current Standard 41.

However, [12VAC5-610-30.B](#) of the SH&D Regulations states that the "Reclamation and reuse of sewage may be subject to permitting by the Department of Environmental Quality under [9VAC25-740](#)." This will most often apply to large alternative onsite sewage systems (AOSSs) defined in [12VAC5-613-10](#) that can be concurrently permitted by both DEQ and VDH in accordance with [9VAC25-740-50.A.1](#). Refer to subdivision [III.K.2.d \(1\)](#) for more information regarding DEQ and VDH permitting of onsite sewage systems.

As discussed in subdivision [III.N.2](#), the DHCD USBC contains design, construction, operation and maintenance requirements for nonpotable water systems of gray water and their associated storage facilities, located inside buildings and structures with some exceptions. Because gray water is considered sewage by VDH, VDH may also consider nonpotable water systems of gray water, as defined by the USBC, to be recycle and reuse systems of onsite sewage in accordance with [12VAC5-610-690](#). Because the boundaries of regulatory authority between VDH and DHCD have not yet been well established regarding onsite systems that will recycle gray water for nonpotable purposes, DEQ ROs are advised to refer all inquiries regarding these systems to the Local Health Departments.

#### **b. VDH guidelines for gray water and harvested rainwater**

As directed by [§ 32.1-248.2](#), VDH was to develop guidelines regarding the use of gray water and rainwater by January 1, 1999. The guidelines were to: (i) describe the conditions and purposes for which gray water and rainwater might be appropriately used, (ii) include categories of used water from households and businesses that would be appropriate for reuse, and (iii) include a definition of gray water that did not include used toilet water. VDH developed separate guidelines for gray water and harvested rainwater in 1999 ([Gray Water Guidelines](#)) and 2011 ([Virginia Rainwater Harvesting and Use Guidelines](#)), respectively.

As discussed in subdivision [III.N.2](#), the DHCD USBC contains design, construction, operation and maintenance requirements for nonpotable water systems of gray water and harvested

rainwater, including their associated storage facilities, located inside buildings and structures with some exceptions. Because the DHCD USBC is regulation, it supersedes redundant or conflicting parts of the VDH gray water and harvested rainwater use guidelines, which are essentially recommendations or best management and design practices. VDH has not yet determined what parts of these guidelines have been superseded by the DHCD USBC in order to clarify the boundaries of regulatory authority between VDH and DHCD for systems that will treat and use harvested rainwater or recycle and reuse of gray water. Therefore, DEQ ROs are advised to refer all inquiries regarding these systems to the Local Health Departments.

## **O. Miscellaneous technical issues**

### **1. UV disinfection**

Ultraviolet irradiation (UV) may be used for disinfection of reclaimed water in lieu of more commonly used methods, such as but not limited to, chlorination. UV disinfection produces no residual chemical, which eliminates the need for any effluent limit or reclaimed water standard and associated monitoring for residual disinfectant. However, bacterial limits or standards and associated monitoring will still be required to demonstrate acceptable disinfection by UV.

UV dose ( $\text{mWsec/cm}^2$  or  $\text{uWsec/cm}^2$ ) is the product of UV intensity expressed in milliwatts per square centimeter ( $\text{mW/cm}^2$ ), and the exposure time of the fluid or particle to be treated expressed in seconds (s). Design dose is that dose required for a specific log inactivation of the target organism and is used for sizing the UV disinfection system. Operational dose is established according to the equipment validation results and can be used to make the most efficient use of the UV disinfection system (e.g., reduce power demand, reduce number of reactors or trains on line) while maintaining the design UV dose. For any UV disinfection system, the engineer must certify that the operational UV dose achieves the design UV dose. Procedures for establishing the operational UV dose should be described in the O&M manual for the reclamation system.

For Level 1 reclaimed water, designs for UV disinfection must be validated according to the Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse (Guidelines), 2<sup>nd</sup> Ed. published by National Water Research Institute (NWRI) (2003) ([9VAC25-740-110.A.2.a](#)). For Level 2 reclaimed water, designs for UV disinfection that are based on dose-response models must be verified by acceptable bioassay test results, and the expected level of indicator organisms must be determined to verify the design ([9VAC25-790-770.C.2](#)).

Per the reclaimed water standards in [9VAC25-740-70.A](#), Level 1 requires secondary treatment with filtration and higher-level disinfection, and Level 2 requires secondary treatment and standard disinfection. Filtration, one of the major differences between Level 1 and Level 2 reclaimed water treatment requirements, is not a substitute for disinfection but must be used in combination with disinfection to provide the required disinfection for Level 1. Generally, the more highly filtered the reclaimed water prior to UV disinfection, the lower will be the UV dose.

For Level 1 reclaimed water, designs for UV disinfection must meet a design dose of greater than or equal to  $100,000 \text{ uWsec/cm}^2$  (MS-2 dose) under peak flow and a minimum transmittance of 55 percent at 254 nm. MS-2 is a virus used to calibrate these systems that is non-pathogenic to

humans. A lower UV disinfection dosage may be approved by DEQ if demonstrated to meet at least one of the bacteria standards for Level 1 specified in [9VAC25-740-70.A](#) and where microbial testing is used to validate the efficacy of the UV disinfection dose in accordance with the NWRI Guidelines ([9VAC25-740-110.A.2.a](#)). Associated with a lower UV disinfection dosage, the turbidity standard should be reduced and the minimum UV transmittance increased (e.g., to 65 percent or greater). The following are alternative turbidity standards and minimum UV transmittance percentages that may be used in conjunction with the specified lower UV disinfection dosages of Level 1 reclaimed water (NWRI Guidelines, 2003):

UV Disinfection Dosage (uWsec/cm <sup>2</sup> ) <sup>(1)</sup>	Turbidity (NTU)	UV Transmittance (%) <sup>(2)</sup>
80,000 uWsec/cm <sup>2</sup> (e.g., for micro and ultra filtration)	Less than or equal to 0.2 NTU 95% of the time; CAT at greater than 0.5 NTU	Greater than or equal to 65
50,000 uWsec/cm <sup>2</sup> (e.g., for reverse osmosis)	Less than or equal to 0.2 NTU 95% of the time; CAT at greater than 0.5 NTU	Greater than or equal to 90

<sup>(1)</sup> Design UV dose under conditions of maximum daily flow.

<sup>(2)</sup> UV transmittance at 254 nm.

For other UV disinfection dosages not shown in the above table, the RO water permit writer should contact OLAP staff for assistance in determining an appropriate turbidity standard and UV transmittance for the particular UV disinfection dosage.

UV disinfection for Level 2 reclaimed water must be designed, constructed and operated in accordance with [9VAC25-790-770](#) of the SCAT Regulations for UV disinfection of secondary effluent. Therefore, the UV disinfection dose for Level 2 reclaimed water must meet a minimum average dose of 50,000 uWsec/cm<sup>2</sup> at 253.7 nm after the UV lamps have been in operation 7,500 hours or more, unless sufficient information is provided to demonstrate that the required level of disinfection can be obtained at a lower dose level. This dose is expected to meet the Level 2 standard for fecal coliform (200 colonies/100 ml of sample) and has effectively met other Level 2 bacteria standards. Although not specifically stated in [9VAC25-790-770](#), it is a standard engineering practice to design UV disinfection for secondary treatment using a minimum transmittance of 65 percent. The same minimum transmittance should be applied to the design of UV disinfection for Level 2 reclaimed water.

For Level 1 reclaimed water, a UV disinfection system must be designed to deliver the minimum design dose of that system at all times ([9VAC25-740-110.A.2.a](#)). To achieve this, the UV disinfection system will require continuous monitoring. The system should also be equipped with alarms for operating conditions that may cause the system to fail to meet its design dose, including but not limited to, low operational UV dose, low UV transmittance, high turbidity or low flow. Set points for these alarms should be specified in the O&M manual of the reclamation system or SRS and allow for adequate response time based on the importance of the alarm and consequences. The system may be automated to immediately adjust the UV disinfection dosage in response to changes in the UV system influent reclaimed water flow and quality ([9VAC25-740-110.A.2.a](#)).

UV disinfection systems for Level 2 reclaimed water must be designed, constructed and operated in accordance with the SCAT Regulations for UV disinfection of secondary effluent ([9VAC25-740-110.A.2.b](#)). Where aspects of the design, construction and operation of a UV disinfection system for Level 1 reclaimed water are not addressed by the Water Reclamation and Reuse

Regulation, recommendations of the NWRI Guidelines (2003) should be preferentially applied, followed by the manufacturer's specifications for the particular UV disinfection system.

## **2. Stormwater management facilities used for reclaimed water storage**

Per [9VAC25-740-110.C.10](#), "Landscape impoundments may also be used for nonsystem storage of reclaimed water prior to another subsequent reuse, such as irrigation." Frequently, landscape impoundments also serve as stormwater management facilities. The regulation does not prohibit the mixing and storage of reclaimed water with stormwater in the same impoundment for subsequent reuse. Therefore, it is possible for an impoundment to serve as a landscape feature, stormwater management facility and a reclaimed water nonsystem storage facility. However, amendments to [9VAC25-740-110.C.14](#) that went into effect on January 29, 2014, require reclaimed water nonsystem storage facilities, including landscape impoundments used for nonsystem storage, to 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. New nonsystem storage facilities constructed after January 29, 2014 must comply with this design requirement independent of their other potential functions (e.g., as a landscape feature, stormwater management facility, etc.). Impoundments existing prior to January 29, 2014 as a landscape feature or combined landscape feature and stormwater management facility that are proposed for nonsystem storage of reclaimed water independent of or in combination with other existing functions, may not be able to meet this and other design requirements specified in [9VAC25-740-110.C](#) due to excessive cost or other constraints to retrofit them. At the request of a permittee, the RO may grant a variance that will allow a proposed nonsystem storage facility to operate as designed or with modifications that do not meet design, construction, operation and maintenance requirements of the regulation where such a variance would not adversely impact public health or the environment. See subdivision [III.I](#) for information regarding variance procedures.

Important to note is that DEQ now has the statutory authority to develop regulations for the reclamation and reuse of stormwater (see subdivision [III.N.1](#)). Should the DEQ Water Division pursue this regulatory action, the potential affect that such regulations would have on the design, construction, operation and maintenance of impoundments used for stormwater storage before or after reclamation for reuse is yet unknown. These regulations may also need to address issues of compatibility with design requirements for reclaimed water nonsystem storage facilities contained in [9VAC25-740-110.C](#) where an impoundment provides storage for both reclaimed stormwater and reclaimed domestic, municipal or industrial wastewater.

## **3. Land treatment systems converting to irrigation reuse**

Although irrigation reuse and land treatment both use water derived from wastewater, they are not the same (see subdivision [III.B.3.e](#)). Permittees owning or managing land treatment systems may be authorized to convert their land treatment sites to irrigation reuse sites, provided:

- (i) The irrigation reuse site is no longer operated as a land treatment system,
- (ii) The rate of irrigation with reclaimed water will be supplemental as discussed in subdivision [III.C.5](#),



- (iii) There is sufficient system storage capacity for the reclaimed water in accordance with [9VAC25-740-110.C.8.b\(2\)](#) where there is no option to suspend generation of reclaimed water for planned periods, or discharge the reclaimed water to an alternate reuse and/or to surface waters under a VPDES permit; and
- (iv) The reclaimed water to be applied to the site meets the appropriate reclaimed water standards for irrigation reuse specified in [9VAC25-740-90.A](#) or developed on a case-by-case basis for irrigation reuse of a reclaimed industrial wastewater in accordance with [9VAC25-740-90.B](#).

For a land treatment site that will be converted to irrigation reuse, any existing groundwater monitoring required at the site will no longer be necessary following the conversion. For the purpose of establishing POCs for reclaimed water monitoring as discussed in subdivision [III.G.6.b](#), a land treatment site converted to irrigation reuse is no longer considered part of the treatment process.

Land treatment systems with no option to discharge will, in most cases, have seasonal storage that may be converted to system storage for reclaimed water. Land treatment seasonal storage converted to reclaimed water system storage must meet (i) the design, construction and operation requirements for system storage specified in [9VAC25-740-110.C.6](#) unless exempted per [9VAC25-740-110.C.7](#); and (ii) capacity requirements for system storage specified in [9VAC25-740-110.C.8](#). Land treatment seasonal storage facilities existing prior to October 1, 2008, may not be able to meet the capacity requirements for system storage due to excessive cost or other constraints to retrofit them. At the request of a permittee, the RO may grant a variance that will allow an existing land treatment seasonal storage facility converted to system storage to operate as designed or with modifications that do not meet design, construction, operation and maintenance requirements of the regulation where such a variance would not adversely impact public health or the environment. See subdivision [III.I](#) for information regarding variance procedures.

Land treatment seasonal storage converted to system storage may also require reclaimed water monitoring and reporting as discussed in subdivisions [III.G.6.k](#) and [III.G.6.a](#), respectively.

Where an applicant or permittee is required to submit a RWM plan for a water reclamation and reuse project (see subdivision [III.C.4](#)), and the project proposes to convert land treatment sites and associated seasonal storage to irrigation reuse sites and system storage, respectively, the RWM plan must include the converted sites and storage in the plan's service area and inventory of storage for reclaimed and reject water (see subdivisions [III.C.4.a](#) and [III.C.4.b](#)).

## **P. Future guidance**

This guidance may be amended or additional separate guidance may be developed to provide further interpretation of the Water Reclamation and Reuse Regulation or to address unanticipated significant issues that may arise related to water reclamation and reuse. Any new or amended guidance and subsequent updates to the VPDES and VPA permit manuals will be posted on the

Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

DEQNET. Therefore, regional water permit staff should refer to the DEQNET for the most current guidance and permitting procedures.

#### **IV. List of Attachments**

- A. Permit Cover Pages, Standards and Special Conditions for Water Reclamation and Reuse**
- B. Monitoring Report and Attachments**
- C. Water Reclamation and Reuse Conditions for Service Agreements or Contracts**
- D. Correspondence**

**Attachment A - Permit Cover Pages, Standards and Special Conditions for Water  
Reclamation and Reuse**

## **General Instructions**

Attachment A contains cover pages for permits and authorizations (administrative and emergency), Level 1 and Level 2 standards pages, and special conditions related to water reclamation and reuse. These are to be used to draft VPDES and VPA permits, or authorizations in association with existing VPDES or VPA permits for water reclamation and reuse projects.

Where standards, monitoring requirements and special conditions related to water reclamation and reuse will be added directly to a VPDES or VPA permit, one part of the permit (e.g., Part I, Part II, Part III, etc.) should be dedicated exclusively to water reclamation and reuse, and should consist of at least two sections, A and B. Section A should contain the reclaimed water standards and monitoring requirements, and section B should contain the water reclamation and reuse special conditions. Because administrative and emergency authorizations issued exclusively for water reclamation and reuse are associated with but not part of an existing VPDES or VPA permit, these authorizations should consist of only one part that includes, at a minimum, sections A and B.

Special conditions contained in Attachment A are divided among the categories listed below. Special conditions may have notes either preceding the condition in parentheses “( )” or within the condition, bolded or italicized and in brackets “[ ]”. These notes are for the use of DEQ staff and are to be deleted from the special condition in the draft permit or authorization. Headings for the following special condition categories should also be deleted and all special conditions placed under Part I.B of the permit or authorization.

- Conditions applicable to all water reclamation and reuse projects
- Conditions applicable to reclamation systems and SRSs
- Conditions applicable to reclaimed water distribution systems
- Condition applicable to systems that blend reclaimed water
- Conditions applicable to Reclaimed Water Management (RWM) plans
- Conditions applicable to reject water and reclaimed water storage facilities
- Conditions related to design and construction of water reclamation and reuse projects
- Conditions requiring access control and advisory signs
- Conditions applicable to irrigation reuses of reclaimed water
- Conditions applicable to non-irrigation reuses of reclaimed water
- Conditions applicable to notifications, record keeping and reporting
- Condition applicable to emergency authorizations

See subdivision [III.G.7](#) for more details regarding special conditions for permits and authorizations.

A “Basis” is provided for each special condition contained in Attachment A immediately following the condition. The basis is the agency’s minimum justification for including the condition in a permit or an authorization (administrative or emergency). It is to be inserted in the fact sheet, but not in a permit or an authorization. The RO should provide more details in the

basis where “best professional judgment” is specified in the template for the basis, or where the RO modifies a condition contained in this attachment.

Special conditions that are relevant to each other may be combined or consolidated provided the basis for each condition is included in the fact sheet for the new condition. See subdivision [III.G.9](#) for more details regarding preparation of the fact sheet.

**Permit and Authorization (Administrative and Emergency) Cover Pages**

**VPDES Permit Cover Page for Issuances and Reissuances Including Water Reclamation and Reuse**

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000

Effective Date:

Expiration Date:

**AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE  
ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW, AND TO  
PRODUCE OR DISTRIBUTE RECLAIMED WATER UNDER THE WATER RECLAMATION AND  
REUSE REGULATION**

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to discharge and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: **[VPDES Permittee]**

Facility Name: **[Facility to which VPDES permit is issued/reissued]**

City [**or County**]: **[Either City or County as appropriate]**

Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

The owner is authorized to discharge to the following receiving stream:

*[Note: Provide the information for each item below]*

Stream: **[Receiving Waters name]**

River Basin:

River Subbasin:

Section:

Class:

Special Standards:

\_\_\_\_\_  
*[Note: Indicate position of person delegated to sign permit here]*

Department of Environmental Quality

\_\_\_\_\_  
Date

**VPA Permit Cover Page for Issuances and Reissuances Including Water Reclamation and Reuse**

**DEQ Letterhead** [*Note: No Board Members, No Regional Letterhead*]

Permit No. **VPA00000**

Effective Date:

Expiration Date:

**AUTHORIZATION TO MANAGE POLLUTANTS UNDER THE  
VIRGINIA POLLUTION ABATEMENT PERMIT AND TO PRODUCE OR DISTRIBUTE  
RECLAIMED WATER UNDER THE WATER RECLAMATION AND  
REUSE REGULATION AND THE VIRGINIA STATE WATER CONTROL LAW**

In compliance with the provisions of the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to manage pollutants and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: [**VPA Permittee**]

Facility Name: [**Facility to which VPA permit is issued/reissued**]

City [**or County**]: [**Either City or County as appropriate**]

Facility Location: [**Location of facility to which VPA permit is issued/reissued**]

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[*Note: Indicate position of person delegated to sign permit here*]  
Department of Environmental Quality

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Date



**Administrative Authorization Cover Page in Association with a VPDES Permit for Water Reclamation and Reuse**

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000

Effective Date:

Administrative Authorization Date:

Expiration Date:

ADMINISTRATIVE AUTHORIZATION TO PRODUCE OR DISTRIBUTE RECLAIMED WATER  
UNDER THE WATER RECLAMATION AND REUSE REGULATION ATTENDING AN  
AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE  
ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.), the following permittee is administratively authorized to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this administrative authorization cover page, and the standards and conditions as set forth herein.

This administrative authorization shall remain in effect until expiration of the above permit for the discharge, at which time the standards and conditions of the administrative authorization shall be incorporated into the permit or eliminated.

Permittee: **[VPDES Permittee]**

Facility Name: **[Facility to which VPDES permit is issued/reissued]**

City **[or County]**: **[Either City or County as appropriate]**

Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

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*[Note: Indicate position of person delegated to sign permit here]*  
Department of Environmental Quality

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Date

**VPDES Permit Cover Page for a Major Modification Related to Water Reclamation and Reuse**

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000

Effective Date:

Modification Date:

Expiration Date:

**AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE  
ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW, AND TO  
PRODUCE OR DISTRIBUTE RECLAIMED WATER UNDER THE WATER RECLAMATION AND  
REUSE REGULATION**

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to discharge and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: **[VPDES Permittee]**

Facility Name: **[Facility to which VPDES permit is issued/reissued]**

City **[or County]**: **[Either City or County as appropriate]**

Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

The owner is authorized to discharge to the following receiving stream:

**[Note: Provide the information for each item below]**

Stream: **[Receiving Waters name]**

River Basin:

River Subbasin:

Section:

Class:

Special Standards:

\_\_\_\_\_  
**[Note: Indicate position of person delegated to sign permit here]**

Department of Environmental Quality

\_\_\_\_\_  
Date

**VPA Permit Cover Page for a Minor or Major Modification Related to Water Reclamation and Reuse**

**DEQ Letterhead** [*Note: No Board Members, No Regional Letterhead*]

Permit No. **VPA00000**

Effective Date:

Modification Date:

Expiration Date:

**AUTHORIZATION TO MANAGE POLLUTANTS UNDER THE  
VIRGINIA POLLUTION ABATEMENT PERMIT AND TO PRODUCE OR DISTRIBUTE  
RECLAIMED WATER UNDER THE WATER RECLAMATION AND  
REUSE REGULATION AND THE VIRGINIA STATE WATER CONTROL LAW**

In compliance with the provisions of the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to manage pollutants and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: [**VPA Permittee**]

Facility Name: [**Facility to which VPA permit is issued/reissued**]

City [**or County**]: [**Either City or County as appropriate**]

Facility Location: [**Location of facility to which VPA permit is issued/reissued**]

\_\_\_\_\_  
[*Note: Indicate position of person delegated to sign permit here*]  
Department of Environmental Quality

\_\_\_\_\_  
Date

**Emergency Authorization to Produce, Distribute or Reuse Reclaimed Water in Association with a VPDES Permit**

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000  
Effective Date:  
Emergency Authorization Date:  
Expiration Date:

EMERGENCY AUTHORIZATION FOR THE PRODUCTION, DISTRIBUTION OR REUSE OF RECLAIMED WATER UNDER THE WATER RECLAMATION AND REUSE REGULATION ATTENDING AN AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with and as defined by the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.), the following permittee is authorized to produce, distribute or reuse reclaimed water under emergency conditions due to drought in accordance with the information contained in the permit application, the Application for an Emergency Authorization to Produce, Distribute or Reuse Reclaimed Water, [**Insert only if submitted with [Emergency Authorization Application](#): the Water Reclamation and Reuse Addendum to an Application,**] this emergency authorization cover page, and the standards and conditions as set forth herein.

This emergency authorization shall remain in effect until expiration of the above permit for the discharge, at which time the standards and conditions of the emergency authorization shall be incorporated into the permit or eliminated.

Permittee: **[VPDES Permittee]**  
Facility Name: **[Facility to which VPDES permit is issued/reissued]**  
City **[or County]**: **[Either City or County as appropriate]**  
Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

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*[Note: Indicate position of person delegated to sign permit here]*  
Department of Environmental Quality

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Date

**Emergency Authorization to Produce, Distribute or Reuse Reclaimed Water in Association with a VPA Permit**

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VPA00000  
Effective Date:  
Emergency Authorization Date:  
Expiration Date:

EMERGENCY AUTHORIZATION FOR THE PRODUCTION, DISTRIBUTION OR REUSE OF RECLAIMED WATER UNDER THE WATER RECLAMATION AND REUSE REGULATION ATTENDING AN AUTHORIZATION TO MANAGE POLLUTANTS UNDER THE VIRGINIA POLLUTION ABATEMENT PERMIT AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with and as defined by the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.), the following permittee is authorized to produce, distribute or reuse reclaimed water under emergency conditions due to drought in accordance with the information contained in the permit application, the Application for an Emergency Authorization to Produce, Distribute or Reuse Reclaimed Water, [**Insert only if submitted with [Emergency Authorization Application](#): the Water Reclamation and Reuse Addendum to an Application,**] this emergency authorization cover page, and the standards and conditions as set forth herein.

This emergency authorization shall remain in effect until expiration of the above permit for the management of pollutants, at which time the standards and conditions of the emergency authorization shall be incorporated into the permit or eliminated.

Permittee: [**VPA Permittee**]  
Facility Name: [**Facility to which VPA permit is issued/reissued**]  
City [**or County**]: [**Either City or County as appropriate**]  
Facility Location: [**Location of facility to which VPA permit is issued/reissued**]

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[*Note: Indicate position of person delegated to sign permit here*]  
Department of Environmental Quality

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Date

## Standards Pages and Special Conditions

### Level 1 Reclaimed Water Standards for Reclamation Systems and SRSs

#### A. STANDARDS AND MONITORING REQUIREMENTS

##### 1. Level 1 Reclaimed Water

- a. During the period beginning with the [**Choose one:** permit's effective date/permit's modification date/issuance of the administrative authorization/issuance of the emergency authorization/issuance of a Certificate to Operate (CTO)] for the [**Choose all that apply:** reclamation system/SRS] and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for approved reuses specified in the Reclaimed Water Management Plan:

Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Choose only one bacteria standard and delete this row and unused bacteria standards]</i>				
Fecal coliform <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 14	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.a]</i> <sup>(4)</sup>	Grab
	CAT: > 49			
E. coli <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.a]</i> <sup>(4)</sup>	Grab
	CAT: > 35			
Enterococci <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.a]</i> <sup>(4)</sup>	Grab
	CAT: > 24			
<i>[Do not include a TRC standard if UV will be used in lieu of chlorination for disinfection of the reclaimed water. Delete this row and TRC standard if not used.]</i>				
Total Residual Chlorine (TRC) <sup>(5)</sup>	NL	mg/l	Continuous	Recorded
	CAT: < 1.0			
pH <sup>(6)</sup>	6.0 – 9.0	Standard Units	Daily	Grab
<i>[Choose either BOD<sub>5</sub> or CBOD<sub>5</sub> and delete this row and the row of the unused parameter]</i>				
BOD <sub>5</sub>	Monthly average: ≤ 10	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	[Grab/4, 8 or 24 HC]
CBOD <sub>5</sub>	Monthly average: ≤ 8	mg/l	<i>[Per 9VAC25-740-</i>	[Grab/4, 8 or 24

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Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
			80.A.3]	HC]
<i>[Where UV will be used for disinfection of Level 1 reclaimed water, other turbidity standards may apply in accordance with 9VAC25-740-110.A.2.a]</i>				
Turbidity <sup>(7)</sup>	Daily average <sup>(8)</sup> : ≤ 2	NTU	Continuous	Recorded
	CAT: > 5			
<i>[Refer to subdivision <a href="#">III.G.6.j</a> (Operational flow monitoring) to determine the need to include “Reclamation System Flow” on the reclaimed water standards and monitoring requirements page. Delete this row and Reclamation System Flow if not used.]</i>				
Reclamation System Flow <sup>(9)</sup>	Monthly average: NL	MGD	[(if Estimated) Daily / (if TIRE) Continuous]	[Estimated/TIRE]
	Monthly maximum: NL			
<i>[If irrigation is included among reclaimed water reuses in the Reclaimed Water Management Plan, include monthly average total N and total P monitoring. If not, delete these parameters for monitoring. Delete this row.]</i>				
Total Nitrogen (N)	Monthly average <sup>(10)</sup> : NL	mg/l	[Per 9VAC25-790-960]	[Grab/4, 8 or 24 HC]
Total Phosphorus (P)	Monthly average <sup>(10)</sup> : NL	mg/l	[Per 9VAC25-790-960]	[Grab/4, 8 or 24 HC]
<i>[If irrigation is included among reclaimed water reuses in the Reclaimed Water Management Plan and the reclaimed water is expected to meet BNR treatment thresholds (i.e., annual ave. total N ≤ 8.0 mg/l, annual ave. total P ≤ 1.0 mg/l) as indicated in the <a href="#">Application Addendum</a>, include calendar year average total N and total P monitoring. If not, delete these parameters for monitoring. Delete this row.]</i>				
Total N	Calendar year average <sup>(11)</sup> : NL	mg/l	1/year	Calculated
Total P	Calendar year average <sup>(11)</sup> : NL	mg/l	1/year	Calculated
<i>[Other parameters are added on a case-by-case basis dictated by intended reuses in RWM Plan]</i>				

CAT = Corrective action threshold  
 NTU = Nephelometric turbidity unit  
 TIRE = Totalizing, indicating, and recording equipment

NL = No Limit  
 MGD = Million gallons per day

(1) Standards, excluding [Choose one: that/those] for turbidity [Insert if chlorine is used for disinfection: and TRC], must be met at the point of compliance (POC) designated as [Insert the applicable language: (for VPDES permitted reclamation systems) internal outfall (choose an outfall # from 650 to 675)/(for VPA permitted reclamation systems) sampling location (insert sampling location #)]. The POC for turbidity shall be just upstream of disinfection [Insert if chlorine is used for disinfection: and the POC for TRC shall be at the end of the chlorine contact tank or contact period]. Exact locations of POCs for all standards shall be as specified in the approved operations and

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- maintenance manual of the reclamation system. *[Note: The POC is the location at which samples will be collected in accordance with 9VAC25-740-70.B and 9VAC25-740-80.A.2 to demonstrate compliance with the standards in the permit.]*
- (2) After disinfection.
  - (3) For the purpose of calculating the geometric mean, bacteria analytical results below the detection level of the analytical method used shall be treated as values equal to the detection level.
  - (4) For reclamation systems treating municipal wastewater, bacterial samples shall be collected between 10:00 a.m. and 4:00 p.m. to coincide with peak flows to the reclamation system. *[Note: An exception to this requirement may be approved upon demonstration to the DEQ that peak flows to the reclamation system occur outside this period. If an exception is approved, replace "10:00 a.m. and 4:00 p.m." with the hours of the approved exception.]*
  - (5) TRC analysis shall be continuous on-line monitoring, equipped with an automated data logging or recording device and an alarm to notify the operator when the CAT for TRC in the standard for Level 1 has been reached. TRC shall be monitored after a minimum contact time of 30 minutes at average flow or 20 minutes at peak flow. *[Note: The TRC standard applies only if chlorine is used for disinfection. TRC less than 1.0 mg/l may be authorized by DEQ if demonstrated to provide comparable disinfection through a chlorine reduction program in accordance with the Sewage Collection and Treatment Regulations (9VAC25-790).]*
  - (6) A properly calibrated pH meter shall be used for all pH analysis of reclaimed water.
  - (7) Turbidity analysis shall be performed by a continuous, on-line turbidity meter equipped with an automated data logging or recording device and an alarm to notify the operator when the CAT for turbidity in the standard for Level 1 has been reached. Compliance with the average turbidity standard shall be determined daily, based on the arithmetic mean of hourly or more frequent discrete measurements recorded during a 24-hour period. See Part I.B.6 *[Note: Or other number that corresponds to condition 6]* for additional information regarding turbidity monitoring.
  - (8) Daily average turbidity is the arithmetic mean of hourly or more frequent discrete turbidity measurements recorded during a 24-hour period.
  - (9) The designated design flow for the reclamation system is *[xxx]* MGD. *[Note: Refer to subdivision III.G.6.i of this guidance to determine "designated design flow".]*
  - (10) **[Insert this footnote only where total N and total P will be monitored and reported:** Monthly average total N and total P shall be the arithmetic mean of total N and total P concentrations measured in all samples collected during the month of monitoring.]
  - (11) **[Insert this footnote only where calendar year average total N and total P will be calculated and reported:** Calendar year average total N and total P shall be calculated as described in Part I.B.9 *(or other number that corresponds to condition 9)* of this **[Choose one:** permit/administrative authorization/emergency authorization], and reported as described in b of these standards and monitoring requirements for Level 1 reclaimed water.]
- b. Results for the above parameters **[Insert only where calendar year average total N and total P will be calculated and reported:** , excluding calendar year average total N and total P,] shall be included in the monthly monitoring report submitted to the DEQ *[Regional Office]* by the 10th of each month for the preceding month's performance. **[Insert only where calendar year average total N and total P will be calculated and reported:** Results for calendar year average total N and total P shall be submitted by January 10<sup>th</sup> of the year following the calendar year for which the calendar year average total N and total P are calculated.]



*[Insert the following in the fact sheet of the permit or authorization (administrative or emergency)]*

**Bases for Level 1 Reclaimed Water Standards and Monitoring Requirements during Reclamation**

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Choose only the bacteria standard specified in the permit or authorization (admin. or emergency). Delete unused bacteria standards and delete this row.]</i>					
Fecal coliform * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤14	9VAC25-740-70.A.1.b(1)	<i>[Insert frequency specified in permit or authorization]</i> <sup>(4)</sup>	Grab	9VAC25-740-80.A.4.a
	CAT: >49				
E. coli * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	9VAC25-740-70.A.1.b(2)	<i>[Insert frequency specified in permit or authorization]</i> <sup>(4)</sup>	Grab	9VAC25-740-80.A.4.a and GM10-2001, Rev. No. 1
	CAT: >35				
Enterococci * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	9VAC25-740-70.A.1.b(3)	<i>[Insert frequency specified in permit or authorization]</i> <sup>(4)</sup>	Grab	9VAC25-740-80.A.4.a and GM10-2001, Rev. No. 1
	CAT: >24				
<i>[Include a TRC standard if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Residual Chlorine (TRC) <sup>(5)</sup> (mg/l)	NL	GM10-2001, Rev. No. 1	Continuous	Recorded	9VAC25-740-80.A.2.a(1)
	CAT: <1.0	9VAC25-740-70.A.1. c			
pH <sup>(6)</sup> (Standard Units)	6.0 – 9.0	9VAC25-740-70.A.1.d	Daily	Grab	9VAC25-740-80.A.5
<i>[Include either BOD<sub>5</sub> or CBOD<sub>5</sub>, whichever parameter is included in the permit or authorization (administrative. or emergency). Delete the unused parameter and delete this row.]</i>					
BOD <sub>5</sub> (mg/l)	Monthly average: ≤ 10	9VAC25-740-70.A.1.e(1)	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	9VAC25-740-80.A.3
CBOD <sub>5</sub> ** (mg/l)	Monthly average: ≤ 8	9VAC25-740-70.A.1.e(2)	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	9VAC25-740-80.A.3
Turbidity <sup>(7)</sup> (NTU)	Daily average <sup>(8)</sup> : < 2.0	9VAC25-740-70.A.1.f	Continuous	Recorded	9VAC25-740-80.A.1
	CAT: > 5.0				

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Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Include monitoring for Reclamation System Flow if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Reclamation System Flow <sup>(9)</sup> (MGD)	Monthly average: NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	GM10-2001, Rev. No. 1
	Monthly maximum: NL				
<i>[Add monitoring for monthly average total N and total P if included in the permit or authorization (administrative or emergency). If not, delete these parameters. Delete this row.]</i>					
Total Nitrogen (N) (mg/l)	Monthly average <sup>(10)</sup> : NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	GM10-2001, Rev. No. 1 and 9VAC25-790-960
Total Phosphorus (mg/l)	Monthly average <sup>(10)</sup> : NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	GM10-2001, Rev. No. 1 and 9VAC25-790-960
<i>[Add monitoring for calendar year average total N and total P if included in the permit or authorization (administrative or emergency). If not, delete these parameters. Delete this row.]</i>					
Total N (mg/l)	Calendar year average <sup>(11)</sup> : NL	GM10-2001, Rev. No. 1	1/year	Calculated	GM10-2001, Rev. No. 1
Total P (mg/l)	Calendar year average <sup>(11)</sup> : NL	GM10-2001, Rev. No. 1	1/year	Calculated	GM10-2001, Rev. No. 1

GM10-2001, Rev. No. 1 = DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

NL = No Limit

\* This bacteria standard was chosen among three possible standards that may apply in accordance with Guidance Memo No. 10-2001, Revision No. 1.  
*[Insert this footnote only if CBOD<sub>5</sub> is used instead of BOD<sub>5</sub> on the reclaimed water standards page in the permit or authorization (administrative or emergency).]*

\*\* The standard for CBOD<sub>5</sub> was chosen instead of the standard for BOD<sub>5</sub> in accordance with Guidance Memo No. 10-2001, Revision No. 1.

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Footnote Number and Description	Basis for Footnote
(1) Locations of points of compliance (POCs) for all reclaimed water standards that will be monitored.	9VAC25-740-70.B and 9VAC25-740-80.A.2
(2) The standards for bacteria must be met after disinfection.	9VAC25-740-70.A
(3) Instructions to calculate the monthly geometric mean for bacteria.	9VAC25-740-70.A
(4) Peak flow collection period for bacteria samples.	9VAC25-740-80.A.4.a, Table 80-A, footnote 2
(5) TRC monitoring requirements for Level 1 reclamation systems.	9VAC25-740-80.A.2.a and 9VAC25-740-70.A.1.c
(6) pH monitoring requirement for all reclamation systems.	GM10-2001, Rev. No. 1
(7) Turbidity monitoring requirements for Level 1 reclamation systems.	9VAC25-740-80.A.1
(8) Calculation of daily average turbidity for Level 1 reclamation systems.	9VAC25-740-80.A.1
(9) Statement of designated design flow for the reclamation system.	GM10-2001, Rev. No. 1
<i>[Use footnote 10 if monthly average total N and total P are included in the table above for reclaimed water standards and monitoring requirements. If not, delete this footnote. Delete this row.]</i>	
(10) Instructions to calculate monthly average total N and total P.	GM10-2001, Rev. No. 1
<i>[Use footnote 11 if calendar year average total N and total P are included in the table above for reclaimed water standards and monitoring requirements. If not, delete this footnote. Delete this row.]</i>	
(11) Instructions to calculate and report calendar year average total N and total P.	GM10-2001, Rev. No. 1

## Level 2 Reclaimed Water Standards for Reclamation Systems and SRSs

### A. STANDARDS AND MONITORING REQUIREMENTS

#### 1. Level 2 Reclaimed Water

- a. During the period beginning with the [**Choose one:** permit's effective date/permit's modification date/issuance of the administrative authorization/issuance of the emergency authorization/issuance of a Certificate to Operate (CTO)] for the [**Choose all that apply:** reclamation system/SRS] and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for approved reuses specified in the Reclaimed Water Management Plan:

Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Choose only one bacteria standard and delete this row and unused bacteria standards]</i>				
Fecal coliform <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 200	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.b]</i> <sup>(4)</sup>	Grab
	CAT: > 800			
E. coli <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 126	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.b]</i> <sup>(4)</sup>	Grab
	CAT: > 235			
Enterococci <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 35	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.b]</i> <sup>(4)</sup>	Grab
	CAT: > 104			
<i>[Do not include a TRC standard if UV will be used in lieu of chlorination for disinfection of the reclaimed water. Delete this row and TRC standard if not used.]</i>				
Total Residual Chlorine (TRC) <sup>(5)</sup>	NL	mg/l	<i>[Per 9VAC25-740-80.A.2.b]</i>	Grab
	CAT: < 1.0	mg/l	Resample within 1 hour of reaching CAT	Grab
pH <sup>(6)</sup>	6.0 – 9.0	Standard Units	Daily	Grab
<i>[Choose either BOD<sub>5</sub> or CBOD<sub>5</sub> and delete this row and the row of the unused parameter]</i>				
BOD <sub>5</sub>	Monthly average: ≤ 30	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	[Grab/4, 8 or 24 HC]
	Max. weekly average: ≤ 45			
CBOD <sub>5</sub>	Monthly average: ≤ 25	mg/l	<i>[Per 9VAC25-740-</i>	[Grab/4, 8 or 24 HC]

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Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
	Max. weekly average: $\leq 40$		80.A.3]	
Total Suspended Solids	Monthly average: $\leq 30$	mg/l	[Per 9VAC25-740-80.A.3]	[Grab/4, 8 or 24 HC]
	Max. weekly average: $\leq 45$			
<i>[Refer to subdivision III.G.6.j (Operational flow monitoring) to determine the need to include "Reclamation System Flow" on the reclaimed water standards and monitoring requirements page. Delete this row and Reclamation System Flow if not used.]</i>				
Reclamation System Flow <sup>(7)</sup>	Monthly average: NL	MGD	[(if Estimated) Daily / (if TIRE) Continuous]	[Estimated/TIRE]
	Monthly maximum: NL			
<i>[If irrigation is included among reclaimed water reuses in the Reclaimed Water Management Plan, include monthly average total N and total P monitoring. If not, delete these parameters for monitoring. Delete this row.]</i>				
Total Nitrogen (N)	Monthly average <sup>(8)</sup> : NL	mg/l	[Per 9VAC25-790-960]	[Grab/4, 8 or 24 HC]
Total Phosphorus (P)	Monthly average <sup>(8)</sup> : NL	mg/l	[Per 9VAC25-790-960]	[Grab/4, 8 or 24 HC]
<i>[If irrigation is included among reclaimed water reuses in the Reclaimed Water Management Plan and the reclaimed water is expected to meet BNR treatment thresholds (i.e., annual ave. total N <math>\leq 8.0</math> mg/l, annual ave. total P <math>\leq 1.0</math> mg/l) as indicated in the Application Addendum, include calendar year average total N and total P monitoring. If not, delete these parameters for monitoring. Delete this row.]</i>				
Total N	Calendar year average <sup>(9)</sup> : NL	mg/l	1/year	Calculated
Total P <sup>9)</sup>	Calendar year average <sup>(9)</sup> : NL	mg/l	1/year	Calculated
<i>[Other parameters are added on a case-by-case basis dictated by intended reuses in RWM Plan]</i>				

CAT = Corrective action threshold  
 MGD = Million gallons per day

NL = No Limit  
 TIRE = Totalizing, indicating, and recording equipment

- Standards **[Insert this sentence if chlorine is used for disinfection: , excluding that for TRC,]** must be met at the point of compliance (POC) designated as **[Insert the applicable language: (for VPDES permitted reclamation systems) internal outfall (choose an outfall # from 676 to 699)/(for VPA permitted reclamation systems) sampling location (insert sampling location #)].** **[Insert this sentence if chlorine is used for disinfection: The POC for TRC shall be at the end of the chlorine contact tank or contact period.]** Exact locations of POCs for all standards shall be as specified in the approved operations and maintenance manual of the reclamation system. **[Note: The POC is the location at which samples will be collected in accordance with 9VAC25-740-70.B and 9VAC25-740-80.A.2 to demonstrate compliance with the standards in the permit.]**
- After disinfection.
- For the purpose of calculating the geometric mean, bacteria analytical results below the detection level of the analytical method used shall be treated as values equal to the

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detection level.

- (4) For reclamation systems treating municipal wastewater, bacterial samples shall be collected between 10:00 a.m. and 4:00 p.m. to coincide with peak flows to the reclamation system.
  - (5) TRC shall be monitored after a minimum contact time of 30 minutes at average flow or 20 minutes at peak flow. *[Note: The TRC standard applies only if chlorine is used for disinfection. TRC less than 1.0 mg/l may be authorized by DEQ if demonstrated to provide comparable disinfection through a chlorine reduction program in accordance with the Sewage Collection and Treatment Regulations (9VAC25-790).]*
  - (6) A properly calibrated pH meter shall be used for all pH analysis of reclaimed water.
  - (7) The designated design flow for the reclamation system is [xxx] MGD. *[Note: Refer to subdivision III.G.6.1 of this guidance to determine “designated design flow”.]*
  - (8) **[Insert this footnote only where total N and total P will be monitored and reported:** Monthly average total N and total P shall be the arithmetic mean of total N and total P concentrations measured in all samples collected during the month of monitoring.]
  - (9) **[Insert this footnote only where calendar year average total N and total P will be calculated and reported:** Calendar year average total N and total P shall be calculated as described in Part I. B.9 (*or other number that corresponds to condition 9*) of this **[Choose one:** permit/administrative authorization/emergency authorization], and reported as described in b of these standards and monitoring requirements for Level 2 reclaimed water.]
- b. Results for the above parameters **[Insert only where calendar year average total N and total P will be calculated and reported:** , excluding calendar year average total N and total P,] shall be included in the monthly monitoring report submitted to the DEQ [*Regional Office*] by the 10th of each month for the preceding month's performance. **[Insert only where calendar year average total N and total P will be calculated and reported:** Results for calendar year average total N and total P shall be submitted by January 10<sup>th</sup> of the year following the calendar year for which the calendar year average total N and total P are calculated.]

*[Insert the following in the fact sheet of the permit or authorization (administrative or emergency)]*

**Bases for Level 2 Reclaimed Water Standards and Monitoring Requirements during Reclamation**

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Choose only the bacteria standard specified in the permit or authorization (administrative or emergency). Delete unused bacteria standards and delete this row.]</i>					
Fecal coliform * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 200	9VAC25-740-70.A.2.b(1)	<i>[Insert frequency specified in permit or authorization]</i> <sup>(4)</sup>	Grab	9VAC25-740-80.A.4.b
	CAT: > 800				
E. coli * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 126	9VAC25-740-70.A.2.b(2)	<i>[Insert frequency specified in permit or authorization]</i> <sup>(4)</sup>	Grab	9VAC25-740-80.A.4.b and GM10-2001, Rev. No. 1
	CAT: > 235				
Enterococci * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 35	9VAC25-740-70.A.2.b(3)	<i>[Insert frequency specified in permit or authorization]</i> <sup>(4)</sup>	Grab	9VAC25-740-80.A.4.b and GM10-2001, Rev. No. 1
	CAT: > 104				
<i>[Include a TRC standard if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Residual Chlorine (TRC) <sup>(5)</sup> (mg/l)	NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.2.b
	CAT: <1.0	9VAC25-740-70.A.2.c	Resample within 1 hour of reaching CAT	Grab	9VAC25-740-70.C.1 and GM10-2001, Rev. No. 1
pH <sup>(6)</sup> (Standard Units)	6.0 – 9.0	9VAC25-740-70.A.2.d	Daily	Grab	9VAC25-740-80.A.5
<i>[Include either BOD<sub>5</sub> or CBOD<sub>5</sub>, whichever parameter is included in the permit or authorization (administrative or emergency). Delete the unused parameter and delete this row.]</i>					
BOD <sub>5</sub> (mg/l)	Monthly average: ≤ 30	9VAC25-740-70.A.2.e(1)	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	9VAC25-740-80.A.3
	Max. weekly average: ≤ 45				
CBOD <sub>5</sub> ** (mg/l)	Monthly average: ≤ 25	9VAC25-740-70.A.2.e(2)	<i>[Insert frequency specified in permit or admin. authorization]</i>	<i>[Insert sample type specified in permit or admin.]</i>	9VAC25-740-80.A.3
	Max. weekly average: ≤				

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Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
	40			<i>authorization]</i>	
Total Suspended Solids (mg/l)	Monthly average: < 30	9VAC25-740-70.A.2.f	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	9VAC25-740-80.A.3
	Max. weekly average: ≤ 45				
<i>[Include monitoring for Reclamation System Flow if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Reclamation System Flow (MGD) <sup>(7)</sup>	Monthly average: NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	GM10-2001, Rev. No. 1
	Monthly maximum: NL				
<i>[Add monitoring for monthly average total N and total P if included in the permit or authorization (admin. or emergency). If not, delete these parameters. Delete this row.]</i>					
Total Nitrogen (N) (mg/l)	Monthly average <sup>(8)</sup> : NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	GM10-2001, Rev. No. 1 and 9VAC25-790-960
Total Phosphorus (P) (mg/l)	Monthly average <sup>(8)</sup> : NL	GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	<i>[Insert sample type specified in permit or authorization]</i>	GM10-2001, Rev. No. 1 and 9VAC25-790-960
<i>[Add monitoring for calendar year average total N and total P if included in the permit or authorization (administrative or emergency). If not, delete these parameters. Delete this row.]</i>					
Total N <sup>†</sup> (mg/l)	Calendar year average <sup>(9)</sup> : NL	GM10-2001, Rev. No. 1	1/year	Calculated	GM10-2001, Rev. No. 1
Total P (mg/l)	Calendar year average <sup>(9)</sup> : NL	GM10-2001, Rev. No. 1	1/year	Calculated	GM10-2001, Rev. No. 1

GM10-2001, Rev. No. 1 = DEQ Water Guidance Memo No. 10-2001, Revision No. 1 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
 NL = No Limit

\* This bacteria standard was chosen among three possible standards that may apply in accordance with Guidance Memo No. 10-2001, Revision No. 1.  
*[Insert this footnote only if CBOD<sub>5</sub> is used instead of BOD<sub>5</sub> on the reclaimed water standards page in the permit or authorization (administrative or emergency).]*



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\*\* The standard for CBOD<sub>5</sub> was chosen instead of the standard for BOD<sub>5</sub> in accordance with Guidance Memo No. 10-2001, Revision No. 1.

Footnote Number and Description	Basis for Footnote
(1) Locations of points of compliance (POCs) for all reclaimed water standards that will be monitored.	9VAC25-740-70.B and 9VAC25-740-80.A.2
(2) The standards for bacteria must be met after disinfection.	9VAC25-740-70.A
(3) Instructions to calculate the monthly geometric mean for bacteria.	9VAC25-740-70.A
(4) Peak flow collection period for bacteria samples. This information is provided in 9VAC25-790-960 of the Sewage Collection and Treatment Regulations, which is referenced in 9VAC25-740-80.A.4.b of the Water Reclamation and Reuse Regulation. Although 9VAC25-790-960 lists sampling and monitoring frequencies for only fecal coliform bacteria, the same sampling and monitoring frequencies are applied to E. coli and enterococci in this guidance.	9VAC25-740-80.A.4.b, 9VAC25-790-960 and GM10-2001, Rev. No. 1
(5) TRC monitoring requirements for Level 2 reclamation systems.	9VAC25-740-70.A.2.c
(6) pH monitoring requirement for all reclamation systems.	GM10-2001, Rev. No. 1
(7) Statement of designated design flow for the reclamation system.	GM10-2001, Rev. No. 1
<i>[Use footnote 8 if monthly average total N and total P are included in the table above for reclaimed water standards and monitoring requirements. If not, delete this footnote. Delete this row.]</i>	
(8) Instructions to calculate monthly average total N and total P.	GM10-2001, Rev. No. 1
<i>[Use footnote 9 if calendar year average total N and total P are included in the table above for reclaimed water standards and monitoring requirements. If not, delete this footnote. Delete this row.]</i>	
(9) Instructions to calculate and report calendar year average total N and total P.	GM10-2001, Rev. No. 1

*[Insert these pages only if monitoring of reclaimed water in or from system storage will be required. See subdivision III.G.6.k.]*

## Reclaimed Water Standards for System Storage

### A. STANDARDS AND MONITORING REQUIREMENTS

#### 2. (or other number) Reclaimed water in or from system storage

- a. During the period beginning with the [**Choose one:** permit's effective date/permit's modification date/issuance of the administrative authorization/issuance of the emergency authorization/issuance of the Certificate to Operate (CTO)] for the [**Choose all that apply:** reclamation system/SRS/reclaimed water distribution system] and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for reuses specified in the Reclaimed Water Management Plan:

*[Insert the following table for monitoring of Level 1 reclaimed water in or from system storage.]*

Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Choose only bacteria standards that correspond with the type of bacteria monitored by the reclamation system or SRS producing the reclaimed water stored by the system storage facility, and delete this row and the other unused bacteria standards. Include a maximum bacteria standard, and where the bacteria will be monitored more often than once per month, include a monthly geometric mean bacteria standard.]</i>				
Fecal coliform <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 14	Colonies/100 ml	<i>[See subdivision III.G.6.k]</i>	Grab
	Maximum <sup>(4)</sup> : ≤ 49			
E. coli <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	Colonies/100 ml	<i>[See subdivision III.G.6.k]</i>	Grab
	Maximum <sup>(4)</sup> : ≤ 35			
Enterococci <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	Colonies/100 ml	<i>[See subdivision III.G.6.k]</i>	Grab
	Maximum <sup>(4)</sup> : ≤ 24			
<i>[Include TRC if chlorination of the reclaimed water occurs during reclamation and/or within the system storage facility, and delete this row.]</i>				
Total Residual Chlorine (TRC) <sup>(5)</sup>	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	mg/l	<i>[See subdivision III.G.6.k]</i>	Grab
<i>[Add other parameters on a case-by-case basis]</i>				

**[Insert the following table for monitoring of Level 2 reclaimed water in or from system storage.]**

Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Choose only bacteria standards that correspond with the type of bacteria monitored by the reclamation system or SRS producing the reclaimed water stored by the system storage facility, and delete this row and the other unused bacteria standards. Include a maximum bacteria standard, and where the bacteria will be monitored more often than once per month, include a monthly geometric mean bacteria standard.]</i>				
Fecal coliform <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 200	Colonies/100 ml	<i>[See subdivision III.G.6.k]</i>	Grab
	Maximum: ≤ 800 <sup>(4)</sup>			
E. coli <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 126	Colonies/100 ml	<i>[See subdivision III.G.6.k]</i>	Grab
	Maximum: ≤ 235 <sup>(4)</sup>			
Enterococci <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 35	Colonies/100 ml	<i>[See subdivision III.G.6.k]</i>	Grab
	Maximum: ≤ 104 <sup>(4)</sup>			
<i>[Include TRC if chlorination of the reclaimed water occurs during reclamation and/or within the system storage facility, and delete this row.]</i>				
Total Residual Chlorine (TRC) <sup>(5)</sup>	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	mg/l	<i>[See subdivision III.G.6.k]</i>	Grab
<i>[Add other parameters on a case-by-case basis]</i>				

**[Insert the following footnotes for all reclaimed water monitoring required in or from system storage.]**

- (1) Standards must be met at the point[s] of compliance (POC[s]) designated as *(insert sampling location numbers, letters or other identifiers)*. At a minimum, one POC shall be located in or from the system storage facility, and prior to the discharge of reclaimed water from the facility to a reclaimed water distribution system or directly to a reuse. **[Insert only where chlorination of reclaimed water in or from system storage occurs following and in addition to disinfection during reclamation (e.g., by chlorination, UV, etc.):** The POC for TRC shall follow the point at which chlorination and mixing in or from storage occurs.] Exact locations of system storage POCs shall be as specified in the **[Insert the applicable language:** *(for system storage facilities that will be part of the reclamation system or SRS to be authorized)* operations and maintenance manual for the (reclamation system/satellite reclamation system)/*(for system storage facilities that will be part of the reclaimed water distribution system to be authorized)* reclaimed water management (RWM) plan for the reclaimed water distribution system] covered by this **[Insert one:** permit / authorization]. **[Note:** A POC for system storage is a location at which samples will be collected in accordance with 9VAC25-740-70.B.2 and 9VAC25-740-80.D to demonstrate compliance with the standards in the permit. See also subdivisions [III.G.6.b](#) and [III.G.6.k](#).]
- (2) After disinfection. **[Note 1:** This footnote only applies where chlorination or other means of disinfecting the reclaimed water in or from system storage occurs following and in addition to disinfection during reclamation.]
- (3) For the purpose of calculating the geometric mean, bacteria analytical results below the detection level of the analytical method used shall be treated as values equal to the

detection level.

- (4) Where reclaimed water monitoring of the system storage facility indicates that the (**Choose all that apply:** maximum (**Insert name of bacterium**) standard has been exceeded / concentration of TRC has fallen below the TRC instantaneous minimum), the permittee shall implement measures contained in the contingency plan of the (**Choose one:** *for system storage facilities that will be part of the reclamation system or SRS to be authorized*) operations and maintenance manual / (*for system storage facilities that will be part of the reclaimed water distribution system to be authorized*) reclaimed water management (RWM) plan for the (**Choose one:** reclamation system / satellite reclamation system / reclaimed water distribution system) covered by this (**Choose one:** permit / authorization) to eliminate or minimize the potential to deliver inadequately treated reclaimed water from system storage to reuse.
- (5) TRC shall be monitored after a minimum contact and mixing time of 30 minutes. [*Note: This footnote only applies where chlorination of reclaimed water occurs in or from the system storage.*]
- (6) The volume of the system storage facility to which the above reclaimed water standards and monitoring requirements apply, is [xxx] gallons.
  - b. The monitoring and reporting period for the above parameters shall be [**Choose one:** monthly/bimonthly/quarterly/semiannually/annually/(*or indicate specific months*)]. Monitoring results of this period shall be included in a monitoring report submitted to the DEQ [*Regional Office*] by the 10th of the month following the period.

*[Insert the following that apply in the fact sheet of the permit or authorization (administrative or emergency)]*

**Bases for Reclaimed Water Standards and Monitoring Requirements in or from System Storage**

*[Insert the following table for monitoring of Level 1 reclaimed water in or from system storage.]*

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Choose only the bacteria standard specified in the permit or authorization (administrative or emergency). Delete unused bacteria standards and delete this row.]</i>					
Fecal coliform * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤14	9VAC25-740-80.D and 9VAC25-740-70.A.1.b(1)	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.4.a
	Maximum <sup>(4)</sup> : ≤ 49	9VAC25-740-80.D and GM10-2001, Rev. No. 1			
E. coli * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	9VAC25-740-80.D and 9VAC25-740-70.A.1.b(2)	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.4.a
	Maximum <sup>(4)</sup> : ≤ 35	9VAC25-740-80.D and GM10-2001, Rev. No. 1			
Enterococci * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	9VAC25-740-80.D and 9VAC25-740-70.A.1.b(3)	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.4.a
	Maximum <sup>(4)</sup> : ≤ 24	9VAC25-740-80.D and GM10-2001, Rev. No. 1			
<i>[Add this TRC standard if included in the permit authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Residual Chlorine (TRC) <sup>(5)</sup> (mg/l)	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	9VAC25-740-80.D and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D and GM10-2001, Rev. No. 1

*[Insert the following table for monitoring of Level 2 reclaimed water in or from system storage.]*

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Choose only the bacteria standard specified in the permit or authorization (administrative or emergency). Delete unused bacteria standards and delete this row.]</i>					
Fecal coliform <sup>*(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 200	9VAC25-740-80.D and 9VAC25-740-70.A.2.b(1)	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.4.b
	Maximum: ≤ 800 <sup>(4)</sup>	9VAC25-740-80.D and GM10-2001, Rev. No. 1			
E. coli <sup>*(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 126	9VAC25-740-80.D and 9VAC25-740-70.A.2.b(2)	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.4.b
	Maximum: ≤ 235 <sup>(4)</sup>	9VAC25-740-80.D and GM10-2001, Rev. No. 1			
Enterococci <sup>*(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 35	9VAC25-740-80.D and 9VAC25-740-70.A.2.b(3)	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.4.b
	Maximum: ≤ 104 <sup>(4)</sup>	9VAC25-740-80.D and GM10-2001, Rev. No. 1			
<i>[Add this TRC standard if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Residual Chlorine (TRC) <sup>(5)</sup> (mg/l)	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	9VAC25-740-80.D and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-80.D, GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.2.b

*[Insert the following notes and footnotes for all reclaimed water monitoring required in or from system storage.]*

GM10-2001, Rev. No. 1 = DEQ Water Guidance Memo No. 10-2001, Revision No. 1 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

\* This bacteria standard was chosen among three possible standards that may apply in accordance with Guidance Memo No. 10-2001, Revision. No. 1.

Footnote Number and Description	Basis for Footnote
(1) Locations of points of compliance (POCs) for all reclaimed water standards that will be monitored.	9VAC25-740-70.B.1 and 2, 9VAC25-740-80.A.2, and GM10-2001, Rev. No. 1
(2) The standards for bacteria must be met after disinfection.	9VAC25-740-80.D and 9VAC25-740-70.A, footnote 1
(3) To calculate monthly geometric mean for bacteria, analytical results less than detection level are reported as equal to detection level.	9VAC25-740-80.D and 9VAC25-740-70.A, footnote 2
(4) Implementation of contingency plans for system storage to eliminate or minimize the delivery of inadequately treated reclaimed water to reuse.	9VAC25-740-140.D.1.i and GM10-2001, Rev. No. 1
(5) Instructions for TRC monitoring following chlorination for Level 1 and Level 2 reclaimed water in or from system storage.	GM10-2001, Rev. No. 1 and 9VAC25-740-80.A.2
(6) Statement of system storage volume or capacity.	GM10-2001, Rev. No. 1

*[Insert these pages only if monitoring of reclaimed water in the reclaimed water distribution system will be required. See subdivision [III.G.6.l.](#)]*

## Reclaimed Water Standards for Reclaimed Water Distribution Systems

*[Insert this page only if monitoring of a reclaimed water distribution system is required. This applies to components of a reclaimed water distribution system, including but not limited to, reclaimed water mains, lateral pipelines and pump stations, or tank trucks used to haul reclaimed water (see subdivision [III.G.6.l.](#)). Monitoring of system storage that is part of a reclaimed water distribution system is addressed separately (see subdivision [III.G.6.k](#) and “Reclaimed Water Standards for System Storage” above).]*

### A. STANDARDS AND MONITORING REQUIREMENTS

#### 3. (or other number) Reclaimed water within the reclaimed water distribution system

*[Insert one of the following paragraphs that applies to the reclaimed water distribution system]*

a. **[For a distribution system that is covered by a permit independent of that issued to the reclamation system or SRS providing reclaimed water to the distribution system:** During the period beginning with the **[Choose one:** permit’s effective date/permit’s modification date] for the reclaimed water distribution system and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for reuses specified in the Reclaimed Water Management Plan:]

**[OR]**

a. **[For a distribution system that is covered by the same permit or authorization issued to the reclamation system or SRS providing reclaimed water to the distribution system:** During the period beginning with the **[Choose one:** permit’s effective date/permit’s modification date /issuance of the administrative authorization/issuance of the emergency authorization/issuance of the Certificate to Operate (CTO)] for the **[Choose all that apply:** reclamation system/satellite reclamation system] and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for reuses specified in the Reclaimed Water Management Plan:]

*[Insert the following table for monitoring of Level 1 reclaimed water in the reclaimed water distribution system.]*

Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Choose only bacteria standards that correspond with the type of bacteria monitored by the reclamation system or SRS providing reclaimed water to the distribution system, and delete this row and the other unused bacteria standards. Include a maximum bacteria standard, and where the bacteria will be monitored more often than once per month, include a monthly geometric mean bacteria standard.]</i>				
Fecal coliform <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 14	Colonies/100 ml	<i>[See subdivision <a href="#">III.G.6.l.</a>]</i>	Grab
	Maximum <sup>(4)</sup> : ≤ 49			
E. coli <sup>(2)</sup>	Monthly Geometric mean	Colonies/100 ml	<i>[See subdivision <a href="#">III.G.6.l.</a>]</i>	Grab



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Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
	<sup>(3)</sup> : ≤ 11			
	Maximum <sup>(4)</sup> : ≤ 35			
Enterococci <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	Colonies/100 ml	[See subdivision <a href="#">III.G.6.1</a> ]	Grab
	Maximum <sup>(4)</sup> : ≤ 24			
<i>[Include TRC if chlorination of the reclaimed water occurs during reclamation, prior to discharge to the distribution system, or within the distribution system, including system storage that is part of the distribution system.]</i>				
Total Residual Chlorine (TRC) <sup>(5)</sup>	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	mg/l	[See subdivision <a href="#">III.G.6.1</a> ]	Grab
<i>[Add this row and footnote (6) where TSS in the distribution system is known or expected to be elevated (see subdivision <a href="#">III.G.6.1</a>).]</i>				
Total Suspended Solids (TSS)	Monthly average: ≤ 10	mg/l	[See subdivision <a href="#">III.G.6.1</a> ] <sup>(6)</sup>	Grab
	Max. weekly average: ≤ 15			
<i>[Add other parameters on a case-by-case basis]</i>				

***[Insert the following table for monitoring of Level 2 reclaimed water in the reclaimed water distribution system.]***

Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Choose only bacteria standards that correspond with the type of bacteria monitored by the reclamation system or SRS providing reclaimed water to the distribution system, and delete this row and the other unused bacteria standards. Include a maximum bacteria standard, and where the bacteria will be monitored more often than once per month, include a monthly geometric mean bacteria standard.]</i>				
Fecal coliform <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 200	Colonies/100 ml	[See subdivision <a href="#">III.G.6.1</a> ]	Grab
	Maximum <sup>(4)</sup> : ≤ 800			
E. coli <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 126	Colonies/100 ml	[See subdivision <a href="#">III.G.6.1</a> ]	Grab
	Maximum <sup>(4)</sup> : ≤ 235			
Enterococci <sup>(2)</sup>	Monthly Geometric mean <sup>(3)</sup> : ≤ 35	Colonies/100 ml	[See subdivision <a href="#">III.G.6.1</a> ]	Grab
	Maximum <sup>(4)</sup> : ≤ 104			

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Parameters	Standard <sup>(1)</sup>	Units	Frequency	Sample Type
<i>[Include TRC if chlorination of the reclaimed water occurs during reclamation, prior to discharge to the distribution system, or within the distribution system, including system storage that is part of the distribution system.]</i>				
Total Residual Chlorine (TRC) <sup>(5)</sup>	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	mg/l	<i>[See subdivision <a href="#">III.G.6.l</a>]</i>	Grab
<i>[Add this row and footnote (6) where TSS in the distribution system is known or expected to be elevated (see subdivision <a href="#">III.G.6.l</a>).]</i>				
Total Suspended Solids (TSS)	Monthly average: ≤ 30	mg/l	<i>[See subdivision <a href="#">III.G.6.l</a>]</i> <sup>(6)</sup>	Grab
	Max. weekly average: ≤ 45			
<i>[Add other parameters on a case-by-case basis]</i>				

***[Insert the following footnotes for all reclaimed water monitoring required in the reclaimed water distribution system.]***

- (1) Standards must be met at the point[s] of compliance (POC[s]) for the reclaimed water distribution system, designated as (*insert sampling location numbers, letters or other identifiers*). **[Insert where chlorination of reclaimed water within the distribution system will occur:** The POC for TRC shall follow the point at which chlorination and mixing within the distribution system occurs.] Exact locations of POCs shall be as specified in the reclaimed water management (RWM) plan for the distribution system covered by this **[Insert one:** permit / authorization]. **[Note:** A distribution system POC is a location at which samples will be collected in accordance with 9VAC25-740-70.B.2 and 9VAC25-740-100.C.1.h to demonstrate compliance with the standards in the permit. See also subdivisions [III.G.6.b](#) and [III.G.6.l](#).]
- (2) After disinfection. **[Note 1:** This footnote only applies where chlorination or other means of disinfecting the reclaimed water will occur within the distribution system.]
- (3) For the purpose of calculating the geometric mean, bacteria analytical results below the detection level of the analytical method used shall be treated as values equal to the detection level.
- (4) Where reclaimed water monitoring of the distribution system indicates that the **[Choose all that apply:** maximum standard for (**Insert name of bacterium**) has been exceeded / concentration of TRC has fallen below the TRC instantaneous minimum], the permittee shall implement contingency measures contained in the reclaimed water management (RWM) plan of the distribution system to maintain reclaimed water quality that complies with (this/these) standard(s) in the system.
- (5) TRC shall be monitored after a minimum contact and mixing time of 30 minutes. **[Note:** This footnote only applies where chlorination of reclaimed water occurs within the distribution system.]

**[Insert this footnote only if TSS monitoring will be included in the standards and monitoring requirements table for the distribution system:**

- (6) The monitoring frequency for TSS may be reduced where results over a minimum monitoring period of **[Insert representative period for monitoring** (e.g., one year, two years, etc.)] consistently demonstrate that TSS complies with the reclaimed water TSS standards indicated above.
  - b. The monitoring and reporting period for the above parameters shall be **[Choose one:** monthly/bimonthly/quarterly/semiannually/annually/(*or indicate specific months*)]. Monitoring results of this period shall be included in a monitoring report submitted to the DEQ [*Regional Office*] by the 10th of the month following the period.

*[Insert the following that apply in the fact sheet of the permit or authorization (administrative or emergency)]*

**Bases for Reclaimed Water Standards and Monitoring Requirements in the Reclaimed Water Distribution System**

*[Insert the following table for monitoring of Level 1 reclaimed water in the reclaimed water distribution system.]*

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Choose only the bacteria standard specified in the permit or authorization (administrative or emergency). Delete unused bacteria standards and delete this row.]</i>					
Fecal coliform * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤14	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.1.b(1) and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Maximum <sup>(4)</sup> : ≤ 49	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1			
E. coli * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.1.b(2) and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Maximum <sup>(4)</sup> : ≤ 35	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1			
Enterococci * <sup>(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : ≤ 11	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.1.b(3) and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Maximum <sup>(4)</sup> : ≤ 24	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1			
<i>[Add the TRC standard if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					

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Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
Total Residual Chlorine (TRC) <sup>(5)</sup> (mg/l)	Instantaneous minimum <sup>(4)</sup> : $\geq 1.0$	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
<i>[Add the TSS standard if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Suspended Solids (TSS) (mg/l)	Monthly average: $\leq 10$	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i> <sup>(6)</sup>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Max. weekly average: $\leq 15$				

*[Insert the following table for monitoring of Level 2 reclaimed water in the reclaimed water distribution system.]*

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
<i>[Choose only the bacteria standard specified in the permit or authorization (administrative or emergency). Delete unused bacteria standards and delete this row.]</i>					
Fecal coliform <sup>*(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : $\leq 200$	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.2.b(1) and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Maximum <sup>(4)</sup> : $\leq 800$	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1			
E. coli <sup>*(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : $\leq 126$	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.2.b(2) and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Maximum <sup>(4)</sup> : $\leq 235$	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1			
Enterococci <sup>*(2)</sup> (Colonies/100 ml)	Monthly Geometric mean <sup>(3)</sup> : $\leq 35$	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.2.b(3)	<i>[Insert frequency specified in permit or</i>	Grab	9VAC25-740-100.C.1.h and

Water Guidance Memo No. 10-2001, Revision No. 1  
 Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
 Attachment A

Parameters and Units	Standard <sup>(1)</sup>	Basis for Parameter and Standard	Frequency	Sample Type	Basis for Frequency and Sample Type
		and GM10-2001, Rev. No. 1	<i>authorization]</i>		GM10-2001, Rev. No. 1
	Maximum <sup>(4)</sup> : ≤ 104	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1			
<i>[Add the TRC standard if included in the permit authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Residual Chlorine (TRC) <sup>(5)</sup> (mg/l)	Instantaneous minimum <sup>(4)</sup> : ≥ 1.0	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
<i>[Add the TSS standard if included in the permit or authorization (administrative or emergency). If not, delete the parameter. Delete this row.]</i>					
Total Suspended Solids (TSS) (mg/l)	Monthly average: ≤ 30	9VAC25-740-100.C.1.h, 9VAC25-740-70.A.2.f and GM10-2001, Rev. No. 1	<i>[Insert frequency specified in permit or authorization]</i> <sup>(6)</sup>	Grab	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
	Max. weekly average: ≤ 45				

***[Insert the following notes and footnotes for all reclaimed water monitoring required in the reclaimed water distribution system.]***

GM10-2001, Rev. No. 1 = DEQ Water Guidance Memo No. 10-2001, Revision No. 1 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

\* This bacteria standard was chosen among three possible standards that may apply in accordance with Guidance Memo No. 10-2001, Revision. No. 1.

Footnote Number and Description	Basis for Footnote
<sup>(1)</sup> Locations of points of compliance (POCs) for all reclaimed water standards that will be monitored.	9VAC25-740-70.B.1 and 2, 9VAC25-740-80.A.2 and GM10-2001, Rev. No. 1
<sup>(2)</sup> The standards for bacteria must be met after disinfection.	9VAC25-740-100.C.1.h and 9VAC25-740-70.A, footnote 1
<sup>(3)</sup> To calculate monthly geometric mean for bacteria, analytical results less than detection level are reported as equal to detection level.	9VAC25-740-100.C.1.h, and 9VAC25-740-70.A, footnote 2

Water Guidance Memo No. 10-2001, Revision No. 1  
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Footnote Number and Description	Basis for Footnote
<sup>(4)</sup> Implementation of contingency measures to maintain compliant reclaimed quality in reclaimed water distribution systems for the intended reuses.	9VAC25-740-100.C.1.h and GM10-2001, Rev. No. 1
<sup>(5)</sup> Instructions for TRC monitoring following chlorination for Level 1 or Level 2 reclaimed water in the reclaimed water distribution system.	9VAC25-740-70.B.1, 9VAC25-740-80.A.2 and GM10-2001, Rev. No. 1
<i>[Use footnote 6 if included in the table above for reclaimed water standards and monitoring requirements. If not, delete this footnote. Delete this row.]</i>	
<sup>(6)</sup> Conditional option to reduce TSS monitoring.	GM10-2001, Rev. No. 1

**Conditions applicable to all water reclamation and reuse projects**

1. The following are prohibited:
  - a. Direct potable reuse;
  - b. The reuse of reclaimed water distributed to one-family or two-family dwellings, except for reuses of reclaimed water outside of and on the same property as one-family or two-family dwellings where the reclaimed water is not distributed to such reuses by way of the plumbing within the dwellings;
  - c. The reuse of reclaimed water to fill residential swimming pools, hot tubs or wading pools;
  - d. The reuse of reclaimed water for food preparation or incorporation as an ingredient into food or beverage for human consumption;
  - e. Bypass of untreated or partially treated wastewater from the reclamation system or any intermediate unit process to the point of reuse unless the bypass complies with standards and requirements specified in this [**Choose one:** permit / authorization] and is for essential maintenance to assure efficient operation; and
  - f. The return of reclaimed water to the reclaimed water distribution system after the reclaimed water has been delivered to an end user.

**(Include this where the project to be authorized includes a reclamation system, SRS or conjunctive system.)**

- g. Reduction of the discharge from a VPDES permitted treatment works due to diversion of source water flow for reclamation and reuse such that the 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.

**Basis:** 9VAC25-740-50.B

2. There shall be no nuisance conditions (e.g., ponded water that attracts mosquitoes or other vectors, strong odors that the Department determines are the subject of frequent and wide spread complaints from the surrounding community, and any condition determined by a court of law to be a nuisance condition) resulting from the distribution, storage or use of reclaimed water.

**Basis:** 9VAC25-740-170.D

3. Reclamation and Reuse Reopener. The Board may modify or revoke and reissue this [Choose one: permit / authorization] where any standards or requirements for only water reclamation and reuse contained herein will (i) be modified to be consistent with amendments to applicable standards or requirements for water reclamation and reuse promulgated under State Water Control Law or regulations promulgated there under, including the Water Reclamation and Reuse Regulation (9VAC25-740), or (ii) be subject to a modification other than that described in 9VAC25-740-30.B.2.a.

**Basis:** [**Choose only one of the following two statements that applies and delete “[OR]”:**  
(For a VPA permit or emergency authorization associated with an existing VPA permit) The basis of this condition is 9VAC25-32-220, which allows staff initiated modifications to VPA permits in response to changes to State Water Control Law or DEQ regulations related to water reclamation and reuse.

**[OR]**

(For a VPDES permit, or an administrative or emergency authorization associated with an existing

Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
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*VPDES permit*) DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance  
for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.]



### **Conditions applicable to reclamation systems, SRSs and conjunctive systems**

**(Reuse Diversion Restriction and Diversion Management. Applicable where: (i) the CIA for the project, if required, indicates that it has the potential to cause significant adverse impacts to beneficial uses, and (ii) OWS has developed the condition(s) to avoid these impacts (see subdivision III.K.1).**

4. Reuse Diversion Restriction and Diversion Management. **[Insert the condition(s) in the permit or authorization that are provided by OWS to avoid significant adverse impacts to beneficial uses.]**  
**Basis:** 9VAC25-740-100.B.6, 9VAC25-740-30.B.2 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable to a reclamation system, SRS, or a system storage facility that discharges intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility or directly to a reuse, and for which there are reclaimed water standards and monitoring requirements contained in Part I.A of the permit.)**

5. For the discharge of reclaimed water from the [**Choose all that apply:** reclamation system/satellite reclamation system/system storage facility] to a reclaimed water distribution system, a non-system storage facility or directly to a reuse of the reclaimed water at any time for any duration within a reporting period, the permittee shall monitor the reclaimed water in accordance with Part I.A and submit monitoring report for the discharge.

**Basis:** 9VAC25-740-80.C state that “A reclamation system that produces reclaimed water intermittently or seasonally shall monitor only when the reclamation system discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.” This also applies to reclamation systems and SRSs that “produce” reclaimed water throughout the year and, as applicable, to their associated system storage facilities that require monitoring in accordance with 9VAC25-740-80.D, where the reclamation systems, SRSs or system storage facilities discharge only intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.

6. Should reclaimed water reach the corrective action threshold (CAT) for [**Choose all that apply:** (applicable to only Level 1) turbidity/(applicable to Level 1 or 2 where chlorination will be used for disinfection) TRC] specified in Part I.A of this [**Choose one:** authorization/permit], the operator of the reclamation system shall immediately initiate a review of treatment operations and data to identify the cause of the CAT monitoring results to bring the reclaimed water back into compliance with the standards in Part I.A. Resampling or diversion shall occur within one hour of first reaching the CAT. Procedures for resampling, operational review and diversion shall be as described in the approved operations and maintenance manual for the [**Choose one:** reclamation system/satellite reclamation system]. If subsequent monitoring results of the resamples collected within one hour of the first CAT monitoring results for [**Choose all that apply:** turbidity/TRC] continue to reach the CAT, the reclaimed water shall be considered substandard or reject water and shall be [**Choose all that apply:** diverted to storage for subsequent additional treatment or retreatment/discharged to another permitted reuse system requiring a lower level of treatment not less than Level 2/discharged to a VPDES permitted effluent disposal system provided the reject water meets the effluent limits of the permit]. If the reclamation system is unattended, the diversion of reject water shall be initiated and performed with automatic equipment. There shall be no automatic restarts of distribution to reuse until the treatment problem is corrected. Failure to divert the substandard or reject water after one hour of CAT monitoring results shall be considered a violation of this [**Choose one:** authorization/permit]. Upon resuming discharge of reclaimed water to the reclaimed water distribution system for which the CAT was reached, resampling for [**Choose all that apply:** turbidity/TRC] shall occur within one

hour to verify proper treatment.

**Basis:** 9VAC25-740-70.C.1

7. Should the reclaimed water reach the CAT for [**Choose one:** fecal coliform/E. coli/enterococci] specified in Part I.A of this [**Choose one:** authorization/permit] for [**Choose all that apply:** Level 1/Level 2] reclaimed water, the operator of the [**Choose one:** reclamation system/satellite reclamation system] shall immediately initiate a review of treatment operations and data to identify the cause of the CAT monitoring results to bring the reclaimed water back into compliance with the bacterial standards. Procedures for operational review shall be as described in the approved operations and maintenance manual for the [**Choose one:** reclamation system/satellite reclamation system]. Two consecutive bacterial monitoring results that reach the CAT of the standards shall be considered a violation of this [**Choose one:** authorization/permit].

**Basis:** 9VAC25-740-70.C.2

**(This condition may be used instead, as a footnote on the reclaimed water standards page in Part I.A.)**

8. Failure to resample after determination that monitoring results are not in compliance with the CAT standards for reclaimed water in Part I.A, or to [**Choose all that apply:** divert/discharge] substandard or reject water in accordance with Part I.B.6 [*or other number that corresponds to condition 6*] shall be deemed a violation of this [**Choose one:** authorization/permit].

**Basis:** 9VAC25-740-70.C.3

**(Applicable where calendar year average total N and total P will be calculated and reported per the Standards and Monitoring Requirements for reclaimed water under Part I.A of the permit or authorization.)**

9. The calendar year average total nitrogen (N) and total phosphorus (P) in the reclaimed water shall be calculated for each calendar year and reported in accordance with Part I.A of this [**Choose one:** permit/authorization]. These values shall be calculated as follows:

$$AC_{avg} = (\sum_{(Jan-Dec)} MC_{avg}) \div 12$$

Where:

$AC_{avg}$  = calendar year average concentration (mg/l)

$MC_{avg}$  = monthly average concentration (mg/l)

For total P, all daily concentration data below the quantification level (QL) for the analytical method used shall be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method shall be treated as reported.

For total N, if none of the daily concentration data for the individual components of total N (i.e., TKN, nitrates and nitrogen) are equal to or above the QL for the respective analytical method used for each component, the daily total N concentration value reported shall equal one half of the largest QL used for the respective components. If one of the data is equal to or above the QL for the respective analytical method used, the daily total N concentration value shall be considered that data point as reported. If more than one of the data is above the QL for the respective analytical method used, the daily total N concentration value shall be considered equal to the sum of these data points as reported.

**Basis:** This special condition is intended to ensure that the calculation of calendar year average total N and total P in reclaimed water is consistent with calculations for these same parameters in treated effluent for point source discharge as described in DEQ Water Guidance Memo No. 07-2008, Amendment No. 2 - Permitting Considerations for Facilities in the Chesapeake Bay Watershed. This

will simplify reporting requirements for permittees that maintain a discharge to surface waters with nutrient limits and produce BNR reclaimed water for reuse.

**(Applicable where UV radiation will be used in lieu of chlorination to disinfect the reclaimed water. For reduced UV radiation design dosages, see subdivision III.O.1 for details. Optionally, this condition may be made a limitation on the reclaimed water standards and monitoring requirements page in Part I.A.)**

10. Where ultraviolet (UV) radiation will be used in lieu of chlorination for disinfection of reclaimed water produced by the [**Choose one:** reclamation system/satellite reclamation system], the UV design dosage shall be [**Choose one:** (for Level 1 reclaimed) greater than or equal to 100,000 uWsec/cm<sup>2</sup> (MS-2 dose) at peak flow and a minimum transmittance of 55 % at 254 nm / (Optionally for Level 1 reclaimed, a lower design dose may be inserted if approved) / (for Level 2 reclaimed) a minimum average of 50,000 uWsec/cm<sup>2</sup> at peak flow and a minimum transmittance of 65 % at 253.7 nm after the UV lamps have been in operation 7,500 hours or more / (Optionally for Level 2, a lower design dose may be inserted if approved)].

**Basis:** [**Choose one:** (for UV disinfection of Level 1 reclaimed water) 9VAC25-740-110.A.2.a / (for UV disinfection of Level 2 reclaimed water) 9VAC25-740-110.A.2.b, 9VAC25-790-770] and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable to Level 1 reclamation systems and SRSs. Choose only one of the following two paragraphs that applies and delete “[OR]”)**

11. **(Where UV is used for disinfection)** Should the on-line turbidity meter for the [**Choose all that apply:** reclamation system/satellite reclamation system] go out of service for either planned or unplanned repair, samples shall be manually collected for turbidity analysis at intervals no greater than four hours in duration, up to a maximum of five days. Following the period of repair (not to exceed five days), continuous, on-line monitoring with a turbidity meter shall resume.

**Basis:** 9VAC25-740-80.A.1

[OR]

11. **(Where chemicals with measurable residual are used for disinfection)** Should the on-line turbidity meter or the on-line disinfectant monitoring equipment for the [**Choose all that apply:** reclamation system/satellite reclamation system] go out of service for either planned or unplanned repair, samples shall be manually collected for turbidity or disinfectant analysis, respectively, at intervals no greater than four hours in duration, up to a maximum of five days. Following the period of repair (not to exceed five days), continuous, on-line turbidity metering and disinfectant monitoring shall resume.

**Basis:** 9VAC25-740-80.A.1.b and 9VAC25-740-80.A.2.a

**(Applicable to reclamation systems and SRSs that will require a classification and assignment of an operator in responsible charge (see subdivision III.G.4.a).)**

12. **Operator requirements.** The classification[s] of the operator[s] for the [**Choose all that apply:** reclamation system/satellite reclamation system/conjunctive system] [is/are] \_\_\_\_\_. The permittee shall employ or contract at least one operator who holds a current Class \_\_\_\_\_ license and the license shall be issued in accordance with Title 54.1 of the Code of Virginia and the regulations of the Board for Waterworks and Wastewater Works Operators. The permittee shall notify the DEQ [*Regional Office*] in writing when compliance with this requirement is not achieved or maintained. The notification shall include a statement explaining the cause for non-compliance with this requirement and a prompt schedule for achieving compliance.

The reclamation system shall be manned while in operation and under the supervision of the Class \_\_\_ operator unless the system is equipped with remote monitoring and, as applicable, automated diversion of substandard or reject water in accordance with Part I.B.6 [*or other number that corresponds to condition 6*] of this [**Choose one:** authorization/permit].

**Basis:** 9VAC25-740-130.A

**(Applicable to most Level 1 reclamation systems, SRSs and pump stations considered part of these systems, and to other similar non-Level 1 (e.g., industrial wastewater reclamation) systems and pump stations as discussed in subdivision III.G.4.b.)**

13. Reliability Class I is required for the [**Choose all that apply:** reclamation system/satellite reclamation system/and pump station(s) considered part of the system] covered by this [**Choose one:** permit/authorization]. DEQ may approve alternative measures to achieve Reliability Class I following submittal by the permittee of an engineering report, using accepted and appropriate engineering principles and practices, demonstrating that the alternative measures will achieve a level of reliability equivalent to Reliability Class I.

**Basis:** 9VAC25-740-130.B and E

**(O&M Manual for reclamation systems and SRSs operating independent of the WWTW(s) or sewage collection systems that provide source water to these systems for reclamation. Where a reclamation system is authorized under the permit of a WWTW that provides source water to the reclamation system or is part of a conjunctive system, the O&M manual for the reclamation system may be made a part of the O&M manual for the WWTW. In this case, use condition 15 instead.)**

14. Within 90 days of placing the [**Choose one:** new/modified] [**Choose all that apply:** reclamation system/satellite reclamation system] covered by this [**Choose one:** permit/authorization] into operation, the permittee shall submit a new or revised operations and maintenance (O&M) manual for the system[s] to the DEQ [*Regional Office*] for approval. The O&M manual is an enforceable part of this [**Choose one:** permit/authorization] that shall reflect the practices and procedures followed by the permittee to ensure compliance with the [**Choose one:** permit/authorization].

The permittee shall ensure that the O&M manual is maintained current. Any changes in the practices and procedures followed by the permittee shall be documented and submitted to the DEQ [*Regional Office*] for approval within 90 days of the effective date of the changes, incorporated into the existing O&M manual, and made an enforceable part of this [**Choose one:** permit/authorization].

The O&M manual for the [**Choose all that apply:** reclamation system/satellite reclamation system] shall be maintained at the site of the facility and shall, at a minimum, contain the following:

- a. A description of unit treatment processes within the [**Choose all that apply:** reclamation system/satellite reclamation system] and step-by-step instructions for the operation of these processes;
- b. For all appurtenances associated with the [**Choose all that apply:** reclamation system/satellite reclamation system] (i.e., storage facilities, pump stations, distribution system, etc.), a description of each, step-by-step instructions for their operation, and a description of their maintenance;
- c. Routine maintenance and schedules of maintenance for each unit treatment process in the system[s];

**(Applicable to Level 1 reclamation systems or SRSs that will use UV for disinfection)**

- d. Procedures to establish and monitor the operational dose of the UV disinfection system for the

[**Choose all that apply:** reclamation system/satellite reclamation system].

**(Applicable to only systems that will produce Level 1 reclaimed water**

- e. The criteria and equipment used to make continuous determinations of the acceptability of the reclaimed water being produced and alarm set points for parameters measured by continuous on-line monitoring equipment;
- f. Descriptions of the following that shall comply with the standards and conditions of this [**Choose one:** permit/authorization]:
  - (1) Reclaimed water sampling and monitoring procedures and equipment. This shall include, but is not limited to, a description of sample handling, preservation and chemical analyses; and calibration and schedules of calibration for monitoring equipment;
  - (2) The sampling locations for points of compliance (POCs) [**Insert if reclaimed water monitoring will be required in Part I.A for system storage that is part of the reclamation system or SRS:** , including but not limited to, POCs identified in Part I.A for system storage that requires monitoring and is part of the (**Choose all that apply:** reclamation system/satellite reclamation system)]; and
  - (3) Control system, alarm functions, set points for alarms, record keeping and reports;
- g. Hours of [**Choose all that apply:** reclamation system/satellite reclamation system] operation, hours that the system will be staffed, procedures to be followed by the staff during a period when a licensed operator in responsible charge is not present at the system, and training of the staff regarding operation and maintenance of the system;
- h. The physical steps and procedures to be followed by the operator when substandard water is being produced, including resampling and operational review required in accordance with Part I.B.[**Choose all that apply:** 6/7 (*or other numbers that corresponds to conditions 6 and 7*)] of this [**Choose one:** permit/authorization];
- i. The physical steps and procedures to be followed by the operator when the treatment works returns to normal operation and acceptable quality reclaimed water is again being produced;
- j. Responsible officials and their duties, roles and contact information;
- k. Information necessary for the proper management of sludge or residuals from reclamation treatment [*Note: This should be information in addition to or not specifically requested in the application for a VPDES or VPA permit*];
- l. A contingency plan to eliminate or minimize the potential to deliver untreated or inadequately treated water that does not comply with applicable reclaimed water standards contained in Part I.A from the [**Choose all that apply:** reclamation system/SRS/(*include only where system storage is part of the reclamation system or SRS, and requires monitoring*) or associated system storage] to reuse areas. The plan shall, among other things:
  - (1) Identify persons responsible for implementing the contingency plan and their contact information;

**[(Add for reclamation systems and SRSs that produce and, in some cases, directly provide reclaimed water for reuses that are other than IPR and require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact)**

(2) Reference and be coordinated with the education and notification program contained in the approved RWM Plan for any release of untreated or inadequately treated water (**Choose all that apply:** to the reclaimed water distribution system/directly to end users);]

**(Applicable to Level 1 reclamation systems or SRSs that will use UV for disinfection)**

(3) Describe for the UV disinfection system, action to be taken in response to:

- (a) Lamp breakage and possibly mercury release;
- (b) Alarms for specific operating conditions of the system (e.g., low operational UV dose, low UV transmittance, high turbidity or low flow);
- (c) Failure of the upstream treatment processes or the UV disinfection system; and
- (d) Power supply interruptions where an uninterruptable power supply is not provided for the UV disinfection system.

**(Applicable to Level 1 reclamation systems that will use UV for disinfection)**

(4) Describe activation of standby UV equipment to include either a standby reactor for each reactor train or a standby reactor train, or activation of an alternative to standby UV equipment, such as adequate storage or other contingency arrangements, that shall manage the substandard water flow during UV disinfection failure.

- m. Location of back up or replacement parts critical to the operation of unit treatment processes within the [**Choose all that apply:** reclamation system/satellite reclamation system];
- n. A list of chemicals and materials in storage areas and the location of storage areas; and
- o. A plan for inactivation or closure of the [**Choose all that apply:** reclamation system/satellite reclamation system] specifying what steps will be taken to protect the environment and public health. Inactivation or closure may include, but is not limited to, replacement through expansion or upgrade of the existing [**Choose all that apply:** reclamation system/satellite reclamation system] or permanent closure of the system[s]. At a minimum, the plan shall contain the following:
  - (1) A list and characterization (i.e., volume, percent solids, nutrient content, etc.) of residual reclaimed water, reject water, solids and waste products that are anticipated to be present at the [**Choose all that apply:** reclamation system/satellite reclamation system] site[s] upon inactivation or closure; and a description of treatment, removal and final disposition of the same; and
  - (2) Supplemental information. Within 90 days of initiating any activities to inactivate or close the [**Choose all that apply:** reclamation system/satellite reclamation system], the permittee shall submit to the DEQ [*Regional Office*] for approval the following information to supplement the previously approved plan:

- (a) Verification of elimination of sources of wastewater and/or an alternate treatment scheme;
- (b) A description of removal, demolition and/or disposal of structures, equipment, piping and appurtenances;
- (c) A description of site fill material, grading, and erosion and sediment control;
- (d) A description of access control during inactivation or closure;
- (e) Proposed land use (post closure) of the site[s];
- (f) Proposed dates for beginning and completing the work; and
- (g) Any new or additional information that modifies procedures or information provided in the previously approved inactivation or closure plan.

**Basis:** 9VAC25-740-120.B.3.f, 9VAC25-740-140.A, D.1 and F; [Add this if UV will used for disinfection: and “Ultraviolet Disinfection: Guidelines for Drinking Water and Water Reuse, 2<sup>nd</sup> Ed.” (NWRI, 2003);] [Add this only if location information regarding POCs for system storage is required: 9VAC25-740-70.B.2;] and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable to a conjunctive system or to a reclamation systems system covered by the same permit or an authorization associated with the permit issued to a WWTW that provides flow to the reclamation system, and the O&M Manual for the reclamation system will be made a part of the O&M Manual for the WWTW)**

15. Within 90 days of placing the [**Choose one:** new/modified] reclamation system into operation, the permittee shall submit to the DEQ [*Regional Office*] for approval changes to the operations and maintenance (O&M) manual for the [*Name of WWTW*] addressing the operation and maintenance of the reclamation system. These changes shall reflect the practices and procedures followed by the permittee to ensure compliance with this [**Choose one:** permit/authorization], be incorporated into the existing O&M manual, and be made an enforceable part of the [**Choose one:** permit/authorization].

**(Insert this paragraph if not already part of the O&M Manual special condition in the permit for the WWTW or if the reclamation system is covered by an authorization associated with permit)** The permittee shall ensure that the O&M manual is maintained current. Any changes in the practices and procedures followed by the permittee shall be documented and submitted to the DEQ [*Regional Office*] for approval within 90 days of the effective date of the changes, incorporated into the existing O&M manual, and made an enforceable part of this [**Choose one:** permit/authorization].

The O&M manual shall be maintained at the site of the [*Name of WWTW*] and reclamation system and shall, at a minimum, contain the following related to the operations and maintenance of the reclamation system:

- a. A description of unit treatment processes within the reclamation system and step-by-step instructions for the operation of these processes;
- b. For all appurtenances associated with the reclamation system (i.e., storage facilities, pump stations, distribution system, etc.), a description of each, step-by-step instructions for their operation, and a description of their maintenance;

- c. Routine maintenance and schedules of maintenance for each unit treatment process in the system;

**(Applicable to Level 1 reclamation systems that will use UV for disinfection)**

- d. Procedures to establish and monitor the operational dose of the UV disinfection system for the reclamation system.

**(Applicable to only systems that will produce Level 1 reclaimed water)**

- e. The criteria and equipment used to make continuous determinations of the acceptability of the reclaimed water being produced and alarm set points for parameters measured by continuous on-line monitoring equipment;
- f. Descriptions of the following that shall comply with the standards and conditions of this [**Choose one:** permit/authorization]:
  - (1) Reclaimed water sampling and monitoring procedures and equipment. This shall include, but is not limited to, a description of sample handling, preservation and chemical analyses; and calibration and schedules of calibration for monitoring equipment;
  - (2) The sampling locations for points of compliance (POCs) [**Insert if reclaimed water monitoring will be required in Part I.A for system storage that is part of the reclamation system or SRS:** , including but not limited to, POCs identified in Part I.A for system storage that requires monitoring and is part of the (**Choose all that apply:** reclamation system/satellite reclamation system)]; and
  - (3) Control system, alarm functions, set points for alarms, record keeping and reports;
- g. Hours of reclamation system operation, hours that the system will be staffed, procedures to be followed by the staff during a period when a licensed operator in responsible charge is not present at the system, and training of the staff regarding operation and maintenance of the system;
- h. The physical steps and procedures to be followed by the operator when substandard water is being produced, including resampling and operational review required in accordance with Part I.B.[**Choose all that apply:** 6/7 (*or other numbers that corresponds to conditions 6 and 7*)] of this [**Choose one:** permit/authorization];
- i. The physical steps and procedures to be followed by the operator when the treatment works returns to normal operation and acceptable quality reclaimed water is again being produced;
- j. Responsible officials and their duties, roles and contact information;
- k. Information necessary for the proper management of sludge or residuals from reclamation treatment [**Note:** *This should be information in addition to or not specifically requested in the application for a VPDES or VPA permit*];
- l. A contingency plan to eliminate or minimize the potential to deliver untreated or inadequately treated water that does not comply with applicable reclaimed water standards contained in Part I.A from the [**Choose all that apply:** reclamation system/(*include only where system storage is part of the reclamation system or SRS, and requires monitoring*) or associated system storage] to



reuse areas. The plan shall, among other things:

- (1) Identify persons responsible for implementing the contingency plan and their contact information;

**[(Add for reclamation systems that produce and, in some cases, directly provide reclaimed water for reuses that are other than IPR; and require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact.)**

- (2) Reference and be coordinated with the education and notification program contained in the approved RWM Plan for any release of untreated or inadequately treated water (**Choose all that apply:** to the reclaimed water distribution system/directly to end users);]

**(Applicable to Level 1 reclamation systems that will use UV for disinfection)**

- (3) Describe for the UV disinfection system, action to be taken in response to:
  - (a) Lamp breakage and possibly mercury release;
  - (b) Alarms for specific operating conditions of the system (e.g., low operational UV dose, low UV transmittance, high turbidity or low flow);
  - (c) Failure of the upstream treatment processes or the UV disinfection system; and
  - (d) Power supply interruptions where an uninterruptable power supply is not provided for the UV disinfection system.

**(Applicable to Level 1 reclamation systems that will use UV for disinfection)**

- (4) Describe activation of standby UV equipment to include either a standby reactor for each reactor train or a standby reactor train, or activation of an alternative to standby UV equipment, such as adequate storage or other contingency arrangements, that shall manage the substandard water flow during UV disinfection failure.
- m. Location of back up or replacement parts critical to the operation of unit treatment processes within the reclamation system;
  - n. A list of chemicals and materials in storage areas and the location of storage areas; and
  - o. A plan for inactivation or closure of the reclamation system specifying what steps will be taken to protect the environment and public health. Inactivation or closure may include, but is not limited to, replacement through expansion or upgrade, or permanent closure of the existing system. At a minimum, the plan shall contain the following:
    - (1) A list and characterization (i.e., volume, percent solids, nutrient content, etc.) of residual reclaimed water, reject water, solids and waste products that are anticipated to be present at the reclamation system site upon inactivation or closure, and a description of treatment, removal and final disposition of the same; and
    - (2) Supplemental information. Within 90 days of initiating any activities to inactivate or close the reclamation system, the permittee shall submit to the DEQ [*Regional Office*] for approval the following information to supplement the previously approved plan:

- (a) Verification of elimination of sources of wastewater and/or an alternate treatment scheme;
- (b) A description of removal, demolition and/or disposal of structures, equipment, piping and appurtenances;
- (c) A description of site fill material, grading, and erosion and sediment control;
- (d) A description of access control during inactivation or closure;
- (e) Proposed land use (post closure) of the site;
- (f) Proposed dates for beginning and completing the work; and
- (g) Any new or additional information that modifies procedures or information provided in the previously approved inactivation or closure plan.

**Basis:** 9VAC25-740-120.B.3.f, 9VAC25-740-140.A, C, D.1 and F; [Add this if UV will used for disinfection: and “Ultraviolet Disinfection: Guidelines for Drinking Water and Water Reuse, 2<sup>nd</sup> Ed.” (NWRI, 2003);] [Add this only if location information regarding POCs for system storage is required: 9VAC25-740-70.B.2;] and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Additional O&M manual requirement for reclamation systems and SRSs that generate reclaimed water applied to bulk irrigation reuse sites under common ownership or management with these systems)**

16. For bulk irrigation reuse sites[s] under common ownership or management with and receiving reclaimed water generated by the [**Choose all that apply:** reclamation system/satellite reclamation system] covered by this [**Choose one:** permit/authorization], the O&M manual for (this/these) system[s] shall include the following:
- a. Measurements and calculations used to determine supplemental irrigation rates of reclaimed water for the irrigation reuse sites [*Note: This may include an irrigation schedule and soil moisture monitoring plan*],
  - b. Operating procedures of the irrigation system,
  - c. Routine maintenance required for the continued design performance of the irrigation system and reuse sites,
  - d. Identification and routine maintenance of reclaimed water storage facilities dedicated to bulk irrigation reuse,
  - e. Schedules for harvesting and crop removal at the irrigation reuse sites,
  - f. An inventory of spare parts to be maintained for the irrigation system, and
  - g. Any other information essential to the operation of the irrigation system and reuse sites in accordance with the requirements of this [**Choose one:** permit/authorization].
  - h. Procedures for posting advisory signs or placards in accordance with [**Choose one:** (*Note: for*

*Level 1 reclaimed water) Part I.B.42 (for Level 2 reclaimed water) Part I.A.41 (or other number that corresponds to either condition 42 or 41)].*

**Basis:** 9VAC25-740-140.G

**(95% Capacity Reopener applicable to reclamation systems and SRSs. Note: Where the DDF (defined in subdivision III.G.6.i) of a reclamation system is equal to the design flow of the WWTW that provides source water to the reclamation system, use the 95% capacity reopener condition that applies to the WWTW in lieu of this condition.)**

17. When the monthly average flow into the [**Choose all that apply:** reclamation system/satellite reclamation system] reaches 95% of the designated design flow specified in this [**Choose one:** permit/authorization] for each month of any 3 consecutive month period, the permittee shall submit a written notice and a plan of action for ensuring continued compliance with the terms of this [**Choose one:** permit/authorization] to the DEQ [*Regional Office*]. The written notice shall be submitted within 30 days and the plan of action shall be received at the DEQ [*Regional Office*] no later than 90 days from the third consecutive month for which the flow reached 95% of the designated design flow. The plan of action shall include the necessary steps and a prompt schedule of implementation for controlling any current problem, or any problem which could be reasonably anticipated, resulting from high flows entering the [**Choose all that apply:** reclamation system/satellite reclamation system]. Failure to submit an adequate plan in a timely manner shall be deemed a violation of this [**Choose one:** permit/authorization].

**Basis:** 9VAC25-740-180

**(Corrective action plan for BNR failure. Applicable to reclamation systems or SRSs that are to produce BNR reclaimed water.)**

18. When the calendar year average concentration of total N or total P in the reclaimed water exceeds 8.0 mg/l or 1.0 mg/l, respectively, for the preceding calendar year (January through December), a written notice of such nutrient reduction failure and a plan of action for ensuring the [**Choose all that apply:** reclamation system/satellite reclamation system] achieves BNR treatment of the reclaimed water shall be submitted by the permittee to the DEQ [*Regional Office*] for review and approval. The written notice shall be submitted by February 1 and the plan of action shall be submitted no later than April 1. The plan of action shall include the necessary steps and a prompt schedule of implementation for the [**Choose all that apply:** reclamation system/satellite reclamation system] to achieve BNR treatment. Upon its approval, said plan and schedule shall become a part of and enforceable under the provisions of this [**Choose one:** permit/authorization]. Failure to submit the required notice or failure to submit an adequate plan in a timely manner shall be deemed a violation of this [**Choose one:** permit/authorization].

**Basis:** DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq. For irrigation reuse with non-BNR reclaimed water, the permit shall contain requirements to manage nutrients in the reclaimed water. In contrast, irrigation reuse with BNR reclaimed water shall not have requirements to manage nutrients in the permit. This condition, although not specifically stated in law or regulation, is intended to address those situations where the permittee’s reclamation system or satellite reclamation system is unable to produce BNR reclaimed water as indicated in their permit application, and the additional nutrients in the non-BNR reclaimed water are consequently unmanaged for irrigation reuses. The permittee has the option to correct treatment of the reclaimed water to achieve BNR or in the absence of any action, face possible enforcement action that may ultimately result in a staff initiated modification of the permit to add nutrient management requirements for irrigation reuse of the non-BNR reclaimed water.

**(Demonstration of managed SIU discharges. Applicable to reclamation systems that will produce**

**Level 1 reclaimed water from source water provided by WWTWs with SIU discharges (see subsection III.J.))**

19. The reclamation system covered by this [**Choose one:** permit/ authorization] shall not produce reclaimed water treated to meet all the standards specified in Part I.A for Level 1 reclaimed water where any wastewater treatment works providing source water to the reclamation system receives discharges from significant industrial users (SIUs), as defined in 9VAC25-31-10, unless:

- a. The wastewater treatment works with SIU discharges is a publicly owned treatment works and has a pretreatment program required by and developed in accordance with procedures described in Part VII of the VPDES Permit Regulation (9VAC25-31-730 et seq.); or
- b. The reclamation system has evaluated source water from the wastewater treatment works for pollutants of concern discharged by SIUs to the treatment works, and has confirmed that such pollutants shall not interfere with the ability of the treatment works to produce source water suitable for the production of reclaimed water meeting all the standards specified in Part I.A for Level 1 reclaimed water.

Not less than 90 days prior to the: (i) addition of a new SIU discharge to a wastewater treatment works that is an existing approved provider of source water to the reclamation system, or (ii) the receipt of source water from a newly added wastewater treatment works with SIU discharges, the permittee shall submit information to the DEQ [*Regional Office*] demonstrating compliance with either a. or b. above.

Where the permittee will perform and submit source water evaluations of SIU discharges, the permittee shall obtain DEQ approval of the evaluations prior to the SIUs commencing discharge to a wastewater treatment works that is an existing approved source water provider, or prior to the reclamation system receiving source water from a newly added wastewater treatment works with SIU discharges. A current inventory of SIU discharges requiring source water evaluations shall be maintained by the permittee.

**Basis:** 9VAC25-740-150.A and DEQ Water Guidance No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Demonstration of managed SIU discharges. Applicable to SRSs that will produce Level 1 reclaimed water from source water provided by a sewage collection pipeline with SIU discharges, excluding SIUs whose discharge has no potential to reach the SRS intake (see subsection III.J.))**

20. The satellite reclamation system (SRS) covered by this [**Choose one:** permit/ authorization] shall not produce reclaimed water treated to meet all the standards specified in Part I.A for Level 1 reclaimed water for reuse where the sewage collection system providing source water to the SRS receives discharges from significant industrial users (SIUs), as defined in 9VAC25-31-10, unless:

- a. The discharge of the SIUs have no potential to reach the SRS intake; or
- b. The SRS has evaluated source water from the sewage collection system for pollutants of concern discharged by SIUs to the collection systems, and has confirmed that such pollutants shall not interfere with the ability of the SRS to produce reclaimed water meeting all the standards specified in Part I.A for Level 1 reclaimed water.

Not less than 90 days prior to the addition of a new SIU discharge to the sewage collection system that will provide source water to the SRS, the permittee shall submit information to the DEQ [*Regional Office*] demonstrating compliance with either a. or b. above.

Where the permittee will perform and submit a source water evaluation for each new SIU discharge, the permittee shall obtain DEQ approval of the evaluation prior to the SIU commencing discharge to the sewage collection system. A current inventory of SIU discharges requiring source water evaluations shall be maintained by the permittee.

**Basis:** 9VAC25-740-150.C and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable only where condition 19 or other number that corresponds to condition 19 is included in the permit or authorization, and where the reclamation system and WWTW providing source water to the reclamation system are not covered by the same permit or authorization)**

21. Prior to the reclamation system covered by this [**Choose one:** permit/authorization] receiving source water from a wastewater treatment works with SIU discharges, the permittee shall establish and maintain a contractual agreement with the wastewater treatment works, except where the treatment works is also covered by this [**Choose one:** permit/authorization]. The contractual agreement shall, at a minimum, require that:

- a. Wastewater treatment works subject to the requirements of Part I.B.19 (*or other number that corresponds to condition 19*) notify the reclamation system of all new SIUs discharges to the treatment works, and
- b. Notifications described in a. of this condition allow sufficient time for the reclamation system to perform, if applicable, source waters evaluations of SIU discharges in accordance with Part I.B.19 (*or other number that corresponds to condition 19*) prior to the anticipated start date of the SIU discharge to the treatment works.

Within 30 days of signing the contractual agreement, the permittee shall submit a copy of the signed agreement to the DEQ [*Regional Office*].

**Basis:** 9VAC25-740-150.B and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable where condition 20 or other number that corresponds to condition 20 is included in the permit or authorization)**

22. Prior to the SRS covered by this [**Choose one:** permit/authorization] receiving source water from a sewage collection system with SIU discharges, the permittee shall establish and maintain a contractual agreement with the sewage collection system. The contractual agreement shall, at a minimum, require that:

- a. The sewage collection system notify the SRS of all new SIUs discharges to the collection system, and
- b. Notifications described in a. of this condition allow sufficient time for the SRS to perform, if applicable, source waters evaluations of SIU discharges in accordance with Part I.B.20 (*or other number that corresponds to condition 20*) prior to the anticipated start date of the SIU discharge to the sewage collection system.

Upon execution of the contractual agreement, the permittee shall submit a copy of the signed agreement to the DEQ [*Regional Office*].

**Basis:** 9VAC25-740-150.D and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable where the permit or authorization issued to a reclamation system will also cover a reclaimed water distribution system not under common ownership or management with the reclamation system but meeting the criteria specified in subdivision [III.B.2.a](#)). Note that in order to use this condition, the permit or authorization must also contain conditions related to the proper monitoring, operation and maintenance of the reclaimed water distribution system.)**

23. Not less than 30 days prior to commencing the discharge of reclaimed water from the reclamation system to the reclaimed water distribution system under the [**Choose all that apply:** ownership/management] of (**insert name of distribution system owner/manager**) for reuse exclusively by this person or party, the permittee shall submit to the DEQ [*Regional Office*] for approval a copy of the draft service agreement or contract between the ownership or management of the reclamation system and the ownership or management of the reclaimed water distribution system. The draft service agreement or contract shall include, among other things, conditions contained in this [**Choose one:** permit/authorization] that apply to the monitoring, maintenance and operation of the distribution system to be implemented through the terms of the service agreement or contract by the owner or management of the reclaimed water distribution system.

**Basis:** 9VAC25-740-40.D and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq., and best professional judgment

### **Conditions applicable to reclaimed water distribution systems**

**\*\*IMPORTANT NOTE\*\*:** The following conditions apply to reclaimed water distribution systems covered by a permit (VPDES or VPA) or authorization (administrative or emergency) associated with a permit. Reclaimed water distribution systems may include, but are not limited to, reclaimed water hauling operations (see subdivision [III.B.2.b](#)).

Where a reclaimed water distribution system qualifies for the alternative to permitting discussed in subdivision [III.B.2.a](#), include the following conditions that apply to the distribution system in the permit or authorization for the reclamation system or SRS. Verify that the same conditions are subsequently included by the permittee in the service agreement or contract between the reclamation system or SRS and the distribution system. An example or copy of the service agreement or contract is to be included in the RWM plan (see subdivision [III.C.4.d](#)).

#### **(Applicable to tank trucks used to distribute reclaimed water)**

24. Tank trucks covered by this [**Choose one:** permit/authorization] to distribute reclaimed water to end users shall:

- a. Be clearly labeled to identify the contents of the truck as non-potable water;
- b. Not transport potable water used for drinking water or food preparation;
- c. Not transport waters or other fluids that do not meet the standards specified in Part I.A of this [**Choose one:** permit/authorization] unless the tank or vessel of the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water;
- d. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply;
- e. Not directly connect to a potable water supply system unless there is an air gap separation of at least eight inches between the potable water and the reclaimed water, or a reduced pressure principle backflow prevention device installed at the point of potable water connection to the tank truck;
- f. Be equipped with outlets that are of a type or are secured in a manner that permits operation by only authorized personnel;
- g. Where parked or operating in areas accessible to the public, be equipped with connections that:
  - (1) Differ materially from those used on potable water distribution systems, including tank trucks used to haul potable water for potable uses, and
  - (2) Are clearly distinguishable as reclaimed water connections so as not to be mistaken for potable water connections;
- h. Be equipped with tanks or vessels that are fully enclosed with water-tight valves and fittings;
- i. Not leak or spill contents during transport; and

- j. Not accept reclaimed water from an end user after the reclaimed water has been delivered to the end user.

**Basis:** 9VAC25-740-110.B.2, 5 and 7, and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable to tank trucks used to distribute reclaimed water)**

- 25. Tank trucks covered by this [**Choose one:** permit/authorization] to distribute reclaimed water to end users shall deliver the reclaimed water within 24 hours of receipt, or dispose of excess reclaimed water in a manner approved by the DEQ [*Regional Office*]. The tank trucks shall not discharge excess reclaimed water to storm drains, state waters unless authorized by DEQ, or sanitary sewers unless allowed under local sewer use ordinances and authorized by DEQ.

**Basis:** 9VAC25-740-140.D.2 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable to all reclaimed water distribution systems that distribute Level 1 reclaimed water to end users)**

- 26. All components of the [**Choose all that apply:** reclaimed water distribution system/reclaimed water hauling operation] that come into direct contact with water not meeting, at a minimum, Level 1 reclaimed water standards, shall not distribute Level 1 reclaimed water to end users unless flushed (i) with potable water or reclaimed water meeting Level 1 or more stringent standards for the protection of public health and the environment, and (ii) immediately before receiving and distributing the Level 1 reclaimed water.

**Basis:** DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Choose only one of the following three paragraphs that apply and delete “[OR]” between the paragraphs)**

- 27. (**Applicable to each reclaimed water distribution system that will be covered by the same permit or authorization issued to the reclamation system or SRS providing reclaimed water to the distribution system.**) The [**Choose all that apply:** reclaimed water distribution system/reclaimed water hauling operation] shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water, such that the reclaimed water distributed by the [**Choose all that apply:** system/operation] shall not be reduced in quantity, or degraded to a quality that violates the standards in Part I.A of this [**Choose one:** permit/authorization].

**[OR]**

- 27. (**Applicable to a reclaimed water distribution system that (i) is covered by a permit or authorization separate from that issued to a reclamation system or SRS providing reclaimed water to the distribution system, and (ii) does not have reclaimed water monitoring requirements.**) The [**Choose all that apply:** reclaimed water distribution system/reclaimed water hauling operation] shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water, such that the reclaimed water type distributed by the [**Choose all that apply:** system/operation] shall not be reduced in quantity, or degraded to a quality that violates the standards of that reclaimed water type. In this case, the reclaimed water type shall be that identified in the [**Choose all that apply:** “*Water Reclamation and Reuse Addendum to an Application for a Virginia Pollutant Discharge Elimination System Permit or a Virginia Pollution Abatement Permit*”/“*Application for Reclaimed Water Hauling Operations*”], submitted for the [**Choose all that apply:** system/operation].



[OR]

**27. (Applicable to a reclaimed water distribution system that is (i) covered by a permit or authorization separate from the permit issued to a reclamation system or SRS providing reclaimed water to the distribution system, and (ii) required to perform and report reclaimed water monitoring.)** The [Choose all that apply: reclaimed water distribution system/reclaimed water hauling operation] shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water, such that the reclaimed water type distributed by the [Choose all that apply: system/operation] shall not be reduced in quantity, or degraded to a quality that violates the standards contained in Part I.A of this [Choose one: permit/authorization].

**Basis:** 9VAC25-740-110.B.9 and 9VAC25-740-100.C.1.h

**(O&M Manual for reclaimed water distribution systems. Where the distribution system is covered by the same permit or authorization issued to a reclamation system or SRS discharging reclaimed water to the distribution system, the O&M Manual for the distribution system may be included in the O&M Manual for the reclamation system or SRS, as applicable (9VAC25-740-140.B). In this case, consolidate this condition with either condition 14 or 15 (or other number that corresponds with condition 14 or 15).**

**Where the reclaimed water distribution system is a reclaimed water hauling operation and the RO determines that an O&M Manual is needed for the hauling operation, include only items of the condition below that will apply to the particular hauling operation covered by the permit or authorization.)**

28. The permittee shall develop an operations and maintenance (O&M) manual for the [Choose all that apply: reclaimed water distribution system/ reclaimed water hauling operation] to be made available at a location central to the [Choose all that apply: distribution system/hauling operation]. The permittee shall maintain the manual and include any changes in the practices and procedures followed by the permittee in the manual.

The O&M manual for the [Choose all that apply: reclaimed water distribution system/ reclaimed water hauling operation] shall, at a minimum, contain the following:

- a. A map of the [Choose all that apply: distribution system/hauling operation], a description of all components within the [Choose all that apply: distribution system/hauling operation], and step-by-step instructions for the operation of specific mechanical components;
- b. Routine and unplanned inspection of the [Choose all that apply: distribution system/hauling operation], [Include the following for all reclaimed water distribution systems and for reclaimed water hauling operations with a cross connection program in their RWM plan: including required inspections for the cross-connection and backflow prevention program contained in the approved RWM Plan];
- c. Routine maintenance and schedules of maintenance for all components of the [Choose all that apply: distribution system/hauling operation]. Maintenance shall include, but is not be limited to, [Choose all that applies: (insert for reclaimed water distribution systems) initial and routine flushing of the distribution system, including system storage; measures to prevent or minimize corrosion, fouling and clogging of distribution lines; and detection and repair of broken distribution lines, flow meters or pumping equipment/(insert for reclaimed water hauling operations) initial and routine flushing, measures to prevent corrosion and fouling, and detection and repair of flow meters and pumping equipment for system storage facilities and tanks or

vessels used to haul reclaimed water by the hauling operation];

d. Procedures to:

- (1) Handle and dispose of any wastes or wastewater generated by maintenance of the [**Choose all that apply:** distribution system/hauling operation] in a manner protective of the environment;
- (2) Prevent the discharge of reclaimed or flush water from maintenance of the [**Choose all that apply:** distribution system/hauling operation] to storm drains, to state waters unless otherwise authorized by the DEQ, and to sanitary sewers unless allowed under local sewer use ordinances and authorized by the DEQ; and
- (3) Collect and, as applicable, retreat reclaimed water or treat flush water from [**Choose all that apply:** distribution system/hauling operation] maintenance activities for a subsequent reuse or use approved by the DEQ;

e. A description of contingency measures to eliminate or minimize the potential to deliver reclaimed water that does not comply with applicable reclaimed water standards contained in Part I.A from the [**Choose all that apply:** reclaimed water distribution system/ reclaimed water hauling operation/*include only where system storage is part of the distribution system or hauling operation, and requires monitoring*) or associated system storage] to intended and authorized reuses of that water. The description shall also identify persons responsible for implementing the contingency measures and their contact information; and

f. A plan for inactivation or closure of the [**Choose all that apply:** distribution system/hauling operation] specifying what steps will be taken to protect the environment and public health. Inactivation or closure may include, but is not limited to, replacement through expansion or upgrade, or permanent closure of the existing [**Choose all that apply:** distribution system/hauling operation]. At a minimum, the plan shall contain the following:

- (1) A list and characterization (i.e., volume, percent solids, nutrient content, etc.) of residual reclaimed water and waste products or materials that are anticipated to be present at the site of [**Choose all that apply:** distribution system/hauling operation] upon inactivation or closure; and a description of treatment, removal and final disposition of the same; and
- (2) Supplemental information. Within 90 days of initiating any activities to inactivate or close the [**Choose all that apply:** distribution system/hauling operation], the permittee shall submit to the DEQ [*Regional Office*] for approval the following information to supplement the previously approved plan:
  - (a) Verification of elimination of sources of reclaimed water or an alternate [**Choose all that apply:** distribution system/hauling operation];
  - (b) A description of removal, demolition and/or disposal of structures, equipment, piping and appurtenances;
  - (c) A description of site fill material, grading, and erosion and sediment control;
  - (d) A description of access control during inactivation or closure;

- (e) Proposed land use (post closure) of the site;
- (f) Proposed dates for beginning and completing the work; and
- (g) Any new or additional information that modifies procedures or information provided in the previously approved inactivation or closure plan.

**Basis:** 9VAC25-740-140.B, D.2 and F, 9VAC25-740-100.C.1.h, and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable where the permittee will convert an existing potable water distribution system, sewer or wastewater collection system, or irrigation distribution system for use as a reclaimed water distribution system)**

29. Not less than 90 day prior to the conversion of [**Insert name of system to be converted that is identified in the [Application Addendum](#)**] to a reclaimed water distribution system, the permittee shall submit the following to the DEQ [*Regional Office*] for approval:

- a. A system conversion plan that contains:
  - (1) Information on the location and identification of the system facilities to be converted;
  - (2) Information on the location of all connections to the system facilities to be converted;
  - (3) A description of procedures to be used to ensure that all system connections and cross-connections shall be eliminated. This may include physical inspections, dye testing, or other testing procedures;
  - (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 9VAC25-740-110.B and C, and operations and maintenance requirements of 9VAC25-740-140.D.2;
  - (5) A description of cleaning and disinfection procedures to be followed before the converted facilities will be placed into operation for reclaimed water distribution. For the conversion of existing sewer and wastewater collection systems, cleaning and disinfection of the system shall be conducted in accordance with AWWA standards (ANSI/AWWA C651-05, effective June 1, 2005). Procedures to dispose of flush water from cleaning or disinfection shall be those described in the operations and maintenance manual of the system for the disposal of flush water from maintenance activities;
  - (6) An assessment of the physical condition and integrity of system facilities to be converted; and
  - (7) Reasonable assurance that cross-connections will not result, public health will be protected, and the integrity of potable water, wastewater, and reclaimed water systems will be maintained when the conversion is made.

**(Choose only one of the following two options for “b.” that apply and delete “[OR]”)**

- b. **(Add this item only where the permit or authorization does not cover an existing reclaimed water distribution system.)** An operations and maintenance (O&M) manual for the system converted to a reclaimed water distribution system. Following DEQ’s approval of the manual,

the permittee shall make the manual available at a location central to the converted system, ensure that the manual is maintained current, and include any changes in the practices and procedures followed by the permittee in the manual. **[Insert this sentence only where the system converted to a distribution system is covered by the same permit or authorization issued to a reclamation system or SRS discharging reclaimed water to the converted system:** Additionally, the permittee may incorporate the O&M manual of the converted system into the O&M manual of the (**Choose all that apply:** reclamation system/SRS) covered by this (**Choose one:** permit/authorization)].

The O&M manual for the converted system shall, at a minimum, contain the following: **[Insert all applicable items listed for O&M manuals of reclaimed water distribution systems in condition 28 (or other number that corresponds with condition 28)].**

**[OR]**

- b. **(Add this item only where the permit or authorization currently covers an existing reclaimed water distribution system, and includes condition 28 (or other number that corresponds with condition 28) or has consolidated condition 28 with either condition 14 or 15 (or other number that corresponds with condition 14 or 15)** An operations and maintenance (O&M) manual for the system converted to a reclaimed water distribution system. Operation and maintenance of the converted system shall be in accordance with Part I.B. **[Choose one:** 28/14/15 (or other number that corresponds with condition 28, 14 or 15)] of this **[Choose one:** permit/authorization]. Following DEQ's approval of the O&M manual for the converted system, the permittee shall make the manual available at a location central to the system, ensure that the manual is maintained current, and include any changes in the practices and procedures followed by the permittee in the manual.

**Basis:** 9VAC25-740-110.B.6

**Condition applicable to systems that blend reclaimed water**

**(Applicable to reclamations systems, SRSs or reclaimed water distribution system that blend for subsequent reuse all or a portion of the reclaimed water that they produce or receive.)**

30. Where the permittee receives reclaimed water from other DEQ authorized sources and blends for subsequent reuse the reclaimed water from these sources with [**Choose all that apply:** one another/ reclaimed water produced by the permittee], the permittee shall monitor the blended reclaimed water in accordance with Part I.A to verify that it [**Choose all that apply:** complies with reclaimed water standards required for reuses approved through this (**Choose one:** permit/authorization)/(*applicable to irrigation reuse with reclaimed water meeting BNR treatment thresholds*) does not exceed BNR nutrient levels (i.e., calendar year average concentrations of total N and total P less than or equal to 8.0 and 1.0 mg/l, respectively)].

**Basis:** 9VAC25-740-90.A and 9VAC25-740-100.C.3

**Conditions applicable to Reclaimed Water Management (RWM) plans**

**(Applicable where a complete RWM plan is required for the system(s) covered by the permit or authorization, but was not submitted with the [Application Addendum](#) or Application for Reclaimed Water Hauling Operations.)**

31. The permittee shall submit to the DEQ [*Regional Office*] a complete Reclaimed Water Management (RWM) plan not less than 90 days prior to commencing the distribution of reclaimed water directly to end users, including the permittee, for reuse. The RWM plan shall include all applicable information specified in the [**Choose all that apply:** “*Water Reclamation and Reuse Addendum to an Application for a Virginia Pollutant Discharge Elimination System Permit or a Virginia Pollution Abatement Permit*”/“*Application for Reclaimed Water Hauling Operations*”] for the [**Choose one:** system/systems] covered by this [**Choose one:** permit/authorization].

**Basis:** 9VAC25-740-100.C and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable where the permittee will distribute reclaimed water to end users other than the permittee)**

32. The permittee shall not distribute reclaimed water to any end user that is other than the permittee without an effective service agreement or contract established between the permittee and the end user. Through the terms and conditions of the service agreement or contract, the permittee shall be responsible for monitoring the end user in accordance with [**Choose one:** the permittee’s approved Reclaimed Water Management plan/the Reclaimed Water Management plan to be submitted per condition 31 (*or other number that corresponds with condition 31*)], and inspecting the end user’s reclaimed water reuses and storage facilities.

**Basis:** 9VAC25-740-40.C, 9VAC25-740-100.C.1.d and e, and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable where the permittee is a reclaimed water agent - notification for the addition of new end users or new reuses to the RWM plan)**

33. For the addition of new end users or new reuses not contained in the-most current approved RWM plan, the permittee shall submit to the DEQ [*Regional Office*] for approval an amendment to the RWM plan identifying the new end users or new reuses prior to connection and reclaimed water service to these users or initiating the new reuses. For each new end user or new reuse, the permittee shall also provide all applicable information required by the [**Choose all that apply:** “*Water Reclamation and Reuse Addendum to an Application for a VPDES Pollutant Discharge Elimination System Permit or a Virginia Pollution Abatement Permit*”/“*Application for Reclaimed Water Hauling Operation*”]. Should the addition of new end users or new reuses to the RWM plan require the incorporation of additional or different reclaimed water standards, monitoring requirements, or special conditions in this [**Choose one:** permit/ authorization], modification of [**Choose one:** the permit/the authorization/the permit with which this authorization is associated] may be necessary to approve distribution of reclaimed water to the new end users or to approve the new reuses.

**Basis:** 9VAC25-740-100.C.9

**\*\*IMPORTANT NOTE\*\*:** Other conditions related to amendments of the RWM plan may apply and are provided under other special condition categories of Attachment A pertaining to reclaimed water storage facilities and irrigation reuse of reclaimed water.

**Conditions applicable to reject water and reclaimed water storage facilities**

**(This condition may not apply where the permittee requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with 9VAC25-740-55.)**

34. Reclaimed water system storage facilities 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 25-year, 24-hour storm. 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 water of the state except in the event of a storm greater than the 10-year, 24-hour storm.

**Basis:** 9VAC25-740-110 C.14

**(Applicable to reject water storage and reclaimed water system storage, excluding such facilities that existed on or prior to 10/1/08 unless modified, expanded or failing to meet other regulatory requirements.)**

35. The permittee shall maintain a minimum freeboard of two feet at all times in the [**Choose all that apply:** reject water/system] storage facility. Non-compliance with the minimum two-foot freeboard requirement at any time shall be reported orally and in writing by the permittee to the DEQ [*Regional Office*] in accordance with Part II.I of [**Choose one:** the permit associated with this authorization/this permit].

**Basis:** [**Choose all that apply:** 9VAC25-740-110 C.6.a/9VAC25-740-110.C.7 for facilities constructed on or prior to October 1, 2008/(for VPA permit related actions) 9VAC25-32-80.I/(for VPDES permit related actions) 9VAC25-31-190.L]

36. A current inventory of reject water storage, system storage and non-system storage facilities located within the service area of the approved RWM plan shall be maintained. For the addition of storage facilities to the inventory after [**Choose one that applies:** permit issuance/issuance of the authorization], the permittee shall submit to the DEQ [*Regional Office*] an amended inventory at least 30 days before reclaimed water will be introduced into newly added storage facilities. An inventory of reject water storage, system storage and non-system storage facilities shall include the following:

- a. Name or identifier for each storage facility,
- b. Location of each storage facility (including latitude and longitude at the center of the storage facility, to the nearest second),
- c. Function of each storage facility (i.e., reject water storage, system storage or non-system storage),
- d. Type of each storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
- e. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to each storage facility within 450 feet of that facility.

**Basis:** 9VAC25-740-110 C.15

**Conditions related to design and construction of water reclamation and reuse projects**

**(Applicable to all reclamation systems, SRSs, reclaimed water distribution systems, and reclaimed or reject water storage facilities covered by the permit or authorization)**

37. All [**Choose all that apply:** reclamations systems/satellite reclamation systems/reclaimed water distribution systems/reclaimed or reject water storage facilities] covered by this [**Choose one:** permit/authorization] shall be designed in accordance with criteria of the Water Reclamation and Reuse Regulation (9VAC25-740).

**Basis:** 9VAC25-740-110

38. **Preliminary engineering report.** A preliminary engineering report (PER) shall be submitted for a new reclamation system, satellite reclamation system or reclaimed water distribution system; or for the modification or expansion of the same facilities where they already exist. At the request of the permittee, the DEQ [*Regional Office*] may waive the need for a PER or portions of a PER for modification or expansion of an existing reclamation system, satellite reclamation system or reclaimed water distributions system based on the scope of the proposed project.

**Basis:** 9VAC25-740-120.A

39. **Certificate to construct and certificate to operate.** The permittee shall not cause or allow the construction, expansion or modification of the [**Choose all that apply:** reclamation system/satellite reclamation system] except in compliance with a Certificate to Construct (CTC) and shall not cause or allow the operation of the same [**Choose one:** facility/**facilities**] except in compliance with a Certificate to Operate (CTO) issued by the DEQ [*Regional Office*].

**Basis:** 9VAC25-740-120.B.1



**Conditions requiring access control and advisory signs**

40. There shall be no uncontrolled public access to the [**Choose all that apply:** reclamation system/satellite reclamation system/system storage facilities]. [**Include this sentence if there is system storage provided in ponds:** System storage ponds shall be enclosed with a fence or otherwise designed with appropriate features to discourage the entry of animals and unauthorized persons.]

**Basis:** 9VAC25-740-160.A

41. For all reuses of reclaimed water treated to Level 2, public access shall be restricted by methods that may include, but are not limited to, fencing around the site boundary. Advisory signs or placards shall be posted around reuse areas or reuse site boundaries. Each sign or placard shall:

- a. State the nature of the reuse and no trespassing;
- b. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
- c. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ [*Regional Office*].

**Basis:** 9VAC25-740-160.B and C

42. For all reuses of reclaimed water treated to Level 1, advisory signs or placards shall be posted [**Choose one:** within and at the boundaries of reuse areas/*(State the specific location for placement of advisory signs or placards. Examples of specific locations include, but are not limited to, entrances to the residential neighborhood, the entrance to the golf course, the first and tenth tees, etc.)*]. Each sign or placard shall:

- a. State the nature of the reuse;
- b. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
- c. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that is easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ [*Regional Office*].

**Basis:** 9VAC25-740-160.B and D

43. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for non-system storage of reclaimed water. Each advisory sign shall meet the specifications described in Part I.B.[**Choose one:** *(for storage of Level 1 reclaimed water) 42/(for storage of Level 2 reclaimed water) 41/(or other number that corresponds to either condition 42 or 41)*].

**Basis:** 9VAC25-740-160.B, [**Choose one:** *(for storage of Level 2 reclaimed water) C/(for storage of*

*Level 1 reclaimed water*) D] and E

44. For industrial reuses, advisory signs shall be posted around those areas of the industrial site where reclaimed water is used and at the main entrances to the industrial site to notify employees and the visiting public of the reclaimed water reuse. Access control beyond what is normally provided by the industry is not required. Each advisory sign shall meet the specifications described in Part I.B. [Choose one: *(for storage of Level 1 reclaimed water)* 42/*(for storage of Level 2 reclaimed water)* 41/*(or other number that corresponds to either condition 42 or 41)*].

**Basis:** 9VAC25-740-160.B [Choose one: *(for storage of Level 2 reclaimed water)* C/*(for storage of Level 1 reclaimed water)* D] and F

45. Above-ground tanks used to store [Choose all that apply: reclaimed water/reject water] shall be labeled to identify the contents of the tank as such, and shall have advisory signs or placards that state, at a minimum, [Choose one: *(for reclaimed water tank storage)* “CAUTION: RECLAIMED WATER – DO NOT DRINK”/*(for reject water tank storage)* “NON POTABLE WATER”] and display the equivalent international symbol for non potable water. The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ [Regional Office].

**Basis:** 9VAC25-740-110.C.5, 9VAC25-740-160.B and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable to reclaimed water distribution systems)**

46. All above-ground valves, outlets (including fire hydrants) and other appurtenances of the reclaimed water distribution system covered by this [Choose one: permit/ authorization, shall be color coded, taped, labeled, tagged or otherwise marked to notify the public and employees that the source of the water is reclaimed water, not intended for drinking or food preparation. **[Insert the following where the system distributes Level 2 reclaimed water:** Such notification shall also:

- a. Inform employees to practice good personal hygiene for incidental contact with reclaimed water, and
- b. Inform the public to avoid contact with the reclaimed water.]

Piping of the reclaimed water distribution system shall comply with identification and notification requirements specified in 9VAC25-740-110.B.8.a, b and c.

**Basis:** 9VAC25-740-110.B.8.a through d

**Conditions applicable to irrigation reuses of reclaimed water**

**(Applicable to all irrigation reuse of reclaimed water)**

47. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.

**Basis:** 9VAC25-740-10 and 9VAC25-740-100.C.2

**(Applicable to bulk irrigation reuse of reclaimed water)**

48. For all bulk irrigation reuse sites identified in the RWM plan for the [**Choose all that apply:** reclamation system/satellite reclamation system/reclaimed water distribution system] covered by this [**Choose one:** permit/authorization], the rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs.

Where it is demonstrated by the permittee or an end user other than the permittee that salts will accumulate or have accumulated in the soil of an irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Where it is demonstrated by the permittee or an end user other than the permittee that salts will accumulate or have accumulated in the soil of an irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will contribute or has contributed significantly to the salt problem, no additional reclaimed water shall be applied for the purpose of leaching salts from the soil at the site. Any additional volume of water required for leaching that is not or cannot be reclaimed water (e.g., rainwater, potable water, etc.) shall be included in the calculation of supplemental irrigation.

**Basis:** 9VAC25-740-10, 9VAC25-740-100.C.2 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Site plans for bulk irrigation reuse sites under common ownership or management with the permittee)**

49. Where a bulk irrigation reuse site under common ownership or management with the permittee will be newly added to or expanded in the permittee's approved RWM plan, the permittee shall submit to the DEQ [*Regional Office*] a site plan for the new or expanding site, displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:

- a. The boundaries of the irrigation site;
- b. The location of all potable and non-potable water supply wells and springs, public water supply intakes, occupied dwellings, property lines, areas accessible to the public, outdoor eating, drinking and bathing facilities; surface waters, including wetlands; limestone rock outcrops and sinkholes within 250 feet of the irrigation site; and
- c. Setbacks areas around the irrigation site in accordance with Part I.B [**Choose one:** (*for irrigation setbacks of Level 1 reclaimed water*) 57/(*for irrigation setbacks of Level 2 reclaimed water*) 58/(*or other number that corresponds to either condition 57 or 58*)].

A new bulk irrigation reuse site or the expansion area of an existing bulk irrigation reuse site shall not receive reclaimed water until approved for inclusion in the RWM plan by the DEQ [*Regional Office*].

**Basis:** 9VAC25-740-100.C.7 and 8, and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable to any bulk irrigation reuse site irrigated with non-BNR reclaimed water, excluding bulk irrigation sites noted in condition 51 (or other number that corresponds with condition 51).)**

50. For all bulk irrigation reuse sites identified in the RWM plan for the permitted [**Choose the facility that provides reclaimed water to the owner of the bulk irrigation site:** reclamation system/satellite reclamation system/reclaimed water distribution system], a nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation, is required. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. [**Where the permittee is a bulk irrigation end user of reclaimed water provided by the permitted facility, add the following:** A NMP for each new bulk irrigation reuse site or the amendment of a NMP for an existing bulk irrigation reuse site shall be submitted by the permittee to the DEQ [*Regional Office*] prior to implementation of the new or amended NMP, respectively. The new or amended NMP shall be incorporated into the RWM plan and made an enforceable part of the permit.] [**Where a bulk irrigation end user of reclaimed water provided by the permitted facility is other than the permittee, add this sentence:** A NMP for each new bulk irrigation reuse site or the amendment of a NMP for an existing bulk irrigation reuse site shall be submitted by the end user to the permittee prior to the end user initiating bulk irrigation reuse of reclaimed water to sites that are required to be covered by the new or amended NMP.]

**Basis:** 9VAC25-740-100.C.3 and C.6, and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable where reclaimed water produced and/or distributed by the permittee is applied to bulk irrigation reuse sites owned or managed by the permittee, and the sites will require a NMP independent of the nutrient content of the reclaimed water. See subdivision [III.C.6.a \(1\)](#).)**

51. For all bulk irrigation reuse sites owned or managed by the permittee and identified in the RWM plan for the permitted [**Choose all that provide reclaimed water to the bulk irrigation site(s):** reclamation system/satellite reclamation system/reclaimed water distribution system], a nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation (DCR), and subsequently approved by the DCR is required. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. A NMP for each new bulk irrigation reuse site or the amendment of a DCR approved NMP for an existing bulk irrigation reuse site shall be submitted by the permittee to the DCR for review and approval. A copy of both the DCR approval letter and the new or amended NMP shall be submitted by the permittee to the DEQ [*Regional Office*] prior to implementation of the NMP. The new or amended NMP approved by the DCR shall be incorporated into the RWM plan and made an enforceable part of the permit.

**Basis:** 9VAC25-740-100.C.4, C.5 and C.6

**(Applicable to any bulk irrigation reuse site required to have a NMP.)**

52. For all bulk irrigation reuse sites required to have a NMP in accordance with Part I.B. [**Choose all that apply:** 50/51/(or other number that corresponds to condition 50 and/or 51)], nitrogen and phosphorus from reclaimed water in combination with other sources of nitrogen and phosphorus applied to the sites shall not exceed the annual nitrogen application rate and the sum of annual

phosphorus application rates specified in the NMP for each site. Where the annual nitrogen application rate or the sum of annual phosphorus application rates specified in the NMP for a bulk irrigation reuse site is met and there remains a need for additional water to irrigate the site, an alternate water source that does not contain nitrogen or phosphorus, respectively, shall be used in lieu of reclaimed water for irrigation.

**Basis:** DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable when the permittee is required to have a RWM plan and nonbulk irrigation reuse of non-BNR reclaimed water is included in the plan)**

53. The permittee shall implement measures to manage nutrients from nonbulk irrigation reuse of reclaimed water not treated to achieve BNR in accordance with the approved RWP plan. Such measures shall include, but are not limited to:

- a. The inclusion of language in the example service agreement or contract between the permittee and end users explaining proper use of the reclaimed water by end users for the purpose of managing nutrients,

**[(Add this item where an E&N program is required in the RWM plan. See subdivision [III.C.4.f.](#))**

- b. The routine distribution of literature not less than annually to individual nonbulk irrigation end users addressing the proper use of the reclaimed water in accordance with the education and notification program contained in the RWM plan,]
- c. Metering the volume of reclaimed water consumed by individual nonbulk irrigation end users as described in the RWM plan, and
- d. Monthly monitoring of nitrogen and phosphorus loads by nonbulk irrigation reuse to the service area of the RWM plan. Nitrogen (N) and phosphorus (P) loads shall be based on the total monthly metered nonbulk irrigation reuse of the reclaimed water for the service area and the monthly average concentrations of total N and total P in the reclaimed water. Results of this monitoring shall be included in the annual report submitted to the DEQ [*Regional Office*] in accordance with Part I.B.[**Choose one:** 81/(*or other number that corresponds to condition 81*)].

**Basis:** 9VAC25-740-100.C.1.d through f, 9VAC25-740-100.C.3.c and 9VAC25-740-170.A.1.a (3)

**(Applicable to all irrigation reuses of reclaimed water)**

54. For all irrigation reuses of reclaimed water, the following shall be required:

- a. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.
- b. The chosen method of irrigation shall minimize human contact with the reclaimed water.
- c. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.

**Basis:** 9VAC25-740-170.E

**(Applicable to reuses of reclaimed water involving bulk irrigation [irrigation of an area > 5 acres])**

55. For bulk irrigation reuse of reclaimed water, the following shall be required:

- a. Irrigation systems shall be designed, installed and adjusted to:
  - 1. Provide uniform distribution of reclaimed water over the irrigation site,
  - 2. Prevent ponding or pooling of reclaimed water at the irrigation site,
  - 3. Facilitate maintenance and harvesting of irrigated areas and preclude damage to the irrigation system from the use of maintenance or harvesting equipment,
  - 4. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances described in Part I.B. [**Choose all that apply:** (for Level 1 reclaimed water) 57/(for Level 2 reclaimed water) 58/(or other number that corresponds to condition 57 and/or 58)], and
  - 5. Prevent clogging from algae or suspended solids.
- b. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
- c. Any reclaimed water runoff shall be confined to the irrigation reuse site unless authorized by the DEQ [Regional Office].

**Basis:** 9VAC25-740-170.F

56. Overspray of surface waters, including wetlands, from irrigation or other reuses of reclaimed water is prohibited.

**Basis:** 9VAC25-740-170.G

**(Setback requirements for irrigation reuses of Level 1 reclaimed water)**

57. For sites irrigated with reclaimed water meeting a minimum of Level 1 standards contained in Part I.A of this [**Choose one:** permit/authorization], the following setback distances are required:

<b>Feature Requiring Setback</b>	<b>Setback Distance</b>
a. Potable water supply wells and springs and public water supply intakes	100 feet
b. Nonpotable water supply wells	10 feet
c. Limestone rock outcrops and sinkholes	50 feet

No setback distances are required from occupied dwellings and outdoor eating, drinking and bathing facilities. However, aerosol formation shall be minimized within 100 feet of occupied dwellings and outdoor eating, drinking and bathing facilities through the use of low trajectory nozzles for spray irrigation, above-ground drip irrigation, or other means.

**Basis:** 9VAC25-740-170.H.1 and H.2

**(Setback requirements for irrigation reuses of Level 2 reclaimed water)**

58. For sites irrigated with reclaimed water meeting a minimum of Level 2 standards contained in Part I.A of this [**Choose one:** permit/authorization], the following setback distances are required:

<b>Feature Requiring Setback</b>	<b>Setback</b>
----------------------------------	----------------

	<b>Distance</b>
a. Potable water supply wells and springs and public water supply intakes	200 feet
b. Nonpotable water supply wells	10 feet
c. Surface waters, including wetlands	50 feet
d. Occupied dwellings	200 feet
e. Property lines and areas accessible to the public	100 feet
f. Limestone rock outcrops and sinkholes	50 feet

**Basis:** 9VAC25-740-170.H.3

**(Use in conjunction with preceding condition 58 regarding setback requirements for irrigation reuse of Level 2 reclaimed water)**

59. For sites irrigated with reclaimed water meeting a minimum of Level 2 standards contained in Part I.A of this [**Choose one:** permit authorization], the setback distances specified in Part I.B. [**Choose one:** 58/(or other number that corresponds to condition 58)] may be reduced as follows with the prior approval of the DEQ [*Regional Office*]:

- a. Up to but not exceeding 50 % from occupied dwellings and areas accessible to the public if it can be demonstrated that alternative measures shall be implemented to provide an equivalent level of public health protection. Such measures shall include, but are not limited to, disinfection of the reclaimed water equivalent to meet Level 1 standards contained in [**Choose one:** Part I.A of this permit/Part I.A of this authorization/9VAC25-740], application of the reclaimed water by methods that minimize aerosol formation (e.g., low trajectory nozzles for spray irrigation, above-ground drip irrigation, etc.), installation of permanent physical barriers to prevent migration of aerosols from the reclaimed water irrigation site, or any combination thereof. Written consent of affected landowners is required to reduce setback distances from occupied dwellings.
- b. Up to 100 % from property lines with written consent from adjacent landowners.
- c. To but not less than 100 feet from potable water supply wells and springs, or public water supply intakes where it is demonstrated that disinfection of the reclaimed water is equivalent to Level 1 standards contained in [**Choose one:** Part I.A of this permit/Part I.A of this authorization/9VAC25-740], and there are no other constituents of the reclaimed water present in quantities sufficient to be harmful to human health.
- d. To but not less than 25 feet from surface waters, including wetlands, where reclaimed water shall be applied by methods that minimize aerosol formation (e.g., low trajectory nozzles for spray irrigation, above-ground drip irrigation, etc.); or permanent physical barriers are installed to prevent the migration of aerosols from the reclaimed water irrigation site to surface waters.

**Basis:** 9VAC25-740-170.H.4

**(Applicable to spray irrigation of reclaimed water)**

60. Application of reclaimed water shall not occur during winds of sufficient strength to cause overspray or aerosol drift into or beyond the buffer zones or setbacks specified in Part I.B. [**Choose all that apply:** (for irrigation setbacks of Level 1 reclaimed water)57/(for irrigation setbacks of Level 2 reclaimed water) 58 and 59/(or other numbers that correspond with conditions 57, 58 and 59)].

**Basis:** 9VAC25-740-170.H.5.

**(Applicable to all setbacks distances for irrigation reuse of reclaimed water)**

61. Unless specifically stated otherwise, all setback distances for irrigation reuse of reclaimed water shall be measured horizontally. Where more than one setback distance may apply, the greater setback distance shall govern.

**Basis:** 9VAC25-740-170.H.6 and H.7

**(Applicable to non-commercially processed food crops irrigated with Level 1 or Level 2 reclaimed water)**

62. Reclaimed water meeting the standards for [**Choose one:** Level 1/Level 2/either Level 1 or Level 2] specified in Part I.A of this [**Choose one:** permit/authorization] may be used for irrigation of food crops eaten raw, excluding root crops, only where there shall be no direct contact (or indirect contact via aerosol) between the reclaimed water and edible portions of the crop.

**Basis:** 9VAC25-740-90.A, footnote c

**(Applicable to pastures for foraging milking animals, ornamental nurseries or sod farms irrigated with Level 2 reclaimed water)**

63. For irrigation with reclaimed water meeting Level 2 standards specified in Part I.A of this [**Choose one:** permit/authorization], the following shall be prohibited unless Level 1 disinfection specified in [**Choose one:** Part I.A of this permit/Part I.A of this authorization/9VAC25-740-90.A] is also provided:

- a. Grazing by milking animals on the irrigation reuse site for 15 days after irrigation with reclaimed water ceases, and
- b. Harvesting, retail sale or allowing access by the general public to ornamental nursery stock or sod farms for 14 days after irrigation with reclaimed water ceases.

**Basis:** 9VAC25-740-90.A, footnote d

**(Applicable to only below-ground drip irrigation reuse of water reclaimed from municipal wastewater and approved by DEQ in accordance with 9VAC25-740-90.B.)**

64. Below-ground drip irrigation systems shall reuse reclaimed water meeting the standards contained in [**Choose one:** Part I.A of this permit/Part I.A of this authorization/9VAC25-740]. [**Insert for below-ground drip irrigation reuse of Level 2 reclaimed water:** The minimum in-ground depth of burial for irrigation system piping that will distribute reclaimed water meeting Level 2 standards shall be six inches below the soil surface.]

**Basis:** DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.



**Conditions applicable to non-irrigation reuses of reclaimed water**

**(Applicable to indoor aesthetic features [i.e., decorative waterfalls or fountains] using Level 1 reclaimed water)**

65. A setback distance of 100 feet horizontally shall be maintained from indoor aesthetic features to adjacent indoor public eating and drinking facilities within the same room or building space where reclaimed water meeting the Level 1 standards specified in Part I.A of this [Choose one: permit/authorization] is used in the aesthetic features and the aesthetic features have the potential to create aerosols.

**Basis:** 9VAC25-740-170.J

**(Applicable to once through & recirculating cooling towers using Level 2 reclaimed water)**

66. Windblown spray generated by once-through cooling or recirculating cooling towers that reuse reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: permit/authorization] shall not reach areas accessible to workers or the public unless Level 1 disinfection of the reclaimed water in accordance with 9VAC25-740 is provided.

**Basis:** 9VAC25-740-90.A, footnote k

**(Applicable to open cooling towers using Level 2 reclaimed water)**

67. A setback distance of 300 feet horizontally shall be provided from an open cooling tower to the site property line where reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: permit/authorization] is used in the tower. No setback distance shall be required from an open cooling tower to the site property line where a drift or mist eliminator is installed and properly operated, or the reclaimed water used in the tower is treated to meet Level 1 disinfection standards contained in 9VAC25-740.

**Basis:** 9VAC25-740-170.K

**(Applicable to all reuses under the Construction and Industrial Reuse Categories included in the RWM plan)**

68. Worker contact with reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: permit/authorization] shall be minimized. Level 1 disinfection of the reclaimed water in accordance with 9VAC25-740 shall be provided when worker contact with the reclaimed water is likely.

**Basis:** 9VAC25-740-90.A, footnote e

**(Applicable to livestock watering that involves milking animals and aquaculture production of fish to be consumed raw)**

69. Reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: permit/authorization] may be used for [Choose all that apply: livestock watering/aquaculture production]. However, Level 1 disinfection specified in [Choose one: Part I.A of this permit/Part I.A of this authorization/9VAC25-740] shall be provided for [Choose all that apply: livestock watering that involves milking animals/aquaculture production of fish to be consumed raw, such as for sushi].

**Basis:** 9VAC25-740-90.A, footnotes i and j

**Conditions applicable to notifications, record keeping and reporting**

**(Applicable where the permit or authorization covers a reclaimed water distribution system and other systems (e.g., reclamation systems, SRSs and other reclaimed water distribution systems) providing reclaimed water to that distribution system, and the permittee is a reclaimed water agent required to have an E&N notification program (see subdivision III.C.4.f).)**

70. The permittee shall provide the following notifications to end users and, as applicable, the affected public:

a. Discharges of noncompliant reclaimed water.

- (1) Where treatment of reclaimed water by the [**Choose one:** reclamation system/satellite reclamation system] fails more than once during a seven-day period to comply with [**Choose all that apply:** (*applicable to Level 1 reclaimed municipal wastewater*) Level 1 disinfection standards/(*applicable to reclaimed municipal wastewater with SIUs or reclaimed industrial wastewater*) reclaimed water standards for the protection of human health] contained in Part I.A of this [**Choose one:** permit/ authorization], and the non-compliant reclaimed water has been discharged directly to reuses of end users, the permittee shall immediately notify end users of the treatment failures in accordance with the education and notification program of the approved RWM plan. The permittee shall also advise end users of precautions to be taken to protect public health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for a minimum of seven days or more when the frequency or magnitude of the treatment failure warrants extending the precautions to protect public health.
- (2) Where the reclaimed water distribution system fails to maintain the quality of reclaimed water that it receives from [**Choose all that apply:** the reclamation system/ the satellite reclamation system/another reclaimed water distribution system], such that the reclaimed water no longer complies with [**Choose all that apply:** (*applicable to Level 1 reclaimed municipal wastewater*) Level 1 disinfection standards (excluding CAT standards)/(*applicable to reclaimed municipal wastewater with SIUs or reclaimed industrial wastewater*) reclaimed water standards for the protection of human health] contained in Part I.A of this [**Choose one:** permit/ authorization], and the noncompliant reclaimed water has been discharged by the distribution system directly to reuses of end users, the permittee shall immediately notify end users of the noncompliant reclaimed water discharge and precautions to be taken as described in a(1) of this condition.

b. Loss of reclaimed water service.

Where reclaimed water service to end users will be lost or interrupted due to planned causes, such as, but not limited to, scheduled maintenance or repairs, the permittee shall provide advance notice to end users of the anticipated date and duration of the interrupted service in accordance with the permittee's approved Education and Notification program. Where reclaimed water service to end users is lost or interrupted due to unplanned causes, such as, but not limited to, an upset at the reclamation system or a break in a reclaimed water distribution main, the permittee shall notify end users and the affected public of the interrupted service if it cannot or will not be restored within eight hours of discovery.

The permittee shall also describe and report all notifications made to end users and, as applicable, the

affected public for causes described above to the DEQ [*Regional Office*] in accordance with Part I.B. [**Choose one:** 73 and 74/(*or other numbers that correspond to conditions 73 and 74*)].

**Basis:** 9VAC25-740-100.C.1.f, 9VAC25-740-170.A.2 and 9VAC25-740-200.B

**(Applicable where the permit or authorization covers a reclamation system or SRS but not a reclaimed water distribution system to which it discharges, and the distribution system is a reclaimed water agent required to have an E&N notification program (see subdivision III.C.4.f).)**

71. The permittee shall provide the following notifications to a reclaimed water distribution system not covered by this [**Choose one:** permit/authorization] that will receive reclaimed water from the [**Choose all that apply:** reclamation system/satellite reclamation system] covered by this [**Choose one:** permit/authorization]:

- a. Discharges of noncompliant reclaimed water. Where reclaimed water produced by the [**Choose all that apply:** reclamation system/satellite reclamation system] fails more than once during a seven-day period to comply with [**Choose all that apply:** (*applicable to Level 1 reclaimed municipal wastewater*) Level 1 disinfection standards/(*applicable to reclaimed municipal wastewater with SIUs or reclaimed industrial wastewater*) reclaimed water standards for the protection of human health] contained in Part I.A of this [**Choose one:** permit/authorization], and the non-compliant reclaimed water has been discharged to the reclaimed water distribution system, the permittee shall immediately:
  - (1) Notify the distribution system of the treatment failures and the discharge of non-compliant reclaimed water, and
  - (2) Advise the distribution system of precautions to be taken for a minimum of seven days or longer, depending on the frequency and magnitude of the treatment failure, to protect public health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely.
- b. Loss of reclaimed water service. The permittee shall provide notification to the reclaimed water distribution system for the loss or interruption of reclaimed water service as follows:
  - (1) For planned causes, such as, but not limited to, scheduled maintenance or repairs at the [**Choose all that apply:** reclamation system/satellite reclamation system], the permittee shall provide advance notice to the distribution system of the anticipated date and duration of the interrupted service.
  - (2) For unplanned causes, such as, but not limited to, an upset at the [**Choose all that apply:** reclamation system/satellite reclamation system], the permittee shall notify the distribution system of the interrupted service as soon as possible upon discovery.

The permittee shall also describe and report all notifications made to the reclaimed water distribution system for causes described above to the DEQ [*Regional Office*] in accordance with Part I.B. [**Choose one:** 75 and 76/(*or other numbers that correspond to conditions 75 and 76*)].

**Basis:** 9VAC25-740-100.C.1.f, 9VAC25-740-170.A.2, 9VAC25-740-200.B and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable where the permit or authorization covers a reclaimed water distribution system but not a reclamation system or SRS providing reclaimed water to the distribution system, and the**

**permittee is a reclaimed water agent required to have an E&N notification program. See subdivision III.C.4.f.)**

72. The reclaimed water distribution system covered by this [**Choose one:** permit/authorization] shall provide the following notifications to end users and, as applicable, the affected public:

- a. Discharges of noncompliant reclaimed water.
  - (1) Where (i) the reclaimed water distribution system will receive reclaimed water from a reclamation system or satellite reclamation system not covered by this [**Choose one:** permit/authorization], (ii) the reclamation system or satellite reclamation system notifies the distribution system that reclaimed water failing to comply with Level 1 disinfection standards or other reclaimed water standards for the protection of human health in the permit of the reclamation system or satellite reclamation system has been discharged to the distribution system, and (iii) the non-compliant reclaimed water has been discharged by the distribution system directly to reuses of end users, the permittee shall immediately notify end users of the treatment failures in accordance with the education and notification program of the permittee's approved RWM plan. The permittee shall also advise end users of precautions to be taken to protect public health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall, at a minimum, be those advised by the reclamation system or satellite reclamation system that discharged non-compliant reclaimed water to the distribution system, and be implemented for seven days or more if advised by the reclamation system or satellite reclamation system for the same non-compliant discharge.
  - (2) Where the reclaimed water distribution system (i) fails to maintain the quality of reclaimed water that it receives from a reclamation system or satellite reclamation system not covered by this [**Choose one:** permit/authorization], such that the reclaimed water no longer complies with Level 1 disinfection standards (excluding CAT standards) or other reclaimed water standards for the protection of human health contained in [**Choose one:** (*applicable where the distribution system is required to perform and report reclaimed water monitoring*) Part I.A of this (**Choose one:** permit/ authorization)/(*applicable where the distribution system has no monitoring and reporting requirements*)] the permit covering the reclamation system or satellite reclamation system], and (ii) discharges the noncompliant reclaimed water directly to reuses of end users, the permittee shall advise end users of precautions to be taken to protect public health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for seven days or more when the degree of reclaimed water degradation in the distribution system warrants extending the precautions to protect public health.
- b. Loss of reclaimed water service.
  - (1) Where the reclaimed water distribution system (i) will receive reclaimed water from a reclamation system or satellite reclamation system not covered by this [**Choose one:** permit/authorization], (ii) is notified by the reclamation system or satellite reclamation system that reclaimed water service is or will be lost or interrupted, and (iii) has no alternate reclaimed water source that is of equivalent quality and immediately available for the duration of the lost or interrupted service, the permittee shall provide notification to end users and the affected public of such events as follows:
    - (a) For planned causes, such as, but not limited to, scheduled maintenance or repairs at the

reclamation system or satellite reclamation system, the permittee shall provide advance notice to end users of the anticipated date and duration of the interrupted service.

- (b) For unplanned causes, such as, but not limited to, an upset at the reclamation system or satellite reclamation system, the permittee shall notify end users and the affected public of the interrupted service if it cannot or will not be restored within eight hours of discovery.
- (2) Where the reclaimed water distribution system is or will be the cause for planned or unplanned loss or interruption of reclaimed water service to end users, the permittee shall provide notification to end users and the affected public of the lost or interrupted service as described in b(1) of this condition.

The permittee shall also describe and report all notifications made to end users and, as applicable, the affected public for causes described above to the DEQ [*Regional Office*] in accordance with Part I.B. [**Choose one:** 73 and 74/(*or other numbers that correspond to conditions 73 and 74*)].

**Basis:** 9VAC25-740-100.C.1.f, 9VAC25-740-110.B.9, 9VAC25-740-170.A.2, 9VAC25-740-200.B and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable where the permittee is a reclaimed water agent - reporting interruption or loss of reclaimed water supply or service to end users)**

73. For each interruption or loss of reclaimed water supply or service to end users, the permittee shall report to the DEQ [*Regional Office*] in writing the following information [**Choose one:** with the next reclamation and reuse monitoring report /by the 10<sup>th</sup> of the month following the monitoring period in which the interruption or loss of reclaimed water supply or service occurs]:

- a. The service area of intended reuse affected by the incident;
- b. The initial date and time, and duration of the incident;
- c. The cause of the incident and whether the cause was planned or unplanned; and
- d. A description of steps taken to correct and prevent recurrence of the incident.

**[Include this statement only if the project has an approved E&N program:** This report shall also contain a description of any notification provided in accordance with the education and notification program of the approved RWM Plan.]

**Basis:** Although 9VAC25-740-200.B requires the interruption or loss of reclaimed water supply to be reported, specific information to be reported for such an occurrence is based on DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable where the permittee is a reclaimed water agent - reporting the discharge and, as applicable, the disposition of noncompliant reclaimed water)**

74. Where the [**Choose all that apply:** reclamation system/satellite reclamation system/reclaimed water distribution system] covered by this [**Choose one:** permit/ authorization] produces or causes the degradation of reclaimed water that fails to comply with [**Choose one:** (*applicable where Part I.A contains reclaimed water standards and monitoring for the specific system*) reclaimed water standards contained in Part I.A/(*applicable where Part I.A does not contain reclaimed water*

*standards and monitoring for the specific system*) standards required for intended and approved reuse(s) of that water in accordance with 9VAC25-740-90] **[Include for only reclaimed water distribution systems and if applicable:** , or receives notice of a noncompliant reclaimed water discharge to the distribution system from a system not covered by this (**Choose one:** permit/authorization)], the permittee shall report to the DEQ [*Regional Office*] the discharge of such water from the [**Choose all that apply:** reclamation system/satellite reclamation system/reclaimed water distribution system] to the service area as a noncompliance in accordance with Part II.I (Reports of Noncompliance) of [**Choose one:** (*for an authorization*) the permit associated with this authorization/(*for a VPDES or VPA permit*) this permit]. **[Include this statement only if the project has an approved E&N program:** The report shall also contain a description of any notification provided in accordance with the education and notification program of the approved RWM Plan.]

**[Inert this paragraph for only reclaimed water distribution systems:** Where disposition of noncompliant reclaimed water as described above from the reclaimed water distribution system was by means other than a discharge to the service area of intended reuse, the permittee shall report to the DEQ [*Regional Office*] by the 10<sup>th</sup> of the month following the month of such disposition:

- a. The cause for the noncompliant reclaimed water;
- b. The method(s) of disposition used for the noncompliant reclaimed water;
- c. The initial date and time, and the duration that each method of disposition was implemented;
- d. The approximate volume of noncompliant reclaimed water managed by each method of disposition; and
- e. A description of corrective action taken to prevent further need for such disposition where the reclaimed water distribution system was the cause of the noncompliant reclaimed water.]

**Basis:** 9VAC25-740-200.B, DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.; and the [**Choose one that applies:** (*for VPDES permits*) VPDES Permit Regulation, 9VAC25-31-10 et seq./(*for VPA permits*) VPA Permit Regulation, 9VAC25-32-10 et seq.]

**(Applicable where the permit or authorization covers a reclamation system or SRS but not the reclaimed water distribution system to which it discharges, and the distribution system is a reclaimed water agent - reporting interruption or loss of reclaimed water supply or service to the reclaimed water distribution system)**

75. For each interruption or loss of reclaimed water supply or service from the [**Choose one:** reclamation system/satellite reclamation system] to a reclaimed water distribution system not covered by this [**Choose one:** permit/authorization], the permittee shall report to the DEQ [*Regional Office*] in writing the following information with the next reclamation and reuse monitoring report:

- a. The initial date and time, and duration of the incident;
- b. The cause of the incident and whether the cause was planned or unplanned; and
- c. A description of steps taken to correct and prevent recurrence of the incident.

**[Include this statement only if the reclamation system or SRS has an approved RWM plan with an E&N program:** The report shall also contain a description of any notification provided for the

same incident in accordance with the education and notification program of the approved RWM Plan for the (**Choose one:** reclamation system/satellite reclamation system).]

**Basis:** Per 9VAC25-740-200.B, the permittee must report to DEQ the interruption or loss of reclaimed water supply “to the service area of intended reuse”. Where a reclamation system or satellite reclamation system (SRS) and a reclaimed water distribution system that receives reclaimed water from the reclamation system or SRS are not covered by the same permit or authorization, for the purposes of reporting in accordance with 9VAC25-740-200.B, the reclaimed water distribution system is considered the “service area of intended reuse” for the reclamation system. Specific information to be reported for such an occurrence is based on DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

**(Applicable where the permit or authorization covers a reclamation system or SRS but not the reclaimed water distribution system to which it discharges - reporting the discharge of substandard reclaimed water to the distribution system)**

76. Each discharge of any water that fails to comply with reclaimed water standards contained in Part I.A from the [**Choose one:** reclamation system/satellite reclamation system] to a reclaimed water distribution system not covered by this [**Choose one:** permit/authorization] shall be reported by the permittee to the DEQ [*Regional Office*] as a noncompliance in accordance with Part II.I (Reports of Noncompliance) of [**Choose one:** (*for an authorization*) the permit associated with this authorization/(*for a VPDES or VPA permit*) this permit]. [**Include this statement only if the reclamation system or SRS has an approved RWM plan with an E&N program:** This report shall also contain a description of any notification provided for the same incident in accordance with the education and notification program of the approved RWM Plan for the (**Choose one:** reclamation system/satellite reclamation system).]

**Basis:** 9VAC25-740-200.B, DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.; and the [**Choose one that applies:** (*for VPDES permits*) VPDES Permit Regulation, 9VAC25-31-10 et seq./(*for VPA permits*) VPA Permit Regulation, 9VAC25-32-10 et seq.]. Per 9VAC25-740-200.B, the permittee must report to DEQ the discharge of any untreated or partially treated water that fails to meet to comply with specified standards in the permit “to the service area of intended reuse”. Where a reclamation system or satellite reclamation system (SRS) and a reclaimed water distribution system that receives reclaimed water from the reclamation system or SRS are not covered by the same permit or authorization, for the purposes of reporting in accordance with 9VAC25-740-200.B, the reclaimed water distribution system is considered the “service area of intended reuse” for the reclamation system.

**(Applicable where the permit or authorization covers a reclaimed water distribution system – reporting reclaimed water distribution system leaks and main breaks)**

77. All leaks and main breaks of the reclaimed water distribution system shall be reported by the permittee upon discovery as follows:
- a. Where the leak or main break discharges or causes or allows a discharge of reclaimed water that may reasonably be expected to enter state waters, the incident shall be reported by the permittee to the DEQ [*Regional Office*] as an unauthorized discharge in accordance with Part II.G (Reports of Unauthorized Discharge) of [**Choose one:** (*for an authorization*) the permit associated with this authorization/(*for a VPDES or VPA permit*) this permit].
  - b. Where the leak or main break does not discharge or cause or allow a discharge of reclaimed water that may reasonably be expected to enter state waters, but may adversely affect state waters or may endanger public health, the incident shall be reported by the permittee to the DEQ [*Regional Office*] as a noncompliance in accordance with Part II.I (Reports of Noncompliance) of [**Choose**

**one:** (for an authorization) the permit associated with this authorization/(for a VPDES or VPA permit) this permit].

**Basis:** DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq., and the [**Choose one that applies:** (for VPDES permits) VPDES Permit Regulation, 9VAC25-31-10 et seq./ (for VPA permits) VPA Permit Regulation, 9VAC25-32-10 et seq.]

**(Applicable to conjunctive systems required to have an auxiliary plan (see subdivision III.C.3) – reporting implementation of the auxiliary plan.)**

78. Under foreseeable circumstances where the permittee must implement the approved auxiliary plan for the reclamation system, the permittee shall report the following to the DEQ [*Regional Office*] not less than 10 days prior to implementing the plan:

- a. The cause(s) for implementing the plan,
- b. The start date to implement the plan, and
- c. The anticipated period the plan will be implemented.

Under unforeseeable or emergency circumstances, the permittee shall report the above information to the DEQ [*Regional Office*] within five days of implementing the auxiliary plan.

**Basis:** 9VAC25-740-100.B.7, DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq. [**Applicable only where the reclamation system is covered by a VPA permit:** , and the VPA Permit Regulation, 9VAC25-32-10 et seq.]

**(Applicable to reclamation systems and reclaimed water distribution systems – record keeping)**

79. In addition to records specified in Part II.B of [**Choose one:** (for an authorization) the permit associated with this authorization/(for a VPDES or VPA permit) this permit], the permittee shall maintain the following at [**Choose all that apply:** the reclamation system/a central depository within the reclaimed water distribution system] for the period specified in Part II.B:

- a. Water reclamation and reuse operating records to include all analyses required for reclaimed water in Part I.A of this [**Choose one:** permit/ authorization], records of operational problems, alarm failures, unit process and equipment breakdowns, diversions to reject storage or emergency storage, discharge to another permitted reuse system requiring a lower level of treatment, or disposal via a permitted effluent discharge; and all corrective or preventive action taken.
- b. A monthly summary of the operating records specified in a. of this condition.

**Basis:** 9VAC25-740-190.A and B

**(Applicable to bulk irrigation reuse sites and associated storage owned or operated by the permittee - monthly reporting)**

80. The permittee shall submit a monthly summary report of the previous month's bulk irrigation reuse activities and associated storage of reclaimed water to the DEQ [*Regional Office*] by the 10th day of the following month. Reports shall include:

- a. The monthly total volume of reclaimed water applied, the combined monthly total volume of all other sources of water applied or received through natural precipitation (e.g., rain or snow fall), and the calculated monthly water demands of the irrigated vegetation in gallons for each approved bulk irrigation reuse site owned or managed by the permittee.



**(Applicable only where bulk irrigation reuse site has a NMP)**

- b. Rates of nitrogen and phosphorus applied during the previous month by way of reclaimed water to each approved bulk irrigation reuse site owned or managed by the permittee. Nitrogen shall be expressed as pounds of plant available nitrogen (PAN) per acre and phosphorus shall be expressed as pounds of P<sub>2</sub>O<sub>5</sub> per acre.

**(c. and d. are applicable where the permittee of a reclamation system does not have an option to dispose of reclaimed water by means other than irrigation reuse on sites owned or managed by the permittee, and must have system storage.)**

- c. For each facility used to store reclaimed water for irrigation reuse, a summary of the volumes of reclaimed water placed in and withdrawn from the storage facility during the previous month, and the remaining storage capacity.
- d. Weekly staff gauge readings of reclaimed water levels in the storage facility during the previous month demonstrating freeboard maintenance.

**Basis:** DEQ, Water Division Interim Guidance Memorandum #01-2005 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**(Applicable to reclaimed water distribution systems – annual reporting)**

81. The permittee shall submit an annual report for the reclaimed water distribution system covering a 12-month period from January 1 through December 31 to the DEQ [*Regional Office*] on or before February 10 of the following year. The annual report shall, at a minimum, include:

- a. The estimated volume of reclaimed water distributed to the service area of the RWM plan, reported as monthly totals.

**(Insert this paragraph where the permittee will deliver non-BNR reclaimed water to irrigation reuses within the service area, including irrigation reuse by the permittee)**

- b. The monthly average concentrations of total N and total P in the reclaimed water, an estimate of the monthly total volume of reclaimed water used for [**Choose all that apply:** nonbulk irrigation / bulk irrigation], the monthly total nutrient loads (N and P) to the service area resulting from [**Choose all that apply:** nonbulk irrigation / bulk irrigation] reuse, and the area in active reuse for [**Choose all that apply:** nonbulk irrigation / bulk irrigation] within the service area.

**[Insert this paragraph only for distribution systems that require an E&N program. See subdivision III.C.4.f.]**

- c. A summary of ongoing education and notification program activities. The summary shall include, at a minimum:

**[Insert (1) only for irrigation reuse of non-BNR reclaimed water]**

- (1) Education programs for individual nonbulk irrigation end users of the reclaimed water,
- (2) Copies of educational materials,
- (3) The number and duration of notifications to end users for each month during the annual reporting period due to:
  - (a) Discharges of noncompliant reclaimed water to reuses of end users; and

- (b) Planned and unplanned loss or interruption of reclaimed water service to end users.

**[Insert this paragraph where the distribution system will deliver reclaimed water to end users other than the permittee.]**

- d. A summary of all notices of failure to comply with the terms and conditions of the service agreement or contract between the distribution system and end users, issued by the distribution system to end users during the annual reporting period. For each notice, the summary shall include, at a minimum, the name of the end user receiving the notice, the date of the notice, and a brief description of the cause for the notice.

**Basis:** 9VAC25-740-200.C [Add this only if paragraph “b” is included in this condition: 9VAC25-740-100.C.3] [Add this only if paragraph “c” is included in this condition: 9VAC25-740-170.A.2] [Add this only if paragraph “d” is included in this condition: DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.]

**(Applicable to bulk irrigation reuse sites and associated storage owned or operated by the permittee – annual reporting)**

82. The permittee shall submit an annual report of bulk irrigation reuse activities by the permittee and associated system storage of reclaimed water covering a 12-month period from January 1 through December 31 to the DEQ [*Regional Office*] on or before February 10 of the following year. The annual summary report shall, at a minimum, include:

- a. A yearly water balance showing such items as inputs and drawdowns from reclaimed water system storage facilities.
- b. A general statement of past reclaimed water system storage performance and the compliance status of [this facility/these facilities] with the requirements of this [Choose one: permit/authorization].
- c. The annual total volume of reclaimed water applied to each bulk irrigation reuse site owned or managed by the permittee.

**[Insert d. and e. when the permittee has submitted NMPs to the DEQ for bulk irrigation reuse sites under common ownership or management with the permittee]**

- d. The annual cumulative nitrogen load, expressed as plant available nitrogen (PAN) per acre, and the annual cumulative phosphorus load, expressed as P<sub>2</sub>O<sub>5</sub> per acre, from reclaimed water applied to each bulk irrigation reuse site owned or managed by the permittee.
- e. A comparison of the actual annual cumulative loads of nitrogen (N) and phosphorus (P) applied from all sources of nutrients, including irrigation reuse of the reclaimed water, to annual loads of N and P specified in the nutrient management plan (NMP) for each bulk irrigation reuse site required to have a NMP. Application of N and P in excess of the annual N and P loads specified in the NMP shall be deemed a violation of this [Choose one: permit/authorization].
- f. [Choose the statement(s) that apply: A summary of turf management practices that occurred during the proceeding growing season./A summary of the agronomic practices which occurred during the preceding growing season including, but not limited to, the timing and number of crop cuttings, an estimate of total crop yield (bushels/acre or tons/acre) removed from the site, the quantity of any lime, fertilizer and animal waste (*specifying type of animal waste*) additions made

Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
Attachment A

to the site; and reseeded.]

**Basis:** DEQ, Water Division Interim Guidance Memorandum #01-2005 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

**Condition applicable to emergency authorizations**

83. No later than 180 days after the issuance of this emergency authorization to produce, distribute or reuse reclaimed water, the permittee shall apply for non-emergency permit coverage to replace the emergency authorization. Failure to apply for non-emergency permit coverage within this period shall be a violation. Upon receipt of an application for non-emergency permit coverage by the DEQ [*Regional Office*], the emergency authorization shall remain in effect until non-emergency permit coverage is issued to the permittee.

**Basis:** 9VAC25-740-45.E

**Attachment B – Monitoring Report and Attachments**

## General Instructions

Attachment B contains the following template and forms:

- **Monitoring report template for a VPA permitted facility.** This template is to be used to develop monitoring reports for reclamation and reuse projects authorized by a VPA permit or an emergency authorization associated with a VPA permit. Monitoring reports for reclamation and reuse projects authorized by a VPDES permit or an authorization (administrative or emergency) associated with a VPDES permit are to be generated by CEDS (see subdivision [III.G.6.c](#)).
- **Supplemental Report for Reclamation Systems Authorized by or in Association with a VPDES Permit.** This form is to be provided to the permittee for only those water reclamation and reuse projects authorized by a VPDES permit or an authorization (administrative or emergency) associated with a VPDES permit. It allows CAT occurrence reporting for which CEDS cannot generate a report form.
- **Monthly Log Sheet for Reclaimed Water Turbidity Monitoring.** This form is to be provided to permittees authorized to produce Level 1 reclaimed water by a VPA or VPDES permit, an administrative authorization associated with a VPDES permit, or an emergency authorization associated with a VPA or VPDES permit.
- **Monthly Log Sheet for Reclaimed Water Bacteria Monitoring.** This form is to be provided to permittees authorized to produce reclaimed water (Level 1 or Level 2) by a VPA or VPDES permit, an administrative authorization associated with a VPDES permit, or an emergency authorization associated with a VPA or VPDES permit.

The monitoring report for water reclamation and reuse projects must reflect the parameters and monitoring requirements shown on the reclaimed water standards page of the permit (VPA or VPDES), an administrative authorization (associated with a VPDES permit), or an emergency authorization (associated with a VPA or VPDES permit).

Where brackets “[ ]” appear on the template and forms in Attachment B, instructions and/or values within the brackets should be used to prepare the final reporting documents for the permittee. Where two or more values or parameters appear in brackets, choose the one that corresponds to parameters and monitoring requirements shown on the reclaimed water standards page in the permit or authorization (administrative or emergency). Delete the brackets and unused values or parameters.

Add other parameters and their standards not shown on the monitoring report template if they are included on the corresponding reclaimed water standards page in the permit or authorization. Delete parameters and their standards that appear on the monitoring report template but do not also appear on the corresponding reclaimed water standards pages in the permit or authorization.

In the column under “Frequency of Analysis”, “TBD” means “to be determined” and applies to specific parameter based on the DDF of the reclamation system or SRS (see subdivision [III.G.6.i](#)). The frequency of analysis for each parameter on the monitoring report should be that of the same parameter shown on the corresponding reclaimed water standards page in the permit or authorization.

As applicable, the monitoring report for reclamation and reuse projects may include “Additional

Permit Requirements or Comments”. These are to be entered on the VPA monitoring report template for facilities covered by a VPA permit or an emergency authorization associated with a VPA permit, or in the DMR comments field on the outfall information screen of CEDS for facilities covered by a VPDES permit or an authorization (administrative or emergency) associated with a VPDES permit. Additional permit requirements or comments include, but are not limited to, those noted on the VPA monitoring report template in this attachment.

For every page of reclaimed water standards contained in the permit or authorization for a water reclamation and reuse project, separate reclaimed water monitoring report forms must be created. For example, separate reclaimed water monitoring report forms must be created for Level 1 and Level 2 reclaimed water produced by the same reclamation system or SRS, and for each system and facility producing, storing and distributing reclaimed water covered by the same permit or authorization and requiring reclaimed water monitoring.

For VPDES permitted reclamation and reuse projects that will submit reclaimed water monitoring reports electronically through e-DMR (see subdivision [III.G.6.c](#)), forms that are associated with the monitoring report (e.g., Supplemental Report for Reclamation Systems Authorized by or in Association with a VPDES Permit, Monthly Log Sheet for Reclaimed Water Turbidity Monitoring, and Monthly Log Sheet for Reclaimed Water Bacteria Monitoring) may also be submitted electronically as attachments to the monitoring report, provided the size of each attachment does not exceed 1.5 MB.

**COMMONWEALTH OF VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
 VPA MONITORING REPORT

DEPT. OF ENVIRONMENTAL QUALITY  
 (REGIONAL OFFICE)

[Address 1]  
 [Address 2]  
 [Address 3]  
 [Address 4]

Name: [Facility Name]  
 Address: [Address 1]  
 [Address 2]

Sampling Location: [Point of Compliance #]

VPA0_____						
PERMIT NUMBER						
MONITORING PERIOD						
YR	MO	DAY		YR	MO	DAY

FROM TO

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	RPTNG REQ
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS				
001 FLOW	RPRTD				*****	*****	*****	***	**			
	RQMNT	[designated design flow]	NL	MGD	*****	*****	*****	***	**	CONT	TIRE	1/M
002 PH	RPRTD	*****	*****	***		*****						
	RQMNT	*****	*****	***	6.0	*****	9.0	S.U.	0	1/DAY	GRAB	1/M
003 BOD5	RPRTD	*****	*****	***	*****							
	RQMNT	*****	*****	***	*****	[10/30]	[NL/45]	mg/l	0	[TBD]	GRAB	1/M
004 TSS	RPRTD	*****	*****	***	*****							
	RQMNT	*****	*****	***	*****	30	45	mg/l	0	[TBD]	GRAB	1/M
006 FECAL COLIFORM	RPRTD	*****	*****	***	*****				**			
	RQMNT	*****	*****	***	*****	[14/200]	NL	n/100ml	**	[TBD]	GRAB	1/M
157 TRC	RPRTD	*****	*****	***		*****	*****		**			
	RQMNT	*****	*****	***	NL	*****	*****	mg/l	**	[CONT/TBD]	[REC/GRAB]	1/M
159 CBOD5	RPRTD	*****	*****	***	*****							
	RQMNT	*****	*****	***	*****	[8/25]	[NL/40]	mg/l	0	[TBD]	GRAB	1/M
120 E COLI	RPRTD	*****	*****	***	*****				**			
	RQMNT	*****	*****	***	*****	[11/126]	NL	n/100ml	**	[TBD]	GRAB	1/M
140 ENTEROCOCCI	RPRTD	*****	*****	***	*****				**			
	RQMNT	*****	*****	***	*****	[11/35]	NL	n/100ml	**	[TBD]	GRAB	1/M
798 TURBIDITY	RPRTD	*****	*****	***	*****	*****			**			
	RQMNT	*****	*****	***	*****	*****	2	NTU	**	CONT	REC	1/M
012 PHOSPHORUS, TOTAL (AS P)	RPRTD	*****	*****	***	*****		*****		**			
	RQMNT	*****	*****	***	*****	NL	*****	mg/l	**	[TBD]	[GRAB/# HC]	1/M



**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
 VPA MONITORING REPORT

DEPT. OF ENVIRONMENTAL QUALITY  
 (REGIONAL OFFICE)

[Address 1]  
 [Address 2]  
 [Address 3]  
 [Address 4]

Name: [Facility Name]  
 Address: [Address 1]  
 [Address 2]

Sampling Location: [Point of Compliance #]

VPA0_____						
PERMIT NUMBER						
MONITORING PERIOD						
YR	MO	DAY	TO	YR	MO	DAY

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	RPTNG REQ
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM				
013 NITROGEN, TOTAL (AS N)	RPRTD	*****	*****	***	*****		*****		**		
	RQMNT	*****	*****	***	*****	NL	*****	mg/l	**	[TBD]	[GRAB/# HC]
792 NITROGEN, TOTAL – CALENDAR YEAR AVERAGE	RPRTD	*****	*****	***	*****		*****				
	RQMNT	*****	*****	***	*****	NL	*****	mg/l		1/YEAR	CALC
794 PHOSPHORUS, TOTAL – CALENDAR YEAR AVERAGE	RPRTD	*****	*****	***	*****		*****				
	RQMNT	*****	*****	***	*****	NL	*****	mg/l		1/YEAR	CALC
[OTHER]	RPRTD	*****	*****	***	*****	*****	*****		**		
	RQMNT	*****	*****	***	*****	*****	*****		**		

ADDITIONAL PERMIT REQUIREMENTS OR COMMENTS:

*[Insert for bacteria monitoring of reclaimed water:* Submit the Monthly Log Sheet for Reclaimed Water Bacteria Monitoring with this report to the DEQ *[Regional Office].]*  
*[Insert for chlorine monitoring of reclaimed water:* For TRC, report the lowest analysis for the month.]  
*[Insert for turbidity monitoring of reclaimed water:* For turbidity, report the highest daily average for the month. Submit the Monthly Log Sheet for Reclaimed Water Turbidity Monitoring with this report to the DEQ *[Regional Office].]*

***[Insert the following question only for reclamation systems or SRSs that will produce Level 1 reclaimed water from municipal wastewater]***  
 Were any bacterial monitoring samples collected outside the period of 10:00 a.m. to 4:00 p.m.?  Yes  No ***[Where the permittee has been granted an exception by DEQ to sample bacteria outside 10:00 a.m. to 4:00 p.m., replace this sampling period with the sampling period specified in the exception.]***

**COMMONWEALTH OF VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
 VPA MONITORING REPORT

Page 3 of \_\_\_

DEPT. OF ENVIRONMENTAL QUALITY  
 (REGIONAL OFFICE)

[Address 1]  
 [Address 2]  
 [Address 3]  
 [Address 4]

Name: [Facility Name]  
 Address: [Address 1]  
 [Address 2]  
 Sampling Location: [Point of Compliance #]

VPA0 _____
PERMIT NUMBER

MONITORING PERIOD						
YR	MO	DAY		YR	MO	DAY
			FROM			
						TO

	CAT PARAMETER	NUMBER. OF CAT EVENTS <sup>1</sup>	NUMBER OF CAT EVENTS WHERE ≥ 2 CONSECUTIVE MONITORING RESULTS REACHED CAT <sup>2</sup>	NUMBER OF CAT DIVERSIONS <sup>3</sup>
CORRECTIVE ACTION THRESHOLD (CAT) REPORTING	<i>[Insert bacteria monitoring parameter]</i> <input type="checkbox"/>			*****
	TRC <input type="checkbox"/>		*****	
	<i>[Insert this row if the permit or authorization has a CAT standard for turbidity, applicable in most cases to Level 1 reclaimed water. Delete this row and turbidity CAT reporting if not used.]</i>			
	TURBIDITY <input type="checkbox"/>		*****	
BYPASS OCCURRENCES	TOTAL OCCURRENCES <sup>4</sup>	TOTAL FLOW		

1. A corrective action threshold (CAT) event consists of one or more measurements that [**Choose all that apply:** fall below the CAT for TRC/exceed the CAT for turbidity/exceed the CAT for *[Insert bacteria monitoring parameter]*]. -A CAT event is considered separate from another similar event by one or more consecutive monitoring result that do not reach the CAT of the monitored parameter.
2. For bacteria monitoring parameters only, indicate the number of CAT events during the reporting period where two or more consecutive monitoring results reached the CAT of the monitored parameter.
3. On a separate sheet attached to this monitoring report, indicate for each diversion associated with a [**Choose all that apply:** TRC/turbidity] CAT event the date, time and reading of the first measurement initiating the CAT event and all subsequent measurements made during the CAT event, including measurements made during the diversion; and the date, time, duration and volume of the diversion.
4. On a separate sheet attached to this monitoring report, provide for each bypass occurrence a general description of circumstances resulting in the bypass of the [**Choose one:** reclamation system/satellite reclamation system/(*applicable to reclaimed water distribution systems that provide additional treatment to maintain or restore reclaimed water quality during transport and have monitoring requirements*) reclaimed water distribution system/(*applicable to system storage facilities that provide additional treatment to maintain reclaimed water quality and have monitoring requirements*) system storage] and appurtenances, the flow of the bypass, the duration of the bypass, and whether the water of the bypass did or did not comply with the reclaimed water standards of the [**Choose all that apply:** permit/authorization].

**COMMONWEALTH OF VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
 VPA MONITORING REPORT

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DEPT. OF ENVIRONMENTAL QUALITY  
 (REGIONAL OFFICE)

[Address 1]  
 [Address 2]  
 [Address 3]  
 [Address 4]

Name: [Facility Name]  
 Address: [Address 1]  
 [Address 2]

Sampling [Point of Compliance #]  
 Location:

VPA0 _____
PERMIT NUMBER

MONITORING PERIOD						
YR	MO	DAY		YR	MO	DAY

FROM

TO

I hereby certify under penalty of law that this document and all attached report forms were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	OPERATOR IN RESPONSIBLE CHARGE			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	CERTIFICATE NO.	YR	MO	DAY
	PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	TELEPHONE	YR	MO	DAY

### Supplemental Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit

	CAT PARAMETER	NUMBER OF CAT EVENTS <sup>1</sup>	NUMBER OF CAT EVENTS WHERE ≥ 2 CONSECUTIVE MONITORING RESULTS REACHED CAT <sup>2</sup>	NUMBER OF CAT DIVERSIONS <sup>3</sup>
CORRECTIVE ACTION THRESHOLD (CAT) REPORTING	<i>[Insert bacteria monitoring parameter]</i> <input type="checkbox"/>			*****
	TRC <input type="checkbox"/>		*****	
	<i>[Insert this row if the permit or authorization has a CAT standard for turbidity, applicable in most cases to Level 1 reclaimed water. Delete this row and turbidity CAT reporting if not used.]</i>			
	TURBIDITY <input type="checkbox"/>		*****	
BYPASS OCCURRENCES	TOTAL OCCURRENCES <sup>4</sup>	TOTAL FLOW		

1. A corrective action threshold (CAT) event consists of one or more measurements that [**Choose all that apply:** fall below the CAT for TRC/exceed the CAT for turbidity/exceed the CAT for *[Insert bacteria monitoring parameter]*]. A CAT event is considered separate from another similar event by one or more consecutive monitoring result that do not reach the CAT of the monitored parameter.
2. For bacteria monitoring parameters only, indicate the number of CAT events during the reporting period where two or more consecutive monitoring results reached the CAT of the monitored parameter.
3. On a separate sheet attached to the monitoring report of the VPDES permit, indicate for each diversion associated with a [**Choose all that apply:** TRC/turbidity] CAT event the date, time and reading of the first measurement initiating the CAT event and all subsequent measurements made during the CAT event, including measurements made during the diversion; and the date, time, duration and volume of the diversion.
4. On a separate sheet attached to the monitoring report of the VPDES permit, provide for each bypass occurrence a general description of circumstances resulting in the bypass of the [**Choose one:** reclamation system/satellite reclamation system/*(applicable to reclaimed water distribution systems that provide additional treatment to maintain or restore reclaimed water quality during transport and have monitoring requirements)* reclaimed water distribution system/*(applicable to system storage facilities that provide additional treatment to maintain reclaimed water quality and have monitoring requirements)* system storage] and appurtenances, the flow of the bypass, the duration of the bypass, and whether the water of the bypass did or did not comply with the reclaimed water standards of the [**Choose all that apply:** permit/authorization].

**[Insert the following question only for reclamation systems or SRSs that will produce Level 1 reclaimed water from municipal wastewater]**  
 Were any bacterial monitoring samples collected outside the period of 10:00 a.m. to 4:00 p.m.?  Yes  No **[Where the permittee has been granted an exception by DEQ to sample bacteria outside 10:00 a.m. to 4:00 p.m., replace this sampling period with the sampling period specified in the exception]**

I hereby certify under penalty of law that this document and all attached report forms were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those	OPERATOR IN RESPONSIBLE CHARGE			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	CERTIFICATE NO.	YR	MO	DAY

Water Guidance Memo No. 10-2001, Revision No. 1

Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

Attachment B

persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	TELEPHONE	YR	MO	DAY



<b>Monthly Log Sheet for Reclaimed Water Turbidity Monitoring</b>	
<b>Operator in responsible charge:</b>	
Print or type name: _____	
Signature: _____	Certificate No.: _____
Telephone No.: _____	Date: _____





<b>Monthly Log Sheet for Reclaimed Water Bacteria Monitoring</b>	
<b>Print name(s) of person(s) collecting samples:</b>  _____	<b>Print name(s) of person(s) or contract laboratory analyzing samples:</b>  _____
<b>Operator in responsible charge:</b> <b>Print or type name:</b> _____	
<b>Signature:</b> _____	<b>Certificate No.:</b> _____
<b>Telephone No.:</b> _____	<b>Date:</b> _____

**Attachment C – Water Reclamation and Reuse Conditions for Service Agreements or  
Contracts**

## **Water Reclamation and Reuse Conditions for Service Agreements or Contracts**

Attachment C contains the minimum conditions to be included in service agreements or contracts between the applicant or permittee and end users of reclaimed water where the applicant or permittee will act as a reclaimed water agent (see subdivision [III.C.4.d](#)). The conditions are divided into Sections I through VII. Section I includes General Conditions that are to be included in most service agreements or contracts with some exceptions noted. Conditions under Sections II through VII are to be included in service agreements or contracts for specific reuses that are grouped according to reuse categories listed in [9VAC25-740-90.A](#) of the Water Reclamation and Reuse Regulation and below:

- **urban – unrestricted access** (requires a minimum of Level 1 reclaimed water)
- **irrigation – unrestricted access** (requires a minimum of Level 1 reclaimed water)
- **irrigation – restricted access** (requires a minimum of Level 1 or 2 reclaimed water depending on potential for public access or contact)
- **landscape impoundments** (requires a minimum of Level 1 or 2 reclaimed water depending on potential for public access or contact)
- **construction** (requires a minimum of Level 2 reclaimed water)
- **industrial** (requires a minimum of Level 1 or 2 reclaimed water depending on type of reuse)

Pursuant to [9VAC25-740-100.C.1.d](#), the reclaimed water agent is required to submit only examples of service agreements or contracts with the Reclaimed Water Management (RWM) plan in the Water Reclamation and Reuse Addendum to an Application for a VPDES or VPA Permit ([Application Addendum](#)). The RWM plan must also include a description and service area map, identifying and displaying the location of all reclaimed water reuses by reuse categories within the service area. Where there will be more than one reuse category within the service area, it is recommended that the example service agreement or contract include general conditions of Section I and divide all other conditions into modules according to reuse categories similar to the organization of Sections II through VII. The modules may then be included in or removed from an actual service agreement or contract between the reclaimed water agent and an end user determined by the applicability of the conditions in each module to the particular reuses of the end user. For reuses of reclaimed water produced from municipal wastewater that are not listed in [9VAC25-740-90.A](#) and for any reuse of reclaimed water produced from industrial wastewater, the DEQ RO may require the inclusion of additional conditions in the service agreement or contract that are consistent with requirements contained in the permit or authorization that is or will be issued to the reclaimed water agent.

**I. General conditions for service agreements or contracts**

- A. [Name of permittee] shall provide reclaimed water to the end user meeting, at a minimum, the standards [**Choose all that apply:** of Level 1/of Level 2/(*applicable to standards developed on a case-by-case basis*) established by DEQ in the permit or authorization issued to (*insert name of permittee*)] for the following reuses:

*[Where the permittee will provide only Level 1 reclaimed water or both Level 1 and Level 2 reclaimed water, list the end user's reuses that require a minimum of Level 1 and Level 2 reclaimed water per [9VAC25-740-90.A.](#)]*

*[Where the permittee will provide only Level 2 reclaimed water, list the end user's reuses that require a minimum of Level 2 reclaimed water per [9VAC25-740-90.A.](#)]*

*[Where the permittee will provide reclaimed water meeting standards developed by DEQ on a case-by-case basis in accordance with [9VAC25-740-90.B.](#), list the end user's reuse for which the standards were specifically developed.]*

- B. The end user shall notify and receive authorization from [name of permittee] for new reuses or changes to existing reuses of reclaimed water provided by [name of permittee] prior to initiating these reuses. Authorization of new or changed reuses may require the addition of new conditions or the modification of existing conditions contained in this service agreement or contract, to be implemented by the end user.
- C. [Name of permittee] shall reserve the right to perform routine or periodic inspections of the end user's reclaimed water reuses and, as applicable, storage facilities; and to terminate the agreement or contract with and withdraw service to the end user for any failure by the end user to comply with the terms and conditions of the agreement or contract if corrective action for such failure is not taken by the end user.
- D. End users that are property owners shall report all potable and non-potable water supply wells on their property to [name of permittee].
- E. The following are prohibited:
1. Direct potable reuse of reclaimed water;
  2. The reuse of reclaimed water for food preparation or incorporation as an ingredient into food or beverage for human consumption;
  3. The return of reclaimed water to the reclaimed water distribution system after the reclaimed water has been delivered to an end user; and
  4. Overspray of surface waters, including wetlands, from irrigation or other reuses of reclaimed water.
- F. There shall be no nuisance conditions (e.g., ponded water that attracts mosquitoes or other vectors, strong odors that are the subject of frequent and wide spread complaints from the surrounding community, and any condition determined by a court of law to be a nuisance condition) resulting from the distribution, storage or use of reclaimed water.

**(Applicable only where the permittee will provide Level 1 reclaimed water to the end user.)**

G. **[Choose one of the following sentences:** For irrigation reuses of reclaimed water treated to Level 1, advisory signs or placards shall be posted within and at the boundaries of irrigation reuse areas. / For all reuses of reclaimed water treated to Level 1, advisory signs or placards shall be posted *(State the specific location for placement of advisory signs or placards. Examples of specific locations include, but are not limited to, entrances to the residential neighborhood, the entrance to the golf course, the first and tenth tees, etc.)*.] Each sign or placard shall:

1. State the nature of the reuse;
2. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
3. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the *[name of permittee]* in consultation with the DEQ *[Regional Office]*.

**(Applicable only where the permittee will provide Level 2 reclaimed water to the end user.)**

H. For all reuses of reclaimed water treated to Level 2, public access shall be restricted by methods that may include, but are not limited to, fencing around the site boundary. Advisory signs or placards shall be posted around reuse areas or reuse site boundaries. Each sign or placard shall:

1. State the nature of the reuse and no trespassing;
2. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
3. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the *[name of permittee]* in consultation with the DEQ *[Regional Office]*.

**(Applicable where a blending end user distributes blended reclaimed water exclusively to itself for reuse. See subdivision [III.B.4.](#))**

I. Where an end user blends reclaimed waters meeting differing reclaimed water standards (i.e., one reclaimed water meets Level 1 and another meets Level 2) or having differing nutrient content (i.e., one reclaimed water meets BNR and another is not treated to achieve BNR as defined in [9VAC25-740-10](#)) from more than one reclamation system, satellite reclamation system, reclaimed water distribution or a combination thereof; and the blended reclaimed water shall be used exclusively by the blending end user, the blended reclaimed water shall be limited to reuses requiring a minimum of Level 2 reclaimed water and/or shall not be considered treated to achieve BNR, thereby requiring management of nutrients in the reclaimed water for irrigation reuses.

## II. Conditions required for urban unrestricted access reuse

- A. The following are prohibited:
1. The reuse of reclaimed water distributed to one-family or two-family dwellings, except for reuses outside of and on the same property as one-family or two-family dwellings where the reclaimed water is not distributed to such reuses by way of the plumbing within the dwellings;
  2. The reuse of reclaimed water to fill residential swimming pools, hot tubs or wading pools;
  3. The reuse of reclaimed water for drinking and oral hygiene; and
  4. The reuse of reclaimed water for food preparation or incorporation as an ingredient into food or beverage for human consumption.
- B. If at any time the [*name of permittee*] notifies the end user that reclaimed water delivered to the end user by the [*name of permittee*] fails to comply with Level 1 reclaimed water standards or other standards for the protection of human health, the end user shall, at a minimum, implement precautions advised by the [*name of permittee*] for the protection of human health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for a period of seven days, or greater if advised by the [*name of permittee*].
- C. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
  2. Not transport potable water used for drinking water or food preparation;
  3. Not transport waters or other fluids that do not meet the requirements of 9VAC25-740-10 et seq., unless the tank or vessel of the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water;
  4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply;
  5. Not directly connect to a potable water supply system unless there is an air gap separation of at least eight inches between the potable water and the reclaimed water, or a reduced pressure principle backflow prevention device installed at the point of potable water connection to the tank truck;
  6. Be equipped with outlets that are of a type or are secured in a manner that permits operation by only authorized personnel;
  7. Where parked or operating in areas accessible to the public, be equipped with connections that:
    - a. Differ materially from those used on potable water distribution systems, including tank trucks used to haul potable water for potable uses, and

- b. Are clearly distinguishable as reclaimed water connections so as not to be mistaken for potable water connections;
  8. Be equipped with tanks or vessels that are fully enclosed with water-tight valves and fittings;
  9. Not leak or spill contents during transport;
  10. Not accept reclaimed water from an end user after the reclaimed water has been delivered to the end user; and
  11. Within 24 hours of receipt, deliver the reclaimed water directly to reuses or dispose of the reclaimed water by [*Describe the DEQ approved option the applicant or permittee will provide to an end user that hauls reclaimed water for the disposal of unused reclaimed water from tank trucks.*].
- D. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.
1. For nonbulk irrigation reuse (irrigation with reclaimed water of a total area < 5 acres on one contiguous property), [*Permittee must insert instructions for nonbulk irrigation end users, explaining how supplemental irrigation is to be achieved. Site specific monitoring and calculations are not required to demonstrate supplemental irrigation for nonbulk irrigation reuse.*].
  2. For bulk irrigation reuse (irrigation with reclaimed water of a total area > 5 acres on one contiguous property), the end user shall submit the methodology used to calculate supplemental irrigation. The rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs. Where it is demonstrated by the end user that salts will accumulate or have accumulated in the soil of a bulk irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Where it is demonstrated by the end user that salts will accumulate or have accumulated in the soil of a bulk irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will contribute or has contributed significantly to the salt problem, no additional reclaimed water shall be applied for the purpose of leaching salts from the soil at the site. Any additional volume of water required for leaching that is not or cannot be reclaimed water (e.g., rainwater, potable water, etc.) shall be included in the calculation of supplemental irrigation.
- E. For a new bulk irrigation reuse site or area of proposed expansion to an existing bulk irrigation site not identified in the current service agreement or contract, the end user shall submit to the [*name of permittee*] a site plan for the new or expanding site, displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:
1. The boundaries of the irrigation site;

2. The location of the following within 250 feet of the irrigation site:
  - all potable and non-potable water supply wells and springs, and public water supply intakes
  - occupied dwellings
  - property lines
  - areas accessible to the public
  - outdoor eating, drinking and bathing facilities
  - surface waters, including wetlands
  - limestone rock outcrops and sinkholes; and
3. Setbacks areas around the irrigation site specified in condition K of this section [*or other condition that corresponds to condition K within Section II*] in the service agreement or contract.

**(Applicable only to bulk irrigation sites that reuse non-BNR reclaimed water)**

- F. For bulk irrigation reuse sites of reclaimed water, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; provide a copy of the NMP to the [*name of permittee*]; and at the request of the [*name of permittee*], provide proof of compliance with the NMP. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. For each new bulk irrigation reuse site or for changes to the NMP of an existing bulk irrigation site (e.g., for expansion of the bulk irrigation reuse site, change in crops to be grown at the site, etc.), the end user shall submit a copy of the new or amended NMP, as applicable, to the [*name of permittee*] prior to implementation of the NMP.
- G. For all bulk irrigation reuse sites required to have a NMP in accordance with condition F of this section [*or other condition that corresponds to condition F within Section II*] in the service agreement or contract, nitrogen and phosphorus from reclaimed water in combination with other sources of nitrogen and phosphorus applied to the sites shall not exceed the annual nitrogen application rate and the sum of annual phosphorus application rates specified in the NMP for each site. Where the annual nitrogen application rate or the sum of annual phosphorus application rates specified in the NMP for a bulk irrigation reuse site is met and there remains a need for additional water to irrigate the site, an alternate water source that does not contain nitrogen or phosphorus, respectively, shall be used in lieu of reclaimed water for irrigation.

**(Applicable only to nonbulk irrigation reuse of non-BNR reclaimed water)**

- H. The reclaimed water contains total nitrogen (N) and total phosphorus (P). These are plant nutrients beneficial to the growth of irrigated vegetation, but they can also contribute to the degradation of state waters when applied in excess of plant nutrient needs at the site of irrigation. Therefore, nonbulk irrigation end users irrigating individual areas less than or equal to five acres with reclaimed water are advised to reduce the application of other sources of plant nutrients (i.e., commercial fertilizers, manures, etc.) where the reclaimed water will be applied. [**Note: *The permittee is to provide information to complete the following sentence.***] The annual average concentrations of total N and total P in the reclaimed water are \_\_\_\_\_ and \_\_\_\_\_ lbs/100 gallons, respectively. The rate of total N and total P application may be calculated by multiplying the concentration of these nutrients by the gallons of reclaimed water that are applied in an average



year to the irrigated site, divided by the area of the site usually in units of acres. The pounds of total N and total P applied per unit area of the site by irrigation with the reclaimed water are subtracted from the recommended N and P fertilizer rates of the irrigated vegetation. This difference is the amount of nutrients needed by the vegetation that may be provided by sources other than irrigation with the reclaimed water.

- I. For all irrigation reuses of reclaimed water, the following shall be required:
  - 1. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.
  - 2. The chosen method of irrigation shall minimize human contact with the reclaimed water.
  - 3. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.
  
- J. For bulk irrigation reuse of reclaimed water, the following shall be required:
  - 1. Irrigation systems shall be designed, installed and adjusted to:
    - a. Provide uniform distribution of the reclaimed water over the irrigation site,
    - b. Prevent ponding or pooling of reclaimed water at the irrigation site,
    - c. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
    - d. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances specified in condition K of this section [*or other condition that corresponds to condition K within Section II*] of the service agreement or contract for irrigation reuse, and
    - e. Prevent clogging from algae or suspended solids.
  - 2. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
  - 3. Any reclaimed water runoff shall be confined to the irrigation reuse site.
  
- K. For sites irrigated with Level 1 reclaimed water provided by the [*name of permittee*], the following setback distances are required:

<b>Feature Requiring Setback</b>	<b>Setback Distance</b>
d. Potable water supply wells and springs and public water supply intakes	100 feet
e. Nonpotable water supply wells	10 feet
f. Limestone rock outcrops and sinkholes	50 feet

No setback distances are required from occupied dwellings and outdoor eating, drinking and bathing facilities. However, aerosol formation shall be minimized within 100 feet of occupied dwellings and outdoor eating, drinking and bathing facilities through the use of low trajectory nozzles for spray irrigation, above-ground drip irrigation, or other means.

- L. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern. All setback distances shall be measured horizontally, unless specifically stated otherwise.
- M. Minimum separation distances for in-ground reclaimed water distribution pipelines specified in 9VAC25-740, shall apply to in-ground piping for irrigation systems of reclaimed water.

**(This condition may not apply where the end user or the permittee on behalf of the end user requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with [9VAC25-740-55](#).)**

- N. Reclaimed water system storage facilities 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 25-year, 24-hour storm. Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage as defined in [9VAC25-740-10](#), shall be designed and operated to prevent a discharge to surface water of the state except in the event of a storm greater than the 10-year, 24-hour storm.
- O. For each new reclaimed water storage facility that is under common ownership or management with the end user, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
  - 1. Location of the storage facility (including latitude and longitude at the center of the facility, to the nearest second),
  - 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
  - 3. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- P. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in Section I, condition G [*or other condition and section that corresponds to Section I, condition G*] of this service agreement or contract.

### III. Conditions required for irrigation-unrestricted access reuse

- A. If at any time the [name of permittee] notifies the end user that reclaimed water delivered to the end user by the [name of permittee] fails to comply with Level 1 reclaimed water standards or other standards for the protection of human health, the end user shall, at a minimum, implement precautions advised by the [name of permittee] for the protection of human health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for a period of seven days, or greater if advised by the [name of permittee].
- B. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
  2. Not transport potable water used for drinking water or food preparation;
  3. Not transport waters or other fluids that do not meet the requirements of 9VAC25-740-10 et seq., unless the tank or vessel of the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water;
  4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply;
  5. Not directly connect to a potable water supply system unless there is an air gap separation of at least eight inches between the potable water and the reclaimed water, or a reduced pressure principle backflow prevention device installed at the point of potable water connection to the tank truck;
  6. Be equipped with outlets that are of a type or are secured in a manner that permits operation by only authorized personnel;
  7. Where parked or operating in areas accessible to the public, be equipped with connections that:
    - a. Differ materially from those used on potable water distribution systems, including tank trucks used to haul potable water for potable uses, and
    - b. Are clearly distinguishable as reclaimed water connections so as not to be mistaken for potable water connections;
  8. Be equipped with tanks or vessels that are fully enclosed with water-tight valves and fittings;
  9. Not leak or spill contents during transport;
  10. Not accept reclaimed water from an end user after the reclaimed water has been delivered to the end user; and
  11. Within 24 hours of receipt, deliver the reclaimed water directly to reuses or dispose of the reclaimed water by *[Describe the DEQ approved option the applicant or permittee will provide to an end user that hauls reclaimed water for the disposal of unused reclaimed water]*

*from tank trucks.].*

- C. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.
1. For nonbulk irrigation reuse (irrigation with reclaimed water of a total area < 5 acres on one contiguous property), [*Permittee must insert instructions for nonbulk irrigation end users, explaining how supplemental irrigation is to be achieved. Site specific monitoring and calculations are not required to demonstrate supplemental irrigation for nonbulk irrigation reuse.*].
  2. For bulk irrigation reuse (irrigation with reclaimed water of a total area > 5 acres on one contiguous property), the end user shall submit the methodology used to calculate supplemental irrigation. The rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs. Where it is demonstrated by the end user that salts will accumulate or have accumulated in the soil of a bulk irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Where it is demonstrated by the end user that salts will accumulate or have accumulated in the soil of a bulk irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will contribute or has contributed significantly to the salt problem, no additional reclaimed water shall be applied for the purpose of leaching salts from the soil at the site. Any additional volume of water required for leaching that is not or cannot be reclaimed water (e.g., rainwater, potable water, etc.) shall be included in the calculation of supplemental irrigation.
- D. For a new bulk irrigation reuse site or area of proposed expansion to an existing bulk irrigation site not identified in the current service agreement or contract, the end user shall submit to the [*name of permittee*] a site plan for the new or expanding site, displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:
1. The boundaries of the irrigation site;
  2. The location of the following within 250 feet of the irrigation site:
    - all potable and non-potable water supply wells and springs, and public water supply intakes
    - occupied dwellings
    - property lines
    - areas accessible to the public
    - outdoor eating, drinking and bathing facilities
    - surface waters, including wetlands
    - limestone rock outcrops and sinkholes; and
  3. Setbacks areas around the irrigation site specified in condition J of this section [*or other condition that corresponds to condition J within Section III*] in the service agreement or

contract.

**(Applicable only to *bulk* irrigation sites that reuse non-BNR reclaimed water)**

- E. For bulk irrigation reuse sites of reclaimed water, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; provide a copy of the NMP to the [name of permittee]; and at the request of the [name of permittee], provide proof of compliance with the NMP. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. For each new bulk irrigation reuse site or for changes to the NMP of an existing bulk irrigation site (e.g., for expansion of the bulk irrigation reuse site, change in crops to be grown at the site, etc.), the end user shall submit a copy of the new or amended NMP, as applicable, to the [name of permittee] prior to implementation of the NMP.
- F. For all bulk irrigation reuse sites required to have a NMP in accordance with condition E of this section [or other condition that corresponds to condition E within Section III] in the service agreement or contract, nitrogen and phosphorus from reclaimed water in combination with other sources of nitrogen and phosphorus applied to the sites shall not exceed the annual nitrogen application rate and the sum of annual phosphorus application rates specified in the NMP for each site. Where the annual nitrogen application rate or the sum of annual phosphorus application rates specified in the NMP for a bulk irrigation reuse site is met and there remains a need for additional water to irrigate the site, an alternate water source that does not contain nitrogen or phosphorus, respectively, shall be used in lieu of reclaimed water for irrigation.

**(Applicable only to *nonbulk* irrigation reuse of non-BNR reclaimed water)**

- G. The reclaimed water contains total nitrogen (N) and total phosphorus (P). These are plant nutrients beneficial to the growth of irrigated vegetation, but they can also contribute to the degradation of state waters when applied in excess of plant nutrient needs at the site of irrigation. Therefore, nonbulk irrigation end users irrigating individual areas less than or equal to five acres with reclaimed water are advised to reduce the application of other sources of plant nutrients (i.e., commercial fertilizers, manures, etc.) where the reclaimed water will be applied. [**Note: The permittee is to provide information to complete the following sentence.**] The calendar year average concentrations of total N and total P in the reclaimed water are \_\_\_\_\_ and \_\_\_\_\_ lbs/100 gallons, respectively. The rate of total N and total P application may be calculated by multiplying the concentrations of these nutrients by the gallons of reclaimed water that are applied in an average year to the irrigated site, divided by the area of the site usually in units of acres. The pounds of total N and total P applied per unit area of the site by irrigation with the reclaimed water are subtracted from the recommended N and P fertilizer rates of the irrigated vegetation. This difference is the amount of nutrients needed by the vegetation that may be provided by sources other than irrigation with the reclaimed water.
- H. For all irrigation reuses of reclaimed water, the following shall be required:
1. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.
  2. The chosen method of irrigation shall minimize human contact with the reclaimed water.
  3. Reclaimed water shall be prevented from coming into contact with drinking fountains, water

coolers, or eating surfaces.

I. For bulk irrigation reuse of reclaimed water, the following shall be required:

1. Irrigation systems shall be designed, installed and adjusted to:
  - a. Provide uniform distribution of the reclaimed water over the irrigation site,
  - b. Prevent ponding or pooling of reclaimed water at the irrigation site,
  - c. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
  - d. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances specified in condition J of this section [*or other condition that corresponds to condition J within Section III*] of the service agreement or contract for irrigation reuse, and
  - e. Prevent clogging from algae or suspended solids.
2. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
3. Any reclaimed water runoff shall be confined to the irrigation reuse site.

J. For sites irrigated with Level 1 reclaimed water provided by the [*name of permittee*], the following setback distances are required:

<b>Feature Requiring Setback</b>	<b>Setback Distance</b>
g. Potable water supply wells and springs and public water supply intakes	100 feet
h. Nonpotable water supply wells	10 feet
i. Limestone rock outcrops and sinkholes	50 feet

No setback distances are required from occupied dwellings and outdoor eating, drinking and bathing facilities. However, aerosol formation shall be minimized within 100 feet of occupied dwellings and outdoor eating, drinking and bathing facilities through the use of low trajectory nozzles for spray irrigation, above-ground drip irrigation, or other means.

- K. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern. All setback distances shall be measured horizontally, unless specifically stated otherwise.
- L. Reclaimed water may be used for irrigation of food crops eaten raw, excluding root crops, only where there shall be no direct contact (or indirect contact via aerosol) between the reclaimed water and edible portions of the crop.
- M. Minimum separation distances for in-ground reclaimed water distribution pipelines specified in

9VAC25-740, shall apply to in-ground piping for irrigation systems of reclaimed water.

**(This condition may not apply where the end user or the permittee on behalf of the end user requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with [9VAC25-740-55](#).)**

- N. Reclaimed water system storage facilities 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 25-year, 24-hour storm. Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage as defined in [9VAC25-740-10](#), shall be designed and operated to prevent a discharge to surface water of the state except in the event of a storm greater than the 10-year, 24-hour storm.
- O. For each new reclaimed water storage facility that is under common ownership or management with the end user, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the *[name of permittee]* of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
1. Location of the storage facility (including latitude and longitude at the center of the facility, to the nearest second),
  2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
  3. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- P. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in Section I, condition G *[or other condition and section that corresponds to Section I, condition G]* of this service agreement or contract.

#### IV. Conditions required for irrigation-restricted access reuse

- A. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
  2. Not transport potable water used for drinking water or food preparation;
  3. Not transport waters or other fluids that do not meet the requirements of 9VAC25-740-10 et seq., unless the tank or vessel of the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water;
  4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply;
  5. Not directly connect to a potable water supply system unless there is an air gap separation of at least eight inches between the potable water and the reclaimed water, or a reduced pressure principle backflow prevention device installed at the point of potable water connection to the tank truck;
  6. Be equipped with outlets that are of a type or are secured in a manner that permits operation by only authorized personnel;
  7. Where parked or operating in areas accessible to the public, be equipped with connections that:
    - a. Differ materially from those used on potable water distribution systems, including tank trucks used to haul potable water for potable uses, and
    - b. Are clearly distinguishable as reclaimed water connections so as not to be mistaken for potable water connections;
  8. Be equipped with tanks or vessels that are fully enclosed with water-tight valves and fittings;
  9. Not leak or spill contents during transport;
  10. Not accept reclaimed water from an end user after the reclaimed water has been delivered to the end user; and
  11. Within 24 hours of receipt, deliver the reclaimed water directly to reuses or dispose of the reclaimed water by [*Describe the DEQ approved option the applicant or permittee will provide to an end user that hauls reclaimed water for the disposal of unused reclaimed water from tank trucks.*].
- B. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.
1. For nonbulk irrigation reuse (irrigation with reclaimed water of a total area < 5 acres on one contiguous property), [*Permittee must insert instructions for nonbulk irrigation end users,*



*explaining how supplemental irrigation is to be achieved. Site specific monitoring and calculations are not required to demonstrate supplemental irrigation for nonbulk irrigation reuse.].*

2. For bulk irrigation reuse (irrigation with reclaimed water of a total area > 5 acres on one contiguous property), the end user shall submit the methodology used to calculate supplemental irrigation. The rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs. Where it is demonstrated by the end user that salts will accumulate or have accumulated in the soil of a bulk irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Where it is demonstrated by the end user that salts will accumulate or have accumulated in the soil of a bulk irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will contribute or has contributed significantly to the salt problem, no additional reclaimed water shall be applied for the purpose of leaching salts from the soil at the site. Any additional volume of water required for leaching that is not or cannot be reclaimed water (e.g., rainwater, potable water, etc.) shall be included in the calculation of supplemental irrigation.
- C. For a new bulk irrigation reuse site or area of proposed expansion to an existing bulk irrigation site not identified in the current service agreement or contract, the end user shall submit to the [name of permittee] a site plan for the new or expanding site, displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:
1. The boundaries of the irrigation site;
  2. The location of the following within 250 feet of the irrigation site:
    - all potable and non-potable water supply wells and springs, and public water supply intakes
    - occupied dwellings
    - property lines
    - areas accessible to the public
    - outdoor eating, drinking and bathing facilities
    - surface waters, including wetlands
    - limestone rock outcrops and sinkholes; and
  3. Setbacks areas around the irrigation site specified in condition I of this section [or other condition that corresponds to condition I within Section IV] in the service agreement or contract.
- (Applicable only to bulk irrigation sites that reuse non-BNR reclaimed water)**
- D. For bulk irrigation reuse sites of reclaimed water, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; provide a copy of the NMP to the [name of permittee]; and at the request of the [name of permittee], provide proof of compliance with the NMP. NMPs shall be maintained current in accordance with the Nutrient Management Training

and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. For each new bulk irrigation reuse site or for changes to the NMP of an existing bulk irrigation site (e.g., for expansion of the bulk irrigation reuse site, change in crops to be grown at the site, etc.), the end user shall submit a copy of the new or amended NMP, as applicable, to the [name of permittee] prior to implementation of the NMP.

- E. For all bulk irrigation reuse sites required to have a NMP in accordance with condition D of this section [or other condition that corresponds to condition D within Section IV] in the service agreement or contract, nitrogen and phosphorus from reclaimed water in combination with other sources of nitrogen and phosphorus applied to the sites shall not exceed the annual nitrogen application rate and the sum of annual phosphorus application rates specified in the NMP for each site. Where the annual nitrogen application rate or the sum of annual phosphorus application rates specified in the NMP for a bulk irrigation reuse site is met and there remains a need for additional water to irrigate the site, an alternate water source that does not contain nitrogen or phosphorus, respectively, shall be used in lieu of reclaimed water for irrigation.

**(Applicable only to nonbulk irrigation reuse of non-BNR reclaimed water)**

- F. The reclaimed water contains total nitrogen (N) and total phosphorus (P). These are plant nutrients beneficial to the growth of irrigated vegetation, but they can also contribute to the degradation of state waters when applied in excess of plant nutrient needs at the site of irrigation. Therefore, nonbulk irrigation end users irrigating individual areas less than or equal to five acres with reclaimed water are advised to reduce the application of other sources of plant nutrients (i.e., commercial fertilizers, manures, etc.) where the reclaimed water will be applied. [Note: *The permittee is to provide information to complete the following sentence.*] The calendar year average concentrations of total N and total P in the reclaimed water are \_\_\_\_\_ and \_\_\_\_\_ lbs/100 gallons, respectively. The rate of total N and total P application may be calculated by multiplying the concentration of these nutrients by the gallons of reclaimed water that are applied in an average year to the irrigated site, divided by the area of the site usually in units of acres. The pounds of total N and total P applied per unit area of the site by irrigation with the reclaimed water are subtracted from the recommended N and P fertilizer rates of the irrigated vegetation. This difference is the amount of nutrients needed by the vegetation that may be provided by sources other than irrigation with the reclaimed water.

- G. For all irrigation reuses of reclaimed water, the following shall be required:

1. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.
2. The chosen method of irrigation shall minimize human contact with the reclaimed water.
3. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.

- H. For bulk irrigation reuse of reclaimed water, the following shall be required:

1. Irrigation systems shall be designed, installed and adjusted to:
  - a. Provide uniform distribution of the reclaimed water over the irrigation site,

- b. Prevent ponding or pooling of reclaimed water at the irrigation site,
  - c. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
  - d. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances specified in condition I of this section [*or other condition that corresponds to condition I within Section IV*] of the service agreement or contract for irrigation reuse, and
  - e. Prevent clogging from algae or suspended solids.
- 2. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
  - 3. Any reclaimed water runoff shall be confined to the irrigation reuse site.
- I. For sites irrigated with Level 2 reclaimed water provided by the [*name of permittee*], the following setback distances are required:

<b>Feature Requiring Setback</b>	<b>Setback Distance</b>
a. Potable water supply wells and springs and public water supply intakes	200 feet
b. Nonpotable water supply wells	10 feet
c. Surface waters, including wetlands	50 feet
d. Occupied dwellings	200 feet
e. Property lines and areas accessible to the public	100 feet
f. Limestone rock outcrops and sinkholes	50 feet

At the request of the end user, the above setbacks may be reduced if approved by the [*name of permittee*] in consultation with the DEQ [*Regional Office*].

- J. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern. All setback distances shall be measured horizontally, unless specifically stated otherwise.
- K. Reclaimed water may be used for irrigation of food crops eaten raw, excluding root crops, only where there shall be no direct contact (or indirect contact via aerosol) between the reclaimed water and edible portions of the crop.

**(Applicable where Level 2 reclaimed water will be provided for irrigation-restricted access reuses without additional treatment to meet Level 1 disinfection standards specified in 9VAC25-740-70.A)**

- L. The following shall be prohibited after irrigation with the reclaimed water:
  - 1. Grazing by milking animals on the irrigation reuse site for 15 days after irrigation with reclaimed water ceases, and

2. Harvesting, retail sale or allowing access by the general public to ornamental nursery stock or sod farms for 14 days after irrigation with reclaimed water ceases.

M. Minimum separation distances for in-ground reclaimed water distribution pipelines specified in 9VAC25-740, shall apply to in-ground piping for irrigation systems of reclaimed water.

**(This condition may not apply where the end user or the permittee on behalf of the end user requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with [9VAC25-740-55](#).)**

N. Reclaimed water system storage facilities 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 25-year, 24-hour storm. Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage as defined in [9VAC25-740-10](#), shall be designed and operated to prevent a discharge to surface water of the state except in the event of a storm greater than the 10-year, 24-hour storm.

O. For each new reclaimed water storage facility that is under common ownership or management with the end user, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the *[name of permittee]* of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:

1. Location of the storage facility (including latitude and longitude at the center of the facility, to the nearest second),
2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
3. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.

P. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in Section I, condition H *[or other condition and section that corresponds to Section I, condition H]* of this service agreement or contract.

**V. Conditions required for landscape impoundments reuse**

**(Applicable to the reuse of reclaimed water in indoor aesthetic features.)**

- A. A minimum of Level 1 reclaimed water may be used in indoor aesthetic features. A setback distance of 100 feet horizontally shall be maintained from indoor aesthetic features to adjacent indoor public eating and drinking facilities within the same room or building space where Level 1 reclaimed water is used in the aesthetic features and the aesthetic features have the potential to create aerosols.

**(This condition may not apply where the end user or the permittee on behalf of the end user requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with [9VAC25-740-55](#).)**

- B. Reclaimed water system storage facilities 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 25-year, 24-hour storm. Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage as defined in [9VAC25-740-10](#), shall be designed and operated to prevent a discharge to surface water of the state except in the event of a storm greater than the 10-year, 24-hour storm.
- C. For each new reclaimed water storage facility that is under common ownership or management with the end user, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the *[name of permittee]* of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
1. Location of the storage facility (including latitude and longitude at the center of the facility, to the nearest second),
  2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
  3. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- D. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in Section I, [**Choose all that apply:** *(for storage of Level 1 reclaimed water) condition G / (for storage of Level 2 reclaimed water) condition H / (or other section and condition(s) that correspond to Section I and condition G or H)*] of this service agreement or contract.

**VI. Conditions required for construction reuse**

A. Tank trucks used to distribute reclaimed water shall:

1. Be clearly labeled to identify the contents of the truck as non-potable water;
2. Not transport potable water used for drinking water or food preparation;
3. Not transport waters or other fluids that do not meet the requirements of 9VAC25-740-10 et seq., unless the tank or vessel of the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water;
4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply;
5. Not directly connect to a potable water supply system unless there is an air gap separation of at least eight inches between the potable water and the reclaimed water, or a reduced pressure principle backflow prevention device installed at the point of potable water connection to the tank truck;
6. Be equipped with outlets that are of a type or are secured in a manner that permits operation by only authorized personnel;
7. Where parked or operating in areas accessible to the public, be equipped with connections that:
  - a. Differ materially from those used on potable water distribution systems, including tank trucks used to haul potable water for potable uses, and
  - b. Are clearly distinguishable as reclaimed water connections so as not to be mistaken for potable water connections;
8. Be equipped with tanks or vessels that are fully enclosed with water-tight valves and fittings;
9. Not leak or spill contents during transport;
10. Not accept reclaimed water from an end user after the reclaimed water has been delivered to the end user; and
11. Within 24 hours of receipt, deliver the reclaimed water directly to reuses or dispose of the reclaimed water by [*Describe the DEQ approved option the applicant or permittee will provide to an end user that hauls reclaimed water for the disposal of unused reclaimed water from tank trucks.*].

**(Applicable where Level 2 reclaimed water shall be provided for construction reuses without additional treatment by the permittee or the end user to meet Level 1 disinfection standards specified in 9VAC25-740)**

B. Worker contact with the reclaimed water shall be minimized.

**(This condition may not apply where the end user or the permittee on behalf of the end user**

**requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with [9VAC25-740-55](#).)**

- C. Reclaimed water system storage facilities 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 25-year, 24-hour storm. Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage as defined in [9VAC25-740-10](#), shall be designed and operated to prevent a discharge to surface water of the state except in the event of a storm greater than the 10-year, 24-hour storm.
- D. For each new reclaimed water storage facility that is under common ownership or management with the end user, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [name of permittee] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
1. Location of the storage facility (including latitude and longitude at the center of the facility, to the nearest second),
  2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
  3. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- E. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in Section I, [**Choose all that apply:** (for storage of Level 1 reclaimed water) condition G/(for storage of Level 2 reclaimed water) condition H/(or other section and condition(s) that correspond to section I and condition G or H)] of this service agreement or contract.

**[Note: Where reclaimed water will be reused for irrigation to establish vegetative erosion control at a construction site, the service agreement or contract should include conditions that apply from Section III (Conditions required for irrigation-unrestricted access reuse) if the reclaimed will meet a minimum of Level 1 reclaimed water standards, or Section IV (Conditions required for irrigation-restricted access reuse) if the reclaimed will meet a minimum of Level 2 reclaimed water standards. If the reuse of reclaimed water for irrigation will continue at the site upon completion of construction activities, the service agreement or contract should include conditions that apply from Section II, III or IV determined by the treatment level (i.e., Level 1, Level 2, etc.) and nutrient content (i.e., treated to meet BNR or non-BNR) of the reclaimed water, and the intended use of the irrigated site following construction (i.e., urban – unrestricted access, irrigation – unrestricted access, or irrigation – restricted access).]**

## VII. Conditions required for industrial reuse

- A. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
  2. Not transport potable water used for drinking water or food preparation;
  3. Not transport waters or other fluids that do not meet the requirements of 9VAC25-740-10 et seq., unless the tank or vessel of the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water;
  4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply;
  5. Not directly connect to a potable water supply system unless there is an air gap separation of at least eight inches between the potable water and the reclaimed water, or a reduced pressure principle backflow prevention device installed at the point of potable water connection to the tank truck;
  6. Be equipped with outlets that are of a type or are secured in a manner that permits operation by only authorized personnel;
  7. Where parked or operating in areas accessible to the public, be equipped with connections that:
    - a. Differ materially from those used on potable water distribution systems, including tank trucks used to haul potable water for potable uses, and
    - b. Are clearly distinguishable as reclaimed water connections so as not to be mistaken for potable water connections;
  8. Be equipped with tanks or vessels that are fully enclosed with water-tight valves and fittings;
  9. Not leak or spill contents during transport;
  10. Not accept reclaimed water from an end user after the reclaimed water has been delivered to the end user; and
  11. Within 24 hours of receipt, deliver the reclaimed water directly to reuses or dispose of the reclaimed water by [*Describe the DEQ approved option the applicant or permittee will provide to an end user that hauls reclaimed water for the disposal of unused reclaimed water from tank trucks.*].

**(This condition may be combined with condition I in this section where both apply)**

- B. For industrial reuses, advisory signs shall be posted around those areas of the industrial site where reclaimed water is used and at the main entrances to the industrial site to notify employees and the visiting public of the reclaimed water reuse. Access control beyond what is normally provided by the industry is not required. Each advisory sign shall meet specifications described in section I, [**Choose all that apply:** *(for reuse of Level 1 reclaimed water) condition G/(for*



*reuse of Level 2 reclaimed water) condition H/(or other section and condition(s) that correspond to section I and condition G or H)] of this service agreement or contract.*

**[Note: Conditions C, D, E and F are applicable where Level 2 reclaimed water will be provided for industrial reuses without additional treatment by the permittee or end user to meet Level 1 disinfection standards specified in 9VAC25-740]**

- C. Worker contact with the reclaimed water shall be minimized.
- D. The reclaimed water may be used for [**Choose all that apply:** livestock watering that does not include milking animals/aquaculture production that does not include fish to be consumed raw, such as for sushi].
- E. Windblown spray generated by once-through cooling or recirculating cooling towers that use the reclaimed water, shall not reach areas accessible to workers or the public.
- F. A setback distance of 300 feet horizontally shall be provided from an open cooling tower to the site property line where reclaimed water is used in the tower. No setback distance shall be required from the open cooling tower to the site property line where a drift or mist eliminator is installed and properly operated.

**(This condition may not apply where the end user or the permittee on behalf of the end user requests and is granted a variance to design criteria for reclaimed water storage facilities in accordance with [9VAC25-740-55](#).)**

- G. Reclaimed water system storage facilities 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 25-year, 24-hour storm. Reclaimed water non-system storage facilities, including landscape impoundments used for non-system storage as defined in [9VAC25-740-10](#), shall be designed and operated to prevent a discharge to surface water of the state except in the event of a storm greater than the 10-year, 24-hour storm.
- H. For each new reclaimed water storage facility that is under common ownership or management with the end user, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
  - 1. Location of the storage facility (including latitude and longitude at the center of the facility, to the nearest second),
  - 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
  - 3. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- I. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in Section I, [**Choose all that apply:** (*for storage of Level 1 reclaimed water*)

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Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
Attachment C

*condition G/(for storage of Level 2 reclaimed water) condition H/(or other section and condition(s) that correspond to Section I and condition G or H)] of this service agreement or contract.*

**Attachment D – Correspondence**

**CIA Notification Letter to Other Agencies and Parties (See subdivision [III.K.1](#))**

*[Note: Do not use this letter to transmit application information for [Emergency Authorization Applications](#).]*

*[A. Use this letter if no VPDES or VPA permit application is submitted with an [Application Addendum](#) and CIA Results Summary, or if the CIA Results Summary must be sent to beneficial users or parties representing beneficial uses or users that would not otherwise receive notification of the permit action if not for the CIA.]*

**[Regional Letterhead]**

*[Date]*

**[Insert name of contact for other agency, beneficial user, or party representing a beneficial use or user]**

**[Address]**

RE: **[Choose one: VPDES Permit No. VA0000000/VPA Permit No. VPA00000], [Facility Name], [County]**  
Results Summary of Cumulative Impact Analysis for Water Reclamation and Reuse Project

Dear **[Choose one: Mr. / Ms. / Mrs.] (last name of recipient):**

The Department of Environmental Quality (DEQ) has received application information for a proposed water reclamation and reuse project that includes a Results Summary of a Cumulative Impact Analysis (CIA) related to the project. The CIA Results Summary indicates that the proposed project, which will divert all or a portion of a VPDES permitted discharge from a receiving stream to water reclamation and reuse, has the potential to cause significant adverse impacts to beneficial uses of the receiving stream. **[Insert this sentence if notification is for a beneficial user or party representing a beneficial use or user: You have been identified by the DEQ Office of Water Supply as a beneficial user or a party representing a beneficial use or user that may experience significant adverse impacts due to the proposed project.]** Please review the project CIA Results Summary and associated application information **[Choose one: attached/available at (provide link to File Share) in the (name of subfolder in File Share) subfolder]**, and submit comments regarding these items within 14 days.

If you have any questions, please contact me at **[phone]** or **[email]**.

Sincerely,

**[Permit Writer]**

**[Insert if applicable: Attachments:**

Cumulative Impact Analysis for **(Insert facility name)**

Water Reclamation and Reuse Addendum to an Application for a VPDES or VPA Permit

**(List other documents if applicable, such as the VPDES or VPA permit application, etc.)]**

Cc: Application file

**[OR]**

***[B. Where the other agency, person or party to receive the CIA notification will also receive the VPDES or VPA permit application for review, insert the following paragraph in the VPDES or VPA permit application transmittal letter. This would apply where, for example, a VPDES permit application and a CIA Results Summary for the same facility must be sent to a VDH-ODW Field Office. Other examples may apply.]***

The DEQ has also received application information for a proposed water reclamation and reuse project that includes a Results Summary of a Cumulative Impact Analysis (CIA) related to the project. The CIA Results Summary indicates that the proposed project, which will divert all or a portion of a VPDES permitted discharge from a receiving stream to water reclamation and reuse, has the potential to cause significant adverse impacts to beneficial uses of the receiving stream. Please review the project CIA Results Summary and associated application information [**Choose one:** attached/available at (**provide link to File Share**) in the (**name of subfolder in File Share**) subfolder], and submit comments regarding these items with comments related to the (VPDES / VPA) permit application.

***[At a minimum, add the following to the list of enclosures or attachments to the VPDES or VPA permit application transmittal letter:***

CIA Results Summary for (**Insert facility name**)

Water Reclamation and Reuse Addendum to an Application for a VPDES or VPA Permit

### **Application Coordination and Review Checklist for VDH-ODW Field Offices and VDH Local Health Districts<sup>1</sup> (see subdivision [III.K.2](#))**

*[Note: Send this checklist with the VPDES or VPA permit application transmittal letter to the appropriate VDH-ODW Field Office, and VDH Office of Environmental Health Services (OEHS), VDH Local Health District and/or Local Health Departments. See subdivision [III.K.2](#) to determine what application information is to be submitted to which VDH offices for review. Check only items on the checklist that apply. Alternatively, applicable items of the checklist may be included in the transmittal letter (without check boxes) in lieu of sending the checklist<sup>2</sup>. This checklist may also be used for amendments to RWM plans independent of VPDES or VPA permit actions, or water reclamation and reuse authorizations (i.e., administrative and emergency) (see subdivision [III.C.4.i](#).)]*

### **Review Checklist for Water Reclamation and Reuse Proposals**

In accordance with the Water Reclamation and Reuse Regulation ([9VAC25-740-10 et seq.](#)), DEQ must coordinate with the Virginia Department of Health (VDH) for input on specific items or issues related to water reclamation and reuse. The DEQ [*Regional Office*] has received such information for **[Choose one:** a proposed reclamation and reuse project / amendments to an existing Reclaimed Water Management (RWM) plan] and requests that the **[Insert the names of the VDH-ODW Field Office, and VDH Office of Environmental Health Services (OEHS), VDH Local Health District and/or Local Health Departments with jurisdiction over the location of the proposal]** provide comments on public health risks associated with the following items contained in the information **[Choose one:** attached/available at (**provide link to File Share**) in the (**name of subfolder in File Share**) subfolder] **[Check or cut and paste all that apply]:**

- A Results Summary of the Cumulative Impact Analysis prepared by the DEQ Office of Water Supply for the proposal indicates that it has the potential to cause significant adverse impacts to beneficial uses of the receiving stream for a VPDES permitted discharge by diverting all or a portion of that discharge to water reclamation and reuse.
- A reuse of reclaimed water that involves:
  - Indirect nonpotable reuse newly proposed after January 29, 2014.
  - Reuses of reclaimed municipal wastewater that are not listed in the Water Reclamation and Reuse Regulation under [9VAC25-740-90.A](#), including but not limited to, below-ground drip irrigation, newly proposed after October 1, 2008.
  - All reuses of reclaimed *industrial* wastewater newly proposed after October 1, 2008 that are not otherwise excluded from the requirements of the Water Reclamation and Reuse Regulation in accordance with [9VAC25-740-50.A](#).
- An application for an emergency authorization to produce, distribute, or reuse reclaimed water submitted in accordance with [9VAC25-740-45](#) for circumstances where, due to drought, there is insufficient public water supply that may result in a substantial threat to public safety.

**[Choose one of the following sentences that applies and delete notes and “(OR)”:**

*(For water reclamation and reuse proposals that will be part of an application to issue or reissue a*

***VPDES or VPA permit, major modify a VPDES permit, or major or minor modify a VPA permit.***  
Please submit comments regarding the items indicated above with other comments related to the (VPDES/VPA) permit application for the project.

**(OR)**

***(For water reclamation and reuse proposals that will be part of an administrative authorization associated with an existing VPDES permit, an emergency authorization associated with an existing VPDES or VPA permit, or an amendment of an approved RWM plan independent of a VPDES or VPA permit action or authorization related to water reclamation and reuse.)*** Please advise reviewing staff to submit comments regarding the items indicated above or a statement verifying that your office has no comments on **(Choose one: the proposed project/amendments to the RWM plan) within 14 days.]**

If more than **14 days** will be needed to respond, please notify the DEQ [Regional Office] of the delay as early as possible.

***(The following footnotes are for permit writer information only and are to be deleted from the checklist before distribution.)***

- 1. [For only unintentional reuse (see subdivision [III.G.3.e \(3\)](#)), do not use the checklist above but insert the following in the VPDES permit application notification letter to VDH-ODW Field Offices, and, as applicable, the VDH OEHS, VDH Local Health Districts and/or Local Health Departments]***

Related to the discharge described in the VPDES permit application for the **(insert name of WWTW)**, the DEQ [Field Office] has identified an unintentional reuse, as defined in 9VAC25-740-10 et seq. that will be supported, in part, by flow from the discharge of this facility. This reuse is located approximately **(insert distance) [Choose one: (on flowing streams) downstream of/(on impoundments) from]** the discharge outfall and involves **(describe unintentional reuse)**. Please submit comments on public health risks associated with (this reuse/these reuses) in your response to this letter.

- 2. [If applicable items of the above checklist are included in the VPDES or VPA permit application transmittal letter in lieu of sending the checklist as a document attached to the letter, insert the following paragraph before the checklist items.]***

**[Insert this sentence if water reclamation and reuse is not mentioned in the first paragraph of the application transmittal letter:** The referenced permit action also includes a proposal for water reclamation and reuse.] In accordance with the Water Reclamation and Reuse Regulation ([9VAC25-740-10 et seq.](#)), DEQ must coordinate with the Virginia Department of Health (VDH) for input on specific items or issues related to water reclamation and reuse. The DEQ [Regional Office] has determined that the permit application contains such information and requests that the **[Insert all that apply: (name of VDH-ODW Field Office)/VDH Office of Environmental Health Services/(name of VDH Local Health District)/(name of Local Health Department)]** provide comments on public health risks associated with the following: *(do not attach the checklist but insert only those items that apply from the checklist.)*

**Transmittal Letter for a Final VPDES Permit Issuance, Reissuance or Major Modification to Include Water Reclamation and Reuse**

*[Note: This applies where water reclamation and reuse standards, monitoring requirements and/or special conditions are included in a VPDES permit. Add the following items to the template of the final permit transmittal letter contained in the most current VPDES Permit Manual.]*

**[Note: Insert these paragraphs at the beginning of the transmittal letter body and delete redundant language elsewhere in the letter template.]**

Your VPDES permit is enclosed. **[For Revocation and Reissuances add the following language:** This permit supersedes the previous VPDES Permit VA00XXXXX issued to this facility.] **[Insert only if permittee unable to use e-DMR:** A Discharge Monitoring Report (DMR) form is included with the permit. **[Insert all that apply related to water reclamation and reuse:** Also included with the permit are the following items:

- [a] reclamation and reuse monitoring report (RRMR) form[s] for the **[Choose all that apply:** reclamation system/satellite reclamation system/reclaimed water distribution system/reclaimed water system storage/(specify other if applicable)] covered by the a permit *[Note: A separate monitoring report form must be developed for each of these systems covered by the permit],*
- [a] monthly log sheet[s] for reclaimed water bacteria **[Insert if applicable:** and turbidity] monitoring, and
- **[Insert for only a reclamation system or SRS covered by the permit:** a form entitled “Supplemental Report for Reclamation Systems Authorized by or in Association with a VPDES Permit” (Supplemental Report form).]

Please make additional copies of **[Choose one:** the DMR/these items] for future use.]

The first DMR required by this permit for **[monthly/bimonthly/quarterly/semiannually /annually monitored parameters]** *[if parameters are monitored at more than one frequency, specify the first monitoring period and due date for each]* is due on **[date]** for the period **[months in monitoring period]**. **[Insert if applicable related to water reclamation and reuse:** The first RRMR[s] with attachments (e.g., log sheet[s] **[Insert if applicable:** and Supplemental Report form[s])) required by this permit [is/are] due on **[date]** for **[month]** *(add other due dates as need for more than one RRMR form)*. If you still have DMR **[Insert if applicable:** or RRMR] data to report as required by the previous permit, please submit it as an attachment to the first **[Choose on:** DMR/corresponding DMR or RRMR] required by this permit. Monitoring results on the DMRs **[Insert if applicable:** and RRMRs] should be reported to the same number of significant digits as are included in the permit limit **[Insert if applicable:** or reclaimed water standard] for the parameter. **[Insert only if permittee is unable to use e-DMR:** Please send DMRs **[Insert if applicable:** and RRMRs] to:

**[Regional Office and Address]**

**[Insert only if permittee does not have e-DMR and has not demonstrated that they are unable to use e-DMR:** A hard copy DMR **[Insert if applicable:** and RRMR[s]] [is/are] not enclosed. However, an electronic DMR is available through e-DMR **[Insert if applicable:** , and electronic copies of the RRMR[s] may be submitted as [an] attachment[s] to the electronic DMR]. If you have not already done so, please register for e-DMR participation now in order for the e-DMR application to be processed



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Attachment D

prior to the first DMR [**Insert if applicable:** and RRMR] due date[s] for this reissuance and to avoid non-compliance with the permit reporting requirements. The following website provides details:

<http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/ElectronicDMRsubmissions.aspx>

You can also contact our regional e-DMR administrator, [**name**], for assistance at [**phone**] or [**email**].

**[Note: Add these items to the “Enclosures” list shown at the bottom of the transmittal letter.]**

Enclosure[s]:

**[Of the following items, insert only those that are also inserted in the body of the letter:**

Reclamation and Reuse Monitoring Report (RRMR) form(s)}

Monthly Log Sheet(s) for Reclaimed Water Bacteria [**Insert if applicable:** and Turbidity]  
Monitoring

Supplemental Report for Reclamation Systems Authorized by or in Association with a VPDES  
Permit]

**[Note: Add these items to the “Cc:” list shown at the bottom of the transmittal letter.]**

Cc: OLAP  
OWS  
DEQ-RO Compliance Auditor

**Transmittal Letter for a Final VPA Permit Issuance, Reissuance or Modification (Minor or Major) to Include Water Reclamation and Reuse**

*[Note: This applies where water reclamation and reuse standards, monitoring requirements and/or special conditions are included in a VPA permit. Add the following items to the template of the final permit transmittal letter contained in the most current VPDES Permit Manual.]*

**[Note: Insert these paragraphs at the beginning of the transmittal letter body and delete redundant language elsewhere in the letter template.]**

Your Virginia Pollution Abatement (VPA) permit is [**Choose one:** enclosed/attached/available for download at (**insert a link to File Share folder**) in the (**name of subfolder in File Share**) subfolder]. [**For revocation and reissuances, add this sentence:** This permit supersedes the previous VPA Permit No. VPA00000 issued to this facility.] [**Insert if permit has monitoring for pollutant management activities other than water reclamation and reuse:** A monitoring report form for (*insert description of pollutant management activity that is being monitored*) is included with the permit.] [**Insert for water reclamation and reuse:** Also included with the permit [is/are [a] reclamation and reuse monitoring report (RRMR) form[s] for the [**Choose all that apply:** reclamation system/satellite reclamation system/reclaimed water distribution system/reclaimed water system storage/(*specify other if applicable*)] covered by the permit [**Note:** *A separate monitoring report form must be developed for each of these systems covered by the permit*] [**Insert if applicable:** , and [a] monthly log sheet[s] for reclaimed water bacteria (**Insert if applicable:** and turbidity) monitoring.]] Please make additional copies of [**Choose one:** the monitoring report form/these items] for future use.

The first monitoring report required by this permit for [**monthly/bimonthly/quarterly /semiannually/annually**] monitored parameters [*If parameters are monitored at more than one frequency, specify the first monitoring period and due date for each*] is due on [**Insert date to be on 10<sup>th</sup> day of the month immediately following the first full monitoring period (i.e., May 10, 20XX)**] for the period [**Insert months in monitoring period**]. [**Insert if applicable related to water reclamation and reuse:** The first RRMR[s] with attachments (e.g., log sheet[s], etc.) required by this permit [is/are] due on [**date**] for [**month**] (*add other due dates as need for more than one RRMR form*)]. [**For reissuances, add this sentence:** If you still have monitoring data to report as required by the previous permit, please submit it as an attachment to the first [**Choose on:** monitoring report/corresponding monitoring report or RRMR] required by this permit.] Monitoring results on the [**Choose all that apply:** monitoring report/RRMR[s]] should be reported to the same number of significant digits as are included in the permit limit [**Insert if applicable:** or reclaimed water standard] for the parameter. Please send [**Choose all that apply:** monitoring reports/RRMRs] to:

*[Regional Office and Address]*

**[Note: Add these items to the “Enclosures” list shown at the bottom of the transmittal letter.]**

Enclosure[s]:

[**Of the following items, insert only those that are also inserted in the body of the letter:**  
Reclamation and Reuse Monitoring Report (RRMR) form(s)  
Monthly Log Sheet(s) for Reclaimed Water Bacteria [**Insert if applicable:** and Turbidity] Monitoring]

**[Note: Add these items to the “Cc:” list shown at the bottom of the transmittal letter.]**

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Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
Attachment D

Cc: OLAP  
OWS  
OVP  
DEQ-RO Compliance Auditor

**Transmittal Letter for Administrative and Emergency Authorizations**

*[Note: Use this letter for administrative authorizations associated with VPDES permits (see subdivision [III.D](#)) or for emergency authorizations associated with VPDES or VPA permits (see subdivision [III.E](#)) related to water reclamation and reuse.]*

[Regional Letterhead]

[Date]

[Permittee's Name]  
[Address]

CERTIFIED MAIL  
[Choose one: (transmitted via USPS)  
RETURN RECEIPT REQUESTED/  
(transmitted via email) READ  
RECEIPT REQUESTED]

RE: [Choose one: VPDES Permit No. VA0000000/VPA Permit No. VPA00000], [Choose one: Administrative Authorization for Water Reclamation and Reuse/Emergency Authorization to Produce, Distribute or Reuse Reclaimed Water]

Dear [Permittee]:

**[Insert for administrative authorizations associated with VPDES permits:**

Your administrative authorization for water reclamation and reuse in association with VPDES Permit No VA0000000 is [Choose one: enclosed/attached/available for download at (insert a link to File Share folder) in the (name of subfolder in File Share) subfolder. [Insert only if the VPDES permittee is unable to use e-DMR: Included with the administrative authorization are the following items:]

**[Insert for emergency authorizations associated with VPDES or VPA permits:**

Your emergency authorization to produce, distribute or reuse reclaimed water in association with [Choose one: VPDES Permit No VA0000000/ VPA Permit No. VPA00000] is [Choose one: enclosed/attached/available for download at (insert a link to File Share folder) in the (name of subfolder in File Share) subfolder. [Insert where the emergency authorization is associated with a VPA permit, or a VPDES permit and the permittee is unable to use e-DMR: Included with the emergency authorization are the following items:]

**[Insert all that apply to the administrative or emergency authorization:**

- [a] reclamation and reuse monitoring report RRM/R form[s] for the [Choose all that apply: reclamation system/satellite reclamation system/reclaimed water distribution system/reclaimed water system storage/(specify other if applicable)] covered by the authorization [Note: A separate monitoring report form must be developed for each of these systems covered by the authorization],
- [a] monthly log sheet[s] for reclaimed water bacteria [Insert if applicable: and turbidity] monitoring, and
- [Insert for only a reclamation system or SRS covered by an administrative or emergency authorization associated with a VPDES permit: a form entitled "Supplemental Report for Reclamation Systems Authorized by or in Association with a VPDES Permit" (Supplemental Report form).]

Please make additional copies of these items for future use.]

The first RRMR[s] with attachments (e.g., log sheet[s] **[Insert if applicable:** and Supplemental Report form[s])) required by this authorization [is / are] due on [date] for [month] (*add other due dates as need for more than one RRMR form*). Monitoring results on the RRMR[s] should be reported to the same number of significant digits as are included in the reclaimed water standard for the parameter in the authorization. **[Insert only if permittee is unable to use e-DMR:** Please send the RRMR[s] to:

**[Regional Office and Address]**

**[Insert for only an authorization (administrative or emergency) associated with a VPDES permit where the permittee does not have e-DMR and has not demonstrated the inability to use e-DMR:**

An electronic DMR is available through e-DMR for the VPDES permit associated with this **[Choose one:** administrative/emergency] authorization. The RRMR[s] for the authorization may be submitted through e-DMR as [an] attachment[s] to the electronic DMR. If you have not already done so, please register now for e-DMR in order to obtain e-DMR access and capabilities prior to the due date of the first RRMR[s], and to avoid non-compliance with the reporting requirements of the authorization. The following website provides details:

<http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/ElectronicDMRsubmissions.aspx>

You can also contact our regional e-DMR administrator, **[name]**, for assistance at **[phone]** or **[email]**.]

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

Alternatively, any owner under §§ 62.1 - 44.16, 62.1 - 44.17, and 62.1 - 44.19 of the State Water Control Law aggrieved by any action of the State Water Control Board taken without a formal hearing, or by inaction of the Board, may demand in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth in 9VAC25-230-130 (Procedural Rule No. 1 - Petition for formal hearing). In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions regarding the **[Choose one:** administrative/emergency] authorization, please contact me at **[phone]** or **[e-mail]**.

Sincerely,

**[Permit Writer]**

**[Insert the following if the authorization is sent to the permittee via USPS or attached to an email]**  
**[Choose one:** Enclosures/Attachments]:

Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
Attachment D

**[Choose one:** Administrative/Emergency] Authorization  
**[Of the following items, insert only those that are also inserted in the body of the letter:**  
Reclamation and Reuse Monitoring Report (RRMR) form[s]  
Monthly Log Sheet[s] for Reclaimed Water Bacteria **[Insert if applicable:** and Turbidity]  
Monitoring  
Supplemental Report for Reclamation Systems Authorized by or in Association with a VPDES  
Permit]

Cc: **[Insert for authorizations associated with VPDES permits only:** OVP]  
OLAP  
OWS  
Permit file  
DEQ-RO Compliance Auditor

**Variance Approval Letter (See subdivision III.I)**

[Regional Letterhead]

[Date]

[Applicant's Name]  
[Address]

CERTIFIED MAIL  
[Choose one: (transmitted via USPS)  
RETURN RECEIPT REQUESTED/  
(transmitted via email) READ  
RECEIPT REQUESTED]

RE: Approval of Variance to the Water Reclamation and Reuse Regulation  
[Insert name of water reclamation and reuse project], [Choose one of the following that  
applies: VA00XXXXX / VPA0XXXX / Administrative Authorization associated with  
VA00XXXXX / Emergency Authorization associated with VA00XXXXX / Emergency  
Authorization associated with VPA0XXXX]

Dear [Applicant]:

On [Date], the Virginia Department of Environmental Quality (DEQ) received your application for a variance to the requirements of 9VAC25-740-[Insert section or subdivision number] for the referenced water reclamation and reuse project. The variance proposes to [Briefly describe the variance]. Based on this and other information contained in the variance application, DEQ has determined that the hardships imposed by 9VAC25-740-[see above] outweigh the benefits of the project and the granting of this variance would not adversely impact public health or the environment [Insert , if applicable, approved suggested conditions contained in the variance application: , provided the following conditions are implemented by the applicant to limit any such anticipated impacts: [Insert approved suggested conditions].

Therefore, the variance to 9VAC25-740-[see above] is [Choose one: (if there are no conditions noted above) approved / (if there are conditions noted above) conditionally approved] and shall become effective 15 days following the date of this notice. The variance shall be terminated when the project comes into compliance with the applicable design, construction, operation, or maintenance requirements of 9VAC25-740-10 et seq., and may be terminated upon a finding by DEQ that the project has failed to comply with any requirements or schedules issued in conjunction with this variance. [Insert only one of the following that applies: There are no changes to any permit conditions, effluent limitations or monitoring requirements associated with the approval of this variance. / Determined by the date the variance is terminated, conditions of the variance shall be incorporated into the referenced (Choose one: permit / authorization) upon (Choose one: issuance / renewal or modification).] The variance approved herein is nontransferable.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

Alternately, any owner under §§ 62.1-44.16, 62.1-44.17, and 62.1-44.19 of the State Water Control Law aggrieved by any action of the State Water Control Board taken without a formal hearing, or

Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
Attachment D

by inaction of the Board, may demand in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth in 9 VAC25-230-130 B of the Board's Procedural Rule No. 1. In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions regarding the approved variance, please contact me at **[phone]** or **[e-mail]**.

Sincerely,

**[Permit Writer]**

Cc: Permit file  
DEQ-RO Compliance Auditor



**Variance Denial Letter (See subdivision [III.I](#))**

[Regional Letterhead]

[Date]

[Applicant's Name]  
[Address]

[Insert if transmitted via email:  
READ RECEIPT REQUESTED]

RE: Denial of Variance to the Water Reclamation and Reuse Regulation  
[Insert name of water reclamation and reuse project], [Choose one of the following that  
applies: VA00XXXXX / VPA0XXXX / Administrative Authorization associated with  
VA00XXXXX / Emergency Authorization associated with VA00XXXXX / Emergency  
Authorization associated with VPA0XXXX]

Dear [Applicant]:

On [Date], the Virginia Department of Environmental Quality (DEQ) received your application for a variance to the requirements of 9VAC25-740-[Insert section or subdivision number] for the referenced water reclamation and reuse project and [Choose one: permit / authorization]. Based on information contained in the application [Insert the following if an informal fact-finding proceeding was held with the applicant: and presented during the informal fact-finding proceedings held (Date) to discuss the application], DEQ has determined that [Insert all that apply: the hardship imposed by 9VAC25-740-(see above) does not outweigh the benefits of the project / the granting of this variance would adversely impact public health or the environment]. Therefore, the variance to 9VAC25-740-[see above] is denied.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

Alternately, any owner under §§ 62.1-44.16, 62.1-44.17, and 62.1-44.19 of the State Water Control Law aggrieved by any action of the State Water Control Board taken without a formal hearing, or by inaction of the Board, may demand in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth in 9VAC25-230-130 B of the Board's Procedural Rule No. 1. In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions regarding this variance denial, please contact me at [phone] or [e-mail].

Sincerely,

[Permit Writer]

Water Guidance Memo No. 10-2001, Revision No. 1  
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.  
Attachment D

Cc: Permit file  
DEQ-RO Compliance Auditor