Economic Impact Analysis
Virginia Department of Planning and Budget

9 VAC 25-740 – Water Reclamation and Reuse Regulation
Department of Environmental Quality, State Water Control Board
September 23, 2011

Summary of the Proposed Amendments to Regulation

The State Water Control Board (the Board) proposes to 1) allow variances from design, construction, operation or maintenance requirements of this regulation, 2) allow the production, distribution and reuse of reclaimed water without a permit when there is a substantial threat to public safety, 3) allow greater flexibility in the management of pollutants of concern from significant industrial users, 4) expand the list of approved reuses not requiring case-by-case approval, 5) expand the reuse of reclaimed water by allowing the reuse of water in more types of dwellings, 6) allow non-system storage facilities of reclaimed water to discharge under less restrictive circumstances, 7) provide facility owners the authority to inspect reuses and storage facilities of end users with whom they have a service agreement or contract, 8) require permit applicants to plan for emergencies, 9) establish that alternative onsite sewage systems regulated by the Virginia Department of Health (VDH) are required to obtain a separate permit from the Department of Environmental Quality (DEQ), 10) provide authority to add new points of compliance downstream for storage facilities and reclaimed water distribution systems, 11) establish additional monitoring requirements to address reclaimed water degradation during longer term storage, 12) introduce design requirements to improve maintenance and compliance with operational requirements of the regulation for reclaimed water distribution systems, and 13) require that pump stations meet reliability requirements for Level 1 reclamation systems and satellite reclamation systems.

Result of Analysis

The benefits likely exceed the costs for one or more proposed changes. There is insufficient data to accurately compare the magnitude of the benefits versus the costs for other changes.

Estimated Economic Impact

The Board proposes numerous changes that will affect water reclamation and reuse facilities and activities in Virginia. Participation in water reclamation and reuse is voluntary. Thus, these regulations apply to those who voluntarily participate in water reclamation and reuse. The proposed changes include many substantive changes as well as many minor changes such as clarification of the language of the regulation, elimination of redundancies, formatting of sections or subdivisions of the regulation, and correction of grammatical and typographical errors. A number of the substantive changes are expected to provide direct benefits to the water reclamation and reuse facility owners thereby encouraging reclamation and reuse while a number of other changes are expected to introduce additional compliance costs. In almost all cases no reliable information is available to quantify the size of the expected benefits or expected costs. A description of the likely economic impacts of substantive changes is as follows.

One of the substantive changes will provide authority to the Board to issue variances from design, construction, operation, or maintenance requirements of this regulation. The proposed language describes circumstances for which a variance may be considered, information to be included in an application for a variance, the period within which the board must act on a variance request, minimum factors to be considered by the board when acting upon a variance request, the Board's disposition of a variance request, effective date of a variance request when granted, variance nontransferability and incorporation into the project permit, and circumstances where variance procedures contained in the other regulations may apply in lieu of the variance procedures contained in this regulation.

According to DEQ, primarily due to high compliance costs, applicants have requested exceptions to design or operational requirements of the regulation, but DEQ was unable to grant such exceptions or variances without the authority established in law or regulation. With the proposed changes, DEQ will have greater flexibility where the design, construction, operation or maintenance of a water reclamation and reuse proposal may not conform to specific

requirements of the regulation. Greater flexibility should help DEQ accommodate requests for less expensive alternative solutions to design requirements of the regulation. DEQ does not expect any increased risks to the environment or public health from this proposed change. Approximately, five variances are expected to be isssued annually.

Another significant change will provide authority to DEQ to allow the production, distribution and reuse of reclaimed water without a permit when the board finds that due to drought there is insufficient public water supply that may result in a substantial threat to public safety. The language regarding this change describes circumstances under which the board can issue an emergency authorization, projects that are or are not eligible for emergency authorization, permit application requirements following the issuance of an emergency authorization, the effective duration of the emergency authorization, and public participation requirements for an emergency authorization. This change will provide only a temporary authorization that will expire automatically unless an application for a permanent authorization is made within 180 days. DEQ had in the past received requests to temporarily authorize emergency reuse of reclaimed water during severe droughts without permit coverage, but was unable to grant such authorization without the authority established in regulation. The amendment will provide DEQ the authority and flexibility to temporarily authorize reclamation and specific reuses of reclaimed wastewater without a permit during periods of significant drought. This change has the potential to help regulants avoid potentially significant compliance costs during severe droughts. Several applications for emergency authorizations may be expected in severe drought years.

The proposed changes will also clarify and simplify requirements to manage pollutants of concern from significant industrial users (SIUs) for reclamation systems and satellite reclamation systems that will produce Level 1 reclaimed water, and for reclamation systems that are part of an indirect potable reuse project. This change will eliminate unnecessary reviews and approvals by the board, no longer require pretreatment programs, and allow greater flexibility in the management of pollutants of concern from SIUs for the purpose of producing Level 1 reclaimed water reducing monitoring, administrative, inspection, investigation, and sampling costs.

The proposed changes will also expand the list of approved reuses not requiring case-by-case approval by DEQ and to include “irrigation to establish erosion control” and will move

"ship ballast" to industrial reuses requiring a minimum of Level 1 reclaimed water. This change will reduce the time to review and approve reuse involving irrigation to establish erosion control. It will also make reclaimed water standards required for ship ballast reuse consistent with US Coast Guard proposed standards for ship ballast discharges within US waters. Both DEQ and permit holders are expected to benefit from this change in terms of reduced administrative compliance costs.

The board also proposes to expand the reuse of reclaimed water by removing a current prohibition that does not allow the reuse of reclaimed water inside residential buildings and structures that are other than one or two family dwellings (i.e., single family homes, townhouses and duplexes). Since this change allows greater use of reclaimed water, some regulants may be able to take advantage of it and enjoy some savings and reduce their reliance on potable water supplies.

The proposed regulations will also allow non-system storage facilities of reclaimed water to discharge under less restrictive circumstances. Currently, no reclaimed water storage facility can discharge except in the event of a 25-year, 24-hour storm. The proposed changes will allow non-system storage facilities of reclaimed water to discharge in the event of a 10-year, 24-hour storm, reducing the necessary storage capacity of these facilities. Allowing smaller facilities to be built can reduce construction and maintenance costs of reclaimed water storage facilities. This change is expected to benefit end users of reclaimed water that must store the reclaimed water between periods of reuse, such as for irrigation (e.g., at golf courses), utilizing existing ponds that predate the design requirements of the current regulation.

The Board will also require that the applicant or permit holder must reserve the right to perform routine or periodic inspections of an end user's reclaimed water reuses and storage facilities to ensure compliance with the regulations. This change will provide reclaimed water agents the authority to inspect reuses and storage facilities of end users with whom they have a service agreement or contract. According to DEQ, while reuses and storage facilities of an end user may be inspected by DEQ, most end users will not be issued a permit by or have a relationship with DEQ. This change will allow reclaimed water agents to be more aware of and responsive to problems with end users, and to exercise more control in the management of

reclaimed water within their service areas. This change may also provide some administrative relief to DEQ as it may be able to direct some of its resources to other areas as needed.

Despite these expected benefits, the proposed changes may introduce additional compliance costs also. One of the changes will require applicants to provide information on specific measures to be immediately implemented for the management of wastewater and reclaimed water in the event that primary reuses of reclaimed water generated by specific conjunctive systems cease or fail. The goal of this change is to address the vulnerability of specific conjunctive systems with no or limited wastewater management options other than water reuse in the event that primary reuses of reclaimed water cease or fail. This change will force permit applicants to plan for emergencies and come up with an auxiliary or backup plan to manage unused reclaimed water. While the required planning may be fairly inexpensive to comply with, there could be significant implementation costs in a crisis situation. However, the benefits of the planning would also be high in such an event.

Another proposed change will establish that alternative onsite sewage systems regulated by VDH are required to obtain a separate permit from DEQ if water reclamation and reuse is part of the system. This change is expected to impose additional costs on owners of these systems interested in making water reclamation and reuse a part of the system. Increased costs may include the fee of a second permit and costs for additional monitoring, reporting, and record keeping required for reclamation and reuse. On the other hand, this change will clarify the applicability of this regulation to VDH permitted alternative onsite sewage systems and allow the use of such systems for water reclamation and reuse.

The proposed regulations also provide authority to the Board to add new points of compliance downstream for storage facilities and reclaimed water distribution systems. This change will allow the Board to establish locations for new monitoring requirements where deemed necessary. Depending on how many and which parameters are analyzed, the cost per sampling event at each point of compliance may vary from $18 to $96. However, since the decision to add new points of compliance will be made on a case by case basis, DEQ does not know the number of cases where a new point of compliance may be established.

Similarly, the proposed regulations will also establish additional monitoring requirements for reclamation systems where reclaimed water is held in system storage for a period greater than

24 hours or for satellite reclamation systems where the system storage facility discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse. This change has the potential to create additional monitoring and reporting costs on system owners. The intent of this change is to mitigate the environmental and public health risks associated with reclaimed water degradation during longer term storage. Since the monitoring parameters and frequencies will be determined on a case-by-case basis, it is not known how many systems may be required to adopt additional monitoring requirements.

The proposed changes will add a new design requirement that valves and outlets on reclaimed water distribution system pipelines are placed where they can be accessed or would allow isolation of pipe sections for maintenance activities. The goal of this requirement is to improve maintenance and compliance with operational requirements of the regulation for reclaimed water distribution systems. This change has the potential to add some compliance costs as it may result in installation of additional valves or installation in places where installation would not normally be preferred.

The Board proposes to require that pump stations meet reliability requirements for Level 1 reclamation systems and satellite reclamation systems. This change is proposed to ensure that all components of Level 1 reclamation systems, including pump stations, will perform reliably or will initiate other contingencies in the event of power failure or other disruption at the facility. This change is expected to reduce the potential discharge of substandard reclaimed water to reuses and reduce environmental or public safety risks. However, improving the reliability of pump stations may add to compliance costs.

Businesses and Entities Affected

According to DEQ, there are 23 facilities currently authorized by individual Virginia Pollution Abatement (VPA) permits and 1033 facilities authorized by individual Virginia Pollutant Discharge Elimination System (VPDES) permits that are capable of providing source water for and/or implementing water reclamation and reuse. Seven water reclamation and reuse projects currently authorized by either a VPDES or VPA permit within the state provide reclaimed water to a variety of end users that range from small to large businesses for cooling, irrigation, fire suppression, toilet flushing, and car washing. While the need and demand for reclaimed water in Virginia is anticipated to grow, there is insufficient data and no clear trends to

extrapolate the number and frequency of water reclamation and reuse projects that will be proposed, and the number and type of end users that will served by these projects.

Localities Particularly Affected

The proposed regulations apply throughout the Commonwealth.

Projected Impact on Employment

Taken together, the proposed changes do not have a clear direct and significant impact on employment in the Commonwealth.

Effects on the Use and Value of Private Property

The proposed changes that benefit facility owners are expected to add to the asset value of their water reclamation and reuse businesses. Conversely, the proposed changes that may introduce additional compliance costs are expected to negatively affect the asset value of water reclamation and reuse businesses.

Small Businesses: Costs and Other Effects

According to DEQ, among the VPA permitted facilities, 13 are privately owned and may be considered small businesses. Among the VPDES permitted facilities, 299 are privately owned and may be considered small businesses. The costs and other effects on small businesses are the same as discussed above.

Small Businesses: Alternative Method that Minimizes Adverse Impact

There are no known alternative methods that would accomplish the same goals while minimizing adverse impacts.

Real Estate Development Costs

The proposed changes are not expected to have a direct impact on real estate development costs.

Legal Mandate

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.H of the Administrative Process Act and Executive Order Number 107 (09). Section 2.2-4007.H requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities

to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. Further, if the proposed regulation has adverse effect on small businesses, Section 2.2-4007.H requires that such economic impact analyses include (i) an identification and estimate of the number of small businesses subject to the regulation; (ii) the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the regulation, including the type of professional skills necessary for preparing required reports and other documents; (iii) a statement of the probable effect of the regulation on affected small businesses; and (iv) a description of any less intrusive or less costly alternative methods of achieving the purpose of the regulation. The analysis presented above represents DPB's best estimate of these economic impacts.