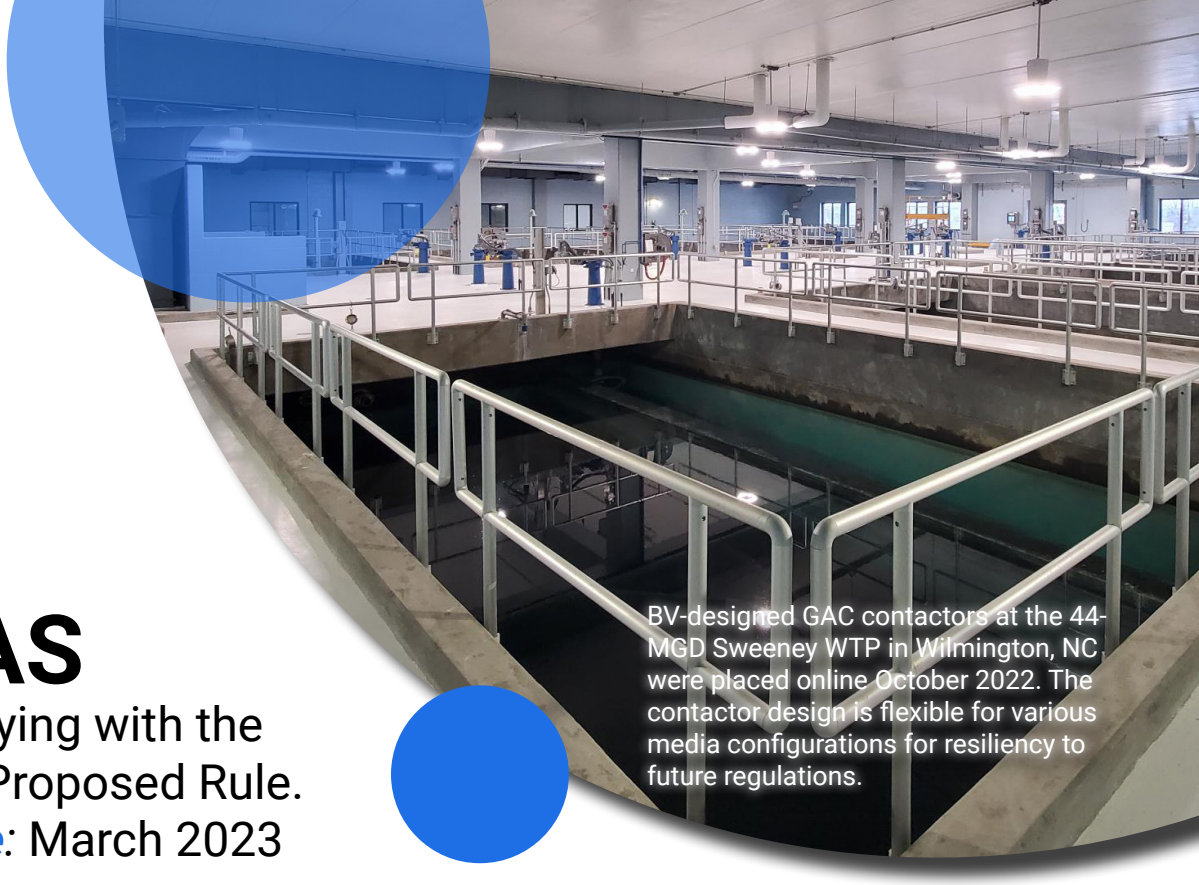

BV-designed GAC contactors at the 44-MGD Sweeney WTP in Wilmington, NC, were placed online October 2022. The contactor design is flexible for various media configurations for resiliency to future regulations.

PFAS

Complying with the EPA's Proposed Rule. *Update*: March 2023

Enforceable Limits

The U.S. Environmental Protection Agency (EPA) has issued proposed regulations for six PFAS compounds. Maximum contaminant levels (MCLs) have been proposed for the following.

- Perfluorooctanoic acid (PFOA) = 4 ppt (parts per trillion)
- Perfluorooctanoic sulfonate (PFOS) = 4 ppt
- Combined Hazard Index (HI) MCL for: Perfluorohexane sulfonic acid (PFHxS); Hexafluoropropylene oxide dimer acid (HFPO-DA) and its ammonium salt (also known as GenX chemicals); Perfluorononanoic acid (PFNA); Perfluorobutanoic acid (PFBS).
- The HI approach limits the four PFAS and any mixture to an MCL of 1.0 (unitless), as calculated using the following formula:

  HI = [GenX]/[10 ppt] + [PFBS]/[2000 ppt] + [PFNA]/[10 ppt] + [PFHxS]/[9 ppt] where [x] equals the concentration in the water sample in ppt.

Compliance Monitoring

- EPA Methods 533 and 537.1 are approved for these 6 compounds. Laboratories must be certified to run these tests.
- Public water systems (PWSs) will be required to sample distribution system entry points using the following monitoring regime for the 6 regulated PFAS.
- Previously acquired monitoring data such as that collected for UCMR 5 will satisfy the initial monitoring requirements. Composite samples are not allowed.
- All surface water and groundwater systems serving >10,000 customers are initially required to monitor quarterly for a 12-month period.
- Groundwater systems serving <10,000 customers are initially required to monitor twice for a 12-month period with each sample at least 90 days apart.
- PWSs are eligible for reduced monitoring if the finished water concentrations are less than "trigger levels" of 1/3 of the MCLs.
- For those with results above the "trigger levels," quarterly monitoring is required moving forward.

Compliance Determinations

- PFAS results will be determined by running annual averages at the sampling point. Results below the practical quantification level (PQL) will be assumed to be 0 ppt.
- PWS will not be considered in violation until one year of sampling is complete, unless the result causes the annual average to exceed the MCL.

BV piloted alternative adsorbent media in Wilmington, NC to select the optimal solution.

Public Notification

- The running annual averages for PFOA, PFOS and the HI will need to be reported in annual Consumer Confidence Reports.
- MCL violations will be designated as Tier 2, requiring notification as soon as practical, but no later than 30 days of learning of the violation.

Treatment

- PWSs will need to implement treatment, change water source, or purchase from another system if their results exceed the MCLs.
- The best available technologies include granular activated carbon (GAC), anion exchange resin (AIX), and high pressure membranes (Reverse Osmosis (RO)/Nanofiltraton (NF)).

What You Need to Do

No actions are required at this time, but PWSs are advised to start monitoring the 6 regulated PFAS in their finished water, to establish their baseline. If the finished water concentrations are greater than the proposed MCLs, the PWS could begin conducting treatment evaluations to identify the best solution and quantify the cost to comply with the proposed rule. This will allow PWSs to begin planning for treatment upgrades in their capital improvement budgets, apply for federal funding and/or participate in litigations, if applicable.

Schedule

The proposed rule will be finalized by the end of 2023. Drinking water systems will have 3 years to be in compliance within the date of the final rule.

Fifth Unregulated Contaminant Monitoring Rule (UCMR)

From 2023 to 2026, UCMR 5 will require PWSs to monitor for 29 different PFAS compounds in their finished water, including the 6 regulated under the proposed rule. The data will support science-based decisions about future regulations.

Why Black & Veatch

- On behalf of the American Water Works Association (AWWA), Black & Veatch (BV) has updated the association's National PFAS Compliance Cost Estimate. We believe the first step to addressing this impending regulation is to understand the potential costs of compliance. Using the cost model, we can help position PWSs to advocate for policy considerations and start the planning process for future projects.
- Our dedicated drinking water process engineers conduct bench-scale testing, pilot-scale testing and/or desk-top treatment evaluations to help clients select the best solution for their facility. Our experience testing various adsorptive media for optimized PFAS treatment leads to lowest life cycle costs and operation and maintenance burdens.
- We have a state-of-the-art research facility with rapid, small-scale column test (RSSCT) capabilities to identify the best performing media option (granular activated carbon (GAC), ion exchange (IX) resin, and other novel adsorptive medias) for your water quality within weeks rather than months or years. Additionally, Black & Veatch can deploy RO pilot skids to evaluate relative membrane performance.

Questions? Contact us.

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