Report to EPA

SAFE DRINKING WATER ACT ANNUAL COMPLIANCE REPORT FOR CALENDAR YEAR 2025

July 2026

Department of the Environment
Water Supply Program

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary
Adam Ortiz, Deputy Secretary

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1. Summary

The Maryland Department of the Environment (MDE) is responsible for implementing the Safe Drinking Water Act (SDWA) to ensure Maryland's public water systems are providing safe drinking water and complying with federal and state regulations. This report summarizes the violations that occurred in calendar year 2025 and describes the initiatives taken to enforce these regulations.

Public water systems are required to sample a variety of contaminants on a routine basis, depending on the population served, source type, and historical monitoring data of the water system. When contaminants are found at levels exceeding the federally established maximum contaminant level, it is a violation of federal and state standards. Violations are also incurred for failure to monitor and/or report as required, failure to use required treatment techniques, and failure to notify the public when there is a problem with their drinking water.

MDE addresses violations in accordance with the federal Drinking Water Enforcement Response Policy. This strategy identifies public water systems with violations that rise to a level of significant noncompliance, focusing on systems with health-based violations and systems that have shown a history of violations across multiple rules. This allows MDE to prioritize and direct enforcement responses to public water systems with the most significant problems.

Public water systems throughout Maryland generally achieve high levels of compliance with the SDWA. In 2025, Maryland had a total of 3,184 active water systems, and 76% of these systems successfully maintained full compliance with all SDWA regulations.

2. Background

2.1 Federal Drinking Water Program

The U.S. Environmental Protection Agency (EPA) established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and its 1986 and 1996 amendments, the EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfection Levels (MRDLs). For some regulations, the EPA establishes Treatment Techniques (TTs) in lieu of an MCL to control unacceptable levels of contaminants in water. EPA also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the states or EPA. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting (M/R) requirements. In addition, EPA requires PWSs to monitor for unregulated contaminants to provide data for future regulatory development. Finally, EPA requires PWSs to notify their consumers when they have violated these regulations. The 1996 Amendments to the SDWA require consumer notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation, and the possibility of alternative water supplies during the violation.

The SDWA applies to the 50 states, the District of Columbia, Indian Lands, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The SDWA allows states, tribes, and territories to seek EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primacy. For a state to receive primacy, the EPA must determine that the state meets certain requirements laid out in the SDWA and the federal regulations, including the adoption of drinking water regulations that are at least as stringent as the federal regulations and a demonstration that they can enforce the program requirements.

Maryland received primacy for the PWSS program in 1977.

2.2 Public Water Systems (PWSs)

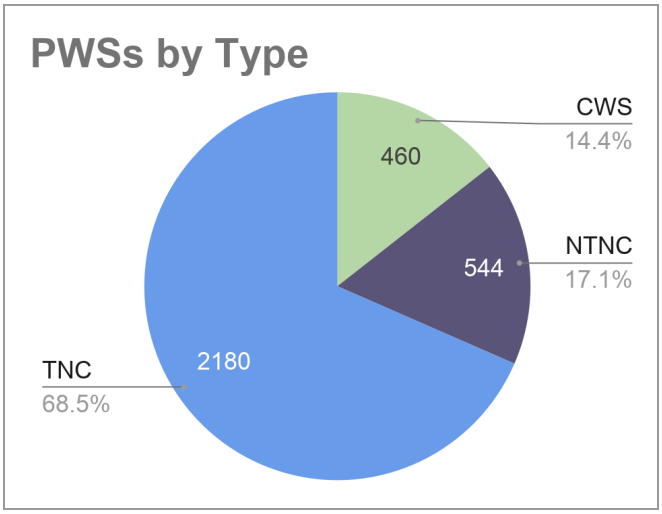
A public water system (PWS) provides drinking water through piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of public water systems:

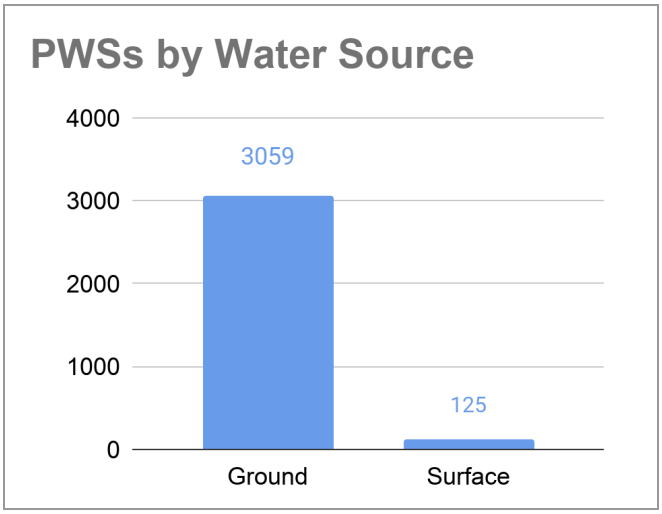
1. **Community Water System (CWS) -** A public water system that supplies water to the same population year-round.
2. **Non-Transient Non-Community (NTNC) -** A public water system that regularly supplies water to at least 25 of the same people at least six months per year. Some examples are schools, factories, and office buildings that have their own water systems.
3. **Transient Non-Community (TNC) -** A public water system that provides water in a place such as a gas station or campground where people do not remain for long periods of time.

Maryland's Water Supply Program (WSP) directly regulates CWS and NTNC water systems. TNCs are regulated and enforced by local county environmental health departments through delegation agreements in 14 counties and Baltimore City. Delegation agreements provide counties with funding, guidance, and training opportunities. The nine counties without delegated authority are Anne Arundel, Cecil, Charles, Harford, Kent, Montgomery, Prince George's, Washington, and Wicomico counties. These counties are directly regulated by WSP.

Maryland has a total of 3,184 public water systems. Table 1 presents a summary of Maryland's 2025 statistics on public water systems and the populations served by each type of system.

Table 1: Maryland Drinking Water Statistics	
Population of Maryland (July 1, 2025, Census Estimate)	6,265,347
Number of Individuals Served by Community Water Systems (CWS)	5,521,651
Percent of Population Served by Public Water Systems (PWS)	88.13%
Percent of Population Served by Individual Wells	11.87%
Total Number of Public Water Systems (PWS)	3,184
Number of Community Water Systems (CWS)	460
Number of Non-Transient Non-Community Water Systems (NTNC)	544
Number of Transient Non-Community Water Systems (TNC)	2,180
Number of Systems Using Surface Water	125
Number of Systems Using Only Groundwater	3,059





2.3 Maryland Water Supply Program (WSP)

The Water Supply Program (WSP) is a part of the Water and Science Administration within MDE. It is WSP's responsibility to ensure that public water systems provide a safe and sustainable supply of water to all current and future users in Maryland.

This mission is accomplished by managing water resources and ensuring that public water systems meet federal and state requirements under the PWSS program. Emphasis is placed on preventative measures instead of reactive enforcement actions in order to avert serious public health incidents. When drinking water violations are issued, the majority are corrected immediately or following the initial notices of violation. WSP also oversees the Board of Waterworks and Waste System Operators, the Board of Well Drillers, and the Laboratory Certification Program. Table 2 presents a summary of the WSP's major activities in 2025.

Table 2: Water Supply Program's Major Activities in 2025	
Sanitary Surveys (Class 1) for CWS and NTNC Systems	448
Sanitary Surveys for Non-Delegated TNC Systems (Conducted by MDE)*	227
Technical Reviews of Water Construction Projects	37
Water Appropriation Permits Issued (New and Renewal)	516
Individuals Certified to Sample Drinking Water (as of June 11, 2026)	2,985
New Wells Sited	21
Water Quality Records Reviewed	121,906
County Water and Sewer Plans Reviewed	71
Laboratory Certifications Completed	94
*MDE conducts TNC sanitary survey inspections in the nine counties without delegation agreements: Anne Arundel, Cecil, Charles, Harford, Kent, Montgomery, Prince George's, Washington, and Wicomico counties.	

2.2.1 Preventative Measures and Capacity Development

WSP emphasizes preventative measures to improve water system capacity and avoid issues that compromise water quality and quantity. The Capacity Development program within WSP aims to support new and existing water systems to ensure they possess the technical, managerial, and financial capacity necessary to provide safe drinking water to their customers.

The following list describes some of the key preventative measures WSP employs to maintain drinking water standards:

1. **Sanitary Survey Inspections** - Sanitary surveys are a critical activity used to evaluate water plant compliance and performance. WSP routinely conducts comprehensive on-site inspections of water systems, including source, treatment, storage, and distribution, to evaluate operational adequacy and reliability. These surveys are used to identify deficiencies before they escalate into regulatory violations.

   High-risk systems, such as non-compliant systems or those using surface water or groundwater under the direct influence of surface water (GWUDI), are prioritized for more frequent oversight. CWSs are inspected at a minimum of once every three years, with a goal of once per year for surface water systems. NTNCs and non-delegated TNCs are inspected by WSP every five years.

2. **School Notifications** - Schools with their own water systems tend to have more total coliform bacteria detections at the beginning of the school year. Stagnant water in school plumbing during summer breaks can lead to bacterial growth and the leaching of metals from pipes. To ensure systems were cleared of potential contaminants before students returned, WSP distributed flushing recommendations to all county Boards of Education and private schools on August 1, 2025.

3. **Source Water Protection** - Contamination is prevented at the source through rigorous site approvals and interagency collaboration. WSP conducts joint field investigations with local health department personnel to approve well sites for CWSs and NTNCs, ensuring they are not susceptible to contaminant sources. Source water protection programs, such as wellhead protection and surface water protection, are used to identify sources of potential contamination to prevent future incidents.

4. **Training and Technical Assistance** - WSP uses federal funding to support two Maryland Rural Water Association (MRWA) circuit riders to provide on-site training and technical assistance to systems serving fewer than 10,000 people. SDWA violations occur more frequently in smaller systems, which have fewer resources and less technical expertise for operating water systems.

   WSP regularly meets with MRWA to discuss classroom training opportunities and subsidizes operator training through the Maryland Center for Environmental Training (MCET). Both initiatives include coursework regarding operational processes, compliance, math, and safety. WSP also funds MRWA's classroom training for the state's water sampler certification program.

5. **Water Appropriation Permitting -** WSP implements a comprehensive water appropriations permitting program, ensuring the sustainable use of water resources and minimizing the potential for conflicts between users. Evaluation of permit requests requires an assessment of the reasonableness of the quantity for the intended use, the reasonableness of the impact on the resource, and the potential impact of the withdrawal on neighboring users.

2.2.2 Enforcement Strategy

The Water Supply Program (WSP) utilizes a progressive enforcement strategy to manage compliance with the SDWA. This approach begins with proactive outreach and communication, including site visits and advisory letters. WSP staff regularly engage with system operators, managers, and owners during sanitary surveys, customer complaint investigations, and emergency events. This frequent communication ensures systems remain aware of SDWA requirements and upcoming regulatory changes.

When a violation occurs, WSP promptly issues a formal Notice of Violation (NOV) detailing the noncompliance and the corrective actions required. SDWA rule managers and engineers then follow up to gather updates and provide technical assistance as needed.To prioritize enforcement actions, WSP follows the federal Drinking Water Enforcement Response Policy. This includes the implementation of the EPA's Enforcement Targeting Tool (ETT) which enables the prioritization of public water systems by assigning each violation a number of points based on the threat to public health. Water systems whose scores exceed a certain threshold are considered a priority system for enforcement.

WSP also uses an internal Targeted Action List (TAL) to identify at-risk public water systems before rising to the level of the EPA's ETT list. A system is placed on the TAL when WSP identifies either a lack of technical, managerial, and financial capacity or a trend of noncompliance that, if left uncorrected, could eventually land the system on the ETT list. WSP consults with TAL systems to discuss resolutions and establish a timeframe for the system to take corrective action.

2.4 Annual State Public Water Systems Report

Each quarter, primacy agencies submit data to the Safe Drinking Water Information System (SDWIS/FED), an automated database maintained by the EPA. The data submitted includes, but is not limited to, PWS inventory information, the incidence of MCL, MRDL, monitoring and reporting, treatment technique violations, and information on enforcement activity related to these violations. Section 1414(c)(3) of the SDWA requires states to provide the EPA with an annual report of violations of the primary drinking water standards. This report provides the numbers of violations in each of six categories: MCLs, MRDLs, treatment techniques, variances and exemptions, significant monitoring and reporting, and significant consumer notification. The EPA regional offices report the information for Wyoming, the District of Columbia, and all Indian lands but the Navajo Nation. EPA Regional offices also report federal enforcement actions taken. Data retrieved from SDWIS/FED form the basis of this report.

2.5 Obtaining a Copy of this Report

A copy of this SDWA Annual Compliance Report is available from the MDE website at mde.maryland.gov. You may also contact the Water Supply Program at water.supply@maryland.gov or 410-537-3702.

3. Review of 2025 Violation Data

3.1 Types of Violations

There are three basic types of violations that a PWS can incur:

1. **Maximum Contaminant Level (MCL) Violation** - The EPA sets federal limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as MCLs and are necessary to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.

2. **Treatment Technique (TT) Violation** - The EPA has established treatment technique (TT) requirements in lieu of an MCL for some regulations. A treatment technique is an enforceable procedure or level of technological performance which water systems must follow to ensure control of a contaminant.

3. **Monitoring and/or Reporting Requirement (M/R) Violation** - A water system is required to monitor and verify that the levels of contaminants present in the drinking water supplies do not exceed an MCL. A monitoring violation occurs when a water system fails to have its water tested as required within a compliance period. A reporting violation occurs when a water system fails to report test results in a timely fashion to the regulatory agency or fails to provide certification that mandated information was provided to the public, such as through the issuance of a public notice or the annual Consumer Confidence Report. A water system that fails to perform required monitoring for a group of contaminants would incur a violation of the Monitoring and Reporting Requirements for each of the individual contaminants within the group.

3.2 Summary of Violations

The 2025 violation data covers the SDWA violations that occurred during calendar year 2025 (January 1 - December 31) or were ongoing from previous years. The data for this report was extracted on June 8, 2026. Table 3 shows the number of violations for each rule category.

Table 3: Summary of 2025 SDWA Violations

Rule Category	MCL & TT	M/R & Other	Total
Inorganic Contaminants (IOC)	18	229	247
Synthetic Organic Contaminants (SOC)	0	32	32
Volatile Organic Contaminants (VOC)	0	21	21
Radionuclides Rule (RAD)	2	8	10
Revised Total Coliform Rule (RTCR)	16	827	843
Disinfectants and Disinfection By-Products Rule (DBPR)	14	31	45
Groundwater Rule (GWR)	3	2	5
Surface Water Treatment Rules (SWTR)	4	2	6

Lead and Copper Rule (LCR)	21	377	398
Public Notice (PN)	0	5	5
Consumer Confidence Rule (CCR)	0	49	49
Variances & Exemptions (V&E)	0	0	0
Total	**78**	**1583**	**1661**

3.3 Discussion of Violations

This section contains information on the number of violations for each SDWA rule category. A detailed list of all violations can be found in Appendix B.

3.3.1 Inorganic Contaminants (IOCs)

IOCs are non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally occurring in some water but can also enter it through farming, chemical manufacturing, and other human activities. In 2025, a total of 247 IOC violations were recorded.

There were 18 MCL violations and 229 M/R violations for IOCs, which are further detailed in Table 4. WSP is working with systems to reduce the number of unresolved M/R violations. To address unresolved violations, rule managers individually track the violations they issue, follow up on violation resolutions, and update the database as soon as the system returns to compliance. WSP has also been improving Standard Operating Procedures (SOPs) to ensure staff adhere to a consistent timeline. Systems that have multiple violations or a history of non-compliance are added to WSP's Targeted Action List (TAL) for additional oversight and more frequent follow-up.

Table 4: Inorganic Contaminants (IOCs)

Contaminant	MCL Violations			M/R Violations		
	Number of Violations	Number of Resolved Violations	Number of PWSs	Number of Violations	Number of Resolved Violations	Number of PWSs
Antimony	0	0	0	7	4	6
Arsenic	13	13	3	16	12	12
Asbestos	0	0	0	0	0	0
Barium	0	0	0	10	7	8
Beryllium	0	0	0	7	4	6
Cadmium	0	0	0	7	4	6
Chromium	0	0	0	7	4	6
Cyanide	0	0	0	0	0	0
Fluoride	0	0	0	10	7	10

Mercury	0	0	0	7	4	6
Nickel	0	0	0	7	4	6
Nitrate	5	5	5	137	55	126
Nitrite	0	0	0	0	0	0
Selenium	0	0	0	7	4	6
Thallium	0	0	0	7	4	6
Total	**18**	**18**	**8**	**229**	**113**	**149**

3.3.2 Synthetic Organic Contaminants (SOCs)

SOCs are man-made, carbon-based chemicals such as herbicides and pesticides used for agricultural and industrial purposes. In 2025, a total of 32 SOC violations were recorded. There were no MCL violations and 32 M/R violations for SOCs, which are further detailed in Table 5.

Table 5: Synthetic Organic Contaminants (SOCs)

Contaminant	MCL Violations			M/R Violations		
	Number of Violations	Number of Resolved Violations	Number of PWSs	Number of Violations	Number of Resolved Violations	Number of PWSs
2,3,7,8-TCDD (Dioxin)	0	0	0	0	0	0
2,4-D (Formula 40, Weedar 64)	0	0	0	0	0	0
2,4,5-TP (Silvex)	0	0	0	0	0	0
Alachlor (Lasso)	0	0	0	2	2	1
Atrazine (Atranax, Crisazina)	0	0	0	2	2	1
Benzo(a)pyrene	0	0	0	2	2	1
Carbofuran (Furdan, 4F)	0	0	0	0	0	0
Chlordane	0	0	0	2	2	1
Dalapon	0	0	0	0	0	0
Di(2-ethylhexyl)adiphate	0	0	0	2	2	1
Di(2-ethylhexyl)phthalate	0	0	0	2	2	1
Dibromochloropropane (DBCP)	0	0	0	0	0	0
Dinoseb	0	0	0	0	0	0
Diquat	0	0	0	0	0	0
Endothall	0	0	0	0	0	0
Endrin	0	0	0	2	2	1
Ethylene Dibromide (EDB, Bromofume)	0	0	0	0	0	0
Glyphosate	0	0	0	0	0	0

3.3.3 Volatile Organic Contaminants (VOCs)

Many VOCs are man-made chemicals that are used and produced in the manufacture of paints, pharmaceuticals, and refrigerants. VOCs are often components of petroleum fuels, chemical solvents, and dry cleaning agents. In 2025, a total of 21 VOC violations were recorded.

There were no MCL violations and 21 M/R violations for VOCs, which are further detailed in Table 6. A single water system was responsible for all 21 VOC violations. The system collected their VOC samples on June 6, 2026, and electronically reported the results on June 19, 2026. Because the results were reported after the data was extracted on June 8, 2026, the current tables do not show the resolved status for these violations.

Table 6: Volatile Organic Contaminants (VOC)

Contaminant	MCL Violations			M/R Violations		
	Number of Violations	Number of Resolved Violations	Number of PWSs	Number of Violations	Number of Resolved Violations	Number of PWSs
1,1-Dichloroethylene	0	0	0	1	0	1
1,1,1-Trichloroethane	0	0	0	1	0	1
1,1,2-Trichloroethane	0	0	0	1	0	1
1,2-Dichloroethane	0	0	0	1	0	1
1,2-Dichloropropane	0	0	0	1	0	1
1,2,4-Trichlorobenzene	0	0	0	1	0	1
Benzene	0	0	0	1	0	1
Carbon Tetrachloride	0	0	0	1	0	1
cis-1,2-Dichloroethylene	0	0	0	1	0	1
Dichloromethane	0	0	0	1	0	1

Ethylbenzene	0	0	0	1	0	1
Monochlorobenzene	0	0	0	1	0	1
o-Dichlorobenzene	0	0	0	1	0	1
p-Dichlorobenzene	0	0	0	1	0	1
Styrene	0	0	0	1	0	1
Tetrachloroethylene	0	0	0	1	0	1
Toluene	0	0	0	1	0	1
Trans-1,2-Dichloroethylene	0	0	0	1	0	1
Trichloroethylene	0	0	0	1	0	1
Vinyl Chloride	0	0	0	1	0	1
Xylenes (Total)	0	0	0	1	0	1
Total	**0**	**0**	**0**	**21**	**0**	**1**

3.3.4 Radionuclide Rule (RAD)

Radionuclides are radioactive particles that can be found in drinking water due to natural processes and human activities. Radionuclides generally enter drinking water through the erosion or chemical weathering of naturally occurring mineral deposits, although human activity, such as mining, industrial activities, or military activities that use or produce man-made radioactive materials can also contribute to their presence in water.

In 2025, a total of 10 RAD violations were recorded. There were two MCL violations and eight M/R violations for the RAD, which are further detailed in Table 7. The three unresolved violations were incurred by two systems. RAD rule managers are working with the systems to help them return to compliance. Occasionally, WSP will request special samples to be conducted by MDE water samplers, ensuring the sampling requirement is met.

Table 7: Radionuclide Rule (RAD)

Contaminant	**MCL Violations**			**M/R Violations**		
	Number of Violations	Number of Resolved Violations	Number of PWSs	Number of Violations	Number of Resolved Violations	Number of PWSs
Gross Alpha Radioactivity	0	0	0	5	2	4
Gross Beta Radioactivity	0	0	0	0	0	0
Radium-228	0	0	0	3	3	3
Combined Radium 226/228	2	2	1	0	0	0
Uranium	0	0	0	0	0	0
Total	**2**	**2**	**1**	**8**	**5**	**7**

3.3.5 Revised Total Coliform Rule (RTCR)

The RTCR is the revision to the 1989 Total Coliform Rule (TCR). Total coliforms are a group of related bacteria found in soil, plants, and animal intestines. The RTCR establishes an MCL for *E. coli* and TT requirement for total coliform. Total coliforms are a useful indicator of other pathogens in drinking water. All public water systems are required to comply with the RTCR.

In 2025, a total of 843 RTCR violations were recorded. There were 16 MCL violations and 827 M/R violations for the RTCR, which are further detailed in Table 8.

Table 8: Revised Total Coliform Rule (RTCR)

Violation Name	Type of Violation	Number of Violations	Number of Resolved Violations	Number of PWSs
MCL (*E. coli*)	MCL	16	12	15
Monitoring, Routine	M/R	827	666	402
Total		**843**	**678**	**415**

3.3.6 Disinfectants and Disinfection Byproducts Rule (DBPR)

While disinfectants are effective in controlling many microorganisms, they react with natural organic and inorganic matter in source water and distribution systems to form disinfectant by-products. The EPA sets national limits on residual disinfectant levels in drinking water to reduce the risk of exposure to disinfectant byproducts formed when public water systems add chemical disinfectant for either primary or residual treatment.

All CWSs and NTNCs that provide disinfected drinking water are required to comply with the Stage 1 and Stage 2 Disinfectants and Disinfection By-Products Rules (DBPR). Additionally, TNCs that use chlorine dioxide are required to comply with the requirements. Water systems that use surface water are required to provide specific water treatment (i.e., sedimentation and filtration) to reduce disinfection byproduct precursors that are likely to form disinfection byproducts with the addition of chlorine.

In 2025, a total of 45 DBPR violations were recorded. There were 15 MCL violations, two TT violations, and 31 M/R violations, which are further detailed in Table 9.

Table 9: Disinfectants and Disinfection Byproducts Rule

Violation Name	Type of Violation	Number of Violations	Number of Resolved Violations	Number of PWSs
Failure to Have Monitoring Plan	M/R	1	1	1
Monitoring, Routine	M/R	30	20	14
Inadequate DBP Precursor Removal	TT	2	2	1

MCL, Locational Running Annual Average (LRAA)	MCL	15	5	6
Total		**45**	**28**	**21**

3.3.7 Groundwater Rule (GWR)

The GWR applies to all water systems that use groundwater sources, such as wells or springs. Instead of requiring disinfection for all groundwater systems, the GWR establishes a risk-targeted approach to identifying groundwater systems that are susceptible to fecal contamination. The GWR requires systems at risk of microbial contamination to take corrective action to protect consumers from harmful bacteria and viruses.

In 2025, a total of five GWR violations were recorded. There were three TT violations and two M/R violations, which are further detailed in Table 10.

Table 10: Groundwater Rule

Violation Name	Type of Violation	Number of Violations	Number of Resolved Violations	Number of PWSs
Failure to Address Deficiency	TT	3	2	2
Failure to Respond/Consult with State	M/R	2	1	2
Total		5	3	3

3.3.8 Surface Water Treatment Rules (SWTRs)

The surface water treatment rules include the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Filter Backwash Recycling Rule (FBRR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), and the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). These rules establish M/R requirements, TT requirements, performance standards, and turbidity standards.

The rules apply to all PWSs using surface water sources or ground water sources under the direct influence of surface water (GWUDI). The purpose of the SWTRs is to reduce illnesses caused by pathogens in drinking water by requiring water systems to filter and disinfect surface water sources. Maryland does not have any PWSs that are approved to use an unfiltered surface water source.

In 2025, a total of six SWTR violations were recorded. There was one recordkeeping violation, one M/R violation, and four TT violations, which are further detailed in Table 11.

Table 11: Surface Water Treatment Rules

Violation Name	Type of Violation	Number of Violations	Number of Resolved Violations	Number of PWSs
Monitoring of Treatment (SWTR-Filter)	M/R	1	1	1

Failure to Maintain Microbial Treatment	TT	2	2	1
Single Turbidity Exceedance (Enhanced SWTR)	TT	1	1	1
Monthly Turbidity Exceedance (Enhanced SWTR)	TT	1	1	1
Record Keeping	Other	1	1	1
Total		**6**	**6**	**3**

3.3.9 Lead and Copper Rule (LCR)

The LCR was first established in 1991 to reduce exposure to lead and copper in drinking water. The federal government banned the installation of new lead pipes in 1986, but many homes and businesses are connected to water mains through legacy lead pipes. For this reason, the EPA has strengthened the initial LCR requirements through the promulgation of the 2021 Lead and Copper Rule Revisions (LCRR) and the final 2024 Lead and Copper Rule Improvements (LCRI).

Under the LCRI, water systems will be required to identify service line pipe materials, replace lead service lines (LSLs) within 10 years, and improve tap sampling. The final rule also lowers the lead action level, a threshold for taking certain actions to reduce exposure to lead in drinking water. If more than 10% of water samples for the compliance period exceed the lead action level, the water system is required to issue a Tier 1 Public Notice within 24 hours and conduct public education. For both lead and copper action level exceedances, the system must conduct source water monitoring, water quality parameter monitoring, and install or adjust corrosion control treatment. All systems will be required to replace their lead service lines expeditiously, regardless of whether or not they exceed the action level. The LCRI also requires more frequent and proactive communications on lead service lines (LSLs) and the system's plans for replacement.

In 2025, a total of 398 LCR/LCRR violations were recorded. There were 21 TT violations and 377 M/R violations, further detailed in Table 12. The majority of the M/R violations are related to service line inventory reporting and notification requirements under the LCRR. These are new requirements for water systems, and more than 99% of service lines in Maryland are inventoried, to date. Currently, the EPA is enforcing the LCRI as Maryland does not yet have primacy over the LCRR/LCRI.

Table 12: Lead and Copper Rule

Violation Name	Type of Violation	Number of Violations	Number of Resolved Violations	Number of PWSs
Initial Tap Sampling for Lead and Copper	M/R	4	4	3
Follow-up or Routine Tap Sampling	M/R	53	37	51
Water Quality Parameter	M/R	14	5	11
Initial, Follow-up, or Routine Source Water	M/R	4	3	4
Optimal Corrosion Control Treatment (OCCT)/Source Water Treatment (SOWT) Recommendation	TT	13	7	13
Lead Public Education	TT	8	6	7

Lead Consumer Notice	M/R	40	31	29
Service Line Inventory Reporting*	M/R	212	195	212
Notification, Known or Potential LSL*	M/R	50	49	50
Total		**398**	**337**	**311**

*2021 Lead and Copper Rule Revisions (LCRR)

3.3.10 Public Notification (PN)

The PN rule requires all PWSs to notify their consumers whenever a violation of drinking water standards occurs. These notices alert consumers if there is a risk to public health. The time period that a PWS has to notify the public depends upon the risk posed by the violation or situation.

When there is a potential for immediate impact on human health, water suppliers have 24 hours to notify people who may drink the water. Notices must be provided to persons served (not just billing consumers). For this report, a significant public notification violation occurs when a PWS completely fails to notify its consumers that the PWS violated a national primary drinking water regulation or had a situation posing a risk to public health.

In 2025, five systems were responsible for a total of five PN rule violations. While two of these violations have already returned to compliance, three remain unresolved. Among the outstanding cases, two systems have addressed the underlying violation that led to the PN requirement but still must complete the PN process.

3.3.11 Consumer Confidence Report (CCR)

The CCR rule requires every CWS to deliver an annual water quality report to its customers. The report is required to include information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations.

In 2025, there were 49 CCR violations, further detailed in Table 13.

Table 13: Consumer Confidence Report Rule

Violation Name	Number of Violations	Number of Resolved Violations	Number of PWSs
Failure to Produce or Deliver Report	20	17	17
Adequacy, Availability, Content or Certification	29	19	27
Total	**49**	**36**	**37**

3.3.12 Variances

A primacy state can grant a PWS a variance from a primary drinking water regulation if the characteristics of the raw water sources reasonably available to the PWS do not allow the system to meet the MCL. To obtain a

variance, the system must agree to install the best available technology, treatment techniques, or other means of limiting drinking water contamination, and the state must find that the variance will not result in an unreasonable risk to public health. The variance shall be reviewed not less than every five years to determine if the system remains eligible for the variance.

In 2025, MDE granted no variances, and no variances were in effect.

3.3.13 Exemptions

A primacy state can grant an exemption temporarily relieving a PWS of its obligation to comply with an MCL, treatment technique, or both if the system's noncompliance results from compelling factors (which may include economic factors) and the system was in operation on the effective date of the MCL or treatment technique requirement. A new PWS that was not in operation on the effective date of the MCL or treatment technique requirement by that date may be granted an exemption only if no reasonable alternative source of drinking water is available to the new system. Neither an old nor a new PWS is eligible for an exemption if management or restructuring changes can reasonably be made that will result in compliance with the SDWA or improvement of water quality, or if the exemption will result in an unreasonable risk to public health. The state will require the PWS to comply with the MCL or treatment technique as expeditiously as practicable, but not later than three years after the otherwise applicable compliance date.

In 2025, MDE granted no exemptions, and no exemptions were in effect.

4. Conclusion

Maryland public water systems maintain a high level of compliance with all SDWA requirements. This high compliance rate can be attributed to the strong oversight of WSP's dedicated staff and the commitment of MDE's leadership to protecting public health.

In general, compliance is more difficult for smaller systems, which often do not have adequate technical, managerial, or financial capacity. These capacity issues may result in postponed preventative maintenance, outdated infrastructure, and problems hiring/retaining qualified water operators. WSP aims to help all systems achieve the highest possible level of public health protection, primarily through the use of targeted outreach and technical assistance.

WSP also continues to improve internal standard operating procedures and transition to online compliance reporting portals for public water systems. These processes are designed to ensure consistent application of regulations across all compliance activities, including permitting, inspections, and enforcement actions. This allows WSP staff to more quickly identify potential issues and allocate resources where they are most needed.

Appendices

Appendix A: Glossary

Term	Description
Public Water System (PWS)	A public water system provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year. A public water system may be publicly or privately owned.
Community Water System (CWS)	A public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.
Non-Transient Non-Community Water System (NTNC)	A public water system that regularly supplies water to at least 25 of the same people at least six months per year. Some examples are schools, factories, office buildings, and hospitals, which have their own water systems.
Transient Non-Community Water System (TNC)	A public water system that provides water in a place such as a gas station or campground where people do not remain for long periods of time.
Maximum Contaminant Level (MCL)	The highest amount of a contaminant that the EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. Unless otherwise specified, MCLs are defined in milligrams per liter (parts per million).
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. The EPA sets national limits on residual disinfectant levels in drinking water to reduce the risk of exposure to disinfectant byproducts formed when public water systems add chemical disinfectant for either primary or residual treatment.
Monitoring and Reporting (M/R)	A water system is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCLs. A monitoring violation occurs when the system fails to have its water tested as required or fails to report test results correctly.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water in lieu of an MCL. For example, TTs have been established for the treatment of surface waters to control the level of viruses and bacteria.

Appendix B: Detailed List of Violations