MAINE STATE LEGISLATURE

Maine CDC Drinking Water Program

Public Drinking Water in Maine

Annual Report 2021

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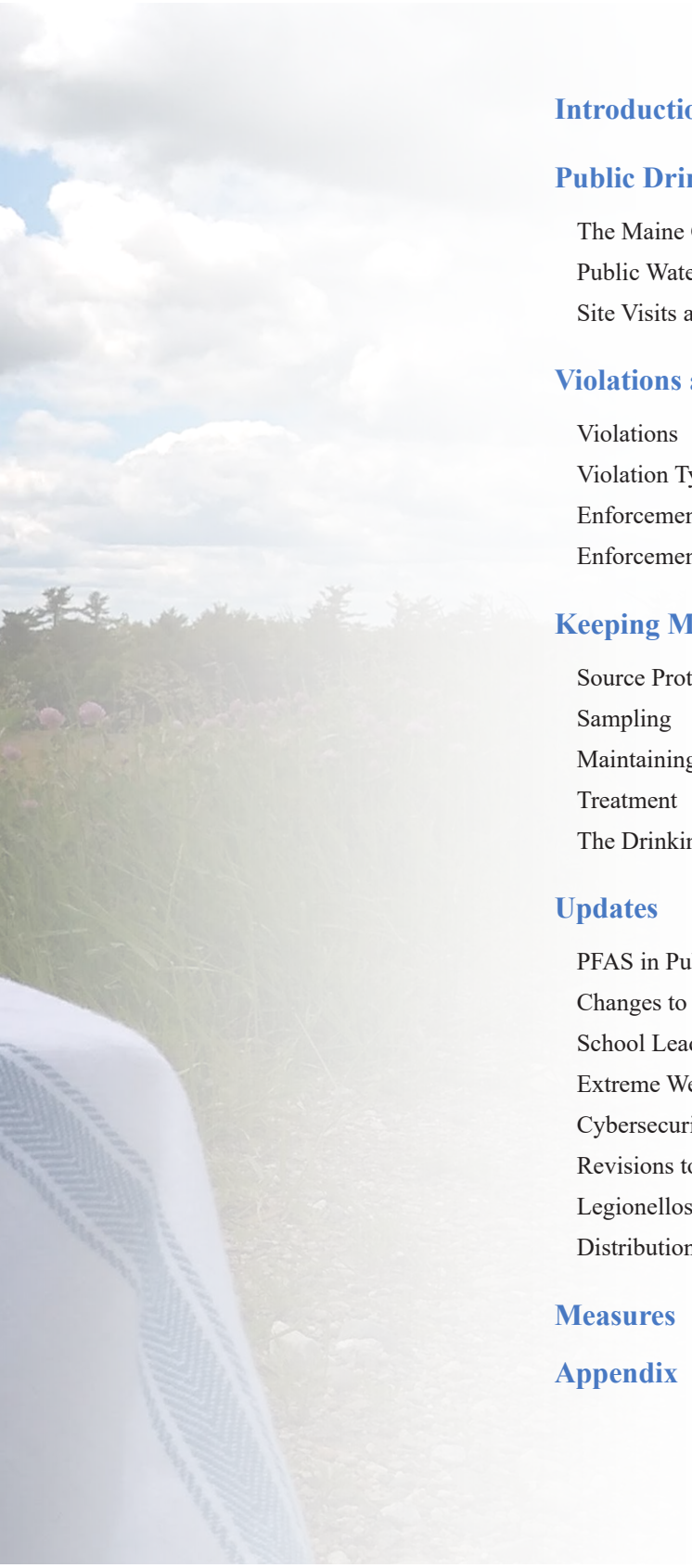


Introduction

The Maine CDC Drinking Water Program works to ensure safe drinking water and protect public health in Maine by administering and enforcing drinking water and subsurface wastewater regulations, and providing educational, technical, and financial assistance.

Of the Earth's vast resources of water, only a small fraction is fresh and drinkable. A few people among the globe's billions have been charged with the task of ensuring everyone else has a reliable source of safe water.

- J.B. Mannion

Dear Reader,

This is a challenging time in the drinking water industry, due in part to the increasing public focus on emerging contaminants, the ongoing process of reviewing, revising, and expanding safe drinking water regulations, and the urgent need to address our aging infrastructure. At the same time, significant federal funding resources have become available in unprecedented amounts to tackle these challenges, resulting in an exciting and dynamic chapter in the field of public drinking water supply.

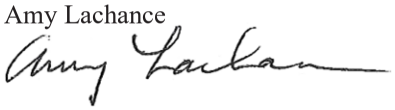
The Maine CDC Drinking Water Program continues to work closely with the nearly 2,000 Public Water Systems in Maine, providing technical assistance, conducting comprehensive inspections, reviewing monitoring results and making the requisite compliance determinations. Public Water Systems continue to strive to ensure that the drinking water they provide meets all regulatory standards, contributing in their part to protecting public health.

This report provides an overview of the Drinking Water Program and the regulated Public Water Systems in Maine. It includes information about the methods and tools used to regulate Maine's Public Water Systems and the data that highlight their compliance with the *Safe Drinking Water Act*. The report demonstrates the magnitude of work that goes into ensuring the availability of safe drinking water in the State.

I remain thankful for the resolve of both the Drinking Water Program staff and the many dedicated individuals working in the drinking water industry. We are all working toward our common mission of providing safe and reliable drinking water to Maine citizens.

As always, the Drinking Water Program is available to answer any questions or concerns you may have regarding the safety of public drinking water in Maine.

Sincerely,
Amy Lachance



Drinking Water Program Manager

Public Drinking Water in Maine

The Maine CDC Drinking Water Program

Primacy

The Maine CDC Drinking Water Program (DWP) administers the *National Primary Drinking Water Regulations* under the *Safe Drinking Water Act* (SWDA). Maine was granted primacy by the United States Environmental Protection Agency (EPA).

Maine Legislative Authorization

The Maine Legislature enacted Maine's *Water for Human Consumption Act* to authorize Maine to administer both State rules and federal safe drinking water regulations. This law grants the DWP oversight over all operational aspects of public water systems in Maine that impact drinking water service and public health.

Organization

The DWP is organized into three teams: Engineering and Water Resources, Data Management and Program Support, and Public Water System Inspection. Each team plays a crucial role in ensuring that Maine's public water systems continually provide safe, reliable drinking water to their customers.

Public Health Protection

The United States has some of the safest public drinking water supplies in the world. Over 286 million Americans consume tap water from public water systems. The EPA regulates drinking water quality for public water systems and sets maximum concentration levels for harmful compounds in water.

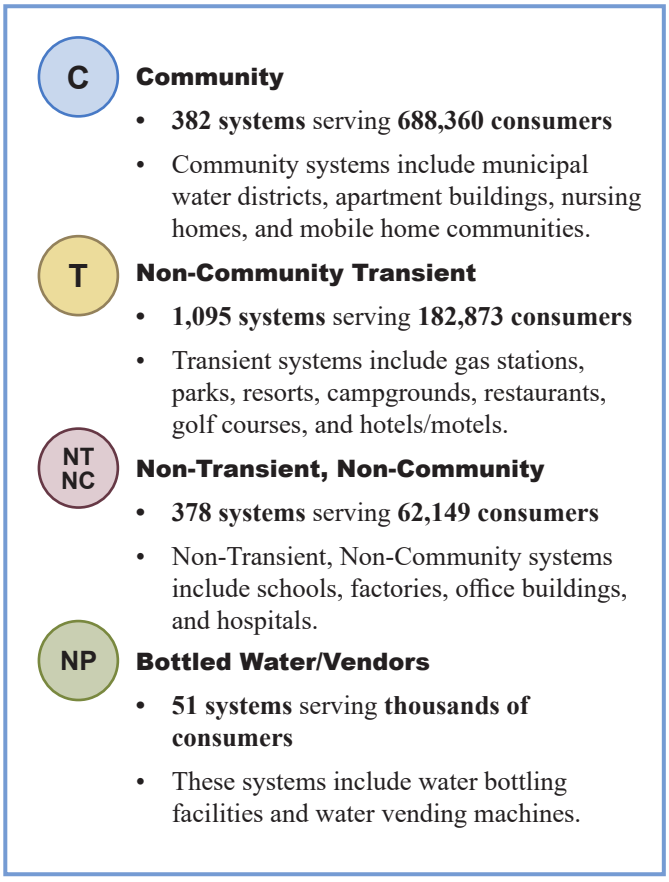
Drinking water sources are susceptible to pollution and sometimes require appropriate treatment to remove disease-causing contaminants. Contamination of drinking water supplies can occur in both the source water and the distribution system. Sources of water contamination include naturally occurring chemicals and minerals (e.g., arsenic, radon, uranium), local land use practices (e.g., fertilizers and pesticides), manufacturing processes, and sewer overflows or wastewater releases.

The presence of contaminants in water can lead to adverse health effects, including gastrointestinal illness, reproductive problems, neurological disorders, cancer, and other issues. Infants, young children, pregnant women, older populations, and those with compromised immune systems may be especially susceptible to illness from some contaminants.

Public Water Systems

Public water systems (PWS) provide water for human consumption through pipes and other constructed conveyances (distribution system) to at least 15 service connections, or serve a minimum average of 25 people per day for at least 60 days per year. The water is usually drawn from exclusive sources: some systems own wells, while others utilize surface water (e.g., lakes and streams).

Public water systems are divided into two categories: ***Community*** and ***Non-Community***; Non-Community systems are further separated into ***Transient*** and ***Non-Transient*** groups.



Public Water Systems (continued)

PWS Responsibilities

While the Drinking Water Program serves as the regulatory body for public drinking water systems in Maine, the systems themselves are responsible for ensuring their ability to provide safe drinking water. These responsibilities include routine operations and maintenance, regular sampling of post-treatment drinking water, and reporting data to both the DWP and the consumers they serve.

1. Operations and Maintenance

Regardless of size and complexity, no public water system can be fully automated. All systems require human oversight and every piece of equipment requires some level of maintenance. Some water systems must employ licensed water operators with qualifications that match the complexity of the water system equipment. To ensure all public water systems serve safe drinking water to the public, sanitary surveys are performed every three to five years. Sanitary surveys are routine inspections conducted by the DWP's public water system inspectors.

2. Routine Sampling

Depending on the type of public water system and water source, water quality testing is required for a variety of contaminants on a routine basis. Specific sampling requirements for public water systems may differ based on site specific characteristics and water quality results. Most systems are eligible to reduce the sampling frequency for many analytes based on sample result history. The table below details general sampling schedules by system type. (See Appendix for a complete list of contaminants regulated in Maine.)

Table 1. General sampling requirements by system type.

	Community		Non-Transient, Non-Community		Transient	
	Groundwater	Surface Water	Groundwater	Surface Water	Groundwater	Surface Water
Total Coliform Bacteria	Monthly or Quarterly	Monthly	Monthly or Quarterly	Monthly	Monthly or Quarterly	Monthly
Nitrates	**All:** Monthly - Quarterly - Annually					
Nitrites	**All:** Quarterly - Every 9 Years					
Inorganics **Volatile Organics**	Quarterly - Every 3 Years (Based on Results History)	Quarterly or Annually	Quarterly - Every 3 Years (Based on Results History)	Quarterly or Annually	State Monitoring Possibly Required (Based on Risk and Results History)	
Synthetic Organics *	**C / NTNC:** Quarterly - Every 9 Years (Based on Risk and Results History)				Not Applicable	
Lead and Copper	**C / NTNC:** Bi-Annually - Every 3 Years (Based on Population and Results History)					
Cyanide	**C / NTNC:** Quarterly - Every 9 Years					
Asbestos*	**C / NTNC:** Every 9 Years					
Radionuclides	Quarterly - Every 9 Years (Determined by Results History)		State Monitoring Possibly Required (Based on Risk and Results History)		State Monitoring Possibly Required (Based on Risk and Results History)	
Disinfection By-Products	Quarterly - Every 3 Years (Based on Population and Results History)	Quarterly - Annually (Based on Population and Results History)	Quarterly - Every 3 Years (Based on Population and Results History)	Quarterly - Annually (Based on Population and Results History)	Not Applicable	
PFAS	**C / NTNC** (NTNC Schools & Day Cares only): One Time - Annual (On-going Quarterly/Annually if exceedance/detect)					

* Waivers are available to allow decreased sampling frequency.

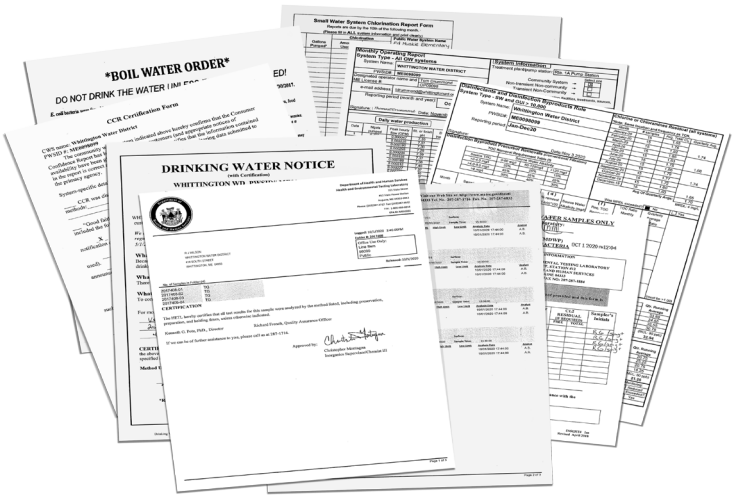
3. Reporting to the DWP

3.1 Sample Results.

Public water systems send water samples to Maine-accredited laboratories for analysis, and these laboratories report the sample results to the DWP within the time-frame set by the system's specific requirement. Although the laboratory reports sample results to the DWP, the public water system is ultimately responsible for ensuring that water quality results are on time and correctly reported.

3.2 Monthly Operating Reports

All public water systems that add chemical(s) to their water systems for treatment are required to send monthly operating reports to the DWP by the tenth day of the following month.



4. Reporting to Consumers

4.1 Consumer Confidence Reports

Every year, community water systems are required to develop and distribute a Consumer Confidence Report. These reports detail the previous year's water quality information and must be shared with consumers and the DWP by July 1 every year. Public water systems are also required to provide evidence to the DWP that Consumer Confidence Reports were delivered to consumers.

4.2 Public Notification

The *Public Notification Rule* requires public water systems to notify consumers when a violation occurs. The scope and delivery method of public notices vary, depending on the type of violation.

Site Visits and Sanitary Surveys

Site Visits

The DWP's public water system inspectors provide on-site advice and assistance to public water systems regarding operation, maintenance, treatment, quality control, testing waivers, and testing requirements. The DWP also partners with Maine Rural Water Association (MRWA) to provide water systems with free, on-site technical assistance.

Technical assistance is available to help systems with reviewing the operation of a treatment process, collecting samples, filling out reports, regulatory compliance, leak detection and line location, and development of emergency response plans and vulnerability assessments.

Sanitary Surveys

A sanitary survey is a regular review of a public water system to identify any deficiencies and make recommendations for improvements. The sanitary survey also offers a chance for public water system operators to ask questions and learn about their requirements and responsibilities.

Public water system inspectors conduct routine sanitary surveys for every public water system. Community water systems and Bottled Water facilities are inspected every three years, while Non-Transient, Non-Community and Transient water systems are inspected every five years.

Table 2. Number of Sanitary Surveys and Site Visits conducted between 2011 and 2021.

Sanitary Surveys		Site Visits
409	**2011**	1641
493	**2012**	1698
480	**2013**	1698
461	**2014**	1502
446	**2015**	1454
304	**2016**	1324
462	**2017**	1240
422	**2018**	1055
501	**2019**	952
383	**2020**	756
348	**2021**	798

Violations and Enforcement

Violations

Violations are issued when a public water system does not meet all of the requirements mandated by the *Safe Drinking Water Act* or the Maine *Rules Related to Drinking Water*.

Initial violations result in a Notice of Noncompliance, or "NON", advising the PWS of the drinking water requirements that were missed and the steps and timeline to be followed for returning to compliance. Quite often these will include submitting missing samples and/or required documentation as well as certification that a public notice was posted. Public notices advise consumers of the nature of the violation and the PWS's plan to correct the lapse in compliance.

If the instructions contained in the NON are followed, then the PWS will return to compliance and no further action is necessary. However, when a PWS does not follow the instructions for returning to compliance after a NON, the DWP begins the administrative enforcement process, outlined in Maine statute and the Maine *Rules Relating to Drinking Water*.

Health-Based and Non-Health-Based Violations

Health-based violations are issued when water sample results show the presence of contaminant(s) at concentrations above a maximum contaminant level (MCL) or when a treatment technique (TT) requirement is not met. The maximum contaminant level is set by the EPA and is based on human health and safety standards. Treatment techniques are specified processes intended to reduce the level of a contaminant.

Non-health-based violations are violations that are not directly related to human health and safety. These types of violations typically arise when public water systems fail to test drinking water for a regulated contaminant (failure to monitor), neglect to report test results to the DWP, and/or fail to notify their customers of violations of the SDWA.

Violation Types

Maximum Contaminant Level (MCL)

A maximum contaminant level is the highest level of a contaminant that is allowed in drinking water. These levels are set as close as feasible to the maximum contaminant level goal, or MCLG. The MCLG is the level of a contaminant in drinking water below which there is no known or expected health risk. When the MCL level is set for a contaminant, public health, available technology, and cost are all taken into consideration. When a PWS exceeds the MCL for any regulated contaminant, they are in violation of drinking water standards.

Treatment Technique (TT)

Treatment techniques are water treatment processes that reduce the level of contamination in drinking water. For certain contaminants, the EPA establishes treatment techniques instead of an MCL, such as those established for viruses, bacteria, and turbidity under the *Surface Water Treatment Rule*. Other rules have established treatment techniques as well, such as conducting lead education or creating corrosion control treatment plans per the *Lead and Copper Rule*, or failing to complete a level assessment or corrective actions under the *Revised Total Coliform Rule* (RTCR). Failure to correctly follow treatment techniques is a violation.

Failure to Monitor (FTM)

All public water systems are required to regularly sample and test their water to ensure that it meets federal and State drinking water standards, and is safe to drink. Every spring, the DWP provides water systems with their annual testing requirements. Water tests must be performed by a certified laboratory, and the test results must be submitted to the DWP. Failure to sample and test water as detailed in a PWS sampling schedule is a violation.

Failure to Report

Public Water Systems are expected to generate a series of operational and maintenance reports over the course of a year, augmenting their scheduled sample tests. Some scheduled activities, such as seasonal start-up procedures, require the PWS to report their completion to the DWP. Furthermore, most violations include a reporting requirement, obliging the PWS to notify their consumers when a drinking water standard has been violated and the steps the system will take to correct the issue. Additionally, a PWS is required to notify the DWP when instructions included in a NON have been followed and the system is returning to compliance. Failure to provide required notification is a violation.

Enforcement

Enforcement action against a PWS occurs when the system violates federal or State drinking water regulations and does not address the non-compliance issue in a timely manner. Under its primacy agreement with EPA, as well as the Maine *Water for Human Consumption Act*, DWP is authorized to enforce State and federal drinking water regulations using administrative enforcement actions to address any PWS violations that remain out of compliance after an initial NON is mailed.

The following provides an overview of this administrative enforcement process.

1. Administrative Consent Order

In the rare occurrence that a PWS fails to meet the deadlines and requirements of the NON, the DWP will offer the system an Administrative Consent Order ("consent order"). A consent order is a signed agreement between the DWP and the PWS, wherein both parties agree to negotiated terms for bringing the PWS back into compliance. A schedule for compliance is set within the order for the PWS to follow.

Consent orders include deadlines for both formalizing an agreement for returning to compliance as well as addressing outstanding violations. If any of those deadlines are missed, and the PWS has not requested an extension, the DWP may proceed to the next enforcement stage.

2. Administrative Compliance Order and Conditional Penalty Assessment

Should a PWS miss a deadline (without seeking an extension) or fail to meet the terms of the finalized consent order, an Administrative Compliance Order ("compliance order") is issued.

A compliance order directs a PWS to return to compliance on a strict set of actions and deadlines. The terms of a compliance order are not negotiable; they generally detail a list of unresolved PWS violations, along with specific directives for resolving those violations. The order is final and binding; however, because it is a final agency action, the PWS may request an administrative hearing.

3. Administrative Penalty Assessment

An Administrative Penalty Assessment is an enforcement tool utilized by the DWP that enables the Program to assess monetary penalties (fines) should a PWS fail to meet its obligations under the compliance order. These penalties are determined by the severity of the accrued violations covered by the compliance order. If the DWP did not include an administrative penalty with the compliance order, the Program may assess an administrative penalty to the PWS.

If the PWS fails to pay a penalty within 30 days, DWP will refer the PWS to the Office of the Maine Attorney General (OAG) for civil enforcement, which could result in court action, including complaints for injunctive relief and civil penalties, as well as payment of attorney fees.

4. Referral to Attorney General or the Environmental Protection Agency

The Maine CDC will refer a PWS to either the OAG or EPA when the above stages of administrative enforcement actions are exhausted and the PWS remains out of compliance with drinking water regulations.

In instances where a PWS is referred to the OAG, a civil complaint will be filed against the PWS in District Court, seeking an order to address outstanding violations as well as administrative and civil penalties (and possible attorney fees).

Ultimately, if the PWS does not comply with a Court Order, the Court may issue a Default Judgment that could include additional fines and penalties and, eventually, a warrant for the arrest of the PWS owner.

In cases referred to the EPA, that agency will issue an administrative order requiring the PWS to take specific actions to return to compliance. These actions could include collecting samples, reporting results, installing water quality treatment, hiring a water operator, etc. However, once referred to the EPA, the PWS is subject to federal enforcement action under federal law, which could result in substantially higher fines and penalties than those under State law.

Enforcement Targeting Tool

The EPA's Enforcement Targeting Tool (ETT) is a method for determining which public water systems require enforcement actions. The tool extracts data from each primacy agency in the country, including the DWP, in order to identify public water systems with violations that do not appear to have been resolved or addressed. It uses a set formula based on violation type and on the length of time the violations have remained unresolved.

Using this formula, public water systems are prioritized for enforcement action in an effort to facilitate a return to compliance. Any public water system scoring 11 points or higher is considered "priority" status. The DWP must address or resolve priority status systems within 60 days of the EPA's quarterly Enforcement Targeting Tool report. Each quarter, the DWP researches the accuracy of all of Maine's priority-status public water systems on the Enforcement Targeting Tool list and reports progress or status of each system to the EPA.

Keeping Maine's Drinking Water Safe

The Drinking Water Program promotes a core message of four principles that ensure public water systems provide safe drinking water to their customers: **source protection**, **sampling**, **treatment**, and **maintenance of tanks and pipes**. The core message encourages water systems to continually work to identify, reduce, and eliminate risks and vulnerabilities to their water systems.

The four principles of the DWP's core message direct public water systems toward the overarching goal of ensuring safe drinking water for all their consumers. The DWP works to convey this message to all of Maine's public water systems on a daily basis through every interaction – whether it be a phone call, site visit, training session, or a DWP email alert.

Source Protection

The ideal drinking water source is in a remote, forested natural area with no nearby sources of pollution. However, most water sources are located near more densely populated areas, increasing the vulnerability of the source to contamination. Contamination, whether from harmful chemicals or biological organisms, often comes from activities on the land close to a drinking water source.

The *Safe Drinking Water Act* requires all public water systems to produce safe water through a multiple-barrier approach. Source protection is the first and most important component of these barriers. If pollutants never reach a drinking water source, the risk for human consumption is greatly diminished – even if other barriers fail. Additionally, treating a contaminated drinking water source is typically much more costly than protecting a drinking water source area.

Keeping Contamination Away

Approval of a new public water system well requires contamination sources, particularly leach fields and underground fuel storage tanks, to be set back a minimum distance from the well. The Maine *Rules Related to Drinking Water* require all public water system wells to be 300 feet from potential sources of contamination and 1,000 feet from underground fuel storage tanks.

When these setback distances cannot be met for unavoidable reasons, such as limited property size or wetlands, the DWP administers setback waiver policies that help to mitigate the increased risk created by reduced setbacks. Mitigation may include increased sampling, well construction requirements, or, in some cases, a pre-treated septic process or the installation of drinking water treatment for the removal of any contaminants from the water supply. The DWP's public water system inspectors administer these setback waiver policies whenever a well with reduced setback is proposed for approval.

Waivers

1. Waivers for Synthetic Organic Compounds

All community and non-transient non-community public water systems are required to test for synthetic organic chemicals (SOCs) at least once every 9 years. Systems have the option to apply for a waiver from testing for SOCs during the first two 3-year cycles of a 9-year period, but are required to sample for SOCs in the last 3-year cycle. Any public water system seeking a waiver from SOC sampling must provide an approved wellhead or watershed protection plan and be able to demonstrate that land within a specified distance of each source is not under threat from SOC use based on land use type. For most land uses a radius of 1,000 feet is used, although a 2,500-foot radius is used for landfills, Superfund sites, and similar higher risk land uses. Systems with waivers can save up to $1,000 per source for each 3-year monitoring/waiver period.

Changes to the SOC waiver process were implemented in 2022. Those changes are discussed in detail on page 10 (Updates: *Changes to the SOC Waiver Process*)

2. Filtration Avoidance

The *Surface Water Treatment Rule* requires all public water systems with sources from surface water or groundwater under the influence of surface water to disinfect and filter the drinking water they provide to their consumers.

Only those systems demonstrating compliance with the most stringent water quality criteria set forth in the Rule may qualify for filtration avoidance.

Maine has nine community water systems that qualify for, and currently maintain, filtration avoidance. (See Appendix for a complete list.)

Sampling

Sampling is considered the best way of determining the quality of drinking water and ensuring it is free of contaminants such as lead, arsenic, nitrates, and bacteria. In Maine, public water systems are required to regularly test the water they provide to consumers and report the results to the DWP. The *Safe Drinking Water Act* lists 86 contaminants for which water systems must test. (See the Appendix for a complete list of regulated contaminants.) Any test results exceeding the standard (MCL) may require treatment, replacement of source, or blending with other sources to reduce the contamination level. Testing schedules are based on a frequency that is reasonable for the protection of public health.

Ensuring Safe Drinking Water

All public water systems must sample their drinking water periodically to ensure that the water is safe to drink. Sampling on a regular schedule will also indicate whether a water system is performing the way it is designed, and can help draw attention to potentially serious problems with the source, treatment, or distribution system.

Maintaining Pipes and Storage Tanks

A water system's distribution system, a network of piping and storage tanks, is an integral part of its ability to provide safe, clean water to consumers. It is important for water systems to regularly inspect their distribution systems as contaminants can enter drinking water through damaged pipes or tanks. Routine inspection and maintenance may also help water systems save money if they are able to find and repair leaks in a timely manner to abate water loss.

Kennebunk, Kennebunkport & Wells Water District's new 1.5 million-gallon water storage tank in Arundel was completed in 2021 with DWSRF funds. (Photo: McKenzie Parker)

Treatment

All Public Water Systems share the same goal of providing safe, reliable drinking water to the communities they serve. To meet this goal, many systems must treat their water to remove potentially harmful contaminants. The types of treatment provided by a PWS vary depending on the size of the system, the source (groundwater or surface water), and the quality of the source water. A vital part of delivering safe drinking water, treatment is only successful when the proper chemicals are applied in the correct amounts and all equipment and materials are regularly maintained and monitored. Effective oversight of treatment systems helps to ensure that high-quality drinking water is delivered to the public.

Monthly Operating Reports

All public water systems that add chemicals to their water must submit a monthly operating report (MOR) to the DWP. These reports help track the amount of chemical used, daily production of the water system, and the amount of chemical residual present in the distribution system. The DWP reviews MORs to ensure that each public water system's treatment is operating efficiently and effectively, providing clean, safe drinking water.

The Drinking Water State Revolving Fund

The Drinking Water State Revolving Fund (DWSRF) is a State-operated program that provides funding to public water systems to improve or replace water system pipes, treatment plants, storage tanks, and water sources to ensure safe drinking water and provide essential public health protection. Funding for drinking water infrastructure improvement projects is available as low interest loans. Disadvantaged Community Water Systems may receive further assistance through principal forgiveness. Furthermore, a portion of the DWSRF is used to fund non-construction projects that help improve and protect drinking water quality in Maine.

The *Safe Drinking Water Act* requires that states match 20 percent of federal grant dollars to fund the DWSRF. This means that every dollar invested by the State of Maine secures five federal dollars. Combined with funds generated through repayment of prior year DWSRF loans, the Drinking Water Program annually offers more than $20 million in loans for drinking water improvement projects in Maine.

The DWP is responsible for project management and technical support, as well as overseeing activities. The Maine Municipal Bond Bank is the financial administrator and oversees the loan application process and tracks money to and from the fund.

Since 1997, the Maine DWSRF has provided over $325 million to public water systems through low interest loans and grants for Capital Improvement Projects to comply with the SDWA.

Updates

PFAS in Public Water Systems

Per- and polyfluoroalkyl substances (PFAS) are man-made chemicals that have been widely used since the 1940s in consumer products and industrial applications. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to some level of PFAS. There is evidence to suggest that continued exposure above specific levels to certain PFAS may lead to adverse health effects.

With the passage of S.P. 64 (*Resolve, To Protect Consumers of Public Drinking Water by Establishing Maximum Contaminant Levels for Certain Substances and Contaminants*), the Maine legislature has mandated that all community (C) public water systems and non-transient, non-community (NTNC) systems - schools and childcare facilities - sample their finished drinking water for PFAS.

SP 64 is online at: https://tinyurl.com/MESP64-PFAS.

Changes to the SOC Waiver Process

In May 2022, the DWP reviewed and revised the Synthetic Organic Compounds (SOC) waiver process. SOCs are man-made organic compounds that are less volatile (not as likely to escape into the atmosphere) when compared to *volatile* organics (VOCs) and other compounds. SOCs include herbicides, insecticides, pesticides, and/or fungicides that can be commonly found in runoff and wastewater discharges.

Per federal rule*, all community (C) and non-transient non-community (NTNC) public water systems are required to test for SOCs at least once every 9 years (in three 3-year cycles). Under our new process, systems will perform their required SOC testing based on the year of their next sanitary survey. After that initial round of testing, systems will have the option to apply for waivers from SOC testing for two cycles in the 9-year timeframe. (Systems will be ineligible for a waiver during the *third* 3-year cycle, as they are required to test for all SOCs at least once every 9 years.) Any system that does not submit a waiver application will be required to collect during the next 3-year period.

Determinations on waivers are based on land use activities in the vicinity of any active water well(s). Following DWP review, systems may receive full- or partial waivers. However, any system found to be ineligible for a waiver will be required to test every 3 years (or quarterly, if they have treatment for SOCs or if they have detected SOCs in compliance sampling).

It should be noted that SOC rules follow a complex set of parameters. A system's SOC schedule might be for 9-year, 3-year, annual, or quarterly testing, based on risk and sample results. It is conceivable that a system may be on a 9-year schedule for certain SOCs, but on 3-year or quarterly schedules for others.

As mentioned, systems will transition to this new SOC process in conjunction with their next sanitary survey. Until then, systems should continue to test for SOCs per previous requirements (refer to most recent SOC waiver letters and required testing sheets). Systems will not receive SOC waiver applications or approval letters from the DWP during this interim period; previous waiver/testing schedules will remain in effect for each system until they transition to the new process.

* Title 40 CFR § 141.24 - *Organic chemicals, sampling and analytical requirements*.

School Lead Testing

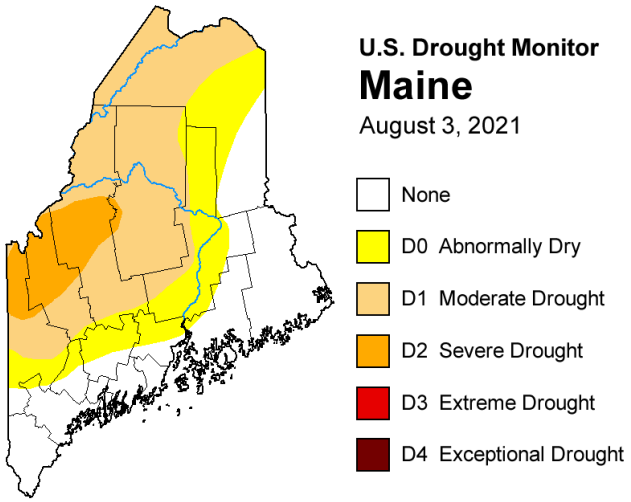
With the passage of LD 153 (*An Act to Strengthen Testing for Lead in School Drinking Water*), the Maine Legislature has mandated that all K-12 schools in Maine test their drinking water for the presence of lead. The Drinking Water Program has been charged with coordinating the effort, which began during the 2021/2022 school year, with a testing extension taking place in the fall of 2022.

The issue of lead in school drinking water has received a lot of attention in recent years. This is because school-age children are among those particularly vulnerable to health and developmental problems after exposure to high levels of lead. Identification of potential sources of elevated lead in schools, along with notification of parents and school personnel, is an important step toward reducing Maine schoolchildren's exposure to lead.

LD 153 is online at: https://tinyurl.com/MELD153-PbSchools.

Extreme Weather Preparedness

EPA sources suggest that the northeastern United States will likely experience more drought, more frequent intense rainfall events, and more tropical cyclone activity (hurricanes and similar storms) in the future. The DWP is working with our response partners at EPA, the Maine Emergency Management Agency (MEMA), County Emergency Management Agencies, the Maine Water/Wastewater Agency Response Network (MEWARN), and public water systems (PWS) to better prepare ourselves for extreme weather event impacts to public water supply operations.



The U.S .Drought Monitor map for Maine from August 3, 2021. While dry periods are a natural part of the climate cycle, droughts are becoming more frequent, severe, and pervasive.

(Graphic: National Drought Mitigation Center, University of Nebraska-Lincoln/USDA/NOAA)

The following resources can be used to increase PWS situational awareness, and provide content for extreme weather response planning and exercising:

- Maine/U.S. Drought Monitor (unl.edu)
  https://tinyurl.com/MaineDrought
- Water Sector Incident Action Checklists (epa.gov)
  - Drought - https://tinyurl.com/EPAIC-Drought
  - Extreme Cold - https://tinyurl.com/EPAIC-Cold
  - Power Outages - https://tinyurl.com/EPAIC-Power
  - Extreme Heat - https://tinyurl.com/EPAIC-Heat
  - Flooding - https://tinyurl.com/EPAIC-Flood
  - Hurricanes - https://tinyurl.com/EPAIC-Hurricane

Cybersecurity

The water sector continues to be a target for cyber threat actors. Public Water Systems in Maine experienced a variety of cyber breaches in 2021, including ransomware attacks, surreptitious installation of software and key loggers by cyber criminals, loss of SCADA functionality, and loss of data and other information. DWP considers cyber threats to be a high priority.

Threat Update

The DWP understands that ransomware and business email compromise (BEC) attacks are currently increasing nation-wide.

Ransomware is a form of malicious software that encrypts (locks) files or an entire computer to make them unusable until a ransom is paid. Paying the ransom does not guarantee decryption. The FBI reported that the New England region experienced a 288% increase in ransomware attacks between the first and second quarter of 2021, and that 75% of the ransomware attacks occur after business hours. For more information, visit the Cybersecurity and Infrastructure Security Agency (CISA) ransomware website:
https://www.cisa.gov/stopransomware/general-information.

A **BEC** is a cyberattack scam in which a cybercriminal impersonates a known contact and sends an email to the victim seemingly from this known source. If the cybercriminal is successful, the victim will believe the cybercriminal is a trusted vendor or colleague. The scam can play-out in a variety of ways, including the victim paying for real contractor services to a fraudulent account as requested by the cybercriminal, or sharing employee direct deposit information with the cybercriminal. For more, please see the FBI Cyber Division Private Industry Notification (PIN) 20210317-001 here:
https://tinyurl.com/DOJCyberThreats

Cybersecurity Resources

The DWP offers the following to help public water systems increase their cyber resilience:

- Some cybersecurity assessments and improvements are eligible for funding under the DWP Water System Asset Security Grant. To learn more, visit the DWP Financial Resources webpage and jump to the 2022 Water System Asset Security Grant's linked heading. Note that the 2022 deadline has passed, and the 2023 request for applications is expected to be announced in January of 2023. Online at: https://www.medwp.com/pws/financialResources.shtml
- The EPA's Incident Action Checklist - Cybersecurity is a short yet rigorous guide to help public water systems prepare for, respond to, and recover from a cyberattack. https://tinyurl.com/EPAIC-Cyber

Cybersecurity (continued)

- For a more detailed read on increasing cybersecurity resilience for water and wastewater systems, see Water ISAC's 15 Cybersecurity Fundamentals for Water and Wastewater Utilities, Best Practices to Reduce Exploitable Weaknesses and Attacks, online at https://tinyurl.com/WaterISAC-CyberSecurity
- Cybersecurity resources from the American Water Works Association (AWWA) can be found here: https://tinyurl.com/AWWA-Cybersecurity-Guidance.

If you have (or may have) experienced a cyber security incident, contact your IT provider immediately and take other necessary initial response steps. Please don't forget to contact your DWP Inspector and local law enforcement office.

Revisions to the Lead and Copper Rule

EPA's new revised *Lead and Copper Rule* better protects children and communities from the risks of lead exposure by better protecting children at schools and childcare facilities, getting the lead out of our nation's drinking water, and empowering communities through information.

Improvements under the revised rule include:

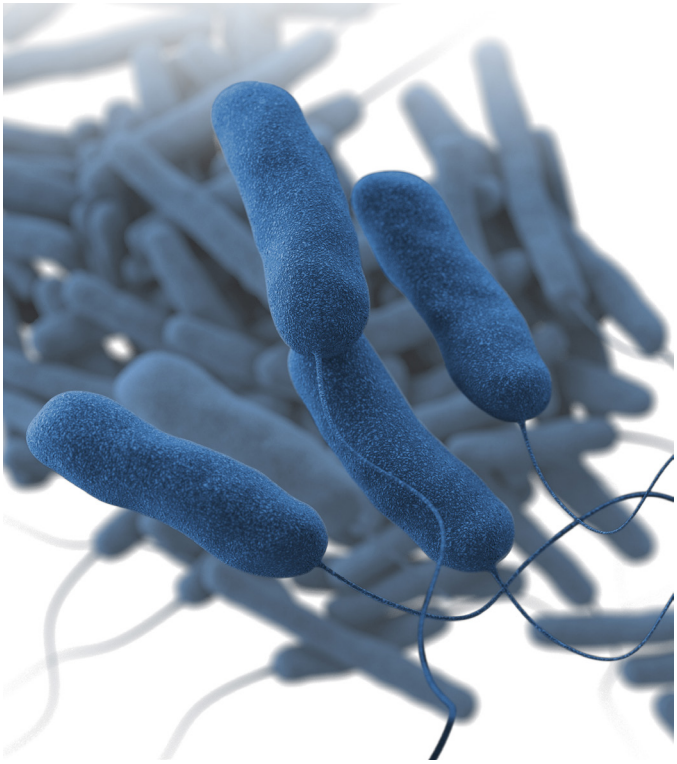
- Using science-based testing protocols to find more sources of lead in drinking water.
- Establishing a trigger level to jumpstart mitigation earlier and in more communities.
- Driving more and complete lead service line replacements.
- For the first time, requiring testing in schools and childcare facilities.
- Requiring water systems to identify and make public the locations of lead service lines

The compliance date of the *Lead and Copper Rule* revision is October 16, 2024.

The *Lead and Copper Rule* can be found online at: https://www.epa.gov/dwreginfo/lead-and-copper-rule.

Legionellosis

Legionellosis is a serious lung infection caused by the bacteria *Legionella*. This infection is also sometimes known as Legionnaires' Disease. *Legionella* bacteria are found naturally in fresh surface water areas, like lakes and streams, and in the ground. The bacteria can also grow and spread in man-made water conveyance and storage systems such as showerheads and sinks, hot tubs, water heaters, and large plumbing systems.



Legionella bacteria.

(Image: U.S. Centers for Disease Control and Prevention)

Legionella becomes a health issue when the bacteria get into the air, allowing people to breathe them in to their lungs. Fortunately, the bacteria cannot spread from one person to another, and most healthy people exposed to the bacteria do not get sick. However, there are certain risk factors that can increase your chances of getting sick. These include age (50 or older), being a heavy smoker, having chronic lung disease, and suffering from a weakened immune system because of disease (e.g., cancer, diabetes, or kidney failure) and/or medications.

Legionellosis can mimic other illnesses such as COVID 19 and even the common cold. Symptoms include cough, shortness of breath, fever, muscle aches, and headaches. Some people who caught legionellosis also reported suffering from diarrhea, nau-

sea, and confusion. Symptoms usually start 2 to 14 days after breathing in the bacteria.

Since 2016, Maine has seen reported cases of Legionellosis every year. While few – if any – of those cases have their origins in a public water supply, the DWP continues to urge PWS to engage in best practices to control, minimize, and preferably eliminate *Legionella* bacteria in their water systems. To assist them, guidance is available on the DWP website: https://tinyurl.com/MeDWP-Legionella. Additional information about *Legionella* and legionellosis can be found through the Maine CDC's Disease Surveillance Epidemiology Program, online at: https://tinyurl.com/MeCDC-Legionella.

Distributing ARPA and BIL Funds

In 2021, the federal *American Rescue Plan Act* (ARPA) was signed into law, a $1.9 trillion stimulus package crafted to help the country recover from the health and financial effects of the COVID-19 pandemic. Subtitle M of ARPA provides funds that may be used for to offset costs incurred by state, county, and local governments for "…necessary investments in water, sewer, or broadband infrastructure." Maine's total estimated State government share is approximately $997 million; Governor Mills has proposed that $25 million of those funds be used for drinking water infrastructure. In August 2021, the DWP announced the decision to blend ARPA funds and *Infrastructure Investment and Jobs Act* (a.k.a., the *Bipartisan Infrastructure Law*, or BIL) funds for increased principal forgiveness.

BIL has a total investment value of $1.2 trillion, with more than $42 billion targeting the nation's water infrastructure. For the Maine DWSRF, BIL will add the following funds to the annual Capitalization Grant for the years 2022-2026:

- BIL reauthorized the DWSRF for five years at unprecedented levels. Maine's DWSRF Base Capitalization Grant for FY22 was $7.1 million, and this allocation is expected to rise in the next four years.
- Supplemental Capitalization Grants totaling approximately $110 million. These funds require a state match of 10% for years 2022 & 2023 and 20% for years 2024-2026. The required subsidy is 49%.
- Capitalization Grants to address emerging contaminants totaling approximately $38 million. These funds require no State match and are 100% subsidy.
- Capitalization Grants to address lead service line replacement totaling approximately $146 million. These funds require no state match and are 49% subsidy.

Maine CDC
Drinking Water Program
Est. 1976

"In 1976, the DWP was established as a program within DHHS and began administering the federal Safe Drinking Water Act. Safe and reliable supplies of drinking water are essential for public health protection, as well as the economic viability of communities. Maine is fortunate to have an abundance of clean water available for public water systems to protect, collect, treat, store, and distribute.

I would like to express my appreciation to all the talented people working diligently throughout Maine to ensure that the public is supplied with high quality, affordable, and safe drinking water!"

Michael Abbott
Director, Division of Environmental and Community Health, Maine CDC

Measures

Comparing yearly rates of compliance with the *Safe Drinking Water Act* is one method of measuring the success of Maine's public water systems in supplying safe drinking water to their consumers.

Total Violations by Year, 2011-2021

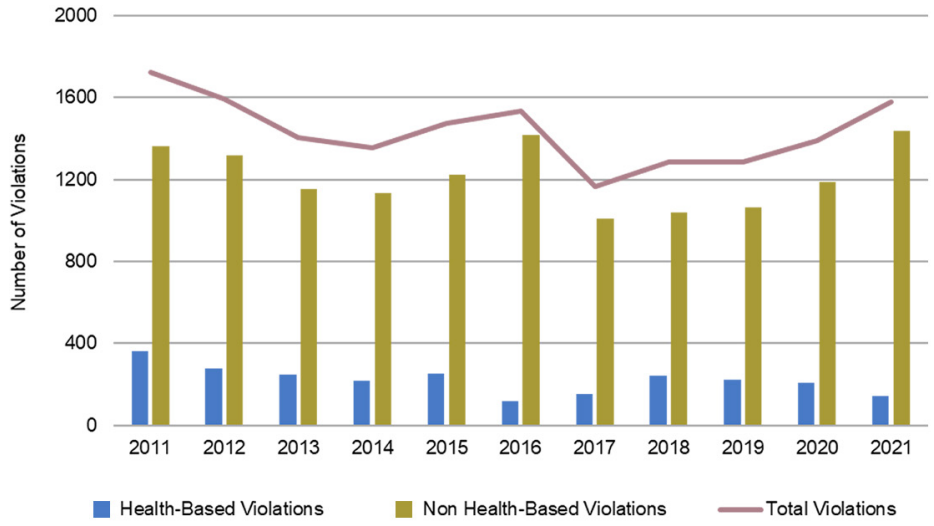


Figure 1. Total number of violations issued to public water systems over the past decade.

A generally decreasing over-all trend (particularly in health-based violations) occurred over the past decade, with a high of 1,723 violations in 2011 and a low of 1,164 violations issued in 2017.

Public Water Systems in Compliance, 2011-2021

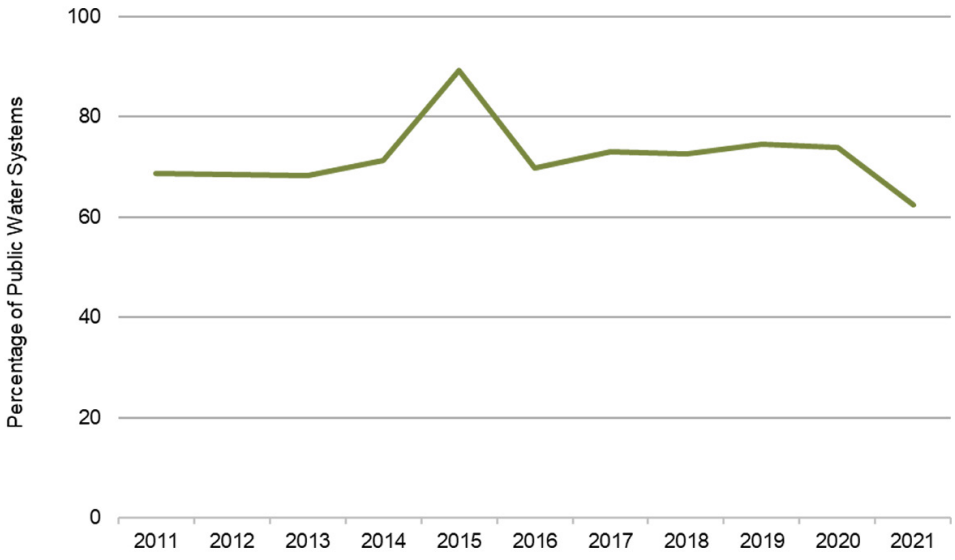


Figure 2. Percentage of water systems receiving no violations over the past decade.

Issues related to the COVID-19 pandemic in 2020-21 contributed to a decrease in the percentage of PWS that were able to remain fully in compliance.

Total Violations by Violation Type, 2011-2021

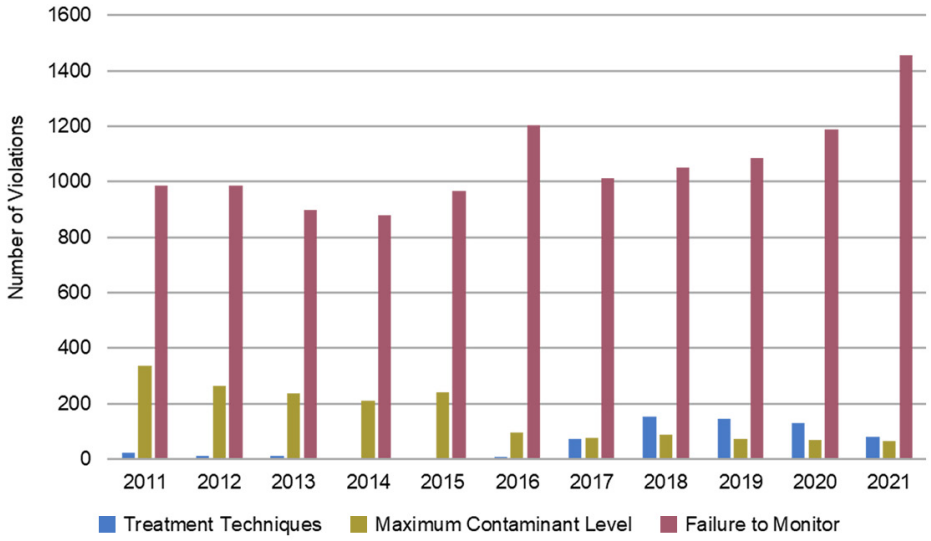


Figure 3. Total number of violations by violation type over the past decade.

Public water systems may receive violations in three different forms: maximum contaminant level (MCL), treatment technique (TT), or failure to monitor/failure to report violations. Failure to monitor violations—and non-health-based violations in general—occur most frequently.

Health-Based Violations Issued in 2021 for Regulated Contaminants

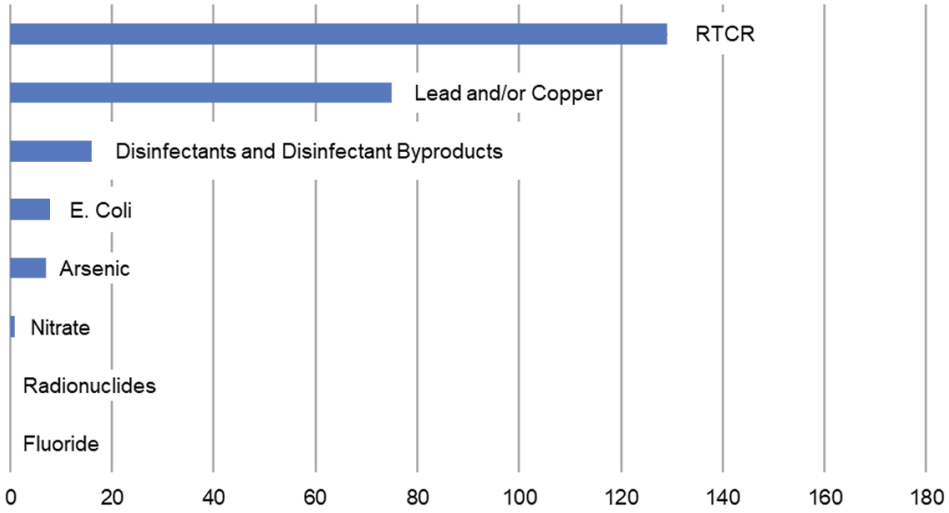


Figure 4. Health-based violations issued in 2021 by type of contaminant.

Violations are issued when a sample result from a public water system exceeds a drinking water standard for a regulated contaminant. In 2021, violations of the Revised Total Coliform Rule were by far the most common.

Measures (continued)

Total Number of PWS Receiving Violations, 2011-2021

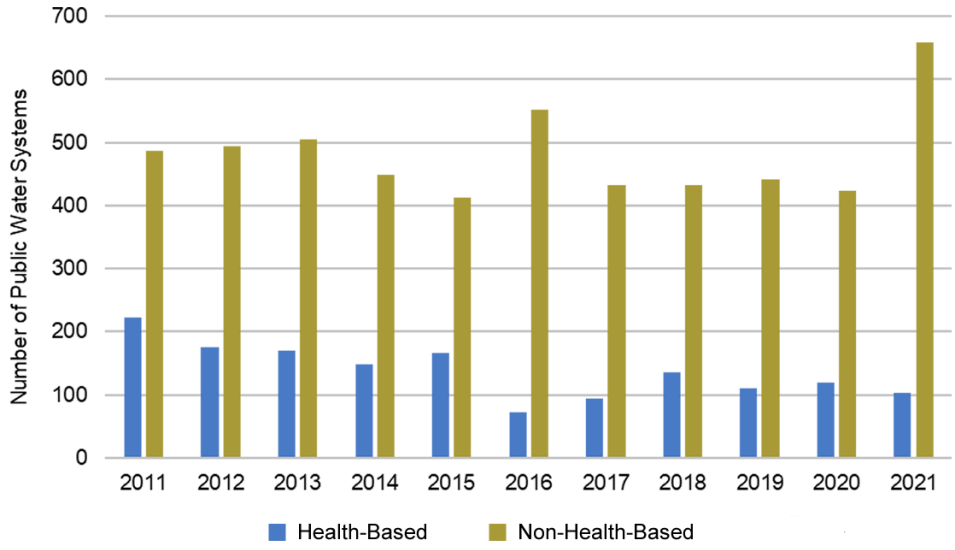


Figure 5. Total number of public water systems receiving violations over the past decade.

Health-Based Violations Issued to PWS, 2011-2021

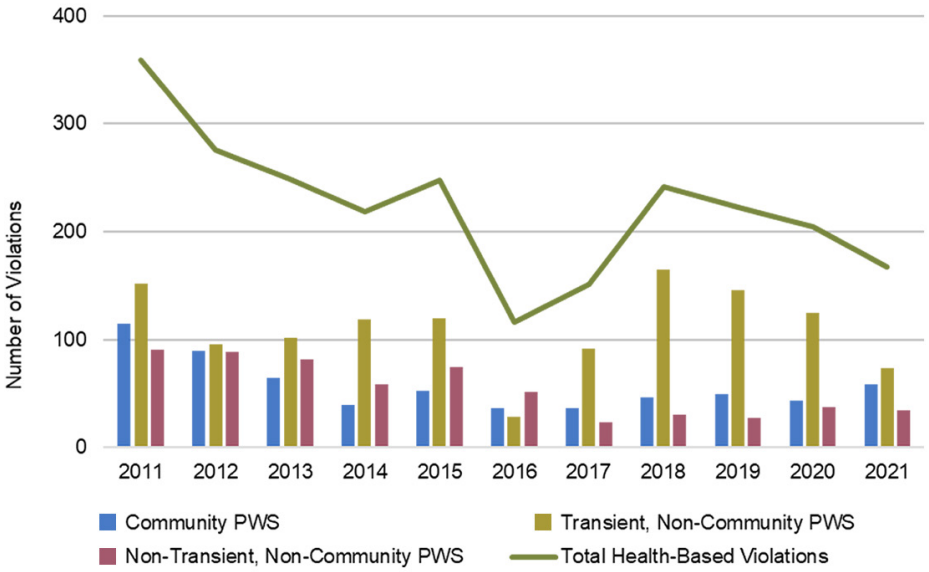


Figure 6. Ten years of total health-based violations by public water system type.

Non-Health-Based Violations Issued to PWS, 2011-2021

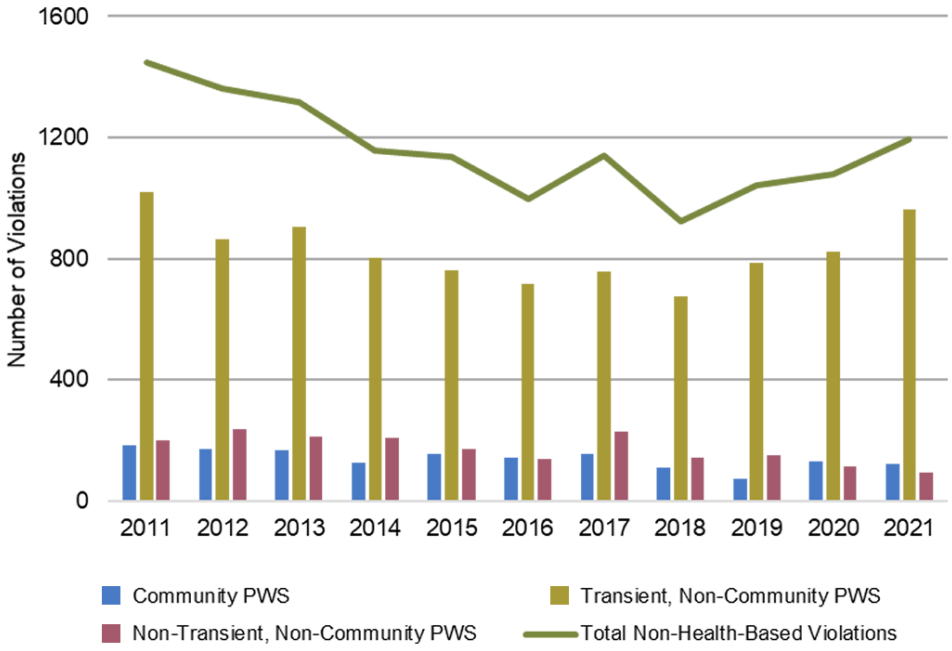


Figure 7. Ten years of total non-health- based violations by public water system type.

While non-transient, non-community and community water systems routinely keep violation numbers near or fewer than 200 per year, transient non-community systems tend to receive more non-health-based violations.

Systems in Enforcement

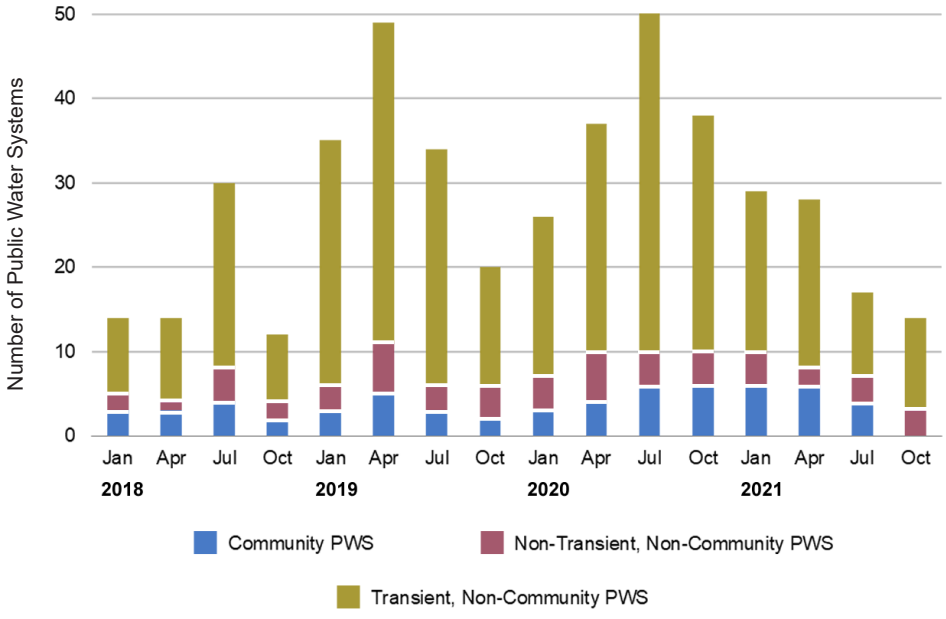


Figure 8. Number of public water systems in Maine by system type listed on the EPA's Enforcement Targeting Tool.

These systems have a "priority" status due to repeated compliance issues and so, as a general rule, must be addressed with an enforcement action.

Appendix

Contaminants in Drinking Water Regulated by the Maine DWP

1. Microorganisms

- Total Coliform
- *E. coli*
- *Cryptosporidium*
- *Giardia lamblia*
- Heterotrophic bacteria/ Heterotrophic Plate Count (HPC)
- *Legionella*
- Viruses
- Turbidity

2. Inorganic Chemicals (IOC)

- Antimony
- Arsenic
- Asbestos
- Barium
- Beryllium
- Cadmium
- Chromium (Total)
- Copper
- Cyanide
- Fluoride
- Lead
- Mercury
- Nickel (no federal regulation, but may require treatment)
- Nitrates (measured as Nitrogen)
- Nitrites (measured as Nitrogen)
- Selenium
- Thallium

3. Radionuclides (RAD)

- Gross Alpha
- Uranium
- Combined Radium (226 & 228)
- Radon

4. Disinfectants and Disinfection By-products (DBP)

- Bromate
- Chloramines
- Chlorine
- Chlorine Dioxide
- Chlorite
- Ozone
- Total Organic Carbon (TOC)
- Haloacetic Acids (HAA5)
- Total Trihalomethanes (TTHM)

5. Volatile Organic Compounds (VOC)

- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethylene
- 1,2,4- Trichlorobenzene
- 1,2-Dibromo-3-chloropropane (Statewide waiver)
- 1,2-Dichloroethane
- 1,2-Dichloropropane
- Benzene
- Carbon Tetrachloride
- Chlorobenzene
- Cis-1,2-Dichloroethylene
- Dichloromethane
- Ethylbenzene
- Methyl Tertiary Butyl Ether-MTBE (Maine-regulated)
- o-Dichlorobenzene
- p-Dichlorobenzene
- Styrene
- Tetrachloroethylene
- Toluene
- Trans-1,2-Dichloroethylene
- Trichloroethylene
- Vinyl chloride
- Xylenes (total)

6. Synthetic Organic Compounds (SOC)

- Acrylamide
- Alachlor (Lasso)
- Atrazine
- Benzo(a)pyrene (PAHs) (waived unless facility uses/stores concrete, asphalt, tar, or coal, or has incinerators)
- Di (2-ethylhexyl) adipate
- Di (2-ethylhexyl) phthalate
- Dioxin (2,3,7,8-TCDD) (Statewide waiver)
- Endrin
- Epichlorohydrin
- Ethylene dibromide (Statewide waiver)
- Glyphosate (Statewide waiver)
- Heptachlor
- Heptachlor epoxide
- Hexachlorobenzene
- Hexachlorocyclopentadiene
- Hexazanone/ Velpar (Maine-regulated)
- Lindane (BHC gamma)
- Methoxychlor
- Simazine
- Chlordane
- Per- and polyfluoroalkyl substances (PFAS) (Maine-regulated)
- Polychlorinated biphenyls (PCBs)
- Toxaphene
- 2,4,5 – TP (Silvex)
- 2, 4-D
- Dalapon
- Dinoseb
- Pentachlorophenol (can be waived unless a woodworking facility is nearby)
- Picloram
- Carbofuran
- Oxamyl (Vydate)
- Diquat
- Endothall

7. Water Quality Parameters (WQP)

- Alkalinity
- Calcium
- Orthophosphate
- pH
- Silica

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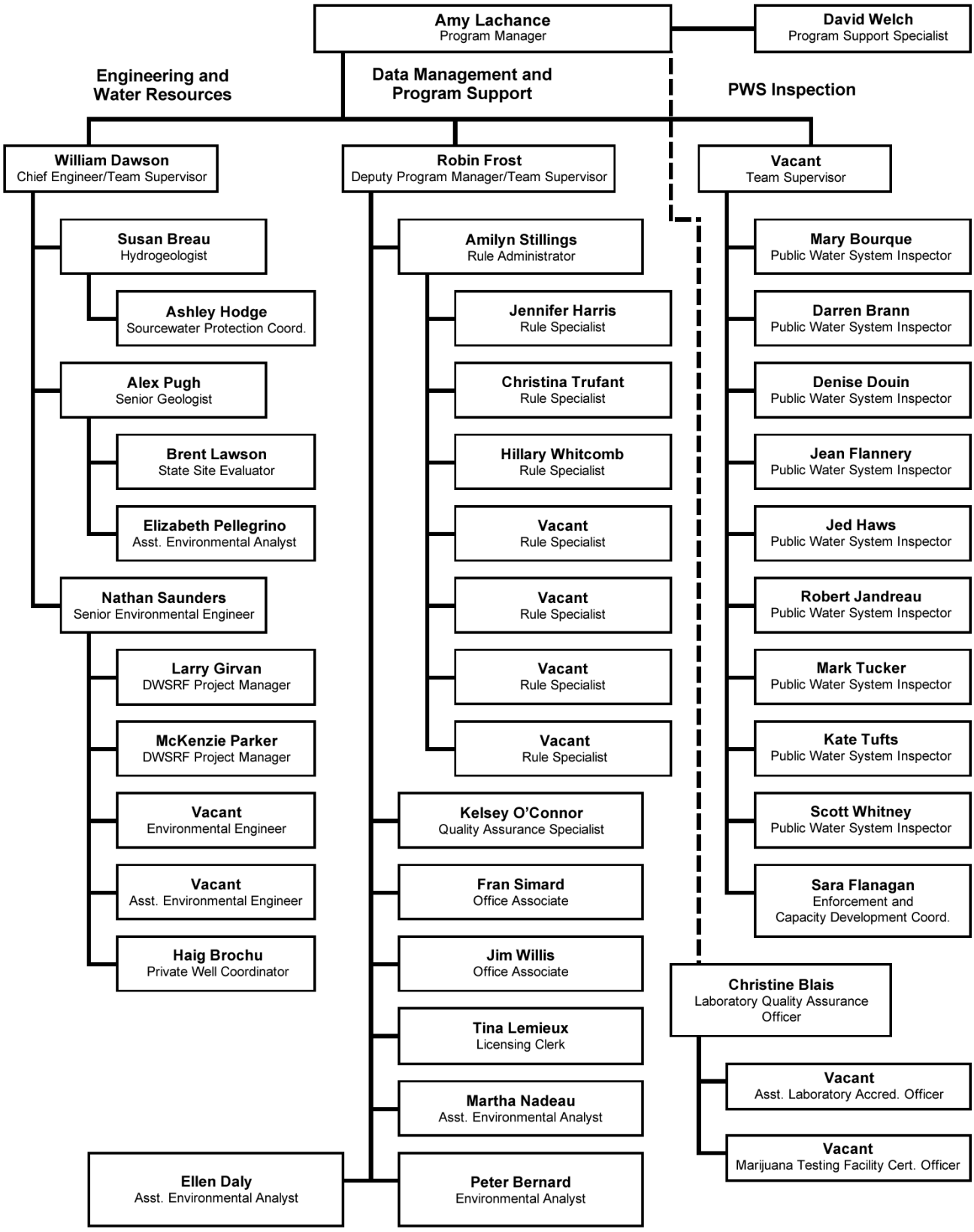
Appendix (continued)

Drinking Water Program Organizational Chart



PWS Maintaining Filtration Avoidance

- **Auburn Water District**
  Lake Auburn
- **Bangor Water District**
  Floods Pond
- **Brewer Water Department**
  Hatcase Pond
- **Great Salt Bay Sanitary District**
  Little Pond
- **Lewiston Water and Sewer Division**
  Lake Auburn
- **Mount Desert Water District**
  Lower Hadlock Pond
  Jordan Pond
- **Portland Water District**
  Sebago Lake
- **Presque Isle Utility District**
  Presque Isle Stream
- **Town of Bar Harbor Water Division**
  Eagle Lake

Online Resources

- **Maine CDC Drinking Water Program**
  www.medwp.com
- **US Environmental Protection Agency**
  https://www.epa.gov/ground-water-and-drinking-water
- **Chapter 231 – State of Maine *Rules Relating to Drinking Water***
  https://tinyurl.com/MEDWRules
- ***Safe Drinking Water Act***
  https://tinyurl.com/PL104-182SDWA
- ***Water for Human Consumption Act***
  https://tinyurl.com/T22-Ch601
- **Maine Rural Water Association**
  https://www.mainerwa.org
- **Maine Drinking Water Commission**
  https://tinyurl.com/MEDWCommission
- **US Centers for Disease Control and Prevention**
  https://www.cdc.gov/healthywater/drinking/index.html

Maine CDC Drinking Water Program

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