

2017 Annual Report Center for Drinking Water Quality



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Message from the Chief

I am pleased to present the 2017 annual drinking water report on behalf of the Rhode Island Department of Health's (RIDOH) Center for Drinking Water Quality, and wish to acknowledge the contributions of our many partners who share our mission to safeguard drinking water in Rhode Island.

This past year has brought continued concern about lead contamination of drinking water, but added to that, concerns about an emerging contaminant known as per- and polyfluoroalkyl substances (PFAS). PFAS is unregulated in drinking water, and to a significant degree, there is a lot that we don't yet know about it. The Environmental Protection Agency (EPA) does not appear to be planning a national PFAS regulation for drinking water at this time or within the foreseeable future. States are trying to determine the best path forward to deal with potential PFAS contamination, but each in a slightly different manner. The public continues to expect assurances of safe drinking water regardless of whether there is a national regulation for PFAS contamination. It is my expectation that this issue will present ongoing challenges and concerns.

The fourth round of unregulated contaminants monitoring begins in 2018. It is anticipated that occurrence data and health reference levels for a new list of emerging contaminants will be made available. What we may find is unknown, but I am confident our shared commitment to protecting public health will enable us to effectively manage next steps.

We welcome your comments, suggestions, and ideas for how we might continue to improve. I encourage you to contact the Center for Drinking Water Quality at 401-222-6867, or to visit us online at <http://health.ri.gov/water/about/yourwater/>.

Sincerely,



June A. Swallow, P.E.

Emergent Topic: PFAS

Per- and polyfluoroalkyl substances (PFAS) are a group of unregulated chemicals that have been found in drinking water in areas of the country near facilities that manufactured and/or used PFAS, including several areas in the northeast. PFAS are found in everyday consumer products that are non-stick, stain-resistant, or waterproof. Most people have PFAS in their blood from these everyday sources. PFAS are also in Class B firefighting foam.

From 2013 to 2015, all large water systems sampled for PFAS as part of the third round of EPA's Unregulated Contaminant Monitoring Rule (UCMR-3). In 2016, the EPA lowered its health advisory for two of these PFAS (PFOA and PFOS) to 70 parts per trillion (ppt), individual or combined. Two of the 17 large water systems in Rhode Island had PFAS detections in one of their wells. Although one of these wells was initially above EPA's health advisory, follow-up testing confirmed these wells were below the health advisory.

In 2017, RIDOH partnered with the Rhode Island Department of Environmental Management (RIDEM) and Brown University on a PFAS sampling study of small water systems that are located near the types of facilities that may have used PFAS. The water systems in this study included small communities, schools, licensed childcare facilities, and food processors served by groundwater wells. RIDOH and Brown University collected more than 60 samples from 40 water systems, and RIDOH's State Health Laboratories analyzed the samples. The study found 31 water systems below the lab's minimum reporting limit, seven with levels less than 35 ppt, and one with a level between 35 and 70 ppt. One public water system, Oakland Association in Burrillville, had levels higher than 70 ppt.

In response to this finding, RIDEM collected samples from private wells located near Oakland Association's water system. RIDOH and RIDEM issued a notification to private well owners and collaborated to host a community meeting to answer any questions or concerns private well owners and Oakland Association customers might have. RIDOH and its engineering services contractor also worked with Oakland Association to identify a resolution to the contaminated water system. The Town of Burrillville is applying for State Revolving Funds to connect the Oakland Association public water system, and any homes that rely on private wells that had test results higher than 70 ppt, to the Harrisville municipal water system. RIDEM is investigating the source of the contamination.

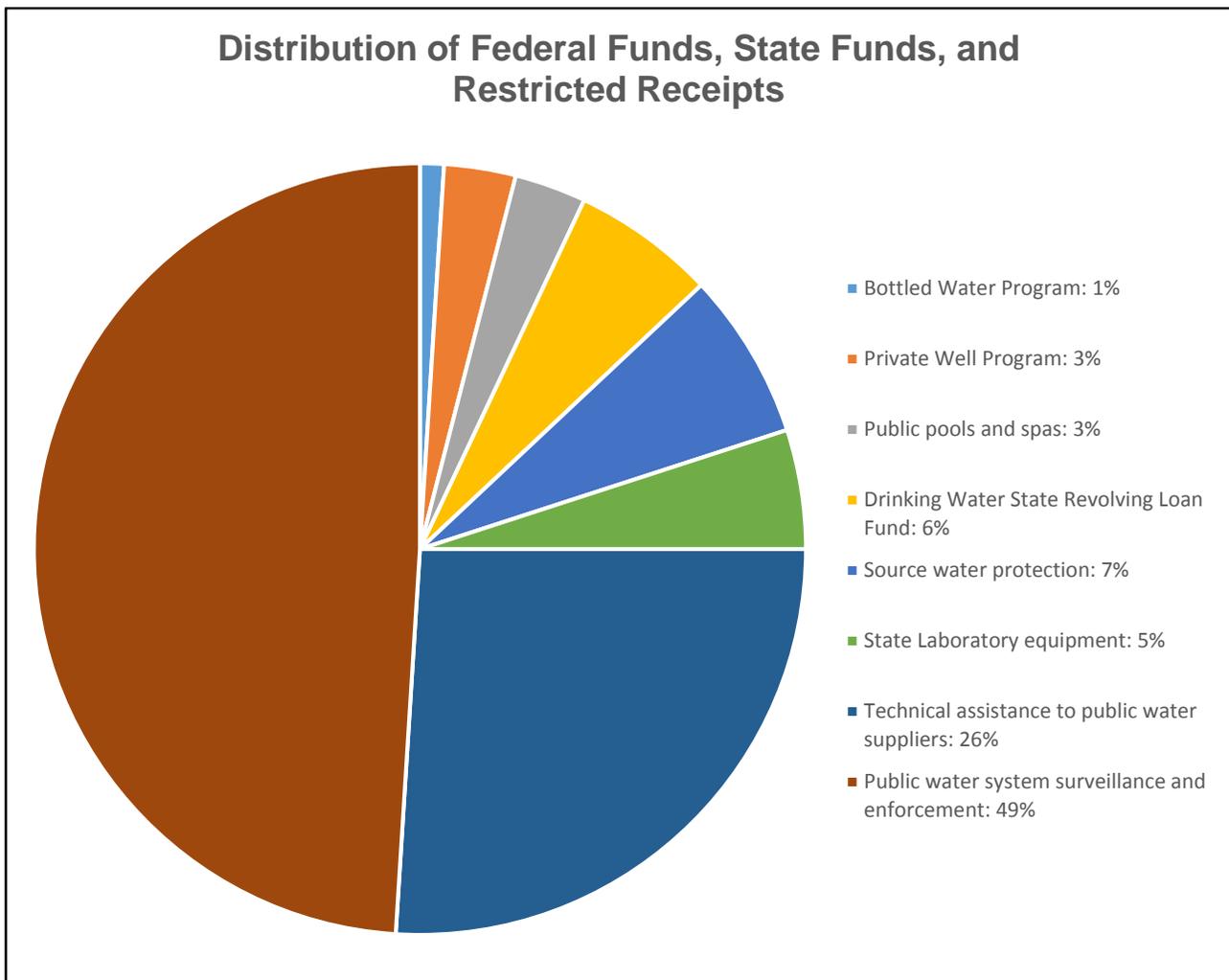
At this time, it is unknown if a federal regulation for PFAS will be developed; however, this issue is expected to remain in the public spotlight. RIDOH is committed to staying current with the latest PFAS science by being actively involved in several national and regional groups that are researching and sharing information about PFAS.

Financials

Since 1976, the EPA has annually received a Congressional appropriation under Section 1443(a) of the Safe Drinking Water Act to assist states, territories, and tribes in carrying out their Public Water System Supervision (PWSS) programs. Each year, Rhode Island receives a grant to develop, implement, and enforce the requirements of the Safe Drinking Water Act and to ensure that water systems comply with National Primary Drinking Water Regulations.

In 2017, RIDOH invested \$4,182,548 in State and federal funds in Rhode Island's public water systems.

Federal Funds	\$	3,616,595
State Funds	\$	125,000
Restricted Receipts	\$	440,953
Total Budget:	\$	4,182,548



Oversight

In Rhode Island, RIDOH is the agency responsible for carrying out the Public Water System Supervision Program. Key activities include:

- Develop and maintain State drinking water regulations;
- Develop and maintain an inventory of public water systems throughout the State;
- Develop and maintain a database to keep compliance information on public water systems;
- Conduct sanitary surveys, conformance, and compliance inspections;
- Support technical, managerial, and financial capacity of public water systems;
- Review public water system plans and specifications;
- Provide technical assistance to managers and operators of public water systems;
- Ensure that public water systems regularly inform consumers about the quality of the water that they are providing;
- Certify laboratories that can perform the analysis of drinking water used to determine compliance with the regulations; and
- Carry out an enforcement program to ensure that the public water systems comply with all the State's requirements.

Public Drinking Water

The mission of the public drinking water program is to protect and promote the health and safety of the people of Rhode Island by ensuring the quality of the State's public drinking water supplies for use by Rhode Island residences, businesses, hospitals, nursing homes, schools, restaurants, industry, and fire and emergency response. The Center for Drinking Water Quality works hard to maintain an excellent record of meeting this high-priority public health responsibility.

Rhode Island Water System Customers by System Type, 2017

Public Water System	1,126,470 ¹
Surface Water Systems	886,957 ¹
Groundwater Systems	239,513 ¹
Public Water Systems	481
Community Systems	89
Non-Transient, Non-Community Systems	82
Transient, Non-Community Systems	308
Active Non-Operational Systems	2
Systems using surface water	32
Systems using groundwater	447 ²

¹ Includes all populations (transient, residential, and workplace)

² Some water systems use both groundwater and surface water (purchased and non-purchased)

Private Drinking Water

In Rhode Island, an estimated 120,000 people rely on private water systems for drinking water. As of December 31, 2017, there were 18 licensed water quality analysis interpreters in the State and 47 licensed water samplers. In 2017, the Private Well Program responded to 1,641 inquiries regarding well-water quality in the State. These inquiries came from residents, realtors, lenders, and other State agencies.

The Private Well Program conducted monthly private well workshops for residents, realtors, and regulators. The program also provided educational outreach at the Rhode Island Home Show, farmers' markets, and other local venues throughout the State.

In 2017, the Center for Drinking Water Quality partnered with RIDEM and Brown University to conduct free sampling for selected wells throughout the state, including private wells that supply licensed childcare facilities, that are located near the types of facilities that may have used per- and polyfluoroalkyl substances (PFAS) (for more information, please refer to page 3). Five child care facilities were identified, and three agreed to sampling. Analytical results from the water samples collected at the licensed childcare facilities showed that the levels of these compounds to be below the EPA health advisory (specifically, two were below the lab's reporting limit, and one was just over the lab's reporting limit).

Additional private well sampling was conducted at wells that are located near a public well serving the Oakland Association public water system, which was found to have PFAS at concentrations that exceeded the EPA health advisory.

RIDEM collected samples from these private wells, and RIDOH and RIDEM coordinated on the notification and outreach to private well owners, including a community meeting. The town of Burrillville is now applying for funding to connect homes that rely on private wells with high results to the municipal water system.

Public Pools and Spas

In 2017, RIDOH licensed 430 public pools. Indoor pools are licensed to operate year-round. Seasonal pools (typically outdoor pools) are licensed to operate from June 1 through September 30. RIDOH collects and analyzes water quality samples for bacteria, free residual chlorine, combined chlorine, and pH levels. Compliance data are available in Appendix F.

Swimming Pools		Therapy Pools (Hot Tubs)	
Yearly	Seasonal	Yearly	Seasonal
136	212	68	14



Bottled Water

Bottled water continues to increase in popularity, with more than 8.5 billion gallons sold annually in the United States. The United States Food and Drug Administration (FDA) regulates bottled water as a food product. Under the federal Food, Drug, and Cosmetic Act, manufacturers are responsible for producing safe, wholesome, and truthfully labeled products. The FDA has established regulations for bottled water, including standards of identity regulations that define bottled water as “water that is intended for human consumption and that is sealed in bottles or other containers with no added ingredients except that it may optionally contain safe and suitable antimicrobial agents.”

Bottled water may be well water, from public water systems, mineral water, purified water, sparkling water, or spring water. Prerequisites for obtaining a bottling permit are submission and approval of analytical data for the water source and product; label approval; satisfactory inspection reports; and approval of the permit application.

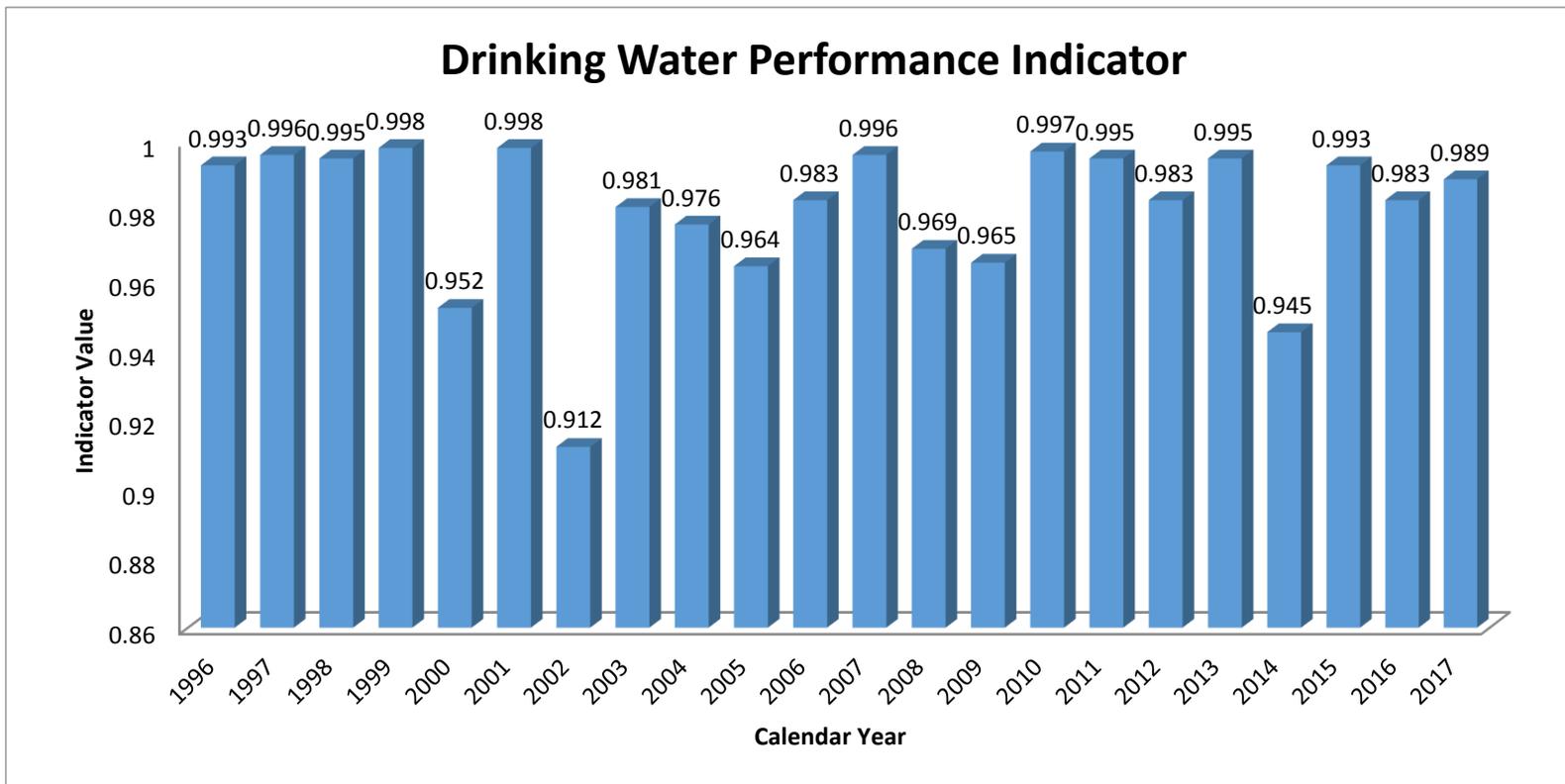
As of December 31, 2017, there was one licensed in-state water bottler and 190 licensed out-of-state water bottlers selling bottled water in Rhode Island.

Impact and Performance

The performance of the State’s public drinking water systems for 2017 is based on compliance with multiple water-quality requirements specified in the Safe Drinking Water Act and is evaluated and compared to data from previous years. The final result of the analysis is an overall performance indicator based on a composite of three metrics:

- Number of days each water system is in compliance with all maximum contaminant levels (MCLs) and treatment technique requirements;
- Number of customers each water system serves; and
- Number of days the water system operates.

A performance indicator value of 1.0 indicates that all public water systems were in compliance with MCL and treatment technique requirements for the entire year.



$$\text{Indicator Value} = \frac{\sum (\text{PWS Population Served}) \times (\text{Days in Compliance with MCLs and Treatment Technique Requirements})}{\sum (\text{PWS Population Served}) \times (\text{Total Days in Operation})}$$

Capacity Development

Rhode Island's public drinking water systems face a wide array of challenges in meeting the public health protection standards to ensure safe drinking water for community members, residents, and visitors.

RIDOH maintains a capacity development strategy aimed at developing the financial, managerial, and technical capacities of small public water systems that serve fewer than 10,000 people. The mission of the capacity development program is to identify methods for assisting water utilities in achieving sustainable operations over time.

To accomplish this mission, RIDOH maintains various contracts with industry professionals and organizations to provide wide-ranging services to the owners and operators of public water systems. These services and training initiatives are included in RIDOH's work plan and are funded through Drinking Water State Revolving Loan Fund set-asides. To meet these training objectives, RIDOH has contracted with:

- The Atlantic States Rural Water and Wastewater Association,
- The University of Rhode Island Cooperative Extension, and
- Northeast Water Solutions, Inc.

In 2017, RIDOH began offering on-site technical assistance to small public water systems to complement its compliance and enforcement activities. Providing this on-demand, in-person support has proven to be a critical component of helping owners and operators achieve and maintain compliance.

- 62 community public water systems received assistance in completing a 2016 Consumer Confidence Report (prepared in 2017 with prior calendar year data).
- 14 public water systems received technical assistance from RIDOH staff to assist in conducting system assessments, notifying consumers of issues, and performing proper sampling.
- Four systems received a Facilities Improvement Plan from RIDOH's contracted partner which provide a comprehensive overview of the system's water infrastructure and recommendations for enhancements.
- Three community systems were referred to RIDOH's new engineering services contractor for work scheduled to continue into 2018.

Operator Certification

Ensuring a competent workforce is a key element in the protection of public health and the provision of safe drinking water. Individuals who operate public water supply treatment and distribution systems must be certified and licensed by RIDOH. Once licensed, operators adhere to continuing education and experience requirements prior to license renewal or upgrade.

There are approximately 702 licenses for treatment and distribution operators issued in the State, and some individuals hold multiple licenses and certifications. There are 90 community and 82 non-transient, non-community public water systems that are required to comply with the State's operator certification rules and regulations. The State has classified these systems for distribution and/or treatment.

Training initiatives are included in RIDOH's work plan and are funded through Drinking Water State Revolving Loan Fund set-asides. RIDOH provides extensive opportunities for training and exam preparation through contracts with industry assistance providers.

In 2017, RIDOH partnered with New England Water Works Association (NEWWA), an accredited drinking water industry member association, to provide free training to certified operators throughout the state. NEWWA delivered 10 sessions from July 2017 to September 2017, and certified operators collectively earned a total of 380 continuing education hours to apply toward license renewals.

Topics of the half- and full-day sessions included:

- Operational Impacts on At-the-Tap Lead Concentrations,
- Understanding and Complying with the Safe Drinking Water Act,
- Sound Procedures for Drinking Water Sampling, and
- Where it All Begins: Knowing and Protecting your Source Water.

Drinking Water Operators by License Type, 2017

License Type	License Count
DO Class 1-Full	112
DO Class 1-Grandfathered	18
DO Class 1-Operator in Training	11
DO Class 2-Full	71
DO Class 2-Grandfathered	1
DO Class 2-Operator in Training	5
DO Class 3-Full	95
DO Class 3-Grandfathered	0
DO Class 3-Operator in Training	7
DO Class 4-Full	41
DO Class 4-Grandfathered	1
DO Class VSS-Full	30
DO Class VSS-Grandfathered	20
DO Class VSS-Operator in Training	3
DO Provisional	0

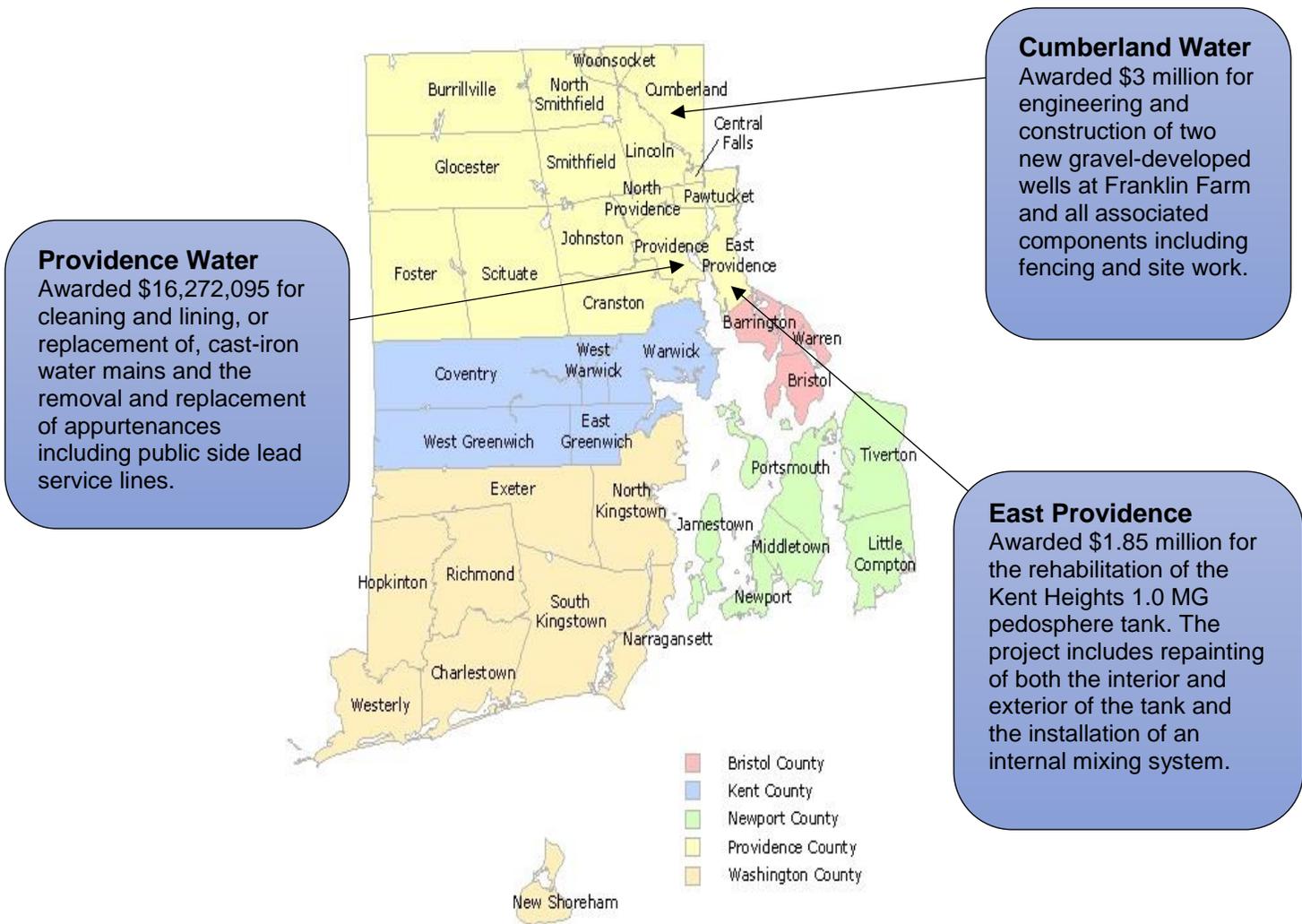
License Type	License Count
TO Class 1-Full	74
TO Class 1-Grandfathered	8
TO Class 1-Operator in Training	10
TO Class 2-Full	72
TO Class 2-Grandfathered	4
TO Class 2-Operator in Training	7
TO Class 3-Full	62
TO Class 3-Grandfathered	1
TO Class 3-Operator in Training	6
TO Class 4-Full	19
TO Class 4-Grandfathered	1
TO Class VSS-Full	15
TO Class VSS-Grandfathered	5
TO Class VSS-Operator in Training	0
TO Provisional	0

Drinking Water State Revolving Loan Program

The Safe Drinking Water Act amendments of 1996 authorized the creation of a Drinking Water State Revolving Loan Fund (DWSRF) program. This fund helps public water systems finance the costs of infrastructure needed to achieve or maintain compliance with the requirements and public health objectives of the Safe Drinking Water Act.

In conjunction with the Rhode Island Infrastructure Bank, RIDOH's Center for Drinking Water Quality operates the DWSRF program with funds supplied by an annual EPA grant. RIDOH is responsible for compilation of a priority list for current, ongoing, and proposed projects; engineering and environmental review of proposed projects; oversight of construction; assuring all grantees and sub-grantees follow DWSRF requirements; oversight of compliance with all laws and regulations; and review and approval of contractor payment requests. Completion of capacity development and maintenance of operator certification are key eligibility requirements for the DWSRF and are reviewed during the application process.

In 2017, RIDOH approved, and the Rhode Island Infrastructure Bank funded, three new loans totaling \$21,122,095.



Engineering Review

The engineering approval process is designed to help ensure the sustainability of the system and the safety of water sources. Once an applicant has demonstrated that a project has adequately met the requirements for public water facilities on paper, projects may proceed and inspections are conducted during and after construction.

The Center for Drinking Water Quality Engineering Review Program is comprised of three sections:

Drinking Water Facilities Plan Review and Approval

This process includes technical and engineering review of infrastructure projects under the Public Water System Surveillance Program in accordance with the Safe Drinking Water Act. Infrastructure review is required for wells, pumping, storage, and treatment, whether new or rehabilitative in nature.

Drinking Water State Revolving Loan Fund Plan Approval

Projects submitted for funding through the DWSRF program must comply with specific requirements of the funding program, including state and federal statutes and federal executive orders. As these projects are reviewed under the Drinking Water Facilities Plan Review and Approval process, the engineers ensure that the projects are compliant with all DWSRF requirements. In addition, the engineers inspect the projects during construction to ensure that all federal and state requirements are being met.

Public Pools and Spas Plan Review, Approval and Inspections

RIDOH ensures that public swimming pools and spas are constructed and operated in a safe and sanitary manner. Technical and engineering review is conducted for all new public pools and spas, as well as any alterations to existing pools and spas. In addition, inspections of filtering systems, water quality, and other sanitary and safety concerns are performed routinely.

Inspections and Site Visits

All aspects of a public water system (water source, treatment facility, operation, and maintenance) require periodic inspection to help ensure that the water system continuously supplies safe drinking water to the public.

During 2017, RIDOH conducted a total of 100 sanitary survey inspections. Surveyors coordinated with the Compliance Program to ensure that all identified deficiencies were corrected. RIDOH staff also performed inspections at the request of water systems as part of the State's Capacity Development Program.

RIDOH also performed 19 conformance inspections of new construction and inspections of significant improvements to water system infrastructure, and 11 Level 2 Assessments in response to violations of the Revised Total Coliform Rule.

System Type	Population served	Inspections
Community Water Systems	374,880	32
Transient Non-Community Water Systems	12,678	57
Non-Transient, Non-Community Water Systems	2,635	11
TOTAL	390,193	100

Emergency Planning and Security

Developing proactive policy for hurricane preparedness and emergency situations can improve conservation of resources, reduce repair expenses, minimize interruption of service, and enhance consumer confidence in the important services provided by drinking water utilities.

Program activities included:

- Dissemination of EPA planning tools to the water systems, including Vulnerability Self-Assessment Tool, Water Health and Economic Analysis Tool, and Incident Action Checklists to assist drinking water and wastewater facilities of all sizes in enhancing their security and resiliency;
- Participation in the Statewide Water Resources Board's Drought Steering Committee;
- Partial development of the Code Red emergency notification system;
- Partial development of the emergency generator program; and
- DWQ staff training in EPA, FEMA, and OSHA practices for emergency preparedness and response.

Water Quality Monitoring

Our nation's waters are monitored by local, state, and federal agencies, universities, dischargers, and volunteers. Water quality data are used to describe the physical aspects of the water, identify trends or emerging problems, evaluate pollution control efforts, and help respond to emergencies.

Maximum Contaminant Levels

Under the Safe Drinking Water Act, EPA sets maximum legal limits on the levels of certain contaminants in drinking water. The legal limits for these contaminants, known as maximum contaminant levels (MCLs), are set at levels that protect the public's health and that are reasonably achievable with available technology. EPA also sets treatment requirements, water-testing schedules, and sampling methods that all water systems are required to follow. RIDOH is responsible for ensuring that water systems in Rhode Island comply with EPA requirements.

Contaminant Rules

RIDOH regulates more than 90 contaminants in six contaminant groups: disinfectants, disinfection byproducts, inorganic chemicals, microorganisms, organic chemicals, and radionuclides. A list of all contaminants and their respective MCL is maintained at <http://water.epa.gov/drink/contaminants/index.cfm>.

A system's type, size, and water source determines which contaminants they must monitor. More than 60 of the regulated contaminants are in two of the contaminant groups: inorganic contaminants and organic contaminants (volatile organic contaminants and synthetic organic contaminants).

Arsenic

Arsenic is a toxic element that naturally occurs in soil, rocks, and minerals. It is unevenly distributed and enters drinking water supplies from natural deposits in the earth and from agricultural and industrial practices.

Groundwater Rule

Most the State's water systems use groundwater sources to supply customers. The Groundwater Rule aims to reduce disease incidence associated with microorganisms in drinking water. The rule establishes a risk-based approach and targets groundwater systems that are at risk of fecal contamination. These vulnerable groundwater systems work to take corrective action to reduce potential illness from exposure to microbial pathogens. This rule applies to all systems that use groundwater as a source of drinking water.

Disinfectants and Disinfection Byproducts

Water that comes from a lake, river, reservoir, or groundwater aquifer must be disinfected to kill harmful bacteria. However, water suppliers are challenged to balance the risks associated with harmful bacteria against the risks associated with disinfection byproducts. In 2017, 54 water systems had to comply with the Disinfection Byproducts Rule (DBPR). This included 32 systems that purchase and distribute water that has been treated with a disinfectant. The most recent changes to the DBPR require that all water systems subject to the DBPR base compliance on MCL results at individual sample locations instead of calculating one average value of all distribution system sample results.

Lead and Copper Rule

The Lead and Copper Rule is intended to minimize lead and copper in water provided by community and non-transient non-community water systems. Most lead and copper contamination comes from pipes or solder that break down and mix with water. In order to treat water that contains lead or copper, the water must be collected from faucets that are inside homes and businesses. If the water is extremely corrosive or contains very fine lead particles, requirements for treatment, public education, and, if applicable, lead service line replacement, are triggered.

Radionuclides

Most drinking water sources have low levels of naturally occurring radioactive contaminants; however, man-made nuclear materials can also contaminate drinking water sources. All community water systems are required to monitor for radionuclides.

Synthetic Organic Contaminants Waivers

Community and non-transient, non-community groundwater systems that serve fewer than 3,300 people and do not use synthetic organic contaminants within their wellhead protection areas may qualify for a waiver that exempts them from monitoring for individual synthetic organic compounds. In 2017, this opportunity applied to 130 water systems with 203 wells. In 2014, RIDOH revised the waiver process and now requires a land-use and chemical-use review and evaluation by water system and RIDOH staff before a waiver is granted. A waiver is valid for three years, and a water system can reapply for a waiver. RIDOH contracted with the University of Rhode Island's Cooperative Extension to evaluate the process and to provide training for water systems about how to fill out a waiver application.

Surface Water Treatment Rule

The Surface Water Treatment Rule establishes filtration and disinfection treatment requirements for any public water system supplied by surface water sources or groundwater sources under the influence of surface water. Nine water systems in Rhode Island are covered by these rules that are designed to reduce or eliminate harmful bacteria. These water systems include filtration and disinfection as part of their treatment processes. An additional 22 water systems purchase filtered and treated water to sell to consumers. These systems are required to maintain a chlorine residual throughout their distribution system.

Total Coliform

There are a variety of bacteria, parasites, and viruses that can make people sick if they drink contaminated water. Instead of testing for each different kind of bacteria, water systems test for coliform bacteria. When coliform bacteria are detected, it lets water system operators know that disease-causing contaminants may be in the water.

Water Quality Sampling

Water quality sampling and testing ensures the quality of the State's drinking water and that each water system is in compliance with monitoring requirements. RIDOH's State Health Laboratories continue to assist water systems with required water-quality testing.

In 2017, the State Health Laboratories analyzed 4,772 water samples. The Center for Drinking Water Quality evaluated 26,439 analytical results from the State Health Laboratories and other State-certified labs.

In support of the Center for Drinking Water Quality, the State Health Laboratories:

- Tested drinking water for bacteria, organic and inorganic contaminants, minerals, and trace metals to determine safety and compliance with the Safe Drinking Water Act;
- Tested potability of water from private wells;
- Analyzed water samples in support of special pollution-monitoring programs;
- Maintained analytical instruments to detect and measure the concentration of a variety of pesticides and volatile and synthetic organic pollutants in drinking water;
- Performed continuous quality improvement of testing processes;
- Operated the analytical laboratory certifications program; and
- Maintained a list of laboratories that are certified for the analysis of drinking water, non-potable water, and environmental lead.

Compliance

The complete 2017 Compliance Table summary, as required by the Safe Drinking Water Act amendments of 1996, can be found in Appendix D. In 2017, a total of 387 violations of the Safe Drinking Water Act and the Rules and Regulations Pertaining to Public Drinking Water [R46-13-DWQ] were reported in the State's public water systems. Of these 387 violations, 56 were water quality violations, 192 were monitoring and reporting violations, 32 were treatment technique violations, and 107 were notification violations. A summary of the violations is presented in Appendices A, B, and C.

Quality Violations

Quality violations occur when the monitoring results for a particular contaminant exceed the maximum allowable standard within a specific time period. Public water systems must monitor for more than 90 contaminants, including inorganic compounds, volatile organic compounds, synthetic organic compounds, radionuclides, and pathogens.

In 2017, 39 public water systems exceeded a maximum allowable amount of a contaminant for a total of 56 violations. Of those 56 violations, 52 were bacteriological violations, one was for nitrate, and three were for disinfection byproducts (total trihalomethanes).

Monitoring and Reporting Violations

Monitoring and reporting violations occur when a water system fails to perform the required monitoring for a particular contaminant in a specified time period and/or fails to report the results by the 10th of the following month. In 2017, a total of 192 monitoring and reporting violations occurred.

Lead and Copper Rule Violations

Six public water systems exceeded the lead action level in 2017. Nine public water systems exceeded the copper action level in 2017. Twenty-seven public water systems received a total of 31 lead and copper rule violations in 2017. Of these violations, 23 were for failure to properly collect, analyze, or report lead and copper rule monitoring samples; one was for failure to report water quality parameters on time; and seven were for failure to report lead results to consumers within 30 days of receiving results from the laboratory.

Public Notification Violations

Public notification violations occur when a water system does not notify customers of a violation within the required time period. In 2017, 38 public water systems failed to perform public notification.

Consumer Confidence Report Violations

Consumer Confidence Report (CCR) violations occur whenever a community public water system does not provide a CCR to their customers and/or does not submit a CCR Certification Form to RIDOH by the required deadline. In 2017, 39 community public water systems did not provide a CCR or CCR Certification Form by the required deadline.

Treatment Technique Violations

Treatment technique violations occur when a public water system does not comply with the required treatment, does not correct a significant deficiency/sanitary detection in the required timeframe, does not complete a Level 1/Level 2 Assessment by the required deadline, or does not complete State-approved, seasonal start-up procedures before providing water to customers. In 2017, 22 public water systems were issued a total of 32 treatment technique violations.

Appendix A: Community Water Systems Violations**

Quality Violations	
CNE - NEW LONDON TURNPIKE ENTRY POINT (TTHM: DBPR, RTCR)	2
EAST PROVIDENCE, CITY OF (TTHM: DBPR)	1
PASCOAG UTILITY DISTRICT, WATER DIVISION (TCR)	1
PRUDENCE ISLAND WATER DISTRICT (RTCRC, TCR)	2
SMITHFIELD WATER SUPPLY BOARD (TTHM: DBPR)	1
SOUTH KINGSTOWN-SOUTH SHORE (TCR)	1
Monitoring and Reporting Violations	
ABBEY LANE COMMUNITY ASSN., INC. (RTCRC)	1
BETHEL VILLAGE WATER ASSN (LCR)	1
BLOCK ISLAND WATER COMPANY (SOCs, VOCs)	2
BRISTOL COUNTY WATER AUTHORITY (LT2ESWTR)	1
CANONCHET CLIFFS WATER ASSOCIATION INC. (RTCRC)	1
CASTLE ROCK CONDOMINIUMS (LCR)	1
CENTRAL BEACH FIRE DISTRICT (LCR)	1
CHURCH WOODS (RTCRC)	1
CNE - HOPKINS HILL ROAD ENTRY POINT (TTHM & HAA5: DBPR)	1
CNE - NEW LONDON TURNPIKE ENTRY POINT (TCR, GWR)	2
CUMBERLAND, TOWN OF (LT2ESWTR)	3
GLENDALE WATER ASSN (RTCRC)	2
GREENVILLE WATER DISTRICT (SWTR)	1
HERITAGE PARK HOME CO-OPERATIVE (LCR)	1
HILLSDALE HOUSING COOPERATIVE, INC. (VOCs, LCR)	2
JAMESTOWN WATER DEPARTMENT (HAA5: DBPR, SWTR, IESWTR/LT1 LT2ESWTR)	4
JOHNSTON WATER CTRL FAC. - CAPITOL ST. (SWTR)	1
JOHNSTON WATER CTRL FAC. - EVERBLOOM ST. (SWTR)	1
JOHNSTON WATER CTRL FAC. - NARDOLILLO ST. (SWTR)	1
JOHNSTON WATER CTRL FAC. - TAYLOR ROAD (SWTR)	1
JOHNSTON WATER CTRL FAC. - WEST END (SWTR, LCR)	2
LADD CENTER WATER SYSTEM (VOCs)	1
MEADOWLARK, INC. (TCR)	1
NAVAL STATION, NEWPORT (RTCRC)	1
NINIGRET REALTY (LCR)	1
PAIGE ASSOCIATES (LCR, VOCs, SODIUM, RTCRC)	6
PASCOAG UTILITY DISTRICT, WATER DIVISION (STATE MONITORING)	1
PROVIDENCE-CITY OF – WHIPPLE (LCR)	1
RICHMOND WATER SUPPLY BOARD (LCR, RTCRC)	2
ROCKVILLE MILL COMMUNITY WATER SYSTEM (LCR)	1
SCITUATE COMMONS (SODIUM)	1
SOUTH KINGSTOWN NURSING AND REHABILITATION (LCR)	1
SOUTH KINGSTOWN-MIDDLEBRIDGE (TTHM & HAA5: DBPR)	1
SOUTH KINGSTOWN-SOUTH SHORE (TTHM & HAA5: DBPR)	1
SPLIT ROCK CORPORATION (LCR)	2
UNIVERSITY OF RHODE ISLAND (SOCs)	1
WOONSOCKET WATER DIVISION (SODIUM)	1
Public Notification Violations	
BETHEL VILLAGE WATER ASSN (CCR)	3
BLUEBERRY HEIGHTS HOUSING COOPERATIVE CO (CCR)	1

CANONCHET CLIFFS WATER ASSOCIATION INC. (PN)	1
CENTRAL BEACH FIRE DISTRICT (CCR)	1
CHIMERA INC (CCR)	2
CHURCH WOODS (PN)	1
CNE - NEW LONDON TURNPIKE ENTRY POINT (PN)	1
CUMBERLAND, TOWN OF (CCR)	2
FOUR SEASONS MHP CO-OP ASSN. (CCR)	1
HEMLOCK VILLAGE (CCR)	2
HERITAGE PARK HOME CO-OPERATIVE (CCR)	2
HILLSDALE HOUSING COOPERATIVE, INC. (CCR)	2
JAMESTOWN WATER DEPARTMENT (CCR)	1
JOHNSTON WATER CTRL FAC. - CAPITOL ST. (CCR)	1
JOHNSTON WATER CTRL FAC. - EVERBLOOM ST. (CCR)	1
JOHNSTON WATER CTRL FAC. - NARDOLILLO ST. (CCR)	1
JOHNSTON WATER CTRL FAC. - TAYLOR ROAD (CCR)	1
JOHNSTON WATER CTRL FAC. - WEST END (CCR)	1
KINGSTON CENTER (CCR)	3
KINGSTON WATER DISTRICT (CCR)	1
LADD CENTER WATER SYSTEM (CCR)	2
LINDHBROOK WATER COMPANY (CCR)	2
MAPLEHILL MOBILE HOME PARK (CCR)	1
MEADOWLARK, INC. (CCR)	2
MOBILE VILLAGE, INC. (CCR)	2
NAVAL STATION, NEWPORT (CCR)	1
NINIGRET REALTY (CCR)	3
NORTH KINGSTOWN TOWN OF (CCR)	1
OAKLAND ASSOCIATION, INC. (CCR, LCR)	2
PROVIDENCE-CITY OF (LCR)	1
PRUDENCE ISLAND WATER DISTRICT (CCR)	2
QUONOCONTAUG EAST BEACH WATER ASSOCIATION (CCR)	1
RICHMOND WATER SUPPLY BOARD (CCR)	1
SAUGATUCKET SPRINGS (CCR)	2
SCITUATE COMMONS (PN)	1
SHADOW WOODS AT DEER BROOK (CCR)	2
SHANNOCK WATER DISTRICT (CCR, LCR)	3
SOUTH KINGSTOWN NURSING AND REHABILITATION (CCR)	1
SOUTH KINGSTOWN-SOUTH SHORE (LCR)	1
SPLIT ROCK CORPORATION (CCR)	2
STONE BRIDGE FIRE DISTRICT (CCR)	1
THE VILLAGE ON CHOPMIST HILL (CCR)	2
TOUISSET POINT WATER TRUST (CCR)	1
UNITED STATES NAVY (FORT ADAMS) (CCR)	1
WARWICK - CITY OF (CCR)	1
WARWICK - POTOWOMUT (CCR)	1
WOODPECKER HILL HEALTH CENTER (CCR)	1
Treatment Technique Violations	
MEADOWLARK, INC. (STATE COMPLIANCE)	2
TOTAL	134

**Correction to Appendix A of the 2016 Annual Report: Portsmouth Water & Fire District had two reporting violations (SWTR and RTCR), not three.

Appendix B: Non-Transient Non-Community Water Systems Violations

Quality Violations	
BENOIT REALTY LLC DBA ANCHOR SUBARU (RTCR, TCR)	5
CREST MFG CO (TCR)	1
FLEMING SCHOOL (TCR)	2
SILVEIRA KINDERGARTEN & NURSERY SCHOOL (NITRATE: IOCs)	1
THE GREENE SCHOOL - BUILDING 2 & 3 (TCR)	1
WEST GREENWICH TRAVEL CENTER (RTCR, TCR)	2
Monitoring and Reporting Violations	
BENOIT REALTY LLC DBA ANCHOR SUBARU (RTCR, TCR)	3
CHARLESTOWN POLICE STATION (IOCs)	1
CHEPACHET PROFESSIONAL BUILDING, LLC. (LCR)	1
CREST MFG CO (NITRATE, RTCR)	1
DAEDALUS OFFICE PARK (RTCR)	1
DR. DAYCARE CHILD DEVELOPMENT CENTER (NITRATE: IOCs, RTCR)	2
FOGARTY MEMORIAL SCHOOL (LCR)	1
LAKEVIEW CHARLESTOWN EARLY LRNING CTR. (LCR)	2
METCALF ELEMENTARY SCHOOL (LCR)	1
PONAGANSET HIGH SCHOOL (LCR)	1
SKI PRO, INC. (LCR)	1
THE GREENE SCHOOL – BUILDING 2 & 3 (GWR)	1
WEST GLOCESTER ELEMENTARY SCHOOL (LCR)	1
Public Notification Violations	
BENOIT REALTY LLC DBA ANCHOR SUBARU (PN)	2
GLOCESTER TOWN HALL/SCHOOL ADMINISTRATION (LCR)	1
NEW ERA ENRICHMENT ACADEMY (LCR)	1
WEST GREENWICH TRAVEL CENTER (PN)	1
WILBUR AND MCMAHON SCHOOL (LCR)	1
Treatment Technique Violations	
BENOIT REALTY LLC DBA ANCHOR SUBARU (RTCR, STATE COMPLIANCE)	4
FLEMING SCHOOL (RTCR)	2
TOTAL	41

Appendix C: Transient Non-Community Water Systems Violations

Quality Violations	
ALBACO, L.L.C. (A.K.A. SHORELINE PLAZA) (TCR)	3
BEL-AIR MOTOR INN, INC. (TCR)	1
CAMP E-HUN-TEE (TCR)	1
CAMP JORI (TCR)	1
CONFREDA GREENHOUSES & FARMS (TCR)	1
COVENTRY MENS CLUB, INC. (TCR)	1
CROWTHERS RESTAURANT, INC. (TCR)	1
DYER WOODS NUDIST CAMPGROUND, LLC (TCR)	1
FEINSTEIN YOUTH CAMP (TCR)	1
FOSTER XTRA MART (TCR)	1
GEMELLI BISTRO (TCR)	1
GLOCESTER MOTOR INN (TCR)	3
GREENWOOD HILL CAMPGROUND ASSOCIATION (TCR)	1
HOG ISLAND WATER ASSOCIATION-SOUTH END (TCR)	1
MEADOW BROOK INN, LTD. (TCR)	1
MICHAELS SHELL STATION (TCR)	1
OLD MILL DINER (TCR)	1
POWDER MILL CREAMERY, LLC (TCR)	1
PROVENDER FINE FOODS, INC. (TCR)	3
PULASKI MEMORIAL PARK-PARKING AREA 3 (TCR)	1
ROMANI ORTHODONTICS (TCR)	2
SMITH VILLAGE (TCR)	1
SONQUIPAUG ASSOCIATION, INC. (TCR)	1
SOUTH SHORE MENTAL HEALTH CENTER, INC. (TCR)	2
SUNRISE ASSOCIATES, LLC (TCR)	2
WARRENS POINT BEACH CLUB, INC. (TCR)	1
WEST KINGSTON PARK (TCR)	1
Monitoring and Reporting Violations	
ALBACO, L.L.C. (A.K.A. SHORELINE PLAZA) (RTCR)	1
ALLIES DONUTS, INC. (RTCR)	1
BELLEVUE HOUSE (RTCR)	2
BLUE SHUTTERS (RTCR)	1
BOWDISH LAKE CAMPING AREA, BROWN 1 & 2 (RTCR)	1
BREACHWAY PROPERTIES LLC (RTCR, NITRATE: IOCs)	2
BRIGGS BEACH, INC. (RTCR)	1
BRIGGS-BOESCH FARM (RTCR, GUDI)	2
BUILDING #747 VICTORY HIGHWAY (NITRATE & NITRITE: IOCs)	2
CADYS TAVERN (RTCR, NITRATE: IOCs)	2
CAMP COOKIE (RTCR)	1
CAMP HOFFMAN (RTCR)	1
CAMP JORI (RTCR)	3
CAMP PONAGANSETT (RTCR)	1
CENTRAL COVENTRY PARK PAVILION (RTCR)	2
CLARK MEMORIAL LIBRARY (RTCR)	1
CLASSIC MOTOR LODGE, INC. (TCR, RTCR, GWR)	3
CUMBERLAND FARMS STORE #1262 CHARLESTOWN (NITRATE & NITRITE: IOCs)	2
D. B. MART #9 (GWR)	2

DANNYS AUCTION (RTCR)	1
DANS PLACE (RTCR)	1
DLM VARIETY DBA HARMONY CORNER STORE (RTCR)	1
DYER WOODS NUDIST CAMPGROUND, LLC (RTCR)	1
EAST GREENWICH GOLF AND COUNTRY CLUB (RTCR)	1
EUREKA HOTEL CORP., INC. (RTCR)	2
FANTASTIC UMBRELLA FACTORY (NITRATE: IOCs)	1
FREDERICKSON FARMS (VOCs)	1
FRONTIER CAMPER PARK (TCR, NITRATE & NITRITE: IOCs)	3
FROSTY DREW NATURE CENTER-NINIGRET PARK (RTCR)	1
GLAD TIDINGS COMMUNITY CHURCH (RTCR)	1
GLOCESTER MOTOR INN (RTCR)	1
GREENWOOD HILL CAMPGROUND ASSOCIATION (RTCR)	1
HOWARDS COUNTRY CHOWDER SHACK (RTCR)	1
IDEAL PIZZA (RTCR)	1
MR. Z'S BY THE LAKE (RTCR)	3
NARRAGANSETT INN (TCR, RTCR, NITRATE: IOCs)	3
NEW ENGLAND FARMS (VOCs, RTCR)	2
NEWPORT BOYS & GIRLS CLUB CAMP (RTCR)	1
NINIGRET INN (RTCR, NITRATE & NITRITE: IOCs)	3
NINIGRET PARK-LITTLE NINI POND (RTCR)	2
NINIGRET PARK-TENNIS COURT (RTCR)	2
NORTHWEST COMMUNITY HEALTH CARE (NITRATE & NITRITE: IOCs)	2
OAKLEAF CAMPGROUND (RTCR)	1
OAKLEYS (RTCR)	2
OLD VILLAGE PROPERTIES, LLC (RTCR)	1
PARADISE MOTEL PARK (RTCR, VOCs)	2
PAYNES NEW HARBOR DOCK (GWR, TCR)	2
PINES RESTAURANT, THE (RTCR)	1
POUND HILL REAL ESTATE CO LLC (RTCR)	2
PROVENDER FINE FOODS, INC. (RTCR)	1
PURPLE CAT RESTAURANT, INC. (RTCR)	1
ROMANI ORTHODONTICS (RTCR)	1
ROSE FARM INN RENTALS INC. DBA ROSE FARM (RTCR)	2
ROUND MEADOWS CAMPGROUND (GWR, RTCR)	2
SACHUEST POINT NATL WILDLIFE REFUGE (NITRATE: IOCs)	1
SHELTER COVE MARINA, LLC (RTCR)	1
SMITH VILLAGE (RTCR)	1
SOPHIES BREW HOUSE INC (RTCR)	1
ST. JOSEPH'S CEMETERY (TCR)	1
STATE LINE DINER (RTCR)	1
STICKS TAVERN (PUTNAM PROPERTIES) (NITRATE & NITRITE: IOCs)	2
SUNRISE ASSOCIATES, LLC (RTCR, VOCs)	3
THE COVE (GWR)	1
THE HITCHING POST, INC. (RTCR)	1
THE OAR & BLOCK ISLAND BOAT BASIN (RTCR, NITRATE: IOCs)	2
TRINITY EPISCOPAL CHURCH (RTCR)	1
US FISH AND WILDLIFE SERVICE VISITOR CTR (NITRATE & NITRITE: IOCs)	2
VFW POST 6342 (RTCR)	2
VICTORY CHAPEL CHRISTIAN CHURCH, INC (RTCR, NITRATE: IOCs)	3

W. ALTON JONES CAMPUS-URI-WHISPERING PINES (NITRATE & NITRITE: IOCs)	4
WARRENS POINT BEACH CLUB, INC. (RTCR)	2
WAWALOAM RESERVATION, INC. (GWR)	1
WEST GREENWICH CONDO ASSOC. (RTCR)	1
WEST KINGSTON PARK (RTCR)	1
WINDMILL HILL GOLF COURSE, INC. (NITRATE & NITRITE: IOCs)	2
YAWGOOG SCOUT RESERVATION (LT2ESWTR)	1
Public Notification	
AGIOS INC DBA THE GENTLEMAN FARMER REST. (PN)	1
ALBACO, L.L.C. (A.K.A. SHORELINE PLAZA) (PN)	3
CAMP ALDERSGATE CAMPSITE DINING HALL (PN)	2
CAMP E-HUN-TEE (PN)	1
CAMP JORI (PN)	3
CAMP PONAGANSETT (PN)	1
D. B. MART #9 (PN)	1
DANNYS AUCTION (PN)	1
DLM VARIETY DBA HARMONY CORNER STORE (PN)	1
EUREKA HOTEL CORP., INC. (PN)	1
FAMOUS PIZZA (PN)	1
GLOCESTER MOTOR INN (PN)	1
IDEAL PIZZA (PN)	1
PAYNES NEW HARBOR DOCK (PN)	1
POUND HILL REAL ESTATE CO LLC (PN)	1
POWDER MILL CREAMERY, LLC (PN)	1
R.I. STATE POLICE TRAINING ACADEMY (PN)	1
ROSE FARM INN RENTALS INC. DBA ROSE FARM (PN)	1
ROUND MEADOWS CAMPGROUND (PN)	1
SMITH VILLAGE (PN)_	1
SOPHIES BREW HOUSE INC (PN)	1
STATE LINE DINER (PN)_	1
STEPPING STONE STABLES, INC. (PN)	2
STICKS TAVERN (PUTNAM PROPERTIES) (PN)	1
SUNRISE ASSOCIATES, LLC (PN)	1
Treatment Technique	
ALBACO, L.L.C. (A.K.A. SHORELINE PLAZA) (RTCR)	2
BELLEVUE HOUSE (RTCR)	1
CAMP JORI (RTCR)	1
CLASSIC MOTOR LODGE, INC. (RTCR)	1
D. B. MART #9 (GWR)	4
EUREKA HOTEL CORP., INC. (RTCR)	1
FAMOUS PIZZA (STATE COMPLIANCE)	1
GLOCESTER MOTOR INN (RTCR)	1
GREENWOOD HILL CAMPGROUND ASSOCIATION (RTCR)	1
IDEAL PIZZA (GWR)	1
KINGSTON PIZZA OF CHARLESTOWN, INC. (GWR)	1
MR. Z'S BY THE LAKE (STATE COMPLIANCE)	1
OAK EMBERS CAMPGROUND (STATE COMPLIANCE)	1
OUT IN NOWHERE CREAMERY (STATE COMPLIANCE)	2
PASTORE LEISURE CENTER (LADD SCHOOL CAMP) (RTCR)	1
PAYNES NEW HARBOR DOCK (RTCR)	1
SUNRISE ASSOCIATES, LLC (RTCR)	1

THE COVE (GWR)	1
WESTERN HOTEL PIZZA & TAVERN (STATE COMPLIANCE)	1
TOTAL	211

Appendix D: Compliance Table (January 1, 2017 – December 31, 2017)

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
Organic Contaminants								
2981	1,1,1-Trichloroethane	0.2	0	0			8	8
2977	1,1-Dichloroethylene	0.007	0	0			8	8
2985	1,1,2-Trichloroethane	.005	0	0			8	8
2378	1,2,4-Trichlorobenzene	0.07	0	0			8	8
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			2	2
2980	1,2-Dichloroethane	0.005	0	0			8	8
2983	1,2-Dichloropropane	0.005	0	0			8	8
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	0	0			0	0
2110	2,4,5-TP	0.05	0	0			2	2
2105	2,4-D	0.07	0	0			2	2
2051	Alachlor	0.002	0	0			2	2
2050	Atrazine	0.003	0	0			2	2
2990	Benzene	0.005	0	0			8	8
2306	Benzo[a]pyrene	0.0002	0	0			2	2
2046	Carbofuran	0.04	0	0			2	2
2982	Carbon tetrachloride	0.005	0	0			8	8
2959	Chlordane	0.002	0	0			2	2

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
2380	cis-1,2-Dichloroethylene	0.07	0	0			8	8
2031	Dalapon	0.2	0	0			2	2
2035	Di(2-ethylhexyl)adipate	0.4	0	0			2	2
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			2	2
2964	Dichloromethane	0.005	0	0			8	8
2041	Dinoseb	0.007	0	0			2	2
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			2	2
2992	Ethylbenzene	0.7	0	0			8	8
2946	Ethylene dibromide	0.00005	0	0			2	2
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			2	2
2067	Heptachlor epoxide	0.0002	0	0			2	2
2274	Hexachlorobenzene	0.001	0	0			2	2
2042	Hexachlorocyclopentadiene	0.05	0	0			2	2
2010	Lindane	0.0002	0	0			2	2
2015	Methoxychlor	0.04	0	0			2	2
2989	Monochlorobenzene	0.1	0	0			8	8
2968	o-Dichlorobenzene	0.6	0	0			8	8
2969	para-Dichlorobenzene	0.075	0	0			8	8

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
2383	Total polychlorinated biphenyls (PCB's)	0.0005	0	0			2	2
2326	Pentachlorophenol	0.001	0	0			2	2
2987	Tetrachloroethylene	0.005	0	0			8	8
2984	Trichloroethylene	0.005	0	0			8	8
2996	Styrene	0.1	0	0			8	8
2991	Toluene	1.0	0	0			8	8
2979	trans-1,2-Dichloroethylene	0.1	0	0			8	8
2955	Xylenes (total)	10	0	0			8	8
2020	Toxaphene	0.003	0	0			2	2
2036	Oxamyl (Vydate)	0.2	0	0			2	2
2040	Picloram	0.5	0	0			2	2
2037	Simazine	0.004	0	0			2	2
2976	Vinyl chloride	0.002	0	0			8	8
Subtotals			0	0	0	0	10₂	9_{2,4}
Stage 2 Disinfection Byproducts Rule								
1009	Chlorite	1.0	0	0			0	0
1011	Bromate	0.010	0	0			0	0
1006	Chloramines	4.0	0	0			0	0
1008	Chlorine Dioxide	0.8	0	0			0	0
0999	Chlorine	4.0	0	0			0	0
2950	Total Trihalomethanes	0.080	3	3			4	4
2456	Total Haloacetic Acids	0.060	0	0			4	4

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
2920	Total Organic Carbon Removal Ratio	1.0			0	0	0	0
Subtotals			3	3	0	0	4	4₄
Inorganic Contaminants								
1074	Antimony	0.006	0	0			1	1
1005	Arsenic	0.010	0	0			1	1
1094	Asbestos (>10 micrometers)	7 million fibers/L					0	0
1010	Barium	2	0	0			1	1
1075	Beryllium	0.004	0	0			1	1
1015	Cadmium	0.005	0	0			1	1
1020	Chromium	0.1	0	0			1	1
1024	Cyanide (as free cyanide)	0.2	0	0			1	1
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			1	1
1040	Nitrate	10 (as N)	1	1			19	18
1041	Nitrite	1 (as N)	0	0			10	9
1045	Selenium	0.05	0	0			1	1
SM	Sodium						3	3
1085	Thallium	0.002	0	0			1	1
1038	Total nitrate and nitrite	10 (as N)	0	0			0	0
Subtotals			1	1	0	0	33₂	23₄

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
Radionuclides								
4000	Gross alpha particle activity	15 pCi/l	0	0			0	0
4010	Combined Radium 226/228	5 pCi/l	0	0			0	0
4006	Combined uranium	30 µg/l	0	0			0	0
4101	Gross beta	4 mrem/yr.	0	0			0	0
Subtotals			0	0	0	0	0	0
Total Coliform Rule								
SL (State-Level)	Non-acute (Total Coliform) MCL violation	5% ³	46	35				
SM or SR	Routine/Repeat (monitoring or reporting)						9	9
Subtotals			46	35	0	0	9	84
Revised Total Coliform Rule								
1A	Acute (<i>E. Coli</i>) MCL violation	Presence ³	6	4				
2A	Level 1 Assessment missing or incomplete				1	1		
2B	Level 2 Assessment missing or incomplete				4	3		
2C	Corrective/Expedited Actions				7	6		
2D	Seasonal Startup Procedures				4	4		
3A/3B	Major or minor routine/additional routine						70	57

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
3C	Monitor extra coliform after turbidity exceedance (unfiltered SW)						N/A	N/A
3D	Lab/Analytical Method Error						0	0
4A	Reporting, Assessment Forms						0	0
4B	Reporting, Sample Results						12	12
4C	Reporting, Seasonal Startup Procedures Certification						4	4
4D	Notification to State w/in 24 hrs. of E. Coli result						0	0
4E	Notification to State w/in 24 hrs. of E. Coli MCL						0	0
4F	Notification to State w/in 24 hrs. of Assessment or Corrective Action Violation						1	1
5A	Sample Siting Plan Errors						0	0
5B	Recordkeeping						0	0
Subtotal			6	4	16	12₄	87	75₄
Groundwater Rule								
05	State notification of treatment failure						3	2

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
34	Triggered monitoring of well						5	5
41	Failure maintain microbial treatment				2	2		
45	Failure address significant deficiency				4	3		
73	Failure notify other water system of E. Coli result(s)						1	1
SC	State-compliance (failure follow plan review requirement)				2	2		
Subtotal			0	0	8	5	9	8
Surface Water Treatment Rule								
36	Monitoring & Reporting SWTR						7	7
38	Monitoring & Reporting IESWTR						1	1
40 - 45	Treatment techniques				0	0		
32	Monitoring, routine/repeat (Source, LT2)						6 ₂	4
SM	State-monitoring (failure perform GUDI monitoring)						1	1
Subtotal			0	0	0	0	15₂	11
Lead and Copper Rule								
51	Initial lead and copper tap M/R		0	0			0	0

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
52,56	Follow-up or routine lead and copper tap M/R		0	0			23	20
53	Water Quality Parameters						1	1
57	OCCT/SOWT RECOM/STUDY						0	0
58, 63	Treatment Installation				0	0		
65, 66	Public education, Lead Consumer Notice						7	7
	Subtotal		0	0	0	0	31	27₄
Consumer Confidence Reports (CCR)								
71	CCR failure to report (major)						29	29
72	CCR inadequate content or reporting (minor)						33	29
Public Notice Rule								
75	Public Notification						34	28
76	Public Notification for state-only violation						4	3
	Subtotal						100	72₄
State Violations (Miscellaneous)								
SC	State-compliance (licensing – operator and PWS)				7	4		
SC	State-compliance (failure correct minor deficiencies)				1	1		

SDWIS Codes		MCL ¹ (mg/l)	MCLs		Treatment Techniques		Monitoring/Reporting	
			Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations	Number of violations	Number of PWSs with violations
SM	State-monitoring & reporting (chlorine residuals)						1	1
	Subtotal				8	5	1	14
	Totals		56	394	32	224	299	1614

¹ Values are in milligrams per liter (mg/l), unless otherwise specified.

² Monitoring violations for Volatile Organic Chemicals, Synthetic Organic Chemicals, Inorganic Chemicals, Disinfection Byproducts, and Long Term 2 Enhanced Surface Water Treatment Rule (LT2) are issued as a single violation for the suite of contaminants, not as violations for each of the regulated contaminants.

³ The coliform MCL is based on presence or absence of total coliforms in a sample, rather than coliform density. For total coliforms: if a public water system collects at least 40 samples per month, the MCL is exceeded when more than 5% of samples collected during the month are total coliform positive; if a public water system collects fewer than 40 samples per month, the MCL is exceeded if more than one sample is total coliform positive. For E. coli, the MCL is exceeded when a single E. coli positive sample is confirmed by a consecutive total coliform positive or E. coli positive sample.

⁴ The subtotal and total number of public water systems with violations is not necessarily the sum of the number of public water systems within each rule category. This is because each public water system might have more than one violation within each rule category.

Appendix E: Compliance Table Definitions

Filtered systems: Surface water systems that have installed filtration treatment.

Inorganic contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos; naturally occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities; EPA has established MCLs for 15 inorganic contaminants.

Lead and Copper Rule (LCR): Established national limits on lead and copper in drinking water; states report violations of the LCR in the following categories:

- Initial lead and copper tap M/R: Water system did not meet initial lead and copper testing requirements or failed to report the results of those tests to the State.
- Follow-up or routine lead and copper tap M/R: Water system did not meet follow-up or routine lead and copper tap-testing requirements or failed to report the results of those tests to the State.
- Water Quality Parameters (WQP): Water system did not collect or report WQP samples properly.
- OCCT/SOWT RECOM/STUDY: Water system did not properly complete or submit an Optimal Corrosion Control Treatment (OCCT) or Source Water Treatment (SOWT) recommendation or study for a lead and/or copper exceedance.
- Treatment installation: Water system did not install optimal corrosion-control treatment system or source-water treatment system to reduce lead and copper levels in water at the tap.
- Public education/Lead Consumer Notice: Water system did not provide required public education about reducing or avoiding lead intake from water or notification of lead results to individuals served by taps used for LCR tap monitoring or did not adequately report either to the State.

Maximum Contaminant Level (MCL): Highest amount of a contaminant that EPA allows in drinking water ensuring no short-term or long-term health risk; quantified as milligrams per liter (parts per million), unless otherwise specified.

Monitoring: EPA-specified water-testing methods and schedules for testing frequency, which water systems are required to follow (for purposes of this report, a major monitoring violation occurs when at least 90% of the required samples were not taken or results were not reported during the specified period).

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides; generally get into water through runoff from cropland or discharge from factories; EPA has set MCLs for 54 organic contaminants.

Radionuclides: Radioactive particles occurring naturally in water or from human activity; EPA has MCLs for five types of radionuclides: radium-226, radium-228, gross alpha, uranium, and beta particle/photon radioactivity; violations are reported in the following categories:

- Gross alpha: Alpha radiation higher than MCL of 15 picocuries/liter; includes radium-226, but excludes radon and uranium.
- Combined radium-226 and radium-228: Combined radiation from two radium isotopes higher than MCL of 5 pCi/L.
- Uranium: Combined uranium higher than MCL of 30 µg/L.
- Gross beta: Beta particle and photon radioactivity from man-made radionuclides higher than four millirems/year.

Reporting Interval: January 1, 2017 - December 31, 2017; includes violations in previous years which did not return to compliance until 2017.

Safe Drinking Water Information System (SDWIS) Code: Specific numeric code assigned to each violation type or contaminant; two-digit code for violation type; four-digit code for contaminant.

State Compliance (SC): Compliance requirement regulated by the State but not regulated under the Safe Drinking Water Act.

State Level (SL): MCL for a contaminant regulated by the State but not regulated under the Safe Drinking Water Act.

State Monitoring (SM) or State Reporting (SR): Monitoring or reporting requirement for a contaminant regulated by the State but not regulated under the Safe Drinking Water Act.

Surface Water Treatment Rule: Establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water; violations are reported in four categories:

- Monitoring, routine/repeat (filtered systems): Water system does not perform required tests or does not report the results of those tests.
- Treatment techniques (filtered systems): Water system does not properly treat its water.
- Monitoring, routine/repeat (unfiltered systems): Water system does not perform required water tests or does not report the results of those tests.
- Failure to filter (unfiltered systems): Water system does not properly treat its water.

Total Coliform Rule (TCR): Establishes regulations for microbiological contaminants in drinking water that can cause short-term health problems; violations are reported in two categories:

- Non-acute MCL violation: Water system detected total coliform in its water at a frequency or level that exceeds the standard.
- Routine/repeat monitoring or reporting: Water system did not perform the required monitoring and/or reporting.

Revised Total Coliform Rule (RTCR): Effective April 1, 2016; establishes regulations for microbiological contaminants in drinking water that can cause short-term health problems; acute MCL Violation refers to confirmed E. Coli not total coliform; presence of total coliform results in assessment; establishes additional requirements for seasonal water systems.

Treatment Techniques: EPA-required water treatment process (instead of an MCL) for contaminants that laboratories cannot adequately measure; also, failure to correct a significant deficiency discovered during a sanitary survey, failure to correct a sanitary defect discovered during an assessment, failure to perform a Level 1 or Level 2 assessment, or failure to adequately perform seasonal start-up procedures.

Unfiltered Systems: Water systems that do not need to filter water before disinfecting it because the source is very clean.

Violation: Failure to meet any State or federal drinking water regulation.

Appendix F: Public Pools and Spas Compliance Data

Figure 1: Total, Water Quality Samples (Bacteria, Free Residual Chlorine, pH level), Swimming Pools and Therapy Pools

Swimming Pools		Therapy Pools	
Indoor	Outdoor	Indoor	Outdoor
119	101	58	9

Figure 2: Swimming and Therapy Pools Violations, By Type

Bacterial Violations				Chlorine Violations				pH Violations			
Swimming Pools		Therapy Pools		Swimming Pools		Therapy Pools		Swimming Pools		Therapy Pools	
Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
15	10	12	0	179	93	103	12	36	42	22	5

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