Annual Report on Violations of the U.S. and Florida Safe Drinking Water Acts in the State of Florida: January – December 2020

Division of Water Resource Management

Florida Department of Environmental Protection

July 1, 2021

In accordance with the Safe Drinking Water Act Amendments of 1996, this summary has been compiled to reflect violations of national primary drinking water regulations by public water systems in the State of Florida.

As required by the Safe Drinking Water Act, the State of Florida has made the 2020 Drinking Water Annual Compliance Report available to the public. Interested individuals can obtain a copy of the 2020 Report for Florida by accessing the Department of Environmental Protection's Drinking Water website at: https://floridadep.gov/program-content/Water/Source-Drinking-Water or contact the program via postal mail at:

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The Drinking Water Program: An Overview

The U.S. Environmental Protection Agency (EPA) established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA) (42 U.S.C. §300j-2) to ensure that the public receives safe drinking water. EPA has granted Florida the authority to administer its own PWSS Program under Section 1413 of the SDWA, 42 U.S.C. §300j-2. The Florida Department of Environmental Protection (DEP) administers this program and has adopted both EPA regulations and additional more protective state requirements to implement the program.[1]

Florida's Drinking Water Program

The Florida Drinking Water Program is a subsection of DEP, and involves six district offices located throughout the state, seven delegated Florida Department of Health (DOH) county programs, DOH's Laboratory Program, and both DEP and DOH headquarters' offices located in Tallahassee. The highest priority for DEP and its delegated programs is to make sure Florida's drinking water systems are safe and being properly monitored.

At the end of 2020, Florida had 5,068 active public water systems (1,607 community systems; 771 non-transient, non-community systems; and 2,690 transient non-community systems).

This report provides the numbers of violations during 2020 in the following categories:

- Maximum Contaminant Level (MCL) violations
- Maximum Residual Disinfectant Level (MRDL) violations
- Treatment Techniques (TT) violations
- Variances and exemptions
- Significant monitoring requirement violations
- Significant consumer confidence report (CCR) notification requirement violations
- Significant reporting requirement (R) violations
- Recordkeeping violations
- Significant public notification requirement violations

[1] ss. 403.850-403.864, et. seq. F.S., and Chapters 62-550, 62-555, and 62-560, F.A.C.

The information provided in this report is based on Florida's drinking water database, as well as the data stored in EPA's Safe Drinking Water Information System (SDWIS/FED), more information on which can be found at: https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information-system-sdwis-federal-reporting.

Pursuant to section 62-550.500, F.A.C., this report presents data on violations that occurred in 2020, which is the first year in the 2020-2022 compliance period. Information on corrective actions taken in connection with the violations that are the subject of this report may be found on EPA's Enforcement and Compliance History Online (ECHO) website at: https://echo.epa.gov/.

Definitions

The following terms used in this report are defined in 40 C.F.R. 141.2, and section 62-550.200, F.A.C. (definitions are available at the following websites):

https://www.gpo.gov/fdsys/pkg/CFR-2015-title40-vol23/pdf/CFR-2015-title40-vol23-part141-subpartA.pdf

https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-550

- **Action Level** is the concentration of lead or copper in water specified in § 141.80(c) which determines, in some cases, the treatment requirements contained in subpart I of this part that a water system is required to complete.

- **Community Water System (CWS)** means a public water system that serves at least 15 service connections used by year-round residents, or regularly serves at least 25 year-round residents.

- **Disinfectant** means any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms.

- **Public Water System (PWS)** means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. The term includes: any collection, treatment, storage, and distribution facilities under control of

the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. The term does not include any "special irrigation district." A public water system is either a "community water system" or a "non-community water system."

- **Maximum Contaminant Level (MCL)** means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

- **Maximum Residual Disinfectant Level (MRDL)** means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. For chlorine and chloramines, a public water system (PWS) is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL. For chlorine dioxide, a PWS is in compliance with the MRDL when daily samples are taken at the entrance to the distribution system and no two consecutive daily samples exceed the MRDL. MRDLs are enforceable in the same manner as maximum contaminant levels under the Florida Safe Drinking Water Act. However, there is convincing evidence that addition of a disinfectant is necessary for control of waterborne microbial contaminants. Therefore, notwithstanding the MRDLs listed in section 62-550.310(2), F.A.C., operators may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level, and for a time, necessary to protect public health to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm runoff events, source water contamination, or cross connections.

- **Non-community water system** means a public water system that is not a community water system. A non-community water system is either a "transient non-community water system" (TWS) or a "non-transient, non-community water system" (NTNCWS).

- **Non-transient, non-community water system** means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year (NTNCWS).

- **Transient, non-community water system** means a non-community water system that does not regularly serve at least 25 of the same persons over six months per year (TWS).

In addition, the following terms used in this report shall have the following definitions:

- **Consumer Confidence Report** means an annual report that community water systems must deliver to customers to detail the quality of their drinking water and report any concerns the system noted in the compliance cycle (40 C.F.R. §141.151, and Section 62-550.824, F.A.C.)

- **Monitoring/reporting violation** means the failure of a water system to monitor or report as required under 40 C.F.R. 141, and sections 62-550.500-828, F.A.C. Depending upon the contaminant and previously reported results, a compliance period is typically monthly, quarterly, annually, or triennially.

- **Treatment technique** means a method to control unacceptable levels of certain contaminants. For example, treatment techniques have been established for viruses, some bacteria, and turbidity, (40 C.F.R. 141. 2, and section 62-550.200(110), F.A.C.).

- **Major monitoring violation** means a failure to collect all monitoring samples or a failure to report any monitoring result during a compliance period within the calendar year (40 C.F.R. 141, sections 62-550.500-828, F.A.C.).

Variances and Exemptions

A primacy state can grant a PWS a variance from a primary drinking water regulation if the characteristics of the raw water sources reasonably available to the PWS do not allow the system to meet the MCL (40 C.F.R. §§141.4 and 142.20). Florida did not issue any variances or exemptions that would be subject to compliance monitoring in 2020.

Violations

Total Coliform Rule

Total coliforms are a group of related bacteria that are (with few exceptions) not harmful to humans. EPA considers total coliforms a useful indicator of other pathogens for drinking water. Total coliforms are used to determine the adequacy of water treatment and the integrity of the distribution system. Of the 5,068 active public water systems in Florida, approximately one-third (community water systems) are required to monitor monthly and the other two-thirds (transient, non-community systems) are required to

sample quarterly. The number of samples required varies from a low of two each quarter to 400 each month, depending upon population served. Non-community ground water systems that serve fewer than 1,000 persons are required to monitor quarterly instead of monthly; this can be reduced to annually or increased back to quarterly if conditions merit.

The Revised Total Coliform Rule (RTCR) went into effect on April 1, 2016. Under the RTCR, non-acute MCL violations are not issued; rather, systems that have treatment technique triggers are required to do a special assessment of their water systems to identify and correct the problems. Water systems that fail to conduct the special assessment for the treatment technique triggers are issued a treatment technique violation.

Treatment technique violations are assessed in cases where the water system fails to do the assessment and follow up with the corrective actions in a timely fashion.

Table 1 summarizes violations of the RTCR during 2020 in three categories: (1) acute MCL violations (presence of fecal coliform or E. coli); (2) major monitoring violations (failure to take any sample on time, or failure to take any necessary repeat samples); and (3) treatment technique violations. In 2020, less than 0.1% of public water systems in Florida had acute MCL violations, 11.5% had major monitoring violations, and 0.5% had treatment technique violations.

Table 1

Total Coliform Rule Violation Type	MCL	Number of MCL Violations	Number of Systems with MCL Violations	Number of Major Monitoring Violations	Number of Systems with Major Monitoring Violations	Number of Treatment Technique Violations (RTCR)	Number of Systems with Treatment Technique Violations (RTCR)
Acute MCL Violation	Presence	1	1				
Major Monitoring Violation				728	582		
Assessment not completed in 30 days						27	23
Corrections not completed in 30 days						0	0

Ground Water Rule

Florida's Ground Water Rule, section 62-550.828, F.A.C., and 40 C.F.R. 141.400 – 405, Subpart S, establish a risk-targeted approach to identify ground water systems that are susceptible to fecal contamination. The occurrence of fecal indicators in a drinking water supply is an indication of the potential presence of microbial pathogens that may pose a threat to public health. The Ground Water Rule applies to all public water systems that use ground water (including consecutive systems), except for systems that combine all ground water with surface water or with ground water under the direct influence of surface water prior to treatment.

Table 2 summarizes violations of the Ground Water Rule during 2020 in two categories: (1) failure to collect routine water samples (assessment monitoring violations); and (2) failure to collect necessary repeat source water samples in response to a Total Coliform positive distribution sample or a Fecal Indicator positive source sample (triggered/additional monitoring violation). In 2020, approximately 90% of systems were in compliance with section 62-550.828, F.A.C., and 40 C.F.R. 141.400 – 405, Subpart S; 94.6% of the violations were the failure to collect routine water samples and 5.4% were triggered/additional monitoring violations.

Table 2

Ground Water Rule	MCL	Number of Assessment Monitoring Violations	Number of Systems with Assessment Monitoring Violations	Number of Triggered/ Additional Monitoring Violations	Number of Systems with Triggered/Additional Monitoring Violations
Total Ground Water Rule Violations	N/A	663	526	38	22

Surface Water Treatment

Florida has 92 public water systems that draw water from surface water or ground water that is under the direct influence of surface water. Table 3 summarizes violations during 2020 in two categories: (1) treatment techniques; and (2) monitoring/reporting violations. One public water system in Florida had violations in these categories.

Table 3

Surface Water and Ground Water Under Direct Influence of Surface Water	Number of Treatment Technique Violations	Number of Systems with Treatment Technique Violations	Number of Monitoring/ Reporting Violations	Number of Systems with Monitoring/Reporting Violations
Surface Water Treatment Rule	0	0	3	1

Inorganic Contaminants

Inorganic contaminants are naturally occurring in some ground water and surface water, but can also be introduced to water through farming, chemical manufacturing, and other human activities. Inorganic contaminants are routinely monitored in public water systems that utilize ground water every three years, except nitrite/nitrate, which is monitored annually (section 62-550.512(1), F.A.C.). Community and non-transient systems are required to increase their nitrate/nitrite monitoring frequency to quarterly if they exceed one-half the MCL during routine monitoring (section 62-550.512(1)(a), F.A.C.). Non-community water systems must monitor quarterly if a sample is greater than one-half the MCL for nitrite or exceeds the MCL for nitrate (section 62-550.512(2), F.A.C.). For the remaining inorganics, quarterly monitoring is not required unless the MCL is exceeded (sections 62-550.513(1) and (2), F.A.C.). Surface water systems must monitor annually instead of every three years, and quarterly for nitrate/nitrite (sections 62-550.512(1) and 62-550.513(1), F.A.C.).

Table 4 summarizes violations in 2020 for the 16 inorganic contaminants that are required to be monitored in public water systems.

Table 4

Inorganic Contaminant Identification Number	Contaminant Name	MCL (mg/L)	Number of MCL Violations	Number of Systems with MCL Violations	Number of Monitoring/ Reporting Violations	Number of Systems with Monitoring/ Reporting Violations
1005	Arsenic	0.01	3	1	10	7
1010	Barium	2	0	0	8	5
1015	Cadmium	0.005	0	0	8	5
1020	Chromium	0.1	0	0	9	6
1024	Cyanide	0.2	0	0	8	5
1025	Fluoride	4	3	1	21	9
1030	Lead	0.015	0	0	8	5
1035	Mercury	0.002	0	0	8	5
1036	Nickel	0.1	0	0	8	5
1040	Nitrate	10	4	3	182	164
1041	Nitrite	1	0	0	174	158
1045	Selenium	0.05	0	0	10	7
1074	Antimony	0.006	0	0	10	7
1075	Beryllium	0.004	0	0	8	5
1085	Thallium	0.002	3	1	11	7
1094	Asbestos	7 MFL	0	0	55	18

Organic Contaminants

Public water systems are required to monitor for two categories of organic contaminants: synthetic organic contaminants (SOCs) and volatile organic contaminants (VOCs). In most cases, the contaminants are monitored every three years, except when required to monitor more frequently due to detections or MCL exceedances (sections 62-550.515(3) and 62-550.516(4), F.A.C.).

Tables 5 and 6, respectively, summarize the violations in 2020 for the SOCs and VOCs that are required to be monitored in public water systems.

Table 5

SOC ID No.	Contaminant Name	MCL (mg/L)	Number of MCL Violations	Number of Systems with MCL Violations	Number of Monitoring/ Reporting Violations	Number of Systems with Monitoring/ Reporting Violations
2005	Endrin	0.002	0	0	56	32
2010	Lindane	0.0002	0	0	56	32
2015	Methoxychlor	0.04	0	0	56	32
2020	Toxaphene	0.003	0	0	53	31
2031	Dalapon	0.2	0	0	64	41
2032	Diquat	0.02	0	0	53	32
2033	Endothall	0.1	0	0	53	31
2034	Glyphosate	0.7	0	0	54	32
2035	Di(2-ethylhexyl)adipate	0.4	0	0	55	32
2036	Oxyamyl	0.2	0	0	52	30
2037	Simazine	0.004	0	0	56	32
2039	Di(2-ethylhexyl)phthalate	0.006	0	0	64	41
2040	Picloram	0.5	0	0	52	30
2041	Dinoseb	0.007	0	0	52	30
2042	Hexachlorocyclopentadiene	0.05	0	0	58	33
2046	Carbofuran	0.04	0	0	52	30
2050	Atrazine	0.003	0	0	56	32
2051	Alachlor/Lasso	0.002	0	0	56	32
2065	Heptachlor	0.0004	0	0	56	32
2067	Heptachlor epoxide	0.0002	0	0	56	32
2105	2,4-D	0.07	0	0	52	30
2110	2,4,5-TP	0.05	0	0	52	30
2274	Hexachlorobenzene	0.001	0	0	56	32
2306	Benzo(a)pyrene	0.0002	0	0	56	32
2326	Pentachlorophenol	0.001	3	1	55	32
2383	Polychlorinated biphenyls (PCBs)	0.0005	0	0	53	31
2931	1,2-DiBromo-3-Chloropropane	0.0002	0	0	52	30
2946	Ethylene Dibromide	0.00005	0	0	52	30
2959	Chlordane	0.002	0	0	56	33

Table 6

VOC ID No.	Contaminant Name	MCL (mg/L)	Number of MCL Violations	Number of Systems with MCL Violations	Number of Monitoring/ Reporting Violations	Number of Systems with Monitoring/ Reporting Violations
2378	1,2,4-Trichlorobenzene	0.07	0	0	20	14
2380	Cis-1,2-Dichloroethylene	0.07	0	0	20	14
2955	Xylenes (total)	10	0	0	33	26
2964	Dichloromethane	0.005	0	0	25	19
2968	o-Dichlorobenzene	0.6	0	0	19	13
2969	p-Dichlorobenzene	0.075	0	0	20	14
2976	Vinyl Chloride	0.002	0	0	19	13
2977	1,1-Dichloroethylene	0.007	0	0	19	13
2979	Trans-1,2-Dichoroethylene	0.1	0	0	19	13
2980	1,2-Dichloroethane	0.005	0	0	20	14
2981	1,1,1-Trichloroethane	0.2	0	0	19	13
2982	Carbon Tetrachloride	0.005	0	0	22	15
2983	1,2-Dichloropropane	0.005	0	0	19	13
2984	Trichloroethylene	0.005	0	0	19	13
2985	1,1,2-Trichloroethane	0.005	0	0	19	13
2987	Tetrachloroethylene	0.005	0	0	19	13
2989	Chlorobenzene	0.1	0	0	19	13
2990	Benzene	0.005	0	0	19	13
2991	Toluene	1	0	0	25	18
2992	Ethylbenzene	0.7	0	0	21	15
2996	Styrene	0.1	0	0	20	14

Radionuclide Contaminants

Radioactive particles can be naturally-occurring in ground water and surface water but can also be introduced to water through human activities. Public water systems in Florida are required to monitor for radionuclides every three or six years (section 62-550.519, F.A.C.).

Effective January 1, 2016, non-transient, non-community water systems are also required to monitor radiological contaminants under Florida law, unless previous sample results have permitted the system to waive radiological monitoring entirely.

In 2020, Florida had a radiological contaminant compliance rate of approximately 99%; less than 0.1% of public water systems had violations of the gross alpha MCL, none had violations of the uranium MCL, and 0.1% had violations of the combined radium MCL.

Table 7 summarizes violations during 2020 for the radionuclides that must be monitored in public water systems.

Table 7

Radionuclides ID	Contaminant Name	MCL (pCi/L)	Number of MCL Violations	Number of Systems with MCL Violations	Number of Monitoring/ Reporting Violations	Number of Systems with Monitoring/ Reporting Violations
4000	Gross Alpha, Excl. Radon & Uranium	15	4	2	30	21
4006	Uranium	30	0	0	26	19
4010	Combined Radium (226 & 228)	5	9	4	0	0

Disinfection By-products

Public water systems are required to kill or inactivate pathogenic organisms in water by use of chemical oxidants or equivalent agents. By-products of disinfection occur in water as a result of organic matter reacting with the disinfection chemicals (for example, chlorine) present in drinking water. Public water systems monitor disinfection by-products (DBPs) either annually or quarterly, depending upon source, size of population, and/or previous results (sections 62-550.821 and 62-550.822, F.A.C.). Systems are also required to report a monthly disinfection residual, and systems using ozone for disinfection must also monitor for bromate (section 62-550.821(9)(b), F.A.C.).

In 2020, Florida had a 98.8% compliance rate for disinfection by-products; 0.6% of public water systems in Florida had violations for the haloacetic acids MCL, and 1.1% had violations for the total trihalomethanes MCL; 2% of public water systems had monitoring/reporting violations for one or both of these parameters.

Table 8 summarizes violations during 2020 for the disinfection by-products that are required to be monitored by public water systems.

Table 8

DBP ID	Contaminant Name	MCL (mg/L)	Number of MCL Violations	Number of Systems with MCL Violations	Number of Monitoring/ Reporting Violations	Number of Systems with Monitoring/ Reporting Violations
2456	Haloacetic Acids (Five) HAA5	0.06	77	28	165	99
2950	Total Trihalomethanes TTHM	0.08	169	56	164	98

Lead and Copper

Lead and copper can be a source contaminant and can enter drinking water through interactions with distribution system and plumbing materials. Lead and copper monitoring requirements are set forth in section 62-550.800, F.A.C. Table 9 summarizes the following categories of violations in 2020: (1) failure of a new public water system to conduct initial monitoring for lead and copper; (2) failure of an existing system to conduct routine monitoring; (3) failure to take corrective measures if there was an Action Level Exceedance; and (4) failure to provide information to the public on steps that can be taken to protect health. In 2020, Florida had a 98% compliance rate for LCR; four public water systems in Florida had violations for initial LCR monitoring, 1.6% had violations for follow-up or routine LCR monitoring, and nine water systems in Florida had violations for failure to take corrective action or to provide public education.

Table 9

Lead and Copper (LCR)	Number of Violations	Number of Systems with Violations
Initial LCR Monitoring	4	4
Follow Up or Routine LCR Monitoring	88	81
Failure to Take Corrective Action	9	8
Failure to Provide Public Education	1	1

Consumer Confidence Reports

Every community water system is required to deliver to its customers a Consumer Confidence Report (section 62-550.824, F.A.C.). For 2020, of the 1,607 community water systems in Florida, three active public water systems failed to submit a Consumer Confidence Report, and 30 were in violation for late or insufficient reporting.

Public Notice

Public water systems are required to notify consumers of all violations (section 62-560.410, F.A.C.). In 2020, there was a total of 10 public notice violations in Florida, and eight public water systems had public notice violations.

Summary

Florida is committed to ensuring all residents receive safe drinking water and facilities are in compliance with state and federal laws. The vast majority of the compliance issues reported in 2020 were administrative (timely submittal of monitoring and reporting paperwork), and not health-based or related to water quality. Where there is an exceedance of a drinking water standard, facilities are required to increase monitoring frequencies to verify the results, and to follow up with corrective actions as needed. In all cases, DEP closely monitors the subsequent results and actions to ensure the system returns to compliance.

Tables 10 and 11 summarize the 2020 violation information presented in this report.

Table 10

2020 Systems / Violation Summary	Number
Total Active Public Water Systems	5,068
Total Public Water Systems with at least one Violation	1,410
Total Violations	5,928

Table 11

Violation Category	Number of MCL Violations	Number of Systems with MCL Violations	Number of Treatment Technique Violations	Number of Systems with Treatment Technique Violations	Number of Monitoring /Reporting Violations	Number of Systems with Monitoring /Reporting Violations
Revised Total Coliform Rule	1	1	27	23	728	582
Ground Water Rule					701	526
Surface Water and Ground Water Under Direct Influence of Surface Water			0	0	3	1
Inorganic Contaminants, Synthetic Organic Contaminants, Volatile Organic Contaminants, and Radionuclide Contaminants	29	12			2,619	273
Disinfection By-Products	246	63			329	99
Lead and Copper Rule					102	92
Consumer Confidence Reports					30	30
Public Notice					10	8