



THE CITY OF FLORENCE
WATER DEPARTMENT

Annual Water Quality Report

January-December 2024



Is my water safe?

Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and the Alabama Department of Environmental Management (ADEM) drinking water health standards. Your Local Water officials vigilantly safeguard its water supplies and once again we are proud to report that our system has not violated a maximum contaminant level or any other water quality standards. We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. The City of Florence's drinking water is supplied by surface water from the Tennessee River and Cypress Creek. Modern State of the art treatment Facilities using the most up to date technology treats the water from these two sources. In addition, we pump ground water from a well in the Killen and Center Star area of Lauderdale County, which is blended with the treated surface water sources. The well source supplies these areas only in Killen. The City of Florence utilizes coagulation, flocculation, sedimentation and filtration in their treatment process. Also, chlorine is added to the water as disinfectant and the required residual is maintained to protect your drinking water from any possible outside contaminants, fluoride is added for dental protection, and lime for pH treatment. The MIEX system was added in 2014 as a simple solution for meeting U.S. Environmental Protection Agency's (EPA) disinfection -product (DBP) removal by employing a continuous ion exchange process. The process removes dissolved organic carbon (DOC) allowing for improved drinking water quality and regulatory compliance. The City of Florence Water Department routinely completes a water storage facility inspection plan and utilizes a Bacteriological Monitoring Plan, and a Cross Connection Policy is in place to insure good safe drinking water for our customers. We have a Source Water Protection Plan available for review that provides more information such as potential sources of contamination. We are committed to ensuring the quality of your water.

The Annual Water Quality Water Report was prepared by Darrell Brewer with Alabama Rural Water Association in accordance with the guidelines of the United States Environmental Protection Agency (USEPA), and the Alabama Department of Environmental Management (ADEM). If you have any questions concerning this report or your water utility, please call Tad Cole or Ryan Wallace at our office at 256-760-6490. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings held on the first and third Tuesday of each month at The Water Works Board Office, 109 S Pine Street beginning at 5:00 PM. To learn more about the City of Florence Water Department go to: https://florenceal.org/utilities/florence_gas_&_water_department/.

The City of Florence Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2024. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

Plain Language Definition

Not Required (NR) – Laboratory analysis not required due to waiver granted by the Environmental Protection Agency for the State of Alabama.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in 10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity

of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Variations & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - (mandatory language) The "Maximum Allowed" (**MCL**) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - (mandatory language) The "Goal" (**MCLG**) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level Goal or MRDLG - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

T.O.N - Threshold odor number.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

- Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water run-off, and residential uses.

- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water run-off, and septic systems.

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or ADEM requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Tables of Primary Contaminants

Contaminant	MCL	Amount Detected
Bacteriological		
Total Coliform Bacteria	< 5%	1.15% *
Turbidity	TT	0.20
Fecal Coliform & E. coli	0	ND

Contaminant	MCL	Amount Detected
Radiological		
Beta/Photon emitters (mrem/yr)	4	ND
Alpha emitters (pci/l)	15	ND
Combined radium (pci/l)	5	ND
Uranium(pci/l)	30	ND

Contaminant	MCL	Amount Detected
Inorganic		
Antimony	.006	ND
Antimony (ppb)	6	ND
Arsenic (ppb)	10	ND
Asbestos (MFL)	7	ND
Barium (ppm)	2	0.02
Beryllium (ppb)	4	ND
Bromate(ppb)	10	ND
Cadmium (ppb)	5	ND
Chloramines(ppm)	4	ND
Chlorine(ppm)	4	2.01
Chlorine dioxide(ppb)	800	ND
Chlotite(ppm)	1	ND
Chromium (ppb)	100	ND
Copper (ppm)	AL=1.3	0.050
Cyanide (ppb)	200	ND
Fluoride (ppm)	4	0.68
Lead (ppb)	AL=15	0.0033
Mercury (ppb)	2	ND
Nickel (ppm)	0.1	ND
Nitrate (ppm)	10	0.49
Nitrite (ppm)	1	ND
Total Nitrate & Nitrite	10	0.49
Selenium(ppb)	50	ND
Thallium(ppb)	2	ND

*Percentage of Coliform Positive Bacti samples all repeat samples were coliform absent.

Contaminant	MCL	Amount Detected	Contaminant	MCL	Amount Detected
Organic Chemicals					
Acrylamide	TT	ND	Epichlorohydrin	TT	ND
Alachlor(ppb)	2	ND	Ethylbenzene(ppb)	700	ND
Atrazine(ppb)	3	ND	Ethylene dibromide(ppb)	50	ND
Benzene(ppbv)	5	ND	Glyphosate(ppb)	700	ND
Benzo(a)pyrene(PHAs)(ppt)	200	ND	Haloacetic Acids(ppb)	60	22.6
Carbofuran(ppb)	40	ND	Heptachlor(ppt)	400	ND
Carbon Tetrachloride(ppb)	5	ND	Heptachlor epoxide(ppt)	200	ND
Chlordane(ppb)	2	ND	Hexachlorobenzene(ppb)	1	ND
Chlorobenzene(ppb)	100	ND	Hexachlorocyclopentadiene(ppm)	50	ND
2,4-D	70	ND	Lindane(ppt)	200	ND
Dalapon(ppb)	200	ND	Methoxychlor(ppb)	40	ND
Dibromochloropropane(ppt)	200	ND	Oxamyl [Vydate](ppb)	200	ND
0-Dichlorobenzene(ppb)	600	ND	Pentachlorophenol(ppb)	1	ND
p-Dichlorobenzene(ppb)	75	ND	Picloram(ppb)	500	ND
1,2-Dichloroethane(ppb)	5	ND	PCBs(ppt)	500	ND
1,1-Dichloroethylene(ppb)	7	ND	Simazine(ppb)	4	ND
Cis-1,2-Dichloroethylene(ppb)	70	ND	Styrene(ppb)	100	ND
trans-1,2-Dichloroethylene(ppb)	100	ND	Tetrachloroethylene(ppb)	5	ND
Dichloromethane(ppb)	5	ND	Toluene(ppm)	1	ND
1,2-Dichloropropane(ppb)	5	ND	TOC	TT	0.65
Di-(2-ethylhexyl)adipate(ppb)	400	ND	TTHM(ppb)	80	32.0
Di-(2-ethylhexyl)phthlates(ppb)	6	ND	Toxaphene(ppb)	3	ND
Dinoseb(ppb)	7	ND	2,4,5-TP (Silvex)(ppb)	50	ND
Dioxin[2,3,7,8-TCDD](ppq)	30	ND	1,2,4-Trichlorobenzene(ppb)	70	ND
Diquat(ppb)	20	ND	1,1,1-Trichloroethane(ppb)	200	ND
Endothall(ppb)	100	ND	1,1,2-Trichloroethane(ppb)	5	ND
Endrin(ppb)	2	ND	Trichloroethylene(ppb)	5	ND
			Vinyl Chloride(ppb)	2	ND
			Xylenes(ppm)	10	ND

Table of Detected Drinking Water Contaminants

Contaminant	MCLG	MCL	Range	Amount Detected	Likely Sources of Contamination
Bacteriological Contaminants January - December 2024					
Turbidity	0	TT		0.20 NTU	Soil runoff
Alpha emitters	0	15	0 - ND	ND pCi/L	Erosion of natural deposits
Barium	2	2	ND - 0.022	0.022 ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine	MRDLG 4	MRDL 4	1.7 - 2.4	2.01 ppm	Water additive used to control microbes
Copper	1.3	AL=1.3	No. of Sites above action level 0	0.050 ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	0	AL=15	No. of Sites above action level 0	0.033 ppb	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as N)	10	10	0.31 - 0.67	0.49 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Nitrate & Nitrite	10	10	0.31 - 0.67	0.49 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Organic Contaminants January - December 2024					
Haloacetic Acids (HAA5)	N/A	60	12.00-34.0	22.6 ppb	By-product of drinking water chlorination
Total Organic Carbon (TOC)	N/A	TT	0.5-0.8	0.65 ppm	Naturally present in the environment
Total Trihalomethanes (TTHM)	0	80	16.00-48.00	32.0 ppb	By-product of drinking water chlorination
Secondary Contaminants January - December 2024					
Chloride	N/A	250	16.65-16.65	16.65 ppm	Naturally occurring in the environment or as a result of agricultural runoff
Color	N/A	15	ND-ND	ND PCU	Naturally occurring in the environment or as a result of treatment with water additives
Copper	N/A	1	ND-0.050	0.050 ppm	Erosion of natural deposits; leaching from pipes
Iron	N/A	0.3	0.01-0.02	0.01 ppm	Erosion of natural deposits
Magnesium	N/A	N/A	1.5-3.9	2.7 ppm	Erosion of natural deposits
Sulfate	N/A	250	ND-8.8	4.4 ppm	Naturally occurring in the environment
Total Dissolved Solids	N/A	500	86.00-156.00	121.0 ppm	Erosion of natural deposits
Special Contaminants January - December 2024					
Calcium	N/A	N/A	19.5-27.7	23.35 ppm	Erosion of natural deposits
Carbon Dioxide	N/A	N/A	ND-ND	ND ppm	Erosion of natural deposits
Manganese	N/A	0.05	0.00-0.014	0.008 ppm	Erosion of natural deposits
pH	N/A	N/A	6.62- 8.01	7.81 SU	Naturally occurring in the environment or as a result of treatment with water additives
Sodium	N/A	N/A	ND-11.6	5.8 ppm	Naturally occurring in the environment
Specific Conductance	N/A	<500	124.0-248.0	186.0 umhos	Naturally occurring in the environment or as a result of treatment with water additives
Temperature	N/A	N/A	8.0-30.0	19.66 °C	Naturally occurring in the environment
Total Alkalinity	N/A	N/A	31.0-69.0	57.08 ppm	Erosion of natural deposits
Total Hardness (as CaCO3)	N/A	N/A	54.7-84.0	69.35 ppm	Naturally occurring in the environment or as a result of treatment with water additives
Langelier Index	N/A	N/A		-1.36	
Unregulated Contaminants January - December 2024					
Bromodichloromethane	N/A	N/A	4.7-5.8	5.25 ppb	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination
Chloroform	N/A	N/A	6.8-52.0	29.4 ppb	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination
Dibromochloromethane	N/A	N/A	ND-2.5	1.25 ppb	Naturally occurring in the environment
Per-and Polyfluoroalkyl Substances (PFAs)	N/A	N/A	ND 0.038 ppb Cypress Creek WTP Wilson Lake WTP	0.038 ppb	Stable manmade chemicals that allow them to repel both water and oil.

This year's report features images of the state-of-art water tower located just off Cox Creek Parkway. The water tower has a storage capacity of 2,000,000 gallons. Photography is by L. Wray Dillard.



Unregulated Contaminant Rule 5 (UCMR5) Contaminants

Contaminant	Amount Detected	Units	Contaminant	Amount Detected	Units
lithium	ppb	ND	PFHpS	ppb	ND
11Cl-PF30UdS	ppb	ND	PFHxA	ppb	0.0060
4:2 FTS	ppb	ND	PFHxS	ppb	0.0025
6:2 FTS	ppb	ND	PFMBA	ppb	ND
8:2 FTS	ppb	ND	PFMPA	ppb	ND
9Cl-PF3ONS	ppb	ND	PFNA	ppb	ND
ADONA	ppb	ND	PFOA	ppb	0.0048
HFPO-DA	ppb	ND	PFOS	ppb	0.018
NFDHA	ppb	ND	PFPeA	ppb	ND
PFBA	ppb	ND	PFPeS	ppb	ND
PFBS	ppb	0.0050	PFUnA	ppb	ND
PFDA	ppb	ND	NeFOSAA	ppb	ND
PFDoA	ppb	ND	NMeFOSAA	ppb	ND
PFEESA	ppb	ND	PFTA	ppb	ND
PFHpA	ppb	0.0032	PFTrDA	ppb	ND

General Information

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

As you can see by the tables, our system had no violations of allowable limits of contaminants in drinking water. We're proud that your drinking water meets or exceeds all Federal and State requirements.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and it can pick up substances resulting from the presence of animals or from human activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or other immune system disorders, some elderly, and infants can be particularly at risk from infections. People at risk should seek advice about drinking water from their health care providers. EPA (Environmental Protection Agency)/CDC (Center of Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline. All Drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Florence Water Department is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Based on a study conducted by ADEM with the approval of the EPA a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus monitoring for these contaminants was not required.

We at The City of Florence Water Department work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

For more information contact:

Tad Cole or Ryan Wallace 256-760-6490





City of Florence, Alabama

P.O. Box 1023, Florence, AL 35631

Florence Water/Wastewater Department

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