

Annual Drinking Water Quality Report 2016

TX2460005

CITY OF FLORENCE

Annual Water Quality Report for the period of January 1 to December 31, 2016

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

Public Participation for this report-
Florence Council Meetings- 1st Tuesday of every month- 6:00 pm

For more information regarding this report contact:

Name James Cheshire

Phone 254-793-2490

CITY OF FLORENCE is Purchased Surface Water and Ground Water

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al teléfono (254)793-2490 x 104.

Sources of Drinking Water

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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

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 runoff, 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, urban storm water runoff, 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 runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; persons who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care providers. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the 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. We are responsible for providing high quality drinking water, but we 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>.

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water source(s) is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus source water protection strategies.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://gis3.tceq.state.tx.us/swav/Controller/index.jsp?wtrsrc=>

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww.tceq.texas.gov/DWW>

Source Water Name	Type of Water	Report Status	Location
3 - FM 970 / S OF TOWN	GW		
4 - 2300 CR 229	GW		
SW FROM CITY OF GEORGETOWN	SW		

The TCEQ completed an assessment of your source water and results indicate that some of your sources are susceptible to certain contaminants. The sampling requirements for the City of Florence are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this Consumer Confident Report. For more information on source water assessments and protection efforts at our system, contact James Cheshire, Operations Manager 254-793-2490.

The City of Florence water comes from both ground water and surface water sources. Ground water is primarily supplied by the Trinity Aquifer. Surface water is primarily supplied by Lake Georgetown which is also fed by Stillhouse Lake, but not directly fed into the distribution system as we purchase treated water from the City of Georgetown.

2016 Regulated Contaminants Detected

Lead and Copper

Definitions:

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination

Copper	2016	1.3	1.3	0.42	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2016	0	1.5	2.8	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Water Quality Test Results

Definitions:
The following tables contain scientific terms and measures, some of which may require explanation.

Avg:
Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Maximum Contaminant Level or MCL:
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.

Level 1 Assessment:
A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Maximum Contaminant Level Goal or MCLG:
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.

Level 2 Assessment:
A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Maximum residual disinfectant level or 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.

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.

MFL
million fibers per liter (a measure of asbestos)

na:
not applicable.

Water Quality Test Results

mrem:
millirems per year (a measure of radiation absorbed by the body)

NTU
nephelometric turbidity units (a measure of turbidity)

pCi/L
picocuries per liter (a measure of radioactivity)

ppb:
micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

ppm:
milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.

Treatment Technique or TT:
A required process intended to reduce the level of a contaminant in drinking water.

ppt
parts per trillion, or nanograms per liter (ng/L)

ppq
parts per quadrillion, or picograms per liter (pg/L)

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Halocetic Acids (HAA5)	2016	53	49.5 - 62.2	No goal for the total	60	ppb	N	By-product of drinking water disinfection.

Total Trihalomethanes (TTHM)	2016	106	89.5 - 122	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	08/21/2015	0.0723	0.0566 - 0.0723	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	08/21/2015	1.44	1.32 - 1.44	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (measured as Nitrogen)	2016	0.08	0.08 - 0.08	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	08/21/2015	3.9	0 - 3.9	50	50	ppb	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	08/21/2015	19.1	15.3 - 19.1	0	50	pCi/L*	N	Decay of natural and man-made deposits.

*EPA considers 50 pCi/L to be the level of concern for beta particles.

Combined Radium 226/228	08/21/2015	3.2	3.2 - 3.2	0	5	pCi/L	N	Erosion of natural deposits.
Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
2,4-D	2016	0.3	0.3 - 0.3	70	70	ppb	N	Runoff from herbicide used on row crops.

Volatile Organic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Xylenes	2016	0.001	0 - 0.001	10	10	ppm	N	Discharge from petroleum factories; Discharge from chemical factories.

Violations Table

Lead and Copper Rule			
The Lead and Copper Rule protects public health by minimizing lead and copper levels in drinking water, primarily by reducing water corrosivity. Lead and copper enter drinking water mainly from corrosion of lead and copper containing plumbing materials.			
Violation Type	Violation Begin	Violation End	Violation Explanation
FOLLOW-UP OR ROUTINE TAP M/R (LCR)	10/01/2013	07/28/2016	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.
FOLLOW-UP OR ROUTINE TAP M/R (LCR)	10/01/2014	07/28/2016	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.
FOLLOW-UP OR ROUTINE TAP M/R (LCR)	10/01/2015	07/28/2016	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.
LEAD CONSUMER NOTICE (LCR)	12/30/2016	02/21/2017	We failed to provide the results of lead tap water monitoring to the consumers at the location water was tested. These were supposed to be provided no later than 30 days after learning the results.

Public Notification Rule

The Public Notification Rule helps to ensure that consumers will always know if there is a problem with their drinking water. These notices immediately alert consumers if there is a serious problem with their drinking water (e.g., a boil water emergency).

Violation Type	Violation Begin	Violation End	Violation Explanation
PUBLIC NOTICE RULE LINKED TO VIOLATION	02/10/2012	2016	We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations.

Disinfectant Residual Table

Disinfectant	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units of Measure	Violation	Likely Source of Contamination
Chlorine Gas	2016	1.47	.27	2.80	4.0	<4.0	ppm	N	Water additive used to control microbes.

The City of Florence currently has a interconnect with the City of Georgetown to access our surface water that is supplemented with our ground water. If you have any questions regarding the City of Georgetown's CCR report, please contact Georgetown Utility Systems 300 Industrial Ave., Georgetown, Texas 76626, Tel. (512) 930-3640, Fax (512) 930-3534.

City of Georgetown

Definitions

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

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest permissible level of a contaminant in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected health risk. MCLG's allow for a margin of safety.

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

Maximum Residual Disinfectant Level Goal (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 contamination.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Abbreviations

MFL - million fibers per liter (a measure of asbestos)

N/A - not applicable

NTU - Nephelometric Turbidity Units

ppq - parts per quadrillion, or picograms per liter

ppt - parts per trillion, or nanograms per liter

ppb - parts per billion, or micrograms per liter (ug/l)

pCi/L - picocuries per liter (a measure of radioactivity)

ppm - parts per million, or milligrams per liter (mg/l)

Microbiological Contaminants For 2016							
Constituent	MCL	No. Positive Samples	Unit	Violation (Y or N)	Typical Source of Contamination		
Total Coliform	Presence in 5% or more of the Monthly Samples.	2.4%	presence	N	Naturally present in the environment		
Fecal Coliform	Routine repeat sample is coliform positive and one is fecal.	0 positive out of 75 samples	presence	N	Human and animal fecal waste		
Constituent	MCL	90th Percentile	Unit	Violation (Y or N)	Typical Source of Contamination		
Total Organic Carbon	N/A	3.23	N/A	PPM	N	Naturally present in the environment	
Turbidity (NTU)	0.3	0.45	N/A	PPM	N	Soil runoff	
Inorganic Contaminants							
Constituent	MCL	90th Percentile	Average Level	Range in Detection	Sample Date	Violation (Y or N)	Typical Source of Contamination
Barium (ppm)	2	2	0.05	0.0404-0.0557	2016	N	Discharge of drilling waste, metal refineries, erosion of natural deposits
Fluoride (ppm)	4	4	0.37	0.19-0.74	2016	N	Erosion of natural deposits; water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	2.1	0.1-3.87	2016	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nickel (ppm)	.1	.1	0.0019	.0016 - .0027	2016	N	Erosion of natural deposits
Chromium (ppm)	.1	.1	Less than Detection Limit	Less than Detection Limit	2016	N	Discharge from steel and pulp mills; Erosion of natural deposits
Lead and Copper 2016 Sampling							
Constituent	Action Level	90th Percentile	Sites exceeding Action Level	Violation (Y or N)	Typical Source of Contamination		
Copper (ppm)	1.3	0.153	0	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives		
Lead (ppm)	0.015	0.0025	0	N	Corrosion of household plumbing systems; Erosion of natural deposits		

Disinfection and Disinfection By-Products

Constituent	NC	MCLG	Average of All Sampling Points	Range of Detected Levels	Sample Date	Typical Source of Contamination
Chloramines (ppm)	4.0	4.0	2.83	.51 – 3.81	2016	Primary Disinfection for surface water
Chlorine (ppm)	4.0	4.0	2.86	.2 – 3.65	2016	Primary Disinfection for ground water
HAA5 Haloacetic Acids (ppb)	60	0	15.09	1.0 – 30.5	2016	By-product of drinking water chlorination
THM Trihalomethanes (ppb)	80	0	28.44	1.0 – 47.2	2016	By-product of drinking water chlorination

Unregulated Contaminants

Constituent	Average of All Sampling Points	Range of Detected Levels	Sample Date	Typical Source of Contamination
Chloroform (ppb)	13.45	0 – 23.5	2016	Unregulated contaminants monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants Perchlorate is tested once every 5 years
Bromoform (ppb)	1.84	0 – 4.9	2016	
Bromodichloromethane (ppb)	9.17	0 – 18.0	2016	
Dibromochloromethane (ppb)	2.89	1.0 - 8.8	2016	
Perchlorate (ppb)	0.00300	0.00197 – 0.00625	2012	

Synthetic Organic Contaminants

Constituent	Average of All Sampling Points	Range of Detected Levels	Sample Date	Typical Source of Contamination
Atrazine (ppb)	<0.1	<0.1	2016	Runoff from herbicide used on row crops.

Unregulated Contaminant Monitoring Rule (UCMR3 Rule)*

Substance (units)	Year Sampled	Average	Range of Detected	Typical Source
Chlorate (ppb)	2013	374	ND - 1400	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.
Chromium (ppb)	2016	ND	ND	Naturally occurring element; used in making steel and other alloys; used for chrome plating, dyes, and pigments, leather tanning, and wood preservation.
Chromium (VI) (ppb)	2015	ND	ND	Naturally occurring element; used in making steel and other alloys; used for chrome plating, dyes, and pigments, leather tanning, and wood preservation.
Molybdenum (ppb)	2013	0.19	ND – 2.2	Naturally-occurring element found in ores and present in plants, animals, and bacteria; commonly used form molybdenum trioxide used as a chemical reagent require
Strontium (ppb)	2013	393	120 – 980	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions.
Vanadium (ppb)	2013	2.2	1.4 – 3	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst.