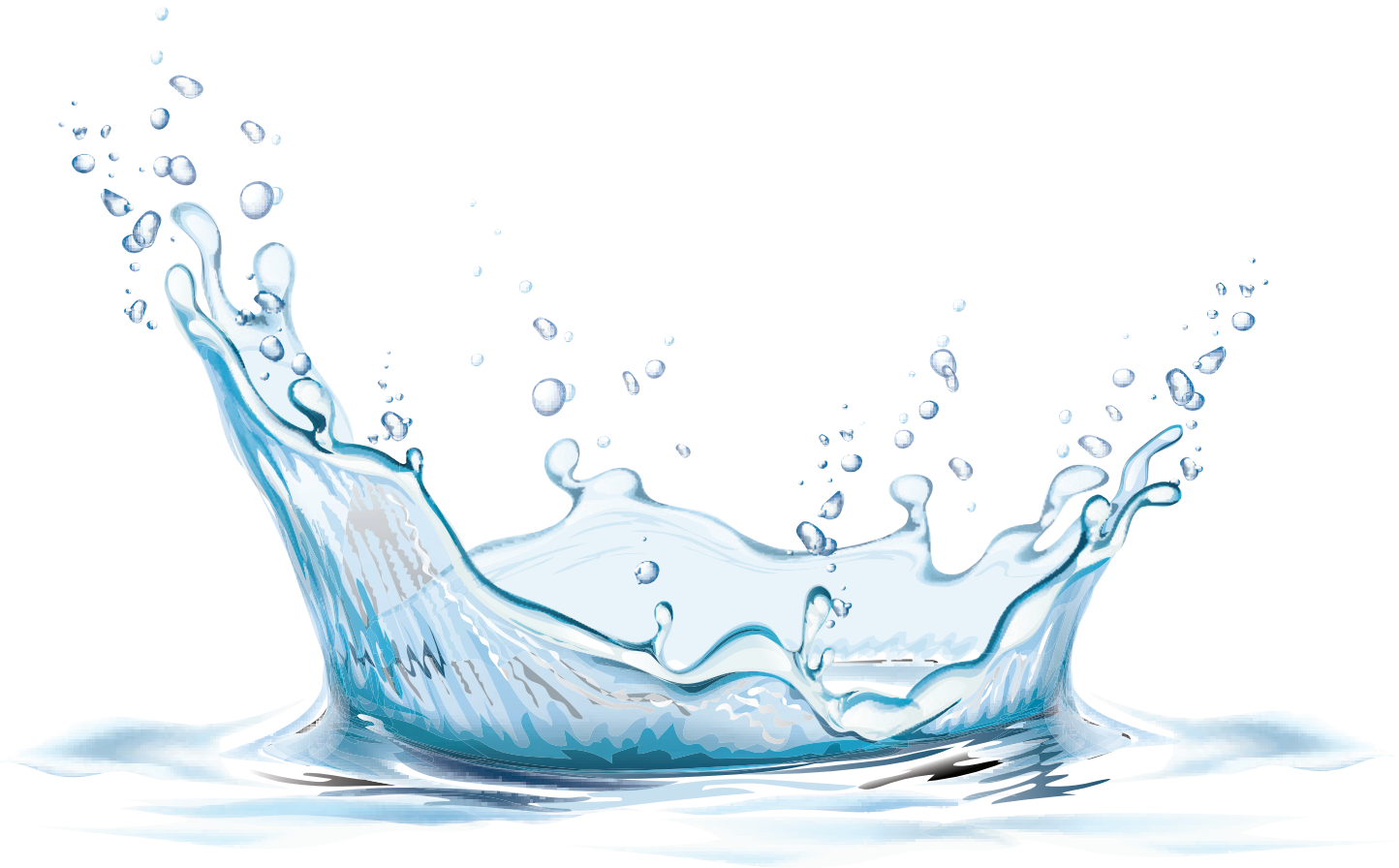
2020 WICHITA FALLS

DRINKING WATER *Quality Report*



CCR WELCOME

It is my pleasure to present this year's Drinking Water Quality Report. The City of Wichita Falls is required to comply with strict Federal and State regulations for drinking water. One of the requirements is to provide this annual water quality report to our customers. I am pleased to report that our drinking water meets or exceeds all Federal and State drinking water standards.

Safe and plentiful drinking water is an essential resource for every community. The City of Wichita Falls is committed to providing its citizens with a reliable supply of quality drinking water now and in the future. We utilize the latest technology to treat your drinking water and this water is tested continuously to ensure high quality. As a water consumer in Wichita Falls, you enjoy "superior" water every time you turn on the tap. "Superior" is the State of Texas' highest water quality designation, given to Wichita Falls for excellence in meeting water quality criteria.

A current concern is whether the drinking water is safe from the COVID-19 virus. As referenced by the EPA, the World Health Organization stated the, "presence of the COVID-19 virus has not been not been detected in drinking-water supplies and based on current evidence, the risk to water supplies is low." Additionally, the federal and state required treatment techniques of disinfection and filtration inactivate and remove viruses, further reducing any risk associated with drinking water.

The good news contained in this report is a tribute to our trained and certified utility system employees that work hard each and every day. Inside, you will find the laboratory test results for our water, as well as other useful information. We value your continued confidence in us to provide you with the very best drinking water.

Sincerely,

Darron J. Leiker
City Manager

IPR UPDATE

Construction began on the indirect potable reuse (IPR) project in the fall of 2016. The treatment plant upgrades and pipeline were completed in January 2018. Plant upgrades at the newly renamed River Road Resource Recovery Facility include new supervisory control and data acquisition (SCADA) software, new treatment for nutrient removal, cloth filtration for final polishing and a pump station that has the ability to pump 16 million gallons of extremely high quality effluent per day. Of course, this project is all a part of bolstering the water supply for the City of Wichita Falls and surrounding communities.

Since 2018 over 3,577 million gallons of high quality treated effluent were pumped to Lake Arrowhead. That means just over 30% of the total raw water treated at the Cypress and Jasper Water Treatment Facilities was replaced in Lake Arrowhead using Indirect Potable Reuse from the River Road Resource Recovery Facility.

WATER PURIFICATION DIVISION

The Water Purification Division employees are responsible for everything from the source water lakes (Lake Arrowhead, Lake Kickapoo and Lake Kemp/Diversion), the treatment of water at the two drinking water treatment facilities, and pumping water to the distribution system and water towers.

There are three employee groups within the division: Operations, Maintenance and Laboratory.

Operations is staffed 24-hours a day and the employees are responsible for the raw water pumping, physical treatment at the advanced water treatment plant (microfiltration and reverse osmosis) as well as each of the conventional treatment plants (coagulation, sedimentation, filtration, and disinfection), and pumping water to the distribution system to maintain system pressure and storage capacity in the elevated storage tanks.

Maintenance personnel perform routine preventative maintenance and emergency repairs on all equipment used in the pumping and treatment processes. A Maintenance employee puts eyes and hands on each location (including remote locations) every day to ensure proper operation of equipment. The Electronic Technicians also calibrate and verify all of the electronics used throughout the process.

The Laboratory staff perform chemical and biological testing in a 3,000 square foot state of the art laboratory. They are responsible for many federal and state required tests that are reported on a daily, weekly or monthly basis.

SALT WATER FUN FACTS!

O	R	G	A	N	I	S	M	S	B	C	Z	S	E	I	T	I	C
X	P	O	N	L	H	N	N	M	D	T	D	E	W	S	Q	S	S
Y	X	Q	Y	A	G	O	O	H	V	D	I	L	A	A	S	L	H
G	D	Y	R	F	T	S	C	R	A	B	U	T	V	L	H	R	I
E	Z	K	W	K	S	E	F	I	S	H	Q	R	E	T	J	A	P
N	S	Q	N	E	J	K	K	J	G	C	S	U	S	Q	D	E	W
Z	X	A	L	E	K	A	G	E	F	I	L	T	N	A	L	P	R
Q	L	A	W	F	G	N	M	H	Q	L	O	B	S	T	E	R	E
P	H	E	H	J	Y	S	C	I	N	A	T	I	T	O	K	Z	C
W	L	S	E	A	M	O	N	S	T	E	R	S	P	Z	X	F	K
S	W	D	S	Z	C	E	Z	C	O	R	A	L	R	E	E	F	S
G	H	A	D	V	X	S	P	I	H	S	E	T	A	R	I	P	Q
A	N	C	I	E	N	T	T	R	E	A	S	U	R	E	S	R	R
D	K	Z	X	S	C	S	L	L	E	H	S	A	E	S	A	Q	Z

If you want to learn more about amazing things found in the ocean, google it! You'll be amazed at the interesting things you'll find! *(Answers to the puzzle on page 7).*

What are things found in the OCEAN?

- Organisms
- Fish
- Sharks
- Plant Life
- Oxygen
- Sea Snakes
- Turtles
- People
- Seashells
- Ancient Treasures
- Ship Wrecks
- Submarines
- Cities
- Coral Reefs
- Pirate Ships
- Whales
- Pearls
- Sand
- Squid
- Lobster
- Jewels
- Sea monsters
- Plankton
- Titanic
- Salt
- Waves
- Crab

Q

FUN FACTS ABOUT THE OCEAN . . .

- *Thanks to technology, we've been able to dive deeper into the ocean than ever before. Some of the strangest discoveries have been made and strange sea creatures have been discovered - they are often nicknamed "seamonsters" because of their strange and sometimes scary features!*
- *70% of the world is covered in salt water. This makes salt water ecosystems the largest on earth!.*
- *Off the coast of Greece and Egypt, divers discovered an Egyptian tombstone and other artifacts of a lost city named Heracleion. The city dates back to the 6th century BC.*
- *One pirate shipwreck off the coast of Columbia dates back to the 18th century. It is said to be worth anywhere between $4 billion and $17 billion.*
- *Because of war or a sinking cargo ship, many different things have been found at the bottom of the ocean: planes, trains, trucks, motorcycles and other interesting items. Many of these items become artificial reefs for sea life.*
- *The Saturn V rocket that launched the historic Apollo 11 mission to land the first men on the moon in 1969, dropped its 5 engines into the Atlantic Ocean and were thought to be lost forever. Using technology created by Amazon founder Jeff Bezos, they were finally found and recovered!*
- *A perfectly shaped Mayan pyramid, measuring 8.5 miles across one side of its base, was uncovered. It is believed that countless more pyramids, although not as big in size, are also expected to be beneath the water off the coast of Mexico.*

SOURCES

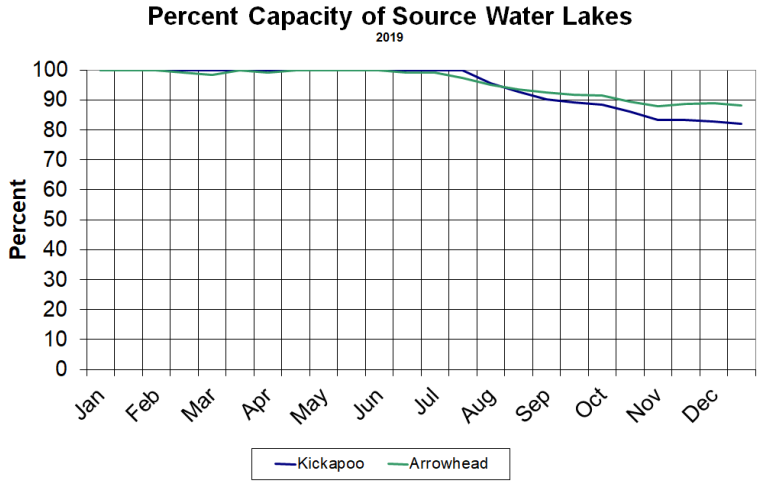
The City of Wichita Falls has previously only utilized two of its surface water reservoirs; Lake Arrowhead and Lake Kickapoo. While these two lakes have provided the citizens of Wichita Falls with a reliable source of drinking water for the last 60 years, the addition of Lake Kemp became possible in 2008 with new, advanced treatment technologies. In 2018,the addition of the indirect potable reuse project further bolstered the City's supply for years to come.

SOURCE WATER SUSCEPTIBILITY ASSESSMENTS

A Source Water Susceptibility Assessment for lakes Arrowhead, Kickapoo & Kemp 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 our drinking water source based on human activities and natural conditions. The information contained in the assessment allows the City of Wichita Falls to focus its source water protection strategies. Some of this source water assessment information will be available later this year on Texas Drinking Water Watch at http://dww2.tceq.texas.gov/DWW/. For more information on source water assessments and protection efforts at our system, please contact the City of Wichita Falls Public Works Department at 761-7477.

LAKE LEVELS

"What are the lake levels?" is one of the most frequently asked questions about the city's source waters. Below is a graph of both Lake Kickapoo & Arrowhead levels through the calendar year of 2019. If you would like to know the current lake levels at any time during the year, the city posts the current lake levels on its web site at www.wichitafallstx.gov/986/Lake-Levels.



NOTE: This graphic only includes data for calendar year 2019, and does not include the most recent increases from rainfall.

Lake Kickapoo

Lake Kickapoo is the first lake in the Little Wichita River watershed and has a drainage area of 275 square miles. Kickapoo was constructed in 1945, 18 miles southwest of Wichita Falls in Archer County. At its maximum capacity, Lake Kickapoo contains 106,000 acre feet (35 billion gallons) of water, which makes it the 56th largest fresh water reservoir (out of 119) in the State of Texas. It was named for the Kickapoo Indians and for Kickapoo Creek, which empties into the reservoir.

LAKE ARROWHEAD

Lake Arrowhead is the last lake in the Little Wichita River watershed and has a drainage area of 832 square miles. Construction on Lake Arrowhead began in 1965, 15 miles southeast of Wichita Falls, primarily in Clay County. At its maximum capacity, Lake Arrowhead contains 228,000 acre feet (74 billion gallons) of water, which makes it the 36th largest fresh water reservoir (out of 119) in the State of Texas.

LAKE KEMP

Lake Kemp is the largest lake in the Big Wichita River watershed and has a drainage area of 2,086 square miles. Construction of Lake Kemp was completed in 1924, 37 miles west of Wichita Falls. At its maximum capacity, Lake Kemp contains 245,308 acre feet (80 billion gallons) of water, which makes it the 35th largest fresh water reservoir (out of 119) in the State of Texas. It was named for Joseph A. Kemp, who sought its construction to alleviate flooding issues within Wichita Falls.

CRYPTOSPORIDIUM

Cryptosporidium is a microscopic parasite that can be found in the digestive tracts of animals. It is shed in the feces and when ingested by humans may result in diarrhea, cramps, fever, and other gastrointestinal symptoms. People with healthy immune systems usually recover within a couple of weeks. However, individuals with weakened immune systems may be unable to clear the parasite from their intestines and suffer a chronic and debilitating illness known as cryptosporidiosis. (NOTE: The table below is providing you data on monitoring the City of Wichita Falls has undertaken to keep track of certain protozoans in its source waters. The city has tested its source water and drinking water for these parasites since 1994.)

The EPA Source Water Protection Web site can be found at: www.epa.gov/sourcewaterprotection

Source Water Monitoring

	WICHITA FALLS WATER RESULTS		EPA REGULATIONS		
Constituent	Reportable Value	Range of Detection	Maximum Contaminant Level	Maximum Contaminant Level Goal	Analysis Year
Giardia; cysts Not naturally present in the environment	0	0 - 0	Not Regulated	0	2019
Cryptosporidium; oocysts Not naturally present in the environment	0.205	0 - 0.205	Not Regulated	0	2019

2019 WATER QUALITY ANALYSIS

The following tables contain all of the chemical and microbiological constituents which have been found in your drinking water for the calendar year 2019. The U.S. Environmental Protection Agency requires water systems to test up to 97 regulated constituents annually. Only sixteen (16) regulated constituents were detected in your water during 2019 and prior.

UNITS OF MEASURE

- Nephelometric Turbidity Unit (NTU): A measure of water's clarity. Turbidity in excess of 5 NTU is just noticeable to the average person.
- Parts per Million (ppm): A measure of the concentration of a substance roughly equivalent to one packet of sugar in 250 gallons of iced tea.
- Parts per Billion (ppb): A measure of the concentration of a substance roughly equivalent to one packet of sugar in an olympic-size swimming pool.
- PicoCuries per liter (pCi/L): A measure of the radioactivity of the water.

DEFINITIONS

- Maximum Contaminant Level (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.
- Maximum Contaminant Level Goal (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.
- 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.
- Action Level: The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

Regulated Compounds

These compounds either occur naturally within the watersheds or are products of human activities. Turbidity is a measure of the "cloudiness" of the water due to suspended material. The City of Wichita Falls monitors it because it is a good indicator of the effectiveness of our filtration systems. For the year 2019, 99% of the >4300 turbidity samples that were taken for regulatory compliance fell below the Treatment Technique of 0.3 NTU. Also, you will notice that some of our data, though representative, are more than one year old. The State of Texas allows the City of Wichita Falls to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

	Wichita Falls Water Results		EPA Regulations		
Constituent	Reportable Value	Range of Detection	Maximum Contaminant Level	Maximum Contaminant Level Goal	Analysis Year
Aluminum; ppm Natural Geology; Rock and Soil Erosion	0.024	0.012 - 0.024	0.2	0.2	2019
Barium; ppm Natural Geology; Drilling Waste	0.043	0.025 - 0.043	2	2	2019
Fluoride; ppm Water Additive; Natural Geology	0.66	0.66 - 0.66	4	4	2019
Nitrate; ppm Fertilizer Runoff; Septic Tanks; Animal Waste	0.49	0.08 - 0.49	10	10	2019
Nitrite; ppm Fertilizer Runoff; Septic Tanks; Animal Waste	0.07	<0.0008 - 0.065	1	1	2015
Total Organic Carbon; ppm Naturally Present in the Environment	15.78	<0.10 - 15.78	TT	N/A	
Turbidity; NTU Soil Runoff	0.31	0.05 - 0.31	TT = 0.3	N/A	2019
Combined Radium 226/228; pCi/L Decay of Natural & Man-Made Deposits	1	1 - 1	5	0	2011
Gross Beta Emitters; pCi/L Decay of Natural & Man-Made Deposits	8.4	8.4 - 8.4	50	0	2017

Regulated Disinfectants

The City of Wichita Falls utilizes Chloramines (Total Chlorine) and Chlorine Dioxide to inactivate disease causing viruses and bacteria in your drinking water. Disinfectants are monitored to ensure that they are adequately applied to the drinking water.

	Wichita Falls Water Results		EPA Regulations		
Constituent	Reportable Value	Range of Detection	MRDL	MRDLG	Analysis Year
Chlorine Dioxide; ppm Disinfectant	0.8	<0.01 - 0.80	0.8	0	2019
Chlorine (Total); ppm Disinfectant (MRDL for running annual average)	4	2.0 - 4.0	4	<4.0	2019

Regulated within the Distribution System

There were 3 regulated disinfection by-products that were detected in your drinking water in 2019. Disinfectants are very active compounds that not only inactivate disease causing organisms, but also react with other naturally occurring compounds in the source waters to produce new compounds referred to as disinfection by-products , or DBPs. The City of Wichita Falls takes great care in keeping the concentrations of these by-products below their regulated limits.

	Wichita Falls Water Results		EPA Regulations		
Constituent	Reportable Value	Range of Detection	Maximum Contaminant Level	Maximum Contaminant Level Goal	Analysis Year
Total Trihalomethane; ppb By-Product of Chlorination	42.9	27.1 - 42.9	80	0	2019
Haloacetic Acid 5; ppb By-Product of Chlorination	41.3	16.7 - 41.3	60	0	2019
Chlorite; ppm By-Product of Chlorine Dioxide	0.82	<0.02 - 0.82	1	0	2019

Lead and Copper

Lead and Copper are regulated at the consumer's tap under the Lead and Copper Rule of 1991. This monitoring is conducted every 3 years, and the City has completed 10 cycles of monitoring. The City of Wichita Falls has an effective program of corrosion control to keep these two metals from being leached out of your household plumbing.

	Wichita Falls Water Results		EPA Regulations		
Constituent	Reportable Value	90th Percentile	Maximum Contaminant Level	Maximum Contaminant Level Goal	Analysis Year
Lead; ppb Corrosion of Household Plumbing	2.8	2.8	15	0	2018
Copper; ppm Corrosion of Household Plumbing	0.085	0.085	1.3	1.3	2018

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. This water supply 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.

Regulated Microbiologicals

Coliform bacteria are naturally present in the environment.

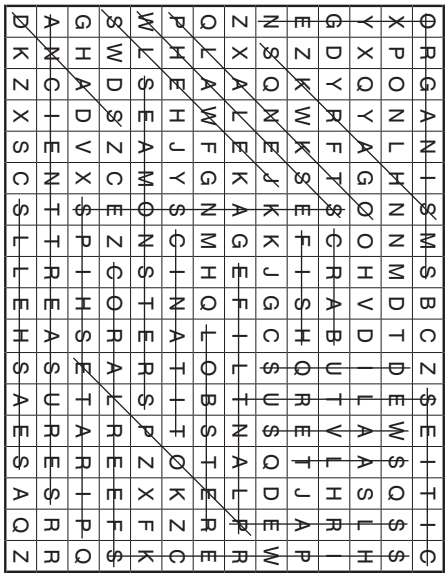
	Total Coliform Bacteria		*E. coli* Bacteria		
Constituent	MCL	Highest No. of Positive	MCL	Highest No. of Positive	Analysis Year
Coliform Bacteria	5	0	1	0	2019

Wichita Falls Water Loss

According to the Texas Water Development Board, “the Total Water Loss Control Program considers water loss from an environmental stewardship perspective, reviews public utility revenue loss, and promotes the protection of public health by eliminating the threat of sanitary defects associated with leaking or broken pipes.”

In the water loss audit submitted to the Texas Water Development Board for the time period of Jan-Dec 2019, the City of Wichita Falls lost an estimated 3.3% of water treated. The goal of maintaining water loss less than 15% was far exceeded.

Puzzle Answers



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