

# City of St. Louis Water Division Consumer Confidence Report 2021



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# CITY OF ST. LOUIS

## Water Quality Report

### 2021

In compliance with the Safe Drinking Water Act, the City of St. Louis Water Division is delivering this Water Quality Report to all its customers who receive water bills. **We ask that landlords, employers, and anyone else who receives the water bill for other water users share this report with them.**

To obtain additional copies, call (314) 771-2255.

The web address of the CCR on the internet is: <http://www.stlwater.com/confidence.php>.

The report summarizes information that your water system collects to comply with regulations, including information on water from the Missouri and Mississippi Rivers, the levels of detected contaminants, and compliance with drinking water rules.

#### ST. LOUIS CITY WATER - A HISTORY OF EXCELLENCE

The Water Division is a branch of the St. Louis City government's Department of Public Utilities. Since 1835, we have been dedicated to supplying the highest quality water to our customers. We are proud to say that in **2021**, our water met or exceeded the standards set by the U.S. Environmental Protection Agency and the Missouri Department of Natural Resources. **In fact, we have never violated a water quality regulation in 117 years of testing.**

Our scientists constantly monitor and test the water for over 150 possible contaminants. We analyze the water where it enters the plant as raw river water, throughout the treatment process, and at multiple points throughout the city. The frequency and thoroughness of these tests exceed federal regulations for water quality monitoring. **Water quality monitoring of St. Louis City water in 2021 indicated that no compounds were detected above the allowable levels set by federal and state regulations.**

The City of St. Louis Water Division is proud to be a charter member of the Partnership for Safe Water. In 1994, this organization was formed by 187 surface water utilities, several drinking water organizations, including the American Water Works Association and the Environmental Protection Agency. The Partnership's goal is to provide a new measure of safety to millions of Americans by improving water quality nationwide.

#### WHERE DOES THE WATER COME FROM?

The City of St. Louis Water Division has two water treatment plants. The Howard Bend Plant draws water from the Missouri River. The Chain of Rocks Plant is located on the Mississippi River, south of the confluence of the Missouri and Mississippi Rivers. The water reaching our intakes at the Chain of Rocks Plant is primarily Missouri River water because the two rivers have not fully mixed when the water reaches the plant. Together, the two plants produce an average of 112 million gallons of water each day.

## **SOURCE WATER ASSESSMENT INFORMATION**

In 2004, the Missouri Department of Natural Resources (DNR) conducted a source water assessment to determine susceptibility of our source water to contamination. You can acquire the complete results by calling DNR at 1-800-361-4827 or the information can be viewed on the internet at: <https://drinkingwater.missouri.edu>. Our system I.D. is: 6010715. The assessment has determined that our river water source is susceptible due to the presence of potential contaminant sources. The City of St. Louis employs all available measures at its disposal to remove contamination at intakes and during the treatment process. The drinking water produced at our facilities consistently meets or exceeds all Safe Drinking Water Standards.

## **WHAT ABOUT CONTAMINANTS?**

All 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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

## **GIARDIA AND CRYPTOSPORIDIUM**

Giardia and Cryptosporidium are microscopic parasites that, when ingested, can result in fever, diarrhea, and other gastrointestinal complications. These organisms are found in all rivers and streams and come from animal wastes in the watershed. They are removed by effective treatment including deactivation with chlorine and precipitative softening, sedimentation, flocculation and filtration. Previous monitoring performed monthly did not detect any Cryptosporidium or Giardia in samples collected after the first stage of our multi-stage, multiple barrier treatment process at either of the City's water purification plants. Prior monitoring showed that neither cysts nor oocysts were detected in our finished water.

## **HEALTH RISKS**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons can be particularly at risk from infections; such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly individuals, and infants. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

## LEAD IN DRINKING WATER

The City of St. Louis Water Division has optimized its treatment process so that the corrosion of internal plumbing is highly unlikely. However, if present, elevated levels of lead can cause serious health problems. *Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.*

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of St. Louis Water Division 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>.

## FLUORIDATION

Since 1953, in accordance with St. Louis City Revised Code Chapter 11.26, the City of St. Louis Water Division has been fluoridating our customers' drinking water. Our goal was to provide fluoridated drinking water to a target level of 1 mg/L. In December 2010, the United States Department of Health and Human Services released a report recommending that fluoridation levels in drinking water should be set at 0.7 mg/L. In January 2012, the City of St. Louis Water Division under the direction of the City of St. Louis Health Department reduced the fluoridation goal to 0.6 mg/L.

## READING THE TABLES

The first table reports only regulated substances that have been found in measurable quantities in St. Louis City's finished drinking water. While we test for 150 possible contaminants, traces of only **17** were detected in **2021**. The results of the detected contaminants are listed in the table. **All contaminants were detected in concentrations well below safe and acceptable limits.**

The second table lists the Highest Locational Running Annual Average (LRAA) for Disinfection Byproducts at each of our distribution monitoring locations.

The third table, "Optional Monitoring (not required by EPA)", lists non-regulated substances whose concentrations have been of interest by consumers.

**DATA FOR 2021 WATER QUALITY REPORT - City of St. Louis Water Division - MO6010715**

<b>Detected Contaminants (units)</b>	<b>MCL</b>	<b>MCLG</b>	<b>Maximum Level Detected</b>	<b>Range</b>	<b>Major Sources of Contaminants</b>
<b>Inorganic Compounds</b>					
Antimony (Total, µg/L)	6	6	0.24	0.23 – 0.24	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (µg/L)	10	0	0.95	0.66 – 0.95	Erosion of natural deposits
Barium (mg/L)	2	2	0.0102	0.0092– 0.0102	Erosion of natural deposits
Chromium (Total, µg/L)	100	100	1.58	1.41 – 1.58	Erosion of natural deposits, Industrial discharge
Selenium (µg/L)	50	50	1.72	1.67 – 1.72	Erosion of natural deposits, Industrial discharge
Fluoride (mg/L)	4	4	0.77	0.15 – 0.77	Water additive for dental health
Nickel (µg/L)	100	100	0.89	0.85 – 0.89	Erosion of natural deposits, Industrial discharge
Nitrate+Nitrite (as mg/L N)	10	10	1.14	1.05 – 1.14	Natural Deposits; Fertilizer runoff
Lead (µg/L)* (2020)	AL = 15	0	90 <sup>th</sup> Percentile = 1.03	Number of samples above AL=0 Range: ND – 6.62	Corrosion of household plumbing
Copper (µg/L)* (2020)	AL = 1,300	1,300	90 <sup>th</sup> Percentile = 21.3	Number of samples above AL=0 Range: 2.0 – 53.0	Corrosion of household plumbing
<b>Organic (Synthetic) Compounds</b>					
Atrazine (µg/L)	3	3	1.92	ND – 1.92	Herbicide runoff from row crops
<b>Disinfectant/Disinfection Byproducts – See additional table for Total Trihalomethanes and Haloacetic Acids (5) on page 6</b>					
Chloramine (mg/L)	MRDL = 4	MRDLG = 4	3.61	2.15 – 3.61	Disinfectant used to treat water
Total Trihalomethanes (µg/L)	80	N/A	29.7	6.3 –29.7	By-product of disinfection
Haloacetic Acids (5) (µg/L)	60	N/A	33.2	9.5 – 33.2	By-product of disinfection
<b>Microbiological Data</b>					
Total Coliform Bacteria (% positive samples)	5% of monthly samples positive	0	Highest Month: ND Annual Average: 0.00%		Naturally present in the environment
Total Organic Carbon (mg/L)	TT (Required min. 15% TOC removal from source water)	N/A	3.81	2.14 – 3.81	Naturally present in the environment
			Annual Avg. Percent removal = 30.4%		
Turbidity (NTU)**	TT (1NTU)**	N/A	Highest Level = 0.11		Soil runoff
	TT = 95% of monthly samples <0.3NTU		Percentage of samples below 0.3NTU = 100%		
<b>Radioactive Contaminants</b>					
Gross Alpha Particle Activity, Total (pCi/L) Year 2013*	15	0	Not Detected	N/A	Erosion of natural deposits
Total Uranium (µg/L) Year 2013*	30	0	Not Detected	N/A	Erosion of natural deposits

**Disinfection Byproducts by Location**

<b>Disinfection Byproducts</b>	<b>Sample Point</b>	<b>LRAA</b>	<b>Range of Sampled Result(s) (low – high)</b>	<b>Unit</b>	<b>MCL</b>	<b>MCLG</b>	<b>Typical Source</b>
(HAA5)	DBPDUAL01	23	11.1 – 28.3	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL02	21	9.5 – 29.0	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL03	26	11.4 -30.3	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL04	24	11.5 -26.8	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL05	23	11.0 – 27.5	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL06	22	10.0 – 32.7	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL07	22	10.9 -28.9	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL08	22	12.6 – 27.0	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL09	21	10.0 – 31.3	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL10	25	11.2 – 29.7	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL11	22	11.0 – 33.2	ppb	60	0	By-product of disinfection
(HAA5)	DBPDUAL12	22	9.5 – 30.5	ppb	60	0	By-product of disinfection
TTHM	DBPDUAL01	15	8.4 – 26.0	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL02	15	6.8 -25.7	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL03	15	7.7 -20.7	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL04	15	6.7 -19.1	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL05	15	6.8 - 19.3	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL06	15	6.6 – 26.4	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL07	14	6.8 -19.5	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL08	15	7.8 -18.6	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL09	15	6.6 – 26.8	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL10	15	7.4 – 21.2	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL11	15	7.3 – 29.7	ppb	80	0	By-product of disinfection
TTHM	DBPDUAL12	15	6.3 – 23.8	ppb	80	0	By-product of disinfection

### Optional Monitoring (not required by EPA)

Secondary Contaminants	MCL	Average Level Detected	Range
Alkalinity, Total (mg/L)	N/A	56	23 - 110
Aluminum (mg/L)	N/A	0.0021	0.0018 – 0.0023
Calcium (mg/L)	N/A	27.8	17.2 – 44.4
Chloride (mg/L)	250	26.3	20.1 – 34.8
Conductivity (µS/cm)	N/A	478	293 - 675
Hardness, Total (mg/L as CaCO <sub>3</sub> )	N/A	133	88 - 198
Iron (mg/L)	0.3	N.D.	N.D.
Magnesium (mg/L)	N/A	15.4	4.4 – 28.7
Manganese (µg/L)	50	N.D.	N.D.
Non Carbonate Hardness (mg/L as CaCO <sub>3</sub> )	N/A	76	23 - 121
pH	N/A	9.57	8.89 – 10.22
Potassium (mg/L)	N/A	4.66	3.97 – 5.81
Sodium (mg/L)	N/A	42.2	23.8 – 61.8
Solids, Total Dissolved (TDS) (mg/L)	500	294	201 - 382
Sulfate (mg/L)	250	133	92.1 - 187

### PFAS/PFOS Monitoring (Not required by EPA)

In August of 2021, the City of St. Louis Water Division conducted PFAS/PFOS monitoring of our source waters and finished water by an outside laboratory using EPA Method 537.1 for the following contaminants:

11CI-PF3OUdS, 9CI-PF3ONS, ADONA, HFPO-DA, NEtFOSAA, NMeFOSAA, Perfluorobutanesulfonic acid, Perfluorodecanoic acid, Perfluorohexanoic acid, Perfluorododecanoic acid, Perfluoroheptanoic acid, Perfluorohexanesulfonic acid, Perfluorononanoic acid, Perfluorooctanesulfonic acid, Perfluorooctanoic acid, Perfluorotetradecanoic acid, Perfluorotridecanoic acid, Perfluoroundecanoic acid.

None of the above contaminants were detected in any of our samples above the minimum reporting levels. For more information concerning PFAS/PFOC can be found at: <https://www.epa.gov/pfas>

## DEFINITIONS:

**(AL) Action Level:** The concentration of a compound that triggers a treatment technique or other requirement that a water system must follow.

**(DL) Detection Limit:** The smallest amount of a compound that can accurately be measured by the test method used.

**(LRAA):** Locational Running Annual Average

**(MCL) Maximum Contaminant Level:** The highest level of a compound allowed in drinking water.

**(MCLG) Maximum Contaminant Level Goal:** The level of a contaminant in drinking water below which there is no known risk to health.

**(MRDL) Maximum Residual Disinfectant Level:** The highest level of a disinfectant allowed in drinking water.

**(MRDLG) Maximum Residual Disinfectant Level Goal:** The level of a drinking water disinfectant below which there is no known or expected risk to health.

**(µg/L) Microgram per Liter:** One part per billion or 1 cent in \$10,000,000.

**(mg/L) Milligram per Liter:** One part per million or 1 cent in \$10,000.

**(mg/L as CaCO<sub>3</sub>):** Expressed as the equivalent in mg/L of Calcium Carbonate.

**(as N mg/L):** Expressed as the total amount of Nitrogen in mg/L.

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

**(ND) None Detected:** The concentration of a compound is less than the smallest amount that can be measured by the test method used.

**(N/A) Not Applicable:** This heading is not needed for this contaminant.

**(NTU) Nephelometric Turbidity Units:** The measurement of the amount of light scattered when a beam of light is directed through a water sample.

**Range:** The highest and lowest results detected for the contaminant.

**(TOC):** Total Organic Carbon.

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

**\*The State of Missouri** has reduced monitoring requirements for certain contaminants to less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. The Lead and Copper Survey is repeated every three years. These results are the 90<sup>th</sup> percentile of the Lead and Copper Survey samples tested in 2020 for the Lead and Copper Rule. The 90<sup>th</sup> percentile means 90 percent of the samples had levels less than the values shown. Radioactive Contaminants are monitored once every nine years.

**\*\*Turbidity:** Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. The maximum turbidity allowable is 1 NTU for a single sample and 0.3 NTU at the 95<sup>th</sup> percentile.