

Our Water Sources



CARTER LAKE
(SURFACE WATER-INTAKE)



SOUTH BOULDER CREEK
(SURFACE WATER-INTAKE)

Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact CORY PETERSON at 303-335-4610 with any questions or for public participation. For more information visit: LouisvilleCO.gov/Water.

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Annual Drinking Water Report

Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.

Public Water System ID: C00107487

2022 Annual Drinking Water Quality Report For Calendar Year 2021

General Information
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 the 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 (1-800-426-4791) or by visiting epa.gov/ground-water-and-drinking-water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants, call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

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. Contaminants that may be present in source water include:

- **Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants:** 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:** may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.
- **Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- **Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.



In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Lead in Drinking Water
If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. 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. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at www.epa.gov/safewater/lead.

Source Water Assessment and Protection (SWAP)
The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the

report please visit wqcdcompliance.com/ccr. The report is located under "Guidance: Source Water Assessment Reports". Search the table using 107487, LOUISVILLE CITY OF, or by contacting CORY PETERSON at 303-335-4610. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that **could** occur. It **does not** mean that the contamination **has or will** occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed on the next page.

Please contact us to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Quality Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued customers, to be informed about the services we provide and the quality water we deliver to you every day.

2021 Test Results

The City of Louisville routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2021 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If not tables appear in this section then no contaminants were detected in the last round of monitoring.

TERMS AND ABBREVIATIONS

Maximum Contaminant Level (MCL) – The highest level of a contaminant allowed in drinking water.

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

Health-Based – A violation of either a MCL or TT.

Non-Health-Based – A violation that is not a MCL or TT.

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.

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.

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 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 contaminants.

Violation (No Abbreviation) – Failure to meet a Colorado Primary Drinking Water Regulation.

Formal Enforcement Action (No Abbreviation) – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.

Variance and Exemptions (V/E) – Department permission not to meet a MCL or treatment technique under certain conditions.

Gross Alpha (No Abbreviation) – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.

Picocuries per liter (pCi/L) – Measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.

Compliance Value (No Abbreviation) – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).

Average (x-bar) – Typical value.

Range (R) – Lowest value to the highest value.

Sample Size (n) – Number or count of values (i.e. number of water samples collected).

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

Parts per billion = Micrograms per liter (ppb = ug/L) – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Not Applicable (N/A) – Does not apply or not available.

Level 1 Assessment – 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.

Level 2 Assessment – 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.

Disinfectants Sampled in the Distribution System							
TT Requirement: At least 95% of samples per period (month or quarter) must be at least 0.2 ppm OR If sample size is less than 40 no more than 1 sample is below 0.2 ppm Typical Sources: Water additive used to control microbes							
Disinfectant (Unit)	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL	Typical Sources
Chlorine	December 2021	Lowest period percentage of samples meeting TT requirement: 100%	0	23	No	4.0 ppm	Water additive used to control microbes

Lead and Copper Sampled in the Distribution System							
Contaminant (Unit)	Time Period	90th Percentile	Sample Size	90th Percentile AL	Sample Sites Above AL	90th Percentile AL Exceedance	Typical Sources
Copper (ppm)	02/26/2021 to 06/30/2021	0.05	66	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	02/26/2021 to 06/30/2021	1.3	66	15	0	No	

Disinfection Byproducts Sampled in the Distribution System								
Name (Unit)	Year	Average	Range: Low - High	Sample Size	MCL	MCLG	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2021	17.14	13.1 to 20.5	16	60	N/A	No	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM)	2021	37.01	21.9 to 54.4	16	80	N/A	No	Byproduct of drinking water disinfection
Chlorite	2021	0.36	0.19 to 0.61	12	1	0.8	No	Byproduct of drinking water disinfection

Total Organic Carbon (Disinfection Byproducts Precursor) Removal Ratio of Raw and Finished Water								
Contaminant (Unit)	Year	Average	Range: Low - High	Sample Size	Unit of Measure	TT Minimum Ratio	TT Violation	Typical Sources
Total Organic Carbon Ratio	2021	1.48	1.22 to 1.79	7	Ratio	1	No	Naturally present in the environment
*If minimum ratio not met and no violation identified then the system achieved compliance using alternative criteria.								

Summary of Turbidity Sampled at the Entry Point to the Distribution System					
Contaminant	Sample Date	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	Date/Month: Dec	Highest single measurement: 16.105 NTU	Maximum 1 NTU for any single measurement	No	Soil Runoff
Turbidity	Month: Dec	Lowest monthly percentage of samples meeting TT requirement for our technology: 98%	In any month, at least 95% of samples must be less than 0.3 NTU	No	

Radionuclides Sampled at the Entry Point to the Distribution System								
Contaminant (Unit)	Year	Average	Range: Low - High	Sample Size	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha pCi/L	2020	0.8	0.7 to 0.9	2	15	0	No	Erosion of natural deposits
Combined Radium pCi/L	2020	1.2	0.8 to 1.6	2	5	0	No	

Inorganic Contaminants Sampled at the Entry Point to the Distribution System								
Contaminant Name	Year	Average	Range Low - High	Sample Size	Unit of Measure	MCL	MCLG	Typical Sources
Barium (ppm)	2021	0.03	0.02 to 0.03	2	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	2021	0.37	0 to 0.74	2	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Violations, Significance Deficiencies, and Formal Enforcement Actions	
Health Based Violations	
Maximum contaminant level (MCL) violations: Test results for this contaminant show that the level was too high for the time period shown. Please read the information shown below about potential health effects for vulnerable populations. This is thesame violation that we told you about in a past notice. We are evaluating, or we already completed an evaluation, to find the best way to reduce or remove the contaminant. If the solution will take an extended period of time, we will keep you updated with quarterly notices.	
Treatment technique (TT) violations: We failed to complete an action that could affect water quality. Please read the information shown below about potential health effects for vulnerable populations. This is the same violation that we told you about in a past notice. We were required to meet a minimum operation/treatment standard, we were required to make upgrades to our system, or we were required to evaluate our system for potential sanitary defects, and we failed to do so in the time period shown below. If the solution will take an extended period of time, we will keep you updated with quarterly notices. **Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.	

Secondary Contaminants**					
**Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.					
Contaminant Name	Year	Average	Range: Low - High	Sample Size	Secondary Standard
Sodium (ppm)	2021	18.65	18.2 to 19.1	2	N/A

Unregulated Contaminants***				
EPA has implemented the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act. EPA uses the results of UCMR monitoring to learn about the occurrence of unregulated contaminants in drinking water and to decide whether or not these contaminants will be regulated in the future. The City performed monitoring and reported the analytical results of the monitoring to EPA in accordance with its Unregulated Contaminant Monitoring Rule (UCMR). Once EPA reviews the submitted results, the results are made available in the EPA's National Contaminant Occurrence Database (NCOD) (epa.gov/dwucmr/national-contaminant-occurrence-database-ncod) Consumers can review UCMR results by accessing the NCOD. Contaminants that were detected during our UCMR sampling and the corresponding analytical results are provided below.				
Contaminant Name	Year	Average	Range Low - High	Sample Size
Anatoxin-a (Ug/L)	2020	<0.0300	<0.0300	11
Cylindrospermopsin (Ug/L)	2020	<0.0900	<0.0900	11
Total Microcystins & Nodularins (Ug/L)	2020	<0.300	<0.300	11
CVTM (%CV)	2020	1.79	0.2 - 5.3	11
****More information about the contaminants that were included in UCMR monitoring can be found at: drinktap.org/Water-Info/Whats-in-My-Water/Unregulated-Contaminant-Monitoring-Rule-UCMR. Learn more about the EPA UCMR at: epa.gov/dwucmr/learn-about-unregulated-contaminant-monitoring-rule or contact the Safe Drinking Water Hotline at (800) 426-4791 or epa.gov/ground-waterand drinking-water.				

Name	Description	Time Period	Health Effects	Compliance Value	TT Level or MCL	Steps Taken
TURBIDITY	EXCEEDED TURBIDITY (CLOUDINESS) LEVELS FOR SURFACE WATER FILTRATION	12/02/2021 - 12/31/2021	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-easing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.	N/A	N/A	During the Marshall Fire, Louisville's water system experienced extreme demand from firefighting efforts. Despite the efforts to keep water pressure up for firefighting, the system continued to lose pressure as the fire damaged the system. One of the emergency measures taken to restore pressure to the system to assist firefighting efforts was to release untreated Marshall Reservoir water into the distribution system. These actions, which were focused on the prevention of loss of life and property, resulted in the failure to meet the Colorado Department of Public Health and Environment (CDPHE) requirements for filtration and disinfection.
CHLORINE/CHLORAMINE	FAILURE TO MAINTAIN MINIMUM TREATMENT FOR SURFACE WATER FILTRATION AND DISINFECTION	12/02/2021 - 12/31/2021	Disinfected residual serves as one of the final barriers to protect public health. Lack of an adequate disinfected residual may increase the likelihood that disease-causing organisms are present.	MC/L	MC/L	As an immediate response to untreated water entering the system, a boil water advisory was issued on 12/30/2021. The entire drinking water distribution system was flushed of this untreated water and water testing was conducted under CDPHE guidance. Test results provided the necessary verification that the water system was safe and the boil water advisory was lifted on 1/6/2022. The immediate responses related to the fire and boil order have addressed these issues.
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENT - M617	12/02/2021 - 12/31/2021	We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connection can lead to inadvertent contamination of the drinking water. This is due to one or more of the following: We have permitted an uncontrolled cross connection, AND/OR we have installed or permitted an uncontrolled cross connection, AND/OR we failed to comply with the requirements for surveying our system for cross connections, AND/OR we failed to complete the testing requirements for backflow prevention devices or methods.	N/A	N/A	There were six (6) failed assemblies identified in 2021 that have not been repaired, notices were provided in April 2022 with a deadline of repair by May 2022 (M617); the City's testing ratio for 2021 was 0.77, missing the compliance ratio of 0.90. The City is currently on track for full compliance in 2022 (M614).
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENT - M614	12/02/2021 - 12/31/2021	We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connection can lead to inadvertent contamination of the drinking water. This is due to one or more of the following: We have permitted an uncontrolled cross connection, AND/OR we have installed or permitted an uncontrolled cross connection, AND/OR we failed to comply with the requirements for surveying our system for cross connections, AND/OR we failed to complete the testing requirements for backflow prevention devices or methods, AND/OR we failed to notify the State Health Dept or a backflow contamination event.	N/A	N/A	