

2023

WATER *Quality* REPORT





Dear Golden Residents,

As your local water provider, City of Golden Water is committed to ensuring that you have access to safe and high-quality drinking water. As part of this commitment, we are pleased to present to you our annual water quality report for 2023.

At City of Golden Water, we take pride in delivering water that meets or surpasses all applicable water quality requirements. Your health and well-being are our top priorities, and we remain dedicated to maintaining the highest standards of water safety and reliability. In 2023, City of Golden Water participated in the EPA's Unregulated Contaminant Monitoring Rule (UCMR) program. We sampled quarterly for 29 different per-and-polyfluoroalkyl substances, known as PFAS or forever chemicals. City of Golden Water had zero detections for any of the 29 PFAS chemicals in our raw source water from Clear Creek or in our finished drinking water.

We encourage you to take the time to review this report thoroughly. If you have any questions or concerns regarding the information provided, please do not hesitate to contact us. Your feedback is invaluable as we strive to continuously improve our services and ensure your confidence in the water we provide.

Thank you for your continued trust in City of Golden Water. Together, we can ensure a healthy and sustainable future for our community.

Sincerely,

Anne Beierle

Anne Beierle
Director of Public Works
City of Golden Water



REGULATED WATER DRINKING QUALITY

In accordance with regulations set forth by the Environmental Protection Agency (EPA), City of Golden Water is obligated to provide this report which offers comprehensive information about the quality of your drinking water, including its source, contents, and compliance with rigorous state and federal standards. City of Golden Water values the trust that the public has placed in us, and we understand and embrace our obligation to provide responsible stewardship of our infrastructure and environment.



Partnering for Transparency



The Partnership for Safe Water is a voluntary, unprecedented alliance of six prestigious drinking water organizations to improve the quality of water delivered to customers by optimizing water system operations. Over its 25 years as stewards of operational

excellence, the Partnership assists organizations improve water treatment processes and distribution systems in an innovative, thoughtful and safe manner. The Partnership offers self-assessment and optimization programs so that operators, managers and administrators have the tools to improve performance beyond proposed regulatory levels.

The City of Golden Water Treatment Plant received the

20-Year Director's Award with the Partnership, which is determined by a peer-reviewed self-assessment of plant operations and water quality data. The Director's Award establishes utilities as high-performing providers of safe drinking water.

The Partnership for Safe Water's Distribution System Optimization Program provides resources and support to help utilities optimize distribution system operation and performance. The City of Golden is currently working towards Phase 1 recognition as part of this program.

Subscribers who complete the Partnership's comprehensive self-assessment process are recognized for their commitment to optimization and public health protection - strengthening trust with the communities they serve.

Immunocompromised People

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 (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 800-426-4791.

THE VITAL SOURCE OF OUR DRINKING WATER

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Golden's source water is predominantly snowmelt from Clear Creek and its tributaries.



The Clear Creek watershed spans four counties covering an area of 575 square miles, with 400 square miles located in the 'upper' watershed in the mountains west of Golden. Nearly two thirds of the upper Clear Creek watershed lies within the Arapaho & Roosevelt National Forests; the rest of this mountainous region is covered by a patchwork of private, municipal, county, and state lands. Clear Creek and its tributaries serve as the primary drinking water supply for multiple towns and municipalities in addition to Golden, serving over 450,000 Colorado residents.

SOURCE WATER ASSESSMENT AND PROTECTION

The Colorado Department of Public Health and Environment (CDPHE) completed a Source Water Assessment Report for Golden's water supply. The 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. A copy of this report is available by contacting our water quality staff at **303-384-8181** or by email at **esdiv@cityofgolden.net**.

Potential sources of contamination include Environmental Protection Agency (EPA) Superfund sites, EPA identified abandoned contaminated sites, EPA identified hazardous waste generators, EPA identified chemical inventory/storage sites, permitted wastewater discharge sites, aboveground, underground, and leaking storage tank sites, solid waste sites, existing/abandoned mine sites, commercial/industrial/transportation, residential areas, urban recreational grasses or fallow, quarries/strip mines/gravel pits, row crops, pasture/hay, deciduous, evergreen, and mixed forests, septic systems, oil/gas wells, and road miles.

LEAD IN DRINKING WATER

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. City of Golden Water is responsible for providing high quality drinking water and removing city owned lead pipes but cannot control the variety of materials used in the service line to your home or plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water.

If you are concerned about lead in your water and wish to have your water tested, **contact Kerry Major at 303-384-8182**. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

Potential Contaminants IN DRINKING WATER

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.

2023 WATER QUALITY MONITORING RESULTS

The City of Golden routinely monitors for contaminants in your drinking water according to Federal and State laws. The following tables show all detections found in 2023 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. For more information, call the Water Quality Lab at 303-384-8181, or contact Kerry Major at 303-384-8182.

DETECTED REGULATED SUBSTANCES

ORGANIC/INORGANIC	MCL VIOLATION	DATA	AVERAGE	RANGE FOUND	UNIT	MCL	MCLG	COMMON SOURCES
Barium, ppm	No	2022	0.03	0.03 - 0.03	ppm	2	2	Erosion of natural deposits
Fluoride, ppm	No	2022	0.32	0.32 - 0.32	ppm	4	4	Erosion of natural deposits
Total organic carbon (TOC), ratio (TOC reported as a ratio, must remain above 1.0 for optimal water treatment)	No	2023, sampled weekly	1.42	1.00 - 1.97	ppm	TT minimum ratio 1.0	TT	Naturally present in the environment

RADIONUCLIDES	VIOLATION	SAMPLE DATE	AVERAGE	RANGE FOUND	UNIT	MCL	MCLG	COMMON SOURCES
Combined Radium (226 & 228)	No	2020	1.6	1.6 - 1.6	pCi/L	5	0	Erosion of natural deposits
Gross Alpha	No	2020	0.2	0.2 - 0.2	pCi/L	15	0	Erosion of natural deposits
Combined Uranium	No	2020	<1.0	<1.0 - <1.0	ug/L	20	0	Erosion of natural deposits

SUMMARY OF TURBIDITY SAMPLES AT THE ENTRY POINT TO THE DISTRIBUTION SYSTEM

CONTAMINANT	VIOLATION	SAMPLE DATE	LEVEL FOUND	TT REQUIREMENT	COMMON SOURCES
Turbidity (<i>measurement of the cloudiness of water. It is a good indication of the effectiveness of our filtration system</i>)	No	January 2023	Highest single measurement: 0.195 NTU	Maximum 1.0 NTU for any single measurement	Soil runoff
Turbidity	No	December 2023	Lowest monthly percentage of samples meeting TT requirements for our technology: 100%	In any month, at least 95% of samples must be less than 0.3 NTU	Soil runoff



DETECTED REGULATED SUBSTANCES

DISINFECTION BYPRODUCTS	VIOLATION	SAMPLE DATE	HIGHEST COMPLIANCE VALUE (LRAA)	RANGE OF COMPLIANCE VALUES (LRAA)	RANGE OF INDIVIDUAL SAMPLES	AVERAGE OF INDIVIDUAL SAMPLES	MCL		COMMON SOURCES
Total Trihalomethanes, ppb	No	2023, sampled quarterly	42.37	32.55 - 42.37	24.3 - 51.5	39.30	80	N/A	Byproduct of drinking water disinfection
Total Haloacetic Acids, ppb	No	2023, sampled quarterly	12.07	9.22 - 12.07	7.7 - 13.9	11.19	60	N/A	Byproduct of drinking water disinfection

DISINFECTANTS SAMPLED IN THE DISTRIBUTION SYSTEM

TT REQUIREMENTS: 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. Golden sample size is 43.
 Typical Sources: Water additive used to control microbes.

DISINFECTANT	VIOLATION	SAMPLE DATE	HIGHEST	AVERAGE	RANGE FOUND	MCL	MCLG	COMMON SOURCES
Chlorine, free (ppm)	No	Throughout the year	1.56	1.12	0.48 - 1.56	MRDL 4	MRDLG 4	Drinking water disinfectant

CONTAMINANT NAME AND UNIT	VIOLATION	SAMPLE DATE	CONCENTRATION AT 90TH PERCENTILE	NUMBER OF EXCEEDANCES AT 90TH PERCENTILE	AL	COMMON SOURCES
Lead, ppb	No	6/3/2021 - 8/19/2021	0	0	15	Corrosion of household plumbing
Copper, ppm	No	6/3/2021-8/19-2021	0.02	0	1.3	Corrosion of household plumbing



OTHER MONITORING RESULTS AND SECONDARY CONTAMINANTS

Monitored Leaving the Water Treatment Plant

Secondary standards, or secondary maximum contaminant levels (SMCL), 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.

ANALYTE & UNIT	SAMPLE DATE	AVERAGE	RANGE FOUND	MCL	SMCL	COMMON SOURCES
Alkalinity, ppm	Weekly	37.7	22.0 - 51.2	N/A	None	Erosion of natural deposits
Barium, ppm*	Monthly	0.04	0.02 - 0.06	2	None	Erosion of natural deposits
Chloride, ppm	Quarterly	43.0	19.7 - 69.0	N/A	250 ppm	Erosion of natural deposits
Fluoride, ppm*	Quarterly	0.54	0.34 - 0.66	4	2 ppm	Erosion of natural deposits
Hardness, ppm	Weekly	116	46 - 161	N/A	None	Erosion of natural deposits
Iron, ppm	Quarterly	0.0146	0.0028 - 0.0265	N/A	0.3 ppm	Erosion of natural deposits
Manganese, ppm	Quarterly	0.008	<0.005 - 0.01	N/A	0.05 ppm	Treatment
pH, SU	Weekly	8.56	7.63 - 9.11	N/A	6.5 - 8.5 SU	Treatment
Potassium, ppm	Quarterly	2.8	1.8 - 3.4	N/A	None	Erosion of natural deposits
Sodium, ppm	2022	17	17 - 17	N/A	None	Erosion of natural deposits
Sulfate, ppm	Quarterly	84.9	44.4 - 104	N/A	250 ppm	Erosion of natural deposits
(TDS), ppm	Quarterly	267	149 - 352	N/A	500 ppm	Erosion and storm water runoff
Zinc, ppm	Quarterly	0.05	0.02 - 0.11	N/A	5 ppm	Erosion of natural deposits

* Required to be monitored for every 9 years, but your water utility monitors them more frequently. Those more frequent monitoring results are included in this table.



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.

We 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	SAMPLE DATE	AVERAGE	RANGE FOUND	SAMPLE SIZE	UNIT
Lithium	2023	22.3	11.6 - 33.5	4	ppm

MONITORING FOR FOREVER CHEMICALS

Perfluoroalkyl and polyfluoroalkyl substances, also known as PFAS, are human-made chemical compounds that have been used for decades to repel water, grease, and oil. A few products that contain PFAS include carpets, fire-fighting foam, water resistant clothing, nonstick cookware, and food packaging. Because these chemicals cannot break down easily, they have been nicknamed “forever chemicals.” Although they were made to make our lives easier, researchers have found that there may be health effects associated with exposure to some PFAS. **During the latest round of UCMR monitoring, Golden sampled quarterly for 29 different PFAS chemicals in our source water and finished drinking water and had zero detections for any of the compounds.**



Glossary of 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: Failure to meet a Colorado Primary Drinking Water Regulation.

Formal Enforcement Action: 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: 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: 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.

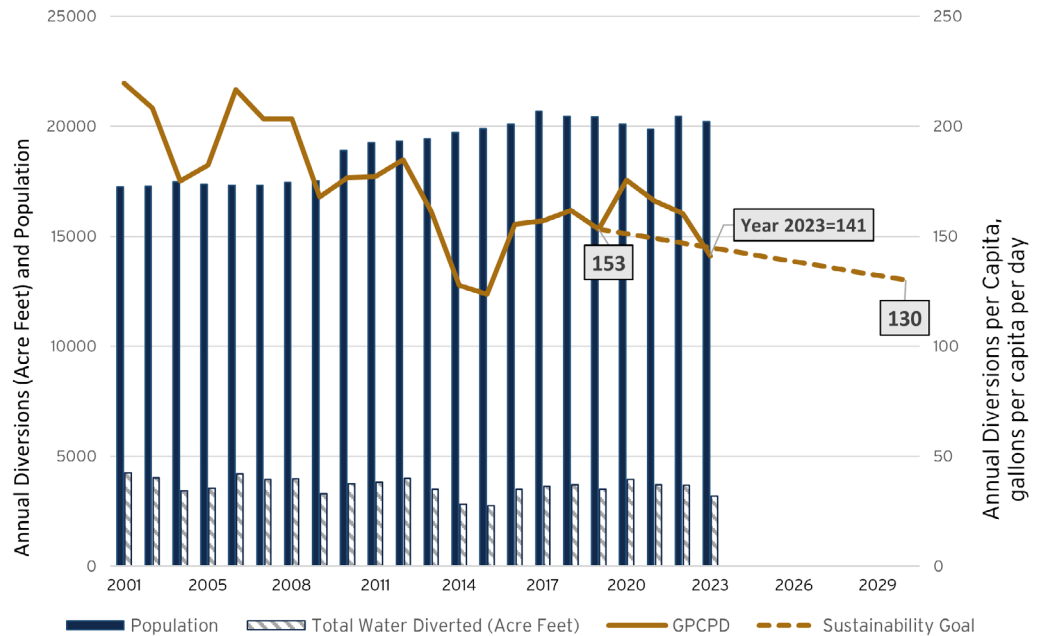
Not Applicable (N/A): Does not apply or not available.

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.

Looking Back

In 2019, Golden updated its sustainability goals to reduce total per capita water use in Golden by at least 15% by 2030. Golden's overall water consumption has steadily decreased over the last 20 years even though our population has steadily increased.



WATER SUPPLY OUTLOOK 2024

Golden's water supply from Clear Creek relies on snowpack. Golden's reservoirs are expected to be full at the end of the 2023-2024 water year going into the summer season. Golden's water supply looks sustainable if we continue to use it wisely.

IRRIGATION WATER SAVINGS

A large portion of Golden's water demand is dedicated towards irrigation. Converting irrigated turf grass lawns to native low-water use requirement vegetation can be a great way to save water.

The City of Golden was offered grant funding through the Colorado Water Conservation Board in 2023. Some of these funds are available for a Lawn Replacement Program to Golden Water customers through Resource Central and the other portion is going towards converting a municipal location to a water-wise landscape. The Golden Parks Department will begin converting "Triangle Park" in 2024 to support these efforts to save water.

There are many other ways to be wise with your irrigation

use. One way water savings can be achieved is by following the Waste of Water Ordinance by watering no more than three days per week and watering between 6 pm and 10 am.

In addition, Golden asks that you consider the following best practices to help in our water conservation efforts:

- Fine-tune irrigation systems, by eliminating overspray onto impervious areas.
- Wait to start watering until May. Leave the lawn dormant a little longer than usual and hand water trees if necessary. Brown spots on the grass are okay!
- Let your grass grow longer between mowing's.
- Use the cycle and soak method to irrigate and adjust watering time each month.
- Check the sprinkler system at the beginning of each month and adjust the time.
- Avoid watering during high winds and after rain.
- Repair sprinkler system leaks and breaks or turn off the system.
- Sign up for AquaHawk Alerting and monitor your account for leaks, breaks, and unusual use.



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