



City of
Cheyenne

Board of Public Utilities

2022 Consumer Confidence Report

The City of Cheyenne Board of Public Utilities (BOPU) is proud to provide this 2022 Consumer Confidence Report (CCR), also known as an annual drinking water quality report. This CCR summarizes water quality from January 1 through December 31, 2022.

The BOPU prepares this report each year in accordance with the [Safe Drinking Water Act](http://www.epa.gov/sdwa) (www.epa.gov/sdwa). The CCR includes a summary of source water information, detected contaminants, compliance with Federal, State, and local regulations and standards, and educational information about Cheyenne's water system. The purpose of the CCR is to improve public health by providing information that assists consumers with making educated decisions regarding any potential health risks pertaining to the quality, treatment, and management of their drinking water. If you have any questions about this CCR, call the Water and Wastewater Quality Control Supervisor at (307) 635-7693.

Este reporte contiene información importante acerca de su agua potable. Por asistencia traduciendo este reporte en español o si tiene unas preguntas de acerca al reporte por favor de llamar a nuestro representante de servicio al cliente. El número de teléfono es: (307) 637-6460.

How does Cheyenne's water compare to drinking water standards?

The BOPU is proud to report that Cheyenne's drinking water meets or exceeds (is better than) federal requirements.

The BOPU's Water Treatment Division monitors water quality 24 hours a day, 7 days a week using in-line instruments. Operators also confirm instrument readings with daily sampling and lab analyses. Lab staff monitor water quality throughout Cheyenne weekly. While some parameters were detected in water samples, there were no violations of [National Primary Drinking Water Regulations](http://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations) (www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations) or [Secondary Drinking Water Standards](http://www.epa.gov/sdwa/secondary-drinking-water-standards-guidance-nuisance-chemicals) (www.epa.gov/sdwa/secondary-drinking-water-standards-guidance-nuisance-chemicals). The tables below show the most recent water quality data (through December 31, 2022).

Where does Cheyenne's water come from?

Cheyenne's water comes from both surface water and groundwater sources. A [Source Water Assessment and Protection](https://cheyennebopu.org//files/assets/bopu/divisions-documents/admin/water-conservation/2004-source-water-assessments_final-report.pdf) (https://cheyennebopu.org//files/assets/bopu/divisions-documents/admin/water-conservation/2004-source-water-assessments_final-report.pdf) report was completed in 2004.

Douglas Creek

Surface water is collected from the Douglas Creek Watershed located about 75 miles west of Cheyenne in the Medicine Bow Mountains (also called the Snowy Range). Water from Douglas Creek is stored in Rob Roy Reservoir. Two pipelines deliver the water from Rob Roy Reservoir to Granite and Crystal Reservoirs.



When BOPU collects water from Douglas Creek, a tributary to the North Platte River, the BOPU replaces the water with water from another source. The BOPU replaces the water with water from west of the Continental Divide in the Little Snake River Watershed.

The Little Snake River is located in the Sierra Madre Mountains, approximately 110 miles west of Cheyenne. A series of collection structures and pipelines collect water from tributaries to the Little Snake River and transport the water under the Continental Divide to Hog Park Reservoir. Water from Hog Park Reservoir can be released into the North Platte River and can be recaptured in Seminoe Reservoir. The BOPU uses water from both Hog Park and Seminoe Reservoirs as trade water. When the BOPU collects water at Rob Roy Reservoir, the BOPU releases the same amount of water from Hog Park Reservoir and Seminoe Reservoir. This way, the BOPU can use the water stored in Rob Roy Reservoir for drinking water in Cheyenne without affecting other water users along the North Platte River.

The Little Snake River is a tributary to the Colorado River. Interstate agreements between Wyoming, Arizona, California Colorado, New Mexico, Nevada, and Utah determine how much water gets used in each state. These agreements rely on water stored in reservoirs to distribute water between the states. After decades of drought, reservoir storage in the Colorado River is declining and may reach critically low levels. If reservoir storage continues to decline, some water users in Wyoming (including the City of Cheyenne) may not be able to collect water from the Colorado River. This would reduce Cheyenne's water supply by approximately half. For more information, see the [Wyoming State Engineer's Colorado River Working Group](http://seo.wyo.gov/interstate-streams/Colorado-river-working-group) (seo.wyo.gov/interstate-streams/Colorado-river-working-group).

Crow Creek

Surface water is also collected from the Crow Creek Watershed. Crow Creek is located about 30 miles west of Cheyenne in the Laramie Mountains near the Vedauwoo recreation area. Water from Crow Creek is stored in North Crow Reservoir (North Crow Creek), Granite and

Crystal Reservoirs (Middle Crow Creek) and South Crow Diversion Structure (South Crow Creek).

Water stored in Crystal Reservoir, Lower North Crow Reservoir, and South Crow Diversion Structure can be delivered to the R.L. Sherard Water Treatment Plant by pipelines.



Groundwater

Cheyenne owns and operates about 36 wells in four well fields (Bell, Borie, Federal and Happy Jack) located west and northwest of Cheyenne. The wells pump from the High Plains (Ogallala and White River) Aquifers. Approximately 15 percent of the water used in Cheyenne comes from wells.

Some wells in the Borie Wellfield pump from aquifers contaminated with trichloroethylene (TCE). The TCE comes from the Atlas “D” Missile Site located on the Belvoir Ranch southwest of Cheyenne. TCE was used at the missile site to clean missiles during the early 1960’s. Since then, a plume of TCE has spread underground reaching municipal wells. The U.S. Army Corps of Engineers (ACOE) is treating the TCE underground at the missile site and at the other end of the plume. The ACOE also constructed a groundwater treatment plant located near Cheyenne’s water treatment plant. This groundwater treatment plant removes TCE from the water produced at the Borie Wellfield. Both the ACOE and the BOPU monitor water quality from the Borie Wellfield before and after treatment. **In 2022, TCE was not detected in any treated water samples.** To learn more about the Atlas “D” Missile Site or the TCE contamination, visit the [Atlas “D” Missile Site 4](http://www.atlassite4.com) website (www.atlassite4.com).

Learn more about Cheyenne's water.

We encourage our customers to learn about Cheyenne's water system and the [Safe Drinking Water Act](http://www.epa.gov/sdwa) (www.epa.gov/sdwa). Our water protects our health, provides fire protection, provides a natural resource for businesses, and provides for our way of life. Our water is vital to our future. Visit our website at www.cheyennebopu.org for additional information about our water system. For example:

- This link www.cheyennebopu.org/Your-Water/Water-Supply/Source-Water contains a description of where Cheyenne’s water comes from including a map of water resources.
- This link www.cheyennebopu.org/Your-Water/Water-Supply/Reservoir-Levels shows current reservoir storage levels.
- This link www.cheyennebopu.org/Your-Water/Water-Quality contains information about water quality such as hardness, clarity, fluoride, and water quality parameters commonly used by home and micro brewers.

What is the BOPU doing to manage water sustainably?

Cheyenne is located in the high plains. We are surrounded by short-grass prairie that is adaptive to long periods without water. In Southeast Wyoming, water is a limited resource. Here are some ways the BOPU is managing water resources sustainably.

- **Water Conservation Program** – Cheyenne has a water conservation program that includes watering schedules and rules, programs to fix leaks, use water efficient appliances and fixtures, and bill structures that encourage efficient water use. For more information, visit www.cheyennebopu.org/Cheyennes-Water/Water-Conservation.
- **Water Reuse** – Once water goes down the drain, it will be used again. The BOPU reclaims wastewater at Cheyenne's water reclamation facilities. The BOPU renamed the wastewater treatment plants to water reclamation facilities because the treatment processes used at the facilities reclaim water making it safe to use again. Some of this water is recycled and piped back into Cheyenne to water parks and athletic fields. Water that isn't recycled is returned to Crow Creek where it is used by livestock, wildlife, aquatic species, and other users downstream.
- **Treated Water Blend** – In 2020, the BOPU completed a study on the ratio of surface water to groundwater in Cheyenne's drinking water. The study concluded that because of the treatment capabilities at the water treatment plant, operators can reduce the amount of groundwater in the blend to 15 percent and still maintain water quality. This allows operators to use local aquifers more sustainably.
- **Hydroelectric Generation** – The BOPU is constructing a hydroelectric generation facility. The hydroelectric generator will produce power from water flowing to the water treatment plant. Water flowing to the treatment plant comes from Crystal Reservoir which is over 500 feet higher in elevation than the treatment plant. Water enters that plant at pressures around 250 pounds per square inch. The generator will use these pressures to spin a turbine that will produce between 300 and 875 kilowatts of electricity. The electricity will be used to reduce treatment costs at the water treatment plant and excess electricity will be sold to the electric grid.
- **Additional Water Resources** – The BOPU is actively investigating and pursuing additional surface and groundwater sources to prepare for possible reductions in water supply due to Colorado River curtailment.

A Note from the EPA About Drinking Water Sources and Regulations

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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. To ensure tap water is safe to drink, the EPA regulates the amount of certain contaminants in water from public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 agricultural, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals which are by-products of industrial process 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.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791 or by visiting <https://www.epa.gov/sdwa>.

Definitions

In the table below, you will find many terms and abbreviations which might not be familiar. To help you better understand these terms, we've provided the following definitions.

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

Maximum Contaminant Level (MCL) – The "maximum allowed" is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the Maximum Contaminant Level Goals as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) – The "Goal" is 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. The addition of 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 contaminants.

National Primary Drinking Water Regulations (NPDWR) – Standards including AL, MCL, MRDL, and TT that are established under the Safe Drinking Water Act.

Nephelometric Turbidity Unit (NTU) – Nephelometric Turbidity Unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable by the average person.

Parts per billion (ppb) or microgram per liter ($\mu\text{g/L}$) – One part per billion is one drop in a billion drops. Using time, it is equal to one second in 31.71 years. In finance, it is equal to one penny in \$10,000,000.

Parts per million (ppm) or milligram per liter (mg/L) – One part per million is one drop in a million drops. Using time as a scale, it is equal to one second in 11.57 days. In finance, it is equal to one penny in \$10,000.

Picocurie per Liter (pCi/L) – Picocurie per liter is a measure of radiation.

RTST – Sample was taken at the Round Top Storage Tank.

SWTP – Sample was taken at the Sherard Water Treatment Plant.

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

ND – Not detected by certified laboratory analysis of a sample.

Microbial Contaminants and Turbidity

Contaminant	Violation Yes/No	Level Detected	MCLG	MCL	Likely Source of Contamination/ Comments
Total Coliform Bacteria	No	Presence/ Absence Testing	0	Presence of coliform in ≥5% of monthly samples	Naturally present in the environment. 720 samples were required for regulatory compliance. The BOPU collected 942 samples. Of that number, no samples tested positive for total coliform.
Turbidity	No	≤0.15 NTU 100%	N/A	TT 95%<0.3	Soil runoff. Maximum allowable filtered water turbidity is 0.3 NTU in 95% of all samples. Turbidity values are recorded every 4 hours from all filters in operation and values reported monthly to the EPA. Turbidity is a measurement of the cloudiness of water caused by suspended particles and is a good indicator of water quality and the effectiveness of water treatment processes.

Name	Violation Yes/No	Level Detected	MRDLG	MRDL	Likely Source of Contamination/ Comments
Chlorine	No	0.1 to 1.5 ppm	4	4	Drinking water disinfectant used to control microbial growth.

The BOPU tested raw (untreated) water from Crystal Reservoir for *Giardia* and *Cryptosporidium* in 2017 but found less than one per liter of sample.

Inorganic Contaminants

Contaminant	Violation Yes/No	Level Detected	Unit	MCLG	MCL	Likely Source of Contamination/ Comments
Copper	No	90 percent of results were less than 0.37. No analysis results exceeded the MCL. Results ranged from ND to 1.17.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; naturally present in the environment; leaching from wood preservatives. This sample was taken from a private residence.
Fluoride	No	RTST: 0.6 SWTP: 0.5	ppm	4	4	Erosion of natural deposits; water additive that promotes strong teeth.
Lead	No	90 percent of results were less than 5. No results exceeded the MCL. Results ranged from ND to 14.	ppb	0	AL=15	Corrosion of household plumbing systems. This sample was taken from a private residence.
Nitrate (as Nitrogen)	No	RTST: 0.42 SWTP: 0.42	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks; sewage; naturally present in the environment.

Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cyanide, Mercury, Nickel, Nitrite, Selenium and Thallium were analyzed for but not detected by certified laboratory analysis.

Asbestos was also analyzed but not detected by certified laboratory analysis.

Sodium was detected in laboratory analysis (SWTP: 18.5 ppm, RTST: 18.5 ppm). Sodium does not have National Primary Drinking Water Regulation or a Secondary Drinking Water Regulation. Sodium comes primarily from water treatment chemicals used to adjust water pH and from the erosion of natural deposits.

Organic Contaminants

Contaminant	Violation Yes/No	Level Detected RTST	Level Detected SWTP	Unit	MCLG	MCL	Likely Source of Contamination/ Comments
Total Trihalomethanes (sum of the 4 compounds: Chloroform, Bromoform, Bromodichloromethane, Dibromochloromethane)	No	Min=24 Max=37 Avg=35.0	Min=23 Max=68 Avg=36.7	ppb	0	80	By-product of drinking water chlorination. Values reported are from the highest locational running average of 8 sites.
Haloacetic Acid (Sum of the 5 compounds: Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)	No	Min=14 Max=28 Avg=21.5	Min=4.4 Max=29 Avg=21.2	ppb	0	60	By-product of drinking water chlorination. Values reported are from the highest locational running average of 8 sites.
Total Organic Carbon (TOC)	No	N/A	Raw Water Avg. = 4.1 Treated Water Avg=2.2	ppm	N/A	TT	Natural organic matter present in the environment. TOC was measured each month and removal requirements were met. TOC has no health effects. TOC provides a medium for the formation of disinfection byproducts such as trihalomethanes and haloacetic acids.

Alachlor; Atrazine; Benzene; Benzo(a)pyrene (PAHs); Carbofuran; Carbon Tetrachloride; Chlordane; Chlorobenzene; 2,4-D; Dalapon; 1,2-Dibromo-3-chloropropane (DBCP); 1,2-Dichlorobenzene; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; 1,2-Dichloroethane; 1,2-Dichloropropane; Dinoseb; Diquat; Endothall; Endrin; Ethylbenzene; 1,2-Dibromomethane; Glyphosate; Heptachlor; Heptachlor Epoxide; Hexachlorobenzene; Hexachlorocyclopentadiene; Gamma-BHC (Lindane); Methoxychlor; Oxamyl; Total Polychlorinated Biphenyls (PCBs); Pentachlorophenol; Picloram; Simazine; Styrene; Toluene; Toxaphene; 2,4,5-TP (Silvex); 1,2,3-Trichlorobenzene; 1,2,4-Trichlorobenzene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Trichloroethene; Vinyl Chloride; Xylenes (total); Bromobenzene; Bromochloromethane; Bromoform; Bromomethane; n-Butylbenzene; sec-Butylbenzene; tert-Butylbenzene; Chloroethane; Chloromethane; 2-Chlorotoluene; 4-Chlorotoluene; Dichlorodifluoromethane; 1,1-Dichloroethane; 1,1-Dichloroethene; cis-1,2-Dichloroethene; trans-1,2-Dichloroethene; 1,3-Dichloropropane; 2,2-Dichloropropane; 1,1-Dichloropropene; cis-1,3-Dichloropropene; trans-1,3-Dichloropropene;

Hexachlorobutadiene; Isopropylbenzene; p-Isopropyltoluene; Methyl tert-butyl ether (MTBE); Methylene chloride; Napthalene; n-Propylbenzene;; 1,2,3-Trichloropropane; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene; m+p-Xylenes; o-Xylenes; Aldrin; Aroclor 1016; Aroclor 1221; Aroclor 1232; Aroclor 1242; Aroclor 1248; Aroclor 1254; Aroclor 1260; Butachlor; Dieldrin; Metolachlor; Aldicarb; Aldicarb Sulfone; Aldicarb Sulfoxide; Carbaryl; 3-Hydroxycarbofuran; Methomyl; 1,2-Dibromoethane; 2,4-DB; Dicamba; Dichlorprop; 1,1,1,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethane; Tetrachloroethene; Trichlorofluoromethane; bis(2-ethylhexyl)Adipate; bis(2-ethylhexyl)Phthalate; Metribuzin; Propachlor; Methiocarb; Baygon; were analyzed for but not detected by certified laboratory analysis.

Radionuclides

Contaminant	Violation Yes/No	Level Detected RTST	Level Detected SWTP	Unit	MCLG	MCL	Likely Source of Contamination/ Comments
Gross Alpha	No	-0.1±1.5 (2021)	1.9±1.4 (2022)	pCi/L	None	15	Naturally occurring in the environment
Radium 226	No	0.07±0.30 (2021)	0.01±0.30 (2022)	pCi/L	None	15	Naturally occurring in the environment
Radium 228	No	0.60±0.70 (2021)	0.6±0.7 (2022)	pCi/L	None	15	Naturally occurring in the environment
Uranium	No	0.5 (2021)	0.7 (2022)	ppb	None	30	Naturally occurring in the environment

How do drinking water regulations apply to immunocompromised people?

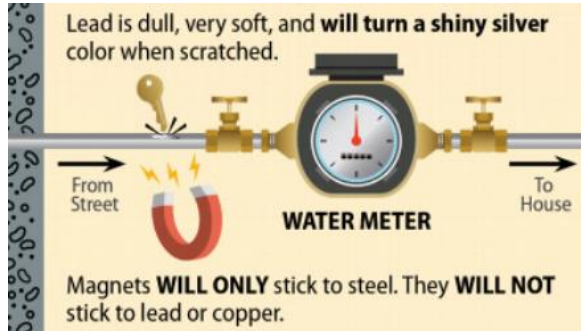
Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can be at particular risk from infection. These people should seek advice about drinking water from their health care provider. EPA/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, and other microbiological contaminants, are available by calling the Safe Drinking Water Hotline at (800) 426-4791, or online at <http://www.epa.gov/safewater>.

Should I be concerned about lead in my drinking water?

In the early 1990's, Cheyenne began studies and programs to prevent the leaching of lead and copper from water pipes into finished drinking water. Today, the R.L. Sherard Water Treatment plant adjusts water pH and alkalinity to reduce the corrosiveness of treated drinking water.

Laboratory staff monitor the amount of lead coming from faucets in selected older homes twice per year. Results from lab analysis have shown the level of lead in these homes to be below EPA's action level. These homes were selected because they were confirmed to have lead service line components or were constructed when lead was used in service line plumbing.

Lead and copper in drinking water primarily comes from materials and components used for in-home plumbing. While the BOPU provides high-quality drinking water, the BOPU has limited control regarding the materials that are used in plumbing components in homes and buildings. Cheyenne began requiring homes to use copper for service lines in 1936. Homes built prior to 1936 could have lead in the service line. In 1986, the Safe Drinking Water Act required the use of "lead-free" pipe, solder and flux in the installation or repair of plumbing.



If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Protect yourself and your family by removing faucets and plumbing that contain lead from your home's plumbing. Minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. You can also use a filter certified by the American National Standards Institute to reduce lead in drinking water.

Recent revisions to the EPA's Safe Drinking Water Act, Lead and Copper Rule, require the BOPU to create an inventory of the materials used in water service lines throughout Cheyenne. To create this inventory, BOPU staff may contact you to perform visual inspections of meter pits. BOPU staff may also need to dig a small hole using a truck-mounted, pressurized-water nozzle

and vacuum, a method referred to as “potholing”. BOPU staff will always be in a BOPU vehicle with proper identification.

If you are concerned about lead in your drinking water, you may wish to have your water tested. Many hardware stores sell lead test kits. Licensed plumbers can also help identify where lead is used in plumbing materials. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available by calling the Safe Drinking Water Hotline at (800) 426-4791 or online at <http://www.epa.gov/safewater/lead>.

How is the water system funded?

In the BOPU's ongoing effort to provide a safe and dependable water supply, it is necessary to make improvements to Cheyenne's water system. Water system improvements and maintenance are paid for through water rates charged to BOPU customers. In fiscal year 2022, total operating expenses for the water and sewer departments were over \$33 million.



BOPU Mission Statement

Sustain Cheyenne's essential water resources to realize our community's potential.

BOPU Vision Statement

We will set the standard of excellence in the water and wastewater industry. We will be a leader in service to our customers. We will be responsible stewards in managing and protecting our water resources, the environment, the health and safety of our employees and community.

Contact Us

Questions about this report or concerning your water utility should be directed to:

BOPU Director: (307) 637-6460

Water Treatment Division Manager: (307) 632-9890

Water and Wastewater Quality Control Supervisor: (307) 635-7693

We want customers to be informed about their water. If you want to learn more about Cheyenne's water system, please attend any of our regularly scheduled BOPU Board Meetings. Board Meetings are held at 3:00 pm on the Third Monday of each month and are open to the public. More information is available on our website at: <https://www.cheyennebopu.org/About-Us/Board-Meetings>.