



Esta es información importante. Si no puede leer en inglés, pídale a alguien que traduzca esta información.

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Contact Ken Matthews, Water Utilities Director at 970-532-2643 PO Box 1229 Berthoud CO 80513 with questions or for public participation opportunities that may affect water quality. **Please view the water quality data from our wholesale system(s) (attached or included in this report) for additional information. Or visit <https://www.berthoud.org/1406/Water-Management> under Water Quality Reports.**

General Information: 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 (EPA) Safe Drinking Water Hotline at 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 and should seek advice from their health care provider. 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.

For more information about contaminants and potential health effects, or to receive a copy of the U.S. 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. 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.

Please contact us at 970-532-2643 with any questions about this report, about what you can do to help protect your drinking water sources, to learn about our water and wastewater system, and/or 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.

Our Water Sources

Sources (Water Type - Source Type)	Potential Source(s) of Contamination
PURCHASE WATER FROM LITTLE THOMPSON (Surface Water-Consecutive Connection) CARTER LAKE (Surface Water-Intake) BERTHOUD RESERVOIR (Surface Water-Intake)	EPA Hazardous Waste Generators, EPA Chemical Inventory/Storage Sites, EPA Toxic Release Inventory Sites, Permitted Wastewater Discharge Sites, Aboveground, Underground and Leaking Storage Tank Sites, Solid Waste Sites, Existing/Abandoned Mine Sites, Other Facilities, Commercial/Industrial/Transportation, Low Intensity Residential, Urban Recreational Grasses, Row Crops, Fallow, Small Grains, Pasture / Hay, Deciduous Forest, Evergreen Forest, Mixed Forest, Septic Systems, Oil / Gas Wells, Road Miles

Terms and Abbreviations

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

Treatment Technique (TT): Required process intended to reduce the contaminant level 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.

Detected Contaminants: BERTHOUD TOWN OF 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, 2022 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 no tables appear in this section, then no contaminants were detected in the last round of monitoring.

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 Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chlorine	December, 2022	Lowest period percentage of samples meeting TT requirement: 100%	0	8	No	4.0 ppm

Lead and Copper Sampled in the Distribution System								
Contaminant Name	Time Period	90 th Percentile	Sample Size	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources
Copper	05/27/2022 to 06/17/2022	0.03	40	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	10/10/2022 to 11/02/2022	5	40	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	10/10/2022 to 11/02/2022	0.01	40	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	05/27/2022 to 06/17/2022	11	40	ppb	15	3	No	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfection Byproducts Sampled in the Distribution System									
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2022	26.34	17.9 to 40.5	8	ppb	60	N/A	No	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM)	2022	36.74	21.3 to 60.1	8	ppb	80	N/A	No	Byproduct of drinking water disinfection

Total Organic Carbon (Disinfection Byproducts Precursor) Removal Ratio of Raw and Finished Water								
*If minimum ratio not met and no violation identified then the system achieved compliance using alternative criteria.								
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	TT Minimum Ratio	TT Violation	Typical Sources
Total Organic Carbon Ratio	2022	1.28	1.11 to 1.47	12	Ratio	1.00	No	Naturally present in the environment

Summary of Turbidity Sampled at the Entry Point to the Distribution System									
Contaminant Name	Sample Date	Level Found			TT Requirement			TT Violation	Typical Sources
Turbidity	Month: Jan	Highest single measurement: 0.353 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: 100 %			In any month, at least 95% of samples must be less than 0.3 NTU			No	Soil Runoff

Radionuclides Sampled at the Entry Point to the Distribution System									
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha	2022	0.8	0.2 to 2	4	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2022	0.85	0.5 to 1.4	4	pCi/L	5	0	No	Erosion of natural deposits

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	MCL Violation	Typical Sources
Barium	2022	0.01	0.01 to 0.01	1	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	2022	0.12	0.12 to 0.12	1	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	2022	0.1	0.1 to 0.1	1	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Secondary Contaminants**									
**Secondary standards are <u>non-enforceable</u> 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	Unit of Measure	Secondary Standard			
Sodium	2022	6.1	6.1 to 6.1	1	ppm	N/A			

Violations, Significant 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 likely the same 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 takes 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 likely 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 takes an extended period of time, we will keep you updated with quarterly notices.

Name	Description	Time Period	Health Effects	Compliance Value	TT Level or MCL
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENTS - M617	12/28/2021 - 04/21/2022	We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connections can lead to inadvertent contamination of the drinking water. This is because we had permitted an uncontrolled cross connection.	N/A	N/A
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENTS - M615	12/28/2021 - 10/18/2022	We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connections can lead to inadvertent contamination of the drinking water. This is because had failed to complete the testing requirements for backflow prevention methods.	N/A	N/A
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENTS - M614	12/28/2021 - 10/18/2022	We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connections can lead to inadvertent contamination of the drinking water. This is because we had failed to complete the testing requirements for backflow prevention devices.	N/A	N/A

Additional Violation Information

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Describe the steps taken to resolve the violation(s), and the anticipated resolution date: There is nothing you need to do at this time. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. **The M617 Backflow Prevention violation** was a result of backflow assemblies that failed the annual inspection and were not repaired within 120 days of discovery. These assemblies were repaired and the violation was resolved 4/21/2022. **The M615 Backflow Prevention violation** was a result of not meeting the inspection ratio for backflow prevention methods. All known methods at the time of the violation were inspected and the violation was resolved 10/18/2022. **The M614 Backflow Prevention violation** was a result of not meeting the inspection ratio for backflow prevention assemblies. All known assemblies at the time of the violation were inspected and the violation was resolved 10/18/2022.

Non-Health-Based Violations: These violations do not usually mean that there was a problem with the water quality. If there had been, we would have notified you immediately. We missed collecting a sample (water quality is unknown), we reported the sample result after the due date, or we did not complete a report/notice by the required date.

Name	Description	Time Period
TURBIDITY	FAILURE TO MONITOR AND/OR REPORT	05/01/2022 - 05/31/2022
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENTS - M613	12/28/2021 - 10/26/2022
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENTS - M612	12/28/2021 - Open
CROSS CONNECTION RULE	FAILURE TO MEET CROSS CONNECTION CONTROL AND/OR BACKFLOW PREVENTION REQUIREMENTS - M610	12/28/2021 - 10/18/2022
CHLORINE/CHLORAMINE	FAILURE TO MONITOR AND/OR REPORT	05/01/2022 - 05/31/2022

Describe the steps taken to resolve the violation(s), and the anticipated resolution date: There is nothing you need to do at this time. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. Failure to monitor for chlorine and turbidity in May 2022 was a result of the May 2022 monthly operating report not being uploaded to the state drinking water portal by the required deadline. The report was completed on time with no violations identified. Due to a clerical error the report was not uploaded to the state drinking water portal until 6/15/22 which did not meet 6/10/22 deadline. This violation was resolved on 7/5/2022 when the June 2022 monthly operating reported was submitted. **The M613 Backflow Prevention violation** was a result of not having records of 2018-2020 annual backflow reports available during the state inspection in December 2021. An interim 2022 annual backflow report was submitted, and this violation was resolved 10/18/2022. **The M610 Backflow Prevention violation** was a result of not having an accurate master list of non-single family residential connections as required for the Town's Backflow Prevention and Cross Connection Control Program. The master list of non-single family residential connections at the time of the violation was updated and this violation was resolved 10/18/2022. **The M612 Backflow Prevention violation** is a result of an inadequate survey ratio of non-single family residential connections. Surveys of non-single family residential connections are used to identify potential cross connection hazards. Surveys were previously completed, however during transitions in staffing many records were lost. The Town is completing and verifying survey information of all non-single family residential connections and is in the process of resolving this violation.

Backflow and Cross-Connection

We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connections can lead to inadvertent contamination of the drinking water.

We either have installed or permitted an uncontrolled cross-connection.