

The Greeley Water and Sewer Department completed surveys of commercial and industrial sites in December 2008. Each site's water service system was inspected for potential cross-connection hazards. All commercial and industrial customers must install backflow prevention assemblies on their water service lines, fire sprinkler systems and irrigation systems.

• Be observant. Check for potential sources of cross-connection around your home, business, or industrial site. Never leave hoses in buckets, pools or sinks.

• If you suspect you may have a cross-connection, contact a qualified plumber who is familiar with cross-connections, hydraulics and pollution factors.

• Install backflow prevention assemblies to prevent potential cross-connections and have a certified backflow tester inspect and test your assemblies annually to ensure they work properly. A list of certified backflow testers is available in the office of the Greeley Water Department or [www.greeleygov.com/backflow](http://www.greeleygov.com/backflow).

What can water customers do to protect our public water system?

of residential cross-connection contaminants listed above. manufacturing processes, sprinkler systems, and the sources of cooling systems, boilers, solvents and chemicals used in industrial sources of cross-connection contamination are coolers. Examples of commercial or water features, aquariums, and swamp water beds, hot tubs, swimming pools, chemical spray bottles, hoses connected to injection systems, hoses connected to include irrigation systems, fertilizer residential sources of cross-connection contamination

As part of our continuing effort to provide and maintain safe, clean drinking water to our water customers, the Greeley Water Department has a Cross-Connection Control Program. A cross-connection to Greeley's drinking water system is any connection that could introduce contaminants such as pesticides, fertilizers, used water, fluids, gases, or other contaminants into the water distribution system. Water typically flows out of the public water distribution system under pressure. When a cross-connection exists, a drop in water pressure can cause a reversal of flow, allowing harmful substances to enter the public water system. Some common residential sources of cross-connection contamination include irrigation systems, fertilizer injection systems, hoses connected to chemical spray bottles, chemicals in water beds, hot tubs, swimming pools, and swamp water features, aquariums, and coolers. Examples of commercial or industrial sources of cross-connection contamination are cooling systems, boilers, solvents and chemicals used in manufacturing processes, sprinkler systems, and the sources of residential cross-connection contaminants listed above.

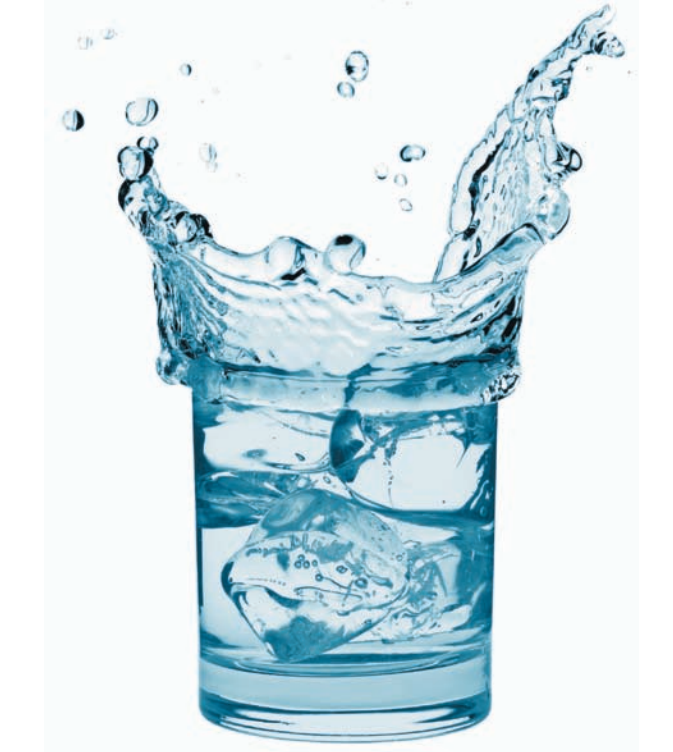
CO-0162321

# City of Greeley

## Annual Drinking Water Report

Reporting Year

# 2008



June 2009 Issue #11

In compliance with the Colorado Primary Drinking Water Regulations, the Greeley Water and Sewer Department is pleased to present our annual Drinking Water Quality Report. The information in this report covers drinking water information from the City of Greeley public water system for calendar year 2008. The report provides an excellent opportunity for our customers to learn about where their drinking water comes from and the quality of the water they consume.

**Esta informacion es importante. Si usted necesita ayuda por favor llamenos y le ayudaremos con gusto. Si tiene alguna pregunta llame al telefono 970-350-9811.**

### Colorado Water Heritage

#### The Cache La Poudre River

The Cache la Poudre River, one major source of water for Greeley drinking water customers, is Colorado's first designated Wild and Scenic River on the National Wild and Scenic River list. The River's name means "hiding place of powder." According to legend, in the 1820's, French fur trappers were caught in a significant snowstorm. To lighten their load, they buried large amounts of gun powder (poudre) in a hiding place (cache) along the banks of the Cache la Poudre River lies in Rocky Mountain National Park, while its terminus is the confluence with the South Platte River approximately five miles east of Greeley. Congress designated the Cache la Poudre River Corridor National Heritage Area "to provide for the interpretation... of the unique and significant contributions to our national heritage of cultural and historic lands, waterways and structures within the Heritage Area." The Cache la Poudre River Corridor Heritage Area is one of 39 National Heritage Areas and was the first to be established west of the Mississippi. The Heritage Area extends for 45 miles and includes the lands within the 100-year flood plain of the Cache la Poudre River.



### Protecting Our Water Sources

Source water is untreated water from streams, rivers, lakes, or underground aquifers which is used to supply public drinking water. The Colorado Source Water Assessment and Protection (SWAP) Program is designed to provide the public with information about the sources of its drinking water, as well as to provide a way to get involved in protecting the quality of drinking water. The SWAP Program has completed its assessment of Colorado's source waters. Currently, the Colorado Water Quality Control Division is still working on Greeley's SWAP Report, which will provide 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, helping us to ensure that quality finished water is delivered to your homes. For information about the Program, visit [www.cdprh.state.co.us/wq/sw/swaphom.html](http://www.cdprh.state.co.us/wq/sw/swaphom.html)

### Get More Information

If you would like more information about the material covered in this report, you can contact the Greeley Water Department's Regulatory Compliance Coordinator, Colleen Young, at 970-350-9846. To view the report online, visit [www.greeleygov.com/ccr](http://www.greeleygov.com/ccr). Access information about drinking water in general on the EPA's drinking water web site at [www.epa.gov/safewater](http://www.epa.gov/safewater).



Additionally, the public is welcome to attend meetings of Greeley's Water and Sewer Board, which are usually held on the third Wednesday afternoon of every month at City Hall, located at 1000 10<sup>th</sup> Street. For more information on times, dates and locations of the Board meetings, please contact Lory Hildred at 970-350-9812.

| Contact Directory   |                 |
|---|-----------------|
| <b>Water &amp; Sewer Department</b><br><a href="http://www.greeleygov.com/water">www.greeleygov.com/water</a><br><a href="mailto:water@greeleygov.com">water@greeleygov.com</a> | <b>350-9811</b> |
| <b>Conservation/Restrictions</b><br><a href="http://www.greeleygov.com/wc">www.greeleygov.com/wc</a>  | <b>336-4134</b> |
| <b>Water Emergencies (Daytime)</b>  | <b>350-9811</b> |
| <b>Water Emergencies (After Hours)</b>  | <b>350-9600</b> |
| <b>Taste and Odor Concerns</b>  | <b>350-9324</b> |
| <b>Utility Billing</b>  | <b>350-9720</b> |



### Halligan-Seaman Project

Greeley needs more water storage to protect the community from drought and to ensure a stable and reliable water supply. That is why Greeley is partnering with the City of Fort Collins in an effort that includes other municipal and agricultural water providers to develop a regional water management project on the North Fork of the Cache la Poudre River. This project intends to enlarge Greeley's Milton Seaman Reservoir and Fort Collins' Halligan Reservoir. Milton Seaman is planned to grow from 5,000 acre-feet to 53,000 acre-feet. In seeking authorization for this project, Greeley and its partners are taking a new approach to water planning. Shared Vision Planning is a collaborative process that includes project partners, environmental advocacy groups, and government agencies. The goal of SVP is to design water projects that maintain a balance between agricultural, municipal, and environmental needs. For more information, please visit [www.halligan-seaman.org](http://www.halligan-seaman.org)

### Greeley Drinking Water Sources


Greeley treats water at the Boyd Lake Water Treatment Plant near Loveland or the Bellvue Water Treatment Plant located north of Fort Collins. Boyd Lake operates from April to October to accommodate increased demand from lawn watering. The Bellvue facility operates year-round. Treated water is then piped to Greeley where it is distributed to customers or stored in one of three finished water reservoirs.

Greeley uses six high-mountain reservoirs in the Poudre basin (Barnes Meadow, Comanche, Hourglass, Peterson, Milton Seaman, and Twin Lake) to retain water from spring snowmelt for redistribution during the summer and fall when water demand is high, but river flows are low. In addition, the city uses a plains reservoir system (Boyd Lake, Lake Loveland and Horseshoe Lake) to provide storage for summer demands. Greeley owns a portion of the Colorado-Big Thompson and Windy Gap Projects. We store our portion from the C-BT Project in Lake Granby, Horseshoe Reservoir and Carter Lake, and can deliver water to either the Poudre or Big Thompson River Basins to meet water demand.

Greeley treats water at the Boyd Lake Water Treatment Plant near Loveland or the Bellvue Water Treatment Plant located north of Fort Collins. Boyd Lake operates from April to October to accommodate increased demand from lawn watering. The Bellvue facility operates year-round. Treated water is then piped to Greeley where it is distributed to customers or stored in one of three finished water reservoirs.

### Director's Message

The mission of Greeley Water is to provide clean, safe, and reliable water for our domestic, industrial, and emergency needs. This task becomes more complex all the time as our water system ages, prices for energy and materials increase, and new challenges arise. The good news is that the cost to maintain and continuously rehabilitate your water system is already built into your monthly bill. Every year, Greeley invests your money maintaining your water system to keep it safe and fully operational. For instance, last year, Greeley entirely replaced the 20-year old covers and liners of the in-town reservoirs to protect the water and to eliminate leakage. All pipes older than fifty years in downtown Greeley are being systematically cleaned and refurbished and all the lead pipes are being replaced by copper ones, reducing rusty water and eliminating potential lead contamination. Activated carbon systems are being added or improved at both your filter plants to deal with tastes caused by algae from the lakes and to deal with new contaminants. Greeley is blessed with high quality source water from the Rocky Mountains and our job is to improve it for you. This Consumer Confidence Report describes how your water meets or exceeds all state and federal requirements. We hope it meets or exceeds your expectations. You deserve no less.

  
Jon Monson  
Water & Sewer Director

### 2009 Watering Restrictions

Greeley allows three days-per-week watering. Water customers must follow the mandatory schedule below and refrain from watering during the heat of the day. Call 970-336-4134 or visit [www.greeleygov.com/wc](http://www.greeleygov.com/wc) for more information.

| Single Family Even Addresses<br>0, 2, 4, 6, 8 | Single Family Odd Addresses<br>1, 3, 5, 7, 9 | Commercial Multi-Family Nonprofit |
|---|--|-----------------------------------|
| Tuesday                                       | Monday                                       | Tuesday                           |
| Thursday                                      | Wednesday                                    | Friday                            |
| Sunday  | Saturday                                     | Sunday                            |

**No Lawn Watering: Noon - 5 p.m.**



## Common Drinking Water Contaminants

The sources of drinking water (both tap and bottled) 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 can pick up substances from animal or human activity. Contaminants that may be present in source water include:



**Microbiological Contaminants** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock operations and wildlife. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present.

**Inorganic Contaminants** such as salts and metals, which can be naturally-occurring or result from urban stormwater 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 agriculture, urban stormwater runoff and residential uses.

**Organic Chemical Contaminants** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production; gas stations; urban stormwater runoff and septic systems.

**Radioactive Contaminants** which can be naturally-occurring or be the result of oil and gas production or mining activities.

### Health Effects

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Similarly, FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health. 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 a health risk.

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 at other homes in the community as a result of materials used in a home's plumbing. The Greeley Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about elevated lead levels in your home's water, call the EPA Safe Drinking Water Hotline 800-426-4791 to have your water tested.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants under six months old. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time due to rainfall or agricultural activity. If you are caring for an infant, and detect nitrate levels above 5 ppm, you should ask advice from your health care provider. In 2008, Greeley's nitrate levels were very low, the most detected was 0.05 ppm.

Cryptosporidium is a microbial pathogen found in source water in Colorado. It must be ingested to cause disease and may be spread through means other than drinking water. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. Certain people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy; undergoing organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants are at greater risk of developing illness and are encouraged to consult a doctor regarding appropriate precautions to take to avoid infection.

Cryptosporidium is eliminated from drinking water by an effective treatment combination which includes coagulation, sedimentation, filtration and disinfection. Greeley did not detect this microorganism in its treated water supplies. In 2008, Cryptosporidium was detected in untreated water samples taken from the Boyd Lake Water Treatment Plant source water intake and from the Bellvue Water Treatment Plant's untreated water out of the Cache la Poudre River. Current test methods do not allow us to determine whether the organisms were dead or capable of causing disease.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline 800-426-4791.

# 2008 Drinking Water Quality Results

(Sampling was performed from January 1, 2008, through December 31, 2008, unless otherwise indicated.)

The Safe Drinking Water Act establishes the standards for most drinking water systems in the country, including Greeley's. In 2008, the Greeley drinking water system operated without any exemption. However, our water system did receive a waiver (permission not to test for specific contaminants) from the State of Colorado for cyanide, asbestos, dioxin, and glyphosate. A waiver was provided because it is unlikely that these contaminants would be found in Greeley's drinking water. The City routinely monitors for a long list of contaminants in drinking water according to state and federal laws. The following monitoring data table identifies drinking water contaminants that Greeley detected in the water, the levels detected, and the maximum allowable contaminant levels. As you peruse the table, you will see that Greeley met all drinking water standards. No violations of state or federal safe drinking water quality regulations occurred in calendar year 2008, for which this report was prepared.



## Microbiological Contaminants

| Contaminant, Units | MCLG | MCL      | Percentage of measurements below the limit | Highest single value | Violation? | Source of contaminant in drinking water |
|--------------------|------|----------|--|----------------------|------------|---|
| Turbidity, NTU     | N/A  | TT ≤ 0.3 | 99%  | 0.21                 | No         | Soil runoff                             |
|                    |      | TT ≤ 1.0 | 100%                                       |                      |            |   |

There are two treatment technique standards for turbidity. To meet the treatment technique standard of 0.3 NTU, the reported turbidity must be less than or equal to this value at least 95% of the time. To meet the treatment technique standard of 1.0 NTU, turbidity must never be greater than 1.0 NTU.

| Contaminant                  | MCLG | Monthly MCL  | Percentage of samples that were positive | Violation? | Source of contaminant in drinking water |
|------------------------------|------|--|--|------------|---|
| Total coliform (TC) bacteria | 0    | A system collecting 40 or more samples per month has greater than 5% of the routine (with repeat) samples positive for TC. | 1 positive sample, November 2008         | No         | Naturally present in the environment    |

Each month, 90 samples are taken in the distribution system. Of the 90 taken each month, one sample tested positive for coliform bacteria in November 2008. Repeat samples were subsequently taken, but no further samples tested positive for coliform bacteria, therefore, per State regulations, the first positive sample was disregarded.

| Contaminant, Units         | MCLG | MCL      | Annual removal ratio and lowest RAA detected | Violation? | Source of contaminant in drinking water |
|----------------------------|------|----------|--|------------|---|
| Total Organic Carbon (TOC) | N/A  | TT > 1.0 | Range: 1.03 – 1.51<br>Lowest RAA: 1.20       | No         | Naturally present in the environment    |

Compliance with the TOC standard is based on how much organic carbon is removed from the raw water. If the annual removal ratio is greater than or equal to 1.0, the water system is in compliance with the TOC treatment technique (TT) standard.

## Disinfectants and Disinfection Byproducts

| Contaminant, Units     | MCLG        | MCL        | Range of levels detected and highest value detected | Violation? | Source of contaminant in drinking water |
|------------------------|-------------|------------|---|------------|---|
| Chlorine Dioxide, ppb  | 800 (MRDLG) | 800 (MRDL) | Range: 0 – 163<br>Highest: 163                      | No         | Water additive used to control microbes |
| Chlorite, ppm          | 0.8         | 1          | Range: 0.02 – 0.39<br>Highest RAA: 0.39             | No         | By-product of disinfection              |
| Chlorine residual, ppm | 4 (MRDLG)   | 4 (MRDL)   | Range: 0.56 - 1.70<br>Highest Annual Average: 1.14  | No         | Water additive used to control microbes |

Compliance with the chlorine residual standard is based on a running annual average (RAA) of monthly samples taken throughout the distribution system.

| Contaminant, Units                 | MCLG | MCL | Range of levels detected and highest value detected | Violation? | Source of contaminant in drinking water |
|------------------------------------|------|-----|---|------------|---|
| Haloacetic Acids, (HAA5), ppb      | N/A  | 60  | Range: 9 - 36<br>Highest Annual Average: 23         | No         | By-product of disinfection              |
| Total Trihalomethanes, (TTHM), ppb | N/A  | 80  | Range: 17-55<br>Highest Annual Average: 36          | No         | By-product of disinfection              |

Compliance with the TTHM & HAA5 standards is based on a running annual average of quarterly samples taken throughout the distribution system. In 2008, we used enhanced treatment to remove the required amount of natural organic material and/or we demonstrated compliance with alternative criteria for control of disinfection by-product precursors. Requirement is TT. Typical sources of disinfection by-product precursors are natural organic material that is present in the environment.

## Inorganic Contaminants

| Contaminant, Units | MCLG | MCL    | Range of levels detected and highest value detected | Violation?                        | Source of contaminant in drinking water        |   |
|--------------------|------|--------|---|-----------------------------------|--|---|
| Barium, ppm        | 2    | 2      | Range: 0.012 – 0.056<br>Highest: 0.056              | No                                | Erosion of natural deposits                    |   |
| Fluoride, ppm      | 4    | 4      | Range: 0.65 – 0.80<br>Highest: 0.80                 | No                                | Water additive that promotes strong teeth      |   |
| Nitrate, ppm       | 10   | 10     | Range: ND – 0.05<br>Highest: 0.05                   | No                                | Erosion of natural deposits, fertilizer runoff |   |
| Selenium, ppb      | 50   | 50     | Range: ND – 2<br>Highest: 2                         | No                                | Erosion of natural deposits                    |   |
| Contaminant, Units | MCLG | MCL    | 90th percentile value                               | # of Homes exceeding action level | Violation?                                     | Source of contaminant in drinking water |
| Lead, ppb          | 0    | AL=15  | 4   | 0                                 | No   | Corrosion of household plumbing systems |
| Copper, ppm        | 1.3  | AL=1.3 | 0.21  | 0                                 | No   |   |

The 90th percentile value represents the highest concentration that is exceeded by 10% of the taps sampled. The data presented are from the most recent testing performed in 2005. The State permits monitoring for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

## Radionuclides

| Contaminant, Units | MCLG | MCL | Range of levels detected and highest value detected | Violation? | Source of contaminant in drinking water |
|--------------------|------|-----|---|------------|---|
| Gross alpha, pCi/L | 0    | 15  | Range: ND – 2<br>Highest: 2                         | No         | Erosion of natural deposits             |
| Gross beta, pCi/L  | 0    | 15  | Range: ND – 3<br>Highest: 3                         | No         | Decay of natural deposits               |

The data presented for radionuclides are from the most recent testing performed on 1/21/2004. The State permits monitoring for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

## Secondary Contaminants/ Other Monitoring

| Contaminant, Units                  | Collection date | Highest value detected | Range       | Secondary standard |
|-------------------------------------|-----------------|------------------------|-------------|--------------------|
| MPA-WTP Raw & Finished Water, units | 4/8/2008        | 2.7                    | 1.97 -2.70  | N/A                |
| Sodium, mg/l                        | 8/13/2008       | 41.6                   | 9.66 - 41.6 | 10,000             |
| Total dissolved solids, mg/l        | 1/21/2004       | 150                    | 150         | 500                |

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. EPA recommends these standards but does not require water systems to comply.

## Key to the Tables

AL: Action level. The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

MCL: Maximum contaminant level. The highest level of a contaminant allowed in drinking water below which there are no known health effects. MCLs are set as close to the MCLGs as feasible, using the best available treatment technology.

MCLG: Maximum contaminant level goal. The level of a contaminant in drinking water below which there are no known or expected risks to health. MCLGs allow for a margin of safety.

MPA: Microscopic Particulate Analysis. An analysis of surface water organisms and indicators in water. This analysis can be used to determine performance of a surface water treatment plant or to determine the existence of surface water influence on a ground water well.

MRDL: Maximum residual disinfectant level. The highest level of disinfectant allowed in drinking water.

MRDLG: Maximum residual disinfectant level goal. The level of a drinking water disinfectant, below which there are no known or expected risks to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A: Not applicable.

ND: Not detected. Lab analysis indicates that contaminant is not present.

NTU: Nephelometric turbidity unit is the measurement of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/l: Pico curies per liter, a measure of radioactivity.

ppm: Parts per million; or milligrams per liter (mg/l).

ppb: Parts per billion; or micrograms per liter (ug/l).

RAA: Running annual average. It is an average of four consecutive quarterly averages.

TT: Treatment technique. A required process intended to reduce the level of a contaminant in drinking water.