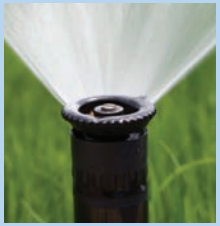
## Director's Message

What do you do next? Someone once told me that is the only problem in life. We all face that problem daily, both in small things and large. Greeley Water's mission is to provide pure plentiful water, for your health and fire safety, every day and without fail. We keep asking ourselves how we can do that better. Should we test new water treatment technologies like ozone and membranes or should we rely on the tried and true, like activated carbon and sand filters? Greeley is blessed with high quality source water, pure Rocky Mountain snowmelt, so the tried and true works pretty well. But we need to keep asking. And deciding what to do next. One of the larger questions we must all ask is how do we maintain that plentiful supply? And we, the whole community of Greeley, must decide. Should we continue to live off our water legacy as we grow (risky) or should we develop more supplies ahead of time (expensive)? Or should we change our lifestyle to look more like the dry plains community we are (trees)? Can we do all three? It is up to us to decide what to do next.

Jon Monson
Water & Sewer Director

## 2008 Watering Restrictions



Greeley allows three days-per-week watering. Residents must follow the mandatory schedule below and refrain from watering during the heat of the day. The Water Department is allowing three days for flexibility, although we encourage you to water one or two days in the spring and fall depending on rainfall and temperature.

Greeley offers sprinkler system assessments and rebates to all residential and commercial water customers. Call 970-336-4134 for more information.

| Single Family Even Addresses 0, 2, 4, 6, 8 | Single Family Odd Addresses 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.**

## 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. Access information about drinking water in general on the EPA's drinking water web site at 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 10th Street. For more information on times, dates and locations of the Board meetings, please contact Lory Hildred at 970-350-9812.

| Greeley Water Contact Directory | |
|---|---|
| **Water & Sewer Department**<br>www.greeleygov.com/water<br>water@greeleygov.com | **350-9811** |
| **Conservation/Restrictions**<br>www.greeleygov.com/wc | **336-4134** |
| **Water Emergencies** (Daytime) | **350-9811** |
| **Water Emergencies** (After Hours) | **350-9600** |
| **Taste and Odor Concerns** | **350-9324** |
| **Utility Billing** | **350-9720** |

City of Greeley Colorado
Great. From the Ground Up.

CO-0162321

# City of Greeley

## *Annual Drinking Water Report*

Reporting Year

# 2007

***June 2008***
***Issue #10***

In compliance with the Colorado Primary Drinking Water Regulations, the Greeley Water Department is pleased to present to you this year's drinking water quality report. The information in this report covers the City of Greeley public water system for calendar year 2007. The report provides an opportunity for you to learn about where our drinking water comes from and the quality of the water. Our constant goal is to provide you with a safe and dependable supply of drinking water.

**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.**

## Greeley's Drinking Water Sources

Greeley drinking water comes from surface water located in four major river basins: Cache la Poudre River, Laramie River, Big Thompson River and Colorado River.

We use 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, Horsetooth 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. The Boyd Lake facility 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.

## United States Water Use

In 2000, about 346,000 million gallons of water per day were withdrawn from surface and groundwater sources.

Here is a breakdown of how Americans use water.

- Irrigation – 40%
- Thermo-electric power generation – 30% *
- Public supply – 13%
- Industry – 5%
- Livestock and aquaculture - < 1%
- Domestic/household use (self-supplied) – 1%
- Mining – 1%

*Note: water used in electrical power generation is mostly used to cool the heated power production equipment. The majority of power plant water is returned to the environment and thereafter available for other uses.

Source: U.S. Geological Survey

## Protect and Conserve Our Water

Water protection and conservation starts with each one of us. While Greeley treats water before and after you use it, your role in protecting water quality for your fellow citizens is crucial. Common contaminants posing a threat to our water every day are: chemical lawn products, pet waste, automotive maintenance fluids, household chemicals and discarded medications. Below are a few ways you can protect our water.

Chemical lawn and garden fertilizers and herbicides that drain off yards following storms and irrigation can be harmful to humans and animals. Use chemical fertilizers and herbicides sparingly and don't apply before rainfall or irrigation. Consider using natural fertilizers such as compost. Try companion planting to reduce the need for herbicides or select pest-resistant plants. For more information, contact the Colorado State University Extension in Weld County, at www.ext.colostate.edu or call 970-304-6535.

Pet waste contains large amounts of bacteria transported by rain and snowmelt through the soil and ultimately, to surface waters. Use a plastic bag or pooper scooper to pick up pet wastes, wrap securely in a plastic bag and place it in the trash.

Don't dispose of pharmaceutical products down the drain or toilet. Crush solid medications and dissolve them in water and dilute liquid medications in water. Then mix the solution with kitty litter, sawdust or other absorbent material that a child or pet would not be attracted to. Place the material in a plastic bag, seal the bag or tie it shut and dispose of the bag in the trash.

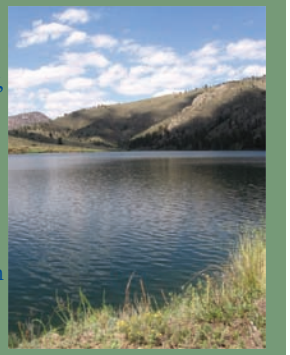
Household and vehicle maintenance chemical products such as motor oil; antifreeze; lead acid, lithium or nickel-cadmium (ni-cad) batteries; chemical cleaning products; pesticides; and paints and solvents can be harmful to humans and animals if disposed of improperly. Never pour used vehicle fluids or household chemical products onto the ground or down the drain.

Dispose of any household hazardous chemicals at the Weld County Household Hazardous Waste Facility, located at 1311 North 17th Avenue. For further information, please call the Weld County Household Hazardous Waste office at (970) 304-6415, extension 3790, or visit: www.co.weld.co.us. Household waste is accepted free from any Weld County resident.

## Protecting Our Source Waters

Source water is untreated water from streams, rivers, lakes or underground aquifers that is used to supply public drinking water. The Colorado Source Water Assessment and Protection (SWAP) Program is designed to provide the public information about the sources of water, as well as protect the quality of drinking water. The SWAP Program encourages community-based protection and prevention to ensure that all public drinking water resources are kept safe from future contamination. The state has completed its assessment of Colorado's source waters and the Greeley SWAP Program assessment report is expected to be released this year. For information about the SWAP Program, visit www.cdphe.state.co.us/wq/sw/swaphom.html.

## Halligan-Seaman Project



In order to provide drought protection for northern Colorado and ensure a reliable water supply, the Cites of Greeley and Fort Collins are partnering with other area municipal and agricultural water providers to develop a regional water management project involving Greeley's Milton Seaman Reservoir and Fort Collins' Halligan Reservoir. Participating in the project are the water districts of North Weld County, Fort Collins-Loveland, East Larimer County, and the North Poudre Irrigation Company.

The project, which is currently in the permitting stage, will provide additional water to satisfy future demand and protection during dry years. City leaders expect that this partnership will help the communities meet future water demand and make more efficient use of existing water supplies. Fort Collins anticipates that enlargement of Halligan will be completed some time after 2010, while the Milton Seaman enlargement will occur around 2025.

For more information on the Halligan-Seaman Water Management Project, please visit www.halligan-seaman.com.

## Common Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and 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.

*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 agriculture, urban storm water runoff and residential uses.

*Organic Chemical Contaminants* including synthetic and volatile organic chemicals, which are by-products of industrial processes 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 or mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public systems. Similarly, the US Food and Drug Administration (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 that water poses a health risk.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is

# 2007 Drinking Water Quality Results

(Sampling was performed from January 1, 2007, through December 31, 2007, unless otherwise indicated.)

## 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.

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

MRDLG: Maximum residual disinfectant level goal. The level of a drinking water disinfectant, below which there

The Safe Drinking Water Act establishes standards for most drinking water systems in the country, including Greeley's. In 2007, the Greeley drinking water system operated without exemption. However, our water system did receive a waiver (permission to not test for specific contaminants) from the state, also known as a variance which is permission to not meet an MCL, MRDL, action level or a treatment technique granted by the state or EPA for cyanide, asbestos, dioxin, and glyphosate. A waiver was provided because it is unlikely that these contaminants would be found in our drinking water. The City routinely monitors a long list of contaminants in our drinking water according to state and federal laws. The following monitoring data tables identify drinking water contaminants that Greeley detected in the water, the levels detected and the maximum allowable levels. As you peruse the tables, you will see that Greeley met all drinking water standards.

## 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% | 0.40 | 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, 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: 1.07 – 1.48<br>Lowest RAA: 1.07 | No | Naturally present in the environment |
| Compliance with the TOC standard is based on how much organic carbon is removed from the raw water. | | | | | |

## 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 – 190<br>Highest: 190 | No | Water additive used to control microbes |
| Chlorite, ppm | 0.8 | 1 | Range: 0.14 – 0.46<br>Highest RAA: 0.46 | No | By-product of disinfection |
| Chlorine residual, ppm | 4 (MRDLG) | 4 (MRDL) | Range: ND - 2.2<br>Highest RAA: 0.64 | 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. | | | | | |
| Haloacetic Acids, (HAA5), ppb | N/A | 60 | Range: 13 - 36<br>Highest RAA: 23 | No | By-product of disinfection |
| Total Trihalomethanes, (TTHM), ppb | N/A | 80 | Range: 22-82<br>Highest RAA: 44 | No | By-product of disinfection |
| Compliance with the TTHM & HAA5 standards is based on RAA of quarterly samples taken throughout the distribution system. | | | | | |

## 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 – 0.042 Highest: 0.042 | No | Erosion of natural deposits |

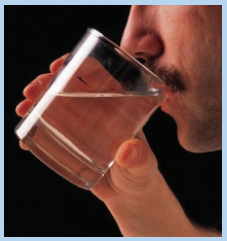
possible that lead levels in your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your water, you may want to have your water tested. You can also flush your tap for 30 seconds to 2 minutes before getting drinking water. More information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline 800-426-4791 or visit www.epa.gov/safewater.

## Drink Greeley Water

Greeley water starts as pure Rocky Mountain snowmelt, is filtered for added purification, laboratory tested for your protection and delivered to you. Since 1907, pure plentiful water has been a hallmark of Greeley. So, rinse and refill your glass and enjoy pure, clean and refreshing drinking water.

*Five Reasons to Choose Greeley Tap Water Instead of Bottled Water*

1. Bottled water costs 1,000 to 10,000 times more than Greeley tap water.



2. Tap water must meet more stringent and much more frequently monitored health standards (EPA) than those for bottled water (FDA).

3. Tap water is delivered to you, 24/7. You don't have to go to the supermarket – just walk over to the nearest tap to get some.

4. Approximately 80 percent of plastic water bottles are not recycled, which adds to the waste going into the landfill.

5. Each year, 1.5 million barrels of oil are used to make plastic water bottles. *This is enough to fuel 100,000 cars or power 250,000 homes for a year. Additional fuel is used to transport them to stores nationwide.* Greeley tap water is delivered 365 days a year by gravity flow directly to your home.

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.

| | | | | | | |
|---|---|---|---|---|---|---|
| Fluoride, ppm | 4 | 4 | Range: 0.31 – 1.20 Highest: 1.20 | | No | Water additive that promotes strong teeth |
| Selenium, ppb | 50 | 50 | Range: <1.0 – 2.7 Highest: 2.7 | | 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 | 15 | 4.6 | 0 | No | Corrosion of household plumbing systems |
| Copper, ppm | 1.3 | 1.3 | 0.34 | 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, incl RA, excl RN & U, PCi/L | 0 | 15 | Range: ND – 2 Highest: 2 | No | Erosion of natural deposits |

Gross alpha, including radium-226 (RA), excluding radon-222 (RN) & uranium (U). This is the gross alpha particle activity compliance value. The data presented for radionuclides are from the most recent testing performed in 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 |
|---|---|---|---|---|
| Sodium, mg/l | 8/13/2007 | 28.9 | 9.6 - 28.9 | 10000 |
| 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.

## Cryptosporidium and Public Health

Cryptosporidium is a microbial pathogen found in surface water across Colorado. It must be ingested to cause disease and it 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. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, undergoing organ transplants, people with HIV/AIDS or other immune system disorders and 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. The EPA and Center for Disease Control have guidelines on how to lessen the risk of cryptosporidium and other microbial contaminants. Call EPA's Safe Drinking Water Hotline 800-426-4791 or visit www.epa.gov/safewater for more information.

In 2007, cryptosporidium was detected in untreated water samples taken from source water supplied by the C-BT system, Cache la Poudre River, Lake Loveland, and Boyd Lake. Current test methods can't determine whether the organisms were capable of causing disease. Cryptosporidium is eliminated from drinking water by an effective treatment combination utilized by the Greeley Water Department which includes coagulation, sedimentation, filtration and disinfection. Greeley did not detect this microorganism in treated water supplies.