Our Mission Continues

We are proud to present once again our annual water quality report covering all testing performed between January 1 and December 31, 2014. Most notably, last year marked the 40th anniversary of the Safe Drinking Water Act (SDWA). This rule was created to protect public health by regulating the nation’s drinking water supply. We celebrate this milestone as we continue to manage our water system with a mission to deliver the best-quality drinking water. By striving to meet the requirements of SDWA, we are ensuring a future of healthy, clean drinking water for years to come.

Please let us know if you ever have any questions or concerns about your water.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. 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.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife; Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 and may also come from gas stations, urban stormwater runoff, and septic systems; Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA’s Safe Drinking Water Hotline at (800) 426-4791.
Source Water Assessment

The City of Council Bluffs obtains its water from the Missouri River and the Missouri River Alluvium. Reservoirs and streams are highly susceptible to contamination because contaminants can move through them quickly. Council Bluffs’ water supply is susceptible to contaminant releases from landfills and livestock confinements. A portion of the Council Bluffs’ water supply is obtained from an alluvial aquifer. The alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials allow contaminants to move through the aquifer quickly. The City of Council Bluffs’ wells will be most susceptible to activities such as dry cleaners, gas stations, industrial sites, and municipal wastewater discharges. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources and is available from John Meads, Purification Manager, at (712) 328-1006, ext. 1020.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Furthermore, the FDA completely exempts bottled water that’s packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you’d pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Tip Top Tap

The most common signs that your faucet or sink is affecting the quality of your drinking water are discolored water, sink or faucet stains, a buildup of particles, unusual odors or tastes, and a reduced flow of water. The solutions to these problems may be in your hands.

Kitchen Sink and Drain
Hand washing, soap scum buildup, and the handling of raw meats and vegetables can contaminate your sink. Clogged drains can lead to unclean sinks and backed-up water in which bacteria (e.g., pink and black slime) can grow and contaminate the sink area and faucet, causing a rotten egg odor. Disinfect and clean the sink and drain area regularly. Also, flush regularly with hot water.

Faucets, Screens, and Aerators
Chemicals and bacteria can splash and accumulate on the faucet screen and aerator, which are located on the tip of faucets and can collect particles like sediment and minerals, resulting in a decreased flow from the faucet. Clean and disinfect the aerators or screens on a regular basis.

Check with your plumber if you find particles in the faucet screen as they could be pieces of plastic from the hot water heater dip tube. Faucet gaskets can break down and cause black, oily slime. If you find this slime, replace the faucet gasket with a higher-quality product. White scaling or hard deposits on faucets and shower heads may be caused by hard water or water with high levels of calcium carbonate. Fixtures can be safely cleaned with vinegar.

Household Water Filtration and Treatment Devices
A smell of rotten eggs can be a sign of bacteria on the filters or in the treatment system. The system can also become clogged over time so regular filter replacement is important. (Remember to replace your refrigerator filter!)
Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not themselves pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at such times. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food, on our skin, in our bodies, and in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we have tested many water samples for coliform bacteria. In that time, none of the samples came back positive for the bacteria.

Federal regulations require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliform are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliform to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.

Where Does My Water Come From?

The Council Bluffs Water Works’ primary water source is the Missouri River and the Missouri River Alluvium.

Community Participation

We want our valued customers to be informed about their water utility. The Board of Water Works Trustees conduct the business of the Water Works during their regularly scheduled meetings. The meetings are normally held on the third Tuesday of the month at 4:30 p.m. at the Water Works office, 2000 N. 25th Street.

Testing for Cryptosporidium

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. While monitoring of source water indicates the presence of these organisms, analyses of the treated or finished water have shown none. The Council Bluffs Water Works utilizes a multiple-barrier treatment process that effectively removes and inactivates Cryptosporidium. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctors regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.
When was drinking water first regulated?
The Safe Drinking Water Act (SDWA) of 1974 represents the first time that public drinking water supplies were protected on a federal (national) level in the U.S. Amendments were made to the SDWA in 1986 and 1996.

How much water do we use every day?
The average person in the U.S. uses 80 to 100 gallons of water each day. (During medieval times, a person used only 5 gallons per day.) It takes 2 gallons to brush your teeth, 2 to 7 gallons to flush a toilet, and 25 to 50 gallons to take a shower.

When was chlorine first used in the U.S.?
In 1908, Jersey City, New Jersey, and Chicago, Illinois, were the first water supplies to be chlorinated in the U.S.

Seventy-one percent of Earth is covered in water: how much is drinkable?
Oceans hold about 96.5 percent of all Earth’s water. Only three percent of the Earth’s water can be used as drinking water. Seventy-five percent of the world’s fresh water is frozen in the polar ice caps.

How much water is in our atmosphere?
Forty trillion gallons of water are carried in the atmosphere across the U.S. each day.

How much water is in our bodies?
Water makes up almost two-thirds of the human body and 70 percent of the brain. Four hundred gallons of water are recycled through our kidneys each day.

How long can a person go without water?
Although a person can live without food for more than a month, a person can live without water for only approximately one week.

Is tap water cheaper than soda?
Yes! You can refill an 8 oz. glass of tap water approximately 15,000 times for the same cost as a six-pack of soda pop. And water has no sugar or caffeine.
Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality.

### Regulated Substances

<table>
<thead>
<tr>
<th>SUBSTANCE (UNIT OF MEASURE)</th>
<th>YEAR SAMPLED</th>
<th>MCL [MRDL]</th>
<th>MCLG [MRDLG]</th>
<th>AMOUNT DETECTED</th>
<th>RANGE LOW-HIGH</th>
<th>VIOLATION</th>
<th>TYPICAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine (ppm)</td>
<td>2014</td>
<td>[4]</td>
<td>[4]</td>
<td>2.0</td>
<td>1.53-2.74</td>
<td>No</td>
<td>Water additive used to control microbes</td>
</tr>
<tr>
<td>Chlorite (ppm)</td>
<td>2014</td>
<td>1</td>
<td>0.8</td>
<td>0.25</td>
<td>0.00-0.25</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Chromium (ppb)</td>
<td>2013</td>
<td>100</td>
<td>100</td>
<td>1.1</td>
<td>0.5–2.7</td>
<td>No</td>
<td>Discharge from steel and pulp mills; Erosion of natural deposits</td>
</tr>
<tr>
<td>Fluoride (ppm)</td>
<td>2014</td>
<td>4</td>
<td>4</td>
<td>0.66</td>
<td>0.26-0.92</td>
<td>No</td>
<td>Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories</td>
</tr>
<tr>
<td>Haloacetic Acids [HAAs]–Stage 2 (ppb)</td>
<td>2014</td>
<td>60</td>
<td>NA</td>
<td>13.0</td>
<td>10–16</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>TTHMs [Total Trihalomethanes]–Stage 2 (ppb)</td>
<td>2014</td>
<td>80</td>
<td>NA</td>
<td>43.00</td>
<td>28–66</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Total Organic Carbon (removal ratio)</td>
<td>2014</td>
<td>TT</td>
<td>NA</td>
<td>1.7</td>
<td>1.1–3.0</td>
<td>No</td>
<td>Naturally present in the environment</td>
</tr>
<tr>
<td>Turbidity' (NTU)</td>
<td>2014</td>
<td>TT</td>
<td>NA</td>
<td>0.12</td>
<td>0.02–0.12</td>
<td>No</td>
<td>Soil runoff</td>
</tr>
<tr>
<td>Turbidity (Lowest monthly percent of samples meeting limit)</td>
<td>2014</td>
<td>TT=95% of samples &lt;0.3 NTU</td>
<td>NA</td>
<td>100</td>
<td>NA</td>
<td>No</td>
<td>Soil runoff</td>
</tr>
</tbody>
</table>

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

<table>
<thead>
<tr>
<th>SUBSTANCE (UNIT OF MEASURE)</th>
<th>YEAR SAMPLED</th>
<th>AL</th>
<th>MCLG</th>
<th>AMOUNT DETECTED (90TH%TILE)</th>
<th>SITES ABOVE AL/ TOTAL SITES</th>
<th>VIOLATION</th>
<th>TYPICAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (ppm)</td>
<td>2013</td>
<td>1.3</td>
<td>1.3</td>
<td>0.06</td>
<td>0/40</td>
<td>No</td>
<td>Corrosion of household plumbing systems; Erosion of natural deposits</td>
</tr>
<tr>
<td>Lead (ppb)</td>
<td>2013</td>
<td>15</td>
<td>0</td>
<td>2.0</td>
<td>0/40</td>
<td>No</td>
<td>Corrosion of household plumbing systems; Erosion of natural deposits</td>
</tr>
</tbody>
</table>

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**UNREGULATED SUBSTANCES**

<table>
<thead>
<tr>
<th>SUBSTANCE (UNIT OF MEASURE)</th>
<th>YEAR SAMPLED</th>
<th>AMOUNT DETECTED</th>
<th>RANGE LOW-HIGH</th>
<th>TYPICAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium (ppm)</td>
<td>2014</td>
<td>78</td>
<td>NA</td>
<td>Erosion of natural deposits</td>
</tr>
</tbody>
</table>

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**UNREGULATED CONTAMINANT MONITORING REGULATION 3 (UCMR3)**

<table>
<thead>
<tr>
<th>SUBSTANCE (UNIT OF MEASURE)</th>
<th>YEAR SAMPLED</th>
<th>AMOUNT DETECTED</th>
<th>RANGE LOW-HIGH</th>
<th>TYPICAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorate (ppm)</td>
<td>2013</td>
<td>0.0438</td>
<td>0–0.142</td>
<td>The most direct source of exposure to chlorate is through drinking water that has been disinfected with sodium hypochlorite or chlorine dioxide.</td>
</tr>
<tr>
<td>Hexavalent Chromium (ppm)</td>
<td>2013</td>
<td>0.0011</td>
<td>0.0005–0.0019</td>
<td>A group of man-made compounds used in the production of stainless steel, chromate chemicals, and pigments</td>
</tr>
<tr>
<td>Molybdenum (ppm)</td>
<td>2013</td>
<td>0.0002</td>
<td>0.0000–0.0004</td>
<td>Natural sources of molybdenum release to water include wet and dry deposition, soil erosion, and leaching from rocks and soil.</td>
</tr>
<tr>
<td>Strontium (ppm)</td>
<td>2013</td>
<td>0.2560</td>
<td>0.2950–0.3950</td>
<td>Strontium is a natural and commonly occurring element found in the form of minerals.</td>
</tr>
<tr>
<td>Vanadium (ppm)</td>
<td>2013</td>
<td>0.0002</td>
<td>0.0000–0.0004</td>
<td>Natural sources of vanadium release to water include wet and dry deposition, soil erosion, and leaching from rocks and soil.</td>
</tr>
</tbody>
</table>

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1 Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.
**Definitions**

**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 that is allowed in drinking water. 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 is no known or expected risk to health. MCLGs allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**NA:** Not applicable

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**removal ratio:** A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.