



# 2020 CONSUMER CONFIDENCE REPORT



## CONSIDERING THE ENVIRONMENT

Fifty years ago, a national movement was born when an estimated 20 million Americans took part in the very first Earth Day activities. Since then, awareness and understanding of mankind's impact on the environment has steadily grown. Things that were once seen as beneficial are now being reconsidered as possible health concerns.

Take, for example, the growing concerns around PFAS, a group of more than 3,000 man-made chemicals that were the subject of the recent movie *Dark Waters*. Beginning in the 1950s, use of these compounds became very popular due to their water repelling properties.

PFAS are commonplace in everyday substances such as water-repellent textiles (think "rain coats"), non-stick paper (think "pizza box" and "hamburger wrapper"), stain-resistant carpets, and some non-stick cookware. And now, they are a suspected carcinogen. Fortunately, two different rounds of testing in Ames failed to detect the presence of PFAS in our source water. As a drinking water provider, we closely monitor the evolving understanding of chemicals in the environment and in our water supply.

At the Ames Water Plant, we do more than just monitor the science. We are taking active steps to minimize the impacts of our own operations on the environment. For example, 100% of the lime-softening residuals generated by the water softening process are beneficially recycled as an agricultural lime. This reduces the quantity of limestone that must be mined by several thousand tons per year.

We also were proud to receive Leadership in Energy and Environmental Design (LEED) certification for the new water treatment plant during the past year. Things like high reflectivity roofing materials and bright white concrete help to minimize the heat island effect of the building. Native landscaping and careful storm water management help minimize runoff and protect nearby waterways. These and other design elements will help ensure that the Ames Water Plant has the smallest environmental footprint possible. Now that's a Smart Choice!

Este informe contiene información importante acerca de su agua potable. Le recomendamos que encuentre recursos que le pueden ayudar a traducir esta información.

## WATER PLANT OPERATORS: ON THE JOB FOR YOU!

When you turn out the light and go to bed, dedicated plant operators are busy at the Ames Water Plant ensuring the water you use every day remains safe and great-tasting. Twenty-four hours a day, 365 days a year, your Ames Water Plant is staffed with employees looking out for you.

Ensuring Ames tap water is safe is a big job. With every 24-hour span, operators test 192 water samples to analyze drinking water. They monitor added treatment chemical levels like chlorine and fluoride, and measure the pH of the water. Water is sampled at various steps throughout the treatment process. The results are meticulously tracked and recorded.

Water treatment operators are certified by the State of Iowa for their technical expertise, but the job requires a broad range of aptitudes. Operators may be called on for plant maintenance, computer troubleshooting, and customer service skills. After hours, a water plant operator is the voice on the phone answering questions about low water pressure or discolored water. Operators are walking the facility looking for issues, checking the status of sampling tests, and ensuring safe, refreshing tap water is always available to all Ames customers.

Being a water plant operator means being prepared for a little bit of everything. The next time you turn on the tap and enjoy some Ames water, remember the water plant operators working behind the scenes have your health and safety as their No. 1 priority.



CITY OF  
**Ames**<sup>™</sup>  
WATER PLANT

1800 E. 13th Street | Ames, IA 50010



For more information please visit [www.CityOfAmes.org/Water](http://www.CityOfAmes.org/Water) or 515.239.5150

Substance (units)	Test Year	No. of Samples	Range	Average Value	Highest Allowed Level (MCL or MRDL)	Ideal Level (MCLG or MRDLG)	Typical Source of Substance
<b>SUBSTANCES TESTED FOR</b>							
Nitrate (ppm)	2019	46	ND	ND	10	<10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Total Coliform (P/A)	2019	761	Present in 0.0 - 1.5% of Monthly Samples	Present in 0.1% of Monthly Samples	Present in <5% of Monthly Samples	Present in 0% of Monthly Samples	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other waterborne pathogens may be present, or that a potential pathway exists through which contamination may enter the drinking water.
Total Chlorine (ppm)	2019	761	1.52 - 2.85	2.45	4	<4	Water additive used to control microbes.
Fluoride (ppm)	2019	792	0.18 - 0.90	0.58	4	<4	Erosion of natural deposits; Water additive which promotes strong teeth.
Sodium (ppm)	2018	1	35	35	N/A	N/A	Erosion of natural deposits; Added to water during treatment process.
Nitrite (ppm)	2019	45	ND - 0.100	0.028	1	<1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Chlorate (ppm)	2019	2	0.14	0.14	N/A	N/A	By-product of drinking water disinfection.
Chlorite (ppm)	2019	2	ND	ND	1.0	<0.8	By-product of drinking water disinfection.
Total Trihalomethanes - TTHM (ppm)	2019	2	ND	ND	80	N/A	By-product of drinking water disinfection.
Bromochloroacetic Acid (ppb)	2018	4	0.47-0.58	0.52	N/A	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 4.
Bromodichloroacetic Acid (ppb)	2018	4	ND-0.58	0.54	N/A	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 4.
Dibromoacetic Acid (ppb)	2018	6	ND-0.46	N/A	N/A	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 4.
Dichloroacetic Acid (ppb)	2018	6	0.76-1.60	1.07	N/A	0	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 4.
Substances (units)	Test Year	No. of Samples	90% of Samples Were Below	No. of Samples Above AL	Action Level (AL)	Ideal Level (MCLG or MRDLG)	Typical Source of Substance
<b>SUBSTANCES REGULATED AT THE CONSUMERS TAP</b>							
Lead (ppb)	2019	52	2.37	2	15	0	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm)	2019	52	0.02	0	1.3	<1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

**ABBREVIATIONS TO KNOW:** **ND:** not detected by test method **ppm:** parts per million, same as milligrams per liter (mg/L) **ppb:** parts per billion, same as micrograms per liter (µg/L) **MRDLG:** maximum residual disinfectant level goal **MRDL:** maximum residual disinfectant level **NTU:** nephelometric turbidity units **TT:** treatment technique, value determined by available treatment technology.

**TERMS TO KNOW:** Regulated substances have Maximum Contaminant Levels (MCLs) set by the EPA. This is the highest level of a contaminant that is allowed in drinking water. Some contaminants have Maximum Contaminant Level Goals (MCLGs). This is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for an additional margin of safety. MCLs are set as close to MCLGs as feasible using the best available water treatment process. Unregulated substances do not have established MCLs but are monitored regularly. If an unacceptable amount of any substance is ever found in our water, the City of Ames will notify residents immediately and take corrective action to eliminate the problem. The MCL for lead and copper is known as the Action Level (AL) which, if exceeded, triggers treatment or other requirements. If 90% of all samples tested are not below the action level concentration, then the water utility is required to implement treatment improvements to lower lead/copper levels. Other actions, such as public education and notices, may also be required.

## LEAD

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. The Ames Water Treatment Plant is responsible for providing high quality drinking water, but 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 <http://www.epa.gov/safewater/lead>.

## PROTECTING AGAINST LEAD

The Ames Water Plant produces water that helps lower the risk of lead contamination. Lead is not present when the water leaves the treatment plant, but can enter the drinking water when private service lines, made of lead, corrode. The Ames Water Plant makes corrosion less likely by maintaining a very specific water chemistry. Some parameters are monitored continuously, and Water Plant operators perform additional tests daily to ensure that the water is unlikely to corrode lead pipes. For more detailed information about how we help limit lead exposure, visit [www.CityOfAmes.org/Lead](http://www.CityOfAmes.org/Lead).

## DRINKING WATER REGULATIONS

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which 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 contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

## SOURCE WATER EVALUATION

Ames' award-winning water originates in groundwater aquifers. The water in Ames' aquifers flows through the remnants of ancient riverbeds of Squaw Creek and the South Skunk River as they existed before the most recent glaciers changed the terrain. The City of Ames uses 22 wells to access the water in the layers of sand and gravel in these ancient riverbeds. In 2014, the Iowa Department of Natural Resources (IDNR) completed a source water evaluation for Ames. The evaluation determined that Ames' groundwater has the potential to be contaminated by leaking underground storage tanks, landfills, or improper hazardous waste disposal. As water travels over the surface or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. Water can also pick up substances resulting from human and animal activity. The City of Ames works diligently to ensure that contamination does not impact the Ames water supply. Interested

citizens can request a copy of the IDNR source water evaluation at the City of Ames Water Treatment Plant.

## SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 people, and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (800-426-4791).

## WATER TREATMENT PROCESS

The United States has some of the best public water supplies in the world. To make this happen, trained professionals work 24 hours a day to provide you with the best possible water.

**FROM THE WELL** - The Ames Water Treatment Plant provides treatment to ensure a safe, palatable supply of drinking water for its customers. Have you ever wondered how the underground water supply gets to you? It all begins when well water enters the treatment plant through an aerator. This vents dissolved gases to the atmosphere that would contribute undesirable taste and odor and interfere with subsequent treatment steps. Dissolved iron combines with oxygen in the air to form rust particles that are removed in a later treatment step.

**LIME ADDED TO REMOVE HARDNESS** - The water then flows into solids contact units where lime is added to raise the pH. In the center column, or solids contact zone, the lime forms solid particles which remove calcium and magnesium, minerals that contribute to hardness.

**HARDNESS SETTLES OUT** - The water then travels to the clarification zone of the solids contact unit where the insoluble calcium and magnesium particles settle to the bottom. These residuals, commonly known as sludge, flow to a lagoon and are allowed to dry. The residuals are recycled to farm fields as a soil conditioner.

**CLEAN, FILTERED WATER** - Next, water enters recarbonation tanks where carbon dioxide gas is diffused into the water to stop the softening reaction. After recarbonation, polyphosphate is added to stabilize the water and reduce scale build-up on the filters. Water is then filtered through beds of anthracite coal and sand. These filters remove fine suspended particles.

**TO YOUR HOME** - Finally, in accordance with recommendations from the U.S. Department of Health and Human Services and the U.S. Environmental Protection Agency, fluoride is added to the water for dental protection just prior to distribution to the community.







## AMES WATER PLANT RECOGNIZED FOR ENGINEERING EXCELLENCE

The City of Ames, FOX Engineering Associates, Inc., HDR, and Barr Engineering are the recipients of the 2020 American Council of Engineering Companies – Iowa Chapter (ACEC-IA) Grand Conceptor Award in addition to winning the grand prize in the Water and Wastewater Category for the Ames Water Treatment Plant. The Grand Conceptor Award is given to the one project that stands above all other entries.

The Ames Water Treatment Plant is a 15 million gallon per day (MGD) facility located on ground previously owned by the federal government. The facility was built to be sustainable, provide increased redundancy and resiliency, and achieve LEED certification.

The ACEC-IA award recognizes the engineering design team's work to improve the new facility through comprehensive planning,

design, and construction of the new water plant. City staff, including administration, engineering, operations, and maintenance personnel, were an important part of the design team. The team collaboratively addressed technical factors involved with treating the water, as well as development of the site, costs, funding, and long-term objectives.

The project demonstrated a breakthrough approach to designing a water treatment plant to achieve LEED certification. Design included use of wood selected from renewable forests, a heating and cooling system that reduces energy consumption by 30%, and using recycled white roofing materials and bright white concrete to reduce the buildings' heat island effects. The \$70 million facility was completed in 2017. The collaborative design process has created a facility in which the entire design team and City staff are proud.

## WATER TREATMENT PLANT RECEIVES LEED CERTIFICATION

The City of Ames Water Treatment Plant has received LEED certification. John Dunn, Ames Water and Pollution Control Director, presented the LEED plaque at the May 28, 2019 City Council meeting. LEED certification is a mark of quality and achievement in green building.

"The whole reason that the Water and Pollution Control Department exists is to protect public health and the environment," said Dunn. "As such, constructing the new Water Treatment Plant in a sustainable manner was accepted early in the design process as a fundamental objective."

Some of the design and construction elements that contributed to earning LEED

certification include:

- The project protects and preserves more than 50 percent of the project site using native vegetation
- Energy consumption of the facility is 19 percent below the LEED benchmark, and water use is 28 percent below the LEED benchmark
- Eighty-eight percent of all construction waste was diverted from a landfill
- One hundred percent of the wood products used in the project comply with the requirements of the Forest Stewardship Council

Additional points towards certification were awarded for providing low-emitting,

fuel-efficient vehicles for staff use; utilizing low-emitting adhesives, paints, and carpeting; and an innovative design that utilizes the cold water being brought into the facility as a geothermal heat exchanger.

As a result of LEED certification, the City will be receiving a check from the Iowa Department of Natural Resources in the coming months.

The Ames water utility was formed in 1891. The previous Water Treatment Plant was constructed in 1927. Construction of the new Water Treatment Plant started in 2014 and began treating the City's water in July 2017. It has the capacity to treat 15 million gallons per day.

The Ames City Council is the governing body that oversees the Ames water system. Bring your ideas to the public forums at the City Council meetings which are normally held at 6:00 p.m. on the second and fourth Tuesdays of each month in the City Council Chambers at 515 Clark Avenue.

For questions regarding the information in this report, or any questions related to your water, please contact the Ames Water Treatment Plant at 515.239.5150.



*Smart Choice*



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