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. At this point, a polymer is added to promote particle settling.

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.

Water & Pollution Control
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Consumer Confidence Report

Drinking Water in Ames 2018

"The more things change, the more they stay the same." You've probably heard that phrase over and over. While it may frequently be overused, it perfectly describes the past year for your drinking water utility.

In late July of 2017, employees transitioned from the old water treatment plant to the new plant. The water quality during and after the transition was virtually unchanged, and many customers have told us they couldn't tell any difference.

The new treatment facility is utilizing a treatment process that is almost identical to the softening process that was first adopted in Ames in 1932. However, the new facility contains equipment that provides much higher reliability, redundancy, and efficiency than the old facility offered.

Just as the previous water treatment plant was upgraded and expanded multiple times over its life, the new facility is designed with the future in mind. The current facility has a maximum capacity of 15 million gallons per day and was laid out in anticipation of expanding to 20, and again to 25 million gallons per day as the Ames community grows.

Perhaps the most important things about Ames water have remained consistent throughout this transition. The water quality continues to far exceed all state and federal water quality standards. (Make sure to review the data inside this report.) And the taste remains exceptional, as demonstrated by Ames taking home the award for "Best Tasting Water in Iowa" just two months after the new facility became operational.

High quality drinking water has become an integral part of the Ames cultural identity. That was demonstrated when an estimated 2,000 people joined us for our ribbon-cutting ceremony last August. From all of us who work around the clock to provide this essential service, we appreciate your faith and support for YOUR water utility.

John R. Dunn, Director
Water & Pollution Control

www.CityOfAmes.org

CITY OF Ames WATER PLANT

Figure (right), water feature addition to the new water treatment plant.

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
SUBSTANCES TESTED FOR							
Nitrate (ppm)	2017	17	ND	ND	10	<10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Total Coliform (P/A)	2017	761	Present in 0% of Monthly Samples	Present in 0% of Monthly Samples	Present in <5% of Monthly Samples	Present in No 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)	2017	761	1.14-2.80	2.38	4	<4	Water additive used to control microbes.
Fluoride (ppm)	2017	1,097	0.10-1.88	0.59	4	<4	Erosion of natural deposits; Water additive which promotes stong teeth.
Sodium (ppm)	2015	1	29	29	N/A	N/A	Erosion of natural deposits; Added to water during treatment process.
Nitrite (ppm)	2017	16	0.006-0.130	0.05	1	<1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Total Chromium (ppb)	2013	4	0.2-2	0.7	100	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 3.
Hexavalent Chromium (ppb)	2013	4	0.170-0.25	0.216	N/A	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 3.
Molybdenum (ppb)	2013	4	1.70-16.5	5.63	N/A	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 3.
Strontium (ppm)	2013	4	0.190-0.227	0.208	N/A	N/A	These samples were collected as part of the requirements for the Unregulated Contaminant Monitoring Rule 3.
Chlorate (ppm)	2017	2	0.15-0.26	0.21	N/A	N/A	By-product of drinking water disinfection.
Chlorite (ppm)	2017	2	0.04	0.04	1.0	<0.8	By-product of drinking water disinfection.
Total Trihalomethanes - TTHM (ppb)	2017	2	ND-2.0	2.0	80	N/A	By-product of drinking water disinfection.
Substance (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**
SUBSTANCES REGULATED AT THE CONSUMERS TAP							
Lead (ppb)	2017	68	5.4	3	15	0	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm)	2017	68	0.024	0	1.3	<1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

Este informe contiene informacion importante acerca de su agua potable. Hage que alguien lo traduzca para usted, o hable con alguien que lo entienda.

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.

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).

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.