



2018 Consumer Confidence DRINKING WATER REPORT

Making Safe Drinking Water

Your drinking water comes from a groundwater source: six wells ranging from 280 to 400 feet deep that draw water from the Jordan aquifer.

Hastings works hard to provide you with safe and reliable drinking water that meets federal and state water quality requirements. The purpose of this report is to provide you with information on your drinking water and how to protect our precious water resources.

Contact City of Hastings Public Works at 651-480-6185 or publicworksdept@hastingsmn.gov if you have questions about Hastings' drinking water. You can also ask for information about how you can take part in decisions that may affect water quality.

The U.S. Environmental Protection Agency sets safe drinking water standards. These standards limit the amounts of specific contaminants allowed in drinking water. This ensures that tap water is safe to drink for most people. The U.S. Food and Drug Administration regulates the amount of certain contaminants in bottled water. Bottled water must provide the same public health protection as public tap water.

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 at 1-800-426-4791.

Hastings Monitoring Results

This report contains our monitoring results from January 1 to December 31, 2018.

We work with the Minnesota Department of Health to test drinking water for more than 100 contaminants. In recent years, we found one or more contaminants with levels above the Environmental Protection Agency's limits. We found some other contaminants in small amounts, but they were below the Environmental Protection Agency's limits.

Learn more by visiting the Minnesota Department of Health's webpage [Basics of Monitoring and Testing of Drinking Water in Minnesota \(https://www.health.state.mn.us/communities/environment/water/factsheet/sampling.html\)](https://www.health.state.mn.us/communities/environment/water/factsheet/sampling.html).

How to Read the Water Quality Data Tables

The tables in this report show the contaminants we found last year or the most recent time we sampled for that contaminant. They also show the levels of those contaminants and the Environmental Protection Agency's limits. Substances that we tested for but did not find are not included in the tables.

We sample for some contaminants less than once a year because their levels in water are not expected to change from year to year. If we found any of these contaminants the last time we sampled for them, we included them in the tables with the detection date.

We may have done additional monitoring for contaminants that are not included in the Safe Drinking Water Act. To request a copy of these results, call the Minnesota Department of Health at 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.



2018 Water Contamination Incident

On Saturday, September 22, the city confirmed the presence of E.coli bacteria in our public water system. A Boil Water Advisory, required by the Minnesota Department of Health, was immediately put into effect as the city worked to disinfect the water system and return to normal operation. On Monday, September 24, the Boil Water Advisory was lifted, and citizens were able to use water normally again. Following this incident, the Department of Health conducted a Level 2 Assessment of Hastings water system, and while they were unable to pinpoint a specific cause for the bacteria finding it was strongly recommended to begin implementing a permanent disinfection solution. All information and findings from the incident can be found online at www.hastingsmn.gov/water

MDH Testing in Hastings

E. coli: We were required to complete one Level 2 assessment because we found E. coli in our water system. In addition, we were required to take corrective actions to resolve the issue because we had total coliform and E. coli-positive repeat samples.

Total coliform bacteria: During the past year we were required to conduct one Level 1 assessment and no E. coli was confirmed. The assessment was completed, and MDH confirmed no corrective actions were required.

During testing prior to September 22, 2018, five E. coli positive samples were found. Of those, three samples were confirmed, and two were not confirmed. Unconfirmed samples are common and can occur due to sampling or testing errors.

Potential Health Effects and Corrective Actions (if applicable)

E. coli: E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

Lead: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Nitrate: Nitrate in drinking water at levels above 10 parts per million is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.

Total coliform bacteria: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that were found during these assessments.



Table Definitions

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

EPA: Environmental Protection Agency

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.

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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): Does not apply.

NTU (Nephelometric Turbidity Units): A measure of the cloudiness of the water (turbidity).

pCi/l (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part per billion in water is like one drop in one billion drops of water, or about one drop in a swimming pool. ppb is the same as micrograms per liter ($\mu\text{g/l}$).

ppm (parts per million): One part per million is like one drop in one million drops of water, or about one cup in a swimming pool. ppm is the same as milligrams per liter (mg/l).

PWSID: Public water system identification.

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

Variations and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.



Monitoring Results - Regulated Substances

LEAD AND COPPER - Tested at customer taps

Contaminant (date, if sampled in previous year)	EPA's Action Level	EPA's Ideal Goal (MCLG)	90% of Results were less than	homes with high levels	Violation	Typical Source of Contaminant
Copper (06/13/16)	90% of homes less than 1.3 ppm	0 ppm	0.13 ppm	0 out of 30	NO	Corrosion of household plumbing
Lead (06/13/16)	90% of homes less than 15 ppb	0 ppm	3.3 ppb	1 out of 30	NO	Corrosion of household plumbing

INORGANIC & ORGANIC CONTAMINANTS - Tested in drinking water

Contaminant (date, if sampled in previous year)	EPA's Action Level	EPA's Ideal Goal (MCLG)	Highest Aver- age or Highest Single Result	Range of Detected Test Results	Violation	Typical Source of Contaminant
Nitrate	10.4 ppm	10 ppm	9.4 ppm	3.80 - 9.40 ppm	NO	Runoff from fertilizer use; leach- ing from septic tanks, sewage; Erosion of natural deposits.
Barium	2 ppm	2 ppm	0.04 ppm	N/A	NO	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposit.
Combined Radium (2017)	5.4 pCi/l	0 pCi/l	1.6 pCi/l	N/A	NO	Erosion of natural deposits.

CONTAMINANTS RELATED TO DISINFECTION - Tested in drinking water

Substance (date, if sampled in previous year)	EPA's Limit (MCL or MRDL)	EPA's Ideal Goal (MCLG or MRDLG)	Highest Aver- age or Highest Single Result	Range of Detected Test Results	Violation	Typical Sources
Total Chlorine	4.0 ppm	4.0 ppm	0.45 ppm	0.37 - 0.52 ppm	NO	Water additive used to control microbes.

OTHER SUBSTANCES - Tested in drinking water

Substance (date, if sampled in previous year)	EPA's Limit (MCL or MRDL)	EPA's Ideal Goal (MCLG or MRDLG)	Highest Aver- age or Highest Single Result	Range of Detected Test Results	Violation	Typical Sources
Fluoride	4.0 ppm	4.0 ppm	0.71 ppm	0.50 - 0.91 ppm	NO	Erosion of natural deposits; Water additive to promote strong teeth.



Monitoring Results - Unregulated Substances

In addition to testing drinking water for contaminants regulated under the Safe Drinking Water Act, we sometimes also monitor for contaminants that are not regulated. Unregulated contaminants do not have legal limits for drinking water.

Detection alone of a regulated or unregulated contaminant should not cause concern. The meaning of a detection should be determined considering current health effects information. We are often still learning about the health effects, so this information can change over time.

The following table shows the unregulated contaminants we detected last year, as well as human-health based guidance values for comparison, where available. The comparison values are based only on potential health impacts and do not consider our ability to measure contaminants at very low concentrations or the cost and technology of prevention and/or treatment. They may be set at levels that are costly, challenging, or impossible for water systems to meet (for example, large-scale treatment technology may not exist for a given contaminant).

A person drinking water with a contaminant at or below the comparison value would be at little or no risk for harmful health effects. If the level of a contaminant is above the comparison value, people of a certain age or with special health conditions - like a fetus, infants, children, elderly, and people with impaired immunity – may need to take extra precautions. Because these contaminants are unregulated, EPA and MDH require no particular action based on detection of an unregulated contaminant. We are notifying you of the unregulated contaminants we have detected as a public education opportunity.

More information is available on MDH’s [A-Z List of Contaminants in Water \(https://www.health.state.mn.us/communities/environment/water/contaminants/index.html\)](https://www.health.state.mn.us/communities/environment/water/contaminants/index.html) and Fourth [Unregulated Contaminant Monitoring Rule \(UCMR 4\) \(https://www.health.state.mn.us/communities/environment/water/com/ucmr4.html\)](https://www.health.state.mn.us/communities/environment/water/com/ucmr4.html).

UNREGULATED CONTAMINANTS - Tested in drinking water

Contaminant	Comparison Value	Highest Average Result or Highest Single Test Result	Range of Detected Test Results
Sodium*	20 ppm	14.1 ppm	N/A
Manganese	100 ppb	16.3 ppb	0.50 - 16.30 ppb
Sulfate	500 ppm	6.04 ppm	N/A

*Note that home water softening can increase the level of sodium in your water.

Some People Are More Vulnerable to Contaminants in Drinking Water

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, and infants can be particularly at risk from infections. The developing fetus and therefore pregnant women may also be more vulnerable to contaminants in drinking water. These people or their caregivers should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) 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 1-800-426-4791.



Learn More about Your Drinking Water

Drinking Water Sources

Minnesota's primary drinking water sources are groundwater and surface water. Groundwater is the water found in aquifers beneath the surface of the land. Groundwater supplies 75 percent of Minnesota's drinking water. Surface water is the water in lakes, rivers, and streams above the surface of the land. Surface water supplies 25 percent of Minnesota's drinking water.

Contaminants can get in drinking water sources from the natural environment and from people's daily activities. There are five main types of contaminants in drinking water sources.

- **Microbial contaminants**, such as viruses, bacteria, and parasites. Sources include sewage treatment plants, septic systems, agricultural livestock operations, pets, and wildlife.
- **Inorganic contaminants** include salts and metals from natural sources (e.g. rock and soil), oil and gas production, mining and farming operations, urban stormwater runoff, and wastewater discharges.
- **Pesticides and herbicides** are chemicals used to reduce or kill unwanted plants and pests. Sources include agriculture, urban stormwater runoff, and commercial and residential properties.
- **Organic chemical contaminants** include synthetic and volatile organic compounds. Sources include industrial processes and petroleum production, gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants** such as radium, thorium, and uranium isotopes come from natural sources (e.g. radon gas from soils and rock), mining operations, and oil and gas production.

The Minnesota Department of Health provides information about your drinking water source(s) in a source water assessment, including:

- How Hastings is protecting your drinking water source(s);
- Nearby threats to your drinking water sources;
- How easily water and pollution can move from the surface of the land into drinking water sources, based on natural geology and the way wells are constructed.

Find your source water assessment at [Source Water Assessments \(https://www.health.state.mn.us/communities/environment/water/swp/swa\)](https://www.health.state.mn.us/communities/environment/water/swp/swa) or call 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.

Call the EPA Safe Drinking Water Hotline at 1-800-426-4791. To learn about how to reduce your contact with lead from sources other than your drinking water, visit [Lead Poisoning Prevention: Common Sources \(https://www.health.state.mn.us/communities/environment/lead/sources.html\)](https://www.health.state.mn.us/communities/environment/lead/sources.html).



Lead in Drinking Water

You may be in contact with lead through paint, water, dust, soil, food, hobbies, or your job. Coming in contact with lead can cause serious health problems for everyone. There is no safe level of lead. Babies, children under six years, and pregnant women are at the highest risk.

Lead is rarely in a drinking water source, but it can get in your drinking water as it passes through lead service lines and your household plumbing system. Hastings provides high quality drinking water, but it cannot control the plumbing materials used in private buildings.

Read below to learn how you can protect yourself from lead in drinking water.

- 1. Let the water run** for 30-60 seconds before using it for drinking or cooking if the water has not been turned on in over six hours. If you have a lead service line, you may need to let the water run longer. A service line is the underground pipe that brings water from the main water pipe under the street to your home.
 - You may be able to find out if you have a lead service line by contacting your public water system, or you can check by following the steps at: <https://www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home>
 - The only way to know if lead has been reduced by letting it run is to check with a test. If letting the water run does not reduce lead, consider other options to reduce your exposure.
- 2. Use cold water** for drinking, making food, and making baby formula. Hot water releases more lead from pipes than cold water.
- 3. Test your water.** In most cases, letting the water run and using cold water for drinking and cooking should keep lead levels low in your drinking water. If you are still concerned about lead, arrange with a laboratory to test your tap water. Testing your water is important if young children or pregnant women drink your tap water.
 - Contact a Minnesota Department of Health accredited laboratory to get a sample container and instructions on how to submit a sample:
[Environmental Laboratory Accreditation Program \(https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam\)](https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam)
The Minnesota Department of Health can help you understand your test results.
- 4. Treat your water** if a test shows your water has high levels of lead after you let the water run.
 - Read about water treatment units:
[Point-of-Use Water Treatment Units for Lead Reduction \(https://www.health.state.mn.us/communities/environment/water/factsheet/poulead.html\)](https://www.health.state.mn.us/communities/environment/water/factsheet/poulead.html)

Learn more:

- Visit [Lead in Drinking Water \(https://www.health.state.mn.us/communities/environment/water/contaminants/lead.html\)](https://www.health.state.mn.us/communities/environment/water/contaminants/lead.html)
- Visit [Basic Information about Lead in Drinking Water \(http://www.epa.gov/safewater/lead\)](http://www.epa.gov/safewater/lead)
- Call the EPA Safe Drinking Water Hotline at 1-800-426-4791. To learn about how to reduce your contact with lead from sources other than your drinking water, visit [Lead Poisoning Prevention: Common Sources \(https://www.health.state.mn.us/communities/environment/lead/sources.html\)](https://www.health.state.mn.us/communities/environment/lead/sources.html).



Home Water Treatment

Most Minnesotans, whether they drink from a public water supply or a private well, have drinking water that does not need treatment for health protection. Water treatment units are best for improving the physical qualities of water—the taste, color, or odor.

No single treatment process can remove all substances in water. If you decide to install a home water treatment unit, choose a unit certified and labeled to reduce or remove the substance of concern. If there is more than one substance you want to remove from your water, you may need to combine several treatment processes into one system.

Even well-designed treatments systems can fail. You should continue to test your drinking water after you install a treatment unit. All home water treatment units need regular maintenance to work correctly. Regular maintenance may include changing filters, disinfecting the unit, or cleaning scale buildup. Always install, clean, and maintain a treatment unit according to the manufacturer's recommendations.

Learn more at [Home Water Treatment](http://www.health.state.mn.us/divs/eh/water/factsheet/com/pou.html) (<http://www.health.state.mn.us/divs/eh/water/factsheet/com/pou.html>).

Beware of Water Treatment Scams

False claims, deceptive sales pitches, or scare tactics have been used by some water treatment companies. Every person has a right to decide what is best for themselves and their family, and you may choose to install additional water treatment to further lower the levels of contaminants of emerging concern, chlorine, and other chemicals in your water. However, you should be cautious about purchasing a water treatment system. If you are considering the purchase of a home water treatment system, please read the Minnesota Department of Health's recommendations online at [Warning: Beware of Water Treatment Scams](http://www.health.state.mn.us/divs/eh/water/factsheet/com/beware.html) (<http://www.health.state.mn.us/divs/eh/water/factsheet/com/beware.html>).

The Pros and Cons of Home Water Softening

Water softeners are a water treatment device. They remove water hardness (dissolved calcium and magnesium). The decision to soften your water is a personal choice that can affect your home and the environment. It is important to understand your home's water quality. This will help you decide if a home water softener is necessary and choose the best treatment device(s). Water softeners must be installed and maintained properly to be safe and effective.

The advantages of home water softening include:

- Prevents build-up of minerals (scale) on the inside of pipes, fixtures, and hot water heaters.
- Lengthens the life of some appliances.
- Reduces or prevents mineral spots on glassware.
- Prevents or reduces soap films and detergent curds in sinks, bathtubs, and washing machines.

The disadvantages of home water softening include:

- Can corrode your pipes. The corroded metal from the pipes can end up in your water.
- Potential health implications from additional sodium from water softening.
- Regular testing of the water and maintenance of the softener is necessary to make sure the softener is working properly.
- Negative impacts to the environment from salt use.
- Water waste: 5% of the water that goes through a softener is not usable.