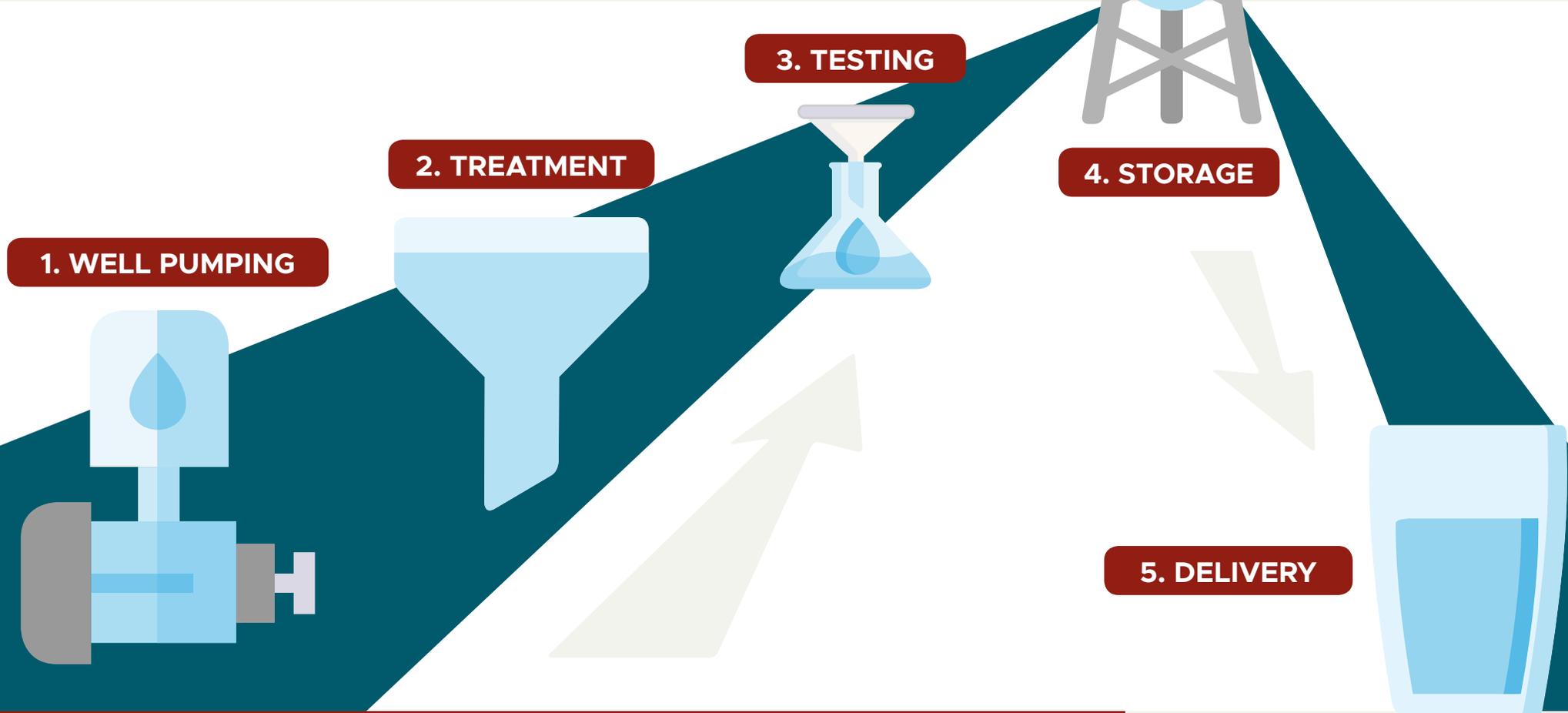


2022

WATER QUALITY REPORT



Thank you for your interest in Apple Valley's water quality. Please read this report and visit us online at applevalleymn.gov for news and updates. If you have any questions, you may contact Brian Skok, Utilities Superintendent. You can also ask for information about how to take part in decisions that may affect water quality.

Website: applevalleymn.gov
Phone: (952) 953-2400
Email: Brian.Skok@applevalleymn.gov



This annual water quality report will follow Apple Valley water from its source to your tap. In it, you'll find information about our water source, treatment and distribution system, and water quality. It also explains how regulations and monitoring help keep our water supply trustworthy. This is all to help you understand Apple Valley's drinking water supply so you can make well-informed decisions for your household.



The City works hard to provide you with safe and reliable drinking water that meets all 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.

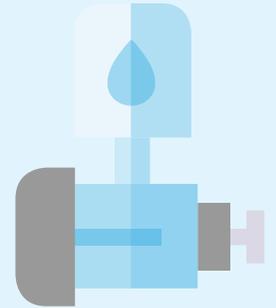
This report contains the results of all monitoring performed from January 1–December 31, 2021, as well as important messages from the Minnesota Department of Health (MDH) and the U.S. Environmental Protection Agency (EPA).



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.

1. WELL PUMPING

Apple Valley draws water from a groundwater source. The City has 17 available wells, ranging from 487 to 516 feet deep to draw water from the Prairie Du Chien-Jordan and Jordan aquifers. The City regularly pumps water from 12 of these wells which produce the highest-quality water. Two standby wells which draw from the Mt Simon-Hinckley aquifer are brought online as needed during peak usage periods. These wells are approximately 1,000 feet deep. An additional five wells serve as an emergency backup. We prioritize the use wells that produce the finest quality water, and only bring additional wells when these cannot meet consumers' demand.



These aquifers are continuously recharged with water that is filtered naturally by the earth. While not an unlimited resource, this is a generous resource that provided us 2.56 billion gallons of water in 2021.

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

- How Apple Valley is protecting your drinking water source
- Nearby threats to your drinking water
- 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:

health.state.mn.us/communities/environment/water/swp/swa

or call (651) 201-4700 or 1-800-818-9318 Monday–Friday, 8 a.m.–4:30 p.m.



2. TREATMENT

The groundwater in local aquifers is notably high in iron and manganese and additional emerging contaminants such as PFAS have brought new concerns. Thoughtful treatment improves the taste, appearance, and safety of water. It also protects our plumbing.

Raw well water is pumped to the Water Treatment Plant (WTP) for treatment. Once there, water is first oxidized by introducing chlorine and sodium permanganate to bring iron and manganese out of suspension. Next, it passes through sand filters which remove these minerals along with other substances that are naturally present in the groundwater.

After filtration, chlorine is added to protect the water against bacteria while it flows through the distribution system. Fluoride is introduced to improve dental health as required by MN State Statute 144.145.

To learn about PFAS, visit: pca.state.mn.us/waste/pfas-pollution



Component <i>unit</i>	Before Treatment	After Treatment
Iron <i>ppm</i>	0.385	0.058
Manganese <i>ppm</i>	0.091	0.035
Chlorine <i>ppm</i>	N/A	0.27-0.77
Fluoride <i>ppm</i>	0.19	0.52-0.91
Hardness <i>grains/gallon</i>	17	17

What might be present in source water?

Main types of contaminants in drinking water sources:

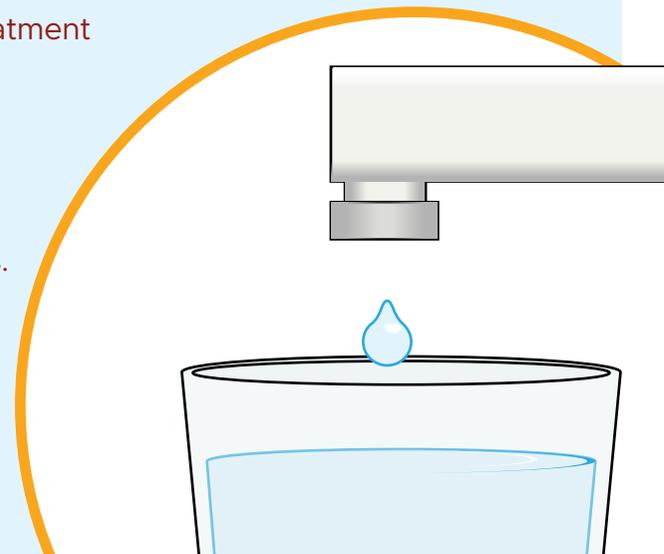
Microbial contaminants: includes viruses, bacteria, and parasites. Sources include sewage treatment plants, septic systems, agricultural livestock operations, pets, and wildlife.

Inorganic contaminants: includes 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: chemicals used to reduce or kill unwanted plants and pests. Sources include agriculture, urban stormwater runoff, and commercial and residential properties.

Organic chemical contaminants: includes synthetic and volatile organic compounds. Sources include industrial processes and petroleum production, gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants: includes radium, thorium, and uranium isotopes come from natural sources (e.g. radon gas from soils and rock), mining operations, and oil and gas production.





3. TESTING

There is no single test that can identify every contaminant in a water sample. Individual tests must be performed for each possible contaminant. This requires water providers must take a strategic approach to monitor water quality to ensure it is safe for drinking.

The Apple Valley Public Works Utilities Division (PWUD) works with MDH to monitor drinking water for over 100 contaminants. Testing is performed every year, throughout the year. It is expected that contaminants will be detected in small amounts as no water supply is ever completely free of contaminants. Drinking water standards protect Minnesotans from substances that may be harmful to their health.

The table on page 5 displays the contaminants that were found last year (or the most recent time we sampled for that contaminant.) It also shows the levels of those contaminants and the EPA's limits. Contaminants are not included on the table where testing did not find the substance present. ***No contaminants were found in Apple Valley water at concentrations that violate drinking water standards.***

PWUD samples for some contaminants less than once a year because their levels in water are not expected to change from year to year. If any of these contaminants were detected when last sampled, they are included in the results table with the date of detection.

Some contaminants are monitored regularly throughout the year and rolling (or moving) annual averages are used to manage compliance. Because of this averaging, there are times where the Range of Detected Test Results for the calendar year is lower than the Highest Average or Highest Single Test Result, because it occurred in the previous calendar year.

MDH's webpage Basics of Monitoring and Testing of Drinking Water in Minnesota
health.state.mn.us/communities/environment/water/factsheet/sampling.html



EPA 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 EPA's Safe Drinking Water Hotline at 1-800-426-4791.

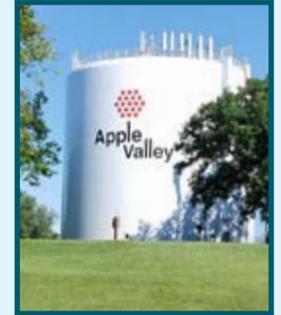
tested at WTP	Contaminant (units) test date	MCLG	MCL	Level Detected	Range	Major Source of Contaminant	Meets Standards
	Barium (ppm) 2/4/2020	2	2	0.17	N/A	Discharge of drilling wastes; Discharge from metal refineries, Erosion of natural deposits.	✓
	Combined Radium (pCi/l) 2020	0	5.4	3.9	N/A	Erosion of natural deposits.	✓
	Fluoride (ppm)	4	4	0.66	0.52-0.91	Erosion of natural deposits; Water additive to promote strong teeth.	✓
	Gross Alpha (pCi/l) 2020	0	15.4	7.3	N/A	Erosion of natural deposits.	✓
	Nitrate (ppm)	10	10.4	0.29	0-0.29	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	✓
	Total Chlorine (ppm)	4 (MRDLG)	4 (MRDL)	0.65	0.27-0.77	Water additive used to control microbes.	✓
	Total Haloacetic Acids (ppb)	N/A	60 (MRDL)	10	5.5-10	By-product of drinking water disinfection.	✓
Total Trihalomethanes (ppb)	N/A	80 (MRDL)	15.6	15.3-15.6	By-product of drinking water disinfection.	✓	
tested at customer taps	Contaminant (units) test date	MCLG	AL	Level Detected	Range	Major Source of Contaminant	Meets Standards
	Copper (ppm) 8/23/2019	0	1.3	0.18	0 of 30 sites > AL	Corrosion of household plumbing systems.	✓
	Lead (ppb) 8/23/2019	0	15	2.8	0 of 30 sites >AL	Corrosion of household plumbing systems.	✓

- **Level Detected** - The value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.
- **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.
- **90% Level** - 90th Percentile Level. This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.
- **AL** - Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.
- **N/A** - Not Applicable (does not apply).
- **pCi/L** - picocuries per liter (a measure of radioactivity).
- **ppm** - Parts per million or milligrams per liter. One ppm is like one drop in one million drops of water, or about one cup in a swimming pool.
- **ppb** - Parts per billion or micrograms per liter. One ppb is like one drop in one billion drops of water, or about one drop in a swimming pool.

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 MDH at (651) 201-4700 between 8 a.m.–4:30 p.m., Monday through Friday.



4. STORAGE



The City of Apple Valley operates and maintains 1 elevated water tower and 5 storage reservoirs tanks. 3 of these reservoirs are in the low pressure zone of our system, 1 is in our high pressure zone, and 1 is at the water treatment plant. The combined capacity is 14.8 million gallons. To maintain consistent levels and water pressure, PWUD uses an advanced SCADA system to manage these important parts of the system. The elevation of water within the storage system is what provides the water pressure at your residence.

Water system security is a high priority. We ask that residents assist with security by calling 952-953-2400 if unusual activity is observed around any water system building, fire hydrant, or reservoir. After hours, call the Police Department at 952-322-2323 or 911.

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 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

5. DELIVERY

The City of Apple Valley has 287 miles of water main. Water must safely flow through the distribution to your tap. A small concentration of residual disinfectant is in Apple Valley's water supply to protect against bacteria along the way. Apple Valley water contains chlorine at the level reported in the table on page 5. Some choose to let tap water rest in a pitcher to allow some of the chlorine to evaporate prior to drinking.

Bacteria is not the only threat your water could potentially encounter on its way to your tap. The Apple Valley water distribution system has no lead water mains, however household plumbing components vary and metals such as lead and copper can be introduced by household plumbing components, especially when they are aged and corroded. See the next page for more on lead.





Lead Information from MDH

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 present in a drinking water source and monitoring has found that lead is not a problem in Apple Valley source water. However, it can get in your drinking water as it passes through lead service lines and your household plumbing system. Apple Valley is responsible for providing high quality drinking water, but it cannot control the plumbing materials used in private buildings. There are no lead service lines in the Apple Valley water system.



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

- 1. Allow water to run for 30-60 seconds** before using it for drinking or cooking if the water has not been turned on in over six hours. 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 an MDH accredited laboratory to get a sample container and instructions on how to submit a sample:

eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam

MDH 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:

health.state.mn.us/communities/environment/water/factsheet/hometreatment





Conservation

It takes a considerable amount of energy to treat and deliver the water you use every day. According to the EPA, letting your faucet run for five minutes uses about as much energy as letting a 60-watt light bulb run for 14 hours!

We all share this precious resource and each of us can have a positive impact by implementing good habits.

- Fix leaks and running toilets. These waste water faster than we might imagine.
- Turn off the tap while shaving or brushing your teeth.
- Clean driveways and sidewalks with a broom rather than a hose.
- Run full loads of laundry. Set the washing machine to the correct water level.
- Wait to run your dishwasher with a full load.
- Irrigate carefully and thoughtfully.

[Click here](#) for helpful lawn irrigation tips.

[Click here](#) to learn about our Water Efficiency Rebate Program.



Watering Restrictions

Lawn watering is only permitted before 11 a.m. and after 6 p.m. each day from May 1 through September 30. Lawn watering refers to in-ground irrigation systems, mechanical sprinklers, and unattended hoses.

These restrictions do not apply to hand watering (hose must be attended) of plants, children's water toys when in use by children, and non-irrigation water use such as vehicle washing.

Alternate sources for irrigation such as private wells or water from lakes and ponds are subject to the same lawn watering restrictions as users of the municipal water supply.

New sod laid and trees planted in the calendar year are exempt.

Additional water restrictions may be implemented if necessary to maintain normal domestic and fire flow requirements.

Visit our New WaterSmart Portal

- Monitor your daily and hourly water use
- Sign up for water use notifications
- Understand your water rates
- Get recommendations on how to find a leak or how to use less water
- Learn how to read your meter
- Get water-saving tips & recommendations
- Make sure you get the most value from every drop of water you use in your home!



Find these great features at
Applevalleymn.watersmart.com