

ECOWATER
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Your Water. Perfected.

YOUR LOCAL

WATER GUIDE

UNDERSTANDING YOUR WATER AND YOUR OPTIONS

EcoWater Systems of Redwood Falls, Willmar, New Ulm, & Mankato has prepared this local water guide as a community resource to help you understand the water quality where your home or business is located.

MANKATO, MN

This guide is written specific to the public guidelines and provided water quality information for the cities of Mankato and North Mankato, Minnesota. Depending on your home or business's specific location, water quality may vary and issues resulting from various water-related issues may differ.

www.ecowaternow.com

Introduction

Access to clean and reliable drinking water is a cornerstone of public health and infrastructure in the Mankato community. The municipal water system is designed, operated, and maintained to meet strict regulatory standards established by both the Environmental Protection Agency (EPA) and the State of Minnesota.

City Guidelines

Water provided to homes and businesses within the cities of Mankato and North Mankato is tested frequently, monitored continuously, and treated using advanced processes to ensure safety. As a result, residents can feel confident that their water meets all legal requirements for potability.

However, regulatory compliance does not always reflect the full picture of how water performs inside the home.

Water hardness, chlorine levels, fluoride, and other water contents are of concern to many homeowners and are typically not addressed by city guidelines.

Overview

Many homeowners experience issues such as mineral buildup, spotting on dishes, or changes in taste and odor, all factors that fall outside regulatory concerns but can significantly impact day-to-day quality of life.



This guide is intended to provide a clear, unbiased overview of:

- The characteristics of Mankato’s water supply
- Common residential water quality concerns
- The difference between safe and optimized water
- Practical, proven solutions for improving water at the household level

Where Your Water Comes From

Water Sources

Mankato's drinking water is primarily sourced from groundwater systems that are influenced by nearby surface water. This combination introduces a range of naturally occurring minerals and environmental factors that shape the overall water profile.

Treatment

Before reaching homes, water undergoes a multi-step treatment process designed to remove contaminants and ensure safety. These processes typically include:

- Coagulation and filtration to remove suspended particles
- Membrane or ultra-filtration for fine particulate removal
- Chemical disinfection (commonly chlorine-based) to eliminate harmful microorganisms

This system is engineered for reliability and consistency across thousands of households and businesses.

What Municipal Treatment Is Designed to Do

Municipal water systems are built with a specific purpose. Namely to protect public health, deliver consistent water at scale, and meet regulatory thresholds. They are *not* designed to soften or condition a city's water supply, nor to remove certain chemicals like chlorine and fluoride.

Water Treatment Plant - Mankato, MN

730 Mound Ave, Mankato, MN 56001



What's In Your Water

Naturally Occurring Minerals

Groundwater in southern Minnesota is typically rich in minerals such as calcium and magnesium. These minerals are responsible for what is commonly referred to as "hard water."

While not harmful to human health, hard water can have noticeable effects on cleaning, appliances, plumbing systems, and your skin and hair.

Disinfectants/Additives

Chlorine and related compounds are used to disinfect water and protect against bacteria and viruses. Additives like fluoride are added to city water to help protect teeth. While essential for safety, these chemicals can create a noticeable taste or odor and/or react with organic matter to form byproducts. These byproducts are regulated, but trace amounts may still be present. Maximum Contaminant Levels (MCL) regulated by the EPA allow for 4.0 mg/L for both.

Trace Contaminants

Depending on environmental conditions and infrastructure, small amounts of additional substances may be detected, including nitrates from agricultural runoff, trace metals such as lead from plumbing systems, organic compounds from natural sources, and ground minerals such as manganese. These are typically within legal limits but may still influence water quality from a homeowner or business owner's perspective.

Regulated Substances

Lead

1.01 ppb

90% of homes less than 15 ppb (according to 2022 testing)

Copper

0.04 ppm

90% of homes less than 1.3 ppm (according to 2022 testing)

Nitrate

3 ppm

Typical sources include runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Combined Radium

1.3 pCi/l

Typical sources include erosion of natural deposits. (Testing results from 2023)

Total Chlorine

1.21 ppm

Typical sources include use as a water disinfectant used to control microbes.

Fluoride

0.72 ppm

Typical sources include erosion of natural deposits; water additive to promote strong teeth.

Non-Regulated Substances

Average Hardness

25 GPG

Water that is more than 1 - 2 grains per gallon is considered to be hard water that can affect appliances, plumbing, etc.

Average Iron

180 mg/L

As a byproduct of high hardness levels in Southern Minnesota's ground water.

Legend:

- ppb = parts per billion
- ppm = parts per million
- pCi/l = picocuries per liter (unit measuring radon gas concentration)
- GPG = grains per gallon (hardness)
- mg/L = milligrams per liter

Common Household Water Issues

Everyday Effects of Water Quality

Many water-related concerns are not immediately obvious from a safety standpoint but become noticeable over time through repeated use.

Specific to the Mankato area, these challenges may include the following items below. These issues are among the most common reasons homeowners explore additional water treatment.

Hard Water Impacts

- Scale buildup inside pipes and appliances
- Reduced efficiency of water heaters
- Increased wear on dishwashers and washing machines

Taste and Odor

- Chlorine-related smell or taste
- Metallic or earthy notes depending on mineral content

Cleaning Challenges

- Soap and detergent do not lather effectively
- Residue remains on dishes, glassware, and fixtures
- Laundry may feel stiff or appear dull

Personal Care Effects

- Skin may feel dry or irritated after bathing
- Hair may appear dull or more difficult to manage

Long-Term Impact on the Home or Business

Over time, mineral deposits accumulate in water heaters, pipes and fixtures, and appliances such as dishwashers and washing machines. This buildup reduces efficiency and can lead to increased energy usage.

In terms of finances, hard water can contribute to higher utility costs due to reduced efficiency, more frequent appliance repairs or replacement, and increased use of cleaning products and detergents. Even small amounts of hardness can reduce soap effectiveness, leave visible residue, and affect overall water feel. Addressing hardness is often the first step in improving overall water quality.

Case Study: Nitrate Contamination in Southern Minnesota

A Regional Analysis with Focus on the Mankato Area

The Minnesota River Basin, which runs directly through the Mankato region, represents one of the most well-documented examples of nutrient-driven water quality challenges in the Upper Midwest. Monitoring and assessment data consistently identify this watershed as a significant contributor of nitrate pollution at both the state and national level.

According to the Minnesota Pollution Control Agency (MPCA), cropland sources account for an estimated 89% to 95% of nitrate loading in the Minnesota River basin and similar southern Minnesota watersheds. ([Minnesota Pollution Control Agency](#))

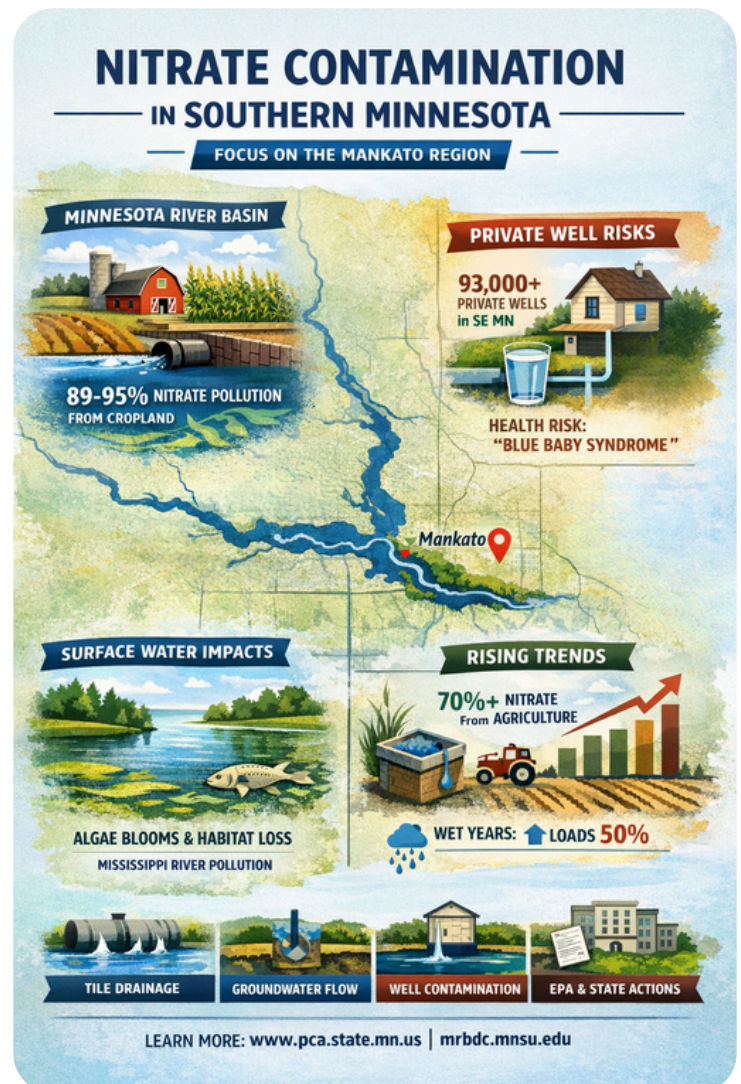
This makes the region a clear case study in how land use directly influences water quality outcomes.

Pathways of Contamination

Nitrate enters surface and groundwater systems through two primary mechanisms:

- Tile drainage systems, which rapidly transport fertilizer-laden water from fields into streams
- Groundwater leaching, which allows nitrate to move slowly through soils and aquifers over time

The MPCA notes that groundwater pathways can take “hours to decades” to reach surface waters, creating long-term persistence even after mitigation efforts begin. ([Minnesota Pollution Control Agency](#))



Case Study (Cont.)

Southern Minnesota Groundwater – Private Well Vulnerability

While municipal water systems in cities like Mankato are highly regulated and typically meet federal standards, groundwater tells a different story, particularly for private well users. Southern Minnesota has been identified as a nitrate hotspot, with elevated levels consistently observed in both shallow aquifers and surface waters. The MPCA confirms:

“Southern Minnesota has historically seen more elevated nitrate levels in surface water.”
([Minnesota Pollution Control Agency](#))

Scope of Exposure

Across southeastern and southern Minnesota:

- Approximately 300,000 residents rely on public water systems
- More than 93,000 residents depend on private wells, which are not federally regulated
([Minnesota Pollution Control Agency](#))

Private well users face the highest risk because:

- Testing is voluntary
- Contamination is invisible (no taste, color, or odor)
- Nitrate is highly mobile in agricultural soils

Health Implications

Nitrate contamination is a recognized public health concern. The MPCA notes that: High nitrate levels “threaten the safety of...drinking water” and can interfere with oxygen transport in the blood. ([Minnesota Pollution Control Agency](#))

This is just *one example* of case studies run on potential contaminants in the water supply of the greater Mankato area. For more information, case studies, and findings, visit the following sources:

<https://www.mankatomn.gov/residents/utilities/water-quality>

<https://www.pca.state.mn.us/air-water-land-climate/water-quality-initiatives>

Options for Water Treatment

Water Softeners

Water softeners are designed to remove hardness minerals through ion exchange. By using ion exchange, softener systems swap hardness minerals in your water for sodium ions. This is done using the system's resin beads, which hard minerals are attracted to. What comes away from this process is soft, smooth water.

Benefits of softened water include prevention of scale buildup, extended appliance lifespan, and improved soap and detergent efficiency.

Reverse Osmosis Systems

Reverse osmosis drinking systems are advanced filtration systems used primarily for drinking water. They remove dissolved solids, heavy metals, and trace contaminants. For the best water quality, a multi-stage RO system is typically used, combining the membrane with sediment and activated carbon filters.

Benefits of using a reverse osmosis system include improved taste and clarity of drinking water and higher-quality drinking water at the tap.

Whole-Home Filtration, Iron & Purpose Filters

Whole home filtration systems treat water at the entry point, removing contaminants like chlorine, sediment, and heavy metals to provide clean, safe water from every tap and appliance. Specialized iron filters specifically tackle iron, manganese, and hydrogen sulfide, eliminating rust stains, metallic taste, and rotten egg odors.

While a whole-home system can be a general filter, an iron filter is a specialized, often more robust solution for high iron content and odors.

Purpose filters, often termed point-of-use (POU) filters or specialty cartridges, are targeted treatment devices designed to remove specific contaminants. This may include contaminants such as lead, fluoride, or chemicals, which are targeted at the exact point of consumption or use.

About EcoWater Systems

Who We Are

We're a locally owned, family-run water conditioning company proudly serving communities throughout southern Minnesota, including Mankato, Redwood Falls, Willmar, and New Ulm. At Johanneck Water, our roots are local and our solutions are powered by EcoWater Systems' industry-leading technology. We pride ourselves on representing the EcoWater name, a name that has been trusted since 1925. From whole-home water softeners and drinking water systems to purified bottled water, softener salt, and 24/7 self-serve water vendors, we offer a full range of water solutions designed to fit real-life needs.

A Local, Customized Approach

EcoWater Systems focuses on solutions tailored specifically to Midwest water conditions. Rather than offering one-size-fits-all systems, the process is designed to evaluate the home's water and clearly explain findings by recommending solutions based on actual data. This approach ensures homeowners receive solutions that match their specific needs.

Complimentary Basic Water Test

Understanding your water is the first step toward improving it. EcoWater Systems offers free in-home basic water testing with clear, easy-to-understand results and personalized recommendations. No obligation to purchase.

To sign up for your free basic water test, contact us at (800) 763-8426 or sign up online at <https://ecowaternow.com/contact-us/>.

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Visit one of our locations!

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