North Sagamore Water District

Annual Water Quality Report

Reporting Year 2025

Public Water Supply ID # 4036002

Board of Water Commissioners

Mark Melchionda – Chairperson

Mark Bergeron – Commissioner

Stephen Mealy – Commissioner

Contact Information

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After-hours emergencies: Call (508) 888-1085 and press 3, or contact the Bourne Police Department at (508) 759-4453.

The North Sagamore Water District holds monthly Commissioners' meetings during the third week of each month. Meetings are held at the District Office at 14 Squanto Road, Sagamore Beach, Massachusetts, and begin at 4:15 p.m. unless posted otherwise. All meetings are publicly posted, and the public is encouraged to attend.

The District office is open Monday through Friday from 7:30 a.m. to 4:00 p.m. Staff are available to assist customers with billing, metering, water service, and other District business. Customers may also contact the office to report water quality concerns, water leaks, fire hydrant issues, or other matters.

The water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). These inspections assess the system's technical, financial, and managerial capacity to provide safe drinking water. The District's water system is operated by Massachusetts-certified drinking water operators who oversee all routine system operations.

2025 Water System Improvements

During 2025, the North Sagamore Water District continued its commitment to maintaining and improving water system reliability and water quality. Our major efforts included the routine maintenance and inspection of wells, treatment facilities, and distribution infrastructure. We also continued rigorous monitoring for regulated and unregulated contaminants, and implemented best management practices to protect our source water quality. Specifically, the District successfully completed two major water main replacement projects, which included final paving and the installation of over a dozen new fire hydrants and several critical water main valves to enhance system control and fire protection. Inside the water treatment plant, aging valves were replaced to improve operational efficiency. To ensure uninterrupted service and system redundancy, we also purchased spare booster station motors and Variable Frequency Drives (VFDs) to ensure the District remains prepared for any equipment maintenance or failures. Furthermore, the District continued its public outreach and water conservation efforts to ensure the long-term sustainability of our water resources.

Drinking Water Sources

The North Sagamore Water District is supplied by three active gravel-packed groundwater wells that draw water from the Plymouth–Carver Aquifer. In 2025, the District pumped approximately 162.5 million gallons of water to meet customer demand.

The Black Pond Well (installed in 1979), located on Black Pond Road, and the Church Lane Well (installed in 2001) supply water to the James A. Morgan Water Treatment Plant on Church Lane. At this facility, water is treated with potassium permanganate to oxidize iron and manganese, sodium hydroxide to reduce lead and copper corrosivity within the distribution system, and a low dose of sodium hypochlorite for disinfection. The treated water is then filtered to remove iron and manganese prior to distribution.

The Beach Well (installed in 1958), located on Pilgrim Road, is treated with sodium hydroxide for corrosion control and a low dose of sodium hypochlorite for disinfection.

The District does not currently have an emergency interconnection with neighboring water systems; however, future interconnections may be considered to provide backup supply options. The District operates three above-ground storage tanks—Bournedale Tank (Scenic Highway), Clark Road Tank, and Norris Road Tank—with a combined storage capacity of approximately 1.7 million gallons. Two booster pumping stations provide increased pressure and flow to portions of Old Plymouth Road, State Road, Norris Road, and the Weldon Park area.

Water Conservation Protects Our Natural Resources

The North Sagamore Water District appreciates customers' efforts to conserve water, particularly during the peak outdoor water use season from May through September. Non-essential outdoor watering should be limited to two days per week and performed during early morning or evening hours to reduce evaporation.

Customers with irrigation systems are strongly encouraged to install rain or soil moisture sensors. Most lawns require no more than one inch of water per week. The District provides water conservation tools—including rain gauges, shower timers, low-flow hose nozzles, and low-flow showerheads—at no cost to District residents. These items are available at the District office.

Source Water Assessment Program (SWAP)

MassDEP has completed a Source Water Assessment Program (SWAP) report for the water supply sources serving the North Sagamore Water District. The SWAP report identifies potential sources of contamination within the water supply protection areas for the Black Pond Well, Church Lane Well, and Beach Well. Based on this assessment, the system received a susceptibility rating of high.

The SWAP report commends the District for:

- Working with the Towns of Bourne and Plymouth to protect public water supply wells
- Conducting public education and outreach efforts
- Purchasing land for water supply protection

The SWAP report recommends the following actions to further protect water sources:

- Continue regular inspections of Zone I protection areas
- Educate residents on ways to protect drinking water sources
- Coordinate with emergency response teams to ensure awareness of drainage patterns in Zones I and II and to improve spill response preparedness

The District addresses these recommendations through enhanced monitoring and the application of best management practices. Copies of the SWAP report are available at the District office and on the District website.

Substances Found in 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

Source Water Information: The sources of drinking water (both tap and bottled) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present include:

- **Microbial contaminants:** Such as viruses and bacteria from sewage treatment plants, septic systems, and wildlife.
- **Inorganic contaminants:** Salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial discharges, or farming.
- **Pesticides and herbicides:** From agriculture, urban storm water runoff, and residential uses.
- **Organic chemical contaminants:** Including synthetic and volatile organic chemicals (byproducts of industrial processes) from gas stations and septic systems.
- **Radioactive contaminants:** Naturally occurring or the result of oil and gas production and mining.

Regulations: In order to ensure that tap water is safe to drink, EPA and MassDEP prescribe regulations that limit the amount of certain contaminates in the water provided by public water systems. FDA and Massachusetts Department of Public Health regulations establish limits for contaminates in bottled water that must provide the same protection for public health.

Vulnerable Populations: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons (such as those with cancer undergoing chemotherapy, organ transplant recipients, or people with HIV/AIDS), some elderly, and infants can be particularly at risk from infections. These individuals should seek advice from their health care providers.

EPA/CDC guidelines on lessening the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (1-800-426-4791).

Important Definitions

- **MCLG (Maximum Contaminant Level Goal):** The level of a substance in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.
- **MCL (Maximum Contaminant Level):** The highest level of a substance that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements by the District.
- **90th Percentile:** Out of 10 homes sampled, 9 were below this level.
- **SMCL (Secondary Maximum Contaminant Level):** Guidance values issued by the US EPA representing levels above which aesthetic properties (taste, odor, color) or cosmetic effects (skin or tooth discoloration) may occur.
- **ORSG (Massachusetts Office of Research and Standards Guideline):** The concentration of a chemical in drinking water at or below which adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.
- **Unregulated Contaminates:** Unregulated contaminates are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.
- **Running Annual Average:** The average of four consecutive quarters of data.
- **ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

Units of Measurement

- **ppm (parts per million):** parts per million or milligram per liter (mg/L)

- **ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).
- **ppt (parts per trillion):** One part substance per trillion parts water (or nanograms per liter).
- **ND (Not detected):** Indicates that the substance was not found by laboratory analysis.
- **pCi/L (piocuries per liter):** A measure of radioactivity.
- **NTU:** Nephelometric Turbidity Units

2025 Water Quality Testing Results

Volatile Organic Contaminants

Contaminant	MCL	MCLG	Amount Detected	Range of Levels	Sample Dates	Major Sources
Tetrachloroethylene (ppb)	5	0	ND	ND	2/13/2025	Discharge from asbestos cement lined pipes

Radioactive Contaminants

Contaminant	MCL	MCLG	Amount Detected	Range of Levels	Sample Dates	Major Sources
Gross Alpha Particles (pCi/L)	15	0	2.25	1.01 – 2.25	10/14/2021	erosion of natural deposits
Combined Radium (pCi/L)	5	0	0.70	0.58 – 0.70	10/14/2021	erosion of natural deposits

Inorganic Contaminants

Contaminant	MCL	MCLG	Amount Detected	Range of Levels	Sample Dates	Major Sources
Nitrates (ppm)	10	10	3.14	0.25 – 3.14	5/22/2025	run off from fertilizer use, septic systems
Perchlorate (ppb)	2	N/A	.150	.064-.150	8/7/2025	fireworks, munitions, flares
Barium (ppm)	2	2	0.007	0.007 – 0.007	5/28/2024	discharge of drilling wastes, erosion of natural deposits
PFAS6 (ppt)	20	N/A	2.33	ND – 2.33	4/24/2025	discharges and emissions from industrial and manufacturing sources

Disinfectants and Disinfection By-Products

Contaminant	MCL	MCLG	Amount Detected	Range of Levels	Sample Dates	Major Sources
Haloacetic Acids (ppb)	60	N/A	1.2	ND-1.2	8/7/2025	by-product of chlorination,
Trihalomethanes (ppb)	80	N/A	9.4	ND – 9.4	8/7/2025	by-product of chlorination
Free Chlorine (ppm)	4	4	0.32	0.05 - 0.32	10 locations monthly	water additive used for disinfection

Disinfection: Disinfection does not sterilize the water; it removes harmful organisms. Sterilization is too costly and kills all microorganisms, even though most are not harmful. The North Sagamore Water District uses sodium hypochlorite as its primary disinfectant.

Lead and Copper

Contaminant	AL	MCLG	90th % Level	Range of Levels	Sites Above AL	Sample Dates	Major Sources
Lead (ppb)	15	0	1	ND - 4	0 out of 20	8/23/2023 - 9/13/2023	plumbing corrosion
Copper (ppm)	1.3	1.3	0.033	ND - 0.056	0 out of 20	8/23/2023 - 9/13/2023	plumbing corrosion

Monitoring for lead and copper is required every three years. Testing will next be performed in 2026.

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups, especially pregnant individuals, infants (both formula-fed and breastfed), and young children. Some of the health effects to infants and children include decreases in IQ and attention span. Lead exposure can also result in new or worsened learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy may be at increased risk of these harmful health effects. Adults have increased risks of heart disease, high blood pressure, kidney, or nervous system problems. Contact your healthcare provider for more information about your risks. Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and home plumbing. North Sagamore Water District is responsible for providing high-quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter certified by an American National Standards Institute-accredited certifier to reduce lead is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure it is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, or doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. If you are concerned about lead in your water, and wish to have your water tested, contact North Sagamore Water District at 508-888-1085. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

Secondary and Unregulated Contaminants

Contaminant	SMCL	ORSG	Amount Detected	Range of Levels	Sample Dates	Possible Sources / Notes
Sodium (ppm)	N/A	20*	46	20 - 46	5/28/2024	erosion of natural deposits, treatment by product
Chlorate (ppb)	N/A	210	97	18 - 97	11/9/2022	treatment by-product**
Nickel (ppb)	N/A	100	0.007	ND – 0.007	5/28/2024	Discharge from domestic wastewater, landfills, and mining and smelting operations
Chloroform (ppb)	N/A	70	1.3	0.61 – 1.3	8/21/2024	Trihalomethane; by-product of drinking water chlorination.
Perfluorobutancesulfonic Acid - PFBS (ppt)	N/A	N/A	0.950	ND – 0.950	4/24/2025	Manmade chemical; used as a replacement for perfluorooctane sulfonic acid (PFOS); used in the manufacture of paints, cleaning agents, and water- and stain-repellent products and coatings, including carpeting, carpet cleaners, floor wax and food packaging. (UCMR5)

Perfluorohexanoic acid - PFHxA (ppt)	N/A	N/A	1.47	ND – 1.47	4/24/2025	Manmade chemical; breakdown product of stain- and grease-proof coatings on food packaging and household products. (UCMR5)
Perfluoropentanoic acid – PFPeA (ppt)	N/A	N/A	3.700	ND – 3.700	1/1/2023, 7/11/2023	Manmade chemical; used in products to make them stain, grease, heat, and water resistant (UCMR5)

Sodium is a naturally occurring element found in soil and water that is essential for human health. The guideline of 20 ppm is not a mandate for treatment; rather, it serves as a notification for physicians and sodium-sensitive individuals who must carefully monitor their intake. More information on sodium is available at our office and on our website.

Chlorate is a known byproduct of the disinfection process, formed when sodium hypochlorite reacts with other compounds in the water. The District utilizes best management practices to limit the formation of chlorate ions and will continue to monitor this unregulated contaminant.

Fluoride: The North Sagamore Water District does not add fluoride to the water, and testing shows no detectable levels in our source water.

The Massachusetts Department of Environmental Protection (MassDEP) has reduced monitoring requirements for Synthetic Organic Compounds (SOCs), Inorganics, and PFAS at the Black Pond and Church Lane wells, as well as for Inorganics at the Beach Well. These reductions were granted because the sources are not at risk of contamination.

The most recent samples for these contaminants—collected in 2015, 2022, and 2023—met all applicable EPA and MassDEP safety standards. To ensure efficiency, the State allows us to monitor certain contaminants less than once per year because their concentrations do not change frequently. Consequently, some of our data, while accurate and representative, may be more than one-year-old.

To ensure safety and compliance, the District tests its drinking water supply according to the rigorous requirements of the Massachusetts Department of Environmental Protection (MassDEP). Test results are submitted to MassDEP monthly for review. Should any test indicate

an irregularity, the District would be notified immediately and would, in turn, provide immediate notification to our customers.

The North Sagamore Water District is pleased to report that our drinking water meets or exceeds all federal and state drinking water standards required by law.

The District currently uses the following resources to inform customers of testing results, water conservation recommendations, and maintenance activities such as system flushing:

- Our Website: www.northsagamorewaterdistrict.com
- The Bourne Enterprise
- Bourne Community Television
- Facebook

The District continually strives to meet the challenges of complying with the Safe Drinking Water Act. It is the primary goal of the District's Commissioners and staff to ensure our customers receive the highest level of water quality possible.

For more information regarding contaminants and potential health effects, you may contact the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at 1-800-426-4791 or visit the following websites:

- Massachusetts Drinking Water Program: https://www.mass.gov/topics/drinking-water
- EPA Ground Water and Drinking Water: https://www.epa.gov/ground-water-and-drinking-water

Cross Connection and Backflow Prevention Information

Cross-connections are a major concern for the safety of drinking water distribution lines. A cross-connection occurs at any point where a drinking water line connects to equipment (such as boilers), systems containing chemicals (air conditioning, fire sprinklers, or irrigation systems), or water sources of questionable quality.

Contamination from a cross-connection can occur in two ways:

- Backpressure: When the pressure in the external equipment or system exceeds the pressure in the drinking water line.
- Backsiphonage: When a drop in drinking water line pressure—caused by routine occurrences like main breaks or heavy demand—creates a vacuum that "sucks" contaminants out of the equipment and into the drinking water supply.

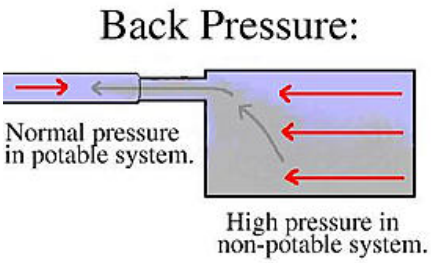
Community water supplies are at constant risk from cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. The District has surveyed industrial, commercial, and institutional facilities within our service area to ensure potential

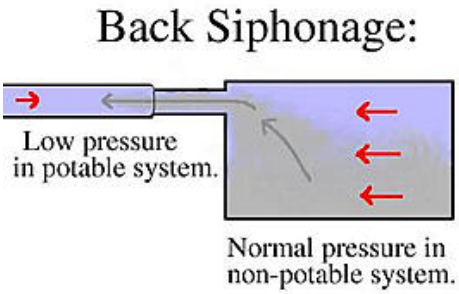
cross-connections are identified and either eliminated or protected. We also regularly inspect and test these backflow preventers to ensure they provide maximum protection.

How You Can Help? You can play a vital role in protecting our water supply by following these simple steps:

- Mind Your Hoses: Never submerge hoses in containers such as pools, buckets, tubs, or sinks. Always keep the end of the hose clear of potential contaminants to prevent backsiphonage.
- Install Hose Bibb Vacuums: Inexpensive backflow devices can be easily installed on older-style hose bibbs or threaded faucets.
- Maintain Irrigation Systems: Customers with irrigation systems should ensure their backflow prevention devices are working properly by having them tested annually.
- Take Advantage of Free Devices: To support our residents, the District offers free backflow prevention devices for outdoor hose spigots. You can pick these up at our office at no cost.

The District relies on your support to maintain the safety and integrity of our drinking water system. More information about cross-connections is available on our website under the Cross-Connections tab.





Additional Public Notice: UCMR5 Monitoring Data

As required by the U.S. Environmental Protection Agency (EPA), our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are substances that do not yet have a drinking water standard set by the EPA. The purpose of this monitoring is to help the EPA determine whether these contaminants should have a public health protection standard in the future.

This notice is to inform our customers that the results of these samples are now available. Any detections of the unregulated contaminants sampled for are included within this Water Quality Report.

Customers who wish to receive a complete copy of the UCMR5 results may:

- Pick up a copy in person: Visit our office at 14 Squanto Road, Sagamore Beach, MA.
- Request an electronic copy: Contact Superintendent Drew Buckley at dbuckley@northsagamorewaterdistrict.com.

Questions?

Any questions pertaining to the North Sagamore Water District's 2025 Water Quality Report may be directed to:

Drew Buckley, Superintendent

Phone: (508) 888-1085

Email: dbuckley@northsagamorewaterdistrict.com

www.northsagamorewaterdistrict.com