

Presented By
Rye Water District



ANNUAL
**WATER
QUALITY
REPORT**

WATER TESTING PERFORMED IN 2017

Quality First

Once again we are pleased to present our annual water quality report. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

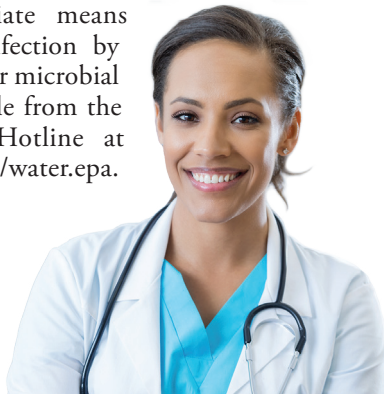
Water system operation is a complex time-consuming process.

Community Participation

You are always welcome and invited to attend the District's monthly meetings and provide your inputs about your drinking water. Rye Water District Commissioners meet the first Wednesday of each month, beginning at 9 a.m., at the Rye Water District office, located at 60 Sagamore Road, Rye, NH 03870. Again, please feel free to email your questions or comments to the Water District Commissioners at commissioners.ryewater@comcast.net.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that 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 these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) 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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Treatment Train Description

The water you receive at your tap is untreated ground water. However, we adjust the pH of the water from the Garland well as part of our corrosion control program.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 www.epa.gov/lead.



Where Does Rye's Water Come From?

Rye Water District has two main sources of water: Rye production wells, and water purchased from Portsmouth for customers on Wentworth Road, a section of Frontier Street, and Elizabeth Lane (off Pioneer Road).

Our primary source is the Garland well, a gravel-packed well, developed in the mid-seventies. It yields 400 - 470 gallons per minute (GPM). Our secondary sources are two deep-driven high-yielding bedrock wells. The Bailey Brook well, developed in the early eighties, yields 300 - 325 GPM. The Cedar Run well, our most recent source, was developed and brought on line in the mid-nineties. Cedar Run well yields 325 - 340 GPM. Combined, these three wells supplied over 133 millions gallons in 2017. The water you receive at your home is a blend of water from all three wells.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Source Water Assessment Summary

The New Hampshire Department of Environmental Services (NHDES) prepared drinking water source assessment reports for all public water systems between 2000 and 2003 in the effort to assess the vulnerability of each of the state public water supply sources. Included in the report is a map of each source water protection area, a list of potential and known contamination sources, and a summary of available protection options. The results of the assessment, prepared on May 2, 2002, and November 12, 2004, are noted here:

Garland Well: Three susceptibility factors were rated high, four were rated medium, and five were rated low.

Bailey Brook Well: One susceptibility factor was rated high, four were rated medium, and seven were rated low.

Cedar Run Well: One susceptibility factor was rated high, four were rated medium, and seven were rated low.

Note: This information is over 10 years old and includes information that was current at the time the report was completed. Therefore, some of the ratings might be different if they were updated to reflect current information. At the present time, DES has no plans to update this data.

The complete Assessment is available for review at the RWD office, 60 Sagamore Rd, Rye, NH. For more information, call the RWD office at (603) 436-2596, or visit the DES Drinking Water Source Assessment Web site at <http://des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm>, then click on Part 1, Viewing an Assessment Table by Town, and then search for Rye.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water and/or system operations, please call Mr. Ken Aspen, District Superintendent, at (603) 436-2596, or contact the Rye Water District Commissioners via email at commissioners.ryewater@comcast.net.

Additional Monitoring

In addition to the required New Hampshire Department of Environmental Services (NHDES) sampling in 2017, the RWD continued to sample for Perfluoroalkyl and Polyfluoroalkyl substances (PFAS) and 1,4-Dioxane. Monthly sampling for PFASs was initiated in July. In August, a new monthly PFAS sampling location was established at the Washington Road tank site. Although the sample size (number of samples taken to date) is relatively small, the levels of PFASs (PFOS and PFOA) appear to be constant and well below the EPA Health Advisory of 70 parts per trillion. The 1,4-Dioxane values remain at nondetectable levels. Monthly results are posted on the town's Web site.

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although these actions seem convenient, they could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and household cleaning products. From 2006 to 2010, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web (<https://goo.gl/aZPgeB>) to find more information about disposal locations in your area.

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of fresh water that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per-capita water footprint is about 8,000 cubic feet, twice the global per-capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to <http://goo.gl/QMoIXT>.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule set by the NHDES Master Sampling Schedule (MSS). The information in the data tables shows only those substances that were detected between January 1 and December 31, 2017. Remember that detecting a substance does not necessarily mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. The state recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic ¹ (ppb)	2016	10	0	1.1	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium ² (ppm)	2016	2	2	0.0129	0.0126– 0.0129	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride ¹ (ppm)	2016	4	4	0.24	NA	No	Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate ³ (ppm)	2017	10	10	3.1	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2017	1.3	1.3	0.676	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	0	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride ² (ppm)	2016	250	NA	90	37–90	No	Runoff/leaching from natural deposits
Copper ³	2016	1.0	NA	0.0082	NA	No	Corrosion of household plumbing systems; Erosion of natural deposits
Iron ¹ (ppb)	2016	300	NA	477	NA	No	Leaching from natural deposits; Industrial wastes
Manganese ¹ (ppb)	2016	50	NA	68.5	NA	No	Leaching from natural deposits
Sulfate ² (ppm)	2016	250	NA	28	16–28	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium ² (ppm)	2016	80.8	44.5–80.8	Naturally occurring

Definitions

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

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.

NA: Not applicable

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

¹ Samples taken from Bailey Brook Well.

² Samples taken from Bailey Brook Well and Garland Well.

³ Samples taken from Garland Well.

