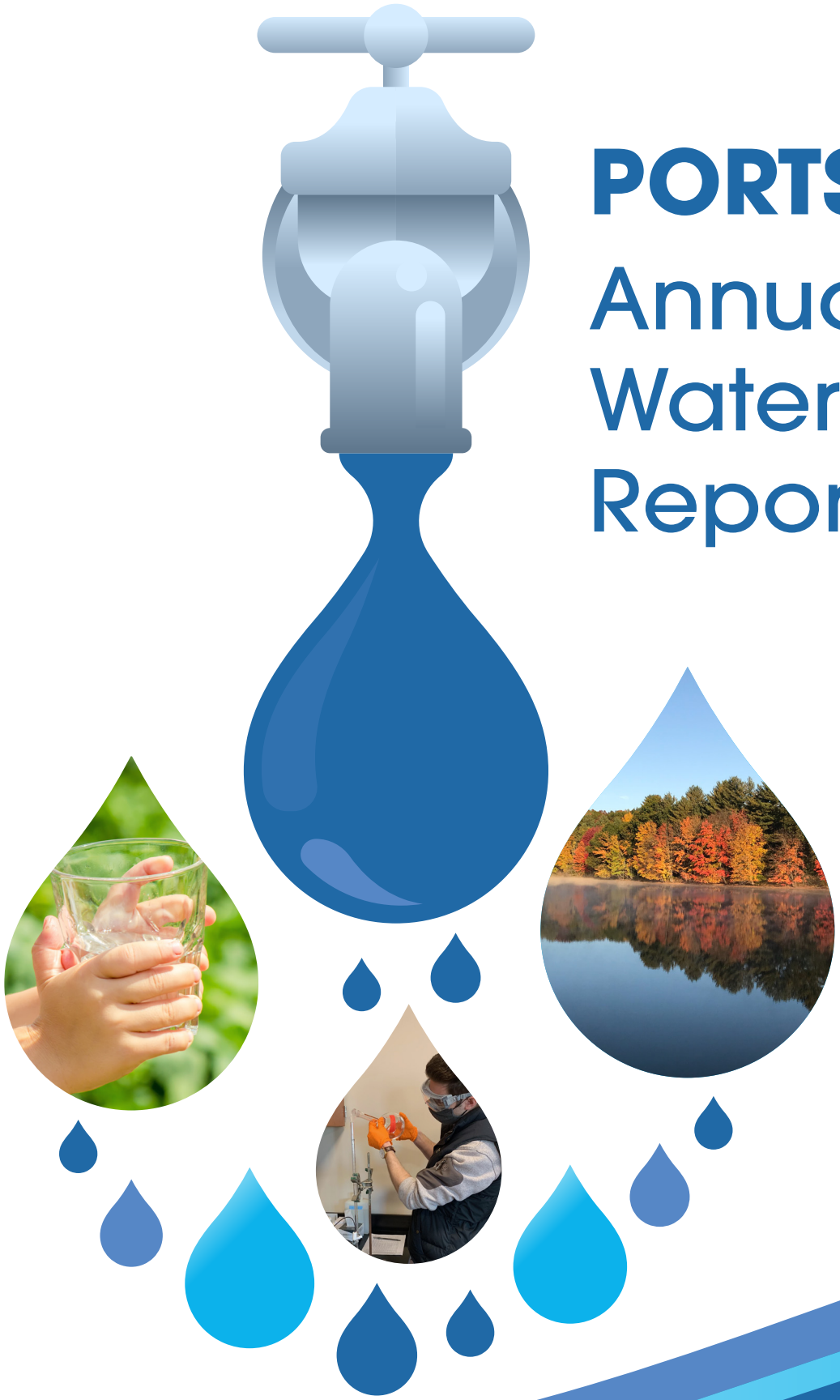


PORTSMOUTH
Annual Water Quality Report

Results from testing in 2021
Portsmouth Water System
PWSID 1951010

OUR COMMITMENT: SAFE DRINKING WATER

City of Portsmouth Water Division is pleased to present the Annual Water Quality Report. This report summarizes the results of drinking water testing performed from 01/01/2021 to 12/31/2021, and is provided to keep you informed about the quality of the water you rely on every day. It is being sent to every water customer served from the Portsmouth water system (PWSID# 1951010).

Through 2021, City of Portsmouth water has continued to meet all water quality standards as regulated by the US Environmental Protection Agency and the NH Department of Environmental Services.

Drinking Water Sources

Our mission is to provide the community with drinking water that meets all current federal and state drinking water standards. The Portsmouth Water Division is constantly monitoring and routinely testing the drinking water according to these requirements to ensure the quality of water delivered to our customers consistently meets these water quality standards. Potential contaminants and impacts from changing weather cause new challenges. We remain vigilant in meeting the goals of water treatment, source water protection, water efficiency, system improvements, fire service capability and community education, while continuing to serve the needs of all our water users.

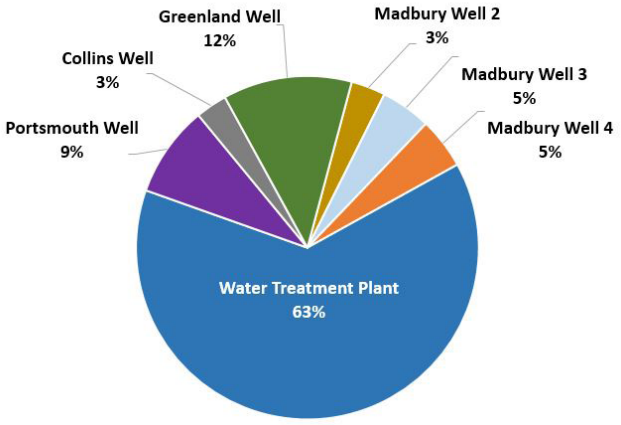
Water supplied to Portsmouth water system customers comes from a combination of surface water and groundwater sources. The surface water supply is the Bellamy Reservoir, which is located in Madbury and Dover. Water flows from a 22 square mile watershed area into the reservoir to the Water Treatment Facility (WTF) in Madbury, where it is treated using a coagulation, dissolved air flotation and dual media filtration process. The treated water is chlorinated with sodium hypochlorite before distribution into the system. Sodium hydroxide (used to adjust the final pH and alkalinity), fluoride as hydrofluorosilicic acid (used to prevent tooth decay) and poly/ortho- phosphate (a sequestering chemical to reduce precipitation of iron and manganese, and inhibit corrosion is used to protect distribution system pipes) are also added before distribution to our regionally served water customers.

There are currently three groundwater wells in Madbury (Madbury Wells #2, #3 and #4) that are pumped with the treated surface water through a transmission main to a Booster Pumping Station in Newington. Customers in Madbury, Durham, and some along Fox Point Road in Newington, receive water from the transmission main. Water is pumped from the Newington Booster Pumping Station to customers through the Portsmouth distribution system.

Portsmouth is also served by three groundwater wells. Two of them, Portsmouth Well #1 and Collins Well, are located off Route 33 (Greenland Road). The third well, the Greenland Well, is located off Post Road in Greenland. The area in Greenland served by the public water system, and a southern portion of Portsmouth, is primarily supplied by the Greenland Well. Sodium hypochlorite and poly/ortho- phosphate are added to the water supplied by the Portsmouth Well #1, Collins Well and Greenland Well. Fluoride as hydrofluorosilicic acid is also added at the Greenland Well.

The City also manages the Pease International Tradeport drinking water system, which is independent from the Portsmouth water system. Detailed information about the Pease water system can be found in a separate annual water quality report on the City's website.

Portsmouth Water Sources
Source Percentages in 2021



PUBLIC ENGAGEMENT

Safe Water Advisory Group (SWAG)

The Safe Water Advisory Group was created with the approval of City Council on October 5, 2020. Its mission is to review and communicate the latest science on the health and environmental effects of drinking water contaminants (with a heavy focus on PFAS), to monitor federal and state level legislative changes, and to anticipate policy changes that could impact the City of Portsmouth. SWAG met five times in 2021 and discussed topics including PFAS regulations, extent, treatment, and testing programs; legislative items associated with drinking water, private well studies, climate change, and community organizing. The group also toured the Portsmouth Surface Water Treatment Facility in Madbury. Video recordings of SWAG meetings are posted on the City's YouTube channel.

The 2022 Portsmouth City Council voted to reinstate the SWAG for another year. The public is invited to attend meetings and encouraged to be involved with the community and informed of all aspects of the City's water supply. If you are interested, please consider attending a community drinking water forum that will be held during National Drinking Water week in May 2022.

Water Has a Memory Exhibit Partnership with Strawbery Banke Museum

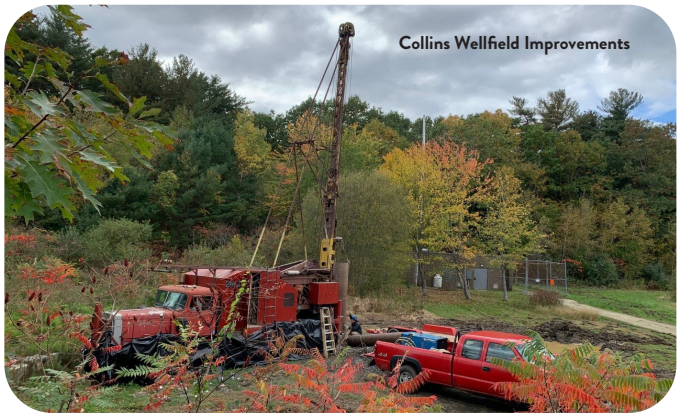
The Planning Department and DPW Water Division collaborated with Strawbery Banke Museum on their "Water Has a Memory" exhibit. It opened during the summer of 2021 to provide the public with information about those who are actively involved with measuring, analyzing, and adapting to the impacts of climate change and sea level rise on the community. The exhibit also incorporates historical timelines and components of the water, wastewater and stormwater systems in the city. This exhibit also invites visitors to "Think Blue" and consider what they can do to spread the word, share stories, and become part of the solution.

Brian Goetz, Deputy Director of Public Works, posing with one of the water system items (an old 1898 cast iron water pipe).

SUSTAINABILITY

Capital Improvement Plan (CIP)

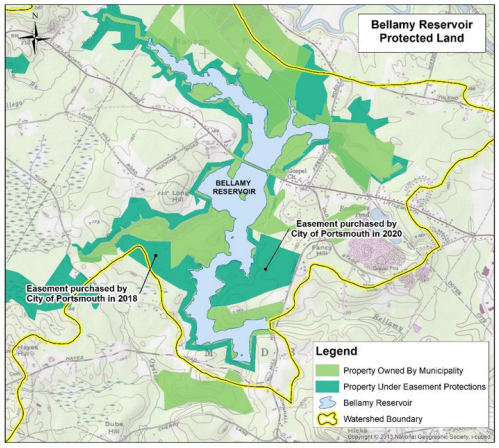
Many capital improvement projects that will increase the resiliency and quality of the water system are currently underway or have been recently completed. The connection of two new wells in Madbury to the water system is currently under construction and scheduled to be complete by August 2022. These wells will replace aging infrastructure and allow for better aquifer management. A backwash tank and a wash-water recycling pumping facility at the Madbury water treatment plant was completed in 2021. These facility upgrades allow for greater optimization of the surface water treatment process. Because the capacity of the existing Collins Well has declined since it was installed and historical data indicates greater yield potential from this aquifer, the City has drilled Collins Well #2 in 2021 and is currently completing well pump testing, and permitting of this additional source as part of the Collins Wellfield. This work is anticipated to bring the water capability of this aquifer back to its original 450 gallons per minute capacity (648,000 gallons per day).



Designs are currently underway for the replacement of the water transmission mains that pass beneath Little Bay to Newington to ensure the supply from Madbury into the City is not interrupted. This construction project is tentatively scheduled for the winter of 2022-2023. Also, aging water mains at various locations throughout the City are being targeted for on-going replacement. Current CIP information in available online.

Conservation Land

Portsmouth Water Division is working to identify properties within critical water supply recharge areas for potential protection. Protecting groundwater recharge areas and reservoir watershed areas from development is important for maintaining the quality of the water resource for the long-term. We welcome any property owner near our water supplies to contact us so we can discuss potential protection options from conservation easements to outright land purchase.



2021 WATER QUALITY RESULTS

	CONTAMINANT (UNIT OF MEASUREMENT)	IN COMPLIANCE	VIOLATION (Y/N)	LEVEL MEASURED	RANGE	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
MICROBIOLOGICAL CONTAMINANTS	Total Organic Carbon (% removal)	✓	N	Average % Removal: 71.1	52.9 - 81.8	N/A	TT: minimum removal 45% - 50%	Naturally present in the environment
	Total Coliform Bacteria	✓	N	**NO** total coliform bacteria detected in the 360 distribution system samples that were collected and analyzed in 2021				Naturally present in the environment
	Turbidity (NTU)	✓	N	Highest Level Measured: 0.12	0.02 - 0.12	N/A	1	Soil runoff
	Turbidity (Lowest monthly percent of samples meeting limit)	✓	N	100%	N/A	N/A	TT=95% of samples < or = 0.3 NTU	Soil runoff
DISINFECTION BYPRODUCTS	Haloacetic Acids (ppb)	✓	N	Highest LRAA: 52	28 - 78	N/A	60	Byproduct of drinking water disinfection
	Total Trihalomethanes (ppb) (Bromodichloro-methane, Bromoform, Dibromo-methane, Chloroform)	✓	N	Highest LRAA: 58	33 - 69	N/A	80	Byproduct of drinking water chlorination
LEAD AND COPPER	Lead (ppb)	✓	N	90th Percentile = 2	1 site above AL (31 sites sampled)	15	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
	Copper (ppm)	✓	N	90th Percentile = 0.238	0 sites above AL (31 sites sampled)	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
INORGANIC CONTAMINANTS	Arsenic (ppb)	✓	N	Highest Level Measured: <1 Avg Source Level: <1	Non-Detect	0	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
	Barium (ppb)	✓	N	Highest Level Measured: 22.4 Avg Source Level: 12.4	6.6 - 22.4	2000	2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
	Chlorine (ppm)	✓	N	Highest Level Measured: 1.92 Avg System Level: 0.96	0.10 - 1.92	MRDLG = 4	MRDL = 4	Water additive used to control microbes
	Chromium (total) (ppb)	✓	N	Highest Level Measured: 1.7 Avg Source Level: 1.2	<1 - 1.7	100	100	Discharge from steel and pulp mills; erosion of natural deposits
	Fluoride (ppm)	✓	N	Highest Level Measured: 0.91 Avg Level: 0.61	0.40 - 0.91	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
	Nitrate (as Nitrogen) (ppm)	✓	N	Highest Level Measured: 2.5 Avg Source Level: 1.37	<0.2 - 2.5	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
RADIOACTIVE CONTAMINANTS	Compliance Gross Alpha (pCi/L) 2016 data	✓	N	Highest Level Measured: 1	<1 - 1	0	15	Erosion of natural deposits
	Uranium (ug/L) 2019 data	✓	N	Highest Level Measured: 1.6	1.2 - 1.6	0	30	Erosion of natural deposits
	Combined Radium 226 + 228 (pCi/L) 2016 data	✓	N	Highest Level Measured: 1.96	<1 - 1.96	0	5	Erosion of natural deposits
UNREGULATED SUBSTANCES	Manganese (ppb) 2019 data	✓	N	Average Source Level: 21.9	2.5 - 211	Naturally-occurring element used in a variety of applications including use in steel production to improve hardness, stiffness and strength. Essential nutrient found in vitamin/mineral supplement and in fortified foods		
	HAA5 (ppb) 2019 data	✓	N	Average Distribution Level: 32	0.3 - 57	Byproducts of drinking water disinfection		
	HAA6Br (ppb) 2019 data	✓	N	Average Distribution Level: 5.5	2.9 - 8.4	Byproducts of drinking water disinfection		
	HAA9 (ppb) 2019 data	✓	N	Average Distribution Level: 38	0.3 - 65	Byproducts of drinking water disinfection		
PFAS	Per- and Polyfluoroalkyl Substances (PFAS)	✓	N	See PFAS section		Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff / leachate from landfills and septic systems		

DEFINITIONS OF TERMS

- **AGQS** (Ambient Groundwater Quality Standard) - Groundwater quality standard established by the State of New Hampshire per Env-Or 600.
- **AL** (Action Level) - Concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **MCL** (Maximum Contaminant Level) - 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) - 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) - 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) - 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.
- **N/A** (not applicable) - Sampling was not completed by regulation or was not required.
- **ND** (none detected) - Indicates that the substance was not found by laboratory analysis.
- **ppm** (parts per million) - One part substance per million parts water (or milligrams per liter).
- **ppb** (parts per billion - One part substance per billion parts water (or micro-grams per liter).
- **ppt** (parts per trillion) - One part substance per trillion parts water (or nanograms per liter).
- **NTU** (Nephelometric Turbidity Units) - Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **TT** (Treatment Technique) - Required process intended to reduce the level of a contaminant in drinking water.
- **LRAA** (Locational Running Annual Average) - Average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

2021 WATER QUALITY RESULTS

Per- and Polyfluoroalkyl Substances (PFAS)

On September 30, 2019 the NHDES established limits on the concentrations of four per- and polyfluoroalkyl substances (PFAS) in drinking water. The NHDES maximum contaminant level (MCL) for drinking water and groundwater is 15 parts per trillion (ppt) for perfluorooctane-sulfonic acid (PFOS), 12 ppt for perfluorooctanoic acid (PFOA), 11 ppt for Perfluorononanoic Acid (PFNA), and 18 ppt for Perfluorohexane sulfonic acid (PFHxS). These limits are based on an annual rolling average of the sample results. The EPA Health Advisory concentration has remained at 70 (ppt) for (PFOS) and (PFOA) since 2016.

Portsmouth is in compliance with the NHDES PFAS limits. The City samples all of the Portsmouth water supply sources quarterly in accordance with NHDES rules and use accredited laboratories and EPA approved testing methods. 2021 sample results are summarized in the PFAS table below. The complete record of PFAS sample results is available online: cityofportsmouth.com/publicworks/water/portsmouth-water-system-pfas-update.

Over the past seven years, the Harrison Well and Smith Well in the Pease Tradeport water system, and Portsmouth Well #1 and Collins Well in the Portsmouth water system, have been routinely monitored for PFAS by the Air Force. All monitoring data is available online. For more online information about PFAS health effects: atsdr.cdc.gov/sites/pease/index.html.

PER- AND POLYFLUOROALKYL SUBSTANCE (concentrations* reported in ng/L or ppt)	NHDES MAXIMUM CONTAMINANT LEVEL (MCL)		PORTSMOUTH WELL #1	COLLINS WELL	GREENLAND WELL	MADBURY WELL #2	MADBURY WELL #3	MADBURY WELL #4	BELLAMY RESERVOIR	WATER TREATMENT PLANT
# of samples in 2021			13	13	4	4	4	4	4	4
% of water supplied in 2021			8.6%	3.0%	12.2%	3.2%	4.7%	4.8%	63.5%	
6:2 Fluorotelomer Sulfonate (6:2 FTS)	not regulated	Average	BD	BD	ND	ND	ND	ND	ND	1
		Range	ND-1	ND-3	ND	ND	ND	ND	ND	1
Perfluorobutane-sulfonic acid (PFBS)	not regulated	Average	3	16	3	2	2	2	1	1
		Range	2 - 4	12 - 21	3 - 4	1 - 2	2 - 3	1 - 3	1	1
Perfluorobutanoic acid (PFBA)	not regulated	Average	3	5	2	2	2	BD	4	3
		Range	2 - 4	3 - 7	2	1 - 2	1 - 2	ND-1	1 - 6	1 - 5
Perfouoroheptanoic acid (PFHpA)	not regulated	Average	3	1	2	1	1	ND	1	1
		Range	2 - 6	ND-2	2	1	1 - 2	ND	1	1 - 2
Perfluorohexane-sulfonic acid (PFHxS)	18	Average	7	2	2	1	1	BD	BD	BD
		Range	6 - 9	2 - 3	2 - 3	1	ND-1	ND-1	ND-<1	ND-<1
Perfluorohexanoic acid (PFHxA)	not regulated	Average	5	2	4	1	2	1	1	1
		Range	3 - 7	1 - 3	4 - 5	1 - 2	1- 4	1	1 - 2	1 - 2
Perfluorononanoic acid (PFNA)	11	Average	BD	BD	ND	ND	ND	ND	ND	BD
		Range	ND-1	ND-1	ND	ND	ND	ND	ND	ND-1
Perfluorooctane-sulfonic acid (PFOS)	15	Average	5	4	5	1	1	ND	1	BD
		Range	3 - 6	3 - 5	4 - 6	1	1 - 2	ND	ND-2	ND-1
Perfluorooctanoic acid (PFOA)	12	Average	5	3	4	3	3	1	2	2
		Range	4 - 7	2 - 6	4 - 5	1 - 4	3 - 4	1 - 2	2 - 3	1 - 3
Perfluoropentanoic acid (PFPeA)	not regulated	Average	6	3	4	2	2	1	BD	1
		Range	4 - 9	1 - 6	4 - 5	1 - 2	1 - 4	1	ND-2	1 - 2

TABLE ABBREVIATIONS & NOTES:

Due to laboratory analytical method limitations, low concentrations reported for these chemicals are considered estimates unless the amount measured is above 2 ng/L (ppt).

EPA Health Advisory Level for PFOS and PFOA concentration separately or combined is 70 ng/L (ppt).

ND (none detected): Indicates that the substance was not found by laboratory analysis.

BD (below detected level): Average calculated resulted in value below the detection limit.

PFAS analyzed but not detected in the samples: 8:2 Fluorotelomer sulfonate (8:2 FTS); Perfluorohexanesulfonic acid (4:2 FTS); Perfluorodecanoic acid (PFDA); Perfluorododecanoic acid (PFDoA); Perfluoroheptanesulfonic acid (PFHpS); Perfluoroundecanoic acid (PFUnA); Perfluoro-3-Methoxypropanoic Acid (PFMPA); Perfluoro-4-Methoxybutanoic Acid (PFMBA); Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA); Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA); Perfluoropentanesulfonic Acid (PFPeS); 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA); 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA); 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS); and 11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)

Source Water Assessment

Portsmouth Water Division routinely updates inventories of potential contaminant threats and is actively pursuing opportunities to increase the protection of our groundwater supplies and the Bellamy Reservoir through property and easement acquisitions. NHDES prepared drinking water source assessment reports for all public water systems between 2000 and 2003 in an effort to assess the vulnerability of each of the State's 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. Results of the assessment, prepared in 2002, are provided in the table. Risk factors, such as proximity of highways and proximity of known contamination, are ranked and summarized in the summary of susceptibility ratings section in terms of the number of factors per risk category. The complete assessment report is available for review at the DPW office and online at the NHDES website.

SOURCE WATER ASSESSMENT RESULTS

SYSTEM	SOURCE INFORMATION	SUMMARY OF SUSCEPTIBILITY RATINGS		
		HIGH	MEDIUM	LOW
PORTSMOUTH	Greenland Well - GPW 003	4	3	5
	Portsmouth Well - GPW 004	5	4	3
	Madbury Well 2 - GPW 006	2	4	6
	Madbury Well 3 - GPW 007	0	5	7
	Madbury Well 4 - GPW 008	2	4	6
	Bellamy Reservoir - 009	1	6	5
	Collins Well - GPW 010	4	1	7

WHAT'S IN YOUR DRINKING WATER AND WHAT'S NOT

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons (e.g., 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. These people should seek advice about drinking water from their health care providers. The US EPA/Centers for Disease Control and Prevention (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 800-426-4791.

Lead and Copper

Portsmouth Water Division takes the responsibility of protecting your health very seriously. We want you to make informed decisions about your drinking water. Lead is not present in the water when it leaves our treatment and well facilities, or in the water mains that run below the streets. However, lead can be present in old service line connections that tie homes to the water system or plumbing inside homes and businesses. Due to the age of many homes in Portsmouth and surrounding towns, and the associated potential for leaded plumbing components, we encourage customers to have their water tested by a certified laboratory, especially if there are children under six or pregnant women in the household. We actively adjust the water chemistry at the treatment facility and well facilities according to our Corrosion Control Program, to reduce the potential for lead in households to dissolve into the water and end up at the tap. But if lead is present in your plumbing system, and is in contact with water, some risk remains. Information about our Corrosion Control Program can be found on the City's website.

Lead was a common material used in plumbing until the 1980s. It is a powerful toxin that is harmful to human health. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. They are especially vulnerable because even low levels of lead in the blood of children can result in behavior and learning problems, lower IQ and hyperactivity, slowed growth, hearing problems and anemia. Adults who drink water with lead concentrations over 15 parts per billion (ppb) for many years could develop kidney problems or high blood pressure.

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 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 the tap for 30 seconds to two (2) minutes before using water for drinking or cooking. Do not use hot 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 at 800-426-4791. Additional information is available from NHDES by calling 603-271-2516 or online: des.nh.gov/water/drinking-water/lead-drinking-water. A list of laboratories that can test your water for lead is available online: cityofportsmouth.com/publicworks/water/information.

Old galvanized service lines are still in service at some locations in Portsmouth, even though their service life is typically only between 20 and 40 years. This type of pipe, besides being at high risk of failing and causing water quality issues, has the potential to contain lead because of their typical connection with the water main. Lead pipe, referred to as "jumpers" or "goosenecks" were historically used to make these connections to galvanized service lines. If you have a galvanized service line, the Water Division strongly advises that they are replaced with copper as soon as possible. In 2022, letters will be sent to services that are known to have galvanized service lines. Water Division personnel would be glad to discuss the replacement process and assist as needed.

In 2021, 31 homes served by the Portsmouth water system were sampled for lead and copper. Of these, twenty-six (26) of the samples had no-detection of lead above the laboratory method detection limit of 1 ppb, and four (4) samples had lead levels between 1 ppb and 5 ppb. We will continue to monitor lead and copper at 30 or more sites in the Portsmouth system over the third quarter in 2022.

Portsmouth water system is currently in compliance with the lead and copper rule.

Fluoridation

Your public water supply is fluoridated. According to the CDC, if your child under the age of six months is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance of dental fluorosis. Consult your child's health care provider for more information. Dental fluorosis, in moderate or severe forms, may result in brown staining and/or pitting of the permanent teeth before they erupt from the gums. Concerns for dental fluorosis arise when fluoride levels are greater than 2 mg/L.

WATER QUALITY MONITORING

Contaminants and Regulations

In order to ensure that tap water is safe to drink, the EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may contain small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects are available by calling the EPA's Safe Drinking Water Hotline at 800-426-4791 or at epa.gov/safewater.

Generally, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it dissolves naturally occurring minerals, and in some cases, radioactive material. It can pick up substances resulting from the presence of animals or from human activity. Such substances are called contaminants, and may be present in source water as:

Microbial contaminants, such as viruses and bacteria, which may come from wastewater 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.

During the past year, we have taken hundreds of water samples in order to monitor and test for the presence of radioactive, biological, inorganic, volatile organic and synthetic organic contaminants. The tables presented show only those contaminants that were detected in the water. Many more parameters were tested for, but not detected. They are not included in this report. The state requires us to monitor for certain substances less 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 when the sample was taken.

Portsmouth has completed the fourth stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program that started in 2018. The UCMR program benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water. This helps the EPA determine if it needs to introduce new regulatory standards to improve drinking water quality. Chemicals analyzed for UCMR 4 included ten cyanotoxins, two metals, eight pesticides, one pesticide manufacturing byproduct, three brominated haloacetic acids, three alcohols, and other semi- volatile chemicals. The results of these tests are summarized in this report. *Chemicals that were not detected are not included.*

Water Quality Parameters

Water quality parameters are routinely monitored to assess the general characteristics of the water supply. Note that the range of some of these parameters illustrates the differences between the characteristics of the surface water supply and the groundwater supply.

WATER QUALITY PARAMETERS

PARAMETERS (UNITS)	AVERAGE LEVEL	RESULTS RANGE	SECONDARY DRINKING WATER STANDARD SMCL
Chloride (ppm)	84	41 - 351	250
Copper (ppb) averaged from 2019-2021	29	1 - 197	1300
Iron (ppb)	31	10 - 440	300
Manganese (ppb)	20	8 - 63	50
pH	7.6	7.1 - 7.8	6.5 - 8.5
Sulfate (ppm) averaged from 2019-2021	14	4 - 28	250
Conductivity (umos/com)	406	250 - 1469	N/A
Alkalinity (ppm)	50	15 - 163	N/A
Hardness (ppm as CaCO3)	52	25 - 207	N/A
Ortho-Phosphate (ppm)	0.96	0.71 - 1.31	N/A
Sodium (ppm)	43	21 - 150	250

CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801

Important Contact Information

CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
WATER DIVISION
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PORTSMOUTH NH 03801
(603) 427-1530
cityofportsmouth.com/publicworks/water

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Water Quality and Resource Protection Specialist
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(603) 312-3804

BILLING QUESTIONS:

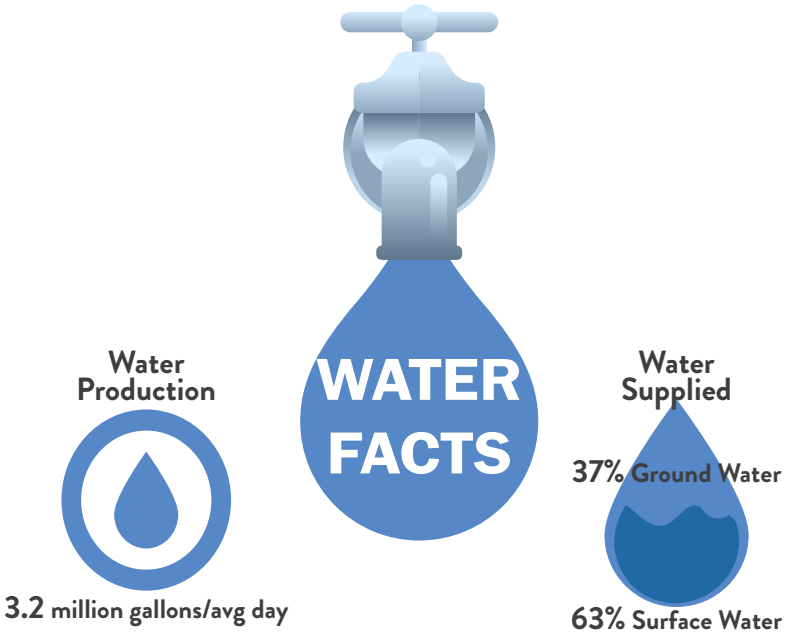
(603) 610-7248 or (603) 610-7237
billpay@cityofportsmouth.com
To pay utility bill online
cityofportsmouth.com/city/pay-my-bill

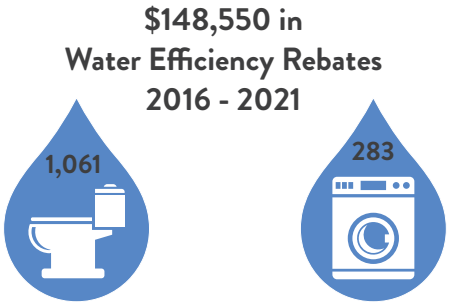
FEDERAL & STATE AGENCIES:

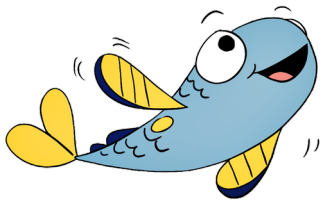
EPA Safe Drinking Water (800) 426-4791
epa.gov/environmental-topics/water-topics
NH Department of Environmental Services
(603) 271-3503 des.nh.gov/water

Get involved! It's your drinking water and your input is important to us.

Participate in a City Council meeting. Meeting agendas are posted on the City's website and posted in the lobby of City Hall at 1 Junkins Avenue. Portsmouth's Government TV Channel is located on Comcast Channel 22 and in HD on Comcast Channel 1072. Meetings are broadcast live and rebroadcast. Municipal meetings are also live streamed in HD on the City's YouTube channel.







Think Blue!