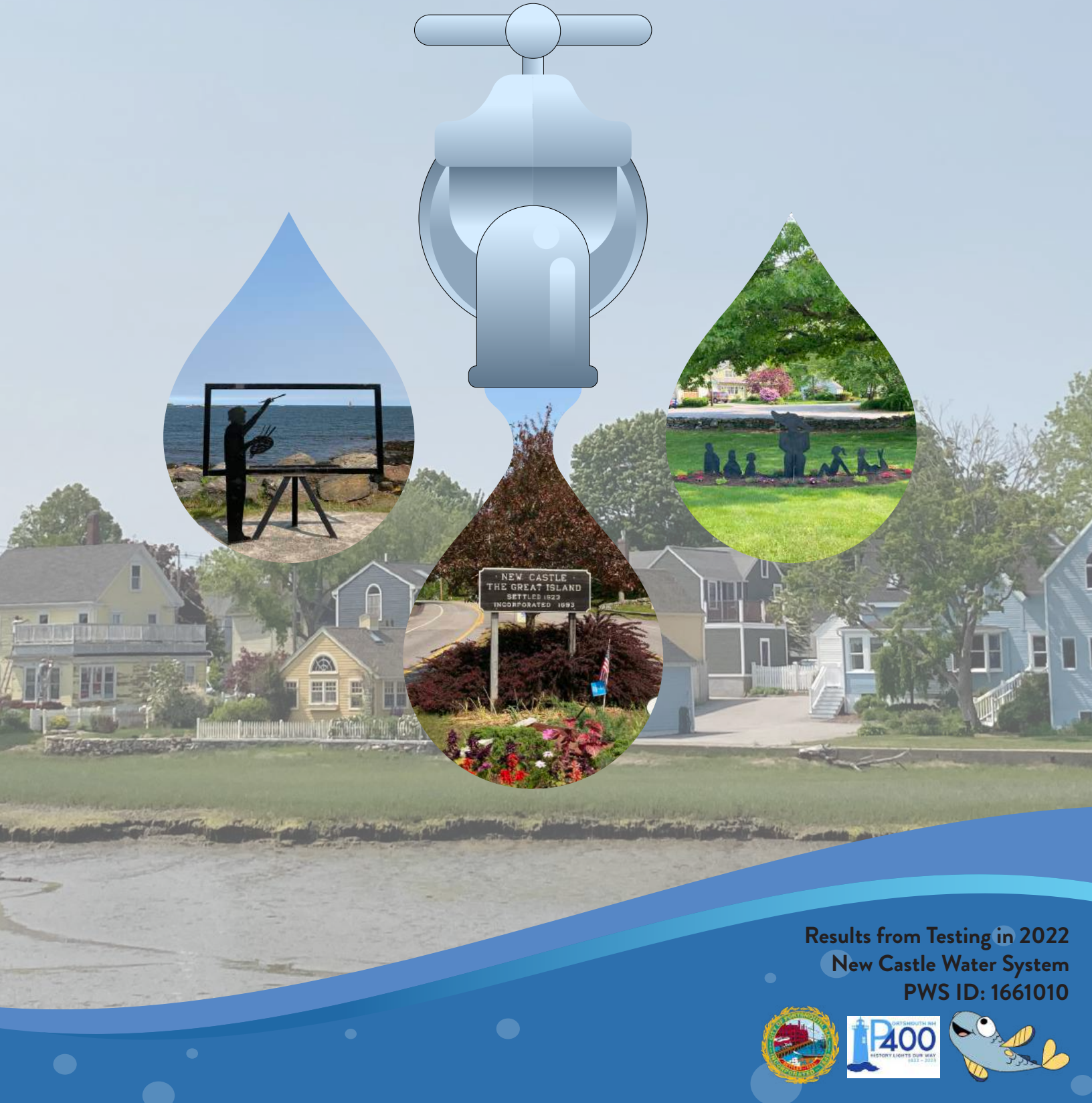
IN CELEBRATION OF PORTSMOUTH NH 400TH ANNIVERSARY

THE CITY OF PORTSMOUTH DPW WATER DIVISION PRESENTS:

Annual Drinking Water Quality Report



Results from Testing in 2022
New Castle Water System
PWS ID: 1661010

OUR COMMITMENT: SAFE DRINKING WATER

On behalf of the Town of New Castle, the City of Portsmouth Water Division is pleased to present the Annual Water Quality Report. This report summarizes results of drinking water testing performed from 01/01/2022 to 12/31/2022, and is provided to keep you informed about the quality of the water you rely on every day. This report pertains to customers that receive water from the New Castle water system (PWSID# 1661010), which is served by the Portsmouth water system (PWSID# 1951010). This system is separate from the Pease water system that serves the Pease Tradeport and a portion of Newington.

Through 2022, the water provided to New Castle customers 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

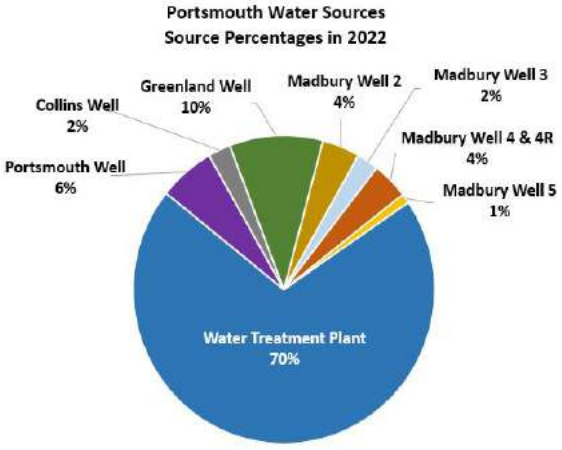
Our mission is to provide the community with drinking water that meets all current federal and state drinking water standards. The Portsmouth Water Division is constantly monitoring and routinely testing the drinking water according to these requirements to ensure the quality of water delivered to our 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 supply updates are prepared and provided on our webpage quarterly, and more often when warranted. Water customers can access these reports at: https://portsnh.co/WaterSupplyUpdates.

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 four groundwater wells in Madbury (Madbury Wells #2, #3, #4R, and #5) 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.

Two additional wells, Portsmouth Well #1 and Collins Well, are located off Route 33 (Greenland Road). Another 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.



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. The SWAG met five times in 2022 and discussed topics including PFAS regulations, extent, treatment, and testing programs; legislative items associated with drinking water, private well studies, lead testing, and community organizing. The group also toured the Pease PFAS Water Treatment Facility and held a Water Forum at City Hall in May. 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 and informed of all aspects of the City's water supply.

"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, with one of the water system items (an old 1898 cast iron water pipe).

SUSTAINABILITY

Capital Improvement Plan (CIP)

Capital improvement projects that will increase the resiliency and quality of the water system are currently underway or have recently been completed. In 2022, the Town of New Castle replaced approximately 1400 feet of water main along Spring Hill Road and Lavangers Lane in New Castle. This project was identified as a recommended upgrade as part of the water system's capital improvement plan. The once aging infrastructure was originally installed as private service, but has since been converted and will be managed by the City of Portsmouth Water Division. Additional infrastructure projects to improve the distribution system were completed at Mainmast Circle and Locke Road at the end of 2021, early 2022. Information regarding these projects are available from the Water & Sewer Commission Meeting Minutes at www.newcastlenh.org/water-sewer-commission and project information is available here: www.newcastlenh.org/new-castle-water-project.

Lavangers Lane & Spring Hill Road Waterline Improvement Project
New 8-inch ductile iron pipe installation - drafted by Underwood Engineers

Portsmouth water supply projects include the recent connection of two new wells in Madbury to the water system; wells #4R and #5. These wells were added to replace aging infrastructure and allow for better aquifer management, while providing additional supply to meet increasing demand throughout the system. 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 2023/2024.

Aging water mains at various locations throughout the City are being targeted for on-going replacement. Water system staff also periodically performs leak detection in New Castle to identify and fix hard-to-locate leaks.

2022 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: 68.3	59.7 - 81.8	N/A	TT: minimum removal 45% - 50%	Naturally present in the environment
	Total Coliform Bacteria	✓	N	No total coliform bacteria were detected in the 12 distribution system samples that were collected and analyzed in 2022				Naturally present in the environment
	Turbidity (NTU)	✓	N	Highest Level Measured: 0.07	0.02 - 0.07	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: 36	22 - 47	N/A	60	Byproduct of drinking water disinfection
	Total Trihalomethanes (ppb) (Bromodichloro-methane, Bromoform, Dibromo-methane, Chloroform)	✓	N	Highest LRAA: 59	25 - 59	N/A	80	Byproduct of drinking water chlorination
LEAD AND COPPER	Lead (ppb) 2021 data	✓	N	90th Percentile = 5	0 sites above AL (12 sites sampled)	15	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
	Copper (ppm) 2021 data	✓	N	90th Percentile = 0.108	0 sites above AL (12 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: 4 Avg Source Level: 2	<1 - 4	0	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
	Barium (ppb)	✓	N	Highest Level Measured: 32 Avg Source Level: 21	8 - 32	2000	2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
	Chlorine (ppm)	✓	N	Highest Level Measured: 1.14 Avg System Level: 0.69	0.35 - 1.14	MRDL=4	MRDL = 4	Water additive used to control microbes
	Chromium (total) (ppb)	✓	N	Highest Level Measured: 2 Avg Source Level: 1	<1 - 2	100	100	Discharge from steel and pulp mills; erosion of natural deposits
	Fluoride (ppm)	✓	N	Highest Level Measured: 1.19 Avg Level: 0.68	0.05 - 1.19	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: 5.5 Avg Source Level: 1.3	<0.2 - 5.5	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
RADIOACTIVE CONTAMINANTS	Compliance Gross Alpha (pCi/L)	✓	N	Highest Level Measured: 4.1	<3 - 4.1	0	15	Erosion of natural deposits
	Uranium (ug/L)	✓	N	Highest Level Measured: 2.1	<1 - 2.1	0	30	Erosion of natural deposits
	Combined Radium 226 + 228 (pCi/L)	✓	N	Highest Level Measured: <1	Non-Detect	0	5	Erosion of natural deposits
UNREGULATED SUBSTANCES	Manganese (ppb) 2020 data	✓	N	Average Source Level: 21.9	2.50 - 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) 2020 data	✓	N	Average Distribution Level: 32	0.30 - 57	Byproducts of drinking water disinfection		
	HAA6Br (ppb) 2020 data	✓	N	Average Distribution Level: 5.5	2.9 - 8.4	Byproducts of drinking water disinfection		
	HAA9 (ppb) 2020 data	✓	N	Average Distribution Level: 38	0.30 - 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.

2022 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. In March 2023, the US EPA proposed regulations that would limit acceptable concentrations of six PFAS in drinking water. The proposed regulation is currently open for public comment. The US EPA's finalized regulation is expected in late 2023 or early 2024. Until the EPA finalizes the PFAS drinking water regulation, water suppliers in NH are required to meet the NHDES PFAS limits.

The water provided to New Castle water customers 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. Sample results from 2022 are summarized in the PFAS table below. The complete record of PFAS sample results is available at https://portsnh.co/PFASTesting. For more information about PFAS health effects: www.atsdr.cdc.gov/sites/pease/index.html.

Over the past eight 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.

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 & 4R	MADBURY WELL #5	BELLAMY RESERVOIR	WATER TREATMENT PLANT
# of samples in 2022			13	12	4	4	4	3	2	3	4
% of water supplied in 2022			**6.0%**	**2.4%**	**10.0%**	**4.1%**	**2.3%**	**3.9%**	**1.0%**	**70.3%**	
6:2 Fluorotelomer Sulfonate (6:2 FTS)	not regulated	Average	BD	ND	ND	ND	ND	ND	ND	ND	ND
		Range	ND-1	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutane-sulfonic acid (PFBS)	not regulated	Average	3	12	2	1	1	3	5	BD	BD
		Range	2 - 3	5 - 20	ND - 3	ND - 4	ND - 2	2 - 4	4 - 6	ND - 1	ND - 1
Perfluorobutanoic acid (PFBA)	not regulated	Average	4	4	2	1	1	ND	ND	1	3
		Range	2 - 5	2 - 10	ND - 3	ND - 4	ND - 2	2 - 4	4 - 6	ND - 1	ND - 1
Perfouoroheptanoic acid (PFHpA)	not regulated	Average	4	BD	1	BD	BD	ND	ND	1	BD
		Range	2 - 6	ND - 2	ND - 3	ND - 1	ND - 1	ND	ND	ND - 2	ND - 1
Perfluorohexane-sulfonic acid (PFHxS)	18	Average	7	2	1	BD	BD	ND	ND	ND	BD
		Range	5 - 10	ND - 3	ND - 3	ND-<1	ND-<1	ND	ND	ND	ND-<1
Perfluorohexanoic acid (PFHxA)	not regulated	Average	6	1	4	1	2	ND	2	1	BD
		Range	4 - 9	ND - 3	4 - 5	ND - 3	2 - 3	ND	2 - 3	ND - 2	ND - 1
Perfluorononanoic acid (PFNA)	11	Average	BD	BD	ND	ND	ND	ND	ND	ND	ND
		Range	ND-<1	ND-<1	ND	ND	ND	ND	ND	ND	ND
Perfluorooctane-sulfonic acid (PFOS)	15	Average	5	3	4	BD	BD	ND	ND	BD	BD
		Range	3 - 6	ND - 6	3 - 5	ND - 1	ND - 1	ND	ND	ND - 2	ND - 1
Perfluorooctanoic acid (PFOA)	12	Average	5	3	4	4	3	ND	4	3	2
		Range	3 - 8	ND - 6	4 - 5	2 - 6	3 - 4	ND	3 - 6	2 - 4	ND - 3
Perfluoropentanoic acid (PFPeA)	not regulated	Average	7	2	5	1	3	ND	1	1	BD
		Range	4 - 11	ND - 4	3 - 6	ND - 3	2 - 3	ND	ND - 3	ND - 2	ND - 1

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

The 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.

SOURCE WATER ASSESSMENT RESULTS	SYSTEM	SOURCE INFORMATION	SUMMARY OF SUSCEPTIBILITY RATINGS		
			HIGH	MEDIUM	LOW
	PORTSMOUTH	Greenland Well - GPW 003	2	3	7
		Portsmouth Well - GPW 004	5	2	5
		Madbury Well 2 - GPW 006	1	3	8
		Madbury Well 3 - GPW 007	1	1	10
		Madbury Well 4R - GPW 011	1	1	10
		Madbury Well 5 - GPW 013	1	1	10
		Bellamy Reservoir - 009	2	5	5
		Collins Well - GPW 010	3	2	7

The results of the assessment have been updated and 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.

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 New Castle 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 of Portsmouth'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 who are especially vulnerable. 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 private, domestic service lines and home plumbing. We are responsible for providing high-quality drinking water but cannot control the variety of materials used in home plumbing components.

If you are concerned about lead in your water, you may wish to have your water tested. 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. 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: https://www.des.nh.gov/water/drinking-water/lead. A list of laboratories that can test your water for lead is available online: cityofportsmouth.com/publicworks/water/information.

Old galvanized service lines may still be in service at some locations in New Castle, 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 be replaced with copper as soon as possible. Please call Water Division personnel if/when you decide to replace your service line.

The Town of New Castle typically samples for lead and copper from at least 10 homes every year. However, the state compliance requirements were not the same in 2022. Due to the additions of two new groundwater wells within the Portsmouth Water System, lead and copper sampling was delayed until the start of 2023. For more information on this topic, please visit the City's website.

The samples collected in 2021 resulted in all of the samples having less than the EPA Action Level (AL) of 15 ppb for lead and 1.3 ppm for copper

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.

The City of Portsmouth's water operations staff were recently awarded a NH Safe Lives certificate for fluoride optimization in the Portsmouth water system.

This award recognized our water operators for achieving an optimal level of fluoride levels (0.7 parts per million) in our drinking water system.

WATER QUALITY MONITORING

Possible Contaminants in Drinking Water Sources

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 table below shows 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 a data table on page 5 of 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)	64	49 - 74	250
Copper (ppb)	19	3 - 73	1300
Iron (ppb)	54	30 - 80	300
Manganese (ppb)	8	1 - 14	50
pH	7.9	7.7 - 8.3	6.5 - 8.5
Sulfate (ppm)	16	3 - 26	250
Conductivity (umos/com)	314	269 - 364	N/A
Alkalinity (ppm)	33	24 - 47	N/A
Hardness (ppm as CaCO3)	30	19 - 41	N/A
Ortho-Phosphate (ppm)	0.91	0.84 - 0.99	N/A
Sodium (ppm)	41	21 - 160	N/A

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

Important Contact Information

TOWN OF NEW CASTLE
DEPARTMENT OF PUBLIC WORKS
301 WENTWORTH ROAD
PO BOX 367
NEW CASTLE NH 03854
www.newcastlenh.org/highway-roads

QUESTIONS:

Chris Robillard
Public Works Superintendent
publicworks@newcastlenh.org
(603) 431-6710 ext. 4

BILLING QUESTIONS:

Town of New Castle
Accounting Clerk
(603) 431-6710 ext. 6

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 New Castle Select Board meeting and/or a Portsmouth City Council meeting.

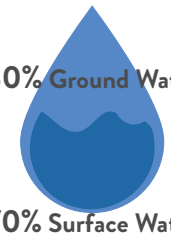
Town of New Castle meeting agendas are online:
newcastlenh.org/select-board

City of Portsmouth meeting agendas are online:
cityofportsmouth.com

WATER PRODUCTION

3.3 million gallons/avg day

WATER SUPPLIED



30% Ground Water

70% Surface Water

**Think Blue,
What Can You Do?**