Annual Water Quality Report

WATER TESTING PERFORMED IN **2016**
PEASE TRADEPORT WATER SYSTEM
PWS ID#: 1951020

The City of Portsmouth's Department of Public Works (DPW), Water Division, is pleased to present this Annual Water Quality Report to keep you informed about the quality of the water you rely upon every day. This report pertains to customers that receive water from the Pease Water System (USEPA PWS ID# 1951020). This report summarizes the results of drinking water testing performed from January 1 through December 31, 2016, and provides information about the sources of your water supply.

Our mission is to provide the community with a dependable and safe supply of drinking water that meets all current drinking water standards. Portsmouth Water Division staff are constantly monitoring and routinely testing the drinking water in accordance with Federal and State requirements. This ensures the quality of water delivered to customers consistently meets these water quality standards. As new challenges emerge with respect to potential contaminants and impacts from changing weather conditions, we remain vigilant in meeting the goals of water treatment, source water protection, water efficiency, system improvement, fire service capability, and community education, while continuing to serve the needs of all of our water users.

Sustainability

Many capital improvement projects designed to increase the resiliency and quality of the water system have been completed or are currently underway. In 2016, the old 400,000 gallon Hobbs Hill water storage tank was replaced with a new 600,000 gallon storage tank. Also in 2016, a granular activated carbon (GAC) filtration system was installed at the Pease Water Treatment Facility on Grafton Road, to demonstrate the effectiveness of that system to remove per- and polyfluoroalkyl substances from the drinking water. Upgrades to the Pease Water Treatment Facility are proceeding into the design phase and are tentatively scheduled to be under construction in 2018. The Treatment Facility upgrade will include additional filters and improved systems to treat and monitor the water that supplies the Pease Tradeport. The City of Portsmouth has been actively engaged with the Air Force for their continued support of this project, and will continue to pursue further actions to ensure the Pease Tradeport water supply remains safe and sustainable.

Projects in Portsmouth that benefit the Pease Tradeport also include: upgrades to the Booster Pumping Station in Newington, that we rely on to transfer water from the Water Treatment Facility in Madbury into the City; a new groundwater well and well improvements in Madbury to allow for better aquifer management; a new well building and a replacement well in Greenland; and replacement of aging water mains at various locations throughout the City. We are also focused on energy efficiency, with on-going replacement of well pumps with premium-efficiency models and the recent installation of a 287 kW DC solar array at the Water Treatment Facility in Madbury.

SUBSTANCES THAT COULD BE IN WATER

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which 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 the 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 at 1-800-426-4791.

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, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. The water supply is routinely tested for these contaminants under State and Federal monitoring requirements. This report summarizes the findings of these tests.

IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk for 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.

WHERE DOES MY PEASE TRADEPORT WATER COME FROM?

Water supplied to Pease Tradeport Water System customers comes primarily from the groundwater wells located on the Tradeport (Harrison Well and Smith Well). Water can be supplemented by water pumped from the Portsmouth Water System (EPA PWS ID# 1951010). Prior to the installation of the carbon filters on the Pease Wells approximately fifty percent of the water supplied to the Pease Tradeport was from the Portsmouth Water System (from May 2014 through December 2016). Detailed information about the Portsmouth Water System can be found in the City of Portsmouth's water quality report for that system. This information can be accessed on the City's website or by contacting the water system directly.

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.

The New Hampshire Department of Environmental Services (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 list of potential and known contamination sources, and a summary of available protection options. The results of the assessment, prepared in 2002 are noted in the Source Water Assessment Results table. Risk factors, such as proximity of highways and/or known contamination, are ranked and summarized in the following table of Susceptibility Ratings in terms of the number of factors per risk category.

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
	Collins Well - GPW 010	4	1	7
Pease	Smith Well - GPW 001	4	3	5

The complete Assessment Report is available for review at the Portsmouth Water Division's office at 680 Peverly Hill Road. Please call (603) 427-1530 for an appointment to view the report.

You may also visit the Drinking Water Source Assessment Reports website at: http://des.nh.gov/organization/divisions/water/dwgb/dwspp/reports/documents/portsmouth.pdf

Contaminants that may be present in source water include:

- **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.

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 its 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. Pease Water System fluoride concentration averaged 0.45 mg/L in 2016.

HOW IS MY WATER TREATED AND PURIFIED?

During much of 2016, water from the Smith Well and Harrison Well was pumped into the distribution system with the addition of sodium hypochlorite (bleach) for disinfection, fluoride as hydrofluorosilicic acid (used to prevent tooth decay) and poly/ortho-phosphate (sequestering chemical to reduce precipitation of iron and manganese and corrosion inhibitor used to protect distribution system pipes). Water from these wells was consistently blended in a 50% mix with water from the Portsmouth Water System during this time. In September 2016, two granular activated carbon (GAC) filters, with Calgon Filtrasorb F-400 carbon, were installed in series to remove per- and polyfluoroalkyl substances that have been detected in the Harrison Well and Smith Well water. These filters were installed in response to the PFAS contamination that was first discovered in the aquifer at the former Air Force Base in 2014. The City of Portsmouth is operating the carbon treatment system to test the effectiveness of this treatment technology with respect to PFAS removal, to remove the low levels that have been detected in the Smith and Harrison Well water, and to determine important operational parameters that will need to be considered in the design of a final treatment system that will be capable of treating water from these wells and Haven Well far into the future. At this time, PFAS have not been measured in any of the fifteen samples of the filtered water.

As needed, water is supplied to the Pease Tradeport Water System from the Portsmouth Water System. Over the past three years, Portsmouth water has been blended into the Pease Tradeport system as a 50/50 blend. Much of the water provided to the Tradeport from Portsmouth is from the groundwater wells in Portsmouth. Sodium hypochlorite and poly/ortho-phosphate are added to the water supplied by the Portsmouth #1 Well, Collins Well, and Greenland Well. Fluoride as hydrofluorosilicic acid is also added at the Greenland Well.

A portion of the water supplied by Portsmouth may originate from the Madbury sources. Water from the Bellamy Reservoir is treated at the Portsmouth Water Treatment Facility (WTF) located in Madbury. The WTF uses the Dissolved Air Floatation (DAF) process and dual-media filters to remove particulates from the water. After filtration, sodium hypochlorite (bleach) is added to the water for disinfection. The treated water is pumped through the transmission main along with the water pumped from the three groundwater wells in Madbury to the Booster Pumping Station in Newington. As the water leaves the WTF, sodium hydroxide (used to adjust the final pH and alkalinity), fluoride as hydrofluorosilicic acid (used to prevent tooth decay) and poly/ortho-phosphate (sequestering chemical to reduce precipitation of iron and manganese and corrosion inhibitor used to protect distribution system pipes) are added.

IS THERE LEAD IN MY WATER?

LEAD AND COPPER RESULTS

Contaminant (units)	Regulatory Requirements		Your Water Results		Month & Year of Testing	# of Sites Exceeding Action Level / Total # of Sites	Violation (Yes/No)	Common Source of Contaminant
	Action Level	MCLG	90th Percentile Sample Value	Range of Detected Values				
Lead (ppb)	15	0	1	< 1 to 2.8	December 2016	0 / 10	No	Corrosion of household plumbing systems, erosion of natural deposits
Copper (ppm)	1.3	1.3	0.489	0.052 to 0.717		0 / 10	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

The City of Portsmouth Water Division takes the responsibility of protecting your health very seriously and 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 or in household plumbing. Due to the age of many homes in Portsmouth and surrounding towns, and associated potential for leaded plumbing components, we encourage customers to have their water tested by a certified laboratory, particularly 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 in accordance with 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. More information about our corrosion control program and answers to frequently asked questions, please visit: www.cityofportsmouth.com the Public Works Water section.

A common material used in plumbing until the 1980s, lead is also a powerful toxin that is harmful to human health. Pregnant women, infants and young children are particularly 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

IS THERE LEAD IN MY WATER CONTINUED…..

anemia. Adults who drink water with lead concentrations over 15 ppb over 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 your tap for 30 seconds to two 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/safewater/lead. Information and assistance is available from NH Department of Health and Human Services (603) 271-4507 or www.dhhs.nh.gov.

Portsmouth samples for lead and copper at the Pease Tradeport from 10 homes and businesses every three years. The 2016 lead and copper testing resulted in all of the sites having less than the EPA Action Limit, and 8 of 10 sample sites had results below the limit of the laboratory testing method.

REGULATED CONTAMINANTS THAT WERE DETECTED

During the past year, the Portsmouth DPW-Water Division has 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, thus 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 data are included, along with the year in which the samples were taken.

RADIOACTIVE CONTAMINANTS

Contaminant (Units) (Year(s) Sampled)	Your Water Results		Regulatory Requirements		Violation? (Yes/No)	Likely Source of Contamination
	Level Measured	Results Range	MCL	MCLG		
Compliance Gross Alpha (pCi/L) (2013 & 2016)	Highest Level Measured: 1	<1 to 1	15	0	NO	Erosion of natural deposits
Uranium (ug/L) (2013 & 2016)	Highest Level Measured: 1	<1 to 1	30	0	NO	Erosion of natural deposits
Combined Radium 226 + 228 (pCi/L) (2016)	Highest Level Measured: 1.96	<1 to 1.96	5	0	NO	Erosion of natural deposits

INORGANIC CONTAMINANTS

Contaminant (Units)	Your Water Results		Regulatory Requirements		Violation? (Yes/No)	Likely Source of Contamination
	Level Measured	Results Range	MCL	MCLG		
Barium (ppb)	Highest Level Measured: 12.8 Average Source Level: 9.8	7.6 to 12.8	2000	2000	NO	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine (ppm)	Highest Level Measured: 1.58 Average System Level: 0.75	0 to 1.58	MRDL = 4	MRDLG=4	NO	Water additive used to control microbes
Chromium (total) (ppb)	Highest Level Measured: 10.3 Average Source Level: <5	<5 to 10.3	100	100	NO	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	Highest Level Measured: 1.11 Average Level: 0.45	0 to 1.11	4	4	NO	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) (ppm)	Highest Level Measured: 2.7 Average Source Level: 1.6	0.81 to 2.7	10	10	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

REGULATED CONTAMINANTS THAT WERE DETECTED CONTINUED...

DISINFECTION BYPRODUCTS

Contaminant (Units)	Your Water Results		Regulatory Requirements		Violation? (Yes/No)	Likely Source of Contamination
	Level Measured	Results Range	LLRA MCL	MCLG		
Haloacetic Acids (HAA) (ppb)	Highest Measured: 1.1	<1.0 to 1.1	60	NA	NO	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) (Bromodichloro-methane, Bromoform, Dibromomethane, Chloroform) (ppb)	Highest Measured: 6.2	6.0 to 6.2	80	N/A	NO	By-product of drinking water chlorination

UNREGULATED CONTAMINANT MONITORING

The City of Portsmouth participated in the third stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program in 2014 and 2015 by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program. The City is also scheduled to participate in the fourth UCMR monitoring event which is scheduled to begin in 2018.

UNREGULATED SUBSTANCES (samples collected from Harrison Well & Smith Well)

Substance (unit of measure)	Year Collected	Average Detected	Range Low	Range High	Typical Source
Chlorate (ppb)	2016	57.5	31.4	83.6	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide
Chromium-6 (hexavalent chromium) (ppb)	2016	0.31	0.16	0.46	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Molybdenum (ppb)	2016	<1.5	ND	1.5	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Perchlorate (ppb)	2016	0.12	0.11	0.12	Oxygen additive in solid fuel propellant for rockets, missiles, and fireworks. States have implemented standards and guidance at levels between 1 ppb and 18 ppb.
Strontium (ppb)	2016	200	159	240	Naturally occurring element; Historically used commercially in the faceplate glass of cathode-ray tube televisions to block X-ray emissions
Per- and Polyfluoroalkyl Substances (PFAS)	2016	See PFAS Table in this report for summary of results from 2016			Surfactant or emulsifier; used in fire-fighting foam, circuit board etching acids, alkaline cleaners, floor polish, and as a pesticide active ingredient for insect bait traps; U.S. manufacture of PFOS phased out in 2002; however, PFOS still generated incidentally. Perfluorinated aliphatic carboxylic acid (PFOA); used for its emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire-fighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films

GENERAL WATER QUALITY PARAMETERS

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

GENERAL WATER QUALITY PARAMETERS

Parameters (Units)	Your Water Results		Secondary Drinking Water
	Average Source Level	Results Range	
Chloride (ppm)	131	32 to 310	250
Copper (ppb)	15	<5 to 28	1000
Iron (ppb)	<5	<5 to 721	300
Manganese (ppb)	<5	<5 to 48.8	50
pH	NA	6.59 - 7.68	6.5 - 8.5
Sulfate (ppm)	17	14 to 29	250
Conductivity (umos/com)	703	294 to 1295	NA
Alkalinity (ppm)	132	97 to 176	NA
Hardness (ppm as CaCO3)	148	86 to 213	NA
Sodium (ppm)	63	19 to 142	NA

PER– AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Per- and polyfluoroalkyl substances (PFAS) are currently unregulated by the Safe Drinking Water Act (SDWA); however, the USEPA Health Advisory concentration is 70 parts per trillion (ppt) for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). Studies indicate that exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations), cancer (e.g., testicular, kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), thyroid effects and other effects (e.g., cholesterol changes).

In response to the discovery of PFOS in the Haven Well in May 2014 at levels exceeding the EPA Provisional Health Advisory level (200 ppt at that time), the Haven Well was removed from service. This well has remained disconnected from the system since this finding. The source of the PFAS at the Tradeport was aqueous film-forming foam that had been used to extinguish fires and in training exercises at the former Air Force Base.

Over the past three years, the Harrison Well and the Smith Well on the Pease Tradeport Water System and Portsmouth #1 Well and Collins Well in the Portsmouth Water System, have been routinely monitored for PFAS by the Air Force. The City of Portsmouth samples all of the other Portsmouth water supply sources routinely. Sample results from 2016 are summarized in the PFAS Table in this report. All of the monitoring data is available on the City of Portsmouth website: www.cityofportsmouth.com in the Drinking Water Quality link.

In September 2016, the City of installed a granular activated carbon (GAC) filtration system to treat the water from the Harrison Well and Smith Well. Testing of this system has demonstrated effective removal of PFAS. The City is currently negotiating with the Air Force for the design and upgrades to the Pease Water Treatment Facility on Grafton Road that will allow for the treatment of all three Pease Wells with a GAC system.

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

		Water From Portsmouth System Supplied As Needed (0% to 50% of Total Pease Supply)								Pease Sources**		Treated Well Water***
PER- AND POLYFLUOROALKYL SUBSTANCE (concentrations* reported in **ng/L** or **ppt**)		**PORTSMOUTH #1 WELL**	**COLLINS WELL**	**GREENLAND WELL**	**MADBURY WELL 2**	**MADBURY WELL 3**	**MADBURY WELL 4**	**BELLAMY RESERVOIR**	**WATER TREATMENT PLANT**	**SMITH WELL**	**HARRISON WELL**	**POST GAC TREATMENT**
# of samples in 2016:		11	12	2	1	2	1	2	1	42	24	7
6:2 Fluorotelomer sulfonate (6:2 FTS)	Average	ND	ND	7	ND	ND	ND	ND	ND	ND	ND	ND
	Range	ND	ND	ND to 7	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutane-sulfonic acid (PFBS)	Average	4	9	3	4	4	4	4	ND	6	5	ND
	Range	ND to 6	ND to 16	ND to 4	4	ND to 4	4	ND to 4	ND	ND to 10	ND to 10	ND
Perfluorobutanoic acid (PFBA)	Average	8	9	ND	ND	ND	ND	ND	ND	8	9	ND
	Range	ND to 9	ND to 13	ND	ND	ND	ND	ND	ND	ND to 10	ND to 13	ND
Perfluoroheptane sulfonate (PFHpS)	Average	ND	ND	ND	ND	ND	ND	ND	ND	5	7	ND
	Range	ND	ND	ND	ND	ND	ND	ND	ND	ND to 8	ND to 10	ND
Perfluoroheptanoic acid (PFHpA)	Average	6	ND	ND	ND	ND	ND	ND	ND	6	9	ND
	Range	ND to 8	ND	ND	ND	ND	ND	ND	ND	ND to 8	5 to 14	ND
Perfluorohexane-sulfonic acid (PFHxS)	Average	9	6	6	4	ND	ND	ND	ND	14	28	ND
	Range	6 to 12	ND to 8	ND to 6	4	ND	ND	ND	ND	10 to 17	21 to 35	ND
Perfluorohexanoic acid (PFHxA)	Average	7	9	ND	ND	ND	ND	ND	ND	6	9	ND
	Range	ND to 10	ND to 7	ND	ND	ND	ND	ND	ND	ND to 9	5 to 14	ND
****Perfluorooctane-sulfonic acid (PFOS)	Average	6	6	9	ND	ND	ND	ND	ND	11	24	ND
	Range	ND to 8	ND to 7	7 to 14	ND	ND	ND	ND	ND	8 to 18	17 to 29	ND
****Perfluorooctanoic acid (PFOA)	Average	7	6	ND	ND	ND	ND	ND	ND	7	8	ND
	Range	ND to 13	ND to 7	ND	ND	ND	ND	ND	ND	ND to 11	ND to 14	ND
Perfluoropentanoic acid (PFPeA)	Average	8	6	6	ND	ND	ND	ND	ND	7	11	ND
	Range	ND to 10	ND to 9	ND to 7	ND	ND	ND	ND	ND	ND to 10	5 to 19	ND
**** PFOS + PFOA	Average	10	7	9	ND	ND	ND	ND	ND	14	31	ND
	Range	6 to 14	ND to 12	7 to 14	ND	ND	ND	ND	ND	8 to 27	22 to 43	ND

* Due to laboratory analytical method limitations, low concentrations reported for these chemicals are considered estimates unless the amount measured is above 20 ng/L (ppt)

** Pease well sources. Concentrations are from wells supplied to the Pease system until September 22, 2016. Water from these wells was mixed by 50% with Portsmouth system water prior to treatment installation.

*** Concentrations from post-granular activated carbon (GAC) treatment.

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

ND = Not Detected above laboratory method detection limit

PFAS analyzed but not detected in the samples:

8:2 Fluorotelomer sulfonate (8:2 FTS), N-Ethyl perfluorooctane sulfonamide (EtFOSA), N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE), N-Methyl Perfluorooctane Sulfonamide (MEFOSA), N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE), Perfluorodecane sulfonate (PFDS), Perfluorodecanoic acid (PFDA), Perfluorododecanoic acid (PFDoA), Perfluorononanoic acid (PFNA), Perfluorooctane sulfonamide (PFOSA), Perfluorotetradecanoic acid (PFTeDA), Perfluorotridecanoic acid (PFTrDA), and Perfluoroundecanoic acid (PFUnA)

ABBREVIATIONS USED IN THIS REPORT

- **AGQS (Ambient Groundwater Quality Standard):** Groundwater quality standard established by the State of New Hampshire per Env-Or 600.
- **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which 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.
- **N/A:** Not applicable
- **MRDL (Maximum Residual Disinfectant Level):** The 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):** The 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.
- **ND (Not detected):** Indicates that the substance was not found by laboratory analysis.
- **NHDES:** New Hampshire Department of Environmental Services
- **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 micrograms 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):** A required process intended to reduce the level of a contaminant in drinking water.
- **LRAA (Locational Running Annual Average):** The 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.

Community Participation

Please share with us your thoughts about the information in this report and the City of Portsmouth website. We welcome your input and the opportunity to answer any questions you have about the water supply. You are also invited to voice your concerns at any regularly scheduled City Council meeting. Meetings are typically held twice each month on Monday evenings starting at 7:00 p.m. at Portsmouth City Hall, 1 Junkins Avenue, Portsmouth, NH.

Meeting dates may be found on our website at www.cityofportsmouth.com or by calling (603) 431-2000 for the date of the next meeting.

City of Portsmouth
Department of Public Works
Water Division
680 Peverly Hill Road
Portsmouth, NH 03801

Additional information and water supply updates are posted at the www.cityofportsmouth.com. Updates regarding the PFOS contamination of the Haven Well and progress of routine monitoring of the aquifer and carbon treatment system for the other Pease wells is also included on the City's website. Please let us know if you ever have any questions or concerns about your water. For more information about this report, or for any questions relating to your drinking water, please call Albert Pratt, P.E., Water Resource Manager, at (603) 520-0622, or Brian Goetz, Deputy Director of Public Works, at (603) 766-1420.