



March 13, 2020

## PORTSMOUTH WATER PFAS UPDATE

The City of Portsmouth’s water system is testing for PFAS in all of our sources of supply quarterly in accordance with the recently adopted amendment to the NH drinking water quality rule for PFAS (NH Administration Rule Part Env-Dw 712). This amendment regulates drinking water testing, Maximum Contaminant Levels (MCLs), and compliance for four PFAS compounds: PFOA, PFOS, PFHxS and PFNA. Due to a lawsuit issued on November 26, 2019, a NH court issued a preliminary injunction against NH’s newly adopted PFAS MCLs. The injunction is currently in effect; however, the City is proceeding with a sampling program that meets all of the requirements set forth in the rule.

The following table provides a summary of the most recent Portsmouth water system testing results. Per NHDES, any sample with “estimated numbers below the reporting limit are considered non-detects.” Per the NHDES rules, a rolling 4-quarter average of the PFAS concentrations is used to determine compliance. The second table below is our current quarterly average. This update includes only the first two quarters of data. Additional results from samples collected since 2014 are accessible on <https://www.cityofportsmouth.com/publicworks/water/portsmouth-water-system-pfas-update> According to this data **all of Portsmouth Water’s sources are in compliance with the New Hampshire MCLs.**

**PFAS Results from January 2020 Samples**

Sample Point	PFHxS	PFNA	PFOS	PFOA
<b>NH MCL in Parts per Trillion (PPT)</b>	<b>18</b>	<b>11</b>	<b>15</b>	<b>12</b>
Bellamy Reservoir	ND	ND	ND	ND
Madbury Water Treatment	ND	ND	ND	1
Madbury Well 2	ND	ND	ND	3
Madbury Well 3	ND	ND	ND	2
Madbury Well 4	ND	ND	ND	2
Collins Well	ND	ND	2	2
Greenland Well	2	ND	3	3
Portsmouth Well	6	ND	4	5

**PFAS Rolling Average Concentrations (October 2019 & January 2020)**

Sample Point	PFHxS	PFNA	PFOS	PFOA
<b>NH MCL in Parts per Trillion (PPT)</b>	<b>18</b>	<b>11</b>	<b>15</b>	<b>12</b>
Bellamy Reservoir	0	0	0	1
Madbury Water Treatment	0	0	0	2
Madbury Well 2	0	0	0	3
Madbury Well 3	0	0	0	3
Madbury Well 4	0	0	0	1
Collins Well	1	0	3	2
Greenland Well	2	0	3	3
Portsmouth Well	6	0	4	5

**Notes:**

- “NH MCLs” are the New Hampshire Maximum Contaminant Levels (effective October 1, 2019)
- “ND” is considered Non Detect. Per NHDES, “estimated numbers below the reporting limit are considered Non Detects.”
- Per NHDES, results below the method reporting limit are considered zero (0) for averaging purposes.
- Laboratory Analytical Method – EPA 537 M (Bureau Veritas laboratory)

**TAP SAMPLING WITH TESTING FOR PEASE**

The City was approached by *Testing for Pease* about performing tap sampling in the Portsmouth water system to confirm PFAS levels in the distribution system. *Testing for Pease* had obtained funding to perform sampling at four selected sites within the Portsmouth water system to measure the PFAS concentrations at various locations to determine blended values of compounds from the water supply sources. They also utilized an alternative laboratory method that detects compounds at the lowest level possible. Based on the data of the four New Hampshire MCL regulated compounds presented in the table below, the results from the tap samples align very well with our source sample results. A copy of the full report results for all compounds is also attached at the end of this update. The report includes only those compounds that had detected results per the laboratory method utilized.

### PFAS Tap Sampling for January 23, 2020

Sample Point	PFHxS	PFNA	PFOS	PFOA
NH MCL in Parts per Trillion (PPT)	18	11	15	12
Banfield Road	0.97 J	ND	1.1 J	2.1
Dondero School	0.78 J	ND	0.76 J	1.9 J
Portsmouth Library	ND	ND	ND	1.3 J
Spinnaker Rec Cntr	ND	ND	ND	1.2 J

**Notes:**

- "NH MCLs" are the New Hampshire Maximum Contaminant Levels (effective October 1, 2019)
- "ND" is considered Non Detect by the laboratory method utilized
- <2 = result is lower than laboratory reportable detection limit of 2 ppt.
- "J" is considered to be an estimated concentration
- Laboratory Analytical Method – Low level by SPE/LCMS (1) EPA 537 M (Bureau Veritas laboratory)

### Pease International Tradeport Drinking Water System Monitoring

In addition to the Portsmouth water supply sources, the Air Force's consultant continues to sample the Pease Tradeport drinking water wells and other monitoring wells in the surrounding area to track the aquifer and monitor for any PFAS moving toward the supply wells. Currently, with the demonstration filters on line, the Pease wells (together with the Portsmouth and Collins wells) are sampled monthly and eleven monitoring wells are sampled quarterly. Sampling data is posted on the City's website once it has been validated by the Air Force's engineering consultant. Information is also posted on the City's website for the City of Portsmouth's PFAS sampling program.

### Additional information can be accessed at:

[www.cityofportsmouth.com/publicworks/water/pease-tradeport-water-system](http://www.cityofportsmouth.com/publicworks/water/pease-tradeport-water-system)

or by calling Al Pratt, Water Resources Manager, at: 603-520-0622 or Brian Goetz, Deputy Director of Public Works at: 603-766-1420

**PORTSMOUTH 2020-Q1 PFAS RESULTS**  
**WATER SUPPLY -SOURCE WATER SAMPLES**  
 SAMPLES COLLECTED: JANUARY 23 - 24, 2020

**METHOD 537.1 M (EPA APPROVED METHOD)**

PFAS	NHDES MCL Maximum Contaminant Level	BELLAMY RESERVOIR RAW WATER	MADBURY WTF TREATED WATER	MADBURY WELL 2	MADBURY WELL 3	MADBURY WELL 4	COLLINS WELL	GREENLAND WELL	PORTSMOUTH WELL #1	RDL	MDL
Perfluorohexanoic Acid (PFHxA)	no MCL	see ID method	0.70	1.5	1.8	0.8	1.4	3.5	4.8	0.5	0.10
Perfluoroheptanoic Acid (PFHpA)	no MCL	see ID method	0.55	0.69	0.99	0.42 J	0.69	1.6	2.7	0.5	0.12
Perfluorooctanoic Acid (PFOA)	12	see ID method	1.1	2.5	2.2	1.6	2.1	2.9	4.8	0.5	0.10
Perfluorononanoic Acid (PFNA)	11	see ID method	0.20 J	0.19 J	0.24 J		0.21 J	0.24 J	0.47 J	0.5	0.16
Perfluorodecanoic Acid (PFDA)	no MCL	see ID method								0.5	0.16
Perfluoroundecanoic Acid (PFUnA)	no MCL	see ID method								0.5	0.14
Perfluorododecanoic Acid (PFDoA)	no MCL	see ID method								0.5	0.15
Perfluorotridecanoic Acid	no MCL	see ID method								0.5	0.14
Perfluorotetradecanoic Acid	no MCL	see ID method								0.5	0.09
Perfluorobutanesulfonic acid (PFBS)	no MCL	see ID method	0.60 J	1.9 J	1.5 J	2.1	18.0	2.7	3.0	2.0	0.45
Perfluorohexanesulfonic acid (PFHxS)	18	see ID method		0.55 J	0.7 J	0.57 J	1.7 J	2.2	6.2	2.0	0.47
Perfluorooctanesulfonic acid (PFOS)	15	see ID method		0.92 J	1.0 J		2.2	3.3	3.7	2.0	0.47
MeFOSAA	no MCL	see ID method								4.0	1.10
EtFOSAA	no MCL	see ID method								4.0	1.00

**ISOTOPE DILUTION METHOD**

PFAS	NHDES MCL Maximum Contaminant Level	BELLAMY RESERVOIR RAW WATER	MADBURY WTF TREATED WATER	MADBURY WELL 2	MADBURY WELL 3	MADBURY WELL 4	COLLINS WELL	GREENLAND WELL	PORTSMOUTH WELL #1	RDL	MDL
Perfluorobutanoic acid (PFBA)	no MCL		11	1.5 J	1.6 J	1.2 J	3.6	2.0 J	3.1	2.0	0.45
Perfluoropentanoic Acid (PFPeA)	no MCL	0.67 J		0.97 J	1.5 J		1.3 J	3.0	4.4	2.0	0.48
Perfluorohexanoic Acid (PFHxA)	no MCL	0.84 J	0.83 J	1.4 J	1.8 J	0.91 J	1.6 J	3.5	4.3	2.0	0.26
Perfluoroheptanoic Acid (PFHpA)	no MCL	0.69 J	0.75 J	0.85 J	1.2 J	0.64 J	0.86 J	1.6 J	2.7	2.0	0.37
Perfluorooctanoic Acid (PFOA)	12	1.6 J	1.7 J	3.0	2.7	2.1	2.7	3.8	5.5	2.0	0.23
Perfluorononanoic Acid (PFNA)	11								0.53 J	2.0	0.48
Perfluorodecanoic Acid (PFDA)	no MCL									2.0	0.18
Perfluoroundecanoic Acid (PFUnA)	no MCL									2.0	0.38
Perfluorododecanoic Acid (PFDoA)	no MCL									2.0	0.25
Perfluorotridecanoic Acid	no MCL									2.0	0.30
Perfluorotetradecanoic Acid	no MCL	0.53 J								2.0	0.16
Perfluorobutanesulfonic acid	no MCL	0.64 J	0.71 J	1.8 J	1.5 J	2.2	17	2.8	2.7	2.0	0.37
Perfluoropentanesulfonic acid	no MCL	0.31 J	0.32 J	0.35 J	0.39 J	0.36 J	0.43 J	0.51 J	0.70 J	2.0	0.28
Perfluorohexanesulfonic acid (PFHxS)	18	0.43 J	0.38 J	0.77 J	0.87 J	0.71 J	2.0 J	2.5	6.0	2.0	0.33
Perfluoroheptanesulfonic acid	no MCL									2.0	0.63
Perfluorooctanesulfonic acid (PFOS)	15	1.2 J	0.89 J	1.6 J	1.6 J	0.91 J	3.2	4.2	4.7	2.0	0.43
Perfluorononanesulfonic acid	no MCL									2.0	0.55
Perfluorodecanesulfonic acid (PFDS)	no MCL									2.0	0.36
Perfluorooctane Sulfonamide (PFOSA)	no MCL	0.42 J	0.39 J		0.55 J				0.52 J	4.0	0.31
EtFOSAA	no MCL									4.0	0.48
MeFOSAA	no MCL									4.0	0.57
4:2 Fluorotelomer sulfonic acid	no MCL									4.0	0.46
6:2 Fluorotelomer sulfonic acid	no MCL									4.0	0.43
8:2 Fluorotelomer sulfonic acid	no MCL									4.0	0.47
Hexafluoropropyleneoxide Dimer Acid	no MCL									4.0	0.61
4,8-Dioxa-3H-Perfluorononanoic Acid	no MCL									4.0	0.94
9Cl-PF3ONS (F-53B Major)	no MCL									4.0	0.49
11Cl-PF3OuD5 (F-53B Minor)	no MCL									4.0	0.80

**Notes:**

The EPA Approved Method 537.1 was used for compliance with the NHDES MCL Rules; the Isotope Dilution Method was used to test for additional compounds and for comparison with the tap samples collected by Testing For Pease.

RDL = Reportable Detection Limit  
 MDL = Method Detection Limit  
 Blank cell = compound was not detected above the method detection limit (MDL)  
 Result above the RDL  
 J = Estimated concentration between the MDL and RDL

# TESTING FOR PEASE PFAS RESULTS

## TAP WATER SAMPLES

SAMPLES COLLECTED: JANUARY 23, 2020

### Perfluorinated Compounds

concentrations in part per trillion (ppt)

PFAS	NHDES MCL Maximum Contaminant Level	BANFIELD	DONDERO	LIBRARY	SPINNAKER	RDL	MDL
Perfluorobutanoic acid (PFBA)	no MCL	3.3	4.9	5.1	2.2	2.0	0.45
Perfluoropentanoic Acid (PFPeA)	no MCL	0.88 J	0.65 J			2.0	0.48
Perfluorohexanoic Acid (PFHxA)	no MCL	1.1 J	0.92 J	0.43 J	0.32 J	2.0	0.26
Perfluoroheptanoic Acid (PFHpA)	no MCL	0.72 J	0.63 J	0.37 J		2.0	0.37
Perfluorooctanoic Acid (PFOA)	12	2.1	1.9 J	1.3 J	1.2 J	2.0	0.23
Perfluorononanoic Acid (PFNA)	11					2.0	0.48
Perfluorodecanoic Acid (PFDA)	no MCL					2.0	0.18
Perfluoroundecanoic Acid (PFUnA)	no MCL					2.0	0.38
Perfluorododecanoic Acid (PFDoA)	no MCL					2.0	0.25
Perfluorotridecanoic Acid	no MCL					2.0	0.3
Perfluorotetradecanoic Acid	no MCL					2.0	0.16
Perfluorobutanesulfonic acid (PFBS)	no MCL	2.2	1.6 J	0.43 J		2.0	0.37
Perfluoropentanesulfonic acid	no MCL					2.0	0.28
Perfluorohexanesulfonic acid (PFHxS)	18	0.97 J	0.78 J			2.0	0.33
Perfluoroheptanesulfonic acid	no MCL					2.0	0.63
Perfluorooctanesulfonic acid (PFOS)	15	1.1 J	0.76 J			2.0	0.43
Perfluorononanesulfonic acid	no MCL					2.0	0.55
Perfluorodecanesulfonic acid (PFDS)	no MCL					2.0	0.36
Perfluorooctane Sulfonamide (PFOSA)	no MCL					4.0	0.31
EtFOSAA	no MCL					4.0	0.48
MeFOSAA	no MCL					4.0	0.57
4:2 Fluorotelomer sulfonic acid	no MCL					4.0	0.46
6:2 Fluorotelomer sulfonic acid	no MCL					4.0	0.43
8:2 Fluorotelomer sulfonic acid	no MCL					4.0	0.47
Hexafluoropropyleneoxide Dimer Acid	no MCL					4.0	0.61
4,8-Dioxa-3H-Perfluorononanoic Acid	no MCL					4.0	0.94
9Cl-PF3ONS (F-53B Major)	no MCL					4.0	0.49
11Cl-PF3OUdS (F-53B Minor)	no MCL					4.0	0.8

### Notes:

all values are parts per trillion (ppt)

RDL = Reportable Detection Limit

MDL = Method Detection Limit

Blank cell = compound was not detected above the method detection limit (MDL)

Result above the RDL

J = Estimated concentration between the MDL and RDL