



# Laboratory Testing Guidelines for Per- and Polyfluoroalkyl Substances (PFAS) for Public Drinking Water Supplies

Requirements and guidelines for testing for Per- and Polyfluoroalkyl Substances (PFAS) in drinking water are provided in this document. A broader overview of analytical and sampling considerations associated with testing for PFAS is available in Association of State Drinking Water Administrators' [PFAS Lab Testing Primer](#).

A list of laboratories that provide PFAS testing services is included at the end of this document. Please ensure the laboratory you use can meet the requirements and recommendations provided below prior to contracting with it.

**1) Laboratories and Analytical Methods:** Analytical methods that use isotope dilution, EPA Method 537 Rev 1.1 or EPA Method 537.1 may be used. NHDES only accepts laboratory data associated with compliance monitoring requirements for public water systems from laboratories that meet the following criteria: 1) The laboratory has obtained New Hampshire NELAP accreditation for PFAS analytical methods that meet the requirements summarized in this document (a list of laboratories that meet this requirement is included at the end of this document); and 2) The laboratory is a NHDES data provider and reports the data electronically to the Drinking Water and Groundwater Bureau. The data provider contact is Mitchell Dezak ([Mitchell.Dezak@des.nh.gov](mailto:Mitchell.Dezak@des.nh.gov)) (603) 271-3139). Submitting sample results is largely unchanged. However, for labs using an isotope dilution method, the method code may begin with "NH." In this case, the method code context will be "NELAC."

**2) Analytes:** NHDES has adopted rules that establish Maximum Contaminant Levels for the four compounds listed below. Effective September 30, 2019, community water systems and non-transient public water systems are required to sample their water sources and test for these compounds in accordance with the sampling schedule issued by NHDES. For the first year, each water system will be required to collect a water sample for each compliance monitoring point for all sources of water. The first quarter of sampling for all water systems will occur from October 1, 2019 through December 31, 2019.

Perfluorooctanesulfonic acid (PFOS) Chemical Abstract Service (CAS) #1763-23-1 SDWIS #2805	Perfluorooctanoic acid (PFOA) CAS #335-67-1 SDWIS #2806	Perfluorononanoic acid (PFNA) CAS # 375-95-1 SDWIS #2804
Perfluorohexanesulfonic acid (PFHxS) CAS # 355-46-4 SDWIS #2803		

**\*\*The acid form of the compounds above, as reflected by the CAS # must be reported\*\***

The following additional PFAS have been regularly detected in groundwater samples in New Hampshire's drinking water and are also recommended (not required) target analytes to include in the PFAS analysis that is reported to NHDES.

Perfluorobutanoic acid (PFBA) CAS # 375-22-4	Perfluoropentanoic acid (PFPeA) CAS # 2706-90-3	Perfluorohexanoic acid (PFHxA) CAS # 307-24-4
Perfluoroheptanoic acid (PFHpA) CAS # 375-85-9	Perfluorobutanesulfonic acid(PFBS) CAS # 375-73-5	

Laboratories often can measure and report additional PFAS analytes not listed above using the same analytical methods used to measure the compounds above. NHDES recommends that samples be submitted for a broad analysis of PFAS compounds to fully assess the potential for contamination impacting a water source. In some communities, customers of water systems have requested that water systems complete the broadest analysis that is possible to fully inform the public about the quality of the drinking water.

- 3) **Reporting Limits:** Analytical methods with reporting limits of 2 nanograms per liter (ng/L) or lower, as achievable by the analytical method used, must be utilized for the compliance monitoring associated with PFOS, PFOA, PFNA and PFHxS.
- 4) **Sample Collection Procedures:** PFAS is analyzed down to ng/L or part-per-trillion (ppt) levels as opposed to part-per-billion (ppb) or (µg/L), or part-per-million (ppm) or (mg/L) levels that are typically used for drinking water analyses. Additionally, there may be numerous sources of PFAS at any given location due to their wide-spread domestic, commercial and institutional uses. This means that there is a greater potential for introducing PFAS contamination into a drinking water sample during the sample collection process. However, sampling agents and certified drinking water operators are qualified to sample public water systems for PFAS compounds if they incorporate the sampling practices described below.

The sample collection procedure is as follows:

- 1) Obtain bottles from the accredited laboratory. Laboratory bottles should be stored in zip-lock bags and transported in coolers. It is recommended that two bottles be collected for each sample in case of sample damage during transport or if the lab needs to reanalyze the sample (Note: Most labs provide two bottles per sample). The bottles should not come into contact with carpet or upholstery in vehicles or in the office.
- 2) If collected for a public water system compliance sample, visit NHDES's OneStop webpage to print an analysis request form.
- 3) The plumbing associated with each sampling tap should be examined to ensure Teflon or PTFE tubing is not in use. If feasible, avoid the use of Teflon/fluorine based sealants in the plumbing system. However, it may be impossible to avoid plumbing that contains sealants with these compounds. These products have generally not been identified as causing elevated levels of PFAS in water samples collected from a sampling tap.

- 4) Remove aerator (if present) on the cold water tap. Turn on the sampling tap or cold water tap and run water for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
- 5) Wash hands and use a new pair of nitrile gloves with each sample. PFAS samples should be collected first.
- 6) Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse the bottle as preservatives may be present. Fill bottle to shoulder and secure the container cap.
- 7) Write the PWS ID, sampling location, and date and time of sample collection on the sample container.
- 8) Screw cap on and place samples in a closed cooler. Samples must be chilled during shipment and must not exceed 10°C during the first 48 hours after collection. Sample temperature must be confirmed to be at or below 10°C when the samples are received at the laboratory. Samples stored after 48 hours of collection must be held at or below 6°C. Samples should not be frozen.
- 9) Make arrangements for delivery of the sample bottles to the laboratory in a timely manner to ensure the applicable sample holding times will not be exceeded. A chain-of-custody form should be completed and maintained when the samples are collected until they are delivered to the laboratory.

**Please note, NHDES does not require field blanks to be collected with each water sample.** Some laboratories provide a sample bottle to collect a field blank for each water source that is sampled. Collecting a field blank sample and submitting it to the laboratory will double the analytical cost and is not a NHDES requirement.

The table on the next page identifies some categories of items that could introduce PFAS contamination into the sample during the collection process and appropriate alternatives that can be used to avoid inadvertent sampling contamination.

## Categories of Items that Could Introduce PFAS Contamination Into the Sample

Category	Prohibited Items/Actions that could introduce PFAS Sample Contamination	Allowable Items
<b>Pumps and Tubing</b>	Teflon® and other fluoropolymer containing materials	High-density polyethylene (HDPE), low density polyethylene (LDPE) or silicone tubing
<b>Sample Container</b>	Containers should not come in to contact with carpeting or upholstery inside buildings or	Containers should be stored in a zip-lock bag and transported in coolers.
<b>Stacked Glassware</b>	Foil should not be used as a layer between stacked sample bottles	Plain paper
<b>Field Documentation</b>	Waterproof/treated paper or field books, plastic clipboards, markers, Post-It® and other adhesive paper products	Plain Paper, metal clipboard, ball-point pens, and Fine or Ultra-Fine Point Sharpie® markers
<b>Clothing</b>	Clothing or boots made of or with Gore- Tex™ Carhartt, or other synthetic water resistant and/or stain resistant materials, Tyvek® material	Synthetic or cotton material, previously laundered clothing (preferably previously washed greater than six times) without the use of fabric softeners
<b>Personal Care Products</b>	<p>The handling or application of cosmetics, moisturizers, hand cream, sunscreens, and insect repellents in the sampling area.</p> <p><i>Note: The presence of PFAS in some of these types products has been documented. However, cross contamination of water samples due to the use of these products has not been documented. The sample collection procedure described in this document should prevent these materials from coming into contact with the water sample. However, limiting the use of these products the day of sampling is still recommended.</i></p>	<p><b>Sunscreens</b></p> <ul style="list-style-type: none"> <li>• Banana Boat for Men Triple Defense Continuous Spray Sunscreen SPF 30</li> <li>• Banana Boat Sport Performance Coolzone Broad Spectrum SPF 30</li> <li>• Banana Boat Sport Performance Sunscreen Lotion Broad Spectrum SPF 30</li> <li>• Banana Boat Sport Performance Sunscreen Stick SPF 50</li> <li>• Coppertone Sunscreen Lotion Ultra Guard Broad Spectrum SPF 50</li> <li>• Coppertone Sport High-Performance AccuSpray Sunscreen SPF 30</li> <li>• Coppertone Sunscreen Stick Kids SPF 55</li> <li>• L'Oréal Silky Sheer Face Lotion 50+</li> <li>• Meijer Clear Zinc Sunscreen Lotion Broad Spectrum SPF 15, 30 and 50</li> <li>• Meijer Wet Skin Kids Sunscreen Continuous Spray Broad Spectrum SPF 70</li> <li>• Neutrogena Beach Defense Water + Sun Barrier Lotion SPF 70</li> <li>• Neutrogena Beach Defense Water + Sun Barrier Spray Broad Spectrum SPF 30</li> <li>• Neutrogena Pure &amp; Free Baby Sunscreen Broad Spectrum SPF 60+</li> </ul> <p><b>Insect Repellents</b> - OFF Deep Woods &amp; Sawyer Permethrin</p>
<b>Food/Beverage</b>	Pre-packaged food, fast food packaging	

**Common products that may contain PFAS:** 1) Paints; 2) Sealants, including products used on grout, countertops and floor treatments; 3) House cleaners and stain removers; 4) Floor wax removers; 5) Stain-resistant textiles (or chemicals used to treat textiles in homes and businesses) including, but not limited to, carpets, shoes and clothing; 6) Furniture with stain-resistant fabric; 7) Water proof textiles; 8) Food cooking ware and utensils; 9) Ski and boat waxes; 10) Dental floss, cosmetics, sunscreen and other personal care products; 11) Construction materials, including caulk sealants and plumbing sealants; 12) Pesticides; 13) Treated paper; 14) Chemical coatings for metal roofing; 15) Solar panels; 16) Purchased garden soils; 17) Automotive supplies, including waxes, cleaners, windshield wipers and additives to fluids used in automobiles; 18) Camping and other outdoor gear; 19) Spray- and grease-based lubricants; and 20) Inks.

Note: Other commercially available products may be PFAS-free. This document identifies products that have been tested by other government entities.

## Laboratories that Provide PFAS Testing Services that Are Accredited by NHDES (09/10/19)

ABSOLUTE RESOURCE ASSOCIATES  
124 HERITAGE AVE, UNIT 16  
PORTSMOUTH, NH  
(603) 436-2001  
ABSOLUTERESOURCEASSOCIATES.COM

ALPHA ANALYTICAL (MANSFIELD)  
320 FORBES BLVD  
MANSFIELD, MA  
(508)822-9300  
WWW.ALPHALAB.COM

AMERICAN WATER CENTRAL  
LABORATORY  
1115 SOUTH ILLINOIS STREET  
BELLEVILLE, IL  
(618)235-3600  
AMWATER.COM

CHEMSERVE  
317 ELM STREET  
MILFORD, NH  
(603)673-5440  
WWW.CHEMSERVLAB.COM

CON-TEST ANALYTICAL LABORATORY  
39 SPRUCE STREET  
EAST LONGMEADOW, MA  
(413)525-2332  
WWW.CONTESTLABS.COM

EASTERN ANALYTICAL, INC.  
25 CHENELL DRIVE  
CONCORD, NH  
(603)228-0525 / (800)287-0525  
EASTERNANALYTICAL.COM

ENDYNE INC.  
56 ETNA ROAD  
LEBANON, NH  
(603)678-4891  
WWW.ENDYNELABS.COM

EUROFINS EATON ANALYTICAL, LLC (IN)  
110 SOUTH HILL ST  
SOUTH BEND, IN  
(574)233-4777  
WWW.EUROFINSUS.COM

EUROFINS LANCASTER LABORATORIES  
ENVIRONMENTAL LLC  
2425 NEW HOLLAND PIKE  
LANCASTER, PA  
(717)656-2300  
WWW.LANCASTERLABSENV.COM

GEL LABORATORIES LLC  
2040 SAVAGE ROAD  
CHARLESTON, SC  
(843)556-8171  
WWW.GEL.COM

GRANITE STATE ANALYTICAL  
22 MANCHESTER ROAD  
DERRY, NH  
(603)432-3044  
GRANITESTATEANALYTICAL.COM

MAXXAM ANALYTICS INTERNATIONAL  
CORPORATION  
6740 CAMPOBELLO ROAD  
ONTARIO CAN L5N 2L8,  
(905)817-5703  
WWW.MAXXAM.CA

NELSON ANALYTICAL  
490 E. INDUSTRIAL PARK DR.  
MANCHESTER, NH  
(603) 622-0200  
NELSONANALYTICAL.COM

PACE ANALYTICAL SERVICES INC -  
FLORIDA  
8 EAST TOWER CIRCLE  
ORMOND BEACH, FL  
(386)672-5668  
WWW.PACELABS.COM

PACE ANALYTICAL SERVICES LLC -  
MINNEAPOLIS MN  
1700 ELM STREET SE SUITE 200  
MINNEAPOLIS, MN  
(612)607-6412  
WWW.PACELABS.COM

SEACOAST ANALYTICAL LABORATORY  
72 PINKHAM ROAD  
LEE, NH  
(603) 868-1457  
SEACOASTANALYTICAL.COM

SGS NA INC - ORLANDO  
4405 VINELAND ROAD, STE. C-15  
ORLANDO, FL  
(407)425-6700  
WWW.SGS.COM

SGS NORTH AMERICA INC  
5500 BUSINESS DRIVE  
WILMINGTON, NC  
(910)350-1903  
WWW.SGS.COM

TEST AMERICA DENVER  
4955 YARROW STREET  
ARVADA, CO  
(303)736-0110  
WWW.TESTAMERICAINC.COM

TEST AMERICA SACRAMENTO  
880 RIVERSIDE PARKWAY  
WEST SACRAMENTO, CA  
(916)373-5600  
TESTAMERICAINC.COM

VISTA ANALYTICAL LABORATORY  
1104 WINDFIELD WAY  
EL DORADO HILLS, CA  
(916)673-1520  
WWW.VISTA-ANALYTICAL.COM