

PFAS in Public Drinking Water: Planning and Sampling Protocol

Please read this entire document carefully at least one day before collecting samples. If you have questions related to sample collection or shipping, please contact the Wisconsin State Laboratory of Hygiene at WSLHPFAS@slh.wisc.edu or 608-262-3750. For any other questions, please contact DNR by email at DNRDGPFASSampling@wisconsin.gov or your DNR Public Water Representative.

Part I: Planning

Before the day of sampling, please make arrangements for overnight shipping of the samples to the Wisconsin State Laboratory of Hygiene (WSLH), including scheduling a package collection time in advance if necessary. WSLH will pay for return shipping with UPS; if a different provider is used, please arrange and pay for overnight shipping. Please plan to collect samples on a Monday, Tuesday, Wednesday or Thursday. Every sample should be shipped the same day as it is collected. The samples must arrive at WSLH at a time when staff are present to receive the samples and transfer them to laboratory cold storage.

PFAS are attracted to air-water interfaces and thus concentrations may fluctuate, especially early in a pumping cycle. Therefore, samples should be collected from each water system entry point during the final third of a pumping cycle (i.e., pumping of the source well(s) at least 67% of the way through the current cycle) to aid in result comparability across samples. Please make a note in the *special instructions* line of the sample form if necessary to plan sample collection time accordingly. If multiple wells serve one finished water distribution system entry point, samples should be collected as late as possible in the pumping cycle for all wells. If it is not possible to sample the entry point at a time when all source wells to that entry point are in operation, please note which wells were not in operation at the time of sample collection.

A WSLH video of the sample collection process is available at www.slh.wisc.edu/environmental/pfas/. This video was developed for private well owners. Most of the video content applies to sampling public drinking water, but a few details are different. Where in doubt, please refer to these instructions and the enclosed sample form and contact WSLH or DNR with any questions.

The sampling kit includes three sample bottles, each containing a preservative called Trizma. Safety Data Sheets (SDS) can be found at <http://www.slh.wisc.edu/environmental/water/environmental-test-kit-safety-data-sheets/>. The sampling kit also contains two bottles (labeled FB1 and FB2) for the Field Reagent Blank: one bottle filled with PFAS-free water and one empty bottle (see instructions on Page 3).

Many common commercial and consumer products contain PFAS. Please plan ahead to avoid use of the following during sampling:

- Polytetrafluoroethylene (PTFE/Teflon) or polyvinylidene fluoride (PVDF) containing materials (used in some tubing, bailers, tape, plumbing paste) or other materials with substances containing “fluoro”, “perfluoro” or “fluorosurfactant”
- LDPE bags or containers
- Waterproof field books, clipboards, binders, notebooks, sticky notes, glue materials, pens, paper (please begin to fill out the provided field sheets before sampling and finish after sampling is completed, so that handling pens and paper during sampling may be avoided)
- Markers (except to label)
- Blue ice packs
- Decontamination soaps (detergents) that contain fluoro-surfactants



- Water that is not “PFAS-free”, except for the sample water when filling the appropriate sample bottles
- Water resistant, waterproof, stain treated clothing or shoes including Gore-Tex and Tyvek materials; wearing all-cotton clothing that has been washed without fabric softener is preferred
- Field personnel should not use cosmetics, moisturizers, hand cream or other related personal care products
- Some manufactured sunblock and insect repellants contain PFAS
- No food or drink with the exception of bottled water

The following information (source: https://www.michigan.gov/documents/pfasresponse/General_PFAS_Sampling_Guidance_634597_7.pdf) is provided to aid in decisions about which sunscreens and insect repellants might be okay to use on sampling day (avoiding use of sunscreens and insect repellants is preferable) and which should be investigated further or avoided:

Sunscreen and Insect Repellents ¹	
■ Allowable Insect Repellants	
Photos	Insect Repellent Spray
	<ul style="list-style-type: none"> • OFF Deep Woods • Sawyer Permethrin
■ Allowable Sunscreens	
Photos	Sunscreens
	<ul style="list-style-type: none"> • Banana Boat Sport Performance Sunscreen Lotion Broad Spectrum SPF 30. • Meijer Sunscreen Lotion Broad Spectrum SPF 30. • Neutrogena Ultra-Sheer Dry-Touch Sunscreen Broad Spectrum SPF 30.
■ Allowable Sunscreens	
<ul style="list-style-type: none"> • Banana Boat for Men Triple Defense Continuous Spray Sunscreen SPF 30 • Banana Boat Sport Performance Coolzone Broad Spectrum SPF 30 • Banana Boat Sport Performance Sunscreen Lotion Broad Spectrum SPF 30 • Banana Boat Sport Performance Sunscreen Stick SPF 50 • Coppertone Sunscreen Lotion Ultra Guard Broad Spectrum SPF 50 • Coppertone Sport High-Performance AccuSpray Sunscreen SPF 30 • Coppertone Sunscreen Stick Kids SPF 55 • L'Oréal Silky Sheer Face Lotion 50+ • Meijer Clear Zinc Sunscreen Lotion Broad Spectrum SPF 15, 30 and 50 • Meijer Wet Skin Kids Sunscreen Continuous Spray Broad Spectrum SPF 70 • Neutrogena Beach Defense Water + Sun Barrier Lotion SPF 70 • Neutrogena Beach Defense Water + Sun Barrier Spray Broad Spectrum SPF 30 • Neutrogena Pure & Free Baby Sunscreen Broad Spectrum SPF 60+ 	
▲ Materials That Require Screening	
<p>Sunscreens: Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss My Face, and baby sunscreens that are “free” or “natural.”</p> <p>Insect Repellents: Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellent, Herbal Armor, California Baby Natural Bug Spray, Baby Ganics.</p> <p>Sunscreen and Insect Repellent: Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion.</p>	

¹This table is not considered to be a complete listing of allowable materials and materials that require screening. All materials should be evaluated before use during sampling. Some of the sunscreen and insect repellent testing has been performed using a PFAS screening Method known as Particle Induce Gamma-Ray Emission (PIGE). The use of approved gloves should always be used, and the sample should never come into contact with any of the sunscreen or insect repellent products. An Equipment Blank sample could also be collected to verify the product as PFAS-free.

Part II: Sample Collection and Handling

- Using permanent marker write the following information on the sample label:
Sampling Site
Date
Time
- IMPORTANT:** Prior to handling any of the items in the sampling kit, the sample collector must wash their hands and wear powderless nitrile gloves (provided) while filling and sealing the sample bottles. This will help minimize contamination sources. Change gloves between each sampling point to prevent sample cross-contamination but note that the number of gloves provided is limited to the number of sampling points due to short supply. After putting on the gloves, avoid touching clothing (which can contain PFAS itself or from detergents used) until after the sample bottles are filled and closed.
Note: Powderless nitrile gloves are provided as the best available low-PFAS gloves for sampling. However, the gloves might contain low levels of a few PFAS. It is therefore important to ensure that the gloves only touch the outside of the sample bottle.
- Samples must be collected in the provided 250-mL polypropylene bottles (bottles for each sample). Finished water samples should be collected from a designated entry point tap, which is a location in the PWS after treatment or chemical addition, but before the distribution system. Before collecting the sample, open the tap and allow the system to flush until water temperature has stabilized (approximately 3 to 5 min). The sample should be shielded from light to the extent practical.
- Fill all three sample bottles up to the shoulder of the bottle. The PFAS sample bottles should be filled before any other bottles if you are doing multiple analyses. Do not touch the inside of the cap or around the edge of the bottle. Do not place the cap on any surface when collecting the sample.
- After collecting the sample, cap each bottle. Do not use any type of tape to close the cap. Keep the bottle sealed until extraction at WSLH.
- Two bottles are provided for Field Reagent Blanks. One bottle is labeled FB1 and is already full of water. During the sampling event, as soon as possible after the drinking water sample is collected, the sample collector must open FB1 and pour it into the empty bottle labeled FB2. Seal FB2 and return it to the lab. The empty FB1 bottle can be discarded.
- Store the samples refrigerated until ready to ship to the laboratory. Ship back to WSLH on ice to ensure their temperature does not exceed 6°C.
- When shipping samples to the laboratory, line the cooler with the large clear plastic bag provided. Ensure samples are tightly capped. Once samples are added, add plenty of regular ice to the bag (do not use ice packs as they may contain PFAS – when in doubt use more ice), and close the large plastic bag and secure with the enclosed zip tie. Place sample submission forms in the provided Zip-Lock bag and place on top of the samples. Dispose of gloves.
- On the same day of sample collection, ship the samples to WSLH by overnight courier.

Note: additional details for shipping are included in the printed version included in sampling kits.

