

Per- and Polyfluoroalkyl Substances (PFAS)

SAMPLE COLLECTION PROCEDURE

Reference Method EPA 533

**Read instructions carefully.
Samples may be rejected if ALL instructions are not followed.**

Laboratory Hold Time:

- Samples must be extracted for analysis within 28 days from the collection time.

Safety concerns:

Caution! Sample bottles contain chemicals. Open containers slowly and carefully. **Do not flush out any of the preservative.**

- The Safety Data Sheet (<https://www.health.state.mn.us/communities/environment/envlab/sdsinformation.html>) for the preservative, Ammonium Acetate, is available on our website.

Overfilling precaution:

- Fill bottle to between the 7 oz and 8 oz line marked on the side of the bottle. **Overfilling will result in rejection of samples.**

Field Blanks:

- One “field blank” must be collected per sampling submission. The submission can include any number of samples from the same public water system (PWS), dwelling, or business. A submission may include several Chain-of-Custody (COC) documents, provided that each COC:
 - Has the same program code, PWSID, collection date, and sample type; and
 - Includes identification of page x of y, where x is the unique page and y is to total number of COCs for that submission.
- To create the field blank, transfer the contents of the reagent water container to an empty sample container. Label this container as the “Field Blank”, in addition to the other required identifying information (PWSID, System Name).
- After preparing the field blank at the first sampling location, the field blank bottle must be opened and resealed at each subsequent sample location for that PWS during sample collection.
- The field blank will need to be added as an additional sample point on the COC form using the date and time that the water was transferred as the collection date and time.
- Please review the Field Blank document for more information on how to use field blanks while collecting PFAS samples:

- [Field Blanks \(PDF\)](https://www.health.state.mn.us/communities/environment/water/docs/sampproc/field_blanks.pdf)
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Duplicate sampling and Quality Control samples:

- Two sample bottles must be collected from each sampling point.
- A third sample bottle must also be collected from one sampling point for each PWS, which will be used by the laboratory for quality control.
 - If there is only one sampling point where samples are collected for a PWS, three samples must be collected.
 - If there are multiple sampling points where samples are collected for a PWS, collect three samples from the first sampling point visited and two from each subsequent sampling point for that PWS.

Contamination concerns:

- Post-It-Notes, stain resistant clothing, Tyvek suits, and disposable cups must not be used at any time during the sampling event. Ball point pen should be used rather than permanent marker (e.g., Sharpie) to avoid potential contamination concerns.
- Many food and snack products are packaged in wrappers treated with PFAS, such as: microwave popcorn, fast food, pizza, bakery items, beverages, candy, cookies, etc. If consumed on the day of the sampling event, hands must be thoroughly washed after handling.

Collector attire:

- Collectors are to wear only old, well-laundered (at least six washings since purchase) clothing. Do NOT use fabric softener when washing clothing for PFAS sample collection or treat with UV protection, insect resistant or water/dirt/stain resistant chemicals.
- Collectors are to wear powder-free **nitrile** gloves when collecting samples.

Sample bottle/preservative:

- 250 mL HDPE bottle with approximately 250 mg Ammonium Acetate ($\text{NH}_4\text{C}_2\text{H}_3\text{O}_2$).
- The MDH container label will read 250 mL HDPE, $\text{NH}_4\text{C}_2\text{H}_3\text{O}_2$.

Sampling locations:

- Sample at the location listed on the COC or directed to by the program.
- If collecting indoors, samples should not be collected in areas where fast food or microwave popcorn is prepared or present. If collection must occur in such locations, it is to be noted on the COC in the Sampler Comments field.

Collection supplies:

- Powder-free nitrile gloves
- 5-gallon bucket
- Cooler
- Cooling material
- Gallon Ziploc bags
- GPS unit
- Crescent wrench
- Work identification
- Cell phone
- Ball point pen

Sample collection procedure:

1. Attach the pre-printed label to the bottle. If you do not have a pre-printed label, write the following information, using a ballpoint, on the generic bottle label: PWSID, PWS Name, and Location ID.
2. Wash hands and put on nitrile gloves.
3. Remove any attachments from the sample tap.
4. Turn on the cold water tap and run for 4 to 5 minutes, or until the water temperature has stabilized, whichever is longer. If there is no floor drain nearby, use a bucket to catch water and dump outside when full.
 - a. If collecting from a sink with only one faucet handle, make sure it is in the cold water position.
5. Reduce the flow of the water so the stream is steady and the width of a pencil.
6. Remove bottle cap and hold in hand. Do not touch the underside of the cap or the inside of the bottle.
7. Fill bottle to between the 7 oz and 8 oz line marked on the side of the bottle. **Overfilling will result in rejection of samples.**
8. Screw the cap back on the bottle. Make sure the cap is on securely. Turn the bottle upside down to make sure the water does not leak.
9. Repeat steps 6 through 8 for the duplicate bottle.
10. At the first sampling point visited for each PWS:
 - a. Repeat steps 6 through 8 a third time for the quality control sample.
 - b. Collect the field blank sample by transferring the reagent water provided by the laboratory to an empty sample bottle. This bottle should be labeled with "Field Blank" as the Location ID in addition to the PWSID and PWS Name.
11. At any subsequent sampling points visited for each PWS, open and reseal the field blank bottle to expose it to the environment.

12. Agitate the samples by hand until the preservative is dissolved.
13. Replace any attachments that were removed from the faucet or sample tap.
14. Upon completion of sampling, immediately (within 15 minutes) place samples and field blank in cooler with cooling material. Samples and blanks must remain chilled with cooling material until they have arrived at the laboratory.

Complete Chain-of-Custody form using indelible ink:

1. Name of the sample collector.
2. Date and Time collected (include a.m. or p.m.).
3. Field Number (MDH only, if applicable).
4. If the analysis type is not already entered on the form, write in "PFAS 533" in the analysis field.
5. Put your signature on the "Relinquished By" line, including date and time when the sample is put in the return mailer and sealed. If samples pass hands prior to packaging, both parties must sign, date, and time. The first party would put down the date and time of the transfer, and the second party would put down the date and time the sample is packaged.

Deliver samples to the laboratory:

Laboratory Sample Acceptance

- **Samples must be received by the laboratory at a temperature of 0 to $\leq 10^{\circ}\text{C}$ within the first 48 hours after collection, and 0 to $\leq 6^{\circ}\text{C}$ thereafter. Samples should never be frozen.**
- All shipping containers must have cooling material present without evidence of sample freezing.

Dropping off samples in person

- Frozen or partially cooling material must be present. Laboratory staff must confirm the state of the cooling material. The temperature of the cooling material must be less than the temperature of the sample(s). Temperature requirements listed above must be followed.
- Physically hand completed COC and cooler/container containing samples and cooling material to laboratory sample receiving staff. Do not leave sample containers at the sample dock unattended.
- If samples are unable to be dropped off on the same day they are collected, samples must be stored according to "Storage Requirements" in this procedure.

Shipping samples

- Make sure the completed COC is in the shipping container.
- Place enough cooling material in the insulated mailing container to completely fill the container while allowing the lid to close tightly.

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- Seal the lid of the mailing container shut with packing tape by covering the seam of the lid with tape all the way around the container.
- Ship samples as soon as possible following sample collection. If samples are unable to be shipped on the same day they are collected, samples must be stored according to “Storage Requirements” in this procedure.
- Ship to the Public Health Laboratory using the applicable address shown below. Because of the temperature requirement, it is recommended to ship using guaranteed overnight shipping.

Courier Service (Spee-Dee, UPS, FedEx, etc.)

Minnesota Department of Health
Public Health Laboratory
Environmental Sample Receiving
601 Robert Street North
Saint Paul, MN 55155-2531

U.S. Postal Service – 1st Class

Minnesota Department of Health
Public Health Laboratory
Environmental Sample Receiving
P.O. Box 64899
Saint Paul, MN 55164-0899

Storage Requirements:

- If samples are held overnight prior to shipment or drop off, either store in a cooler with wet ice or store in a refrigerator.
- If stored in a cooler with wet ice, drain water from melted ice out of bags and replace melted ice before shipping samples.
- The field blank must be stored along with the samples.

If you have questions, call 651-201-4700, or email health.drinkingwater@state.mn.us

Minnesota Department of Health
Drinking Water Protection
651-201-4700
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www.health.state.mn.us

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To obtain this information in a different format, call 651-201-4700.