

## Standard Operating Procedure (SOP) for PFAS Sampling

### 1. Purpose and Scope

This SOP outlines standardized procedures for collecting drinking water samples for analysis of per- and polyfluoroalkyl substances (PFAS) in accordance with [EPA Method 533](#) and [EPA Method 537.1](#). It applies to all field staff responsible for sampling activities to ensure data quality and integrity.

### 2. Sampling Materials and Equipment

The grantee/contractor project manager must arrange all required sampling equipment and coordinate with the lab to confirm correct containers and QC sample requirements (field duplicates or FD, matrix spikes or MS, matrix spike duplicates or MSD, field reagent blanks or FRB). Before sampling, the samplers must ensure that all necessary materials and equipment are in place. If not, they should immediately report to the grantee/contractor project manager. The list of required materials and equipment is listed below:

- a) Clean polypropylene (PP) or polyethylene (PE) bottles with PP screw caps.
- b) Certified PFAS-free gloves (powderless nitrile gloves recommended).
- c) Ballpoint pen and Bottle labels (other pens, such as Sharpies, contain PFAS compounds).
- d) Cooler with ice (for proper sample storage and transportation to the lab).
- e) Ammonium acetate (solid) for a 1 g/L final concentration.
- f) Chain-of-custody (COC) forms and field logbook.
- g) PFAS-free water for field reagent blanks (FRB).
- h) Ziplock bags.

### 3. Collection Procedures

Two-person sampling teams are highly recommended. Distributing the workload to ensure attention to the Sampling SOP is easier with a two-person team. PFAS sampling is highly vulnerable to cross-contamination, and a two-person team will help reduce the risk.

When sampling for PFAS, a two-person team allows one person to serve as the dedicated "sample" handler and the other as the dedicated "document" handler.

DWR-SRF-P-28-QAPP EC SDC Program-01202026

One team member obtains the samples, and the other records them on the COC form with the sample collection information. If only one person is conducting the sampling, ensure care is taken to properly record all samples on the COC, and follow all the precautions noted in this SOP.

### 3.1 Preparation

- a) Samplers must wash their hands using PFAS-free soap and clean water, then dry them with a clean, single-use paper towel or air-dry naturally to avoid accidental contamination. Immediately after drying their hands, they should put on powderless nitrile gloves. Hand sanitizer should not be used.
- b) Samplers should only wear PFAS-free clothes.
- c) Bottle labels (Primary Sample, FRB, FD) and COC should be completed before sample collection, except for the sample time. Be sure to use a ballpoint pen. Other pens, such as Sharpies, contain PFAS compounds.
- d) Samplers must make sure to add solid ammonium acetate (1 g/L for final concentration) to each bottle before sampling. (e.g., if the sampling bottle is 250 ml, 0.25 g of solid ammonium acetate should be added to the bottle).

### 3.2 Sample Collection

- a) The presence of Teflon® and other fluoropolymer-containing materials should be clearly noted in the field notebook. Be sure to remove aerators, screens, washers, hoses, and water filters from the tap before flushing.
- b) If the water source is in active use, only a short flush time is necessary (5 minutes) to ensure the impact of local sources of PFAS cross-contamination, such as Teflon® tape and valve seats, is minimized.
- c) If the water source is not in active use, activate the source or open the tap and flush until the water temperature has stabilized, or until a minimum of one well casing volume has been flushed out (if the source is a well). Another approach is to run the source for 15 minutes before sampling to ensure the sample reflects the source's water quality.
- d) Reduce the flow to a slow laminar stream to reduce air entrainment and overfilling of the bottle (Sample volume should be equal to the bottle volume).

DWR-SRF-P-28-QAPP EC SDC Program-01202026

- e) Uncap the sample bottle. Do not place the bottle cap on any surface when collecting the sample, and avoid all contact with the inside of the sample bottle or its cap.
- f) Fill sample bottles, taking care not to flush out the sample preservation reagent. Do not overfill to avoid diluting the ammonium acetate (1 g/L for final concentration).
- g) Seal immediately and invert or shake to dissolve the preservative. Keep the sample sealed from the time of collection until extraction.
- h) After sampling, insert sample containers into Ziploc bags.

### **3.3 Field reagent blanks (FRB) and field duplicates (FD)**

Grantee/contractor field staff are responsible only for Field Blanks and Field Duplicates that the lab may later use to prepare MS/MSD QC samples. Below is the collection procedure for FD and FRB:

- i) After collecting the primary sample, immediately collect a second sample or FD from the same location under identical conditions. Fill, seal, preserve, and store the duplicate sample the same way as the primary sample. Place it on ice with the primary sample.
- j) To collect an FRB, move away from the sampling point to avoid tap aerosols, put on fresh nitrile gloves, and fill a clean sample bottle with laboratory-provided PFAS-free reagent water without touching the inside of the bottle or cap. Seal the bottle immediately.
- k) After sampling, insert sample containers into Ziploc bags.

### **3.4 Labeling and Documentation**

- a) Label each bottle with sample ID, date/time, location, collector, and preservative confirmation.
- b) Complete field logbook and chain-of-custody documentation.
- c) Scan and email a copy of the completed Chain of Custody form to the Grantee/ contractor Project Manager.

## **4. Preservation and Transport**

- a) Place samples on ice immediately. Ice should not be placed outside the cooler liner to avoid leakage.

DWR-SRF-P-28-QAPP EC SDC Program-01202026

- b) Maintain samples at  $<10^{\circ}\text{C}$ ; Samples are valid if ice remains upon receipt or delivered within 48 hours.
- c) Do not freeze samples.
- d) Store at  $\leq 6^{\circ}\text{C}$  in the lab.

### **5. Laboratory Submission and Holding Times**

- a) Field staff need to coordinate with the Grantee/contractor Project Manager to mail the cooler back to the designated lab following the laboratory's shipping instructions. Include the chain of custody form.
- b) Samples must be extracted within 28 days of collection.
- c) Extracts must be analyzed within 28 days after extraction.
- d) The grantee/ contractor project manager must confirm receipt conditions with the laboratory.
- e) The Project Manager must upload the laboratory results into the GMS. Any modification or alteration of laboratory results is strictly prohibited and may result in withdrawal of grant funding. The laboratory documentation must include the Laboratory Supervisor's approval signature.

### **6. Field Quality Control (QC) Procedures**

- a) Note any conditions that may affect sample integrity, such as weather, source turbulence, or visible contamination. Document these observations in the field logbook.
- b) Collect one field reagent blank (FRB) per event or site.
- c) Collect field duplicates as required.
- d) The laboratory is responsible for verifying that the samples have a pH between 6 and 8 and that no free chlorine is present upon receipt. The laboratory also prepares the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples for quality control. Document any deviations.

### **7. Interference Prevention and Best Practices**

Minimize use of the following products on the day of the sample event, preferably 24 hours before the event:

- a) Cosmetics, moisturizers, sun-blocks, insect repellants, fragrances, creams, or other personal care products (including hair products). Exceptions: Products that are known to be 100% natural.

DWR-SRF-P-28-QAPP EC SDC Program-01202026

- b) Other items that are likely to contain PFAS and to be avoided include:
  - I. Paper packaging for food or fast food.
  - II. New or unwashed clothing.
  - III. Clothing washed with fabric softeners or dried with anti-static sheets.
  - IV. Synthetic water-resistant/or stain-resistant materials (such as waterproof clothing and shoes, such as Gore-Tex), waterproof or coated Tyvek® material (special attention to boots).
  - V. Teflon® and other fluoropolymer-containing materials (e.g., polyvinylidene fluoride [PVDF], Kynar®, Neoflon®, Tefzel®).
  - VI. Waterproof/treated paper on field notebooks.
  - VII. Waterproof markers (such as Sharpie®, etc.).
  - VIII. Chemical or blue ice, which may contain PFAS and may not reduce and/or maintain the temperature of the samples adequately.
- c) Avoid sampling in the rain if possible (if necessary, please use vinyl or polyvinyl chloride [PVC] rain gear).
- d) Avoid filling your gas tank the day of the sampling (before sampling)