

Standard Operating Procedure (SOP) PFAS Sample Collection and Handling for Drinking Water December 2019

Sample Preparation

The sample handler must wash their hands before sampling and wear nitrile gloves while filling and sealing the sample bottles. It is further recommended that the sample handler wear non-synthetic clothing while collecting samples. PFAS contamination during sampling can occur from a number of common sources, such as food packaging and certain foods and beverages. Proper hand washing and wearing nitrile gloves will aid in minimizing this type of accidental contamination of the samples.

Sample Collection (Single-Point Sample)

Open the tap and allow the system to flush until the water temperature has stabilized (approximately 3 to 5 min). Remove aerator if present.

Label sample containers prior to sample collection using ball point pen only. Permanent marker (Sharpie®) should not be used.

Collect samples from the flowing system. Fill sample bottles, taking care not to flush out the sample additive (Trizma, pH buffer and chlorine scavenger). Samples do not need to be collected headspace free.

After collecting the sample, cap the bottle and agitate by hand until preservative is dissolved. Place samples in zip lock bag and keep cool using ice. The use of ice substitutes is not permitted.

Point-of-Entry Treatment Systems (POETs)

Point-of-Entry Treatment Systems (POETs) typically consist of two granular activated carbon (GAC) vessels with three sample ports (spigots). One spigot is placed before the GAC vessels and is identified as the “influent.” An influent sample represents untreated water from the well (the influent sample location may require modification if there is a water softener, filter or other treatment; the influent sample must be raw, untreated water from the well. There is typically a spigot at the system pressure tank, which can be used if necessary). A second spigot is placed between the two GAC vessels and is identified as the “midfluent.” A midfluent sample represents water that has been treated through the first carbon vessel and is used to determine when the first GAC vessel needs to be replaced due to breakthrough of contaminants through the first GAC vessel. The third spigot is identified as the “effluent” and represents treated water that is delivered to the end user.

Label sample containers prior to sample collection using ball point pen only, as INF, MID and EFF with a location identifier. Fill sample bottles from each corresponding spigot using the same methodology for single point samples. **Note:** Running the water for 5 (or 15) minutes from the effluent port is sufficient to purge the system (i.e. don't need to run each spigot for 5/15 minutes).

Field Blanks

Field blanks must be collected once per sample event with a minimum of one field blank per 10 samples. The sample set is comprised of samples collected from the same sample site and at the same time. Transfer the contents of the laboratory provided field blank sample bottle to the laboratory provided empty and non-preserved sample bottle. Seal and label this bottle as the field blank. The field blank is submitted to the laboratory along with the samples and analyzed to ensure that PFAS were not



introduced into the sample during sample collection/handling. The field blank is only analyzed if there is a detection in one of the samples in the sample set cooler.

Trip Blank

A trip blank is typically used to detect and identify any contamination of the samples from travelling to and from the laboratory in the cooler. This blank represents the “trip” the sample containers take from leaving the laboratory with the bottle order to the field for sample collection and back to the lab for testing. Trip blanks are NOT to be opened until they’re tested at the laboratory.

A laboratory provided trip blank should accompany the samples throughout the sampling event and be submitted for analysis with the collected samples. Trip blanks should be labeled as such, with the sampling date and project number.

Transfer to Laboratory

All samples must be placed on ice (no gel or other freezer packs) and relinquished to the laboratory using proper chain of custody procedures and protocols.

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