NTN/PFAS Bag Sampling Preparation

Introduction:

The collection of PFAS samples from NTN wet-deposition collectors follow the same protocols as NTN sampling. **The noticable differences are the use of a Tyvek lab coat during sample preparation and decanting and the type of lid seal pad material**. A new lid seal pad is provided in the start-up kit. The use of clean vinyl gloves remains the same, as well as the type of sample bag, and 1L bottle.

An additional requirement for PFAS sampling is semi-annual Quality Assurance (QA) protocols done in the field. Quality Control (QC) supplies will be shipped to the site semi-annually, these consist of a field blank and field spike. Quarterly QC requirements SOP is detailed in PFAS-2214_Semi-annual_QC_Instructions.

Items needed:

- Tyvek lab coat
- Modified NTN bucket
- Two (2) flexible lids (FLID) in protective bags (1 from previous week, 1 new)
- Pouch of new sample bags
- Clean, vinyl laboratory gloves
- Bucket strap and bucket plug
- Laboratory wipes and Deionized (DI/RO) or distilled water
- Handheld vacuum or other vacuum source
- Balance or scale

Precautions:

- Avoid leaning over the bucket and passing items (e.g., bucket strap) over the top of the bucket when deploying the sample bag.
- Avoid touching the inside surface of the sample bag. Doing so may contaminate the sample.
- Wear clean laboratory gloves as directed below.
- If the bucket is damaged contact the Site Liaison for a replacement.
- Store the Tyvek jacket in a plastic bag for use the following week.

Instructions – Sample Bag Preparation: Complete these steps **before** going to the field to deploy the new sample bucket.

Figure 1. Items needed to deploy sampling bag.

1. **Put on the supplied Tyvek lab coat.** Replace the Tyvek lab coat at approximately 3-month intervals (or sooner if clearly dirty, torn or compromised). New Tyvek lab coats will be supplied with each set of semi-annual QC supplies.
2. Clean the NTN bucket. Wet a laboratory wipe with deionized water and wipe the rim, and inside and outside surfaces of the bucket. Do this each time before a deploying a new sample bag.

Figure 2. Cleaning sample bucket.

2. Remove the bucket plug and set aside. Put on a new pair of clean, laboratory gloves. Remove a sample bag from the zippered pouch. Open the sample bag by pulling the sides open, starting at the top of the bag and working downward toward the seam. Insert the bag into the bucket by aligning the bottom seam of the bag with the bucket handle attachment points.

Figure 3. Open the sample bag starting at the top of the bag.

3. Drape excess bag over the sides of the bucket. The bag should extend approximately 4 inches (10 cm) below the lip of the bucket (see Figure 4). Pull the bag below the second ridge of the bucket to keep the bag from shifting while applying the bucket strap.

Figure 4. Drape excess sample bag over edge of NTN bucket.

4. Wrap the strap around the side of the NTN bucket to secure the sample bag to the bucket. This helps prevent air leaks when the vacuum is applied in the next step. Place the strap around the bucket just below the lip of the bucket, aligning the buckle above the bucket hole. Cinch the strap to ensure a good seal. Avoid contact between the strap and the inside collection surface of the sample bag.

Figure 5. Wrap strap around NTN bucket and cinch to secure the sample bag.

5. Locate the vacuum hole in the side of the bucket. Apply the handheld vacuum to this opening to form the sample bag to the walls of the NTN bucket. A handheld portable vacuum is included as part of the start-up kit.

Figure 6. Apply the vacuum to pull the sample bag to the walls of the NTN bucket.

6. Excess bag on the outside of the bucket should lie flat. Folds and pockets in the excess bag on the outside of the bucket will trap water. This will cause the sample mass to be reported incorrectly, and may contaminate the sample when it is decanted to the shipping bottle. Ensure the strap lies flat by using the o-rings to hold the excess strap. Figure 7 illustrates the NTN bucket with the sample bag ready for deployment.

Figure 7. NTN bucket and sample bag ready for deployment.

7. Insert the bucket plug in the opening on the side of the NTN bucket to prevent water from entering the bucket. Water between the sample bag and the walls of the bucket will cause the sample mass to be reported incorrectly. It is normal for the bag to collapse slightly after removing the vacuum source.

Figure 8. Insert bucket plug in the hole on side of NTN bucket to prevent water from entering.

8. Tare (or zero) the scale (or balance).

9. Place the prepared bucket with secured sample bag, bucket, bucket strap and bucket plug (with no lid) on the scale. Record the mass (pre-deployment) on the field form. Avoid leaning over the top of the bucket and touching the inside surface of the sample bag to avoid contaminating it.

Figure 9. Weigh NTN bucket, sample bag, bucket strap and bucket plug

10. On the NTN FORF, record the mass in Block 6 **Bucket Sample Weight** in the line labelled "1. Prepared Bucket/Bag (No Lid)." NOTE: you will not record a lid weight at this time.

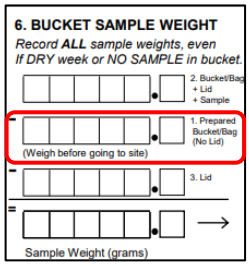

Figure 10. Block 6: Enter Bucket, bag, strap, and plug weight in "CAL Bucket".

11. Use a new unused lid (in protective bag) and place on the prepared bucket to protect the sample bag during transport to the site. Take the protective bag with you to the site to store the lid in it once the bucket is deployed.

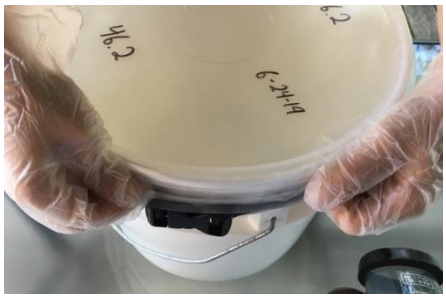

Figure 11. Place lid on NTN bucket and secure to protect sample bag.

12. The NTN bucket and sample bag are now ready to be transported to the field for deployment. Take the empty lid bag from above and the extra lid (in the protective bag) that was returned from the site the previous week along with the new bucket to the site. Refer to the SOP titled *PFAS_2211_Bag_Sampling_Changeout.*