Sample Decanting SOP, NTN Bag Sampling

Items needed:

- Field Form - Field Observer Report Form (FORF), as started the previous week
- SiteID barcode labels
- Sample bag and bucket containing sample to be processed
- Extra lid in protective bag returned from site
- Clean laboratory gloves
- Balance or scale
- Calibration weights (100 g and 1 kg), if available
- 1-L sample bottle and sample bottle shipping box
- Logbook, if used

Precautions:

Use care when handling the sample bottle, sample bucket, and lid to avoid contaminating the sample. NTN samples are analyzed for sodium, chloride, and potassium all of which are present in sweat. Oils present on skin are difficult to remove. Detergents are not used to clean the lids or bottles.

If the sample is frozen, allow the sample to thaw completely with the lid on before decanting. Do not place the sample bucket on or near a heat source. NTN samples should be allowed to melt at room temperature.

Instructions:

1. Prior to weighing the sample, with the lid still on the bucket, wipe down any excess moisture on the outside of the bucket, bag and lid to get the most accurate weight of the sample.

2. Verify calibration of balance, if calibration weights are available. If the calibration is off by more than 1 g and the scale cannot be corrected, record the difference in Block 10 **Remarks** block of the field form.

Figure 1. Check balance with calibration weight.

3. Weigh the sealed bucket containing last week's sample. Enter the mass (Bucket + Bag + Strap + Plug + Lid + Sample) in Block 6 **Bucket Sample Weight** of the field form ("2. Bucket/Bag + Lid + Sample"). Complete this step each week, regardless of whether precipitation occurred during the week. Network operating procedures require that the sample bucket be changed at least once every 194 hours (8 days and 2 hours).

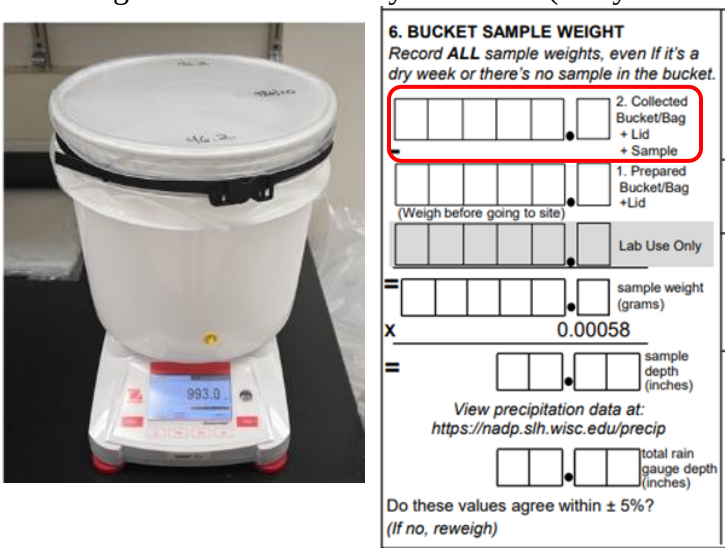

Figure 2. Weigh bucket, bag, strap, plug, lid, and sample.

4. If the weight of the bucket exceeds the capacity of the scale, call site support at 1-800-952-7353 for an alternative procedure to obtain a sample weight.
5. The mass of the fully assembled bucket (bucket + bag + strap + plug + lid) should have been entered on the field form the previous week prior to deployment. Calculate the Sample Weight.

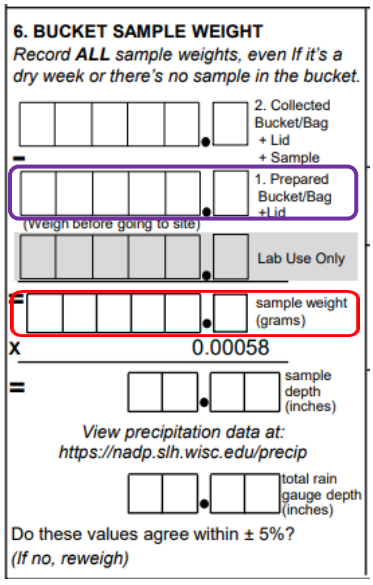

Figure 3. Complete Block 6: Bucket Sample Weight on field form.

6. Calculate the sample depth by multiplying the sample weight by 0.00058. If the sample depth does not agree with the total rain gauge depth within ± 5%, reweigh to confirm.

7. If the bucket is empty (i.e., no precipitation occurred during the week), skip to step 15. Otherwise, continue to step 8.

8. Put on a pair of clean laboratory gloves. Remove the lid from the sample bucket by grasping the far edge of the lid and pulling the lid toward you. This eliminates the possibility that the sample may be contaminated by clothing fibers or sweat passing over the exposed sample. Place the used lid in the provided poly mailer, do not reuse once the lid is removed for decanting.

Figure 4. Remove lid from bucket.

9. Tilt the bucket toward you to inspect the sample for physical contamination (e.g., pollen, leaves, dirt). Do not lean over the open bucket. Doing so may lead to contamination of the sample (e.g., human hair, clothing fibers). Note any contaminants in Block 5 (**Sample Condition**) of the field form. Answer yes or no to each contaminant.

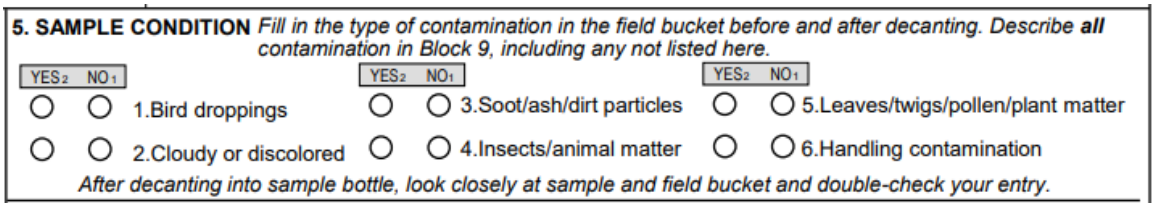

Figure 5. Complete Block 5: Sample Condition on the field form.

10. Remove a clean sample bottle from its zipped bag and uncap the bottle. The cap should be placed upright on a clean surface to prevent contaminating the cap.

11. Decant the sample into the sample bottle. Note the following:
    - do **not** remove the bag or bucket strap,
    - do **not** swirl the sample before decanting,
    - do **not** use a funnel,
    - do **not** remove bag and cut the corner off,

- pour slowly, look for a portion of the bag with few creases, the sample will follow any creases in the bag,
- avoid decanting physical contaminants into the bottle,
- use both hands, one on either side of the bucket, to support the bucket,
- hold the handle against the side of the bucket with one hand to keep it from moving,
- avoid contacting the lip of the bucket to the mouth of the bottle,
- do **not** discard low volume samples. All samples, regardless of volume, should be submitted for analysis,
- sample volume greater than the volume of the sample bottle may be discarded, and
- decant the NADP sample before decanting sample for other studies.

Figure 6. Decant the sample into the sample bottle.

12. Cap the sample bottle. Ensure the cap is tight to prevent the sample from leaking during shipment.

13. Using a pen or permanent marker, write the site ID and date off on the sticker affixed to the sample bag. Place the associated barcode label underneath the affixed sticker.

Figure 7. Complete sample bottle bag information.

14. Re-seal the sample bottle in its zipped bag.

15. Place a bar code label on the field form, and its matched pair on the zipped sample bag, or on a dry sample envelope if no precipitation occurred during the week.

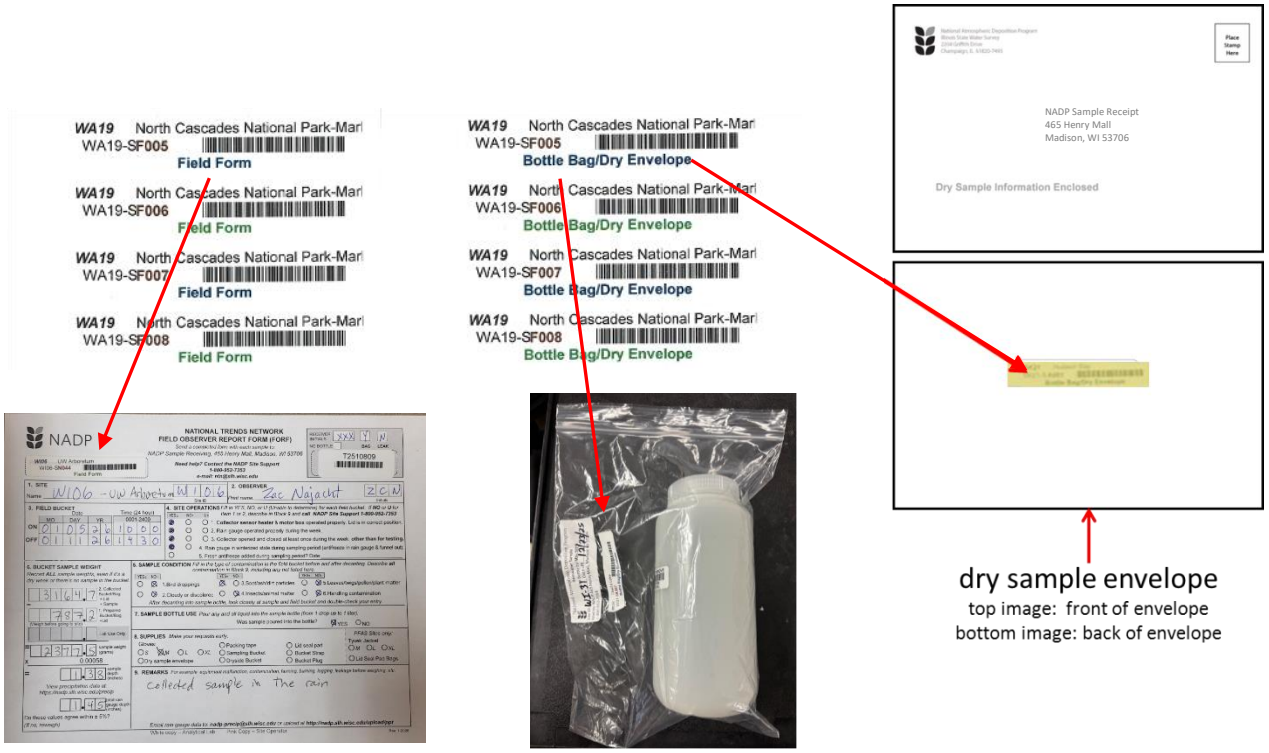

Figure 8. Adding SiteID barcode labels to sample field form, bottle bag, and dry sample envelope.

16. Complete Block 7 **Sample Bottle Use** to indicate whether sample is decanted to a sample bottle and will be shipped to the laboratory for analysis. If sample is present, it should be decanted and submitted for analysis.

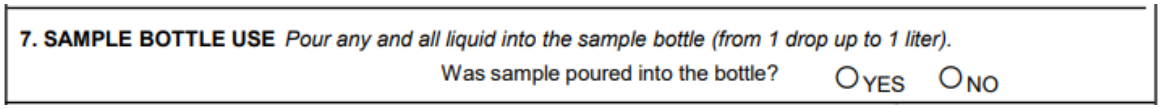

Figure 9. Block 7 from the FORF.

17. Inspect the field form and complete any missing fields.

18. Indicate any supplies that are needed in Block 8 (Supplies) of the field form. **When you only have three (3) clean lids remaining, ship the poly mailer (with 7 used lids) back to the NADP Analytical Laboratory (NAL).**

19. Use a sample bottle shipping box to ship the bagged sample bottle and the completed field form to the address shown below for analysis. Do not put the field form inside the bag with the bottle.

    NADP Sample Receiving
    WI State Laboratory of Hygiene
    465 Henry Mall
    Madison, Wisconsin 53706

20. If no precipitation occurred during the week, mail the completed field form in one of the dry sample envelopes provided. Alternatively, the field form can be scanned or photographed and sent electronically to ntn@slh.wisc.edu.

21. Remove the used sample bag and recycle or discard.

22. The extra lid returned from the site (in the protective bag) will be used to cover the sample during next week's visit.

23. **Return the used lids to the shipping address listed below when there are seven (7) used lids. There will be a sticker on the poly mailer with the Site ID. If the sticker is missing, clearly mark on the outside of the poly mailer the NADP Site ID.** The use of the poly mailer will reduce shipping costs.

    Ship the used lids back to the NAL:

    NADP Supply Receiving
    WI State Laboratory of Hygiene
    465 Henry Mall
    Madison, Wisconsin 53706