Time and travel schedules and steady precipitation may make option 2 necessary. If possible, wait until the precipitation slows. Whatever the situation, extra care is necessary. Unless safety is a concern, do not skip the Tuesday collection.

For inclusion in NTN summaries, samples can have sampling periods up to 194 hours in duration. If you cannot reach the site within 1 or 2 hours of 0900 hours, make sure the sampling period fits this constraint.

**Never touch sampling surfaces.** Precipitation samples have very low ion concentrations, and any contamination could result in unrepresentative data. For example, one drop of human perspiration invalidates a sample for sodium, chloride, ammonium, and possibly other ions. A fingerprint inside a bucket or lid may contain more sodium than the entire sample.

Check the main functions of the collector each week. These functions are the motor box *off* and *on* switching functions, the sensor heating and switching functions, and the operation of the event recorder in the raingage. Use the Precipitation Collector Maintenance Manual, Appendix C, to diagnose and resolve any problem. Contact the CAL at 1-800-952-7353 for additional help to solve the problem or determine which components require replacement and which precipitation samples may have been affected.

If the collector fails any of the function checks:

- Try to confirm that the collector is getting power.
- If the collector is cycling back and forth, unplug the sensor to see what happens.
- If the drive motor does not respond to the sensor being wet, try to push the clutch mechanism 2 or 3 inches to see what happens (see Appendix C).

### 3.2.2.1 Weekly Sampling Routine

1. Approach the collector and work from the downwind side to reduce windblown contaminants. Inspect the site and equipment for damage.

   **Initial Collector Checks**

2. Check the temperature of the sensor on the collector by touching the sensor plate (Figure 3-2). Unless the collector has been open within the last few minutes, it should feel cool.

3. Inspect the dry-side bucket and note the presence of any precipitation. Large amounts of precipitation in the dry-side bucket may indicate a collector malfunction. Estimate the precipitation volume in the dry-side bucket. Later you will record this observation.

   ![Figure 3-2. Check the sensor temperature.](image-url)
4. Open the black mailer and set the lid inside up on the ground.

5. Activate the sensor grid by applying a few drops of water (Figure 3-3). **Do not use metal to short the grid as this may damage it.** The collector should open immediately, the collector lid should move to cover the dry-side bucket, and then the drive motor should turn off. Observe this movement. The collector lid should operate freely with little motor noise, and the lid seal should rest snugly on the dry-side bucket.

6. After the collector has been open for at least 5 minutes, check the sensor with your finger. The sensor plate should feel warm.

7. Carefully examine the wet-side bucket for contamination. In your notebook you will make detailed notes describing any contamination (see step 10). This is very important since some contaminants, such as bird droppings or soil particles, get mixed into the sample during transport and go unnoticed. **Never remove contaminants from the bucket.**

8. Remove the bagged snap-on lid from the black mailer. Undo the twist-tie and while grasping the lid through the outside of the bag, carefully pull the bag over your arm. Seal the lid onto the field bucket by pushing down on the center in typical “Tupperware” fashion. Be careful not to touch the inside of the lid or bucket while you snap it into place (Figure 3-4).

9. Remove the sealed field bucket from the collector. Place it into the plastic bag that previously held the clean lid and secure it with the twist tie. Set the bucket in the black mailer.

10. In the notebook and also on the outside of the plastic bag, use a permanent marker to write the site ID, date and time off, and the presence of any soil, bugs, bird droppings, etc. as described in Step 7. **Do not write on the snap-on lid or field bucket (Figure 3-5).** Note that the time of the bucket change will be used to complete two separate FORFs: (1) the previous week’s bucket off time and (2) new bucket on time.