# Maintenance Procedures for the Precipitation Collector and the Recording Raingage

## Maintaining Dry-Side Bucket and Foam Lid Seal

On the first Tuesday of every month, change the dry-side bucket when you perform the wet-side bucket change. This helps ensure a clean surface for the lid seal to rest upon during precipitation. Each site should have two 3.5-gallon LPE buckets dedicated to dry-side use: one bucket installed on the collector and the other cleaned, bagged, and ready to use as a replacement. Both buckets should be plainly marked in permanent marker: *DRY-SIDE USE ONLY.*

Note: Using a Dry-Side Use Only bucket to collect a wet-side sample will invalidate the wet-side sample.

## Cleaning Dry-Side Buckets at Field Laboratory

1. Rinse the bucket inside and out with lots of tap water. Scrub the bucket with a sponge or paper towel to remove any debris and dirt films. To prevent any chemical residues from forming, do not use detergents or alcohol.
2. After cleaning the bucket with tap water, rinse it with distilled water and shake off the excess.
3. Place the bucket in a spare CAL bag and fasten it with a twist tie.

## Changing Dry-Side Buckets and Cleaning Foam Lid Seal

1. When you change the dry-side bucket, take the replacement bucket (that was cleaned as detailed in the instructions above), a squeeze bottle with distilled water, and some lint-free tissues to the field site. If you do not have a replacement bucket, remove a clean bucket from your supply, label it plainly with a permanent marker: *DRY-SIDE USE ONLY*, and use it as one of two dry-side buckets.
2. Before operating the collector, remove the "old" dry-side bucket, set it aside, and note the presence of any precipitation.
3. Remove the wet-side bucket according to the instructions in Section 3.2.2 of the *National Trends Network Site Operation Manual*.
4. While both buckets are out of the collector:
   - Assuming the sensor is wet, dry it, and if it is dry, wet it to cause the collector lid to move. When the lid is halfway between the wet-side and dry-side buckets, unplug the power to the collector.
   - Wipe the underside of the lid seal to remove any accumulated debris. Use a clean, lint-free tissue dampened with distilled water.
   - Let the foam lid seal air dry.
   - Wipe the top of the roof, the frame of the collector, and the sensor to remove bird droppings or other accumulations that could enter into the sample bucket from these surfaces.
5. Install the new *DRY-SIDE USE ONLY* bucket. Plug in the collector.
6. Install the new wet-side bucket.
7. Note which surfaces have been cleaned in the remarks block of the FORF.

If it is snowing, raining, or the site is experiencing freezing temperatures, you may not be able to use the lint-free tissue dampened with distilled water to wipe the underside of the lid seal. In these cases, dry wipe the lid seal, the top of the collector lid, the collector frame, and the sensor.

### Lid Seal Replacement

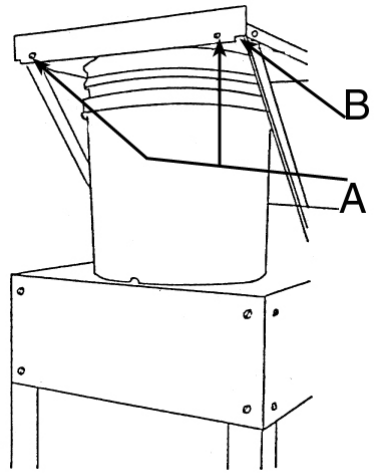


*Figure 1. Removing the lid seal*

Approximately every 12 months the CAL provides each site with a new foam lid seal and instructions for its installation (Figure 1). This replacement further limits contamination and helps ensure a tight lid-to-bucket seal. To change the lid seal, use a medium-sized straight blade screwdriver and follow these steps:

**1.** First, remove both buckets from the aluminum bucket holders. Position the lid mid-stride by unplugging the collector as the lid approaches the mid-point between the bucket holders.
**2.** Next, remove the two screws labeled A on Figure 1 and the L-retainers they hold in place. These retainers, labeled B, hold the foam lid seal in place. After removing the L-retainers, the old seal will simply drop out. Be careful not to lose the screws.
**3.** Insert the new foam lid seal (foam side down) and re-install the L-retainers and screws. Do not remove the clear outer cover.
**4.** Plug the collector back into its power supply.
**5.** Clean the foam lid seal with DI water and lint-free tissues.
**6.** Record the lid seal change in the remarks block of the FORF, complete the paperwork sent with the new lid seal, and return it with the old lid seal to the CAL.

### Raingage Winterization

- Remove the funnel attached to the bottom of the top cap by rotating the funnel until its slots clear the beads in the collector tube. Lift it off and store it in a safe place.
- Empty the catch bucket, replace it in the gage, and add 2 quarts of standard automotive ethylene glycol or propylene glycol antifreeze. This addition will cause the gage to read approximately 2.5 inches of precipitation.
- **Do not make any zeroing adjustment to the gage baseline after adding antifreeze to the bucket**.
- Stir the antifreeze solution in the bucket each week after moving the recording pens away from the raingage chart drum.
- **Do not dump any antifreeze on the ground. It is toxic to plants and animals. Disposal of antifreeze should comply with proper disposal guidelines.**

Note: Snow or mixed precipitation amounts are invalidated when the raingage is not properly winterized.

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