



Microbiology Sampling Protocols

SanAir Technologies Laboratory Bioaerosol Sampling Method

For use with Andersen N-6 sampler

(NIOSH Method 0800 – NMAM Fourth Ed. Jan. 15, 1998)

Following this general list of procedures will maximize the quality and accuracy of analysis.

A representative outdoor sample and field blank for each job must be provided for proper analysis.

Field Equipment: Calibrated Andersen Sampler
 70% Isopropanol rubbing alcohol
 Media Plates
 Permanent marker
 Parafilm

1. Be sure to have one set of plates for each sample site; including outdoor, non-complaint, and blank samples, if possible. NOTE: You will need more than one type of media plate, per sample site, if testing for both fungi and bacteria. Please contact the laboratory for determination of proper sampling media for your particular job. NOTE: Be sure to check the expiration date for each plate.
2. Be careful when unwrapping the plates as they are not sealed shut. In order to avoid contamination, be sure the plates do not open up while preparing to sample. Allow the plates to sit out for 30 minutes prior to sampling in order to reach room temperature.
3. Using a permanent marker, write on THE BOTTOM OF EACH PLATE (not on the lid!) a unique sample number.
4. Before using the Andersen sampler, wipe it clean with 70% isopropanol and allow it to air dry. This step must be done before sampling and between each sample!
5. Prior to use, your sampling pump should be calibrated to 28.3 L/min. Refer to the user manual for calibration instructions.
6. Once you are ready to sample, remove the lid from one plate and place it in the Andersen unit. ONLY remove the lid of a plate if you are READY to sample; this avoids

contamination. The recommended sampling time is five minutes at 28.3 L/min. NOTE: The sampling duration can be lowered (e.g. 3 minutes) in heavily contaminated areas or raised (e.g. 10 minutes) if the sample yields lower than expected results.

7. Once sampling is complete, stop the pump, remove the plate, and immediately replace the lid. Seal the plate shut using parafilm or tape. Duplicate or triplicate samples from the same site should be collected for more accuracy.
8. Write the sample information on the SanAir Technologies Laboratory Chain-of-Custody as listed below. NOTE: There is no need to fill out the “Turn-Around-Time” as C1/C3 results take a standard 5 – 10 days, and C2 results take a standard 2 – 4 days.

1
2
3
4
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9

Sample Number (i.e. a unique sample number)

Sample Identification (e.g. location of sampling)

Sample Type (AP)

Analysis Type (C1, C2, or C3)

Total Volume: Total Volume in Liters is equal to the flow rate of your pump (e.g. 28.3 L/min) multiplied by the duration of sampling (e.g. 5 minutes). For example, an air sample that was pulled for 5 minutes on a pump calibrated to 28.3 L/min would have a total volume of 141.5 L/min ($28.3 \text{ L/min} \times 5 \text{ min} = 141.5 \text{ L/min}$)

10

Time (Start – Stop): In order to keep track of the duration of sampling, the start and stop times of sampling (or the total time for sampling) may be noted. NOTE: If the start and stop times are noted on the COC, but the Total Volume is left blank, then the flow rate of the pump must be noted in Special Instructions so that the Total Volume can be calculated.

9. If testing for both fungi and bacteria, then repeat steps 3-8 for the remaining plates in the sample site. Tape all plates for one site together and store them upside down (lid down). Be sure to load and immediately unload, and seal at least one set of plates to serve as a field blank.
10. Continue with steps 3-9 for all other sample sites.
11. For best results, plates should be shipped immediately! If this is not possible, store plates in a refrigerated unit and ship within 24 hours. Plates should be shipped upside down (lid down) to prevent condensation from dripping onto the agar surface. Make sure there is sufficient cushioning to avoid plate breakage during shipping. When using a cooler use only chemical cooling packs; ice is not recommended as it will melt and seep into the plates.



References

Bioaerosol Sampling (Indoor Air), Culturable Organisms: Bacteria, Fungi, Thermophilic Actinomycetes, Method 0800, Issue 1: 15 January 1998, NMAM, Fourth Ed.