Indoor Air VOC Sampling and Analysis Requirements

(April 2003)

In general, the samples are to be collected and analyzed in accordance with the "Compendium Method TO-15 Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially Prepared Canisters and Analyzing by Gas Chromatography/Mass Spectrometry (GC/MS)." Method is found in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (January 1999). The USEPA website is http://www.epa.gov/ttn/amtic/airtox.html. If the contaminants of concern are not VOCs (or if the RP wishes to use an analytical method other than TO-15), please consult the contacts at the end of the document.

More specifically:

1. The sampling event shall be conducted by collecting one indoor air sample from the ground floor (living space) at each property using 6-Liter Summa® canisters (or other specially prepared stainless steel canisters) and analyzed for VOCs using USEPA Method TO-15. If a basement or crawlspace exists, a second canister air sample shall be collected. Breathing zone height (3-5') will be appropriate for the ground floor sample collection, whereas the basement sample shall be positioned as close as possible to the source area (i.e., sumps, major cracks in foundation). The precise locations should be selected in consultation with the Department's technical staff. Additional canister air samples may be employed to assess indoor air quality within a building as needed.
2. One ambient (outdoor) sample (per sampling event - NOT per property) shall be taken concurrently with indoor samples to assist in evaluating background contaminant levels. This ambient air sample should be taken at breathing zone height and as far from auto traffic or other potential sources as possible.
3. Completion of the Indoor Air Building Survey and Sampling form is required. It should be noted that the Building Survey form contained in the NJDEP Indoor Air Sampling Guide for Volatile Organic Contaminants (January 1999) has been revised. The new Indoor Air Building Survey & Sampling form is attached. *The Indoor Air Sampling Guide is currently being revised.*
4. Air samples shall be collected over a 24-hour period (a minimum 8-hour sample may be substituted, if necessary).
5. The laboratory must follow all the requirements as stated in USEPA Method TO-15. There are no variations to the method allowed without prior approval from NJDEP.
6. The laboratory must use gaseous standards for the preparation of all standards used in this method.
7. Air Filters are required for each canister to prevent clogging of the orifice during sample collection.
8. The laboratory is required to analyze laboratory control samples and laboratory control sample duplicates at the same frequency as method blanks are required in the method.
9. The maximum Reporting Limit (RL) for each compound in the method is $\leq$0.5 ppbv. The reporting limit used by the laboratory must be greater than the clean canister certification level of 0.2ppbv and $\leq$0.5 ppbv.

10. The laboratory must provide a complete listing of the Method Detection Limit Study for each compound reported as part of the analytical data deliverable package. The MDL study must comply with the requirements of 40 CFR Part 136 Appendix B as required by Section 11.2 of the method. The MDL (statistical determination) must be less than or equal to the Clean Canister Certification level for all compounds.

11. Effective October 2002, NJDEP is offering NJ Laboratory Certification for Method TO-15. Laboratories analyzing indoor air samples must hold current certification/accreditation from the NJDEP Office of Quality Assurance (OQA). A list of currently certified/accredited laboratories can be obtained from Mr. Paul Buckley (OQA) at 609-777-1748.

12. All results are to be reported in ppbv. The laboratory shall also report the data in $\mu g/m^3$ in a separate column from the ppbv results.

13. The laboratory must report in the analytical data deliverable package both the initial and final pressure gauge readings of the canisters. The initial reading is determined when the laboratory pressurizes the canister and the final reading the taken when the canisters are received back at the laboratory. The laboratory must submit a copy of the laboratory notebook page on which the information is recorded.

14. The final analytical data package delivered to the State must be in the Full Regulatory Deliverable Package Format. *New deliverable package format requirements will be available in June 2003.*

15. The electronic deliverable requirements for Hazsites database will be available in June 2003.

If you have any questions, please contact:

John Boyer (609-984-9751) regarding data interpretation, sampling plan development, oversight, field assistance, methodology consultation

Kathy Grimes (609-633-2355) regarding quality assurance requirements, data validation/review, and laboratory issues

Diane Groth (609-984-9782) regarding criteria development, modeling, risk evaluation, and general issues dealing with the NJDEP Indoor Air Committee