## NC DAQ Source Test Observers Checklist - Particulate Testing EPA Methods 1-5

### Facility Name / Location:

### Source Contact / Phone #:

### Testing Firm / Contact:

### Facility ID / Source Tested:

### Tracking Number:

<table>
<thead>
<tr>
<th>Run #</th>
<th>Start Date</th>
<th>End Date</th>
<th>DGM Start</th>
<th>DGM End</th>
<th>Vm</th>
<th>Ave. dp</th>
<th>Nozzle ø</th>
<th>Filter No.</th>
<th>H2O Coll.</th>
<th>Post leak</th>
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Ask for an explanation to any question answered "No" and attach comments to this form or in your report.

### METHOD 1 - Sample and Velocity Traverses for Stationary Sources

| 1.1) | Method 1 calculated correctly (see reverse side)?
| 1.2) | Cyclonic flow check completed during test day? (Average of absolute value of all angles <20 degrees?)

### METHOD 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate

| 2.1) | Pitot tube leak check completed after each run?
| 2.2) | Visual check of pitot tube heads - good condition?
| 2.3) | Manometer level and zeroed correctly?
| 2.4) | Static pressure measured during the test day? Static Pressure: inches H2O
| 2.5) | Barometric pressure recorded and adjusted for elevation? (see reverse side)
| 2.6) | Pitot tube heads oriented to axis of flue? / Pitot tube perpendicular to axis of stack?
| 2.7) | Temperature recorded at each sampling point?
| 2.8) | Minimum sample of 30 dscf collected (or per applicable subpart?)(see Vm above)

### METHOD 3 - Gas analysis for O2, CO2, and Dry Molecular Weight

| 3.1) | Is molecular weight being assumed? (If yes, and allowed, skip rest of Method 3)(see reverse side)
| 3.2) | Multi point integrated sample / Bag evacuated and leak free (if applicable)
| 3.3) | Electronic Analyzer; or Orsat (performed in triplicate, analysis consistent?) (circle)(see reverse side)
| 3.4) | Calculate F0 / Within Range?

### METHOD 4 - Determination of Moisture Content in Stack Gases

| 4.1) | 100 ml H2O in first 2 impingers, 3rd empty, silica gel in 4th? (see reverse for each impinger design req.)
| 4.2) | Temperature at the exit of impingers / condenser <68 F?(see reverse side)
| 4.3) | Silica gel in good condition? - Blue-new, Pink-spent (unable to absorb more H2O)

### METHOD 5 - Determination of Particulate Emissions from Stationary Sources

| 5.1) | Methods 2 - 5 run concurrently? Test team accurately recording meterbox data at each sampling point?
| 5.2) | Visually inspect sample nozzle for damage / nozzle opening facing direction of flow?
| 5.3) | Pre run leak check, optional (watch) Leak Rate ≤0.02cfm?
| 5.4) | Post run leak check, mandatory (watch) Leak Rate ≤0.02cfm? Conducted ≥ highest vacuum during run?
| 5.5) | Isokinetic rates between 90% and 110%? (see reverse side) K factor:
| 5.6) | Filter and probe temperatures at 248 +/- 25F (or applicable subpart, such as MATS)?
| 5.7a) | During a run, was any equipment changed (ie. filter, nozzle, impinger) Why? (Do not explain a "No")
| 5.7b) | Was a leak check performed prior to the equipment change? (May not be applicable)
| 5.8) | Meterbox calibration values - ΔH@: Y: Date Calibrated:
| 5.9a) | Particulate sample clean-up: acetone used? (or water if required by CFR such as MACT MM)?
| 5.9b) | Inside of nozzle, probe, and glassware (before the filter) rinsed and brushed in triplicate (minimum)?
| 5.9c) | Is filter holder disassembled on site or transported to lab intact? (circle)
| 5.9d) | 200 ml acetone blank prepared? Volume of acetone used for cleanup:
RECORD PROCESS DATA: It is imperative for the facility and the observer to record the pertinent data during the test so that the measured emissions can be correlated to a production rate and compared to the permit limit. The test will be unacceptable without production data. Control device operating parameters should also be recorded.

DATA TABLE: DGM stands for "dry gas meter", the volume of dry gas collected typically in cf. The "V_m" is the DGM meter change from the beginning to the end of the run, which is the total dry gas volume collected. "Ave. Δp" is the average pitot tube velocity head for the points sampled (in inches H_2O). "Nozzle ø" is the nozzle diameter, typically in inches. "H_2O Coll." is the water collected by Method 4. "Post leak" is the post leak check amount in cfm (see below).

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METHOD 3: The measurement of O_2 & CO_2 is usually performed with an analyzer. Orsats may be used but must meet analysis criteria (see guidance document). Assuming ambient air and a molecular weight may be acceptable for some stacks (asphalt plants).

Calculate: \[ F' = \frac{20.9 - \%O_2}{\%CO_2} \]

METHOD 4: 1st, 3rd, 4th impingers modified Greenburg-Smith design; 2nd impinger Greenburg-Smith design with the standard tip.

METHOD 5:

Leak Check: If the results indicate a leak (>0.02cfm), record the leakage rate. Suggest repeating the run, but it is the discretion of the test team and facility to accept the leak. However, the sample volume will be adversely adjusted due to the leakage rate.

Isokinetics: If the test team indicates that the isokinetic rate of a run is over 110% or under 90%, the run should be voided and repeated.

Particulate Sample Clean-up: If any particulate sample is lost during clean-up, the run should be voided and repeated.

REMARKS: (Record process data and applicable regulations here and/or in your observation report)

** DO NOT REJECT A TEST WITHOUT CONSULTING WITH THE STATIONARY SOURCE COMPLIANCE BRANCH. IF YOU HAVE TESTING CONCERNS, DISCUSS THEM IMMEDIATELY WITH THE TESTING COMPANY AND SSCB. **