

# DRAFT

## IOWA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION

### POLICY/PROCEDURE STATEMENT

**TOPIC:** Requirement for back-half (condensable) catch in particulate sampling

**Policy Procedure Number:**

**Replaces Number:**

**Date:** September 8, 1998

**Effective Date:**

**Preparer:** Catharine Fitzsimmons

**Reviewer:** Mark Stone

**Approval:** Bureau Chief: Pete R. Hamlin

Date: 9/16/98

Division Administrator: Allan Stokes

Date:

**Applicable Code of Iowa or Iowa Administrative Code Rule:** 567 IAC 25.1(9)  
Iowa "Compliance Sampling Manual"

In determining compliance with applicable emissions limits set under authority of the State Implementation Plan (SIP) for Particulate matter, stack tests results must include the sum of in-stack and condensable particulate matter.

40 Code of Federal Regulations (CFR) Part 51 Appendix M, Method 202, an alternative approved by the E.P.A. Administrator, or as specified in the Iowa "Compliance Sampling Manual" must be used to determine condensable Particulate emissions limited under conditions established in the SIP. a

**Attachments:** U.S. Environmental Protection Agency, March 31, 1994 letter from Thompson G. Pace to Dr. Sean G. Fitzsimmons, Ph.D, DNR.

### REASON OR BACKGROUND

Since 1977, the "Compliance Sampling Manual" has required inclusion of condensable particulate emissions in the determination of compliance with TSP (Total Suspended Particulate) emission limits.

In 1993, DNR became aware that not all facilities required to conduct PM<sub>10</sub> performance tests (stack tests) were including the condensable fraction of the sample in their determination of compliance with emission standards. As a result, DNR staff made inquiries to both U. S. Environmental Protection Agency (EPA) Region 7 and Headquarters scientists and

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specialists requesting a determination on when condensible particulate matter is required to be considered in determining compliance with emission limits.

March 31, 1994, DNR received a response to the state's questions on whether and how to consider the condensible fraction of PM<sub>10</sub> in determining compliance with PM<sub>10</sub> emission limits.

EPA's letter states that condensibles must be included in determining PM<sub>10</sub> emissions and that the appropriate method for sampling condensible emissions for Particulate is Method 202. Although Iowa has had an alternative method for sampling these emissions since 1977, it has not always been used and is not considered to be as accurate a method for quantifying these emissions.

In 1994, DNR amended the "Compliance Sampling Manual" (adopted in 567 Iowa Administrative Code subrule 25.1(9)) to clarify that for Particulate stack tests the condensible fraction must be collected and included in determining compliance with the applicable Particulate standards.

### **DETAILS**

Condensible particulate matter must be measured in Particulate compliance tests. 40 CFR Part 51, Appendix M, Method 202, is the preferred method for determination of condensible particulate matter.

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OPTIONAL FORM NO. 10 (7-83)

FAX TRANSMITTAL

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To <b>Doug Campbell</b>	From <b>Ward Burns</b>
Dept./Agency	Phone # <b>(913) 551-7960</b>
Fax # <b>(515) 281-8895</b>	Fax #

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711  
March 31, 1994

Mr. Sean Fitzsimmons  
Iowa Department of Natural Resources  
Wallace State Office Building  
Des Moines, IA 50319

Dear Mr. Fitzsimmons:

This is in response to your letter of January 25, 1994 requesting responses to certain questions regarding PM-10 condensibles. Here are your questions and our responses:

1. Does the Environmental Protection Agency (EPA) definition of PM-10 include condensible particulate matter (CPM)?
  - Yea, the definition of PM-10 includes CPM. CPM is of potential importance to attainment of the PM-10 national ambient air quality standards because it usually is quite fine and thus falls primarily within the PM-10 fraction (see, e.g., "PM<sub>10</sub> C.F.T.P. Development Guideline," June 1987, USEPA, EPA-450/2-86-001 at p. 5-32 and 56 FR 65432, December 17, 1991). The EPA ambient monitoring method for the determination of PM<sub>10</sub> in the atmosphere is intended to include any particles that are caught by the filter at "ambient" conditions and thus, in providing for the determination of ambient PM-10 concentrations, includes any CPM (see 40 CFR part 50, Appendix J).
2. In evaluating compliance tests for determining ambient PM-10 levels in PSD permits,
3. Are the States required to compute PM-10 as the sum of in-stack and condensible PM-10?
- Since CPM is considered PM-10 and, when emitted, can contribute to ambient PM-10 levels, applicants for PSD permits must address CPM if the proposed emission unit is a potential CPM emitter.

b. Are the States required to use Method 202 to determine condensable PM-10 emissions unless EPA has approved an acceptable alternative?

- Yes, States must use Method 202, unless the EPA Administrator approves the use of an alternative method (see 40 CFR part 51.212, subpart K). This requirement in the part 51 rules is applicable to plans EPA has approved or promulgated under section 110 of the Clean Air Act, which includes PSD plans.

c. Would EPA consider it an acceptable alternative to waive Method 202 testing in source categories where CPM emissions are known to be significant?

- No, where CPM emissions are likely to be significant, the calculation of PM-10 emissions from a source must include in-stack PM-20 emissions and CPM. As noted above, Method 202 is the recommended method, although the use of alternatives as approved is allowed.

3. In evaluating compliance tests for determining ambient PM-10 levels as required in synthetic minor permits (where the source agrees to federally enforceable permit conditions which limit its allowable emissions to amounts lower than the major source threshold),

a. Are the States required to compute PM-10 as the sum of in-stack and condensable PM-10?

- Yes, CPM emissions must be addressed. Accounting for CPM is particularly important at sources that emit significant CPM since not addressing it will underestimate the sources ambient PM-10 impact.

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b. Are the States required to use Method 202 to determine condensable PM-10 emissions unless EPA has approved an acceptable alternative?

- Yes (see answer no. 2b above).

c. Would EPA consider it an acceptable alternative to waive Method 202 testing in source categories where CPM emissions are known to be significant?

- No (see answer no. 2c above).

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4. Typically the permit engineer establishes the potential to comply with air quality regulations with the aid of emissions factors. If a definition of PM-10 that includes CPM is adopted by the States, is it: EPA's position that currently available PM-10 emission factors are adequate for establishing the potential to comply?
- The emission factors for PM-10 in the current AP-42 may not adequately characterize CPM. Because emission factors in AP-42 are usually based upon the results of emission test reports and because Method 202 was only recently developed, AP-emission factors may only adequately characterize id-  
- filterable PM-10. Recent AP-42 additions have used a clearer nomenclature for the various particulate fractions, separating "filterable" PM-10 and CPM. To the extent that condensible particulate information is available in AP-42, this portion of total PM-10 emissions will be specifically identified as either "condensible organic particulate" and/or "condensible inorganic particulate." In many AP-42 sections the filterable PM-10 and the condensible fraction will be summed and presented as "total PM-10." It is reasonable to assume that where AP-42 is not clear on whether the emission factor is for total PM-10 the PM-10 emission factor only includes the filterable portion of total PM-10. As a result, the permit engineer should evaluate the potential CPM emissions based upon additional data or engineering judgement.

I appreciate this opportunity to be of service and trust that this information will be helpful to you.

Sincerely,

*Kenneth Woodward for*

Thompson G. Pace  
Acting Chief

SO<sub>2</sub>/Particulate Matter Programs Branch

cc: Chris Stoneman  
Lisa Naugen, Region VII