

## **Questions and Answers on Ambient Air Monitoring Data Certification for CY2009 Data**

**1. Are there any additional changes to the data certification process besides the changes that were made in the 2006 ambient monitoring rule revisions?**

**There have been no additional changes to the process. Please be aware that the new data certification deadline that was finalized in the 2006 rule amendments has impacted this year's process. With few exceptions (noted later), **CY2009 data must be certified by May 1, 2010.****

Monitoring Data Subject to Certification – All SLAMS and FRM, FEM, and ARM SPM stations that meet criteria in 40 CFR 58 Appendix A from January 1 to December 31 of the previous year.

All PAMS monitoring data (ozone, VOC, NO/NO<sub>x</sub>/NO<sub>2</sub>, carbonyl, NH<sub>3</sub>, and HNO<sub>3</sub> if collected), except data from some monitors designated as special purpose monitors (SPMs). (Authority - 40 CFR 58.15(a) in combination with 40 CFR 58.16(a))

PAMS sites counted towards the minimum PAMS requirements cannot be designated as SPMs. Note that for certain PAMS data<sup>1</sup> collected in 2009, the certification deadline is May 1, 2011 since the data submission deadline is 6 months following the end of each quarterly reporting period, putting the submission deadline past May 1, 2010 for fourth quarter data.

Required Language for the Certification Statement - The certification statement from the responsible State or local official must indicate that (1) the ambient concentration data *and the quality assurance data* are *completely submitted to AQS<sub>2</sub>* and (2) the ambient data are accurate to the best of his or her knowledge *taking into consideration the quality assurance findings*.

Required Documentation - The certification letter must be accompanied by two summary reports:

(1) The first is a summary report of the ambient concentration data from the monitors required to have their data certified. We request this requirement be satisfied with a copy of the AQS AMP450 report for CO, NO<sub>2</sub>, SO<sub>2</sub>, ozone, lead, PM<sub>10</sub>, and PM<sub>2.5</sub> and the AMP450NC report for other pollutants. Multiple reports may be needed for complex situations, to capture all the monitors being certified. (Authority – 40 CFR 58.15(b))

(2) The second is a summary report of the quality assurance data for each monitor whose

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<sup>1</sup> VOC, carbonyl, NH<sub>3</sub>, and HNO<sub>3</sub> data from PAMS sites, per 40 CFR 58.16(d)

data are being certified (AMP 255). The output will be a “pdf” file, which will make it easier to run and transmit electronically compared with the previous version of the report. It will simplify the certification process as the report will readily identify any monitor which did not conform to the Appendix A calculations.

(3) It is highly preferable that electronic copies of summary reports be provided in lieu of hard copies to ensure that the utilized selection criteria (page 1 of the reports) can be reviewed.

Changes in Certification Flags in AQS - For 2009 data, OAQPS will begin to make some changes to how we set “certification flags” in AQS, once we receive and review a certification letter. This flagging process is not addressed by the monitoring regulations. It is an internal EPA process developed for informational purposes.

## **2. What types of monitoring organizations must certify their data?**

State and local government monitoring organizations must certify their data. A state official should certify all data submitted for affected monitors in that state, except where responsibility for compliance with 40 CFR Part 58 requirements has been delegated to a local monitoring agency. Note that even if multiple monitoring organizations are considered to be with a single Primary Quality Assurance Organization, the certification must come from the state level, or from each local agency which has delegated responsibilities for compliance with 40 CFR Part 58.

The District of Columbia, Puerto Rico, and the Virgin Islands must also certify their data.

A Tribe must certify its data if the Tribe has received an approval for Treatment as a State that encompasses the responsibility for meeting 40 CFR Part 58 requirements, or the right to make recommendations to EPA regarding designations based on monitoring data the Tribe has collected. A Tribe may also be specifically required to certify its data under the terms of a grant from EPA.

## **3. What about other monitoring organizations that submit data to AQS?**

Certification by agencies other than those identified in the answer to the previous question is optional. However, EPA encourages these agencies to certify their data to aid data users in interpreting the quality of the data.

## **4. What monitoring data must State/local and other subject monitoring agencies certify by May 1, 2010?**

All data from SLAMS monitoring stations must be certified. Hence, ambient concentration data (including criteria pollutant and other pollutants/compounds) from the following types of SLAMS monitors must be certified:

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- Federal reference method (FRM) or Federal equivalent method (FEM) monitors for CO, NO<sub>2</sub>, SO<sub>2</sub>, ozone, lead, PM<sub>10</sub>, PM<sub>10-2.5</sub>, and PM<sub>2.5</sub>
- Approved regional method (ARM) monitors for PM<sub>2.5</sub> (in 2009, there were no ARMs approved)
- Continuous PM<sub>2.5</sub> monitors
- Filter-based PM<sub>2.5</sub> speciation monitors - (total mass and speciated components)
- Filter-based PM<sub>10</sub> speciation monitors (if any) - (total mass and speciated components)
- NCore station precursor gas monitors for CO, SO<sub>2</sub>, and NO/NO<sub>x</sub>/NO<sub>y</sub>
- PAMS data (ozone, NO/NO<sub>x</sub>/NO<sub>2</sub>, VOC, carbonyl, NH<sub>3</sub>, and HNO<sub>3</sub> if collected)
- Ammonia monitoring data (if submitted to AQS)

Data from special purpose monitors (SPMs) must also be certified, if the SPM is a FRM, FEM, or ARM monitor, and meets the QA requirements of 40 CFR 58 appendix A.

Unless the Regional Administrator has approved an alternative to the QA requirements of appendix A, an SPM using an FRM or FEM method is required to meet the requirements of appendix A, so it should be presumed to do so and data from it should be certified.

Special purpose monitors not using FRM/FEM methods are not subject to the requirement for data certification, although OAQPS encourages data from these monitors to be certified.

Many non-FRM/FEM monitors are discretionary and can be designated as special purpose monitors at the option of the monitoring organization, with Regional Office concurrence. This would remove the requirement for data certification. However, note that any monitor counted towards meeting a minimum monitoring requirement cannot be designated as an SPM. There are minimum requirements for PM<sub>2.5</sub> speciation “Trends” monitors, continuous PM<sub>2.5</sub> monitors, background and transport PM<sub>2.5</sub> monitors, and PAMS monitors.

Air toxics data (other than VOC air toxics from PAMS stations and toxic metals from PM speciation monitors) and meteorological data are not subject to the certification requirement. OAQPS encourages the certification of such data on a voluntary basis, if the data were collected under a Quality Assurance Project Plan or Quality Management Plan approved by EPA.

OAQPS is aware that some monitoring organizations have in the past chosen not to certify data from PM<sub>2.5</sub> speciation monitors for which chemical analysis is performed by Research Triangle Institute under an EPA-managed contract. This special situation is addressed in Questions 14 and 15, below.

State, local, and tribal monitoring agencies are not required or expected to certify data from IMPROVE program samplers located within their boundaries, regardless of whether or not the agencies are involved in operating the monitors. IMPROVE data does not flow into AQS on the same schedule as monitoring data submitted directly by these agencies,

and the agencies have a much different role in the quality assurance and data validation processes for these data.

**5. What other data can State/local, tribal, or other monitoring agencies certify if they choose?**

Any monitoring organization may certify any of the other ambient data that have been submitted directly to AQS. Note that IMPROVE, some CASTNET, and NADP data are not submitted directly to AQS. Statements about the accuracy of these data may be included in the certification letter, but currently there is no mechanism for these statements to become visible to the users of these data.

**6. What does it mean for a monitoring agency to certify its data or to not certify it?**

The responsible official certifies that (i) the ambient concentration data and the quality assurance data are completely submitted to AQS, and that (ii) the ambient data are accurate to the best of his or her knowledge taking into consideration the quality assurance findings.

The first part means that all of the ambient data and all of the quality assurance data that were collected, and that have completed and passed the monitoring agency's data validation process, have been submitted to AQS. The second part means that the official has considered the results of periodic quality control checks and any other relevant performance assessments.

**7. Why may a monitoring agency that is not required to certify all or some of its data want to certify that data anyway?**

Certifying data is optional in some cases as described in Questions 2, 3, 4, and 5. However, if data are not certified, this may lead some data users to not utilize these data in their analyses because they may presume the agency responsible for collecting, analyzing, and reporting data has not yet completed its normal data validation process and/or that the agency does not believe the data are of adequate quality. The main purpose of collecting data is to make quality data available to the data user community. Certification signals that the monitoring agency has loaded all of its data for the year and has completed the monitoring agency's normal validation process.

**8. How will the fact that a monitoring agency has certified the data from a particular monitor be communicated to potential data users via flags on AQS?**

AQS includes a data certification flag, for each combination of site, monitor, pollutant, and POC, for each calendar year. As in the past several years, the insertion of a data certification flag for a particular site/monitor/pollutant/POC for 2009 will be the responsibility of OAQPS. For CO, NO<sub>2</sub>, SO<sub>2</sub>, ozone, lead, PM<sub>10</sub>, and PM<sub>2.5</sub> by

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FRMs/FEMs, this flag is displayed on both the AMP450 Quick Look summary report and AMP450NC<sup>2</sup> reports.

For the review of 2009 criteria pollutant data, OAQPS will begin to utilize additional values of the AQS data certification flag to convey more detailed information to data users. See Question 9 for more information.

### **9. What will be the possible values of the data certification flag and how will each flag be determined by OAQPS?**

The possible flag values and the situations in which OAQPS intends to apply each are as follows.

<u>Flag Value</u>	<u>Applicable Situation</u>
Blank	Certification is not required by 40 CFR 58.15 and no conditions apply to be the basis for assigning another flag value, or  The deadline for certification letter has not yet passed, or  OAQPS has not yet had time to note the receipt/nonreceipt of the certification letter or to determine what other flag to assign, or  OAQPS finds that the data in AQS have been modified since the summary reports submitted with the certification letter were generated, and the discrepancy has not yet been resolved with the monitoring agency.
S	The monitoring organization has submitted the certification letter and required summary reports, and no conditions yet apply to be the basis for assigning another flag value. A value of “S” conveys no OAQPS assessment regarding data quality per se. This flag will be assigned as soon as OAQPS has determined that the conditions for it are met, and will remain until/unless OAQPS determines that a value of “Q” or “Y” is more descriptive.
Q	The monitoring organization has submitted the certification letter and required summary reports, but EPA has identified issues – not yet resolved – regarding the quality of the ambient concentration data. These issues may involve the amount of quality assurance data submitted to AQS, the uncertainty statistics shown in the AMP255 report, and/or the

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<sup>2</sup> The AMP450NC report was recently updated to show the certification flag.

highest reported concentrations. OAQPS will always notify the Regional Office staff contact for AQS whenever a “Q” flag has been assigned, to initiate the resolution process.

- N            The state did not submit a required certification letter and summary reports for this monitor even though the due date has passed, or
- The state's certification letter specifically did not apply the certification to this monitor, or
- The monitoring organization has submitted the certification letter and required summary reports, but EPA has determined that issues regarding the quality of the ambient concentration data cannot be resolved due to the lack of performed quality assurance checks or the results of uncertainty statistics shown in the AMP255 report.
- Y            The state has submitted a certification letter, and EPA has no unresolved reservations about data quality (after reviewing the letter, the attached summary reports, the amount of quality assurance data submitted to AQS, the quality statistics, and the highest reported concentrations).
- M            The monitoring organization has revised data from this monitor since the most recent certification letter received from the state.

Note that under this scheme, the meaning of a “Y” flag value is the same as it has been in recent years. The possible meaning of an “N” flag value has been changed (previously, an “N” could be assigned in situations now described by a “Blank” or “Q” flag. The “S” flag value and “Q” flag value have been newly defined to provide fair distinctions.

#### **10. How does data certification affect how ambient air monitoring data are used by EPA and others?**

Under 58.15, an annual certification letter must be submitted to EPA by May 1. EPA presumes that before this deadline has passed monitoring agencies may still be reviewing and validating their data, making the data subject to change. After the deadline has passed, EPA may move ahead and use both certified and uncertified data to propose and make designations or findings of attainment.

Also, OAQPS does not restrict the release of uncertified data from AQS, for example in response to requests we receive for data before the required certification date. OAQPS usually advises outside data users to be cautious about using data before the certification deadline has passed. EPA typically does not use AQS data in broadly distributed publications until the deadline for certification has passed.

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If a data certification letter is not received, OAQPS makes an inquiry through the Regional Office to determine the reasons for the failure to certify, to understand the implications if any for data use, and to encourage resolution of any obstacles to certification.

We have received some anecdotal reports that even after the deadline has passed, some outside data users do not utilize data in their analyses unless the certification flag in AQS has been set to “Y.”

### **11. What documents need to be provided by May 1, 2010? Where should they be sent?**

There are three items needed:

(a) A data certification statement signed by the senior air pollution monitoring person from the monitoring agency, or his or her designee. This statement must be in the form of a letter to the EPA Regional Administrator. The letter must make the specific statements given in the first paragraph of the response to Question 6 above. The letter must be clear regarding what combinations of site, monitor, pollutant, and POC are the subject of the certification statement. This clarity can be achieved by referring to the attached AMP450 and AMP450NC Quick Look summary report(s), and explicitly stating that data from all combinations of site, monitor, pollutant, and POC in the summary report are being certified (or all but certain of those listed in the report(s), if that is the case). Alternatively, a separate table can specify what data are being certified.

(b) An AMP450 or AMP450NC summary report (or reports, if multiple reports are necessary to identify all the data being certified) which shows the summary data statistics for identified combinations of site, monitor, pollutant, and POC. Please include the first page that lists the selection criteria. It is recommended that the “select criteria” utilized for the AMP450NC report be “ALL”, and any special purpose monitors that the agency wants to be excluded from the certification be so cited in the cover memo.

(c) An AMP255 report which details the quality assurance statistics for the reporting organization’s monitors (the zip file of reports that was created in the older version of the AMP255 has been replaced by a “pdf” file). It should be noted that the AMP255 report will not work properly if the “monitor collocated indicator flag” field is not populated for PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb.

The reports for items “b” and “c” should be generated from AQS prior to but near the date on which the senior air pollution monitoring person signs the data certification statement. If any additions or changes are made to the data in AQS after this report has been generated it will complicate the processing of the certification letter once received by EPA.

It will expedite processing if all required documents are provided in electronic form – a pdf scan of the letter and the AQS-generated PDF versions of the two summary reports together with the AMP255 “pdf” file.

These documents should be sent to the EPA Regional Administrator. Some Regional Offices require only that a copy be sent to the Regional Office, while other Regional Offices ask that a copy also be sent to OAQPS. Generally, OAQPS will not start reviewing its copy until the Regional Office confirms that it appears to be complete (see Question 16). However, an advance copy to OAQPS will help OAQPS track the progress of the submissions and expedite any conversations OAQPS and the Regional Office may need to have about the completeness of a package. When a reporting organization or the Regional Office sends a copy to OAQPS, please send it electronically to David Lutz at [lutz.david@epa.gov](mailto:lutz.david@epa.gov). Or, when sending items by mail, David Lutz’s address is:

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4930 Page Road  
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## **12. What if a required document is missing or defective?**

If one of the required documents is missing, the EPA Regional Office will contact the monitoring organization to ask for the missing item and to emphasize the importance of coordinating the dates of all three required items.

## **13. Are quality assurance check data to be certified?**

The signing official is required to certify that quality assurance data are completely submitted to AQS. (40 CFR 58.15(a)) This includes the quality assurance check data.

The signing official does not have to certify the accuracy of the quality assurance check data themselves, as he/she must for ambient concentration data. The quality assurance check data are one of the main considerations when the signing official judges the accuracy of the ambient data.

OAQPS uses the quality assurance data to determine which data certification flag to put



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on the data in AQS. (See Question 9)

**14. What about data with split responsibilities, such as for some PM<sub>2.5</sub> speciation monitoring in which an EPA contractor does the laboratory work and gives the monitoring agency a period to review and make changes before the contractor enters the data into AQS?**

Most monitoring agencies send PM<sub>2.5</sub> speciation filters to Research Triangle Institute (RTI) under an EPA-managed contract. OAQPS is aware that some monitoring organizations have in the past chosen not to certify data from PM<sub>2.5</sub> speciation monitors for which chemical analysis is performed by RTI because RTI is not under direct contract and supervision by the monitoring organizations. However, the monitoring regulations require the senior air pollution control officer of state or local agency which operates a monitor (i.e., the agency which manages the monitoring station, changes filters, and does flow checks and maintenance on the monitor) to certify all the data from that monitor, with no exception based on where chemical analyses were performed. This certification must indicate that the ambient data are accurate to the best of his or her knowledge. The certifying official may add additional explicit text if he or she wishes to document what parts of the field versus laboratory operations were performed by his or her agency. OAQPS encourages every monitoring agency using the RTI laboratory service to actively review data provided by RTI prior to it being uploaded into AQS. More information on the data validation process for the RTI laboratory analysis is available at <http://www.epa.gov/ttn/amtic/files/ambient/pm25/spec/05datval.pdf>.

**15. What about situations when PM sampler flow rates are checked for precision and bias by the monitoring agency's own QA program but ambient PM concentration data are all submitted to AQS by an EPA contractor?**

See the response to the question immediately above.

At the present time, neither the monitoring agencies nor RTI are regularly entering data from PM<sub>2.5</sub> speciation sampler flow checks into AQS. OAQPS acknowledges that this is in part because of the lack of a convenient submission process for monitoring agencies to use. When the senior official certifies data from such samplers, he or she may make special note that PM speciation sampler flow rate quality assurance checks from specifically named or described monitors have not been completely submitted to AQS due to the current absence of a suitable submission process. The senior official should nevertheless take into consideration the results of the flow checks conducted by the monitoring agency when declaring that the ambient data is accurate to the best of his or her knowledge.

OAQPS has been working towards a suitable submission process for these flow check data for use in the reporting of PM<sub>2.5</sub> speciation sampler flow checks. We expect to

provide specific instructions later this year to fully support the reporting of these data.

#### **16. What is the role of EPA Regional Offices?**

The EPA Regional Offices should review the data certification package received from the monitoring agency for completeness before sending it to OAQPS (or confirming to OAQPS that an advance copy already received by OAQPS is ready for action), and should retain a copy as the official record of the certification. Any problems discovered in this process should be sent back to the agency collecting the data to be rectified. OAQPS staff will in most cases consult with Regional Office monitoring staff about any complicated cases before setting data certification flags in AQS.

#### **17. Why is a monitor's certification flag re-set to "blank" if a monitoring agency modifies the data for that monitor after EPA first sets the flag? How can a monitoring agency get a non-blank value restored?**

AQS automatically re-sets the certification flag to blank if any deletion, revision, or addition of data causes a change in the value of a summary statistic. AQS is programmed to re-set the data certification flag because the data within AQS are no longer what was originally submitted and certified. The monitoring agency should repeat the normal procedure of submitting a signed certification letter, including submission of a new AMP450 or AMP450NC and a new AMP 255 report. This will allow the Regional Office and OAQPS to repeat their reviews and re-set the certification flag to an appropriate non-blank value, thus informing all data users that the monitoring organization considers the new data set to be accurate and complete. OAQPS will monitor the Critical Review report from AQS for cases in which a flag has been re-set to "blank" and no new certification letter has been received within a month or two, and will ask the Regional Office to remind the monitoring organization to re-submit a certification letter.

#### **18. What items does OAQPS review prior to inserting the certification flag in AQS?**

- Signed certification letter from agency
- AMP450 report
- AMP450NC report
  - Review AMP450 and AMP450NC regarding the quality of the ambient concentration data for each site
- AMP255 report
  - Gaseous pollutants
    - 75 % completeness for each site for 1-point quality control checks
    - Minimum of 1 performance evaluation is performed
  - Pb, PM<sub>10</sub>, PM<sub>2.5</sub>
    - 75 % completeness for each collocation requirement
    - Minimum requirements for number of collocated sites per PQAO
    - Flow rate verification requirements (PM-10 automated only) and semi-

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annual flow rate audits requirements

- Completeness requirements for Pb audit strip analysis