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EPA - TTN - AMTIC Quality Assurance Regulations and Guidance Documents



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### Quality Assurance Regulations and Guidance Documents

This section includes quality assurance related guidance documents.

On This Page:	Links to Other Pages
<ul style="list-style-type: none"><li><a href="#">IMPROVE</a></li><li><a href="#">Air Toxics</a></li></ul>	<ul style="list-style-type: none"><li><a href="#">QA Handbook (Criteria Pollutants - Core)</a></li><li><a href="#">PM<sub>2.5</sub> Speciation QA</a></li><li><a href="#">PM<sub>2.5</sub></a></li></ul>

#### IMPROVE

- [Final IMPROVE Field Audit Standard Operating Procedures \(PDF\)](#) (20pp, 1.4 MB) - 12/12/03
- [IMPROVE Technical Systems Audit Questionnaire \(PDF\)](#) (4pp, 12k) - 12/12/03
- [Performance Audit Standard Operating Procedures for IMPROVE Sampler and Technical System Audit Form - Final \(PDF\)](#) (22pp, 102k) - 7/17/02

#### Air Toxics

- [Quality Assurance Guidance Document - Model Quality Assurance Project Plan for the National Air Toxics Trends Stations - updated version 1.1 \(PDF\)](#) (617 kb) - December 2007
- [Model QAPP for Local-Scale Monitoring Projects \(PDF\)](#) (920 kb) - June 2006
- [National Air Toxics Trends Stations - Quality Management Plan Final \(PDF\)](#) (278 kb) - September 2005
- [Protocol for Model-to-Monitor Comparisons for National Air Toxics Assessment" \(Draft\) \(PDF\)](#) (81 kb) - February 2000

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### Quality Assurance Handbook

[QA Handbook Vol II Final \(PDF\)](#) (4.7 MB) - 12/10/2008

[Section 2.3 -- DRAFT - Reference Method for the Determination of Nitrogen Dioxide in the Atmosphere \(Chemiluminescence\) \(PDF\)](#) (257 kb) - 2/28/2002

[Sec. 2.10 of QA Handbook - Draft - revised to local standard and pressure \(PDF\)](#) (771 kb) - 12/19/1997

[Sec. 2.11 of QA Handbook - Draft - revised to local standard and pressure \(PDF\)](#) (674 kb) - 12/19/1997

[QA Handbook for Air Pollution Measurement Systems: "Volume I: A Field Guide to Environmental Quality Assurance," EPA-600/R-94/038a, April 1994 \(PDF\)](#) (1.7 MB) - 6/22/1999

[QA Handbook Vol II \(DRAFT Procedure for the "Determination of Ozone By Ultraviolet Analysis"\) \(PDF\)](#) (402 kb) - 3/31/1998

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# **Quality Assurance Handbook for Air Pollution Measurement Systems**

## **Volume II**

### **Ambient Air Quality Monitoring Program**

# Exploring the AMTIC: Locating **DRAFT FINAL** – QAPP for the Audit Support Program - NPAP and NATTS



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- [August 6, 2009 memorandum from Chet Wayland to Air Directors regarding National Performance Audit Program/PM2.5 Performance Evaluation Program Implementation Decision Memorandum for Calendar Year 2010 \(PDF\)](#) (9pp, 836k)
- [May 17, 2006 Memo for Monitoring Organization Determination to Implement the National Performance Audit Program or PM<sub>2.5</sub> Performance Evaluation Program \(PDF\)](#) (53pp, 630k)

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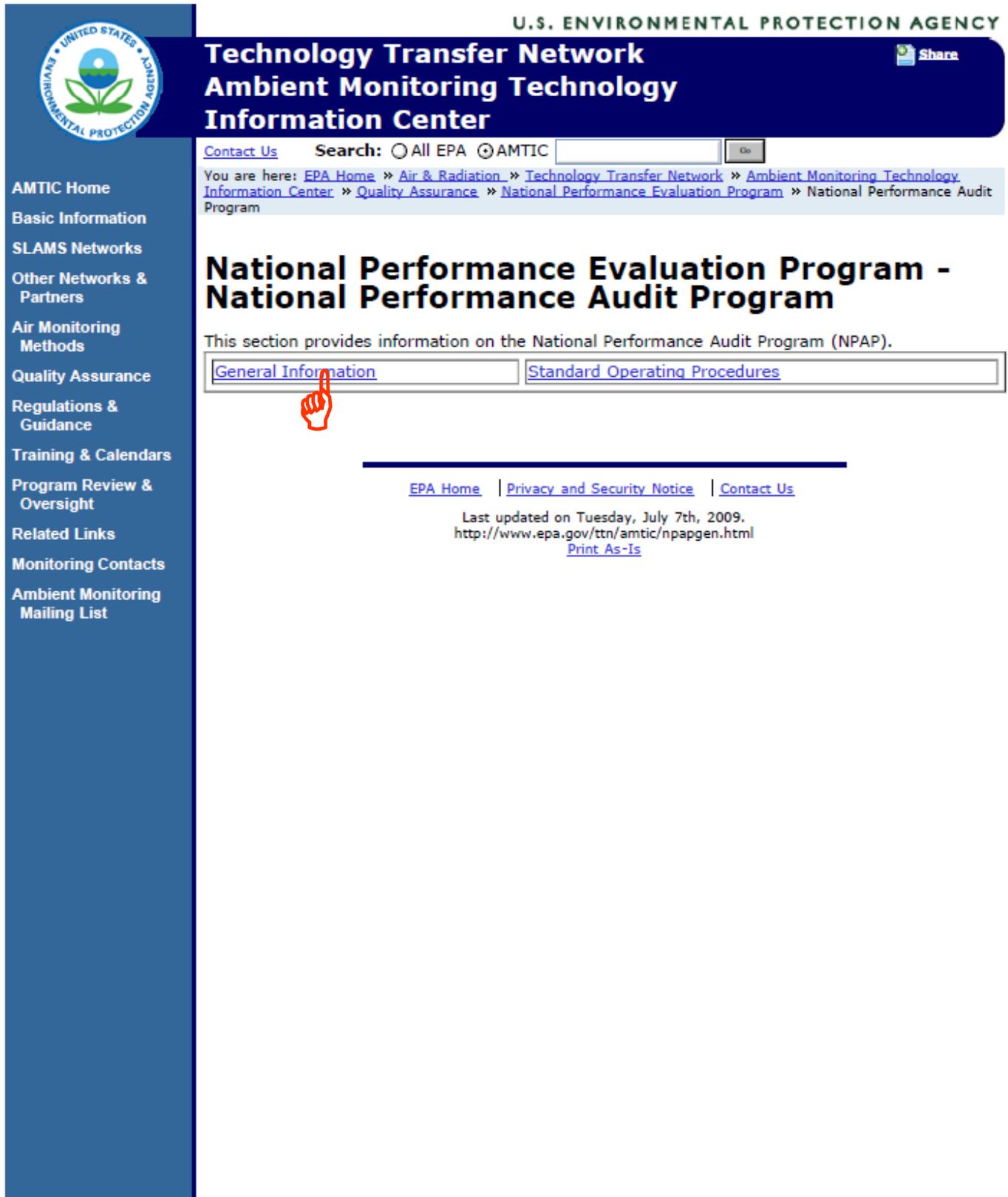
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## National Performance Evaluation Program - National Performance Audit Program

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### National Performance Evaluation Program - National Performance Audit Program (NPAP) - General Information

Description	Date Posted	Bytes	Type
<b>DRAFT FINAL</b> - Quality Assurance Project Plan for the Audit Support Program - NPAP and NATTS	1/29/2009	0.4MB	
NPAP Program Adequacy/Independence Criteria: Monitoring Rule Requirements and Implementing Instructions	7/25/2008	0.3MB	
AIRS Sites Audited by EPA's National Performance Audit Program Volume 1, 1996-2005	06/21/05	292KB	
AIRS Sites Audited by EPA's National Performance Audit Program Volume 2, 1989-1995	06/21/05	292KB	
Through the Probe Mobile Laboratory Information and Towing Specifications	03/14/05	123KB	
Field Instructions for the TECO 175 Multi-Pollutant Audit Device	9/20/2002	186829	
Field Instructions for Auditing PM-10 (SSI) Samplers Using the Reference Flow (ReF) Device	9/20/2002	169203	
Field Instructions for Conducting and Ozone Audit	9/20/2002	54634	
Field Instructions for the Gas Dilution System Multi-Pollutant Audit Device	9/20/2002	111392	
Data Validation for Data Bases of the NPAP Program	9/16/2002	133490	
NPAP QA Project Plan - Zipped WP	7-7-96	11562	
App. A of NPAP QAPP/SOP-QAD-553 - Zipped WP	7-7-96	14761	

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**Quality Assurance Project Plan  
For The  
Audit Support program  
(NPAP-Mailed & TTP; and NATTS)**

Approved by:

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*Keith Kronmiller*  
Project Manager  
Alion Science and Technology

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Mark Shanis  
EPA Work Assignment Manager  
(NPAP-Mailed and TTP)

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Dennis K. Mikel  
EPA Work Assignment Manager  
(NATTS)

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Joe Elkins  
Quality Assurance manager, OAQPS

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*Lewis Weinstock*  
Leader, AAMG

# Exploring the AMTIC: Finding Gravimetric Inter-Laboratory Comparison Study



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EPA - TTN - AMTIC National Performance Evaluation Program (NPEP)



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## PM 2.5 and Chemical Speciation - Quality Assurance - PM 2.5 Performance Evaluation Program

Description	Date	Bytes	Type
PEP Program Adequacy and Independence Criteria: Monitoring Rule Requirements and Implementing Instructions Revised June 30, 2009	6/30/09	50 kb	
Gravimetric Inter-Laboratory Comparison Study	6/15/09	195 kb	
June. 2008 Laboratory Comparison Study of Gravimetric Laboratories Performing PM2.5 Filter Weighing for the PM2.5 Performance Evaluation Program and Tribal Air Monitoring Support	03/30/09	219 kb	
June. 2007 Laboratory Comparison Study of Gravimetric Laboratories Performing PM2.5 Filter Weighing for the PM2.5 Performance Evaluation Program and Tribal Air Monitoring Support	03/30/09	192 kb	
Dec. 2006 Laboratory Comparison Study of Gravimetric Laboratories Performing PM2.5 Filter Weighing for the PM2.5 Performance Evaluation Program and Tribal Air Monitoring Support	03/30/09	110 kb	
May. 2006 Laboratory Comparison Study of Gravimetric Laboratories Performing PM2.5 Filter Weighing for the PM2.5 Performance Evaluation Program and Tribal Air Monitoring Support	03/30/09	49 kb	
PM2.5 FRM Network Federal Performance Evaluation Program Quality Assurance Project Plan (QAPP) March 2009 (QA officer approvals pending)	03/12/09	2.4 MB	
PM2.5 Performance Evaluation Program (PEP) Standard Operation Procedures (SOP) for Field Activities - January 30, 2009 Edition	03/12/09	1.9 MB	
Gravimetric Inter-Laboratory Comparison Study	3/10/09	335 kb	
September 2006 Revised Quality Assurance Guidance Document, Method Compendium "Field Standard Operating Procedures for the PM <sub>2.5</sub> Performance Evaluation Program	10/30/06	3.8 MB	
Review of the Potential to Reduce or Provide a More Cost Efficient Means to Implement the PM <sub>2.5</sub> Performance Evaluation Program (DRAFT)	01/05/06	95 kb	

# Exploring the AMTIC: Finding Gravimetric Inter-Laboratory Comparison Study



## TECHNICAL MEMORANDUM

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**TO:** Dennis Crumpler / OAQPS  
**FROM:** Eric Boswell / NAREL  
**AUTHOR:** Steve Taylor  
**DATE:** June 15, 2009  
**SUBJECT:** Gravimetric Inter-Laboratory Comparison Study

### Introduction

The National Air and Radiation Environmental Laboratory (NAREL) has completed another gravimetric comparison study to evaluate laboratories that weigh Teflon® filters used in  $PM_{2.5}$  air monitoring programs. EPA labs that routinely participate in this study include the Region 4 laboratory in Athens, GA; the Region 2 laboratory in Edison, NJ; the Radiation and Indoor Environments Laboratory (R&IE) in Las Vegas, NV; and the Office of Air Quality Planning and Standards (OAQPS) laboratory in Research Triangle Park (RTP), NC. The Region 4 laboratory provides pre- and post-weighing of filters for the  $PM_{2.5}$  Performance Evaluation Program (PEP). The R&IE Laboratory provides pre- and post-weighing of Teflon® filters in support of the Tribal Air Monitoring Support (TAMS)  $PM_{2.5}$  air monitoring program. Region 2 provides quality assurance oversight of laboratories in the region that weigh filters for the  $PM_{2.5}$  program. The OAQPS laboratory performs special studies and serves as a backup weighing facility for the  $PM_{2.5}$  PEP. A fifth participant included in this study for the first time was the Arizona Department of Environmental Quality (ADEQ) Air Filter Laboratory (AFL). ADEQ's AFL provides gravimetric analysis of particulate matter concentrations on filter media for the agency's air monitoring program. NAREL coordinated this study by supplying performance evaluation (PE) samples and served as the reference laboratory.

Mass determination of  $PM_{2.5}$  is performed using a microbalance to weigh the Teflon® collection filter before and after the sampling event. The amount of particulate matter ( $PM_{2.5}$ ) captured onto the surface of the filter can be calculated by a simple subtraction of the tare or pre-mass from the loaded filter or post-mass. In order to accurately measure particulate mass at microgram levels, the microbalance must be located in a clean, dust free environmental chamber with precise temperature and humidity control. Elimination of static from samples is also very important for accurate mass measurements.

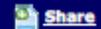
All laboratories participating in this study are equipped with microbalances capable of mass measurements of one microgram sensitivity. NAREL, Region 4, R&IE, OAQPS, and ADEQ laboratories perform mass measurements inside environmentally controlled weighing rooms in order to maintain a constant temperature and humidity and to control dust contamination. The Region 2 laboratory utilizes a glove box that has been modified with temperature and humidity controls as well as HEPA filtered air to maintain constant environmental conditions. Samples are conditioned and weighed inside the modified glove box.

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### Precision and Accuracy Reporting System (PARS)

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Description	Date Posted	Bytes	Type
<a href="#">Frequently Asked Questions About the AMP 255 Report (PDF)</a> (493 kb) - 08/28/09	08/28/09	493 kb	 
<a href="#">2007 Criteria Pollutant Quality Indicator Summary Report for AQS Data (ZIP)</a> (28.2 MB) - 07/22/09	07/22/09	28.2 MB	
<a href="#">2008 Quality Management Plan and Quality Assurance Project Plan Tracking Matrix as of June 27, 2008 (PDF)</a>	07/07/08	800 kb	
<a href="#">2007 Quality Management Plan and Quality Assurance Project Plan Tracking Matrix as of June 25, 2007 (PDF)</a>	10/17/07	300 kb	
<a href="#">2006 Criteria Pollutant Quality Indicator Summary Report for AQS Data (ZIP)</a>	09/12/07	30 MB	
<a href="#">Guideline on the Meaning and the Use of Precision and Bias Data Required by 40 CFR part 58 Appendix A - Version 1.1 (PDF)</a>	10/17/07	616 kb	
<a href="#">Data Assessment Statistical Calculator (DASC) - The software to assist those in calculating the new precision and bias statistics (MS Excel)-- MS Excel File Type</a>	10/17/07	1.1 MB	
<a href="#">Companion Document for the Single Point Precision and Bias Graphics for Gaseous Criteria Pollutants Box-and-Whisker Plots (PDF)</a>	10/30/06	127 kb	
<a href="#">CY 2005 Completeness, Precision and Bias Data Summaries for the Criteria Pollutant of the Ambient Air Monitoring Program (ZIP)</a>	07/26/06	30 MB	
<a href="#">CY 2004 Completeness, Precision and Bias Data Summaries for the Criteria Pollutant of the Ambient Air Monitoring Program (ZIP)</a>	12/16/05	30 MB	
<a href="#">Proposal: New Method for Estimating Precision and Bias for Gaseous Automated Methods for Ambient Air Monitoring Program (PDF)</a>	12/14/05	99 kb	
<a href="#">CY 2003 Completeness, Precision and Bias Data Summaries for the</a>			

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# Exploring the AMTIC: Finding “Questions and Answers Related to the New AMP-255 Report”

## Questions and Answers Related to the New AMP-255 Report

In 2009 the National Air Data Group (NADG) revised the AMP-255 report based on QA regulation that were revised in 2006 and more recently with the changed in the Pb NAAQS in 2008. In addition monitoring organizations had commented that the older version of the AMP-255 had too many tables and was cumbersome to review. NADG revised to AMP-255 into fewer tables and also added summary report in PDF format.

So far, comment on the new report are positive but there are a few features that have caused some concern in the new version that will be discussed below. A few have already been rectified. The issues will be discussed in a question and answer format.

**Q1: The semi-annual flow rate audits (40 CFR Part 58 App A Section 3.2.4) for particulate matter require 2 audits per year. I’ve done at least 2; sometimes I do more. Why does the AMP-255 report indicate that I have not met the criteria?**

**Answer-** The regulation states “Every 6 months audit the flow rate of the PM<sub>10</sub> PM<sub>10-2.5</sub> and PM<sub>2.5</sub> particulate analyzers.” Example 1 illustrates a flow rate audit page for the AMP-255.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM  
**DATA QUALITY INDICATOR REPORT**  
Semi-Annual Flow Rate Audits

Jul. 6, 2009

Pollutant: PM10 App A7: Yes

Year	Region	State	Site ID	POC	MT	Begin Date	End Date	# Req	#Q w/ Data	% Complete	Criteria Met?	Q1	Q2	Q3	Q4	Avg %d	Flow Rate Conf. Limits Lower/Upper	% Between Conf. Limits	
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	Y	1	0	1	0	6.3			
2008				1	SP	01-JAN-08	31-DEC-08	2	2	100	N	1	0	0	1	-0.4			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	Y	1	0	1	0	6.9			
2008				3	SP	01-JAN-08	31-DEC-08	2	2	100	Y	0	1	0	1	6.4			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	N	1	0	1	0	6.7			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	N	0	1	0	1	2.1			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	Y	0	1	0	1	-1.1			
2008				3	SP	01-JAN-08	28-OCT-08	2	2	100	N	1	0	1	0	6.4			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	N	1	0	1	0	6.9			
2008				3	SP	01-JAN-08	31-DEC-08	2	2	100	N	1	0	1	0	-0.2			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	Y	0	1	0	1	6.7			
2008				1	S	01-JAN-08	31-DEC-08	2	2	100	N	0	1	0	1	6.6			
2008				2	QA	01-JAN-08	31-DEC-08	2	2	100	N	0	1	0	1	1.8			
2008				3	SP	01-JAN-08	31-DEC-08	2	2	100	N	0	1	0	1	6.5			
2008								38	38	100	42	10	9	10	10	6.7	-2.70	3.44	95
SUMMARY								38	38	100	42	10	9	10	10	6.7	-2.70	3.44	95

**Example 1**

**Audits either > 7 months apart or <5 months**

For the “Criteria Met” column to be a “Y”, two criteria must be met:

- 1) There must be enough audits for the site based on the sites’ begin and end date. If the site operates > 7 months then 2 are required. If the site operates <3 months an audit is not required. If a site operates > 3months but < 7 months, 1 is required.
- 2) The audits must be conducted within a 5 to 7 month period. Since the audits are required every 6 months they should not be conducted too close to each other or too far apart. EPA set the criteria in a AMP-255 that audits conducted within 5 to 7 months would be a reasonable achievement of the requirements. In the case above, even though two audits were accomplished, the audits were either less than 5 months apart or greater than 7 months apart. In Example 2 below (bounded in red) even though 3 audits were

# Exploring the AMTIC: Finding Annual Speciation Data Quality Reports

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### Announcements

The 2009 National Ambient Air Monitoring Conference will be held Nov. 2-5 in Nashville TN. [Click here](#) to learn more and register.



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Last updated on Tuesday, July 7th, 2009.  
<http://www.epa.gov/ttn/amtic/qapollutant.html>  
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EPA - TTN - AMTIC National Air Monitoring Strategy

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## PM 2.5 and Chemical Speciation - Quality Assurance Documents

<a href="#">PM<sub>2.5</sub> Speciation Lab Audit Reports and Assessments</a>	<a href="#">PM<sub>2.5</sub> Speciation Field Guidance Documents</a>
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Last updated on Thursday, June 4th, 2009.  
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## PM 2.5 and Chemical Speciation - Speciation - Quality Assurance Documents - Field Guidance Documents

Description	Date	Bytes	Type
2008 Technical System Audit and PM2.5 Chemical Speciation Sampler Audit Worksheets	04/21/08	0.2 MB	
Interim "Standard Operating Procedure (SOP) for the URG 3000N Sequential Particulate Speciation System (Sampler) Version (1.0).	04/16/07	2.1MB	
Final IMPROVE Field Audit Standard Operating Procedures	12/12/03	1.4MB	
Final Met One SASS Field Audit Standard Operating Procedures	12/12/03	1.2MB	
Final URG MASS Field Audit Standard Operating Procedures	12/12/03	576KB	
Final Andersen RASS Field Audit Standard Operating Procedures	12/12/03	607KB	
IMPROVE Technical Systems Audit Questionnaire	12/12/03	12KB	
Speciation Sampler Technical Systems Audit Questionnaire	12/12/03	26KB	
Performance Audit Standard Operating Procedures for IMPROVE Sampler and Technical System Audit Form - Final	07/17/02	88495108	
Performance Audit Standard Operating Procedures for PM <sub>2.5</sub> Speciation Samplers and Technical System Audit Form	06/24/02	58766	
Quality Management Plan for the PM <sub>2.5</sub> Speciation Trends Network	07/19/01	329900	
"Speciation Trends Network Quality Assurance Project Plan"	02/28/01	1000009	

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EPA Quality System



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### EPA's Quality System for Environmental Data and Technology

EPA uses its Quality System to manage the quality of its environmental data collection, generation, and use. The primary goal of the Quality System is to ensure that our environmental data are of sufficient quantity and quality to support the data's intended use. Under the EPA Quality System, EPA organizations develop and implement supporting quality systems. Similar specifications may also apply to contractors, grantees, and other recipients of financial assistance from EPA.

**Quality Management Conference**  
The 2009 EPA Quality Management Conference took place May 12-14, 2009 in San Antonio, Texas. The presentation and training materials are now available on our [conference Web site](#).

**News**  
**NFW** The new EPA Quality Program Policy and Procedure for Agency products and services issued in October 2008 is now available. [EPA Quality Program Policy - CIO 2106.0](#) (PDF 11pp, 129K) and [Procedure - CIO 2106-P-01.0](#) (PDF 17pp, 340K).  
The Agency is transitioning to a new numbering scheme for the EPA Quality System Policy and Manual for environmental data and technology. EPA Order 5360.1 A2 is now [CIO 2105.0](#) (PDF 12pp, 94K [About PDF](#)) and EPA Manual 5360 A1 is [CIO 2105-P-01-0](#) (PDF 62pp, 169K [About PDF](#)). During the transition you may see one or both of the above numbers referenced. **The contents of the Quality System policy and manual have not changed.** Only the document numbers have changed.

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#### Common Starting Points

- If you are developing a Quality Management Plan, see [Quality Management Tools - Quality Management Plans](#).
- If you are writing a Quality Assurance Project Plan, see [Quality Management Tools - Quality Assurance Project Plans](#). Also see [Quality Management Tools - Systematic Planning](#) for information about planning your project before you document this planning in a QA Project Plan.
- If you are looking for a typical example of documentation for your specific-project, ask the