



DATA CERTIFICATIONS

2024 Annual Data Certification Training

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WHAT IS DATA CERTIFICATION?



Required May 1st submittal to the Regional Administrator by 40 CFR §58.15: a PQAO attests the completeness and accuracy of the previous year's data collected by approved monitors at SLAMS and SPM sites that meet CFR QA/QC criteria.

Data certification requirements may also be in other agreements.

EPA does not “validate” or “certify” data submitted by an agency but does review the data and enters EPA evaluation flags.

WHAT IS DATA CERTIFICATION? CONTINUED



Data should be verified and validated prior to the data certification process.

The data certification package:

- A data certification cover letter

- AMP600 Report (for criteria pollutants) – signed with certifying agency

- AMP450 NC Report for any PMcoarse (PM10-2.5) and/or 5-min SO₂ data

DATA CERTIFICATION FLAGS AND THEIR MEANINGS

Flag Value	Application
X	Certification is not required by 40 CFR 58.15 and no conditions apply to be the basis for assigning another flag value
U	Uncertified. The certifying agency 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.
S	The certifying agency has submitted the certification letter and required summary reports. A value of "S" conveys no Regional assessment regarding data quality per se. This flag will remain until the Region provides an "N" or "Y" concurrence flag.
N	The certifying agency has submitted the certification letter and required summary reports, but the certifying agency and/or EPA has determined that issues regarding the quality of the ambient concentration data cannot be resolved due to data completeness, the lack of performed quality assurance checks or the results of uncertainty statistics shown in the AMP256 report or the certification and quality assurance report.
Y	The certifying agency 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.

Can be found in the data certification guidance documents, AMTIC webpage, and AQS webpage.

AMP600 COLOR CODING

In the data certification guidance documents on AMTIC webpage.

Check the guidance documents annually for any changes to the process or AMP600.

NOTE: 3 Yellow Flags trigger an red AQS “N” flag.

Assessment	Current CFR Requirement or Guidance	Green (Acceptable)	Yellow (Warning)	Red (Recommend N Flag)	Comments
Technical Systems Audit	PQAO every 3 years	TSA within 3 years	TSA within 4 years	TSA > 5 years	Not a monitoring Org responsibility. Will be reported on summary page not by pollutant
Gaseous Criteria Pollutants					
Routine Data Completeness	75%	≥80%	79-70%	<70%	Based on CFR criteria for data use 100* Number of hourly obs/number of hours in monitor sample period ¹
QAPP Approval	Approval date within 5 years of current date	Approval date within 5 years of current date	Approval date between 5-10 years	Not approved and/or approval date greater than 10 years	Could be sole reason for “N” flag if QAPP not approved.
1-Point QC Completeness	75%	≥75%	65-75%	<65%	Based on 26, 1-point QC for a year. Calculated based on the number of days the monitor operated.
1-Point QC Precision	<7.1% O3, <10.1% CO, SO2 <15.1% NO2	≤7.1% O3, <10.1% CO, SO2 <15.1% NO2	8-20% O3 11-25% CO, SO2 16-25% NO2	> 20% O3 > 25% others	Based on all valid 1-point QC checks in AQS for the year. Value should reflect AMP256 value
1-Point QC Bias	≤±7% O3, <±10.1% CO, SO2 <±15.1% NO2	≤±7% O3, <±10.1% CO, SO2 <±15.1% NO2	± 8-20% O3 ±11-25% CO, SO2 ±16-25% NO2	> ±20% O3 > ±25% others	Based on all valid 1-point QC checks in AQS. Value should reflect AMP256 value
Annual PE Completeness	1 PE/year 3 audit levels	1 PE/year 3 audit levels	1 PE/year 2 audit levels	No PE or 1 audit level	Will not count more than one actual value in an audit level. For example, two audits in one level count as 1 audit level.
Annual PE Bias O3, SO2, NO2, CO	< ±1.5 ppb / < ±15.1% ≤±0.03 ppm/ ± 15%	≤ ±1.5 ppb / ±15% ≤ ±0.03 ppm/ ± 15%	≤ ± 1.6-3.0 ppb / ± 16-25% ≤ ± 0.04-0.06 ppm/ ± 16-25%	> ±3.0 ppb / ± 25% > ±0.06 ppm/ ± 25%	Average PD of all PE values for the monitor
NPAP Audit Completeness -PQAO	20% of sites in PQAO	20% of sites in PQAO	10-19% of sites in PQAO	<10% of sites in PQAO	Not a monitoring Org responsibility. Will be marked as “Y”
NPAP Bias	< ±10.1% O3 < ±15.1% others	< ±10.1% O3 < ±15.1% others	± 10.1-20% O3 ±15.1-25% others	> ±20% O3 > ±25% others	median PD for all values at a site and median PD for PQAO level estimate
NPAP Audit Completeness -Site	4 levels	4 levels	2-3 levels	≤1 level	Not a monitoring Org responsibility
Outliers					Not implemented in 2018

HOW THE AMP600 CRITERIA WORKS

Certification Report for Particulate Matter

Certifying Year: 2012
 Certifying Agency: [REDACTED]
 Parameter: PM2.5 - Local Conditions (88101)
 PQAO Name: [REDACTED]
 Quality Assurance Project Plan Approval Date: [REDACTED]

Collocation Summary									PEP Summary					
Method	# Sites	# Sites Reg	# Sites Collocated	% Collocated	CV Est	CV UB	Criteria Met?	# Methods	# Audited Methods	# PEP Required	# PEP Submitted	% Complete	Bias	Criteria Met?
145	4	1	1	100	10.87	12.07	Y	1	1	5	2	40	+5.41	Y

Monitors Summaries

AQS Site ID	POC Method	Monitor Type	Routine Data (ug/m3)				Exceed. Out		Flow Rate Audit		Collocation		PEP		Certification		
			Mean	Min	Max	Count	Count	% Complete	Bias	% Complete	CV	% Complete	PQAO Crit. Me	PQAO Crit. Met	QAPP Appr.	AQS Rec Value	Req Value
-0004	1	145	SLAMS	6.72	.8	16.7	0	87	+1.22	100	Y	Y	Y	Y	Y	Y	Y
-0007	1	145	SLAMS	4.55	.6	18.1	0	93	+0.53	100	Y	Y	Y	Y	Y	Y	Y
-0012	1	145	SLAMS	6.73	.4	19.9	0	92	+1.22	100	12.07	100	Y	Y	Y	Y	Y
-0012	2	145	SLAMS	6.95	.8	17.7	0	90	+1.07	100	Y	Y	Y	Y	Y	Y	Y
-0002	1	145	SLAMS	8.93	1.8	33.0	0	92	+0.75	100	Y	Y	Y	Y	Y	Y	Y

PEP PQAO Criteria is based on Bias estimate, not completeness.

Some flags are generated at a PQAO level and affect every monitor's AQS recommended flag.

THE DATA CERTIFICATION PROCESS



STEP 1: RUN REPORTS

1. Run the AQS Monitor Description Report (AMP390) - If a certifying agency role is not designated, then the monitor will not appear in the AMP600.
2. Run the Certification Evaluation and Concurrence Report (AMP600) - AQS will recommend a certification flag for each monitor based on 40 CFR Part 58 criteria.
3. Run the QA Data Quality Indicator Report (AMP256) to get a more detailed look at the QA data.



RUNNING AN AMP600 IN AQS

The screenshot shows the 'Standard Report Criteria Selection (National Air Data Group) AMP600' window. The 'Data Selection' tab is selected and circled in red. The interface is divided into several sections: 'Monitor / Geographic Criteria' with a table for State Code, County Code, and Site Id; 'Protocol Criteria' with a table for Pollutant Type and Parameter Code; 'Date Criteria' with Start Date and End Date fields; and 'Agency Role' and 'Agency' fields. A 'Generate Report' button is circled in red at the bottom. A yellow box contains the text: 'In this tab fill out all the necessary cells (at a minimum the ones highlighted in yellow on this slide)'. The 'Generate Report' button and the 'Agency' field are also highlighted in yellow.

Standard Report Criteria Selection (National Air Data Group) AMP600

Criteria Set **Data Selection** Sort Order Report Options Retrieve Reports

Monitor / Geographic Criteria

State Code	County Code	Site Id

In this tab fill out all the necessary cells (at a minimum the ones highlighted in yellow on this slide).

Protocol Criteria

Pollutant Type	Parameter Code

Date Criteria

Start Date: [] End Date: []

Agency Role: CERTIFYING

Agency: []

Generate Report

Record: 1/1

THE AMP600 REPORT SUMMARY PAGE

Data Evaluation and Concurrence Report Summary					Jul. 22, 2014	
Certification Year:		2012				
Certifying Agency (CA):		[REDACTED]				
Pollutants in Report:						
<u>Parameter Name</u>	<u>Code</u>	<u>Monitors Evaluated</u>	<u>Monitors Recommended for Concurrence by AQS</u>	<u>Monitors NOT Recommended for Concurrence by AQS</u>		
Carbon monoxide	42101	3	3	0		
Nitrogen dioxide (NO2)	42602	2	2	0		
Ozone	44201	16	14	2		
PM10 Total 0-10um STP	81102	8	7	1		
PM2.5 - Local Conditions	88101	12	9	3		
Sulfur dioxide	42401	4	4	0		
PQAOs in Report:						
<u>PQAO Name</u>	<u>PQAO Code</u>	<u>TSA Date</u>				
[REDACTED]	[REDACTED]	09/27/12				
Summary of 'N' flags for all pollutants:			AQS Recommended	Cert. Agency Recommended		
<u>PQAO</u>	<u>Code</u>	<u>AQS Site-ID</u>	<u>POC</u>	<u>Flag</u>	<u>Flag</u>	<u>Reason for AQS Recommendation</u>
[REDACTED]	44201	[REDACTED]-1100	1	N	[REDACTED]	Annual Performance Evaluation Audit Missing or 1 Level.
[REDACTED]	44201	[REDACTED]-0032	1	N	[REDACTED]	Annual Performance Evaluation Audit Missing or 1 Level.
[REDACTED]	88101	[REDACTED]-0016	2	N	[REDACTED]	Annual Summary completeness < 70%.
[REDACTED]	88101	[REDACTED]-0014	1	N	[REDACTED]	Annual Summary completeness < 70%.
[REDACTED]	88101	[REDACTED]-0103	1	N	[REDACTED]	PQAO-Level Collocation criteria not met.
[REDACTED]	81102	[REDACTED]-0014	1	N	[REDACTED]	Flow Rate Audit completeness < 65%.
Signature of Monitoring Organization Representative: _____						

Make sure the report is signed here before submittal.



STEP 2: DATA REVIEW AND CORRECTION

If you see “N” flags in the AMP 600 check the following:

1. Has any data not been submitted?
2. Should data be invalidated and removed from AQS?
3. Run an AMP256 and/or AMP390 to get more details.

The AQS recommended flags cannot be altered - it is based on the AMP600 criteria.

Use the AQS [Certification Form](#) to enter your certifying agency flags.

THE AQS CERTIFICATION FORM

Year	AQS Monitor ID	AQS Recommended Flag	Monitoring Agency Request	EPA Evaluation Value	Monitoring Agency Comment	Region Comment
2012	44201-2	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-2	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	Y	Y			
2012	44201-1	N	★			
2012	44201-1	N	★			
2012	44201-1	Y	Y			

An agency can choose to put in a different flag than the AQS flag and provide a comment. "M" flags indicate data was changed after certification and needs recertification.

SAVE your changes before leaving the certification form!

For the ★ monitors, until the agency enters their flags, EPA Evaluation Flags will not be added.

THE AMP600 POLLUTANT PAGE

After CA Flags
are Entered

Certifying Year 2012
 Certifying Agency Code [REDACTED]
 Parameter Ozone (44201) (ppm)

PQAO Name [REDACTED]
 QAPP Approval Date 06/23/2009

NPAP Audit Summary: Number of Valid Audits 7 NPAP Bias 1.21951 Criteria Met Y

AQS Site ID	POC Monitor Type	Routine Data						One Point Quality Check			Annual PE		NPAP		Concur. Flag			
		Mean	Min	Max	Exceed. Count	Outlier Count	Perc. Comp.	Precision	Bias	Complete	Bias	Complete	Bias	PQAO Level Criteria	QAPP Appr.	Aqs Rec Flag	CA Rec Flag	Epa Concur
[REDACTED]-0014	2 SPM	0.042	0.016	0.085	0	0	93	2.95	+/-2.39	100	- 3.54	100		Y	Y	Y	Y	Y
[REDACTED]-1100	1 TRIBAL	0.038	0.014	0.059	0	0	91	1.87	+/-1.36	100	- 0.43	100		Y	Y	Y	Y	Y
[REDACTED]-2003	1 SLAMS	0.046	0.014	0.094	0	0	99	1.52	+3.35	100	0.90	100	0.00	Y	Y	Y	Y	Y
[REDACTED]-0102	1 SLAMS	0.047	0.024	0.080	0	0	98	2.64	+/-1.99	100	- 3.74	100	1.01	Y	Y	Y	Y	Y
[REDACTED]-0103	1 SLAMS	0.044	0.017	0.078	0	0	95	1.43	-2.56	100	- 1.35	100	1.22	Y	Y	Y	Y	Y
[REDACTED]-2005	1 SLAMS	0.042	0.014	0.082	0	0	99	1.40	+/-1.28	100	- 2.02	100		Y	Y	Y	Y	Y
[REDACTED]-0004	2 SLAMS	0.043	0.021	0.087	0	0	96	4.69	+/-3.63	100	0.41	100		Y	Y	Y	Y	Y
[REDACTED]-3001	1 SPM	0.038	0.010	0.081	0	0	99	0.93	+/-1.13	100	- 1.41	100		Y	Y	Y	Y	Y
[REDACTED]-1100	1 TRIBAL	0.040	0.019	0.071	0	0	89	1.53	+/-1.04	100		0	3.70	Y	Y	N		★
[REDACTED]-4008	1 SLAMS	0.041	0.018	0.069	0	0	99	2.27	+/-1.96	100	0.67	100		Y	Y	Y	Y	Y
[REDACTED]-0006	1 SPM	0.043	0.014	0.108	0	0	99	8.98	+/-5.88	100	0.07	100	1.00	Y	Y	Y	Y	Y
[REDACTED]-0019	1 SPM	0.040	0.021	0.075	0	0	98	3.91	+/-3.60	100	0.72	100		Y	Y	Y	Y	Y
[REDACTED]-0032	1 TRIBAL	0.038	0.011	0.062	0	0	99	1.27	+/-1.46	100		0		Y	Y	N		★
[REDACTED]-0038	1 SPM	0.044	0.011	0.094	0	0	99	1.89	+3.68	100	3.43	100		Y	Y	Y	Y	Y
[REDACTED]-0040	1 SPM	0.044	0.017	0.088	0	0	98	1.13	+2.30	100	2.61	100		Y	Y	Y	Y	Y
[REDACTED]-2002	1 SLAMS	0.047	0.016	0.096	0	0	99	1.59	+/-1.82	100	0.30	100	1.89	Y	Y	Y	Y	Y

"M" FLAGS + CA & AQS FLAGS THAT DIFFER

Monitors Summaries

AQS Site ID	POC	Monitor Type	Routine Data (ug/m3)					Flow Rate Verification		Flow Rate Audit		QAPP Appr.	Concurrence Flag				
			Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Bias	% Complete	Bias		% Complete	AQS Rec Flag	CA Rec Flag	EPA Rec Concur	
1011	2	SLAMS	16.62	.0	491.0	0	0	97	+0.19	75	-0.22	100	Y	Y	Y	M	

Parameter: PM10 Total 0-10um STP (81102) INTERMITTENT
 PQA Name: [REDACTED]
 Quality Assurance Project Plan Approval Date: 10/15/2011

Collocation Summary

# Sites	# Sites Req	# Sites Collocated	% Collocated	CV Est	CV UB	Criteria Met?
5	1	1	100	8.87	10.93	Y

Monitors Summaries

AQS Site ID	POC	Monitor Type	Routine Data (ug/m3)					Flow Rate Audit		Collocation		PQA Crit. Met	QAPP Appr.	Concurrence Flag			
			Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Bias	% Complete	CV			% Complete	AQS Rec Flag	CA Rec Flag	EPA Rec Concur
0011	2	SLAMS	15.25	2.0	54.0	0	0	96	+0.66	100			Y	Y	Y	Y	Y
0015	2	SPM	21.32	8.0	60.0	0	0	86	+0.36	100	10.93	86	Y	Y	Y	Y	Y
0015	3	SPM	19.96	8.0	62.0	0	0	93	+0.78	100			Y	Y	Y	Y	Y
0103	2	SPM	6.15	2.0	19.0	0	0	95	-1.20	100			Y	Y	Y	Y	Y
0016	2	SLAMS	13.84	2.0	61.0	0	0	91	-0.93	100			Y	Y	Y	Y	Y
0002	3	SLAMS	17.66	2.0	89.0	0	0	96	+0.03	100			Y	Y	Y	Y	Y
0014	1	SLAMS	19.22	2.0	80.0	0	0	91	+/-	0			Y	Y	N	Y	N

Submitter Comment: Flow Rate Audit Completeness 75% according to AMP250 EPA Comment:

"M" flags indicate a change to the data was made after certification. In this case, the CA has already changed their "M" flag to another flag. This indicates the data needs recertification.

A CA comment is needed if the CA flag disagrees with the AQS recommended flag.

STEP 3: DATA CERTIFICATION

1. Rerun the AMP600 - Verify flags and comments have been entered.
2. Sign the cover letter and AMP600 report and submit with AMP reports or other documentation.

NOTE: EPA Evaluation Flags are not Concurrence Flags!

CERTIFICATION PROCESS: THOUGHTS AND STEPS FORWARD



Use the certification process often - don't wait until May to run the reports!

Think of it like taxes! The IRS recommends not waiting until the last minute to file - same for certification.



For more Q&A please see the guidance and webinars posted on the AMTIC Certification webpage.

Questions:

1. What to do if data values are changed (removed or corrected). What happens to the data if it isn't recertified?
2. How to handle issues at the PQA level and not at the local level - such as collocation not being met at PQA level?

Answers:

1. Recertification is needed. Please work with your Regional Office contact on recertification packages. Uncertified data is identified as questionable and may or may not be used for determinations.
2. Work with your regional office contact. They can help determine what requirements are needed and which flags/comments would be appropriate.



CONTINUED

For more Q&A please see the guidance and webinars posted on the AMTIC Certification webpage.

Questions:

3. How are issues corrected?
4. Are there rules for the comments in AQS, especially for any issues identified?

Answers:

3. This depends on the issue and how much data may be affected. If data is changed, please see the answer to Question #1. If issues are identified, work with your Regional Office contact to identify a resolution.
4. There is no limit to the number of characters/words that can be entered into the comment section of the AQS Certification Form/AMP600 Comment area.

RESOURCES

[40 CFR Part 58](#)

[AMTIC QA](#)

[Data Certification Webpage](#)

[AQS Webpage](#)

Questions or Problems with AQS or Data Certifications Contact:

Your EPA Regional Office AQS Contact – current contacts identified in the data certification guidance document

[The Exchange Network Services Center \(ENSC\)](#)

8:00 AM - 6:00 PM (EST)

1-888-890-1995 - choose option 2 for Node Helpdesk Support

nodehelpdesk@epacdx.net