Data Certification

CARB PQAO Training 2017

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EPA Region 9

OVERVIEW

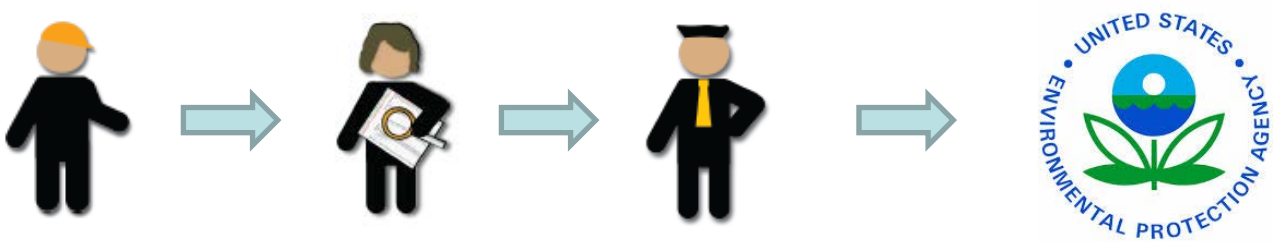
1. Definitions
2. Requirements/Monitoring Rule
3. Roles
4. Criteria in AMP 600
5. Troubleshooting/Best Practices
6. EPA Interpretation and Use
7. Available Resources

DATA CERTIFICATION

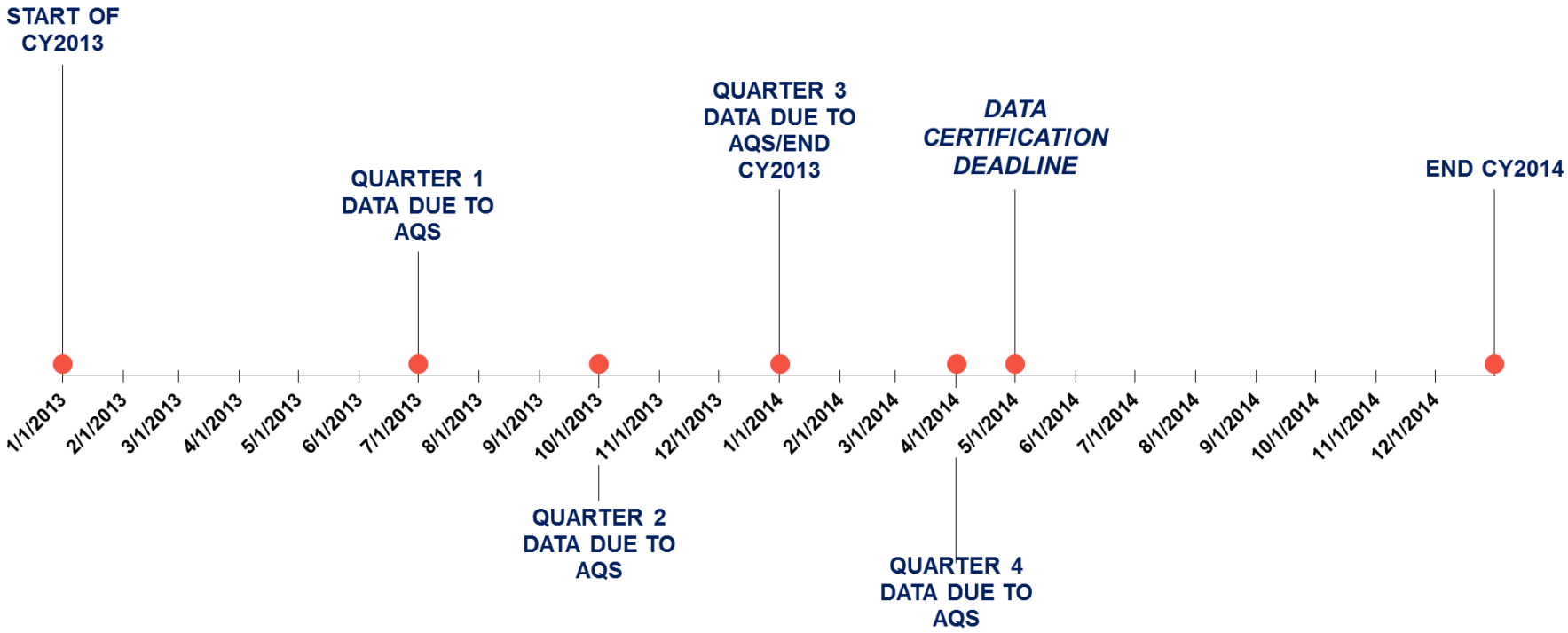
1. The ambient concentration data and the quality assurance data are completely submitted to AQS, and that
2. The ambient data are accurate to the best of his or her knowledge taking into consideration the quality assurance findings.

Interpretation:

The agency is formally asserting that the all the required data have been submitted to AQS and have been through the data validation process and are accurate.



DATA SUBMITTAL REQUIREMENTS



CHANGES TO CERTIFICATION REQUIREMENTS

- New "Monitoring Rule"
  - Effective date: April 27, 2016
  - 2016 data certification (May 1, 2017)
- Only applies to *criteria pollutants using FRM/FEM methods*
  - Excludes $PM_{2.5}$ speciation, met data, and most PAMS data
  - No longer need to submit AMP 450NC – " Non Criteria Pollutant Quicklook Report"
  - New requirement to submit $PM_{2.5}$ flow rate verifications to AQS

DATA CERTIFICATION ROLES

Field Operations

- Performing QC Checks
- Performing QA Audits

Data Validation/AQS

- Review of Ambient and QA/QC Data
- Data submittal to AQS
- *Submittal of QAPP approval Dates and PEP/NPAP Results*

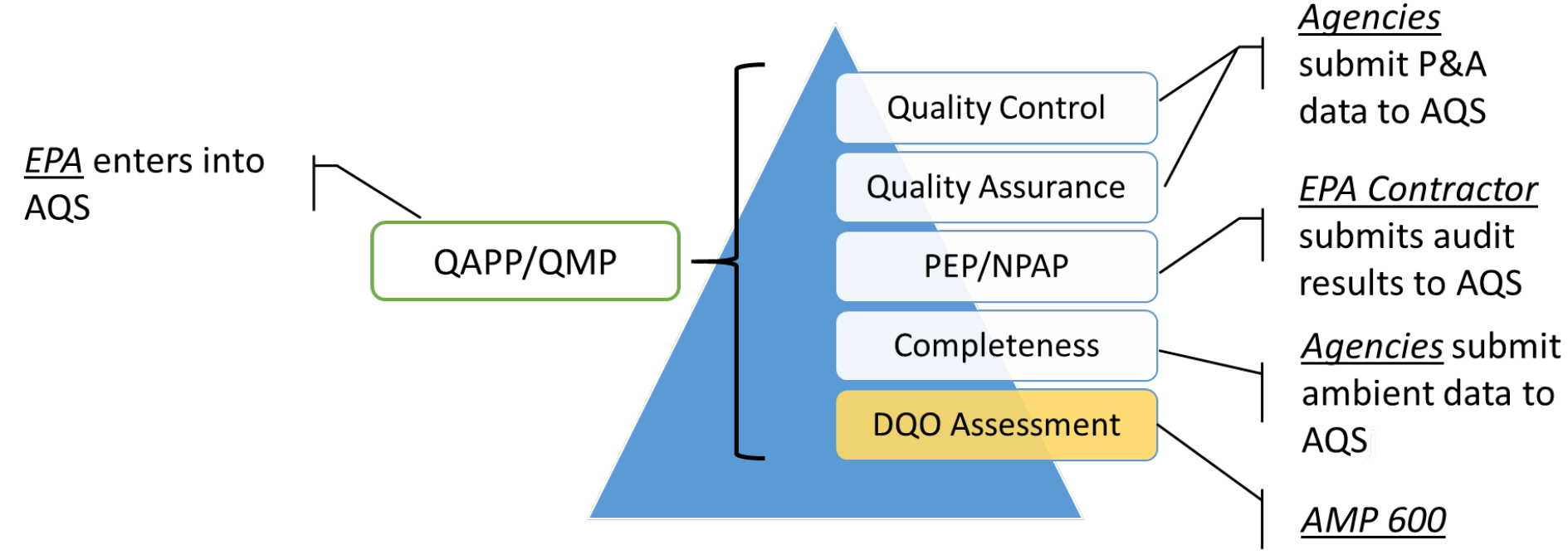
Data Review/ Submittal

- Editing AMP 600 and Justifications for "N" values
- Letter

Tracking/ Review

- *Completeness Review*
- *AQS Flags*

DATA CERTIFICATION ROLES



Assessment	Current CFR Requirement or Guidance	Green (Acceptable)	Yellow (Warning)	Red (Recommend N Flag)	Comments
PM2.5 Criteria					
Routine Data Completeness	75%	≥80%	80-70%	<70%	Based on CFR criteria for data use 100 * number of creditable samples/number of scheduled samples in monitor sample period
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.
Flow Rate Audit Completeness	2 /year every 6 months	2/year every 5-7 months or 3 or 4 with one audit in 3 or 4 quarters	2 across 2 quarters	1 audit	Semi-annual flow rate audits. Based on how long sampler operated. If sampler operates <9 months at least 1 is expected. If operated >9 months two audits expected.
Flow Rate Audit Bias	± 4% of transfer standard ± 5% from design	≤ ± 4% of transfer standard ≤ ± 5% from design	± 5-6% of transfer standard ± 6-7% from design	> ± 6% of transfer standard > ± 7% from design	design =design flow rate Average PD for audits at monitor level Value should reflect AMP-255 value
Collocation Completeness	75%	≥75%	65-74%	<65%	By method designation Summary level= average of completeness of site level values Site level = number of reported observations /30 Based on how long sampler operated
Collocation Precision	10%	≤ 10%	11-25%	>25%	By method designation Same statistics as AMP-255 for summary level and site level. Value should reflect AMP-255 value
PM2.5 PEP Completeness	5 or 8	5 or 8	3-4 or 6-7	< 3 or 6	Not a monitoring Org responsibility
PEP Bias	±10%	≤ ±10%	± 11-30%	>± 30%	Value should reflect AMP-255 value

Data Evaluation and Concurrence Report for Particulate Matter

Certifying Year: 2013
Certifying Agency: California Air Resources Board (0145)

Parameter: PM2.5 - Local Conditions (88101)
PQAO Name: California Air Resources Board (0145)

Quality Assurance Project Plan Approval Date: 07/27/2007

Collocation Summary

Method	# Sites	# Sites Req	# Sites Collocated	% Collocated	CV Est	CV UB	Criteria Met?
117	11	2	1	50	6.98	8.10	N
118	25	4	6	100	16.61	17.18	Y
145	2	1	1	100	8.63	9.68	Y
170	29	4	2	50	15.84	16.62	N
195	1	1	0	0			N

PEP Summary

# Methods	# Audited Methods	# PEP Required	# PEP Submitted	% Complete	Bias	Criteria Met?
5	0	8	11	100	+1.69	Y

Monitors Summaries

				Routine Data (ug/m3)						Flow Rate Audit		Collocation			PEP		Concurrence Flag		
AQS Site ID	POC	Method	Monitor Type	Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Bias	% Complete	CV	% Complete	PQAO Crit. Met	PQAO Crit. Met	QAPP Appr.	AQS Rec Flag	CA Rec Flag	EPA Concur
06-007-0008	1	118	SLAMS	10.17	1.0	38.8		0	87	-0.08	100			Y	Y	Y	Y		
06-011-1002	1	118	SLAMS	7.05	1.0	24.5		0	90	-0.23	100			Y	Y	Y	Y		
06-019-0011	1	118	SLAMS	16.89	1.0	99.6		0	92	-1.21	100	14.75	100	Y	Y	Y	Y		
06-025-0007	1	118	SLAMS	7.24	1.4	23.1		0	100	-0.26	100			Y	Y	Y	Y		
06-025-1003	1	118	SLAMS	7.05	1.2	30.0		0	100	+2.87	100			Y	Y	Y	Y		
06-029-0014	1	118	SLAMS	20.14	2.9	111.7		0	85	-0.59	100	28.70	100	Y	Y	Y	Y		
06-029-0014	2	118	SLAMS	19.08	1.0	114.9		0	88	-1.14	100			Y	Y	Y	Y		
06-029-0016	1	118	SLAMS	22.30	3.0	167.3		0	97	-0.15	100			Y	Y	Y	Y		
06-057-1001	1	118	SLAMS	8.27	1.0	42.9		0	96	+2.01	100	11.22	100	Y	Y	Y	Y		
06-057-1001	2	118	SLAMS	7.75	1.0	31.8		0	85	+1.92	100			Y	Y	Y	Y		
06-063-1006	1	118	SLAMS	9.54	1.0	50.6		0	85	+0.17	100			Y	Y	Y	Y		
06-063-1010	1	118	SLAMS	14.66	1.0	51.8		0	88	+1.58	100			Y	Y	Y	Y		
06-067-0006	1	118	SLAMS	11.39	1.0	53.8		0	95	+1.55	100	11.58	96	Y	Y	Y	Y		
06-067-0006	2	118	SLAMS	12.03	2.5	49.4		0	96	+0.36	100			Y	Y	Y	Y		
06-067-0010	1	118	SLAMS	10.11	1.0	39.2		0	98	+0.34	100			Y	Y	Y	Y		

Collocation Summary

Method	# Sites	# Sites Req	# Sites Collocated	% Collocated	CV Est	CV UB	Criteria Met?
117	11	2	1	50	6.98	8.10	N
118	25	4	6	100	16.61	17.18	Y
145	2	1	1	100	8.63	9.68	Y
170	29	4	2	50	15.84	16.62	N
195	1	1	0	0			N

Precision

PEP Summary

# Methods	# Audited Methods	# PEP Required	# PEP Submitted	% Complete	Bias	Criteria Met?
5	0	8	11	100	+1.69	Y

National Bias

				Routine Data (ug/m3)						Flow Rate Audit		Collocation			PEP		Concurrence Flag		
AQS Site ID	POC	Method	Monitor Type	Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Bias	% Complete	CV	% Complete	PQAO Crit. Met	PQAO Crit. Met	QAPP Appr.	AQS Rec Flag	CA Rec Flag	EPA Concu
)6-007-0008	1	118	SLAMS	10.17	1.0	38.8		0	87	-0.08	100			Y	Y	Y	Y		

Site Specific Information

Flow Rate Bias

COMMON ISSUES

- Late Submittal of Ambient Data
  - Impossible to upload precision/accuracy data associated with particular instrument
- Mismatch POC (parameter occurrence code)
  - POC that is assigned to samplers is not the same as the one used for data upload
- Improper start/end dates
  - When a monitor does not have the correct START or END dates, AQS will incorrectly tag the monitor has having “incomplete” data, both ambient and precision/accuracy.
- Incomplete Flow rate verifications (FRV)
  - New requirement is for all FRV for all PM samplers be in AQS.
  - Set up automatic or manually upload on a quarterly basis.

TROUBLESHOOTING/BEST PRACTICES

- Since data validation relies on all aspects of air monitoring, the stronger the program, the easier data certification will be.
  - Site operator review of QC checks
  - QA staff review of audits
  - Review of AQS submittal and reports (i.e AMP 256 reports)
  - Coordination on changes
    - Close out dates for monitors in AQS
    - Checking POC codes are correct when methods are changes
    - Strategic
- If criteria are not met, a justification must be provided explaining the specifics of that particular criteria.

EPA INTERPRETATION & USE

- Used as a *tool* to evaluate data quality objectives and other QA requirements
- Region 9 will *not* be setting certification concurrence flags
- Important flags:

Flag	Brief Description
U	Uncertified (not submitted)
S	Submitted
M	Modified (data have been changed)

EPA INTERPRETATION & USE

- Reviewed as part of the annual network plan process
- Included in the docket for any regulatory action
  - Provides framework for evaluation of compliance with EPA regulations and guidance.
  - All actions are found at *regulations.gov*
- Important that information is complete, accurate, and meets the requirements, as these documents are part of the public record
  - Potential for public comment on the validity or usability of the data

RESOURCES

- http://www.epa.gov/ttnamti1/qacert.html
  - Data Certification Flag Values
  - Ambient Air Monitoring Data Certification Q&A for CY2016
  - Additional Information Related to the AMP600 Data Certification process
- Breakout Session
  - Quality Assurance & Data Management A
  - *Data Validation and Certification Exercise*
    - 1:45 pm
    - 3:30 pm