Air Resources Board

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QUALITY ASSURANCE BULLETIN – 003 **AQS Minimum Value Reporting Limits**
December 2015

Introduction

This bulletin is intended to provide clarification for ambient air monitoring organizations (MOs) within the California Air Resources Board's (ARB) Primary Quality Assurance Organization (PQAO) regarding the continuous particulate matter monitors minimum value reporting limits to the U.S. Environmental Protection Agency's Air Quality System (AQS).

Issue

Criteria used for reporting negative values from continuous particulate matter monitors to AQS vary amongst MOs. For example, some MOs convert negative values to zero, others report the values as-is, while others report down to -5 ug/m3 as the minimum value. To establish consistency within the ARB PQAO, a working group was formed to discuss current minimum value reporting limits and what the policy should be going forward.

Resolution

Effective January 1, 2016, MOs within the ARB PQAO are to report continuous particulate matter values to AQS to the negative of the Federal Method Detection Limit (MDL) as posted on the AQS parameters table. If the MDL is negative, leave the negative when determining the minimum value reporting limit. For example, if the negative MDL for a certain parameter and method code combination is -5 ug/m3, values of -6 ug/m3 and below should be invalidated, and values greater than or equal to -5 ug/m3 (i.e., -1, -2, etc.) should be reviewed and validated per the MOs data validation protocols. Data submitters are advised to replace the more negative values with a null data code (e.g., 'DA', 'BR', etc.). The lists of QA qualifier and null data codes and MDLs for all acceptable parameter and method codes can be found at the following links:

https://aqs.epa.gov/aqsweb/documents/codetables/qualifiers.html

https://aqs.epa.gov/aqsweb/documents/codetables/methods_all.html

MOs in the ARB PQAO are required to follow this policy. MOs that wish to deviate from this policy must submit an addendum to ARB outlining the MO's policy. Examples of the minimum value reporting limits for several instruments are included in Attachment 1.

Note:

1. In rare cases where the AQS Absolute Minimum Sample Value (AMSV) is greater than the negative of the MDL, report values down to the AMSV (found on the AQS parameters table).

2. In cases where data is reported in both LC and STP conditions from a continuous monitor and the negative value for one condition is less than the negative federal MDL, the data from both conditions should be invalidated.

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Attachment 1

Examples of AQS Codes for Particulate Matter (PM2.5 and PM10) as of 11/5/15

Parameter Name	Parameter Code	Method Code	Reporting Unit	Instrument Description	Federal Method Detection Limit	Absolute Minimum Sample Value	Minimum Reporting Value for the ARB
PM10 Total 0-10um STP	81102	076	µg/m3	Andersen FH621N BAM	4	-50	-4
PM10 Total 0-10um STP	81102	079	µg/m3	R & P TEOM SER 1400	-50	-50	-50
PM10 Total 0-10um STP	81102	081	µg/m3	Wedding and Associates PM10 Automated BAM	-10	-10	-10
PM10 Total 0-10um STP	81102	122	µg/m3	Met One BAM-1020	4	-5	-4
PM10 Total 0-10um STP	81102	150	µg/m3	Thermo Andersen BAM	4	-50	-4
PM10 Total 0-10um STP	81102	151	µg/m3	Environmental SA BAM	4	-50	-4
PM10 Total 0-10um STP	81102	156	µg/m3	DKK TOA BAM	4	-50	-4
PM10 Total 0-10um STP	81102	193	µg/m3	OPSIS Model SM 200	4	0	0
PM10 - LC	85101	079	µg/m3	R & P TEOM SER 1400	-50	-50	-50
PM2.5 - Local Conditions	88101	170	µg/m3	Met One BAM-1020 Mass Monitor w/VSCC	5	-10	-5
PM2.5 - Local Conditions	88101	181	µg/m3	Thermo Scientific TEOM 1400	2	-10	-2
PM2.5 - Local Conditions	88101	182	µg/m3	Thermo Scientific TEOM 1405	2	-10	-2
PM2.5 - Local Conditions	88101	183	µg/m3	Thermo 5014i or FH62C14 BAM	2	-10	-2
PM2.5 - Local Conditions	88101	184	µg/m3	Thermo 5030 BAM	2	-10	-2
PM2.5 - Local Conditions	88101	195	µg/m3	GRIMM EDM Model 180 - Laser Light Scattering	0.1	0	0
PM2.5 - Local Conditions	88101	204	µg/m3	Teledyne Model 602 BAM	2	-10	-2