To: Compher, Michael[compher.michael@epa.gov]
From: Ross, Anthony
Sent: Mon 12/15/2014 8:35:06 PM
Subject: FW: AQS Data Review - 2012 WDNR
2012 WDNR Data Review.docx
WDNR AMP255 Precision and Accuracy 2012.pdf
WDNR Data Completeness 2012.pdf
WDNR Criteria Accuracy Audits 2012.pdf
WDNR Criteria Precision Checks 2012.pdf
WDNR Ozone Precision Checks 2012.pdf

From: Ross, Anthony
Sent: Wednesday, January 15, 2014 12:19 PM
To: Good, Gail - DNR
Cc: Lehrman, Loretta; Qazzaz, Bilal
Subject: AQS Data Review - 2012 WDNR

Gail,

The following WDNR monitors did not meet 75% completeness requirements for calendar year 2012 (this 75% completion requirement should be met for each calendar quarter). Keep in mind that some of these sites may have been closed down but still show up in AQS. Please see attachment "2012 WDNR Data Review" for more in-depth review regarding data completeness and QA/QC.

# MONITOR TYPE	SITE ID	PARAMETER CODE	POC	CITY	ADDRESS	PCT YEA
SLAMS	55-009-0005	42401	2	Green Bay	EAST HIGH, 1415 E. WALNUT	0
SLAMS	55-027-0001	42401	2	Horicon	Horicon Wildlife Area, 1210 N Palmatory St	0
SLAMS	55-085-	42401	2	Rhinelander	RHINELANDER WATER TOWER, 454 High St. Behind house under water tower.	0

SLAMS	0996 55-117-0008	12128	1	Kohler, 444 Highland Dr	0
QA COLLOCATED	55-117-0008	12128	2	Kohler, 444 Highland Dr	0
TRIBAL MONITORS	55-041-0007	42401	2Crandon	FIRE TOWER RD, POTAWATOMI SITE	0
QA COLLOCATED	55-027-0001	81102	2Horicon	Horicon Wildlife Area, 1210 N Palmatory St	55

According to AQS, WDNR are reporting flow rate verifications for PM2.5 in Standard Temperature and Pressure (STP) and Local Conditions (LC). CFR states that reporting units for PM2.5 should be reported in local conditions. Please see the first screencapture below to see reported units for PM2.5 flow rate verifications.

PM10 low-volume is being reported in LC and STP (should be in LC), and PM10 hi-vol is being reported in LC (should be STP-see second screencapture).

Also for NO2, WDNR are reporting precision checks and accuracy audits in ppm and ppb. According to CFR, this data should be reported in ppb (see bottom screencapture).

WDNR audits for NO2 are being reported in ppm and ppb. NO2 NPAP-ttp (USEPA) audits are being reported in ppm (should be ppb).

WDNR audits for PM10 hi-vol reported in STP and LC. Audits for PM10 low-vol reported In STP.

WDNR PM2.5 audits reported in STP and LC (should be in LC).

I have also found an ozone monitor that failed QC checks (greater than +/-7 percent) but data was still reported to AQS (see screencaptures at the bottom of email). Some other QC checks for ozone failed as well. Some QC checks for the other gases failed according to the criteria precision check report.

Let me know if you have any questions.

Anthony

SINGLE-MONITOR PRECISION CHEC

PARAMETER	STATE	PQAO	MONITOR ID	DATE	PREC ID	A
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/01/05	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/02/07	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/03/09	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/04/05	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/05/04	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/06/04	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/07/03	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/09/10	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/10/08	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/11/13	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-003-0010-88101-2	2012/12/03	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/01/05	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/04/05	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/05/08	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/06/06	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/07/10	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/09/05	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/10/08	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-1	2012/12/12	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-2	2012/01/05	1	
PM2.5 - Local Cor	WI	Wisconsin Dept Of Natural Res	55-009-0005-88101-2	2012/04/05	1	

PARAMETER	STATE	PQAO	MONITOR ID	DATE	PREC ID	ACTUAL	M
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-027-0001-81102-3	2012/07/29	1	16.88	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-027-0001-81102-3	2012/08/31	1	17.25	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-027-0001-81102-3	2012/10/17	1	17.08	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-027-0001-81102-3	2012/12/14	1	16.75	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0010-81102-1	2012/02/14	1	1.057	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/01/27	1	16.9	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/02/29	1	16.89	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/03/29	1	16.44	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/04/26	1	17.0	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/05/23	1	16.8	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/06/15	1	16.76	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/07/23	1	16.81	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/08/24	1	16.80	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/10/25	1	16.33	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/11/12	1	17.04	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0026-81102-3	2012/12/21	1	16.75	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0058-81102-1	2012/12/03	1	1.107	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-079-0058-81102-2	2012/07/11	1	1.131	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/01/04	1	16.67	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/02/01	1	16.72	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/03/02	1	15.48	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/05/01	1	16.89	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/06/06	1	16.71	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/07/02	1	16.90	
PM10 Total 0-10ur	WI	Wisconsin Dept Of Natural Res	55-111-0007-81102-7	2012/08/01	1	16.62	

SINGLE-MONITOR PRECISION CHECKS

PARAMETER	STATE	PQAO	MONITOR ID	DATE	PREC ID	ACTUAL	MEAS.	METI CODE
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/07/02	1	0.086	0.090	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/07/09	1	0.091	0.093	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/07/18	1	0.093	0.094	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/07/26	1	0.147	0.143	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/08/01	1	0.147	0.144	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/08/09	1	0.146	0.142	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/08/16	1	0.146	0.144	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/08/23	1	0.146	0.142	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/08/29	1	0.149	0.141	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/09/05	1	0.146	0.146	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/09/13	1	0.143	0.147	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/09/19	1	0.143	0.147	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/10/11	1	0.083	0.086	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/10/17	1	0.091	0.086	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/10/23	1	0.096	0.094	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/10/30	1	0.090	0.089	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/11/05	1	0.092	0.091	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/11/13	1	0.088	0.090	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/11/28	1	0.102	0.099	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/12/04	1	0.103	0.099	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/12/12	1	0.099	0.099	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-041-0007-42602-1	2012/12/17	1	0.096	0.100	082
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-071-0007-42602-1	2012/06/13	1	86.6	84.4	075
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-071-0007-42602-1	2012/06/25	1	87.3	92.4	075
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-071-0007-42602-1	2012/07/06	1	87.2	87.9	075
Nitrogen dioxide	WI	Wisconsin Dept Of Natural Res	55-071-0007-42602-1	2012/07/11	1	87.9	89.3	075

The screencapture below outlined in red illustrates an ozone (55-127-0005) QC check conducted by WDNR on 6-5-2012:

The QC check results were -8.9% difference between monitor and standard, and the CFR requirement for acceptable ozone precision check is +/-7%. So this was not a passing QC check by CFR/QA Handbook standards.

Ozone	WI	Wisconsin Dept Of Natural Res	55-127-0005-44201-1	2012/06/05	1

Below is the ambient ozone concentration data for 55-127-0005 (Walworth County) for June 2012. Green highlight indicates point of failed QC check. All other values are hourly ambient ozone concentrations. The main issue here is that data was entered into AQS after a precision check was greater than acceptance limits. There were some other QC checks that failed for different parameters (please see WDNR ozone precision check and criteria precision check attachments).

AIR QUALITY SYSTEM
RAW DATA REPORT

(44201) Ozone

SITE ID: 55-127-0005 POC: 1
COUNTY: (127) Walworth
CITY: (00000) Not in a city
SITE ADDRESS: RR4 ELGIN CLUB RD
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (55) Wisconsin
AQCR: (239) SOUTHEASTERN
URBANIZED AREA: (0000) NOT I
LAND USE: RESIDENTIAL
LOCATION SETTING: RURAI

SUPPORT AGENCY: (1175) Wisconsin Dept Of Natural Resources, Air Monitoring Section
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (087) INSTRUMENTAL ULTRA VIOLET ABSORPTI
PQAO: (1175) Wisconsin Dept Of Natural Resources, Air Monitoring Section

REPORT FOR: JUNE 2

HOUR DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
1	.025	.024	.023	.023	.026	.024	.024	.024	.029	.033	.040	.044	.047	.044	.044	.044
2	.033	.035	.035	.036	.034	.033	.035	.037	.042	.048	.053	.053	.053	.053	.054	.055
3	.029	.029	.028	.028	.028	.024	.030	.039	.047	.052	.055	.056	.056	.058	.058	.057
4	.041	.041	.037	.032	.028	.024	.029	.030	.033	[illegible]	[illegible]	.042	.044	.045	.046	.048
5	.029	.029	.027	.027	.026	.027	.026	.028	.030	BF	BF	.037	.037	.037	.040	.042
6	.023	.024	.020	.020	.017	.018	.024	.027	.032	[illegible]	[illegible]	.041	.045	.048	.049	.049
7	.027	.027	.018	.015	.017	.013	.019	.027	.036	.042	.048	.050	.050	.051	.053	.056
8	.028	.023	.021	.021	.021	.020	.029	.035	.049	.058	.063	.063	.065	.067	.069	.068
9	.041	.039	.037	.038	.035	.036	.045	.055	.066	.070	.067	.068	.069	.068	.067	.065
10	.052	.049	.046	.046	.044	.042	.044	.047	.051	.057	.059	.060	.062	.064	.066	.066
11	.047	.045	.042	.042	.039	.035	.032	.034	.037	.039	.043	.043	.046	.051	.053	.054
12	.033	.034	.037	.040	.040	.033	.038	.033	.030	.032	.034	.036	.035	.035	.035	.038
13	.026	.027	.019	.016	.012	.014	.024	.027	.032	.037	.041	.046	.047	.050	.051	.049
14	.032	.035	.031	.034	.033	.031	.028	.035	.039	.047	.056	.064	.070	.077	.078	.080
15	.053	.047	.039	.037	.037	.038	.046	.056	.066	.076	.076	.082	.080	.081	.085	.093
16	.060	.056	.055	.055	.054	.052	.049	.052	.057	.054	.043	.043	.052	.054	.060	.060
17	.037	.041	.039	.037	.031	.022	.025	.029	.037	.044	.048	.048	.050	.050	.052	.054
18	.043	.042	.039	.041	.040	.035	.032	.034	.041	.046	.048	.049	.050	.051	.055	.055
19	.043	.039	.034	.033	.032	.031	.034	.039	.045	AN	AN	AN	AN	AN	AN	AN
20	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AM	.044	.050	.052
21	.044	.041	.042	.042	.039	.038	.040	.039	.043	.043	.043	.047	.051	.050	.049	.048
22	.033	.034	.028	.024	.024	.016	.028	.038	.044	.045	BF	.049	.048	.048	.048	.049
23	.031	.036	.039	.033	.031	.026	.039	.039	.043	.050	.053	.055	.055	.055	.050	.037