



# New Audit Levels for Annual PE's



# 2006 Monitoring Regulations

- Annual PE Sect 3.2.2 – “Accuracy Audits”
  - Audit 25% of the network quarterly and at least one audit per year per monitor; at least one PE per quarter
  - New audits levels – added low level for NCORE and changed other levels
  - Audit 3-consecutive audit levels (“encourages” 4<sup>th</sup> audit point)
  - Audit levels “should” bracket 80% of the concentrations



# November 2010 Technical Memo

## Expanding Audit Levels

- Expanded audit levels to 10 levels
- Consecutive or non-consecutive levels
- Bracket 80% of ambient concentrations
  - Audit in the levels where you are most likely to measure.



# November 2010 Technical Memo

Table 1. Current CFR Audit Levels and Percent of RO that have Routine Concentrations Extending into the Audit Level (2004-2006 data)

Audit Level	O3	% RO with data in audit range	SO2	% RO with data in audit range	NO2	% RO with data in audit range	CO	% RO with data in audit range
1	0.02-0.05	all	0.0003-0.005	all	0.0002-0.002	all	0.08-0.10	all
2	0.06-0.10	99%	0.006-0.01	97%	0.003-0.005	all	0.50-1.00	all
3	0.11-0.20	4%	0.02-0.10	89%	0.006-0.10	all	1.50-4.00	98%
4	0.21-0.30	<b>0%</b>	0.11-0.40	11%	0.11-0.30	<b>0%</b>	5-15	12%
5	0.31-0.90	<b>0%</b>	0.41-0.90	<b>0%</b>	0.31-0.60	<b>0%</b>	20-50	<b>0%</b>



# Expanded Audit Levels

## Consecutive or Non-consecutive

Audit Level	Concentration Range, ppm			
	O3	SO2	NO2	CO
1	0.004-0.0059	0.0003-0.0029	0.0003-0.0029	0.020-0.059
2	0.006-0.019	0.0030-0.0049	0.0030-0.0049	0.060-0.199
3	0.020-0.039	0.0050-0.0079	0.0050-0.0079	0.200-0.899
4	0.040-0.069	0.0080-0.0199	0.0080-0.0199	0.900-2.999
5	0.070-0.089	0.0200-0.0499	0.0200-0.0499	3.000-7.999
6	0.090-0.119	0.0500-0.0999	0.0500-0.0999	8.000-15.999
7	0.120-0.139	0.1000-0.1499	0.1000-0.2999	16.000-30.999
8	0.140-0.169	0.1500-0.2599	0.3000-0.4999	31.000-39.999
9	0.170-0.189	0.2600-0.7999	0.5000-0.7999	40.000-49.999
10	0.190-0.259	0.8000-1.000	0.8000-1.000	50.000-60.000



# Bracket 80% Ambient Data

## (a few options)

- Organization Specific - Aggregate 3 years of data from all sites to choose acceptable audit levels that could be used by all sites
- MSA (nonattainment area) Specific - Aggregate 3 years of data from all sites in a geographic area to choose acceptable audit levels that could be used by all sites
- Site Specific – Aggregate 3 years of data from each site to choose acceptable levels for respective sites



# Example of MSA Specific 1-year

STATE_C ODE	COUNTY _CODE	SITE_ID	Max	Upper	Lower	Min
17	31	1	0.091	0.051	0.002	0.002
17	31	32	0.091	0.052	0.008	0.002
17	31	42	0.143	0.056	0.018	0.002
17	31	64	0.086	0.042	0.002	0.002
17	31	72	0.089	0.048	0.012	0.002
17	31	76	0.088	0.044	0.002	0.002
17	31	1003	0.089	0.049	0.002	0.002
17	31	1601	0.1	0.046	0.006	0.002
17	31	4002	0.085	0.047	0.002	0.002
17	31	4007	0.087	0.039	0.002	0.002
17	31	4201	0.093	0.044	0.002	0.002
17	31	7002	0.095	0.043	0.006	0.002
17	43	6001	0.087	0.039	0.002	0.002
17	89	5	0.097	0.044	0.002	0.002
17	97	1002	0.097	0.042	0.007	0.002
17	97	1007	0.118	0.051	0.012	0.002
17	111	1	0.086	0.044	0.009	0.002
17	197	1011	0.083	0.044	0.01	0.002



## AMP 255 and Appendix A Revisions

- OAQPS will be revising AMP 255 to properly report these audit levels
- Appendix A revision – maybe next rulemaking?





# February 2011 Memo Revising Level 1 and 2 Acceptance Criteria

- For O<sub>3</sub>, SO<sub>2</sub> and NO<sub>2</sub>  $\pm 1.5$  ppb difference or  $\pm 15\%$  difference whichever is greater
- For CO a  $\pm 0.03$  ppm difference or  $\pm 15\%$  difference whichever is greater
- Levels 3 and above - keep the 15% acceptance criteria