

Lead (Pb) Air Quality Data Update 2008-2009 & 2007-2009 Design Values

The following is a brief summary of EPA's 2009 air quality update for lead based on ambient monitoring data for the two year period, 2008-2009 with regards to the 1978 CFR Pb NAAQS, and for the 3-year period, 2007-2009 with regards to the 2008 CFR Pb NAAQS. During these timeframes:

- Of the 13 original designated nonattainment areas for the 1978 Pb NAAQS, two are still designated as nonattainment. One of these two areas, the Herculaneum, Missouri Pb nonattainment area violated the Pb NAAQS for 2007-2008. No 2007-2008 data were available for the other remaining designated Pb nonattainment area of East Helena in Lewis and Clark County, Montana. The source associated with the East Helena area closed in early 2001 and monitoring ceased in late 2001; the latest available quarters of data (from 2001) were below the 1978 NAAQS level (i.e., $1.5 \mu\text{g}/\text{m}^3$). Of the 11 original Pb nonattainment areas that were subsequently redesignated to attainment, one area (Dent Township, MO - part of Iron County) violated the 1978 NAAQS with 2008-2009 data; one area (Dakota County, MN) met the NAAQS in 2008-2009, and the remaining nine redesignated areas had incomplete or no data for 2008-2009. (Table 1)
- Three monitors (located in 2 counties), not part of an original designated Pb nonattainment area, violated the 1978 Pb NAAQS in 2008-2009. (Table 2)
- With regard to the 2008 CFR Pb NAAQS, 58 counties contained Pb sites (136 total sites in the 58 counties) with 2007-2009 FRM/FEM data that could be compared to the new strengthened NAAQS. Twenty of these 52 counties contained at least one site that met the 2008 CFR completeness. Fifteen of the 20 counties with at least one complete site did not meet the 2008 CFR Pb NAAQS based on the highest design value of the complete sites, and the other 5 counties met the 2008 NAAQS based on the highest design value of its complete sites. (Table 3) (Note that a county aggregation was utilized for this table based solely on historical precedence and convenience. When actual attainment/nonattainment designations are made for the 2008 CFR Pb NAAQS, numerous factors will be used to delineate the designated area boundaries. In some cases designated areas may be based on single counties, and in other situations they may be based on partial counties (e.g., townships).

In 1978, the EPA established the Pb NAAQS for lead (measured in Pb-TSP) as a 1.5 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) maximum quarterly average. The 1978 Pb standard is not met at a monitor if the maximum quarterly average for the two most recent calendar years of monitoring data exceeds $1.5 \mu\text{g}/\text{m}^3$ (1.55 rounds up to 1.6 and is a violation). In 2008, the EPA strengthened the Pb NAAQS to a $0.15 \mu\text{g}/\text{m}^3$ maximum 3-month average over the most recent three calendar years. Although Pb-TSP was kept as the chief indicator, The Pb-TSP measurements are now required to be expressed in local conditions (i.e., actual temperature and pressure at the site, "LC") as opposed to the 1978 NAAQS which requires Pb-TSP measurements to be reported at standard temperature and pressure (STP). Further, the 2008 CFR Pb NAAQS also permits, in certain situations, Pb-PM10 data to be compared to the NAAQS, but specifically only for identifying violations.

Air quality data from EPA's Air Quality System (AQS) were used to calculate lead design values. The data used for these calculations were obtained from AQS on May 10, 2010.

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Table 1. Areas Previously Designated Nonattainment for the Pb 1978 NAAQS

AQS Data Query: 5/10/2010; Last Updated: 11/04/2010

Designated Area	State	EPA Region	Designation Status ¹	Classification	2008-2009 Annual Design Value (µg/m ³) ^{2,3}	Met NAAQS?
Collin County, TX	TX	6	Maintenance	not applicable	incomplete	incomplete
Dakota County, MN	MN	5	Maintenance	not applicable	0.4	yes
Dent Township, MO - part of Iron County	MO	7	Maintenance	not applicable	1.9	no
Douglas County, NE	NE	7	Maintenance	not applicable	no data	no data
East Helena, MT - Lewis and Clark County	MT	8	Nonattainment	not applicable	no data	no data
Fayette County, TN	TN	4	Maintenance	not applicable	no data	no data
Herculaneum, MO - part of Jefferson County	MO	7	Nonattainment	not applicable	2.9	no
Jefferson County, AL	AL	4	Maintenance	not applicable	no data	no data
Liberty and Arcadia, MO - part of Iron County	MO	7	Maintenance	not applicable	incomplete	incomplete
Marion County, IN	IN	5	Maintenance	not applicable	no data	no data
Muscogee County, GA	GA	4	Maintenance	not applicable	no data	no data
Shelby County, TN	TN	4	Maintenance	not applicable	no data	no data
Williamson County, TN	TN	4	Maintenance	not applicable	no data	no data

Notes:

1. Area designation status as of June 9, 2010.

2. The level of the 1978 NAAQS for Pb is 1.5 micrograms per cubic meter (µg/m³). The design value for the 1978 Pb NAAQS is the maximum calendar quarter mean concentration for a given year. The value shown here is the higher of the design values for 2008 and 2009.

3. The design values shown here are computed for the latest design value period using Federal Reference Method or equivalent data reported by States, Tribes, and local agencies to EPA's Air Quality System (AQS) as of 5/10/2010. Concentrations flagged by States, Tribes, and local agencies as exceptional events (e.g., high winds, wildfires, volcanic eruptions, construction) and concurred by the associated EPA Regional Office are not included in the calculation of these design values.

Table 2. Violating Monitors in Areas Not Previously Designated Nonattainment for the Pb 1978 NAAQS
 AQS Data Query: 5/10/2010; Last Updated: 11/04/2010

State	County	EPA Region	2008-2009 Annual	Site ID	POC	CBSA
			Design Value ($\mu\text{g}/\text{m}^3$) ^{1,2}			
California	Los Angeles	9	2.4	060371405	1	Los Angeles-Long Beach-Santa Ana, CA
Indiana	Delaware	5	2.3	180350009	1	Muncie, IN
Indiana	Delaware	5	2.2	180350009	2	Muncie, IN

Notes:

1. The level of the 1978 NAAQS for Pb is 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) not to be exceeded in any calendar quarter. The design value for the 1978 Pb NAAQS is the maximum calendar quarter mean concentration for a given year. The value shown here is the higher of the design values for 2008 and 2009.

2. The design values shown here are computed for the latest design value period using Federal Reference Method or equivalent data reported by States, Tribes, and local agencies to EPA's Air Quality System (AQS) as of 5/10/2010. Concentrations flagged by States, Tribes, and local agencies as exceptional events (e.g., high winds, wildfires, volcanic eruptions, construction) and concurred by the associated EPA Regional Office are not included in the calculation of these design values.