

Texas Commission on Environmental Quality
Comments to the U.S. Environmental Protection Agency's
Revisions to Lead Ambient Air Monitoring Requirements, Proposed Rule
74 FR 69050, December 30, 2009
Docket ID No. EPA-HQ-OAR-2006-0735

The Texas Commission on Environmental Quality (TCEQ) provides the following comments on the U.S. Environmental Protection Agency's (EPA) proposed rule, Revisions to Lead Ambient Air Monitoring Requirements. The TCEQ's comments are detailed below.

Lead (Pb) fits awkwardly into the regulatory structure established for dealing with air pollutants through a national ambient air quality standard (NAAQS). For the general population, exposure to lead occurs primarily via oral exposure. Inhalation of lead in ambient air and exposure to contemporary lead deposition from ambient air are small sources of lead exposure.

Key elements in protecting the public from lead toxicity include: protection from lead in house paint and on household items; lead in food storage and cooking containers, serving containers, and utensils; lead in toys and jewelry; lead in food and water; lead in soil resulting from decades-long use of leaded gasoline and lead-based paint; lead in soil from historic deposition; and current settled dust from point source emissions. An effective, integrated program to protect the public, especially the key sensitive population, young children, from lead toxicity must also include protection from lead in soil.

There should be two primary objectives of the ambient air monitoring network for lead:

Source-Oriented Monitoring Requirements

1. To measure maximum ambient air concentrations near potentially significant point sources of lead emissions to the ambient air so data will be available to identify whether lead in ambient air is contributing to toxicologically significant public exposure to lead through settled dust in soil, on exterior surfaces, and on interior surfaces. Below are further comments on source-oriented monitoring requirements.

Non-Source-Oriented Monitoring Requirements

2. To determine long-term trends in urban ambient air lead concentrations to ensure ambient air concentrations remain at or below their current low levels. A limited number of monitoring sites in appropriate areas would be adequate to meet this objective. The proposal to use NCore (name derived from "National Core") sites for this monitoring is appropriate. Having lead data as well as the other types of data at the well-documented NCore sites would be preferable to having the long-term trend urban lead sites at locations different from the NCore sites.

Source-Oriented Monitoring Requirements – Further Comments

Use of a mass per year threshold for presumptively requiring ambient air lead monitoring near point sources is reasonable. The Appendix D to Part 50 §4.5(ii) provision allowing waiver of the monitoring requirement if the responsible agency demonstrates that the lead "source will not contribute to a maximum ambient air lead concentration in excess of 50% of the NAAQS . . ." is also appropriate.

The December 23, 2009, EPA press release announcing the proposed rule change to the lead ambient air monitoring requirements states, "Lead emitted into the air can be inhaled or can be ingested after it settles. Ingestion is the main route of human exposure. Children are the most susceptible because they are more likely to ingest lead, and their bodies are developing rapidly." Because the lead in settled dust presents the main lead absorption hazard for children, who are the most susceptible population, an appropriate additional screening test for waiving the ambient air lead monitoring requirement would be a test for lead content in settled dust or in surface soil in the area of predicted maximum ambient air impact to which children have meaningful access.

Because the concentration of lead in surface soil represents an integrated measure of the impact of a point source plus other sources of lead on potential exposure for children, it would be an even more protective screening tool than air quality dispersion modeling for allowing lead monitoring waivers. Such a screening tool for exemption from monitoring would be appropriate for sources that have been in place long enough to allow significant lead concentrations to have accumulated in soil for the soil testing to be representative. The five-year period required for air quality dispersion modeling would be a reasonable minimum source life to allow the use of this screening method for an ambient air lead monitoring waiver.

Monitoring Near Airports

The analysis presented in the proposed rule for establishing a lead emissions threshold for ambient air monitoring for airports is inappropriate because children do not have practical access to soil or interior surfaces as close to the piston engine run-up, hold-short, and take-off areas of a taxiway-runway pair as the monitor near the blast fence has at the Santa Monica airport (East Tarmac Site #3, proposed rule reference: Fine, Philip (2007)). Having children riding in aircraft taxiing, landing, or taking off from an airport does not present the practical possibility of significant lead exposure from lead deposited in soil on the airport property.

For airports without practical access to areas closer than the distance of the Residence Site #2 from the end of the runway and the piston engine run-up and hold-short areas of a runway, it would be appropriate to use the data from Residence Site #2 to establish the annual lead emissions threshold for an airport. Using the methodology in the proposed rule, the three-month lead average at Residence Site #2 is close to 0.03 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Taking the ratio of the 0.03 $\mu\text{g}/\text{m}^3$ to the 0.15 $\mu\text{g}/\text{m}^3$ level of the standard demonstrates that the Santa Monica airport, which has 0.4 tons per year of lead emissions, would have to have approximately 2.0 tons per year of lead emissions to produce an ambient air lead concentration equal to the NAAQS at Residence Site #2. For this reason, it would be inappropriate to lower the annual lead emissions monitoring threshold at airports below 1.0 tons of per year for any airport without practical access for children to an area within the distance of Residence Site #2 to the run-up, hold-short, and take-off areas of a taxiway-runway pair at the airport.

Because of the lack of information on piston-engine aircraft landing and take-off operations at some airports, it would be helpful if the EPA developed a methodology for using the annual amount of leaded aviation gasoline sales at an airport to calculate the annual lead emissions from the airport. An alternative would be to develop a methodology for using the ratio of the leaded aviation gasoline to turbine engine fuel sold at an airport together with the total number of landings and take-off operations at the airport to calculate the annual lead emissions from the airport.

Timeline for Deploying New Monitors

A one-year timeline for deploying monitors to NCore sites is reasonable for NCore sites that are already established. If new equipment procurement is involved, a deadline shorter than one year after federal funding is provided is not reasonable for NCore sites.

For point-source oriented ambient air lead monitors, a one-year deadline for installation is not reasonable. Obtaining a model-ready emissions inventory for each plant, performing dispersion modeling to determine the area of maximum ambient air impact, procuring new monitoring equipment, obtaining EPA regional office approval of each site, and negotiating a site use agreement, contracting site preparation, and obtaining electrical service can each require more time than expected. An 18-month timeline would be more reasonable.

If a monitor for an airport needs to be sited on the airport, there is another complication. Federal Aviation Administration approval of a new installation on an airport can add six months or more to the process of establishing a site. In addition, the data gathering for emissions modeling for airports may require additional months of work, so a more appropriate timeline for airport impact monitors would be 20-to-24 months.