



State of Utah

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*Governor*

GREG BELL  
*Lieutenant Governor*

Department of  
Environmental Quality

Amanda Smith  
*Executive Director*

DIVISION OF AIR QUALITY  
Cheryl Heying  
*Director*

DAQ-056-09

**MEMORANDUM**

**TO:** Air Quality Board

**THROUGH:** Cheryl Heying, Executive Secretary

**FROM:** Bruce Allen, Environmental Scientist

**DATE:** September 16, 2009

**SUBJECT:** Recommendation to the Governor for Designations Under the Revised Lead Standards

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In October 2008, the Environmental Protection Agency (EPA) revised both the primary (health-based) and secondary (welfare-based) standards for lead. The new National Ambient Air Quality Standards (NAAQS) are ten times more stringent than previous standards. The final rule requires that Governor Herbert submit recommendations to the EPA for designating areas in Utah under the new lead standards by October 15, 2009. Three possible recommendations for designation may be submitted: attainment, non-attainment, and/or unclassifiable.

DAQ submitted the following recommendation to Governor Herbert:

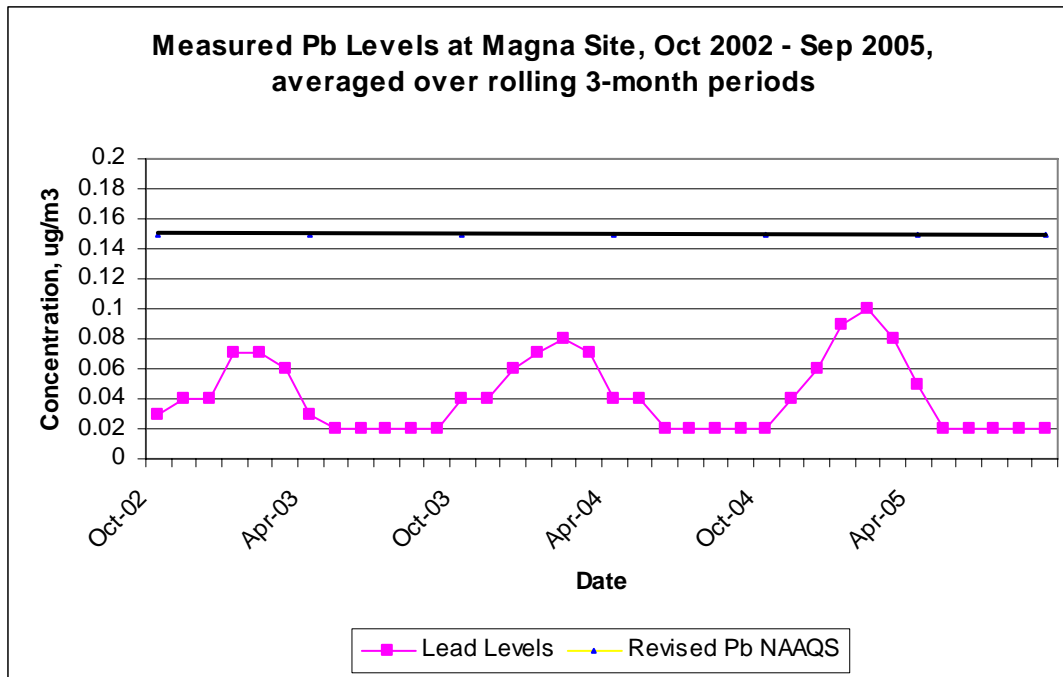
The State of Utah recommends that all 29 counties in Utah be designated unclassifiable for the primary and secondary lead standards. With approval from EPA Region 8, the State has not monitored for lead in the ambient air since September 2005. Lead monitoring was halted because measured levels of lead were extremely low relative to the former primary and secondary lead standards ( $1.5 \mu\text{g}/\text{m}^3$  quarterly average). Consequently, insufficient information is available to determine the current attainment status of each area of Utah. If a violation of the lead standard is measured at any lead monitoring site before EPA issues its final designations, the State will submit a revised recommendation to the Agency as expeditiously as possible.

As outlined in Utah's 2009 Air Monitoring Network Plan, the Utah Division of Air Quality (UDAQ) will begin source-oriented, lead monitoring near Rio Tinto's Kennecott smelter and refinery by January 1, 2010. EPA Region 8 has indicated that it will issue its final designations for the State no later than October 2011 after UDAQ has collected and submitted at least one year of quality assured lead data from the Rio Tinto site. Federal regulations require the State to begin additional lead monitoring by January 1, 2011, in its three largest metropolitan statistical areas — Ogden-Clearfield, Salt Lake City, and Provo-Orem. Urban-based monitoring will be addressed in the State's 2010 Air Monitoring Network Plan.

Overview of Lead Monitoring Data in Utah

EPA issued its initial lead NAAQS of 1.5 $\mu\text{g}/\text{m}^3$  in 1978. Since that time, more than 6,000 new studies on health and environmental effects of lead have been published. Study findings show that adverse health effects occur at much lower levels of blood lead than previously thought, especially in children. Exposures to low levels of lead early in life via inhalation and ingestion have been linked to adverse effects on IQ, learning, memory, and behavior. There is no known safe level of lead in the body. Evidence from these scientific studies strongly suggested that the 30-year old lead NAAQS be revised to improve the health protection of children and other at-risk groups. Accordingly, EPA has revised primary and secondary lead NAAQS levels to 0.15 $\mu\text{g}/\text{m}^3$ .

An area is considered in compliance with the revised lead standard if measured lead concentrations do not exceed 0.15 $\mu\text{g}/\text{m}^3$  during a rolling three-month averaging period evaluated over three years. The graph below shows lead values averaged over rolling three-month periods at the Magna site (AIRS code: 49-035-1001) for the most recent three-year monitoring period (2002-2005). For reference purposes only, the revised lead NAAQS is also shown. Each lead sample was collected over a 24-hour sampling period (from midnight to midnight) every sixth day at the site. On average, 15 samples were collected during each three-month averaging period. Magna is the only site where ambient lead concentrations were measured in the State's air monitoring network during the past five years. No additional lead monitoring data have been collected in the State by the EPA, local, or tribal agencies during this period and submitted to EPA's national database, AQS.



None of these three-month rolling averages exceeds the revised lead standard. The highest three-month average occurred between December 2004 and February 2005 when the 15 collected samples averaged 0.10 $\mu\text{g}/\text{m}^3$ . 1989 was the last time an average lead level of 0.15 $\mu\text{g}/\text{m}^3$  was measured at the site during any three-month period. The lead monitors were removed from Magna at the end of September 2005 because ambient concentrations of the pollutant were consistently low relative to the existing primary and secondary lead standards. Monthly lead concentrations had averaged less than one-tenth of NAAQS over a

15-year monitoring period at the site (1990-2005). Nationally and locally, lead levels in the ambient air have been reduced dramatically in the past three decades. UDAQ's former monitoring station in downtown Salt Lake City showed a 97% decrease in ambient air lead measured over an 18-year monitoring period (1982-1999), mirroring national trends. These dramatic reductions are attributable to EPA's lengthy regulatory efforts to remove lead from gasoline for use in on-road vehicles (1973-1996).