



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Michael R. Pence  
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Commissioner

October 31, 2013

Ms. Susan Hedman  
Regional Administrator  
U.S. Environmental Protection Agency  
Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604-3950

Re: Technical Addendum for the Attainment  
Demonstration and Technical Support  
Document for the Muncie, Delaware  
County, Indiana Lead Nonattainment Area

Dear Ms. Hedman:

The Indiana Department of Environmental Management (IDEM) has prepared this technical addendum to the Attainment Demonstration and Technical Support Document for the Muncie, Delaware County, Indiana Lead Nonattainment Area (Attainment Demonstration) to provide modeled emission limits for Exide Technologies (Exide) proposed plans to construct and install two new bag houses to existing processes. IDEM submitted the Attainment Demonstration to the United States Environmental Protection Agency (U.S. EPA) for review on June 11, 2012 and a final submission on March 14, 2013, to demonstrate how the area will attain the National Ambient Air Quality Standard (NAAQS) for lead by the attainment date (i.e. December 31, 2015).

Exide submitted a significant permit modification application to their Title V permit to IDEM in May, 2013. Exide plans to construct and install an additional bag house in the refinery area, where two pig casting machines and 11 pot furnaces are located (i.e. Refinery Bag House #2). This new bag house will have its own exhaust stack separate from the existing refinery bag house stack (i.e. Refinery Bag House #1). Exide will maintain the lead Prevention of Significant Deterioration (PSD) minor limit combined for both of these bag houses.

The second new bag house (i.e. Bin Room Bag House #2) will be installed in the bin room area, where lead containing material storage and slag crushing are contained. This new bag house will have its own exhaust stack separate from the existing bin room bag house stack (i.e. Bin Room Bag House #1). Exide will maintain the lead PSD minor limit combined for both of these bag houses.

The most recent version of AERMOD (BEEST Version 10.07) was used to conduct the updated air quality analysis. Pre-processed meteorological data from Indianapolis International Airport and upper air data from Wright-Patterson Air Force base in Dayton, OH were used for the analysis. The data include 1-minute readings from 2006 through 2010. All elevations for the buildings, sources, and receptors were calculated using the AERMAP program. Building downwash from the Exide facility was considered in the analysis. No fugitive sources were considered for this analysis. Receptors were placed at 100 meter intervals along the fenceline. Receptors were also placed at 100 meter intervals to 2,000 meters away from Exide's fenceline and at 500 meter intervals up to 10,000 meters away from the fenceline. Monthly concentrations at 3,751 receptors were calculated.

Table 1 lists each unit's permitted allowable maximum lead emission's rate in tons per year (tpy) under the national emission standards for hazardous air pollutants (NESHAP) for secondary lead smelters at 40 Code of Federal Regulations (CFR) 635.44. The emission limits for the two existing bag houses and two new bag houses are divided equally into the existing source permitted limit.

**Table 1- Exide Modeled Point Sources**

<b>Description</b>	<b>Proposed NESHAP Lead Emission Limits (tpy)</b>
Lead Battery Crusher/Breaker	0.29
Lead Reverberatory Furnace	0.48
Material Handling	0.13
Refinery Bag House #1	0.37
Refinery Bag House #2	0.37
Bin Room Bag House #1	0.045
Bin Room Bag House #2	0.045
<b>Total Lead Emissions</b>	<b>1.73</b>

After the modeling was completed, LEADPOST was used to calculate the three-month rolling average. This tool calculates and outputs the rolling cumulative (all sources) three-month average concentration at each modeled receptor with source group contributions and the maximum cumulative (all sources) rolling three-month average concentration by receptor.

### **Analysis Results**

LEADPOST calculated the maximum three-month rolling average at 0.09 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) for the period ending July 2008. The maximum impact is located on the northern fenceline of Exide's property. The three-month rolling average for the Mount Pleasant Road monitor (Site ID# 18-035-0009) ending February 2012 was  $0.34 \mu\text{g}/\text{m}^3$ . This design value is greater than the NAAQS of  $0.15 \mu\text{g}/\text{m}^3$ . As a result, once the calculated modeling results are added to the monitored design value, the value suggests that Exide would still exceed the 2008 lead NAAQS with the installation and operation of the two new bag houses.

However, since February 2012, the monitored design value at the Mount Pleasant Road monitor has steadily decreased to 0.03  $\mu\text{g}/\text{m}^3$  for the last three consecutive three-month rolling averages. Therefore, the application of the modeling analysis estimates to more current monitoring data indicate that the proposed installation of the two new bag houses should not contribute to an exceedance of the NAAQS in the future. As such, this project will not interfere with Indiana's State Implementation Plan for lead or the attainment demonstration for the Muncie, Delaware County, Indiana Lead Nonattainment Area.

IDEM believes that this technical addendum in conjunction with the Attainment Demonstration satisfies Indiana's obligation under Section 172(c) of the 1990 Amendments to the Clean Air Act to demonstrate how the area will attain the 2008 lead NAAQS by the attainment date (i.e. December 31, 2015) and provide for an ample margin of safety.

This submittal consists of one (1) hard copy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy has been sent to Doug Aburano, Chief of U.S. EPA Region 5's Attainment Planning and Maintenance Section.

If you have any questions or need additional information concerning this matter, please contact Scott Deloney, Chief, Air Programs Branch, at (317) 233-5694 or [sdeloney@idem.IN.gov](mailto:sdeloney@idem.IN.gov).

Sincerely,



Keith Baugues  
Assistant Commissioner  
Office of Air Quality

KB/sad/ghf

cc: Doug Aburano, U.S. EPA Region 5  
Andy Chang, U.S. EPA Region 5  
Fred Ganster, Exide Technologies  
Keith Baugues, IDEM  
Scott Deloney, IDEM  
Gale Ferris, IDEM  
File Copy

