

**MARYLAND DEPARTMENT OF THE ENVIRONMENT AND LEHIGH
CEMENT COMPANY**

AGREEMENT FOR EARLY REDUCTIONS IN MERCURY EMISSIONS

WHEREAS, mercury is a hazardous air pollutant that bioaccumulates in fish and can cause adverse health effects. Cement kilns are a source of mercury emissions in Maryland.

WHEREAS, the Lehigh Cement Company (Lehigh) owns and operates a Portland Cement manufacturing plant in Union Bridge, Maryland (the "Union Bridge Plant" or "Plant"). The Union Bridge plant utilizes raw materials and fuels in the cement manufacturing process that contain mercury.

WHEREAS, in 2008, Lehigh reported mercury emissions of approximately 400 pounds from the Union Bridge Plant.

WHEREAS, On May 6, 2009, the U.S. Environmental Protection Agency ("EPA") published proposed National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Portland Cement kilns containing a Maximum Achievable Control Technology ("MACT") mercury standard, 74 *Fed. Reg.* 21135 (the "Proposed Mercury MACT Standard"). EPA is required by the terms of a Consent Decree to adopt a final Mercury MACT Standard for cement plants no later than March 31, 2010. If adopted as proposed, the final Mercury MACT Standard would require a reduction in mercury emissions from the Union Bridge Plant of approximately 80% from current mercury emission levels. Compliance with the final Mercury MACT Standard must be achieved no later than three years following publication of the final rule.

WHEREAS, the Department recently authorized Lehigh to utilize dried Class A bio-solids (DBS) in its overall fuel mix at the Union Bridge Plant on a trial basis. Lehigh subsequently submitted an application to the Department for a modification to its Permit to Construct that would authorize the Plant to use Class A DBS in the Plant's fuel mix on a permanent basis as a substitute for a portion of the coal presently used in its fuel mix.

WHEREAS, Lehigh's goal is to obtain DBS from sources in Maryland to the extent available prior to accepting DBS from out-of-state facilities.

WHEREAS, the Department wishes to encourage the beneficial use of biosolids, the use of renewable energy sources, such as DBS, and a reduction in the quantity of biosolids presently disposed of in Maryland landfills.

WHEREAS, DBS contains mercury and performance of a mercury mass balance analysis during the trial period demonstrated that the use of DBS in the Plant's fuel mix increases the Plant's mercury emissions.

WHEREAS, Lehigh has evaluated operational measures for eliminating the additional mercury emissions resulting from the use of DBS and further reducing the Plant's mercury emissions below current levels.

WHEREAS, Lehigh has experimented with recycling a portion of the baghouse dust (BD) generated by the manufacturing process into the final product through Finish Mill No. 1 as a means of reducing mercury emissions (the "BD Recycling Process").

WHEREAS, through the BD Recycling Process testing, Lehigh has determined that the maximum quantity of BD that can presently be recycled into the finished cement product without adversely impacting product quality is 0.3% of the finished product. Lehigh's testing has further determined that continuous utilization of the BD Recycling Process to achieve a 0.3% BD concentration in the finished cement process results in a reduction in mercury emissions of approximately 92 pounds per year.

WHEREAS, through utilization of the BD Recycling Process, Lehigh has eliminated 100% of the additional mercury emissions resulting from the combustion of DBS and achieved an additional mercury emission reduction equivalent to 50% of the mercury emissions generated from the combustion of DBS.

WHEREAS, Lehigh is continuing to evaluate the BD Recycling Process with the goal

of recycling a greater percentage of BD consistent with industry product standards and further reducing the plant's mercury emissions.

WHEREAS, Lehigh expects the Union Bridge Plant to comply with the proposed Mercury MACT Standard during periods when the raw mill is operating without the operation of additional mercury emission control technology.

WHEREAS, the Department is vested with responsibility for regulating air pollution in the State and protecting public health and the environment from the harmful effects of air pollution.

WHEREAS, the Department and Lehigh desire to reduce the Plant's mercury emissions as expeditiously as possible in advance of the deadline for compliance with the final Mercury MACT Standard through the installation and operation of mercury controls and the use of the BD Recycling Process, both during periods when DBS is being utilized in the Plant's fuel mix and when it is not being combusted.

NOW, THEREFORE, in consideration of the foregoing and the mutual promises and covenants contained herein, the Department and Lehigh hereby AGREE as follows:

1. The Department agrees to modify Lehigh's existing Permit to Construct for the Union Bridge Plant to authorize Lehigh to combust no more than 10 short tons of Class A DBS per hour, and no more than 50,000 short tons of Class A DBS annually, measured on a 12-month average rolling monthly, unless otherwise authorized in writing by the Department pursuant to Paragraph 5.
2. Lehigh agrees to comply with all of the terms and conditions in the modified Permit to Construct governing the combustion of DBS at the Union Bridge Plant.
3. Lehigh agrees to utilize all available DBS produced by Maryland facilities at the Union Bridge Plant prior to accepting DBS from out-of-state facilities, provided that doing so would not result in significant increased costs to Lehigh. In the event that Lehigh accepts DBS from out-of-

state facilities when DBS is available from Maryland facilities, Lehigh shall have the burden of demonstrating that acquiring DBS from Maryland facilities would result in significant increased costs.

4. Lehigh agrees to reduce the Plant's mercury emissions when the Plant is combusting DBS by an amount that is no less than 150% of the level that is introduced into the cement manufacturing process as a result of combusting DBS, measured and reported in accordance with the conditions of the modified Permit to Construct. When the Plant is not combusting DBS, Lehigh agrees to recycle BD in amounts equivalent to the quantity Lehigh recycles when it is utilizing DBS in the fuel mix to achieve the approximate 92-pound reduction in mercury emissions that is achieved when DBS is utilized in the Plant's fuel mix.

5. Lehigh agrees to continue its current efforts to improve the BD Recycling Process for the purpose of achieving larger mercury emission reductions and to operate the BD Recycling Process to maximize mercury reductions beyond the reductions required by Paragraph 4. With the written consent of the Department, Lehigh may increase the quantity of DBS combusted up to 77,000 short tons annually, measured on a 12-month average, rolling monthly, provided that mercury emission reductions satisfactory to the Department in excess of 150% are achieved through improvements to the BD Recycling Process, installation of add-on mercury pollution controls or through implementation of other measures. In acting on a request from Lehigh to increase the quantity of DBS combusted, the Department will consider, among other factors, the level and sustainability of additional projected mercury emission reductions and the effect combustion of additional DBS will have on emissions of pollutants other than mercury.

6. An increase in the quantity of combusted DBS that is authorized under this Agreement does not relieve Lehigh of its obligation to comply with all applicable laws, regulations and permit conditions.

7. On or before March 31, 2010, Lehigh agrees to complete an evaluation of activated

carbon injection systems, and, as necessary, other mercury pollution control technologies and measures that will achieve a reduction in mercury emissions from the Union Bridge Plant necessary to comply with the Proposed Mercury MACT Standard, which prohibits mercury emissions in excess of 43 pounds per million tons of clinker produced (the “Mercury Emission Reduction Options Study”).

8. Subject to the provisions of Paragraph 10, no later than March 31, 2012, Lehigh agrees to install and commence operation of an activated carbon injection system, at the Union Bridge Plant for use when the raw mill is shut down that is capable of achieving the Proposed Mercury MACT Standard as expeditiously as possible. Lehigh agrees to operate the carbon injection system, as applicable, so as to maximize mercury emission reductions at the Plant with the goal of achieving compliance with the Proposed Mercury MACT Standard. With the exception of malfunctions and interruptions expected during the shakedown period following installation of the carbon injection system, until required to achieve compliance with the final Mercury MACT Standard in accordance with Paragraph 9, Lehigh anticipates operating the carbon injection system, or other mercury emission control technology, no less than 80% of the time when the raw mill is not operating.

9. Subject to the provisions of Paragraph 10, Lehigh agrees to achieve compliance with the proposed Mercury MACT Standard no later than September 30, 2012 and to operate the Union Bridge Plant in compliance with the Proposed Mercury MACT Standard thereafter until such time as Lehigh is subject to a State or revised final federal Mercury MACT Standard. Prior to the effective date of the final Mercury MACT Standard, Lehigh shall demonstrate compliance with the Proposed Mercury MACT Standard by performance of a mass balance analysis.

10. In the event that the final Mercury MACT Standard adopted by EPA is more stringent than the Proposed mercury MACT standard such that none of the mercury emission

control technology options evaluated in conjunction with the Mercury Emission Reduction Options Study, either individually or in combination, will achieve the final mercury MACT Standard, Lehigh shall:

(a) No later than 30 days following publication of the final Mercury MACT Standard in the *Federal Register* so notify the Department in writing; and

(b) no later than 45 days following publication of the final Mercury MACT Standard in the *Federal Register*, submit to the Department for approval, a proposed plan to adjust the deadlines in Paragraphs 8 and 9, as necessary, to maximize mercury emission reductions in advance of the deadline for achieving compliance with the final Mercury MACT Standard.

11. No later than April 30, 2010, Lehigh shall submit to the Department a report on the status of its activities under this Agreement, including the status of the BD Recycling Process, the efficacy of a carbon injection system and all other options considered by the Mercury Emission Reduction Options Study and a description of Lehigh's plans to achieve early compliance with the final Mercury MACT Standard.

12. Lehigh shall include in the quarterly emissions report submitted to the Department for the Union Bridge Plant, the following additional information calculated in accordance with the conditions of the modified Permit to Construct on a monthly basis:

(a) the Plant's mercury emissions;

(b) the Plant's usage of DBS in tons;

(c) the mercury content of all DBS and coal used in the fuel mix;

(d) the reduction in mercury emissions attributable to utilization of the BD Recycling Process;

(e) the amount of BD recycled;

(f) the percentage of BD in the finished cement product;


- (g) the percentage of DBS obtained from Maryland facilities;
- (h) the percentage of time and total hours the raw mill operated; and
- (i) the percentage of time and total number of hours the activated carbon injection system or other mercury emission control technology operated.

13. This Agreement shall terminate at such time as the compliance date of the final Mercury MACT Standard for the Union Bridge Plant.

14. This Agreement shall be construed in accordance with Maryland law.

MARYLAND DEPARTMENT
OF THE ENVIRONMENT

Date: 8/4/07

Shari T. Wilson, Secretary 

LEHIGH CEMENT COMPANY

Date: 13 July 2009

Albrecht Schall, Vice President 

Date: 13 July 2009

Shane Alesi, Vice President 

Approved for form and legal
sufficiency this 31st
day of July, 2009.

Mary Raivel, Assistant Attorney General

