

3279

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
1800 Washington Boulevard • Suite 605 • Baltimore, Maryland 21230-1719  
410-537-3375 • 800-633-6101 x3375 • [www.mde.state.md.us](http://www.mde.state.md.us)

Land Management Administration • Solid Waste Program

**Coal Combustion Byproducts (CCB)  
Annual Generator Tonnage Report**

**Instructions for Calendar Year 2010**

The following is general information relating to the requirement for reporting quantities of coal combustion byproducts that were managed in the State of Maryland during calendar year 2010. Please answer the questions on the form provided, attaching additional information and any requested supplemental information to the back of the form. Questions can be directed to the Solid Waste Program at (410) 537-3318 or via email at [edexter@mde.state.md.us](mailto:edexter@mde.state.md.us).

**I. Background.** This requirement that generators of coal combustion byproducts (CCBs) submit an annual report was instituted in the Code of Maryland Regulations COMAR 26.04.10.08, that was promulgated effective December 1, 2008. The regulation requires that any non-residential generator of CCBs submit a report to the Department by March 1 of each year describing the manner in which CCBs generated within the State were managed during the preceding calendar year. Additional information and specific instructions follow. For more detailed information, please refer to COMAR 26.04.10.08.

**II. General Information and Applicability.**

**A. Definitions.** Coal combustion byproducts are defined in COMAR 26.04.10.02B as:

*"(3) Coal Combustion Byproducts. (a) "Coal combustion byproducts" means the residue generated by or resulting from the burning of coal.  
(b) "Coal combustion byproducts" includes fly ash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, including flue gas desulfurization sludge and other solid residuals recovered from flue gas by wet or dry methods."*

A generator of CCBs is defined in COMAR 26.04.10.02B as:

*"(9) Generator.  
(a) "Generator" means a person whose operations, activities, processes, or actions create coal combustion byproducts.  
(b) "Generator" does not include a person who only generates coal combustion byproducts by burning coal at a private residence."*

**B. Applicability.** If you or your company meet the definition of a generator of CCBs as defined above, you must provide the information as required below. For the purposes of this report, "you" shall hereinafter refer to the generator defined above. Please note that COMAR 26.04.10.08 requires generators of CCBs to submit an annual report to the Department

3279

Facility Name: LEHIGH CEMENT CO. LLC CCB Tonnage Report - 2010

concerning the disposition of the CCBs that they generated the previous year. **THIS INCLUDES CCBS THAT WERE NOT SEPARATELY COLLECTED BUT WERE PRODUCED BY THE BURNING OF COAL AND WERE DIRECTLY CONTRIBUTED TO A PRODUCT, such as cement.** Where the amount cannot be directly measured, estimates based on the amount of coal burned can be used. The method of determining the volume of CCBs produced must be described.

**III. Required Information.** The following information must be provided to the Department by March 1, 2011:

A. Contact information:

Facility Name: LEHIGH CEMENT COMPANY LLC

Name of Permit Holder: \_\_\_\_\_

Facility Address: 675 QUAKER HILL ROAD  
Street

Facility Address: UNION BRIDGE MD 21791  
City State Zip

County: CARROLL

Contact Information (Person filing report or Environmental Manager)

Facility Telephone No.: 410 386 1210 Facility Fax No.: 410 368 1296

Contact Name: KURT DEERY

**RECEIVED**

Contact Title: ENVIRONMENTAL ENGINEER

**FEB 28 2011**

Contact Address: SAME  
Street

SOLID WASTE  
OPERATIONS DIVISION

Contact Address: Same  
City State Zip

Contact Email: KDEERY@LEHIGHCEMENT.COM

Contact Telephone No.: 410 386 1229 Contact Fax No.: SAME

*For questions on how to complete this form, please call Edward Dexter, Solid Waste Program at 410-537-3318.*

Facility Name: LEHIGH cement

CCB Tonnage Report - 2010

B. A description of the process that generates the coal combustion byproducts, including the type of coal or other raw material that generates the coal combustion byproducts. If the space provided is insufficient, please attach additional pages:

THE SITE DOES NOT GENERATE CCB'S TO BE  
STORED OR SHIPPED OFF-SITE. THE ASH GENERATED  
FROM BURNING COAL IN THE CEMENT KILN IS  
INCORPORATED INTO THE CLINKER PRODUCED WITHIN  
THE ROTARY KILN.

C. The volume of coal combustion byproducts generated during calendar year 2011, including an identification of the different types of coal combustion byproducts generated and the volume of each type generated. If the space provided is insufficient, please attach additional pages in a similar format:

Table I: Volume of CCBs Generated <sup>used</sup> for Calendar Year 2010:

Reporting Year	Volume of CCB Type:	Volume of CCB Type:	Volume of CCB Type:
2010	211,474 TONS FLY ASH		

Additional notes:

LEHIGH'S CEMENT KILN UTILIZES FLY ASH IN  
THE CLINKER PRODUCTION AS A RAW MATERIAL.  
SEE ATTACHED.

Facility Name: LEHIGH Cement

**CCB Tonnage Report – 2010**

D. Descriptions of any modeling or risk assessments, or both, conducted relating to the coal combustion byproducts or their use, that were performed by you or your company during the reporting year. Please attach this information to the report.

E. Copies of all laboratory reports of all chemical characterizations of the coal combustion byproducts. Please attach this information to the report.

F. A description of how you disposed of or used your coal combustion byproducts in calendar year 2010, identifying:

(a) The types and volume of coal combustion byproducts disposed of or used (if different than described in Paragraph C above), the location of disposal, mine reclamation and use sites, and the type and volume of coal combustion byproducts disposed of or used at each site:

PLEASE see ATTACHED

and (b) The different uses by type and volume of coal combustion byproducts:

FLY ASH — CLINKER PRODUCTION  
see ATTACHED.

If the space provided is insufficient, please attach additional pages in a similar format. (Please note that in subsequent years you need only provide the information in Section F for the last calendar year).

Facility Name: Lehigh

**CCB Tonnage Report – 2010**

G. A description of how you intend to dispose of or use coal combustion byproducts in the next 5 years, identifying:

(a) The types and volume of coal combustion byproducts intended to be disposed of or used, the location of intended disposal, mine reclamation and use sites, and the type and volume of coal combustion byproducts intended to be disposed of or used at each site:

*NA*

and (b) The different intended uses by type and volume of coal combustion byproducts.

*clinker production / raw material*

If the space provided is insufficient, please attach additional pages in a similar format.

**IV. Signature and Certification.** An authorized official of the generator must sign the annual report, and certify as to the accuracy and completeness of the information contained in the annual report:

This is to certify that, to the best of my knowledge, the information contained in this report and any attached documents are true, accurate, and complete.		
<i>Kurt M. Deery</i>	<i>ENVIRONMENTAL ENGINEER</i>	<i>2/24/2011</i>
Signature	<i>410 386 1229</i> Name, Title, & Telephone No. (Print or Type)	
	<i>KDEERY@LEHIGHCEMENT.COM</i> Your Email Address	

## Lehigh Cement Company Fly Ash Usage

Lehigh Cement Company  
675 Quaker Hill Road  
Union Bridge, MD 21791  
Phone (410) 386-1210  
Fax (410) 386-1296

Manufacturing of cement required Calcium Oxide (CaO), Silicon Dioxide (SiO<sub>2</sub>), Aluminum Oxide (Al<sub>2</sub>O<sub>3</sub>), and Ferric Oxide (Fe<sub>2</sub>O<sub>3</sub>) in precise quantities to form the necessary hydraulic phases that determine the overall strength performance of the clinker, a semi-finished cement product. Clinker is then blended with gypsum and ground to a prescribed fineness to form the finished cement. The Union Bridge plant uses limestone to provide the CaO content, sand to supply SiO<sub>2</sub>, millscale to provide Fe<sub>2</sub>O<sub>3</sub> and Fly ash as an Al<sub>2</sub>O<sub>3</sub> source for clinker manufacture, fly ash is added before the kiln.

Adding materials before the kiln and being exposed to 1400° C temperature transforms all materials to liquid state and destroys any source of origin. In other terms Al<sub>2</sub>O<sub>3</sub> from fly ash is no different from minor volumes of Al<sub>2</sub>O<sub>3</sub> from limestone or sand. Thus, there is no fly ash in clinker or finished cement.

A table below show's the hydraulic phase details:

Phase Compound	Chemical Formula	Effects on cement
Tricalcium Silicate (C3S)	3CaO · SiO <sub>2</sub>	Early Strengths
Dicalcium Silicate (C2S)	CaO · SiO <sub>2</sub>	Late Strengths
Tricalcium Aluminate (C3A)	3CaO · Al <sub>2</sub> O <sub>3</sub>	Setting Characteristics
Tetracalcium Aluminoferrite (C4AF)	4CaO · Al <sub>2</sub> O <sub>3</sub> · Fe <sub>2</sub> O <sub>3</sub>	Color and late strength development

**2010 Union Bridge Fly Ash Supply**

**2010 Fly Ash Deliveries (in s-tons)**

	Outage												Total YTD	Per State	
	Jan	Feb	Mar	Abr	May	June	July	Aug	Sept	Oct	Nov	Dec			
Constellation - Baltimore, MD	0	3817	5703	4125	4927	8068	7657	10037	9798	2492	2555	5881	65060	65060	
Mirant - Mrgtwn & Chalk Point, MD	0	26	0	3962	2617	683	729	1501	4489	9254	8825	1528	33614	33614	
NRG - Dover, DE	86	126	542	325	233	428	384	356	572	432	284	537	4305	4305	
															Maryland <b>102979</b>
Conectiv - Deepwater, NJ	0	117	70	1329	1886	2037	0	0	0	0	0	0	5439	5439	
PSE&G - Jersey City, NJ	94	0	0	0	0	0	0	0	0	0	710	1677	2481	2481	
PSE&G - Trenton, NJ	0	502	1345	781	1072	3106	1991	3332	1366	758	1456	1254	16963	16963	New Jersey <b>24883</b>
PSE&G - Bridgeport, CT	216	359	0	137	211	169	747	28	1	0	0	1001	2869	2869	Conn. <b>2869</b>
Boral Materials - Norfolk, VA	0	775	4170	4441	2384	2505	1860	2707	1892	1264	1866	524	24388	24388	Virginia <b>24388</b>
PP&L - York Haven, PA	915	4233	6230	5896	4829	6400	3333	4973	4084	4448	4809	5524	55674	55674	
Reliant - Birdsboro, PA	0	129	179	0	196	127	0	0	0	0	0	0	631	631	
Excelon - Eddystone, PA				50									50	50	
															Penn. <b>56355</b>
<b>Estimated Total</b>	<b>1311</b>	<b>10084</b>	<b>18239</b>	<b>21046</b>	<b>18355</b>	<b>23523</b>	<b>16701</b>	<b>22934</b>	<b>22202</b>	<b>18648</b>	<b>20505</b>	<b>17926</b>	<b>211474</b>	<b>211474</b>	<b>Overall Fly Ash YTD</b>