

**Coal Combustion Byproducts (CCBs)  
Annual Generator Tonnage Report  
Instructions for Calendar Year 2020**

The following is general information relating to the requirement for reporting quantities of coal combustion byproducts (CCBs) that were managed in the State of Maryland during calendar year 2017. Please answer the questions on the form provided, attaching additional information and any requested supplemental information to the back of the form. *Note that the form requires both volume and weight of the CCBs produced. If you know one of these parameters but not the others, for example, you have the tonnage produced but not the volume, you may calculate the other parameter; however, please provide the calculations and assumptions that you used in your estimate.* Questions can be directed to the Solid Waste Program at (410) 537-3315 or via email at [ed.dexter@maryland.gov](mailto:ed.dexter@maryland.gov).

**I. Background.** This requirement that generators of 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.** CCBs 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.”*

Facility Name: Lehigh Cement Co. LLC

**CCB Tonnage Report – 2020**

**B. Applicability.** If you or your company meets 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 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, 2018:

A. Contact information:

Facility Name: Lehigh Cement Company LLC

Name of Permit Holder: No Permit Required

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.: 410-386-1296

Contact Name: Kurt Deery

Contact Title: Environmental Engineer

Contact Address: Same

Street

Contact Address: Same

City

State

Zip

Contact Email: Kurt.Deery@lehighhanson.com

Contact Telephone No.: 410-386-1229 Contact Fax No.: same

*For questions on how to complete this form, please contact the Solid Waste Program at 410-537-3315*

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

Lehigh generates coal ash by burning coal to fire the cement kiln. All coal ash is incorporated into the clinker produced inside of the kiln. The coal ash during production of clinker is converted to calcium silicates.

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C. The volume and weight of CCBs generated during calendar year 2017, including an identification of the different types of CCBs generated and the volume of each type generated. If the space provided is insufficient, please attach additional pages in a similar format. If converting from volume to weight or weight to volume, please provide your calculations and assumptions.

**Table I: Volume and Weight of CCBs Generated for Calendar Year 2017:** Please note that this table includes both the volume and weight of the types of CCBs your facility produces.

<b>Volume and Weight of CCBs Generated for Calendar Year 2017</b>			
Coal Ash consumed in mfg process From Lehigh burning coal in cement kiln	Gypsum consumed in mfg process	Delivered Fly Ash Consumed by Lehigh in mfg. process	Delivered Bottom Ash consumed by Lehigh in mfg process
Type of CCB	Type of CCB	Type of CCB	Type of CCB
<b>375,455</b>	<b>284,804</b>	<b>24,898</b>	<b>413,014</b>
Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards
<b>66,146.0</b>	<b>192,243.0</b>	<b>15,181.0</b>	<b>390,298.0</b>
Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons

Additional notes:

Lehigh burned 228,089 short tons of coal with an ash content of approximately 29%.  
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D. Descriptions of any modeling or risk assessments, or both, conducted relating to the CCBs 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 CCBs. Please attach this information to the report.

F. A description of how you disposed of or used your CCBs in calendar year 2020, identifying:

(a) The types and volume of CCBs disposed of or used (if different than described in Paragraph C above) including any CCBs stored during the previous calendar year, the location of disposal, mine reclamation and use sites, and the type and volume of CCBs disposed of or used at each site:

       Lehigh utilizes fly ash and bottom ash along with synthetic gypsum in the clinker and cement manufacturing process. See Attachments.\_\_\_\_\_  
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and (b) The different uses by type and volume of CCBs:

Beneficial use within the clinker and cement manufacturing process. See Attachments.

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

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

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

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and (b) The different intended uses by type and volume of CCBs.

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See attached

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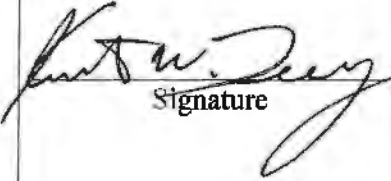
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If the space provided is insufficient, please attach additional pages in a similar format.

**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.		
 Signature	Kurt W. Deery, REM Environmental Engineer, 410-386-1229 <hr/> Name, Title, & Telephone No. (Print or Type)	01/29/2021 <hr/> Date
	kurt.deery@lehighhanson.com <hr/> Your Email Address	

**V: Attachments (please list):**

Manufacturing Description  
 Quantities of ash and synthetic gypsum beneficially used in 2020\_\_\_.

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- Calculations sheet
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**Attachment 1**  
**Year 2020 CCB Reporting**

**Table 1: Delivered Fly Ash Totals**

<b>Fly Ash Supplier</b>	<b>Supplier Location</b>	<b>Total Short Tons Delivered to Lehigh</b>	<b>Cubic Feet of Material*</b>	<b>Yards of Material</b>
Raven Power	Baltimore, MD	2,688.00	119,467	4,425
Paul Blum	Dickerson	2,439.00	108,400	4,015
RFI	Conemaugh	8,366.00	371,822	13,771
PPL	York Haven, PA	1,688.00	75,022	2,779
<b>Total</b>		<b>15,181.00</b>	<b>674,711</b>	<b>24,989.30</b>

\*Note: Fly ash = 45 lbs/cu. Ft as measured by Lehigh Lab

**Table 2: Fly Ash Consumed in Kiln from Lehigh**

<b>Fly Ash Supplier</b>	<b>Supplier Location</b>	<b>Total Short Tons Generated &amp; Consumed By Lehigh</b>	<b>Cubic Feet of Material*</b>	<b>Yards of Material</b>
Lehigh	Union Bridge MD	66,146.00	2,939,822	108,882

**Table 3: Delivered Poned Ash Totals**

<b>Bottom Ash Supplier</b>	<b>Supplier Location</b>	<b>Total Short Tons Delivered to Lehigh</b>	<b>Cubic Feet of Material*</b>	<b>Yards of Material</b>
Paul Blum	Dickerson	236,318.00	6,751,943	250,072
PPL	York Haven, Pa	151,494.00	4,328,400	160,311
Franklin	Luke, MD	2,486.00	71,029	2,631
<b>Total</b>		<b>390,298.00</b>	<b>11,151,371</b>	<b>413,013.76</b>

\*Note: Poned Ash = 70 lbs/cu. Ft as measured by lehigh Lab

**Table 4: Delivered Synthetic Gypsum**

<b>Gypsum Supplier</b>	<b>Supplier Location</b>	<b>Total Short Tons Delivered to Lehigh</b>	<b>Cubic Feet of Material*</b>	<b>Yards of Material</b>
MERG	West Virginia	132,037.00	5,281,480	195,610
MERG	Dickerson, MD	0.00	0	0
RFI	Conemaugh	55,491.00	2,219,640	82,209
Raven Power	Baltimore, MD	0.00	0	0
PPL	Various Locals	4,715.00	188,600	6,985
<b>Total</b>		<b>192,243.00</b>	<b>7,689,720</b>	<b>284,804.44</b>

\*Note: Synthetic Gypsum = 50 lbs/cu. Ft as measured by Lehigh Lab

Attachment 1

**Total short tons of CCBs used Year 2020 = 663,868.00**

**Total Yards of CCBs used Year 2020 = 831,689.8**

Calculations

(Tons \* 2000 lb/ton / lbs/cu ft) = cubic feet of material

Cubic Feet of material \* (1 yard/ 3ft)<sup>3</sup> = yards of material



Lehigh Cement Company

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Union Bridge, MD 21791

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**Lehigh Cement Company  
Fly Ash Usage  
CCB Tonnage Report---2020**

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. Lehigh received and utilized fly ash and bottom ash as listed in Attachment 1.