

Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

MAY 01 2019

Mr. Marcus Genova  
Environmental Manager  
Holcim, Inc. – Ste. Genevieve  
2942 US Highway 61  
Bloomsdale, MO 63627

RE: New Source Review Permit - Project Number: 2019-01-017

Dear Mr. Genova:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).



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Mr. Marcus Genova  
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If you have any questions regarding this permit, please contact Ryan Schott, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



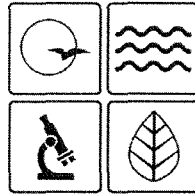
Susan Heckenkamp  
New Source Review Unit Chief

SH:rsr

Enclosures

c: Southeast Regional Office  
PAMS File: 2019-01-017

Permit Number: 052019-002



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

**MISSOURI AIR CONSERVATION COMMISSION**

**PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 052019-002

Project Number: 2019-01-017  
Installation Number: 186-0044

Parent Company: LafargeHolcim, Inc.

Parent Company Address: 8700 West Bryn Mawr Avenue, Chicago, IL 60631

Installation Name: Holcim, Inc. – Ste. Genevieve

Installation Address: 2942 US Highway 61, Bloomsdale, MO 63627

Location Information: Ste. Genevieve County (S18, T39N, R7E)

Application for Authority to Construct was made for:

The modification of the existing barge receiving/unloading facility to accommodate an increased receipt of ponded ash. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

*Kendall B. Hale for*

Director or Designee  
Department of Natural Resources

MAY 01 2019

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Effective Date

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of startup of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:  
Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:  
<http://dnr.mo.gov/regions/>

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (3)(E). "Conditions required by permitting authority."*

Holcim, Inc. – Ste. Genevieve  
Ste. Genevieve County (S18, T39N, R7E)

1. Control Device Requirement – Fabric Filters
  - A. Holcim, Inc. – Ste. Genevieve shall control emissions from the equipment listed in Table 1 using fabric filters, as specified in the permit application.

**Table 1. Equipment Controlled by Fabric Filters**

Emission Point	Description	Control Device
32A-17	Transfer from 32A-BC4 (Belt Conveyor) to 32A-BI5 (Pond Ash Bin)	32A-BF4
32A-16	Transfer from 32A-BC3 (Belt Conveyor) to 32A-BC4 (Belt Conveyor)	32A-BF3
33A-11	Transfer from 32A-BI5 (Pond Ash Bin) to 33A-AF5 (Apron Feeder)	33A-BF4
33A-12	Transfer from 33A-AF5 (Apron Feeder) to 33A-WF5 (Weigh Feeder)	33A-BF4

- B. The filters shall be operated and maintained in accordance with the manufacturer's specifications.
- C. The filters shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
- D. Holcim, Inc. – Ste. Genevieve shall monitor and record the operating pressure drop across the filters at least once every 24 hours while the equipment is operating. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty, which shall be kept onsite.
- E. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- F. Holcim, Inc. – Ste. Genevieve shall maintain an operating and maintenance log for the filters, which shall include the following:
  - 1) Incidents of malfunction with impact on emissions (tons), date and duration of event, probable cause, and corrective actions;
  - 2) Maintenance activities with inspection schedule, repair actions, replacements, etc.
  
- 2. Record Keeping Requirements  
Holcim, Inc. – Ste. Genevieve shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2019-01-017  
Installation ID Number: 186-0044  
Permit Number:

052019-002

Installation Address:

Holcim, Inc. – Ste. Genevieve  
2942 US Highway 61  
Bloomsdale, MO 63627  
Ste. Genevieve County, (S18, T39N, R7E)

Parent Company:

LafargeHolcim, Inc.  
8700 West Bryn Mawr Avenue  
Chicago, IL 60631

REVIEW SUMMARY

- Holcim, Inc. – Ste. Genevieve has applied for authority to modify the existing barge receiving/unloading facility to accommodate an increased receipt of ponded ash.
- The application was deemed complete on January 31, 2019.
- HAP emissions are not expected from the proposed equipment.
- None of the NSPS or NESHAPs apply to this project. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Fabric filters are being used to control particulate emissions from the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Ste. Genevieve County, an attainment/unclassifiable area for all criteria pollutants.
- This installation is classified as item number 3, *Portland cement plants*, on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal, or applicable rules.
- Submittal of an amendment to your Part 70 Operating Permit is required within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Holcim, Inc. – Ste. Genevieve is a Portland cement manufacturing facility located near Bloomsdale, Missouri. The installation is a major source for all criterial pollutants and currently has a Part 70 Operating Permit (OP2018-100). Table 2 provides a list of New Source Review permits that have been issued to Holcim, Inc. – Ste. Genevieve from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
062004-005	PSD for new Portland cement manufacturing installation
022001-006T	Rock crushing
062004-005A	PSD amendment for as-built changes
032009-016	Temporary permit for crusher and screen
062004-005B	PSD amendment for haul roads
062004-005C	PSD amendment for haul roads
102011-012	Track-mounted crusher
012013-005	Barge loading
082013-005	Dust collection upgrade
052014-002	Temporary lime injection test
062004-005D	PSD amendment for sorbent injection
092016-009	Reconstruct clinker cooler
122017-006	Petcoke pre-crusher

## PROJECT DESCRIPTION

Holcim, Inc. – Ste. Genevieve has been given the opportunity to obtain increased amounts of an additive (ponded and bottom ash) that is used as a raw material in the cement manufacturing process. The increased amounts that the installation would like to receive and store exceed the capacity of the current equipment. In order to manage the material, Holcim, Inc. – Ste. Genevieve is proposing to modify the existing barge receiving/unloading facility, expand the correctives/additives building, install a new feed bin system for the ponded ash, and install a barge cleaning system.

A new additive hopper with an apron feeder will be installed on the barge-mounted facility. The new clamshell will have an increased bucket capacity allowing fewer swings of the crane to unload a barge. The maximum unloading rate will increase to 876 tons per hour.

To store the larger amount of ponded ash, an expansion of the existing correctives/additives (CA) building is required. The length of the CA building will be increased by approximately 10-12 meters. The storage pile for the ponded ash will be enclosed by the building in the same way that additives are currently stored and managed. Adjustments to the lengths and position of the existing feed belt conveyors transferring additives from the CA building to feed bins will be included in this project, and the increased belt rate will affect the transfer point emission sources associated with the conveyors.



A new feed bin system will be installed next to the existing additive feed bins. The 342 ton feed bin will be equipped with a baghouse, apron feeder, and weigh belt.

Additionally, a new barge cleaning system will be installed in the harbor. This system will be a closed-loop washing system that will use process water to clean the barges. Table 3 provides a list of emission points affected by the project and their updated design rates.

Table 3. Project Emission Points

Emission Point	Description	Old Maximum Design Rate (ton/hr)	New Maximum Design Rate (ton/hr)
X11-01	Transfer from Barge to B52-CA1 (Crane Clamshell)	507	876
X11-02	Transfer from B52-CA1 (Crane Clamshell) to Hopper/Screen 2	507	876
X11-03	Transfer from Hopper 2 to Belt Conveyor 1	507	876
X11-04	Transfer from Crane Clamshell to Hopper/Screen 1	507	876
X11-05	Transfer from Hopper/Apron Feeder 1 to Belt Conveyor 2	507	876
X11-06	Transfer from Belt Conveyor 1 to Belt Conveyor 2	507	876
X14-07	Transfer from X14-BC2 to X11-BC6	507	876
X11-08	Transfer from X11-BF6 to X11-BC6	507	876
X11-09	Transfer from X11-BC6 to X11-BC7	507	876
X11-10	Transfer from X11-BF7 to X11-BC7	507	876
32A-06	Transfer from 32A-BC1 (Belt Conveyor) to 32A-BC2 (Belt Conveyor)	275	413
32A-10	Transfer from 32A-BC2 (Belt Conveyor) to 32A-BC3 (Belt Conveyor)	275	413
32A-11	Transfer from 32A-BC3 (Belt Conveyor) to 32A-BI1 (Mill Scale Bin)	275	413
32A-12	Transfer from 32A-BC3 (Belt Conveyor) to 32A-BI2 (Diaspore Clay Bin)		
32A-13	Transfer from 32A-BC3 (Belt Conveyor) to 32A-BI3 (Porter's Creek Clay Bin)		
32A-14	Transfer from 32A-BF2 (Bag Filter) to 32A-BI4 (Sand Bin)		
32A-17*	Transfer from 32A-BC4 (Belt Conveyor) to 32A-BI5 (Pond Ash Bin)	-	
32A-16*	Transfer from 32A-BC3 (Belt Conveyor) to 32A-BC4 (Belt Conveyor)	-	413
33A-11*	Transfer from 32A-BI5 (Pond Ash Bin) to 33A-AF5 (Apron Feeder)	-	132
33A-12*	Transfer from 33A-AF5 (Apron Feeder) to 33A-WF5 (Weigh Feeder)	-	132

\*New emission points

The increase in the amount of ponded ash received and stored will not impact the existing cement manufacturing process or the existing raw material mix. Holcim, Inc. – Ste. Genevieve is only increasing the capacity for receiving and storing of one ingredient, which is not a process bottleneck.

## EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 13.2.4 *Aggregate Handling and Storage Piles* (November 2006). All emission points were considered drop operations that can be represented using Equation (1), assuming an outdoor wind speed of 4.9 miles per hour and a moisture content of 7.0%, which is the weighted average result from semi-annual moisture testing.

All existing non-fugitive processes listed in Table 3 are controlled by baghouses. These include all emission points from X14-07 through 32A-14. Operation of the existing baghouses will not be changing, and the equipment they control will continue to be subject to the requirements of the special conditions originally imposed in their respective construction permits. All affected equipment will have the same emission factors and control efficiencies as originally calculated, but with increased throughput. All new processes listed in Table 3 will also be controlled by fabric filters. The filters were given an overall control efficiency of 99% for all particulates, which is the same as the existing filters.

No HAP emissions are expected from ash handling. No emissions are expected from the barge cleaning system.

Table 4 provides an emissions summary for this project. Existing potential emissions were taken from the installation's previous construction permit (122017-006). Existing actual emissions were taken from the installation's most recent EIQ. Potential emissions of the project represent the potential of the new equipment and existing equipment whose maximum design rates are increasing (see Table 3), assuming continuous operation (8,760 hours per year).

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2017 EIQ)	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	>100	N/D	11.34	>100
PM <sub>10</sub>	15.0	>100	377.51	5.36	>100
PM <sub>2.5</sub>	10.0	>100	251.16	0.81	>100
SO <sub>x</sub>	40.0	>100	538.78	N/A	>100
NO <sub>x</sub>	40.0	>100	2,996.88	N/A	>100
VOC	40.0	>100	408.58	N/A	>100
CO	100.0	>100	1,505.16	N/A	>100
Total HAPs	25.0	>25	44.13	N/A	>25

N/A = Not Applicable; N/D = Not Determined

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

## APPLICABLE REQUIREMENTS

Holcim, Inc. – Ste. Genevieve shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

## GENERAL REQUIREMENTS

*Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050

- *Operating Permits*, 10 CSR 10-6.065
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
  - Per 10 CSR 10-6.110(4)(B)2.A, a full EIQ is required annually
- *Restriction of Emission of Odors*, 10 CSR 10-6.165
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 10, 2019, received January 14, 2019, designating LafargeHolcim, Inc. as the owner and operator of the installation.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....percent	<b>Mgal</b> .....1,000 gallons
<b>°F</b> .....degrees Fahrenheit	<b>MW</b> .....megawatt
<b>acfm</b> .....actual cubic feet per minute	<b>MHDR</b> .....maximum hourly design rate
<b>BACT</b> .....Best Available Control Technology	<b>MMBtu</b> ....Million British thermal units
<b>BMPs</b> .....Best Management Practices	<b>MMCF</b> .....million cubic feet
<b>Btu</b> .....British thermal unit	<b>MSDS</b> .....Material Safety Data Sheet
<b>CAM</b> .....Compliance Assurance Monitoring	<b>NAAQS</b> ....National Ambient Air Quality Standards
<b>CAS</b> .....Chemical Abstracts Service	<b>NESHAPs</b> National Emissions Standards for Hazardous Air Pollutants
<b>CEMS</b> .....Continuous Emission Monitor System	<b>NO<sub>x</sub></b> .....nitrogen oxides
<b>CFR</b> .....Code of Federal Regulations	<b>NSPS</b> .....New Source Performance Standards
<b>CO</b> .....carbon monoxide	<b>NSR</b> .....New Source Review
<b>CO<sub>2</sub></b> .....carbon dioxide	<b>PM</b> .....particulate matter
<b>CO<sub>2e</sub></b> .....carbon dioxide equivalent	<b>PM<sub>2.5</sub></b> .....particulate matter less than 2.5 microns in aerodynamic diameter
<b>COMS</b> .....Continuous Opacity Monitoring System	<b>PM<sub>10</sub></b> .....particulate matter less than 10 microns in aerodynamic diameter
<b>CSR</b> .....Code of State Regulations	<b>ppm</b> .....parts per million
<b>dscf</b> .....dry standard cubic feet	<b>PSD</b> .....Prevention of Significant Deterioration
<b>EIQ</b> .....Emission Inventory Questionnaire	<b>PTE</b> .....potential to emit
<b>EP</b> .....Emission Point	<b>RACT</b> .....Reasonable Available Control Technology
<b>EPA</b> .....Environmental Protection Agency	<b>RAL</b> .....Risk Assessment Level
<b>EU</b> .....Emission Unit	<b>SCC</b> .....Source Classification Code
<b>fps</b> .....feet per second	<b>scfm</b> .....standard cubic feet per minute
<b>ft</b> .....feet	<b>SDS</b> .....Safety Data Sheet
<b>GACT</b> .....Generally Available Control Technology	<b>SIC</b> .....Standard Industrial Classification
<b>GHG</b> .....Greenhouse Gas	<b>SIP</b> .....State Implementation Plan
<b>gpm</b> .....gallons per minute	<b>SMAL</b> .....Screening Model Action Levels
<b>gr</b> .....grains	<b>SO<sub>x</sub></b> .....sulfur oxides
<b>GWP</b> .....Global Warming Potential	<b>SO<sub>2</sub></b> .....sulfur dioxide
<b>HAP</b> .....Hazardous Air Pollutant	<b>SSM</b> .....Startup, Shutdown & Malfunction
<b>hr</b> .....hour	<b>tph</b> .....tons per hour
<b>hp</b> .....horsepower	<b>tpy</b> .....tons per year
<b>lb</b> .....pound	<b>VMT</b> .....vehicle miles traveled
<b>lbs/hr</b> .....pounds per hour	<b>VOC</b> .....Volatile Organic Compound
<b>MACT</b> .....Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> .....micrograms per cubic meter	
<b>m/s</b> .....meters per second	