

STATE OF 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: 042010-010 Project Number: 2010-03-015

Parent Company: Mississippi Lime Company

Parent Company Address: 3870 South Lindbergh Boulevard Suite 200,
St. Louis, MO 63127

Installation Name: Mississippi Lime Company

Installation Number: 186-0001

Installation Address: 16147 U.S. Highway 61, Ste. Genevieve, MO 63670

Location Information: Ste. Genevieve County, S29, T38N, R9E

Application for Authority to Construct was made for:
Installation of a trans-loading station for finished lime product. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

APR 16 2010

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "James L. Kucenich".

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

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 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 Departments' Air Pollution Control Program of the anticipated date of start up 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 of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' 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 at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Project No.	2010-03-015

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 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 (12)(A)10. "Conditions required by permitting authority."

Mississippi Lime Company
Ste. Genevieve County, S29, T38N, R9E

1. Capture Device Requirements
Mississippi Lime Company shall use total enclosures to capture emissions from the trans-loading conveyor drop-points (EU904-EU906) listed in Table 2 as having a total enclosure capture device. A total enclosure is an enclosure that completely surrounds emissions from an emissions unit.
2. Control Device Requirement – Baghouse (CD903)
 - A. Mississippi Lime Company shall control emissions from the trans-loading conveyor drop points (EU904-EU906) equipped with total enclosures by using a baghouse as specified in the permit application.
 - B. The baghouse shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. The gauge(s) or meter(s) shall be located such that the DNR employees may easily observe them.
 - C. Replacement filters for the baghouse shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Mississippi Lime Company shall maintain an operating and maintenance log for the baghouse which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
 - E. Mississippi Lime Company shall maintain all records required by this permit for not less than five (5) 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: 2010-03-015
Installation ID Number: 186-0001
Permit Number:

Mississippi Lime Company
16147 U.S. Highway 61
Ste. Genevieve, MO 63670

Complete: March 3, 2010

Parent Company:
Mississippi Lime Company
3870 South Lindbergh Boulevard Suite 200
St. Louis, MO 63127

Ste. Genevieve County, S29, T38N, R9E

REVIEW SUMMARY

- Mississippi Lime Company has applied for the authority to construct a trans-loading station for the transfer of finished lime product to temporary storage.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment. 40 CFR 60, Subpart HH, "Standards of Performance for Lime Manufacturing Plants" applies to the source but does not apply to the project because the rotary lime kilns are not being modified. 40 CFR 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the source but does not apply to the project because lime (calcium oxide) is not considered a nonmetallic mineral.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations applies to the proposed equipment. 40 CFR 63, Subpart AAAAA, "National Emission Standard for Hazardous Air Pollutants for Lime Manufacturing Plants", applies to the source but not to the proposed equipment because the processed stone handling requirements apply to the limestone feed prior to the kiln and do not apply to the finished lime product.
- A baghouse (CD903) is being used to control particulate matter less than 10 microns and 2.5 microns in aerodynamic diameter (PM₁₀ and PM_{2.5}) emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ and PM_{2.5} are below de minimis levels.

- This installation is located in Ste. Genevieve County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2, 11. *Lime Plants*. The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing are not required for the equipment.
- As there are no specific requirements within the existing operating permit for the equipment considered for this project, an amendment to the Part 70 Operating Permit may not be required.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Mississippi Lime Company (Mississippi Lime) is a lime processing plant that is located near Ste. Genevieve, Missouri in Ste. Genevieve County. The installation is a major source for construction permit purposes and a Part 70 (Title V) source for operating permit purposes. The installation produces lime which is a product of the calcination of limestone.

Mississippi Lime currently holds Part 70 operating permit number OP2002-018. The following construction permits have been issued to Mississippi Lime Company from the Air Pollution Control Program.

Table 1: Construction Permits Issued to Mississippi Lime

Permit Number	Description
042009-001	A Section (5) permit for new limestone crushing, screening, and conveying equipment for the underground mine
072004-012	Vertical kilns-(netting).
052003-045	A Section (5) permit issued on May 2, 2003, for a new lime hydrator.
122002-007	A Section (8) permit for two (2) new Rotary Lime Kilns.
102002-008	A Section (5) permit issued on October 7, 2002, for a lime handling system.
082002-004	A Section (5) permit issued on August 9, 2002, for a new railcar transloading system.
092001-014	A Section (5) permit issued on September 19, 2001, for a new Vertical Kiln plant with supporting equipment.
112001-005	A Section (5) permit issued on November 6, 2001, for a new bagging operation.

Permit Number	Description
052001-003	A Section (5) permit issued on May 4, 2001, to add two (2) additional hydrated lime storage silos, two (2) additional truck load out systems and one (1) additional rail load out system.
0999-009	A Section (3) Temporary Permit issued on September 14, 1999, to reclaim and remediate waste storage piles. Permit Expiration Date: July 31, 2001.
0799-015	A Section (5) permit issued on July 20, 1999, to revise Permit No. 0679-002 to account for increased potential emissions.
1198-020	A Section (5) permit issued on November 24, 1998, for a modification to the rotary kiln load out system.
0898-019	A Section (5) permit issued on August 17, 1998, for construction of a Maerz natural gas fired vertical lime kiln and ancillary equipment.
0198-006	A Section (5) permit issued on January 8, 1998, for the addition of a pneumatic conveying system from the Rotary Hydrate Plants No. 2 & No. 3 to Rotary Hydrate Plant No. 1.
0997-015	A Section (5) permit issued on September 11, 1997, for modifications to the lime handling and blending system at the Peerless Plant.
0897-035	A Section (5) permit issued on August 26, 1997, to amend Permit No. 0292-010A for a natural gas fired Maerz Vertical Lime Kiln to include an ancillary limestone feed and limestone processing system.
0897-018	A Section (5) permit issued on December 2, 1997, to replace an existing natural gas fired burner of the precipitated calcium carbonate system (MRPCC-2) with a larger burner.
0897-017	A Section (5) permit issued on August 20, 1997, for an underground limestone crushing operation.
0395-008	A Section (5) permit issued on February 10, 1995, to construct a new hydrate bulk bagging system.
0794-014	A Section (5) permit issued on July 20, 1994, to construct a Fuller pneumatic conveying system to convey precipitated calcium carbonate (PPC) from PPC Plant No. 1 to PPC Plant No. 2.
0292-010	A Section (5) permit issued on February 1, 1992, for the addition of a new natural gas fired Maerz Vertical Lime kiln.
1090-006	A Section (5) permit issued on October 11, 1990, for the addition of two (2) storage silos for lime hydrate.
0889-013	A Section (5) permit issued on August 30, 1989, to add a calcium carbonate slurry operation.
0588-008A	A Section (5) permit issued on May 31, 1988, for a milling operation.
1086-005A	A Section (5) permit issued on October 1, 1986, to construct a precipitated calcium carbonate plant (MRPCC-2).
0284-008A to 010A	A Section (5) permit issued on February 21, 1984, to construct a rotary hydrator (MRH-3).
0480-006	A Section (8) permit issued on April 1, 1980, to construct two (2) rotary lime kiln systems.
0679-002	A Section (5) permit issued on June 6, 1979, for various crushing, conveying, storage and loading equipment.

PROJECT DESCRIPTION

Mississippi Lime was issued a Notice of Violation (NOV) for constructing this project without first obtaining a construction permit or a preconstruction waiver. This permit is for a new trans-loading station which will supplement an existing trans-loading station. The new trans-loading station will transfer finished lime (calcium oxide) product to and

from hopper bottom trailers and railcars for temporary storage purposes. The trans-loading station includes a below-ground dump pit, two conveyors operating in series, and a load-out spout. The Maximum Hourly Design Rate (MHDR) for the trans-loading station is bottle-necked by the maximum capacity of the conveyors which are rated at 50 tons lime per hour (tph). Emissions from the conveyor drop-points and load-out spout are vented to a baghouse. Baghouse collections will be recycled back to the conveyors. The following table summarizes the emission units and control devices that were considered for this project.

Table 2: Summary of Emission Units

Emission Unit ID	Drop-Point Descriptions	MHDR	Capture Device	Control Device	Description
EU902	Dump Pit to Hopper	50 tph	N/A	N/A	N/A
EU903	Hopper to Conveyor	50 tph	N/A	N/A	N/A
EU904	Conveyor to Conveyor	50 tph	Total Enclosure	CD903	Baghouse
EU905	Conveyor to Load-Out	50 tph	Total Enclosure	CD903	Baghouse
EU906	Baghouse to Conveyor	0.48 lb/hr	Total Enclosure	CD903	Baghouse

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition (AP-42). According to AP-42, Chapter 11.17 "Lime Manufacturing" (February 1998) the predictive drop-point equation provided in AP-42, Chapter 13.2.4 "Aggregate Handling and Storage Piles" (November 2006) is the recommended method for estimating material handling emissions for lime product. Therefore, the potential emissions of PM₁₀ and PM_{2.5} were calculated using the drop-point equation for aggregate storage piles. This equation accounts for moisture content and wind speed to develop an emission factor. The moisture content of lime is expected to be very low. Therefore the moisture content of limestone (0.2 percent) was used as it is considered conservative for the drop-point equation. A minimal wind speed was assumed (1.3 miles per hour) as all of the drop-points are either enclosed with ductwork or located below ground. The control efficiency for the baghouse (CD903) was obtained from AP-42, Appendix B.2 "Generalized Particle Size Distributions" (September 1996).

An increase in haul road emissions is expected and the potential emissions were calculated using the predictive equations from AP-42, Section 13.2.2 "Unpaved Roads" (November 2006). A 90% control efficiency was allowed for the haul road potential emissions as all of the haul road emissions are controlled with paving or a chemical dust suppressant. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ^[1]	Existing Actual Emissions (2008 EIQ)	Uncontrolled Potential Emissions of the Application	Controlled Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	10637.37	773	4.28	0.79	N/A
PM _{2.5}	10.0	N/D	3	0.65	0.32	N/A
SO _x	40.0	>250	3906	N/A	N/A	N/A
NO _x	40.0	7154.52	2992	N/A	N/A	N/A
VOC	40.0	392.56	34	N/A	N/A	N/A
CO	100.0	>250	9317	N/A	N/A	N/A
HAPs	10.0/25.0	38.29	21.9	N/A	N/A	N/A

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

¹Existing potential emissions obtained from permit number 042009-001

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 PM₁₀ and PM_{2.5} are below de minimis levels.

APPLICABLE REQUIREMENTS

Mississippi Lime Company 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

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *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

- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- As the potential emissions of the emission units are less than 0.5 pounds per hour, 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter From Industrial Processes*, does not apply to the equipment in this permit.

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*, I recommend this permit be granted with special conditions.

Kathi Jantz
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 2, 2010, received March 3, 2010, designating Mississippi Lime Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated March 11, 2010.

Mr. Jonathan Kennedy
Environmental Compliance Specialist
Mississippi Lime Company
16147 U.S. Highway 61
Ste. Genevieve, MO 63670

RE: New Source Review Permit - Project Number: 2010-03-015

Dear Mr. Kennedy:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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.

If you have any questions regarding this permit, please do not hesitate to contact Kathi Jantz, at the Departments' 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

Kendall B. Hale
New Source Review Unit Chief

KBH:kjl

Enclosures

c: Southeast Regional Office
PAMS File: 2010-03-015

Permit Number: