



Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

STATE OF INDIANA)
COUNTY OF MARION) SS: BEFORE THE INDIANA DEPARTMENT
OF ENVIRONMENTAL MANAGEMENT

IN THE MATTER OF:)
ORDER OF THE COMMISSIONER)
PURSUANT TO IC 13-14-2-1)
FOR CARMEUSE LIME INC.)

NOTICE AND ORDER OF THE
COMMISSIONER OF THE
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

This Notice and Order of the Commissioner of the Department of Environmental
Management ("Order") is issued pursuant to Indiana Code ("IC") 13-14-1-9, IC 13-14-2-1, and
IC 13-14-2-7. During the Commissioner's review, it was determined that the Petition should be
granted according to the terms specified below:

PETITION

Petitioner is Carmeuse Lime, Inc. ("Carmeuse" or "Petitioner"), a stationary lime
manufacturing plant with Source I.D. Number 089-00112, located at 1 North Carmeuse Drive in
Gary, Lake County, Indiana, and permitted under the Part 70 air operating permit program.

The United States Environmental Protection Agency (U.S. EPA) published the final Data
Requirements Rule (DRR) for the 2010 1-hour SO2 Primary National Ambient Air Quality
Standard (NAAQS), in the Federal Register on August 21, 2015 (80 FR 51052). The DRR was
promulgated in order to establish minimum requirements for air agencies to characterize 1-hour
SO2 air quality concentrations across the country, with an emphasis on doing so in the vicinity of
sources that have the largest annual SO2 emissions to aid in the implementation of the 2010
primary 1-hour SO2 standard. Implementation of the new 1-hour SO2 standard began in 2013
when U.S. EPA established nonattainment areas based on monitoring data. On March 2, 2015,
U.S. EPA entered into a federal Consent Decree with the Sierra Club and Natural Resources
Defense Council (NRDC) that established a timeline for the completion of air quality
characterizations and designations in all remaining areas of the country. The Consent Decree
required U.S. EPA to complete the designations in three additional rounds: Round 2 by July 2,
2016, Round 3 by December 31, 2017, and Round 4 by December 31, 2020.

On January 7, 2016, Indiana submitted to U.S. EPA a list of 11 stationary sources for air
quality characterization pursuant to the DRR requirements as part of the Round 3 designation
process. The DRR considers air dispersion modeling and ambient air monitoring appropriate
ways to assess local SO2 concentrations and the DRR also provides states with a third option to
establish a permanent and federally enforceable facility-wide limit on SO2 emissions from a

listed source to below 2,000 tons per year. A source that limits its SO₂ emissions under the third option is not subject to the requirements for air quality characterization. Though the Petitioner is not one of the 11 stationary sources listed by IDEM and its SO₂ emissions are less than 2,000 tons per year, it has been identified by IDEM as a source that could impact overall SO₂ air quality in the area surrounding it.

On November 16, 2016, the Petitioner submitted a request to the Commissioner to impose permanent and enforceable SO₂ requirements on the Petitioner in order to ensure continued attainment of the 2010 1-hour SO₂ NAAQS in the area surrounding Carmeuse.

By January 13, 2017, the Indiana Department of Environmental Management ("IDEM") intends to recommend that Lake County be designated as attainment for the 2010 1-hour SO₂ NAAQS. The recommendation will be based on modeling that includes, among other requirements, permanent and enforceable SO₂ requirements at Carmeuse.

The Petitioner proposed that it be required to comply with emission rates for Rotary Kilns EU-1, EU-2, EU-3, EU-4, and EU-5 that would provide for modeled attainment of the 2010 1-hour SO₂ NAAQS.

FINDINGS

Pursuant to IC 13-14-2-1(b) and IC 13-14-2-7(1), the Commissioner may issue Orders to secure compliance with Indiana's environmental statutes and rules, and to impose emission limitations or other restrictions to demonstrate attainment of the ambient air quality standards, including the ambient air quality standard for SO₂ at 326 Indiana Administrative Code ("IAC") 1-3-4(b)(1)(A).

Petitioner's proposal and this Order are intended to support IDEM's intended recommendation that Lake County be designated as attainment for the 2010 1-hour SO₂ NAAQS.

Based on the foregoing information, IDEM finds the following:

1. Permanent and enforceable SO₂ emission requirements for Carmeuse are required in order to model continued attainment of the 2010 1-hour SO₂ NAAQS in areas surrounding the Petitioner.
2. Adding SO₂ emission requirements to the Petitioner's Part 70 Operating Permit is not adequately permanent to assure continued attainment of the 2010 1-hour SO₂ NAAQS. An Order of the Commissioner of IDEM is required to ensure SO₂ emission requirements remain permanent and enforceable, as required by 42 U.S.C. § 7407(d)(3)(E)(iii).
3. Approval by U.S. EPA of the Commissioner's Order into the Indiana State Implementation Plan ("SIP") is required to make the Order requirements federally enforceable. Upon approval into the Indiana SIP, the Order requirements become applicable requirements as defined in 326 IAC 2-7-1(6).
4. Based on modeling conducted by IDEM, the SO₂ emission rates in Order paragraph 2 are adequate to assure continued attainment of the 2010 1-hour SO₂ NAAQS.

ORDER

1. This Order approves the Petition submitted by the Petitioner according to the terms specified below. This Order imposes on Petitioner the SO₂ emission requirements described below.
2. Requirements:
 - a. The SO₂ emissions from Rotary Kilns EU-1, EU-2, EU-3, EU-4, and EU-5 shall not exceed nine and forty-eight hundredths (9.48) pounds per hour, each, calculated as a rolling seven hundred and twenty (720) operating hour average, per kiln.
3. The Petitioner shall comply with the requirements in Order paragraph 2, beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017.
4. As required by 326 IAC 2-7-2(d)(1) and 326 IAC 2-7-5, the Petitioner shall apply to incorporate these Order requirements as set forth in Order paragraphs 2 and 5 into its Part 70 Operating Permit within thirty (30) days of the effective date of U.S. EPA's approval of the requirements contained within this Commissioner's Order into the State Implementation Plan.
5. The Petitioner shall comply with the reporting, stack testing, compliance determination and recordkeeping requirements specified in this paragraph beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017.
 - a. Reporting: The Petitioner shall submit to IDEM, on a quarterly basis, a report of the SO₂ emissions in pounds per hour from each of Rotary Kilns #1 through #5 (EU-1 through EU-5) on a rolling seven hundred and twenty (720) operating hour average calculated for each kiln. Each report will be submitted not later than thirty (30) days after the end of the calendar quarter being reported.
 - b. Stack Testing: The Petitioner shall perform SO₂ testing of Rotary Kilns #1 through #5 (EU-1 through EU-5) utilizing methods approved by the Commissioner at least once every thirty (30) months from the date of the most recent valid stack test. The testing is required in order to develop the SO₂ scrubbing factors used to demonstrate compliance with the SO₂ emission rates in Order paragraph 2. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Permit Condition C.8, Performance Testing, in Title V Permit No. T089-34191-00112 contains Petitioner's obligation with regard to the performance testing required herein. Representative sampling of the as-fed limestone, coal, engineered fuel (EF), and glycerin shall be conducted during each stack test run and the sulfur content analysis of the collected samples shall be included in the stack test report for development of the SO₂ scrubbing factor. Material sampling (as-fed during test) and analysis methods shall be included in the test protocol submitted to OAQ. Stack testing shall be conducted with limestone representative of the material processed in the kiln (dolomitic limestone or high calcium limestone). Testing shall be conducted for both dolomitic limestone and high calcium limestone if the kiln is used or is anticipated to be used to process both. The initial SO₂ stack test for each kiln shall occur no later than 180 days from the effective date as determined in Order paragraph 3. For kilns that process both dolomitic limestone and high calcium

limestone, the stack test for the second product processed in the kiln shall occur by the later of 180 days from the effective date as determined in Order paragraph 3 or 90 days after the second product is first processed, whichever occurs last.

- c. Compliance determination: Petitioner shall demonstrate compliance with the SO₂ emission rates in Order paragraph 2 above as follows:

Sampling, Analysis and Calculations:

- (i) Sampling: Each shipment of limestone, glycerin, engineered fuel (EF), and coal is sampled and analyzed by an independent laboratory, utilizing American Society for Testing and Materials (ASTM) standards for sampling and chemical analysis. The certified analyses that accompany each shipment shall be the source of the data of the sulfur content in both the limestone and coal calculation of the hourly SO₂ emissions for reporting. Either a certificate of analysis or certification that the EF complies with Carmeuse's specifications will be the source of the data of the sulfur content in the EF for calculation of the hourly SO₂ emissions for reporting. Information concerning the sulfur content of pipeline quality natural gas shall be the source of the data of the sulfur content in the natural gas. Pursuant to 326 IAC 7-4.1-2(c), the current sampling and analysis protocol to be used in lieu of certified analyses, certificates of analysis, or certification of compliance with Carmeuse's specifications for limestone, coal, glycerin, and/or EF is as follows:
- (a) The sample acquisition points shall be at locations where representative samples of the respective material shipments may be obtained.
- (b) Minimum sample size shall be in accordance with ASTM specifications for representative samples in the size fraction and quantity delivered.
- (c) Samples shall be composited and analyzed in accordance with ASTM specifications.
- (1) For limestone, a sample shall be taken for each boat/barge load received and analyzed.
- (2) For glycerin, a sample shall be taken for each truck load received and analyzed.
- (3) For EF, analysis of a composite sample consisting of each truck load received per month.
- (4) For coal, a sample shall be taken for each rail load received and analyzed.
- (d) Preparation of the sample and sulfur content analysis, where applicable, shall be determined pursuant to 326 IAC 3-7-2(c), (d), and (e).
- (ii) For each kiln, the Petitioner shall calculate the SO₂ scrubbing factor for each product type as follows:

$$\text{Scrubbing Factor (SF)}_{\text{Kiln}(i) / \text{Product}(i)} = 1 - [\text{SO}_2, \text{stack test}(i) / (\text{S}_{\text{input STest}(i)} * 2 * 2000)]$$

Where, for purposes of this paragraph 5.c.(ii), $\text{S}_{\text{input STest}(i)} =$

$$\begin{aligned} & [(\%S_{\text{limestone STest}(i)} \times \text{Usage}_{\text{limestone STest}(i)}) / 100] + \\ & [(\%S_{\text{coal STest}(i)} \times \text{Usage}_{\text{coal STest}(i)}) / 100] + \\ & [(\%S_{\text{glycerin STest}(i)} \times \text{Usage}_{\text{glycerin STest}(i)}) / 100] + \\ & [(\%S_{\text{EF STest}(i)} \times \text{Usage}_{\text{EF STest}(i)}) / 100] + \\ & [(\text{S}_{\text{natural gas STest}(i)} \times \text{Usage}_{\text{natural gas STest}(i)}) / (7000 \times 2000)] \end{aligned}$$

$\%S_{\text{STest}(i)}$ = weight percent sulfur in limestone, coal, glycerin or EF inputs, as applicable, as determined by sampling and analysis for the respective material input during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)).

$\text{S}_{\text{natural gas STest}(i)}$ = sulfur content of natural gas (grains/dscf) during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)).

$\text{Usage}_{\text{STest}(i)}$ = average limestone, coal, glycerin, EF or natural gas input to the kiln during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)) in tons/hr or dscf/hr as applicable.

The Petitioner shall recalculate the scrubbing factor within thirty (30) days after receiving the results of the most recent valid stack test for SO₂ for Kiln(i) for the applicable product type (Product(i)).

- (iii) The Petitioner shall calculate hourly SO₂ emissions (lb/hr) for each of Rotary Kilns #1 through #5 (EU-1 through EU-5) by the following calculations using the input values determined in Order paragraphs 5.c.(i) and 5.c.(ii) above:

$$\text{SO}_2 \text{ Emissions}_{\text{Kiln}(i)} \text{ (lb/hr)} = (1 - \text{SF}_{\text{Kiln}(i)/\text{Product}(i)}) \times \text{S}_{\text{Input}} \times 2 \times 2000$$

Where

$SF_{Kiln(i)/Product(i)}$ = Scrubbing Factor value determined in Order paragraph 5.c.(ii) from most recent valid stack test for Kiln(i) for the applicable product type (Product(i)) for which the total sulfur input during the test was the same as or greater than the total sulfur input for the hour. If the total sulfur input for the hour is greater than the total sulfur input during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)), then the Scrubbing Factor value used shall be the value determined based on the results of the most recent prior valid stack test for Kiln(i) for the applicable product type (Product(i)) for which the total sulfur input during the test was the same as or greater than the total sulfur input for the hour.

Hour of operation is defined as any hour that fuel is being combusted within the affected kiln(s).

For the time period beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017 and the completion of the initial stack testing discussed in Order paragraph 5.b for each kiln and product type, Petitioner shall continue to use the existing scrubbing factors to calculate SO₂ emissions. However, following the development of new scrubbing factors based on the results of the initial stack tests for each kiln and product type, Petitioner shall recalculate the SO₂ emissions for the period beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017 to the date the new scrubbing factors were determined using the new scrubbing factors. If Petitioner has filed reports as required by Order paragraph 5.a based on the existing scrubbing factors, Petitioner shall submit revised reports based on the use of the new scrubbing factors.

When limestone or product is NOT present in a kiln, the SF shall be equal to zero (0).

For purposes of this paragraph 5.c.(iii), $S_{input} = [(\%S_{limestone} \times \text{Hourly Input}_{limestone}) / 100] + [(\%S_{coal} \times \text{Hourly Input}_{coal}) / 100] + [(\%S_{glycerin} \times \text{Hourly Input}_{glycerin}) / 100] + [(\%S_{EF} \times \text{Hourly Input}_{EF}) / 100] + [(S_{natural\ gas} \times \text{Hourly Input}_{natural\ gas}) / (7000 \times 2000)]$

$\%S$ = weight percent sulfur in limestone, coal, glycerin or EF inputs, as applicable, as determined by the most recent vendor analysis or sampling, in accordance with 5.c.(i) - Sampling above.

$S_{natural\ gas}$ = sulfur content of natural gas (grains/dscf).

Hourly Input = limestone, coal, glycerin, EF or natural gas input to the kiln in tons/hr or dscf/hr as applicable.

- (iv) The Petitioner shall calculate the rolling seven hundred and twenty (720) operating hour average SO₂ emissions (lbs/hr) for each Rotary Kiln #1 through #5 (EU-1 through EU-5) by adding the hourly SO₂ emissions calculated in Order paragraph 5.c.(iii) for each Rotary Kiln to the preceding seven hundred and nineteen (719) hours of operation for each rotary kiln, then divide by seven hundred and twenty (720) to derive the rolling average emissions per kiln per averaging period.
- d. Recordkeeping: The Petitioner shall maintain records of the sampling and analysis of raw material and fuels, certifications, other documentation, and the equations used to demonstrate compliance with the emission requirements in Order paragraph 2. These records shall be retained for a period of at least five (5) calendar years.

This Order shall apply to and be binding upon the Petitioner, its successors and assigns. No change in ownership, corporate, or partnership status of the Petitioner shall in any way alter its status or responsibilities under this Order.

Nothing in this Order shall prohibit future revisions to the emission rates in Order paragraph 2, including increases in such emission rates, provided such future revisions demonstrate continued attainment of the 1-hour SO₂ NAAQS, satisfy the requirements in Section 110(l) of the Clean Air Act (42 U.S.C. §7410(l)), and any necessary revisions to the applicable regulations and SIP are obtained.

EFFECTIVE DATE OF ORDER

Pursuant to IC 13-14-2-1(d), IC 4-21.5-3-1, IC 4-21.5-3-5(a)(6), and 40 CFR 51.102, IDEM will give notice of this Order to each entity to whom the Order is directed and affected neighbors by mailing and to the general public by publication.

Pursuant to IC 4-21.5-3-7(a)(3), IC 4-21.5-3-2(e), and IC 4-21.5-3-5, this Order may be appealed by a Petition for review within eighteen (18) days after the date affected persons were given notice of the Order by U.S. mail. Information on petitions for review of this Order can be found at IC 4-21.5-3-7 and 315 IAC 1-3-2.

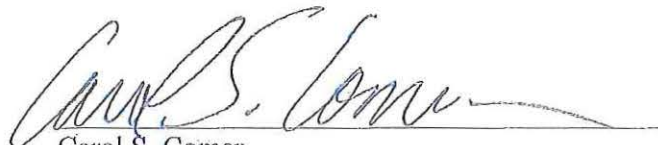
Pursuant to IC 4-21.5-3-5(f) and IC 4-21.5-3-2(e), this Order is effective eighteen (18) days from mailing of the notice unless a Petition for review has been filed before or on the eighteenth (18th) day. However, the compliance date for the SO₂ emission requirements in Order paragraph 2 begins seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017.

Pursuant to 40 CFR 51.103, IDEM will submit this Order to U.S. EPA as a revision to the Indiana SIP. Upon approval by the U.S. EPA, this Order will be part of the Indiana SIP.

Persons seeking judicial review of this Order may do so in accordance with IC 4-21.5-5.

If you have procedural or scheduling questions regarding your request for review, you may contact the Office of Environmental Adjudication at (317) 232-8591. If you have questions regarding this Order, please contact Betsy Zlatos, Office of Legal Counsel, by telephone at (317)233-5645 or email at bzlatos@idem.IN.gov.

Dated at Indianapolis, Indiana this 16th day of November, 2016.

A handwritten signature in cursive script, appearing to read "Carol S. Comer", written over a horizontal line.

Carol S. Comer
Commissioner
Indiana Department of Environmental Management