

January 6, 2015

Mr. Bechara Choucair, M.D.  
Commissioner, Department of Public Health  
City of Chicago  
333 South State St., Room 200  
Chicago, IL 60604

**RE: Request for Variance from the Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles  
Carmeuse Lime, Inc. – 3245 East 103<sup>rd</sup> Street, Chicago, IL 60617**

Dear Mr. Choucair:

Pursuant to Paragraph 8.0 of the City of Chicago Department of Public Health (CDPH) Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles (bulk material handling rule), Carmeuse Lime, Inc. (Carmeuse) hereby submits this request for variance from several requirements of the rule as they apply to the Carmeuse facility located in Chicago, Illinois (South Chicago Facility). Specifically, this variance request addresses requirements pertaining to the lime operation at the South Chicago Facility. In addition to lime operations, Carmeuse is permitted to operate a stone distribution terminal. The stone received, handled, stored, and shipped offsite meets the definition of “Construction or Demolition Material” in Paragraph 2.0(8);<sup>1</sup> and therefore, does not meet the definition of “Bulk Solid Material” as defined in Paragraph 2.0(3) of the bulk material handling rule.<sup>2</sup> As such, Carmeuse believes that the stone distribution operation at the South Chicago Facility is not subject to the bulk material handling rule. Therefore, compliance or variance from the requirements of the bulk material handling rule are not addressed herein for the stone distribution terminal. Carmeuse will address compliance or variance from the requirements of the bulk material handling rule at which time the stone handled at the stone distribution terminal no longer meets the definition in Paragraph 2.0(8) for “Construction or Demolition Material”.

The following sections detail the information required by Paragraph 8.0(2) of the bulk material handling rule.

**a) The regulation or requirement from which the variance is requested**

The requirements from which the variance is requested are provided in the following table.

Rules Section	Regulation or Requirement
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<sup>1</sup> Pursuant to Paragraph 2.0(8), “Construction or Demolition Material” means material used in or resulting from the construction, remodeling, repair, landscaping, or demolition of utilities, structures, buildings, and roads, including but not limited to stockpiles of crushed stone, sand and gravel, hot mix asphalt plants or ready mixed concrete plants.

<sup>2</sup> Pursuant to Paragraph 2.0(3), “Bulk Solid Material” means any solid substance or material that can be used as a fuel or as an ingredient in a manufacturing process that may become airborne or be scattered by the wind and that, except for coke and coal, is stored at a Facility in an amount equal to or greater than 25 cubic yards at any one time, including but not limited to ores, coal, and coke, including petcoke and metcoke, but shall not include salt, grains, Construction and Demolition Materials, materials that are handled or stored pursuant to a recycling, reprocessing, or waste handling Facility permit under Chapter 11-4 of the Code, or materials used in manufacturing cement at a facility that has obtained a construction permit and prevention of significant deterioration approval from the Illinois Environmental Protection Agency.

Rules Section	Regulation or Requirement
<p>Paragraph 3.0(2)(c) Measurement of Opacity</p> <p>Paragraph 3.0(2)(d) Testing of Visual Emissions and Opacity Limits</p> <p>Paragraph 3.0(3)(f)(ii) Dust Monitoring Plan</p>	<p>Fugitive Dust – Prohibited. The Facility Owner or Operator shall prevent the discharge into the atmosphere of visible fugitive dust as specified below:                      c) Opacity shall be determined based on a visual reading in accordance with the measurement method specified in 35 Ill. Admin. Code 212.109.</p> <p>d) The Facility Owner or Operator shall, on at least a quarterly basis, periodically perform tests of visual fugitive dust and opacity in accordance with the protocol set forth in the approved Fugitive Dust Plan.</p> <p>(3) Fugitive Dust Plan – Required                      f) A dust monitoring plan that describes:                      ii. The schedule and plan for quarterly testing to ensure compliance with the prohibition on Fugitive Dust set forth in 3.0(2). Such testing must be a) conducted by a professional trained and certified to read opacity in accordance with the measurement method specified in 35 Ill. Admin. Code 212.107, and b) conducted during a range of weather conditions to ensure that representative conditions are the Facility are covered.</p>
<p>Paragraph 3.0(4) Fugitive Dust Monitoring</p> <p>Paragraph 3.0(3)(f)(i), (g), and (h) Dust Monitoring Plan</p> <p>Paragraph 3.0(17)(e) Records of Continuous Monitoring</p>	<p>Installation, operation and maintenance of permanent, continuous Federal Equivalent Method (FEM) real-time PM<sub>10</sub> monitors around the perimeter of the facility.</p> <p>A dust monitoring plan that describes the placement, operation, and maintenance of the PM<sub>10</sub> monitors required in Paragraph 3.0(4).</p> <p>(g) A contingency plan describing the Owner’s or Operator’s response activities when the monitors required under paragraph 3.0(4) detect PM<sub>10</sub> that exceeds the Reportable Action Level as defined in Section 2.0 above. The response activities should consist of a range of increasingly aggressive measures appropriate to different levels of exceedance.</p> <p>(h) A contingency plan for an alternative method of monitoring in the event of malfunction or failure of the approved PM<sub>10</sub> monitors.</p> <p>Record the results of the continuous monitoring for Fugitive Dust as required in Paragraph 3.0(4), indicate any instances when a monitor detects Fugitive Dust that exceeds the Reportable Action Level set forth in the Fugitive Dust Plan, and record the action taken to respond to the detection of Fugitive Dust.</p>
<p>Paragraph 3.0(10) Vehicle Leaking</p>	<p>Facility owners or operators shall not load material into truck trailers, railcars, or barges such that a vehicle leaks material or liquid that contains material onto Internal Roads or into waterways. If a vehicle leaks material or liquid that contains material onto an Internal Road or into a waterway, the Facility Owner or Operator shall clean the affected road within one hour with a street sweeper or water and shall clean the affected waterway immediately.</p>
<p>Section 3.0(15)(b) Roadway Cleaning</p>	<p>Use a street sweeper to clean any paved road that is used to transport material inside or within one quarter (¼) mile of the perimeter of the facility and</p>



Rules Section	Regulation or Requirement
	comply with the following: b) The street sweeping shall be sufficient so that not more than four (4) hours elapses between each street sweeper cleaning or after every 100 truck material receipts or dispatches, but not less than one time daily when the facility is open for business, unless the roads are free and clear of any material transported to or from the facility.

**b) A description of the process or activity for which the variance is requested, including pertinent data on location, size, and the population and geographic area affected by, or potentially affected by, the process or activity**

The South Chicago Facility is located at 3245 East 103<sup>rd</sup> Street adjacent to the Calumet River. An aerial map of the South Chicago Facility is provided in Attachment 1. The facility encompasses approximately 35 acres. The property is bounded by South Calumet River Street on the east and East 106<sup>th</sup> Street on the south. To the west of the South Chicago Facility is the Calumet River and to the east are railroad tracks and woods. Across the woods are residential properties.

The South Chicago Facility is located in the East Side area of Chicago, which covers an approximately 2.8 square miles, bounded by Calumet River to the north and west, State Line Road to the east, and 126<sup>th</sup> street to the south. The population of this area is about 23,000 people.<sup>3</sup> The South Chicago Facility is located in the 60617 zip code. The 60617 zip code encompasses a total area of 15.37 square miles, which is made up of 13.86 square miles of land area and 1.51 square miles of water area. The population of the 60617 zip code is 84,155 and the population density is about 6,070 people per square mile, which is lower than the 2010 US Census estimate for Chicago of 11,842 people per square mile.<sup>4</sup>

Carmeuse previously operated a lime manufacturing plant (including two rotary kilns and other material processing and handling operations) at the South Chicago Facility. Carmeuse has permanently shut down portions of its operations and is in the process of dismantling portions of the South Chicago Facility including both rotary kilns. The South Chicago Facility continues to conduct lime receiving, handling (including grinding and bagging), storage, and transfer operations. Additionally, Carmeuse continues the operation of the stone distribution terminal at the South Chicago Facility.

Lime receiving, handling, storage, and transfer operations are all enclosed and controlled by dust collectors. Pebble lime is transferred to the facility primarily via truck or railcar. Railcar unloading and truck unloading operations are conducted within enclosed buildings to minimize the loss of product during handling operations. The pebble lime is then transported to screening and processing operations via covered conveyor belts and screw conveyors. Pebble lime can be transported to storage tanks or silos for eventual load out or further processing, including crushing and grinding. The conveyor system, hopper system, bucket elevator system, grinding mill operation, and the material transfer points are controlled by dust collectors to minimize product loss and fugitive dust emissions.

Limestone aggregate (i.e., stone) is received via boat/barge and unloaded to a stockpile near the barge dock. Stone is then transferred to a storage pile via front end loaders and haul trucks. Stone is not further processed

<sup>3</sup> Paral, Rob. "Chicago Demographics Data". Dated 12 June 2012.

<sup>4</sup> Information obtained from <http://www.unitedstateszipcodes.org/> and <http://quickfacts.census.gov/qfd/states/17/1714000.html>.



at the South Chicago Facility. Stone from the storage pile is loaded into shipping trucks and railcars via front end loaders. However, as previously stated, the stone distribution terminal meets the definition of "Construction or Demolition Material" in Paragraph 2.0(8); and therefore, does not meet the definition of "Bulk Solid Material" as defined in Paragraph 2.0(3) of the bulk material handling rule.

**c) The quantity and types of materials used in the process or activity in connection with which the variance is requested, as appropriate**

Lime is typically received via railcars or trucks. Lime that is either crushed or not processed, is shipped out via trucks or railcars or in 50-lb bags. Lime operations vary based on demand based factors. Historical processing and shipment were approximately 50,000 – 800,000 tons per year.

Stone is typically received via barge. Stone shipped out from the South Chicago Facility via trucks and railcars will not exceed 50,000 tons per month and 187,000 tons per year, as permitted under Construction Permit (No. 09120004) issued by the Illinois Environmental Protection Agency (IEPA). The South Chicago Facility currently has approximately nine (9) and a half (1/2) acres of land that could accommodate outdoor storage of stone.

**d) A demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses**

The implementation of best management practices to control fugitive dust emissions from the operations at the South Chicago Facility as documented in the Fugitive Dust Operating Program and operating in compliance with the federal, state and city regulations ensure that the operations at the South Chicago Facility will not create a public nuisance or adverse impact to the surrounding area, environment or property uses. Each paragraph in the bulk material handling rule that Carmeuse seeks a variance is detailed further below.

*Paragraph 3.0(2)(c) and (d) Fugitive Dust Measurement of Opacity and Testing of Visual Emissions and Opacity Limits and Paragraph 3.0(3)(f)(ii)*

Carmeuse is seeking a variance on the prescribe test methods in Paragraph 3.0(2)(c) and Paragraph 3.0(3)(f)(ii). Specifically, Paragraph 3.0(2)(c) requires that opacity be measured in accordance with the method specified in Title 35 Illinois Administrative Code (IAC) 212.109 (i.e., US EPA Method 9, 40 Code of Federal Regulation (CFR) 60, Appendix A); and Paragraph 3.0(2)(d) specifies that testing of visual emissions and opacity limits be performed in accordance with the protocol set forth in the Fugitive Dust Plan (i.e., Fugitive Particulate Matter (PM) Operating Program) pursuant to Paragraph 3.0(3)(f)(ii). However, Paragraph 3.0(3)(f)(ii) requires that the testing be conducted by a professional trained and certified to read opacity in accordance with the measurement methods specified in 35 IAC 212.107 (i.e., US EPA Method 22, 40 CFR Part 60, Appendix A). Carmeuse has clarified in the South Chicago Facility dust monitoring plan (contained in the Fugitive PM Operating Program) that the following monitoring be completed.

The South Chicago Facility completes an opacity monitoring program on at least a quarterly basis. This program consists of US EPA Method 9 observations on all sources of fugitive PM within the facility (e.g., stacks, loading/unloading operations), and a US EPA Method 22 observations wherein the observer stands on the property boundaries to ensure that no visible PM is being emitted offsite. The opacity monitoring is completed by plant personnel who are trained and certified to read opacity in accordance with 35 IAC 212.109 (Method 9 monitoring) and trained to read opacity in accordance with 35 IAC 212.107 (Method 22 monitoring).

As this requested variance is a clarification to the required visible emissions and opacity testing, Carmeuse does not anticipate any it will not create a public nuisance or adverse impact to the surrounding area, environment or property uses.

***Paragraph 3.0(4) Fugitive Dust Monitoring***

Based on the nature of operations at the South Chicago Facility (i.e., lime handling operation inside enclosures), Carmeuse does not anticipate off-site emissions of fugitive particulate matter (PM). Carmeuse has historically conducted visible emissions observations (i.e., Method 22) of the dust collection system and adhered to best management practices as detailed in the facility Fugitive PM Operating Program to ensure fugitive PM emissions are minimized.<sup>5</sup> Additionally, Carmeuse believes that adhering to the Fugitive PM Operating Program, which includes a dust monitoring plan pursuant to Paragraph 3.0(3)(f)(ii)<sup>6</sup> will document that there is no public nuisance or adverse impact to the surrounding area.

***Paragraph 3.0(10) Vehicle Leaking***

Carmeuse is requesting for a variance from portions of the vehicle leaking requirements outlined in Paragraph 3.0(10). Carmeuse makes every effort to ensure that material is loaded into truck trailers and railcars in a manner preventing vehicle leaks onto internal roads or into waterways. However, Carmeuse is seeking a variance from the requirement to clean material or liquid that contains material from an Internal Road within one (1) hour. Truck and railcar loading of lime is conducted within an enclosure and material spills are promptly cleaned up. The lime loading area is also inspected at least once per work shift.<sup>7</sup>

***Paragraph 3.0(15)(b) Roadway Cleaning***

Carmeuse is requesting for a variance from portions of the roadway cleaning requirements outlined in Paragraph 3.0(15)(b). Carmeuse requests for a variance from the requirement to sweep the street every four (4) hours or every one hundred (100) truck material receipts or dispatches. Paved surfaces are cleaned on a daily basis using a wet street sweeper, except when there is adequate precipitation or the temperatures are below freezing (which would create a safety hazard) as outlined in the South Chicago Fugitive PM Operating Program. The roadway cleaning frequency has been previously agreed upon by the US Environmental Protection Agency (EPA), Region 5 and Carmeuse. Additionally, Carmeuse believes that adhering to the Fugitive PM Operating Program, which includes a dust monitoring plan pursuant to Paragraph 3.0(3)(f)(ii)<sup>8</sup> will document that there is no public nuisance or adverse impact to the surrounding area. As such, Carmeuse does not anticipate that the issuance of variance from this requirement would not cause any public nuisance or adverse impacts.

**e) A statement explaining:**

- i. Why compliance with the regulations imposes an arbitrary or unreasonable hardship;**

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<sup>5</sup> The Fugitive Dust Operating Program was most recently revised on December 2014 and incorporates the required elements pursuant to Paragraph 3.0(3) of the bulk material handling rule.

<sup>6</sup> Unless otherwise documented in this variance request.

<sup>7</sup> Inspections are conducted when loading has occurred during the previous work shift (e.g., if no railcar loading occurred, inspection of the railcar loading area are not required).

<sup>8</sup> Unless otherwise documented in this variance request.



- ii. **Why compliance cannot be accomplished during the required timeframe due to events beyond the Facility Owner or Operator's control such as permitting delays or natural disasters; or**
- iii. **Why the proposed alternative measure is preferable.**

*Paragraph 3.0(2)(c) and (d) Fugitive Dust Measurement of Opacity and Testing of Visual Emissions and Opacity Limits and Paragraph 3.0(3)(f)(ii)*

Carmeuse is seeking a variance on the prescribe test methods in Paragraph 3.0(2)(c) and Paragraph 3.0(3)(f)(ii). Specifically, Paragraph 3.0(2)(c) requires that opacity be measured in accordance with the method specified in Title 35 Illinois Administrative Code (IAC) 212.109 (i.e., US EPA Method 9, 40 Code of Federal Regulation (CFR) 60, Appendix A); and Paragraph 3.0(2)(d) specifies that testing of visual emissions and opacity limits be performed in accordance with the protocol set forth in the Fugitive Dust Plan (i.e., Fugitive Particulate Matter (PM) Operating Program) pursuant to Paragraph 3.0(3)(f)(ii). However, Paragraph 3.0(3)(f)(ii) requires that the testing be conducted by a professional trained and certified to read opacity in accordance with the measurement methods specified in 35 IAC 212.107 (i.e., US EPA Method 22, 40 CFR Part 60, Appendix A). Carmeuse has clarified in the South Chicago Facility dust monitoring plan (contained in the Fugitive PM Operating Program) that the following monitoring be completed.

The South Chicago Facility completes an opacity monitoring program on at least a quarterly basis. This program consists of US EPA Method 9 observations on all sources of fugitive PM within the facility (e.g., stacks, loading/unloading operations), and a US EPA Method 22 observations wherein the observer stands on the property boundaries to ensure that no visible PM is being emitted offsite. The opacity monitoring is completed by plant personnel who are trained and certified to read opacity in accordance with 35 IAC 212.109 (Method 9 monitoring) and trained to read opacity in accordance with 35 IAC 212.107 (Method 22 monitoring).

*Paragraph 3.0(4) Fugitive Dust Monitoring*

Carmeuse requests a variance from the requirement to install FEM real-time PM<sub>10</sub> monitors around the perimeter of the South Chicago Facility, because the lime handling operations are conducted within enclosures the risk of off-site fugitive PM is anticipated to be low. Additionally, it is economically infeasible to install and maintain the PM<sub>10</sub> monitors. The cost estimate provided by a vendor for the ambient PM<sub>10</sub> FEM monitors, not including design, installation and required ancillary equipment, is in the range of \$130,000 - \$150,000. Annual operating costs are estimated to be in the range of \$70,000 - \$100,000.

Furthermore, it is ineffective to rely on PM<sub>10</sub> monitors which cannot distinguish background concentrations or the source of the monitored PM<sub>10</sub> levels. The PM<sub>10</sub> monitored readings might arbitrarily trigger response activities for detection of fugitive dust not attributable to the South Chicago Facility.

Carmeuse operates the South Chicago Facility under a Fugitive PM Operating Program, which details best management practices and the dust monitoring plan pursuant to Paragraph 3.0(3)(f)(ii).<sup>9</sup> Carmeuse believes that these measures should ensure that the emission standards specified in Paragraph 3.0(2)(a) and (b) are met. Additionally, Carmeuse operates a wind monitor that records wind speed and wind direction data. Therefore, Carmeuse will be able to suspend the applicable operations when necessary to avoid off-site fugitive PM emissions.

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<sup>9</sup> Unless otherwise documented in this variance request.



### *Paragraph 3.0(10) Vehicle Leaking*

Carmeuse is requesting for a variance from portions of the vehicle leaking requirements outlined in Paragraph 3.0(10). Carmeuse makes every effort to ensure that material is loaded into truck trailers and railcars in a manner preventing vehicle leaks onto Internal Roads or into waterways. However, Carmeuse is seeking a variance from the requirement to clean material or liquid that contains material from an Internal Road within one (1) hour. Truck and railcar loading of lime is conducted within an enclosure and material spills are promptly cleaned up. The lime loading area is also inspected at least once per work shift.<sup>10</sup> It would potentially put undue burden on the plant personnel to clean spills on Internal Roads within one (1) hour when leaks are likely to be identified while trucks are loaded within an enclosure.

Leaks from stone trucks or railcars are unlikely given the size of the material being loaded. Furthermore, paved surfaces are cleaned on a daily basis using a wet street sweeper, except when there is adequate precipitation or the temperatures are below freezing (which would create a safety hazard) as outlined in the South Chicago Fugitive PM Operating Program. Therefore, Carmeuse believes that the current practice of material spills cleanup is sufficient to ensure compliance with the emission standards specified in Paragraph 3.0(2)(a) and (b) of the bulk material handling rule.

### *Section 3.0(15)(b) Roadway Cleaning*

All routinely accessed paved surfaces are cleaned on a daily basis using a wet street sweeper unless temperatures are below freezing or during precipitation events as documented in the South Chicago Facility Fugitive PM Operating Program. Trucks enter and exit the South Chicago Facility via 106<sup>th</sup> Street. Therefore, Carmeuse sweeps 106<sup>th</sup> Street within one quarter (1/4) mile of the facility property boundary using a wet street sweeper on a daily basis except when there is adequate precipitation or the temperatures are below freezing (which would create a safety hazard) as outlined in the South Chicago Fugitive PM Operating Program.

Carmeuse requests a variance from the requirement in Paragraph 3.0(15)(b) to sweep paved roads inside and within ¼ mile of the property boundary either every four (4) hours or after every one hundred (100) truck material receipts or dispatches, but at least one time daily. The previously established best practice of sweeping paved roads inside and within ¼ mile of the property boundary on a daily basis except as detailed above was previously approved by US EPA, Region V. Therefore, Carmeuse believes that the previously prescribed street sweeping frequency is sufficient to ensure compliance with the emission standards specified in Paragraph 3.0(2)(a) and (b) of the bulk material handling rule.

### **f) A description of the proposed methods to achieve compliance with the regulations and a timetable for achieving that compliance, if applicable**

As previously discussed, Carmeuse implements best management practices and control measures, which are sufficient to minimize fugitive PM emissions at the South Chicago Facility. Carmeuse conducts the operations at the South Chicago Facility in accordance with the recently updated Fugitive PM Operating Program. Carmeuse believes that adhering to the Fugitive PM Operating Program, which includes a dust monitoring plan pursuant to Paragraph 3.0(3)(f)(ii)<sup>11</sup> will document compliance with the emission standards specified in Paragraph 3.0(2)(a) and (b).

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<sup>10</sup> Inspections are conducted when loading has occurred during the previous work shift (e.g., if no railcar loading occurred, inspection of the railcar loading area are not required).

<sup>11</sup> Unless otherwise documented in this variance request.

**g) A discussion of alternate methods of compliance and of the factors influencing the choice of applying for a variance**

Alternate methods and factors influencing Carmeuse's decision to apply for the specified variances are discussed throughout this request letter. In summary, Carmeuse has implemented adequate control measures to avoid excessive fugitive dust emissions from its operations at the South Chicago Facility to ensure that the operations would not create public nuisance or adverse impact to the surrounding areas. Factors that influence the choice of applying for the specified variances include the technical and economic feasibility of complying with the requirements in the bulk material handling rule. Carmeuse's approaches are consistent with the federal and state regulations, and in line with practices previously approved by US EPA.

**h) A statement regarding the person's current status as related to the subject matter of the variance request**

Carmeuse has provided the current status of the South Chicago Facility as related to the subject matter of the variance request. Should the CDPH requires any additional information, Carmeuse is willing to discuss and provide additional information.

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Carmeuse appreciates your careful consideration of this variance application. Please do not hesitate to contact Mr. David Moore at (219) 944-6159 or via email at David.Moore@carmeusena.com if you have any questions regarding this submittal.

Sincerely,



Larry Sewick  
Site Operations Manager

Attachment

cc: Chris Imbrogno, Carmeuse

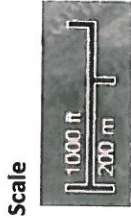


ATTACHMENT 1

**Aerial Map of South Chicago Facility**



Trucks enter and exit  
the facility on 106<sup>th</sup>  
Street only



Carmeuse Line, Inc.

Figure 1-1. Aerial Layout