

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number
B2169

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B2169-2013

Carmeuse Lime, Inc.

SRN: B2169

Located at

25 Marion Avenue, River Rouge, Michigan 48218

Permit Number: MI-ROP-B2169-2013

Staff Report Date: October 8, 2012

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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October 8, 2012 STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft permit pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	Carmeuse Lime, Inc. 25 Marion Avenue River Rouge, Michigan 48218
Source Registration Number (SRN):	B2169
North American Industry Classification System (NAICS) Code:	327410 (Lime Manufacturing)
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	200500186
Responsible Official:	Jeff Bittner, Site Operations Manager 313-849-9268
AQD Contact:	Stephen Weis, Senior Environmental Engineer 313-456-4688
Date Permit Application Received:	August 26, 2005
Date Application Was Administratively Complete:	August 26, 2005
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	October 8, 2012
Deadline for Public Comment:	November 7, 2012

Source Description

The Carmeuse Lime, Inc. facility is located on the north side of Marion Avenue, just east of Jefferson Avenue, in the City of River Rouge. The facility's property is bounded by Marion Avenue to the south; by the Rouge River to the north; by Jefferson Avenue and a City of River Rouge Department of Public Works building and yard to the west; and by the BP River Rouge Terminal (205 Marion St.) to the east. The areas east and west of the Carmeuse facility are industrial properties, ranging from various fuel terminals to a gypsum processing facility. The areas to the north, on the other side of the Rouge River, contain the operations of the Detroit Water and Sewerage Department Wastewater Treatment Plant (WWTP); most of the wastewater treatment operations are located west of Jefferson Avenue, but a chlorination process is located on the east side of Jefferson. Zug Island, which contains the steel making operations of US Steel and EES Coke, is located further to the east (about ½ mile) on the north side of the Rouge River. There are also residential neighborhoods in close proximity to Carmeuse, located directly to the south of the facility. The closest residential properties are located approximately 100 yards to the south of Carmeuse's lime kilns.

The Carmeuse facility is a lime manufacturing facility at which limestone (calcium carbonate), the raw material, is calcined via heating in two rotary lime kilns to produce quicklime, or calcium oxide (CaO). The limestone is brought to the Carmeuse facility via ship, and is stored in the northern half of the facility adjacent to the Rouge River. The limestone comes from quarries in locations such as Manitoulin Island, Ontario; Rogers City, MI; and Gulliver, MI in the southern Upper Peninsula. The limestone is conveyed from the storage piles to the two rotary lime kilns, where it is heated to over 1,600°F to calcine the limestone, essentially driving off the CO₂ portion. The kilns, which are 300 feet long, are fired by coal (with natural gas used at start up) which produces a flame that heats the kiln; according to information provided by Carmeuse, the fuel end of the kiln is maintained at a temperature of approximately 2,200°F. The quicklime that is produced at the facility is sent to various customers, including the steel industry (there are two steel mills within a few miles radius of the Carmeuse facility), as well as for uses such as water treatment and flue gas desulfurization. Each kiln has a maximum production capacity of between 500 and 550 tons of lime product per day.

The exhaust gases from the two kilns are sent to one of two baghouses, one for each kiln. Prior to venting to the baghouses, the exhaust air from the kilns is sent through a water spray to lower the exhaust air temperature to below 500°F. Each of the two baghouse units (which are positive pressure, reverse-air baghouse units) consists of 12 compartments that contain a high-temperature fabric filter. Both baghouses exhaust to the ambient air via a monovent. The primary purpose of the baghouse units is to control emissions of particulate matter, but due to the resultant coating of limestone-derived material on the fabric filters, the baghouse also provides some measure of control for other pollutants produced by the lime production process, namely sulfur dioxide and hydrogen chloride.

The process equipment and devices that generate emissions that are released to the ambient air at a facility are referred to as Emission Units for the purposes of the ROP. Among the Emission Units included in the ROP for the Carmeuse Lime facility are the aforementioned two rotary lime kilns, identified as EUKILNNUMBER1 and EUKILNNUMBER2, with permit requirements identified under the Flexible Group FG-MACT-AAAAA-Lime Manufacturing Plants in the ROP; conveyors, elevators and rescreening operation for finished lime product that are identified as EUCONVEYOR/ELEV; lime loadout equipment for transferring finished lime product to truck and rail vehicles that are identified as EULIMELOADOUT; a flue dust tank identified as EUFLUEDUSTTANK; a lime fines handling operation that vents through a baghouse identified as EUNO6BINVENT; and potential fugitive emission sources at the facility – those associated with processed stone handling operations are addressed via the Flexible Group Conditions in FG-MACT-AAAAA-Lime Manufacturing Plants, while other potential fugitive dust sources, such as storage piles and facility roadways, are addressed in the Source-Wide Conditions in the ROP.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the 2011 submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	70
Lead (Pb)	Negligible
Nitrogen Oxides (NO _x)	547
Particulate Matter less than 10 microns (PM ₁₀)	64
Sulfur Dioxide (SO ₂)	608
Volatile Organic Compounds (VOCs)	Negligible

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases in tons per year of CO₂e is 609,696. CO₂e is a calculation of the combined global warming potentials of six Greenhouse Gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

See Parts C and D in the draft ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is located in Wayne County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as a nonattainment area with respect to the particulate matter (PM_{2.5}) standard. Wayne County is currently designated as attainment/unclassified for all other criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO) and particulate matter each exceed 100 tons per year. The facility is also considered a major source of hazardous air pollutants (HAP) due to potential emissions of a single HAP, hydrochloric acid (HCl), being greater than 10 tons per year. Also, the potential to emit of Greenhouse Gases is 100,000 tons per year or more calculated as carbon dioxide equivalents (CO₂e) and 100 tons per year or more on a mass basis.

The stationary source is subject to the Prevention of Significant Deterioration regulations of 40 CFR, Part 52.21 because the potential to emit of nitrogen oxides, sulfur dioxide, carbon monoxide and particulate matter each exceed 100 tons per year (lime plants are one of the 28 source categories listed in Part 52.21(b)(1)(i)(a) for which the 100 ton per year threshold applies).

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR 98 is not an ROP applicable requirement and is not included in the ROP.

EUKILNNUMBER1, EUKKILNNUMBER2, and EUPSHFUGITIVE, with permit requirements identified under the Flexible Group FG-MACT-AAAAA-Lime Manufacturing Plants, at the stationary source are

subject to the Maximum Achievable Control Technology (MACT) Standards for Lime Manufacturing Plants promulgated in 40 CFR, Part 63, Subparts A and AAAAA.

EUKILNNUMBER1 and EUKKILNNUMBER2, with permit requirements identified under the Flexible Group FG-MACT-AAAAA-Lime Manufacturing Plants, at the stationary source are subject to the New Source Performance Standards (NSPS) for Lime Manufacturing Plants promulgated in 40 CFR, Part 60, Subparts A and HH. However, the emission standards for particulate matter put forth in 40 CFR, Part 63, Subpart AAAAA referenced above are more stringent than the requirements in the NSPS; thus, the particulate matter standards put forth in Subpart HH are not included in the ROP.

The emission limitation or standard for particulate matter from EUKILNNUMBER1 and EUKKILNNUMBER2 (with permit requirements identified under the Flexible Group FG-MACT-AAAAA-Lime Manufacturing Plants) at the stationary source is exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR, Part 64, because emissions of particulate matter are addressed by 40 CFR, Part 63, Subpart AAAAA. Therefore, these Emission Units and their associated Flexible Group are exempt from CAM requirements for particulate matter.

The coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal associated with Flexible Group FG-MACT-AAAAA-Lime Manufacturing Plants at the stationary source are subject to the opacity limitation specified in the New Source Performance Standards (NSPS) for Coal Preparation and Processing Plants promulgated in 40 CFR, Part 60, Subparts A and Y.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document. PTIs issued after the effective date of ROP No. 199700102 are identified in Appendix 6 of the ROP.

Streamlined/Subsumed Requirements

This permit does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Equivalent Requirements

This permit does not include any equivalent requirements pursuant to Rule 212(5). Equivalent requirements are enforceable applicable requirements that are equivalent to the applicable requirements contained in the original PTI, a Consent Order/Judgment, and/or the State Implementation Plan.

Non-applicable Requirements

Part E of the draft ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the draft ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

There were no processes listed in the ROP application as exempt devices under Rule 212(4). Exempt devices are not subject to any process-specific emission limits or standards in any applicable requirement.

Draft ROP Terms/Conditions Not Agreed to by Applicant

This permit does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by the DEQ

The AQD proposes to approve this permit. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the U.S. Environmental Protection Agency (USEPA) is allowed up to 45 days to review the draft permit and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Wilhemina McLemore, Detroit District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

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November 29, 2012 STAFF REPORT ADDENDUM

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Purpose

A Staff Report dated October 8, 2012 was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	Jeff Bittner, Site Operations Manager 313-849-9268
AQD Contact:	Stephen Weis, Senior Environmental Engineer 313-456-4688

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period.

Changes to the October 8, 2012 Draft ROP

No changes were made to the draft ROP.