B2169

MANILA

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B216940737

FACILITY: CARMEUSE LIME Inc, RIVER ROUGE OPERATION		**SRN / ID:** B2169
LOCATION: 25 MARION AVE, RIVER ROUGE		**DISTRICT:** Detroit
CITY: RIVER ROUGE		**COUNTY:** WAYNE
CONTACT: Matt Gower , Site Operations Manager		**ACTIVITY DATE:** 07/12/2017
STAFF: Stephen Weis	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Compliance inspection of the Carmeuse Lime and Stone facility in River Rouge. The Carmeuse facility is scheduled for inspection in FY 2017.		
RESOLVED COMPLAINTS:		

Location:
Carmeuse Lime, Inc. (SRN B2169)
25 Marion Avenue
River Rouge

Date of Activity:
Wednesday, July 12, 2017

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Kris Milner, Environmental Area Manager, Carmeuse
Matt Gower, Site Operations Manager, Carmeuse River Rouge
Ryan Zavalney, Production Supervisor, Carmeuse River Rouge

Purpose of Activity

A self-initiated inspection of the Carmeuse Lime, Inc. facility (hereinafter "Carmeuse" or "the River Rouge facility") was conducted on Wednesday, July 12, 2017. Carmeuse was on my list of sources targeted for an inspection during FY 2017. The purpose of this inspection was to determine compliance of operations at the Carmeuse facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control) and Federal standards. The facility is also subject to the terms and conditions of Renewable Operating Permit No. MI-ROP-B2169-2013, and Permit to Install No. 193-14A.

Facility Description

The Carmeuse River Rouge facility is located on the north side of Marion Street, just east of Jefferson Avenue. The facility is bounded on the north by the Rouge River, along which Carmeuse has docking and off-loading infrastructure in place to allow for raw material delivery (limestone, coal) via ship. The areas to the north and east of Carmeuse contain some of the area's notable heavy industrial facilities - the Great Lakes Water Authority's Water Resource Recovery Facility lies across the Rouge River to the north of Carmeuse; Zug Island, which contains some of U.S. Steel's operations (blast furnaces) and other activities associated with steelmaking, such as EES Coke's coke oven, lies about ¾ mile to the east and northeast; DTE Energy's River Rouge Power Plant is about ¾ mile to the east; and US Steel's facility in Ecorse is about one mile to the south/SE. BP's River Rouge Terminal is located directly to the east of Carmeuse along Marion Ave., and U.S. Gypsum is located on the west side of Jefferson Ave. The area directly to the south of Carmeuse is a residential area. The closest residential properties are located along Anchor Street, backing up to Marion Ave., and are approximately 100 yards from Carmeuse's lime kilns.

Carmeuse is a Belgian company with North American operations based in Pittsburgh, PA. The company produces lime, high calcium limestone and dolomitic stone. The River Rouge facility is one of 28 production facilities that are currently operating in the eastern U.S. and eastern Canada. The River Rouge facility produces calcium oxide, also known as quicklime, lime, and high calcium lime. According to Carmeuse's website, this product is used in the steel making process, for flue gas treatment, for water treatment, and in the construction

industry.

The lime product is produced at the River Rouge facility in two counter-flow horizontal rotary kilns, in which limestone is heated in a process referred to as calcining. Each kiln is 300 feet long, with a drum diameter of 10.6 feet. The kilns are fired by pulverized coal, with natural gas used during start-ups. Coal is received via ship and stored on site. The coal is transferred from the storage piles to feed bins, from which it is conveyed to a rolling mill for pulverizing/sizing, after which it is fed to the kilns. Limestone also arrives at the facility via ship, and it is offloaded to storage piles in the northern portion of the Carmeuse property. The limestone comes from various Carmeuse quarries in Michigan and Canada, including Rogers City, Drummond Island and Port Calcite (near Gulliver), MI and Manitoulin Island, Ontario. The limestone is conveyed from the storage piles via feeders under the piles to transfer stations, where the limestone is screened and sized prior to being conveyed to the kilns.

The kilns are counter-flow kilns – with this configuration, the limestone is fed on the opposite end of the kiln that the coal is fed, and it "flows" towards the firing end. The kilns are heated to temperatures ranging from 1100 to 1300°F at the end in which the limestone is fed, and up to 2375°F at the fuel end. The heating of the limestone constitutes the calcining process, through which the limestone (calcium carbonate, $CaCO_3$) is thermally broken down into high calcium lime (CaO) and carbon dioxide. Each kiln has a maximum production capacity of approximately 500 tons of lime product per day. The lime product is conveyed from the kilns to lime product storage silos. The lime product is pneumatically loaded from the storage tanks to trucks and rail cars for delivery to customers.

Under the current lime kiln-exhaust configuration, 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. 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. Both baghouses currently exhaust to the ambient air via a monovent. Per the requirements of Permit to Install No. 193-14A, which was drafted as part of Michigan's 1-hour SO_2 non-attainment SIP development, Carmeuse will be installing a new stack. The new stack will release emissions 120 feet above grade, have a maximum exhaust diameter of 108 inches, and be a single point discharge rather than a vent.

Facility Operations

The Carmeuse facility is a production facility at which limestone is converted to calcium oxide. The facility typically operates 7 days a week, 24 hours per day.

Carmeuse's Renewable Operating Permit defines Emission Units and Flexible Groups that represent the various processes that occur at the River Rouge facility. These Emission Units and Flexible Groups are described below.

- EUKILNNUMBER1 – a horizontal rotary lime kiln identified as Kiln No. 1. The kiln is 300 feet long with a 10.6 foot diameter. Exhaust from the kiln is vented through a positive pressure reverse air baghouse that currently vents to the ambient air via a monovent-type ambient discharge.
- EUKILNNUMBER2 – a horizontal rotary lime kiln identified as Kiln No. 2. The kiln is 300 feet long with a 10.6 foot diameter. Exhaust from the kiln is vented through a positive pressure reverse air baghouse that currently vents to the ambient air via a monovent-type ambient discharge.
- EUCONVEYOR/ELEV – the conveyors, elevators and rescreening operations for the finished lime product. There are three baghouse units associated with this equipment to control potential particulate emissions.
- EULIMELOADOUT – lime load out equipment for transferring finished lime product from storage silos to truck and rail vehicles. There are two baghouse units associated with this equipment to control potential particulate emissions.
- EUFLUEDUSTTANK - a storage tank for lime kiln dust (LKD). There is a baghouse unit associated with this equipment to control potential particulate emissions.

- EUFUGITIVE – this Emission Unit covers potential fugitive dust associated with open storage piles of materials (limestone, coal) and facility roadways. These potential fugitive emissions are controlled by water sprays, dust suppressant, and/or sweeping.
- EUNO6BINVENT – a lime fines handling operation that is vented through a baghouse.
- EUFDLOADOUT – flue dust load out equipment that vents through the same baghouse as EUFLUEDUSTTANK to control potential particulate emissions.
- EUPSHFUGITIVE – equipment used for handling limestone after the limestone bin, and prior to the lime kilns. The processed stone handling (PSH) equipment includes all conveyors prior to the lime kilns for which the only emissions are fugitive dust emissions.
- FG-MACT-AAAAA-LIME MANUFACTURING PLANTS – this Flexible Group consists of the Emission Units that are subject to the Federal NESHAP (National Emission Standards for Hazardous Air Pollutants) for Lime Manufacturing Plants, 40 CFR Part 63 Subpart AAAAA. This Flexible Group consists of EUKILNNUMBER1, EUKILNNUMBER2 and EUPSHFUGITIVE.

Inspection Narrative

I arrived at the facility at about 11:15am. I checked in at Carmeuse's offices, and I was met by the River Rouge facility's Site Operations Manager, Matt Gower. Matt and I proceeded to the conference room, where I was met by Kris Milner and Ryan Zavalney. I communicated the purpose of the visit, specifying that I wanted to check how Carmeuse demonstrates compliance of the River Rouge facility with the applicable regulations and permits.

We began by discussing the current operations at the facility. I was told that there have been no changes in the operations at the facility since my last site inspection, which was on July 31, 2015. Facility staff told me that the facility still operates on a 24 hour per day, 7 days per week schedule, and that there are currently 30 persons employed at the facility.

We then discussed the upcoming installation of the new stack and baghouse. Carmeuse staff described how the new ductwork for each kiln will exhaust the dust chamber to a heat exchanger, which will then exhaust to the common 120 foot tall stack. I was told that the new baghouse is progressing through the site preparation phase. The location of the baghouse is on a portion of the property that had historically been the site of an old saw mill, so pilings will need to be installed at a cost of $1.2 million. The engineering and construction work was scheduled to start within a month; the mechanical work is scheduled to start by the end of this year; the electrical work is scheduled for May 2018; and Carmeuse is planning to commission the baghouse equipment in July/August of 2018.

We proceeded to go over the conditions of the facility's ROP. As we reviewed the ROP, Carmeuse staff referenced facility records to demonstrate compliance. I was also shown an internal, company software program used to track equipment maintenance. We also referenced monitors in the conference room that can access the kiln control room screens, which show the operating status and parameters for the kilns. A summary of the compliance status of the River Rouge facility with the ROP is found in the following section.

After discussing the ROP, we discussed a couple of other topics related to the facility operations. I asked Carmeuse staff how the facility determines when a bag in one of the baghouses needs to be replaced. I asked if there a specific bag replacement schedule, or whether the decision to replace is based upon hours of use, or inspection results. I was told in response that if VEs are seen, the individual compartment that is causing the VEs is identified, and staff look for a breach in bag. There are 12 compartments in each baghouse, with 72 bags in each compartment. If a breach is found, the bag is capped off (removed from service). There is enough capacity in the remaining bags to carry the load/handle the flow rate. During the next scheduled downtime, any capped bags are replaced. Kris mentioned that a rule of thumb is that bags are good for approximately 20,000 cleaning cycles (which roughly equates to 5 years), and the cycle involves the reverse air process. I was told that the company mandate is compliance, and that the decision as to whether to replace bags is not financial.

We then discussed whether there have been any recent dust or fallout issues. I was told that Carmeuse staff meet with the Mayor of River Rouge quarterly, and they have not received any indication from the Mayor that area residents currently have any issues with the Carmeuse facility.

I left the facility at 1:05pm.

Permits/Orders/Regulations

Permits

The primary sources for the regulatory air requirements that are currently applicable to the operations at the Carmeuse facility are the facility's two permits – Renewable Operating Permit No. MI-ROP-B2169-2013, which became effective on January 15, 2013, and Permit to Install (PTI), No. 193-14A, which was issued via correspondence from DEQ-AQD to Carmeuse dated March 24, 2016. The ROP expires on January 15, 2018, and Carmeuse submitted an administratively complete ROP renewal application before the July 15, 2017 submittal deadline.

Carmeuse has also submitted two PTI applications that are currently under review by DEQ-AQD's Permit Unit – application No. 330-07E, which addresses the introduction and use of used oil product as a fuel for the kilns, and application No. 128-17, which addresses the "trial burn" use of biosolids produced at the Great Lakes Water Authority's Water Resource Recovery Facility (SRN B2103) as a fuel for the kilns.

The following subsections address the Carmeuse facility's compliance with the two permits that are currently effective at the facility.

1) ROP No. MI-ROP-B2169-2013

The following paragraphs provide a description of Carmeuse's compliance with the terms and conditions put forth by the ROP, with the headings representing the sections of the ROP.

Source-Wide Conditions

The Source-Wide Conditions table in the ROP addresses fugitive dust at the Carmeuse facility. The requirements in this section of the ROP cite **Consent Order SIP No. 22-1993** as an applicable requirement. This Consent Order is part of the State of Michigan's State Implementation Plan (SIP); this part of the SIP was submitted by the State of Michigan as part of the attainment demonstration for PM-10. The Michigan Department of Natural Resources submitted the PM-10 SIP to EPA on June 11, 1993, and, after a couple of revisions, the nonattainment area PM SIP for Wayne County, Michigan was approved and became effective on February 16, 1995. One element of the SIP was the requirement that facilities with designated standard industrial classifications that are located in the area designated in Table 36 of Michigan Administrative Rule 371 "... develop and implement an approved fugitive dust control operating program and to have the program embodied in a legally enforceable order..." (this quote was taken from the preamble to the Consent Order). Many of the larger facilities in the portion of Wayne County designated in Table 36 were issued Orders as part of the SIP. Carmeuse was issued the Consent Order referred to as SIP No. 22-1993.

In the Source-Wide Conditions section of the ROP, the Emission Limits table contains a couple of opacity limits – 20 percent for sources of fugitive dust other than storage piles, and 5 percent for material storage piles. The compliance method for the opacity limits is put forth in Special Condition VI.2, which requires that Carmeuse River Rouge staff do the following:

1) Perform visible emission (VE) readings from roads, lot and storage piles on a weekly basis (method 9 readings should be taken when VEs are observed).
2) Perform VE readings from fugitive dust sources other than roads, lots or storage piles on a weekly basis (method 9 readings should be taken when VEs are observed).

I was shown a log book that contains records of the required visible emission readings during my site visit. I requested a copy of the "Visible Emission Observation Evaluation" form for the week of July 2, 2017; it is attached to this report for reference.

Special Conditions III.1, VI.1, and all of the conditions under the "IX. Other Requirements" directly list the Consent Order as the applicable requirement. Carmeuse staff told me that calcium chloride is applied to any surface on the River Rouge property that is unpaved, and that a vehicle might drive on, at least every 6 weeks. This is **in compliance** with 3.D.2 of Exhibit A of the Consent Order. Carmeuse provided me with copies of the invoices for the two most recent calcium chloride applications at the facility, which are attached to this

report for reference.

In addition, Carmeuse staff showed me a log book titled "Weekly Environmental Compliance Requirements". This log book contains sheets for each week that serves as a checklist for the various tasks required to be performed in accordance with applicable air and water regulations. For air, this includes the maintenance of all of the identified fugitive dust sources on site, required equipment inspections, visible emission and opacity readings, and parametric monitoring. I reviewed several entries in the log book, and I was provided with a copy of the weekly log for the weeks of June 26, 2017 and July 3, 2017, and they are attached to this report for reference. These records indicate that all of the visible emission and opacity observations required by Special Condition VI.2 are being performed, and that the fugitive dust control measures that are required by the SIP Order are being adhered to. It should be noted that Carmeuse staff performs the visible emission/opacity readings during the week, and staff from Derenzo and Associates, Inc., an environmental consulting company that provides visible emissions monitoring, perform the readings on the weekends. The information and records that I was provided indicate that Carmeuse is **in compliance** with the requirements in the Source-Wide Conditions section.

EUCONVEYOR/ELEV, EULIMELOADOUT, EUFLUEDUSTTANK, EUNO6BINVENT, and EUFDLOADOUT

All of these Emission Units have been grouped together for the purposes of this compliance discussion because they all have, essentially, the same permit requirements. In addition, the compliance demonstrations for these Emission Units are grouped together. EUCONVEYOR/ELEVATOR represents lime product conveyors, elevators and rescreening equipment. EULIMELOADOUT represents the loading of lime product to trucks. EUFLUEDUSTTANK represents the flue dust bin. EUNO6BINVENT represents #6 bin vent, which handles lime fines. EUFDLOADOUT represents flue dust rail loadout or flue dust rescreening. Carmeuse staff provided that the rail loadout portion of this Emission Unit is no longer in operation.

All of these Emission Units have a particulate matter emission limit with Michigan Administrative Rule 331 as the applicable requirement. The emission limits all have the same monitoring/testing method – the requirement that a particulate matter emission test may be required (Special Condition V.1 in all five Emission Unit tables), and identical requirements under section "VI. Monitoring/Recordkeeping" to:

1. Conduct regular inspections of the operating condition of the baghouses associated with the Emission Units;

2. Perform weekly monitoring and recording of the pressure drop across the baghouses;

3. Perform daily VE readings to determine the presence or absence of visible emissions (i.e. an EPA Method 22 reading).

The weekly monitoring of the pressure drop, as required by Special Condition VI.2, and the daily visible emission readings, as required by Special Condition VI.3, are accomplished via the aforementioned Weekly Environmental Compliance Requirements log sheet. The examples from the facility log sheet that are attached to this report show the visible emission readings, and the various pressure drops, which are typically taken on Friday. The baghouse inspections are logged in a Carmeuse's central maintenance data system. This system allows Carmeuse staff to log the results of equipment inspections, and to request and log any repairs and maintenance that is performed. Carmeuse staff showed me some outputs from the central maintenance data system.

Carmeuse appears to be **in compliance** with the permit conditions associated with EUCONVEYOR/ELEV, EULIMELOADOUT, EUFLUEDUSTTANK, EUNO6BINVENT, and EUFDLOADOUT. During the site visit, I was told that for the EUFLUEDUSTTANK, the baghouse is going to be upgraded. Matt said that he would check with AQD-Permit staff as to whether a PTI application will need to be submitted. I pointed out the permit exemption criteria in Michigan Administrative Rule 285(d), which exempts the reconstruction or replacement of air pollution control equipment with equivalent or more efficient equipment.

FG-MACT-AAAAA-LIME MANUFACTURING PLANTS

This Flexible Group includes the permit requirements for EUKILNNUMBER1, EUKILNNUMBER2, and EUPSHFUGITIVE. The equipment covered by these Emission Units is subject to the requirements of 40 CFR Part 63, Subpart AAAAA, the National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants (hereinafter "the Lime MACT"). This Flexible Group is meant to present the applicable requirements of the Lime MACT. The Flexible Group description in the ROP states, in part, that the Lime MACT "...covers the

existing lime kilns and their associated coolers, and PSH operations located at a lime manufacturing plant that is a major source."

The paragraphs that follow provide a summary of Carmeuse's compliance with the Special Conditions in this Flexible Group.

I. Emission Limits

The Emission Limits table contains emission limits for PM, opacity and sulfur dioxide. The Monitoring/Testing Method for the PM and sulfur dioxide emission limits is the stack testing requirements put forth in Special Conditions V.1 and V.2 for PM and sulfur dioxide, respectively. The most recent stack tests, which were performed on August 30-31, September 26-27 and November 15, 2016, presented some non-compliance issues. The test results showed the following:

- The August testing showed measured PM from Kiln No. 1 of 0.03 lb/ton of stone feed (tsf), versus the permitted limit of 0.12 lb/tsf, while SO2 from Kiln No. 1 was measured at 0.432 lb/MMBTU (vs. the permitted limit of 2.4 lb/MMBTU), and 188.55 ppm corrected to 50% excess oxygen (vs. the permitted limit of 300 ppm corrected to 50% excess air). For Kiln No. 2, SO2 was once again compliant, with measured emissions of 0.340 lb/MMBTU and 148.35 ppm (corrected to 50% excess oxygen). However, the three-run average PM emissions were measured at 0.33 lb/tsf, in exceedance of the 0.12 lb/tsf limit.

- Kiln No. 2 was retested for PM emissions in September. The results of the September testing showed a three-run average for PM emissions of 0.57 lb/tsf, once again in exceedance of the PM emission limit.

- After some repairs to the Kiln No. 2 baghouse, another PM compliance emissions test was performed on November 15, 2016. The results of this testing showed a three-run average of 0.05 lb/tsf, below the permitted emission limit of 0.12 lb/tsf.

A Violation Notice (VN) was issued to Carmeuse by DEQ-AQD as a result of the August and September compliance emissions tests. Carmeuse provided a response to the VN. Per their response, Carmeuse provided that the baghouses for the kilns were inspected by an outside entity in July of 2016. Visible emissions were observed coming from a portion of the Kiln No. 2 baghouse during the test, and during a follow-up inspection of the Kiln No. 2 baghouse, Carmeuse discovered a hole in one of the bags in room 3 of the baghouse. The hole was repaired, and a retest of PM emissions from Kiln No. 2 was scheduled. During the retest, VEs were once again noticed. An inspection of the baghouse revealed that the cap had come off of the hole that had been repaired on the bag in room 3, and another hole was discovered in another bag in the same room. Kiln No.2 was taken out of operation during the month of October, during which time a contractor was brought in, and they changed all of the bags in rooms/cells 3, 4, and 8, as well as 18 other bags in the baghouse. A copy of Carmeuse's response to the VN is attached to this report. Kiln No. 2 was retested in November, and PM emissions were in compliance with the permitted limit.

DEQ-AQD is finalizing a Consent Order with Carmeuse to resolve the emissions violations. Consent Order AQD No. 10-2017 will require that Carmeuse comply with the PM emission limits for Kiln Nos. 1 and 2 in the ROP after the effective date of the Order; that there be a compliance emissions test for PM within 365 days of the effective date of the Order; and that, after the new stack and baghouse required by PTI No. 193-14A have been installed, and no later than April 1, 2019, the facility shall perform another compliance emissions test for PM. The Public Hearing for the proposed Consent Order was held on June 21, 2017.

The non-compliance issue relating to the PM emission limits for the lime kilns is considered resolved at this time. The compliance stack test that was performed after the Kiln No. 2 baghouse was repaired demonstrated compliance. The baghouse is in the process of being replaced with a new unit, and there are compliance testing requirements that will be required by the Consent Order.

II. Material Limits

The conditions in the Material Limits table address the usage of alternative fuels to fire the kilns. The use of glycerin and syngas was analyzed and allowed by Permit to Install No. 330-07D, which was incorporated into the ROP.

During the inspection, I was told that Carmeuse has not used either of these fuels for some time, and there are no immediate plans to use them. Carmeuse has not had any throughputs of these materials, so the facility is **in compliance** with these permit conditions.

III. Process/Operational Restrictions

Special Condition:

III.1 – **Compliance**. The Carmeuse facility's compliance with the emission limits in this Flexible Group were described under the Emission Limits heading.

III.2 – **Compliance**. The facility maintains and operates the kiln baghouses when the kilns are operating. There was an issue with the Kiln #2 baghouse at the time of the first two compliance stack tests in August and September 2016, and the facility made the necessary repairs and performed inspections.

III.3 – **Compliance**. Carmeuse checks compliance with the 15% opacity limit. During the inspection, I was shown log sheets titled "Visible Emission Observation Evaluation" through which Carmeuse keeps track of the visible emission/opacity observations of the lime kiln baghouse. I was provided with copies of the entries for April 11 and July 10, 2017, which are attached to this report for reference.

III.4 – **Compliance**. Carmeuse demonstrated compliance with the Lime MACT opacity limits associated with EUPSHFUGITIVE.

III.5 – **Compliance**. Carmeuse submitted an Operations, Maintenance and Monitoring (OM&M) Plan to the AQD-Detroit office for the River Rouge facility dated September 14, 2007. Carmeuse staff presented their copy of the OM&M Plan during the inspection.

III.6 – **Compliance**. Carmeuse has developed a written startup, shutdown and malfunction plan for the River Rouge facility. It was available for review during the inspection.

III.7 – **Compliance**. Carmeuse complies with Special Condition III.7.b. by operating the lime kiln baghouse is accordance with the OM&M Plan referenced in Special Condition III.5.

III.8 – **Compliance**. The River Rouge facility is currently firing coal in the kiln, with natural gas used during startup. Glycerin and syngas are not currently in use.

IV. Design/Equipment Parameters

There are no permit conditions in this section.

V. Testing/Sampling

Special Condition:

V.1 – **Compliance**. Carmeuse has conducted an approved particulate matter emission test in 2016 (see the related discussion under "I. Emission Limits").

V.2 – **Compliance**. Carmeuse has conducted an approved sulfur dioxide emission test. The test indicated compliance (see the related discussion under "I. Emission Limits").

V.3-5 – These Special Conditions address testing, monitoring and sample analysis associated with the use of glycerin and syngas. These fuels are not being used, so these conditions are not currently applicable.

V.6 – **Compliance**. Carmeuse samples the coal used at the River Rouge facility for analysis. Coal is sampled for both BTU analysis and monthly Greenhouse Gas (GHG) sampling. Carmeuse staff collect a composite sample of coal from around the coal piles after each coal delivery by ship, from which an ultimate analysis is performed, as well as a determination of the ash fusion temperature. Carmeuse showed me an example record of a coal analysis. I was also provided with a copy of some coal analysis information for the facility, and a running total of the amount of coal consumed at the facility through July 2017. This information is attached to this report for reference.

VI. Monitoring/Recordkeeping

Special Condition:

VI.1 – **Compliance**. The air pollution control devices (capture/collection and closed vent system) are inspected at least once each year. Carmeuse staff told me that this task is performed during the annual outage for each

kiln. Carmeuse provided me a copy of the information relating to the most recent inspection, which is attached to this report for reference.

VI.2 – **Compliance**. Carmeuse is keeping records of all of the deviations, notifications and records required by the Lime MACT.

VI.3 – **Compliance**. According to Carmeuse staff, they are operating and maintaining the continuous parameter monitoring system (CPMS) in accordance with the OM&M Plan.

VI.4 and VI.5 – **Compliance**. According to Carmeuse staff, the flow measurement devices and pressure measurement devices are compliant with the Lime MACT.

VI.6 – **Compliance**. Carmeuse is performing the required visible emission/opacity readings associated with the processes in EUPSHFUGITIVE. The readings are kept on the Weekly Environmental Compliance Requirements form, and also tracked via the facility's Visible Emission Observation Evaluation forms. An example of VE reading of the stone handling process (aka PSH) is the first attachment to this report.

VI.7 – **Compliance**. The daily limestone feed rate is continuously monitored and recorded. During the site visit, I was shown the trend data for the time period from June 5 through July 12. A reading of the feed rate is logged every $1/10^{th}$ of a minute.

VI.8 and VI.9– **Compliance**. Carmeuse tracks and records the BTU/hour heat input rate of coal to the lime kilns, as well as the coal consumption rate. This information is also tracked by the facility's internal system, which shows the coal usage in each kiln. As described by Carmeuse staff, a daily inventory of production and fuel usage is compiled each day. Via their internal tracking system, Carmeuse can determine the BTU's used to produce lime.

VI.10, VI.11, VI.12, and VI.13 – these ROP Special Conditions address monitoring and recordkeeping requirements associated with glycerin and syngas usage. These conditions are not currently applicable.

VII. Reporting

SCs VII.1 through VII.4 – **Compliance**. Carmeuse is complying with the reporting requirements in this section. These reports are required by either the ROP (VII.1, 2 and 3) or the Lime MACT (VII.4).

VIII. Stack/Vent Restrictions

Carmeuse is maintaining the exhaust stack/vent parameters as described in this section. However, Carmeuse will be changing their method of venting their baghouse to the ambient air in accordance with the requirements of Permit to Install No. 193-14A. The facility is currently **in compliance**.

IX. Other Requirements

SC IX.1 – **Compliance**. Carmeuse is demonstrating compliance with the applicable provisions of 40 CFR Part 63, Subpart AAAAA (the Lime MACT).

SC IX.2 – **Compliance**. Carmeuse is demonstrating compliance with the applicable provisions of 40 CFR Part 60, Subpart Y (Standards of Performance for Coal Preparation and Processing Plants). Subpart Y applies to the coal processing and conveying equipment, coal storage system, or coal transfer and loading systems at the facility.

In summary, based on the information presented during my inspection of Carmeuse River Rouge, the facility is **in compliance** with the terms and conditions of MI-ROP-B2169-2013.

2) Permit to Install No. 193-14A

This Permit to Install was issued on March 18, 2016. PTI No. 193-14 was initially issued in support of the 1-hour SO_2 National Ambient Air Quality Standards, and as part of Michigan's SO_2 Non-attainment SIP Plan. Permit 193-14 requires that Carmeuse construct a new stack. The Permit also requires that, upon completion of the new stack configuration, Carmeuse establish a new SO_2 emission rate for the combined exhaust of Kiln Nos. 1 and 2. Additional modeling for SO_2 revealed that the stack height required in PTI No. 193-14 would not result in

attainment of the SO_2 standard. Carmeuse and DEQ-AQD determined, via air dispersion modeling, that a stack height of 120 feet would result in compliant SO_2 emissions. PTI No. 193-14A was issued to put forth this updated stack height requirement. The requirements of this Permit do not begin to apply until October 1, 2018, when Carmeuse is required to begin compiling hourly SO_2 emission rate calculations, and continuously monitor and record the total hourly limestone feed rates to each kiln. Carmeuse will be required to perform a SO2 emission test to determine the SO_2 emission rate no later than April 1, 2019.

Federal Regulations

The Carmeuse River Rouge facility is subject to the requirements of **40 CFR Part 63, Subpart AAAAA.** The requirements of Subpart AAAAA are included in the facility's ROP. The facility is also subject to **40 CFR Part 60, Subpart Y**, as the facility has the potential to process more than 200 tons of coal per day. The requirements associated with this regulation are put forth in Special Condition IX.2 in FG-MACT AAAAA-LIME MANUFACTURING PLANTS of the facility's ROP.

In addition, the two lime kilns are subject to **40 CFR Part 60, Subpart HH**. The particulate matter emission standards put forth by the Lime MACT (Subpart AAAAA) are more stringent than the emission limits in Subpart HH. Thus, the requirements of Subpart HH are not included in Carmeuse's ROP.

Compliance Determination

Based upon the results of the July 12, 2017 site visit and subsequent records review, the Carmeuse River Rouge facility appears to be in compliance with all of the terms and conditions of the facility's Renewable Operating Permit, as well as applicable State and Federal regulations.

Attachments to this report: a copy of a "Visible Emission Observation Evaluation" form for VEs readings conducted of the PSH operations; copies of the most recent dust suppressant application invoices; a printout of the "Weekly Environmental Compliance Requirements" log sheets for the weeks of June 26 and July 3, 2017; copies of the company's "Visible Emission Observation Evaluation" form for two days showing VE readings of the kilns; printouts of coal analysis data; a printout from Carmeuse's SAP software system that shows the tracking of the most recent inspection on the Kiln No. 1 baghouse; a copy of Carmeuse's response to the VN that was issued on November 4, 2016.

NAME [signature] DATE 10/9/17 SUPERVISOR JK