

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

N736245275

FACILITY: GRAYMONT WESTERN LIME INC		SRN / ID: N7362
LOCATION: 181 W COUNTY ROAD 432, GULLIVER		DISTRICT: Upper Peninsula
CITY: GULLIVER		COUNTY: SCHOOLCRAFT
CONTACT: Justin Bowers , HSE Specialist		ACTIVITY DATE: 07/24/2018
STAFF: Sydney Bruestle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Onsite Inspection to verify compliance with MIROP-N7362-2015 and all other applicable state and federal air quality regulations		
RESOLVED COMPLAINTS:		

On July 24, 2018 I (Sydney Bruestle) performed an onsite inspection at Graymont Western Lime located at 181 W County Road 432 Gulliver, Michigan. While onsite I met with Justin Bowers, HSE Specialist at Graymont. Mr. Bowers gave me a tour of the facility and provided me with the required records.

Facility Description:

The Graymont Western Lime Inc. facility began operation in May 2007. The plant is located at 181 West County Road 432 Gulliver, Michigan. The site is adjacent to the Carmeuse Port Inland Limestone Plant, from which it receives limestone via conveyor belt. The limestone is crushed, sized and washed to provide a consistently sized raw material. The plant calcines the limestone into lime using a single rotary kiln (EU-KILN#1) with preheater and Niemis style cooler. The kiln can be fired with a mixture of coal and petroleum coke. The preheater/cooler acts as a sulfur dioxide absorption device. Several fabric filter baghouses are used at the plant for particulate matter control. The plant can produce 870 tons of lime per day, but no more than 292,000 tons per year.

Graymont Western Lime is considered a major pollution source of Nitrogen Oxides (NOx), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), and Hydrogen Chloride (HCl) emissions. The Kiln is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Lime Manufacturing Plants promulgated in 40 CFR Part 63, Subparts A and AAAAA and the New Source Performance Standards (NSPS) for Lime Manufacturing Plants promulgated in 40 CFR Part 60, Subparts A and HH. Compliance with these standards will be discussed later in this report.

Emission Units:

EUKILN#1

Description: Limestone enters a rotary kiln via a ram style preheater. The stone is heated as it travels through the kiln. The lime then enters a counterflow Niemis style cooler. Exhaust gas particulate from the preheater, cooler, and kiln is controlled by a fabric filter dust collector using modular baghouse sections.

Emission Limits:

Pollutant	Limit	Actual
PM10	7.5 pounds/hr (Test Protocol)	0.36 lb/hr (stack test done October 10 & 11 2017)
PM10	0.1 pounds (per ton of stone feed)	0.0112 pounds/ ton of feed (stack test done October 10 & 11, 2017)
PM10	29.2 tons (12 month rolling time period)	2.7 tons (Records from January 2018)
NOx	132.6 pounds/hr (24 hour rolling average)	42.2 lbs/hr (Oct 10, 2017)
NOx	532 tons (12 month rolling time period)	241.09 tons (Records from January 2018)
SO ₂	60.2 pounds per hour (test protocol)	
SO ₂	242 tons/year (12 month rolling	20.67 tons (January 2018)

	time period	
CO	113.2 pounds per hour (24 hour rolling average)	32.2 lb/hr (Oct 10, 2017)
CO	456 tons (12 month rolling time period)	(185.63 tons) January 2018
Visible Emissions	10 percent Opacity	0% (observed while onsite)

Formula used to calculate SO2 emissions:

[Coal used (tons/day)]([Sulfur_Content_%]/100)*(1-0.955)*(64/32)*

Coal used (tons/day): Taken from belt scale daily totalizer

([Sulfur Content %]/100): Taken from monthly coal testing

(1-0.955): amount of sulfur not removed by the lime. Based on stack testing performed November 7, 2007, the kiln achieved a removal efficiency of 95.5% of the sulfur input during the test.

(64/32): stoichiometric conversion of the sulfur to SO2. Fuel sampling results are in % sulfur

Process/Operational Restrictions:

- The permittee shall not process more than 584,000 tons of limestone feed in EU-KILN#1:
 - o Actual: 514,917 tons of limestone feed (June 2018 records)
- The permittee shall only burn No. 2 Fuel Oil, propane, coal, or coal combined with petroleum coke in EU-KILN#1
 - o In compliance
- The combined coal and petroleum coke sulfur content of the fuel shall not exceed 2.5% by weight based upon a monthly average
 - o Actual: 0.5% (May 2018)

Design/Equipment Parameters:

- The permittee shall install maintain, calibrate and operate in a satisfactory manner a device to monitor and record the NOx and CO emissions at the outlet of the control device from EU-Kiln#1 on a continuous basis
 - o Continuous Emissions Monitor System (CEMS) was installed and operating properly
- The permittee shall operate EU-KILN#1 with a fabric filter collection system which is installed, maintained, and operated in a satisfactory manner:
 - o Baghouses were installed and operating during the inspection
- The permittee shall not operate EU-KILN#1 unless the preheater is installed, maintained, and operated in a satisfactory manner:
 - o Preheater is installed and operating

Testing/Sampling:

- Within three years of the effective date of this permit, the permittee shall conduct emissions tests for PM and PM10 to determine compliance with the EMISSION LIMITS above. The testing shall include concurrent measurement of stone feed rate to EU-KILN#1.
 - o Testing was done October 10 & 11, 2017

Monitoring/Record Keeping:

- The permittee shall monitor and record visible emissions from EU-KILN#1 on a continuous basis. The continuous opacity monitoring system (COMS)
 - o COMS was installed and operating properly
 - o COMs report for 06/14/2018 is attached to the hard copy of this report.
- The permittee shall monitor and record NOx and CO emissions from EU-KILN#1 on a continuous basis. The continuous emissions monitoring systems (CEMS)

- o CEMS was installed and operating properly
- The permittee shall keep a written record of the following information for EU-KILN#1
 - o Daily recording of the pressure drop across the fabric filter
 - § 3-5.5 inches WC (June 1, 2018 records)
 - o Monthly calculations, determining the pounds per hour emission rate based upon a monthly average for SO2
 - § 7.5 lbs/hr (June 2018 records)
 - o Calculations determining the mass emission rate in tons per year for SO2
 - § 26.33 tons/year (June 2018)
 - o Daily records of the coal/petroleum coke samples (date, time, weight) and the amount of No. 2 Fuel Oil, propane, and/or coal/petroleum coke used.
 - § Records are attached to the hard copy of inspection report
 - o Records determining the combined average monthly sulfur content of the coal and petroleum coke
 - § Records are attached to the hard copy of this inspection report
 - o The hours of operation for the lime kiln per month and 12 month rolling time period as determined at the end of each month
 - § Records are attached to the hard copy of this inspection report
 - o The hours of operation per month and 12-month rolling time period which the kiln was operated during startup, shutdown, and upset conditions.
 - § Records are attached to the hard copy of this inspection report

Reporting:

- § Prompt reporting of deviations
 - o *In Compliance: Last report received 08/01/2018*
- § Semiannual reporting of monitoring and deviations:
 - o *In Compliance: Last report received 08/01/2018*
- § Annual certification of compliance:
 - o *In Compliance: Last report received 03/14/2018*
- § In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an Excess Emission Report (EER) and/or the Summary Report in an acceptable format to the AQD within 30 days following the end of each calendar quarter for NOx, CO, and Opacity:
 - o *In Compliance: Last report received 08/01/2018*

EU-HAULING

Description: Fugitive emissions from the vehicle traffic in the plant area

Emission Limits:

Pollutant	Limit	Actual
Visible Emissions	5% Opacity (6-minute average)	0% (Observed during inspection)

EU-STONE HANDLING:

Description: Raw limestone is unloaded to a stacking conveyor and stockpiled. Stone is then reclaimed by vibrating under pile feeders and moved by conveyor belt to a screen. Screened stone is then conveyed to the kiln preheater via conveyor belt. Limestone pile fugitive dust emissions are included

Emission Limits:

Pollutant	Limit	Actual
Visible Emissions	5% Opacity (6-minute average)	0% (Observed during inspection)

FG-BAGHOUSES

Description: Baghouses located throughout the facility used to capture dust generated by various conveyors, elevators, screens, crushers and feeders.

Emission Limits/Monitoring and Recordkeeping:

There were no visible emissions during my inspection. Records of Pressure drop readings and VE readings for June 2018, for all the baghouses are attached to the hard copy of this inspection report.

FG-FACILITY:

Description: All process equipment at the facility including equipment covered by other permits, grand-fathered equipment and exempt equipment.

Emission Unit: EU-KILN#1, EU-STONE HANDLING, EU-COAL HANDLING, EU-COAL SILO (BAGHOUSE 191), EU-DUST LOADING WET, and EU-HAULING

Pollution Control Equipment: Baghouses are used for EU-KILN#1 and EU-COAL SILO (Baghouse 191)

Emission Limits:

Pollutant	Limit	Actual
Visible Emissions	10% (6-minute average) process equipment only	0% observed while onsite
Visible Emissions	0% Buildings that contain process stone and coal handling equipment	0% observed while onsite

FG-NSPS-Y

Description: The provisions of this subpart apply to affected facilities in coal preparation and processing plants that process more than 200 tons of coal per day. The provisions of this subpart are applicable to any of the following affected facilities: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems, transfer and loading systems.

Emission Unit: EU-COALPRECRUSHER (Coal Pre-Crusher)

Emission Limits:

Pollutant	Limit	Actual
Visible Emissions	10% Opacity (6 Minute average) Coal pre-crusher	0% observed while onsite

FG RICEMACT

Description: 40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, existing non-emergency, combustion ignition RICE less than 100 brake hp.

Process Operational Restrictions:

- § Each engine in FG-RICEMACT shall be installed, maintained, and operated in a satisfactory manner
- § The following are the recommended work practices specified in 40 CFR Part 63, Subpart ZZZZ, Table 2c:
 - o Change oil and filter every 1000 hours of operation or annually, whichever comes first, except as allowed in SC III.2,
 - o Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first,

and replace as necessary; and

- o Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

§ In Compliance: Oil and air filter Changed on 06/29/2018 (Work order form attached to the hard file of this report)

Monitoring and Recordkeeping:

§ For each engine in FG-RICEMACT the permittee shall keep in a satisfactory manner, records of the maintenance conducted to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the developed maintenance plan. The permittee shall keep all records on file and make them available to the department upon request:

- o In Compliance: records attached to the hard file of this report

FG-MACT-AAAAA

Description: The affected source is a new lime manufacturing plant (LMP) that is a major source of hazardous air pollutant (HAP) emissions. An existing affected source is a source that commences construction or reconstruction before December 23, 2002. A new affected source includes a new lime kiln (and, if applicable, its associated lime cooler), and a processed stone handling (PSH) operations system for which construction or reconstruction began after December 20, 2002. An existing lime kiln (and, if applicable, its associated lime cooler) and an existing PSH operations system are those that do not meet the definition of a new kiln or a new PSH operations system. The regulations cover the existing lime kilns and their associated coolers, and PSH operations located at a LMP that is a major source.

Emission Unit: EUKILN#1

Pollution Control Equipment: Fabric Filter Baghouse (Baghouse 188)

Emission Limits:

<i>Pollutant</i>	<i>Limit</i>	<i>Actual</i>
PM	0.10 pounds per ton of stone feed 0.05 grams per dry standard cubic meter	0.0112 pounds/ ton of feed (stack test done October 10 & 11, 2017)
Opacity	7 % (6-minute average) stack or building vent emissions from FG-FACILITY	No visible emissions during my inspection
Opacity	10% (6-minute average) Fugitive emissions from operations associated with FG-FACILITY that are not enclosed in a building	No visible emissions during my inspection
Opacity	No Visible emissions or 0% Fugitive emissions from the building containing operations associated with FG-Facility except for emissions from a vent	No visible emissions during my inspections

Process/Operational Restrictions:

§ In lieu of using a bag leak detection system (BLDS) or particulate matter (PM) detector, the permittee shall maintain the baghouse such that the 6-minute average opacity for any 6-minute block period does not exceed 15 percent, and comply with the requirements in 40 CFR 63.7113(f)

- o In Compliance: Graymont Western Lime has bag leak detection systems installed on all baghouses onsite

