

**Compliance Assurance Monitoring (CAM) Plan**  
**Graymont Western Lime, Inc. - Port Inland Plant (SRN: N7362)**

**April 21, 2023**

**1. Air Pollutants**

Particulate Matter with an aerodynamic diameter of less than or equal to 10 micrometers (PM<sub>10</sub>).

**2. Processes**

<b>Table 1 – CAM Plant Operations</b>		
<i>Stack</i>	<i>Process/Emission Unit ID</i>	<i>Collector</i>
SV-2	EU-KILN#1	Fabric filter dust collector using six (6) modular baghouse sections; 185.1; 185.2; 185.3; 185.4; 185.5; 185.6

**3. Applicability**

The exhaust gas from the preheater, cooler, and kiln is controlled by a fabric filter dust collector which is used to control particulate matter emissions. A CAM Plan is being submitted for PM<sub>10</sub> because the kiln meets the following applicability requirements under 40 CFR Part 64:

- a. Subject to an emission limitation or standard for an applicable regulated air pollutant (or a surrogate thereof), that is not exempt under 40 CFR 64.2(b)(1),
- b. Uses a control device to achieve compliance with such emission limitation or standard, and
- c. Has pre-control emissions greater than the Part 70/71 major source threshold of 100 tons per year (tpy).

PM<sub>10</sub> limitations for EU-KILN#1 are included in the Renewable Operating Permit (ROP) MI-ROP-N7362-2020. A CAM Plan is being submitted for the PM<sub>10</sub> limitations because these limitations were established in a new source review permit and are not otherwise exempt from the requirements of CAM by the lime manufacturing Maximum Achievable Control Technology (MACT) standard in 40 CFR Part 63 Subpart AAAAA.

Compliance assurance monitoring is intended to provide a reasonable assurance of compliance with applicable emission limitations and standards under the Clean Air Act for large emission units that rely on pollution control device equipment to achieve compliance. Monitoring of indicator ranges is conducted to determine that control measures, once installed or otherwise employed, are properly operated and maintained so that they continue to achieve a level of control that reasonably assures compliance with emission limitations or standards. A departure from an indicator range established for monitoring under this Plan does not necessarily mean that there was a violation of exceedance of an emission limitation or standard.

<b>Table 2 – Emission Limits, Applicable Regulations, Monitoring Requirements</b>			
<i>Pollutant</i>	<i>Emission Limit</i>	<i>Underlying Applicable Requirements</i>	<i>Monitoring Requirement</i>
PM <sub>10</sub>	7.5 pounds/hour	40 CFR 52.21(j); R 336.1205; R 336.1331	Continuous Opacity Monitoring System (COMS)
	0.1 pounds/tsf		
	29.2 tons/12 month rolling time period		

Note: Under 40 CFR 64.2(b)(1)(i), a CAM Plan is not required for the Particulate Matter (PM) limitations under the lime manufacturing MACT of 40 CFR Part 63 Subpart AAAAA because the limitations were proposed by the EPA after November 15, 1990.

#### 4. Indicators to be monitored

- Kiln stack opacity. EU-KILN#1 is equipped with COMS that monitors opacity continuously while the kiln is operating. A COMS is required by the MACT AAAAA when used in lieu of a PM detector or bag leak detection system (BLDS).
- Kiln baghouse differential pressure. EU-KILN#1 is equipped with a baghouse pressure transmitter monitoring system requiring daily recording of the differential pressure drop while the kiln is operating. Differential pressure monitoring is recommended by the baghouse manufacturer.

#### 5. Indicator Ranges

Indicator ranges for opacity and baghouse differential pressure are summarized in Table 3, including the monitoring frequency and averaging period.

<b>Table 3 – Indicator Ranges</b>					
<i>Emission Unit</i>	<i>Emission Unit ID</i>	<i>Parameter</i>	<i>Range</i>	<i>Frequency</i>	<i>Averaging Period</i>
Kiln 1	EU-KILN#1	Opacity	0-10%	Continuous	6-minutes
		Differential Pressure	1-10 inches H <sub>2</sub> O across baghouse	Continuous (i.e., 1 minute)	1-hour

#### 6. Monitoring Equipment

The equipment to be used for the CAM Plan is currently in operation and is consistent with ROP MI-ROP-N7362-2020. This permit, as well as the Operations, Maintenance and Monitoring Plan (OM&M) plan, Startup, Shutdown and Malfunction Plan (SSMP) and Malfunction Abatement Plan (MAP), includes installation, certification, and operating requirements for the COMS and baghouse differential pressure gauges as well as inspection and operating information for the baghouse and its monitoring equipment. The air permit and the OM&M plan, SSMP, and MAP incorporate the monitoring requirements of the lime manufacturing MACT of 40 CFR Part 63 Subpart AAAAA; these requirements are presumptively acceptable for CAM.

## 7. Justification

The parameters to be monitored for this CAM Plan are based on the recommendations of US EPA in Appendix B of the *CAM Guidance Document* (January 2005). The use of a COMS is consistent with the lime manufacturing MACT as a compliance demonstration method for PM<sub>10</sub> limitations.

The opacity and differential pressure readings are used as an indicator and diagnostic tool for operation and maintenance of the baghouse. An increase in opacity or changes in VE observations can indicate process changes, changes in baghouse efficiency, or leaks. An increase in pressure differential can be indicative of fabric blinding or decreased permeability (which typically increases control efficiency), and a decrease in pressure differential indicative of change in operation. In the event of a potential issue, the diagnostic activities listed in the OM&M plan can be used to normalize baghouse performance.

## 8. Excursions

For the opacity indicator, an excursion of the PM<sub>10</sub> limitation occurs when the 3-hour block average opacity value exceeds 10%. This does not include periods of startup or when running No. 2 fuel oil and/or propane and no stone feed.

For the differential pressure indicator, an excursion of the PM<sub>10</sub> indicator occurs when the differential pressure reading for the baghouse is outside the indicator range for greater than two calendar days.

Excursions from the opacity and pressure differential indicator ranges defined in this CAM plan are not necessarily considered violations.

## 9. Historical Data

Historical Kiln 1 performance tests have demonstrated consistent compliance with the particulate matter emission limitation.

Date	Parameter	Permit Limit	Result (3-hr Avg)
10/24/12	Filterable PM (EPA Method 5)	0.10 lb/tsf	0.03 lb/tsf
10/11/17			0.011 lb/tsf
10/2/18			0.075 lb/tsf
8/17/22			0.048 lb/tsf
9/13/22			0.0022 lb/tsf
10/24/12	PM10 (EPA Method 201A/202)	7.5 lb/hr	3.75 lb/hr
10/2/18			4.84 lb/hr
8/17/22			7.85 lb/hr*
9/13/23			1.44 lb/hr

\*8/17/23 testing demonstrated compliance with MACT AAAAA FPM limit, but the results were above the PM10 limit after small holes developed in weakened bags when the kiln production rate was increased for testing.

Date	Parameter	Indicator Range	Result
10/24/12	Stack Opacity	0-10% (6-minute average)	0.0%
10/11/17			0.0%
10/2/18			0.0%
8/17/22			0.4%
9/13/22			0.0%

10/24/12	Baghouse Differential Pressure	1-10 inches H2O across baghouse (1-hour average)	4.2 in H2O
10/11/17			6.7 in H2O
10/2/18			7.3 in H2O
8/17/22			6.4 in H2O
9/13/22			6.4 in H2O

## 10. Quality Assurance/Quality Control

<b>Table 4 – Calibration Time Frames</b>	
<b>Audit</b>	<b>Frequency</b>
Optical Alignment Assessment	Quarterly
Zero Compensation Assessment	Quarterly
Calibration Error Test	Quarterly
Zero Alignment Assessment (On Stack)	Annually
Primary Zero Alignment (Off Stack)	Every 3 years
System Appraisal	Periodically
Baghouse Pressure Manometers	Annually

See the facility Quality Assurance & Quality Control for more details.

## 11. Quality Improvement Plan (QIP)

When excessive excursions occur, a QIP will be performed. Based on the permit limits, a QIP may specify an appropriate threshold for the number of excursions that trigger the implementation of the QIP. A QIP may include evaluation of control performance issues, revised control methods, more frequent monitoring, or enhanced monitoring depending upon the situation.

For the opacity and baghouse differential pressure indicators, the QIP threshold is 36 excursions for opacity and three excursions for the baghouse differential pressure within a rolling three-month period. Both QIP thresholds represent approximately 5% of operating time during a quarter of operation.