

MINERAL MANUFACTURING CORPORATION
BARBOUR COUNTY, AL
FACILITY No. 601-0013

MAJOR SOURCE OPERATING PERMIT
THIRD TITLE V RENEWAL
OCTOBER 1, 2026

DRAFT

STATEMENT OF BASIS

Mineral Manufacturing Corporation
Eufaula, Alabama
Barbour County
Facility No. 601-0013

This proposed Title V Major Source Operating Permit (MSOP) Renewal is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of Alabama Department of Environmental Management, in accordance with the terms and the conditions of this permit.

Mineral Manufacturing Corporation (hereinafter "MMC") has applied to renew the existing Title V Major Source Operating Permit, which was issued on January 10, 2022.

MMC was initially issued a Title V Major Source Operating Permit on October 21, 2011. Per ADEM Rule 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more than eighteen (18) months, before the date of expiration of the permit. Based on this rule MMC's third renewal application was due to the Department by April 20, 2026. A complete application for permit renewal was received by the Department on April 20, 2026.

The facility is located in Barbour County, which is currently listed as attainment/unclassifiable for all criteria pollutants.

FACILITY DESCRIPTION

MMC receives shipments of bauxitic clay and kaolin minerals (hereinafter "minerals") that require crushing and calcining to achieve a marketable product for consumers.

The following is a description of the plant process:

(Unit 001 – 20 TPH Kiln/Cooler, Crushing, and Conveying) - Raw minerals are shipped to MMC by truck and stockpiled in one of two enclosed storage buildings prior to processing. In one storage building, the raw minerals are transferred by front-end loader into a feed hopper. From the feed hopper, the minerals are transferred via an apron feed conveyor to a double roll crusher for size reduction. The reduced minerals are then transferred via a belt conveyor to a saw-toothed crusher for further reduction. Exiting the crusher, the reduced minerals enter a second hopper to await transfer to another apron feed conveyor. The apron feed conveyor, which is equipped with variable speed control, then transfers the reduced minerals to a belt conveyor that feeds an 8' x 200' rotary kiln with a heat capacity of 40 MMBtu/hr and fueled by natural gas only. The minerals are calcined in the rotary kiln at a temperature above 2000°F to remove free moisture. After exiting the kiln, the minerals then enter a 6' x 61' rotary cooler for heat recovery. To complete the process, the calcined minerals are transported from the cooler via two subsequent belt conveyors and stored in an enclosed storage building.

All aforementioned process equipment, excluding the last belt conveyor, are ducted into a reverse, pulse type dust collector consisting of a series of four smaller baghouses that work in unison. There is one stack affiliated with this control device. The collection device has a designed removal efficiency of greater than 99%. The last belt conveyor is located in an enclosed storage building and does not have a control device. Therefore, all emissions from the conveyor are fugitive.

(Unit 002 – 200 TPH Conveying, Crushing, and Extruding) - In the second storage building, raw materials of kaolin or bauxite are initially processed at a rate of 200 tons per hour. The minerals are transferred by front-end loader into a feed hopper. From the feed hopper, the minerals are conveyed to a primary crusher. The crushed material would be conveyed to a disintegrator for further reduction, followed by a conveyor to a smooth-roll crusher. The clay material would then be conveyed to a pre-pugmill sealer, before being conveyed to a pugmill extruder. This high moisture-content homogenized pellet product is fed to the kiln/cooler process (Unit 001) via front end loader.

(Unit 003 – 25 TPH Conveying, Crushing, Screening, and Sacking) - Once the calcined material is transported to the final storage building, it is fed to a conveyor, then to a crusher. The material then enters an elevator, where product is transported to a screen for sizing. The four levels of the screen each correspond to a 10 ton bin, where finished product is subsequently bagged in 2-ton bulk sacks. The crusher, elevator, screen and baggers are controlled by a baghouse.

MISCELLANEOUS UNITS

There is a 58 Hp diesel-fired emergency engine which rotates the kiln during periods of electrical interruption to the facility.

APPLICABILITY

MMC is subject to the following regulations:

State Implementation Plan (SIP)	ADEM Admin. Code r. 335-3-4-.01 (<i>Opacity</i>) ADEM Admin. Code r. 334-3-4-.01 (<i>Particulate Matter</i>) ADEM Admin. Code r. 334-3-4-.02 (<i>Fugitive Dust and Fugitive Emissions</i>)
New Source Performance Standards (NSPS)	40 CFR Part 60, Subpart OOO (<i>Standards of Performance for Nonmetallic Mineral Processing Plants</i>)
Major Source Operating Permits (Title V)	ADEM Admin. Code r. 335-3-16
National Emission Standards for Hazardous Air Pollutants (NESHAP)	40 CFR 63, Subpart ZZZZ. (<i>NESHAP for Stationary Reciprocating Internal Combustion Engines</i>)

Unit specific regulations are detailed under the section "Unit Descriptions and Potential Emissions" of this analysis.

MMC would not be subject to the following subparts of the New Source Performance Standards (NSPS):

1. Subpart LL (Standards of Performance for Metallic Mineral Processing Plants) - This subpart would not apply to MMC because the proposed process would not meet the definition of *metallic mineral processing plant*.
2. Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries) - This subpart would not apply to MMC because the rotary kiln commenced construction, modification, or reconstruction prior to applicability date of April 23, 1986.
3. Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) - This subpart would not apply to MMC because the emergency engines were manufactured prior to applicability date of April 1, 2006.
4. Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) - This subpart would not apply to MMC because the emergency engines were manufactured prior to applicability date of January 1, 2009.

Based on the Title V application, MMC has the potential to exceed the Prevention of Significant Deterioration (PSD) threshold of 250 TPY for SO₂ and NO_x. However, according to ADEM Admin. Code 335-3-14-.04(2)(n), MMC would be considered grandfathered/exempt from PSD regulations based on the Major Source baseline dates of January 6, 1975, for SO₂, and February 8, 1988, for NO_x. Any future increases of emissions at MMC must be evaluated for PSD applicability if the emissions exceed the significant levels listed in ADEM Admin. Code 334-3-14-.04(2)(w).

According to the Title V application, MMC is subject to Compliance Assurance Monitoring (CAM) regulations. The rotary kiln at this facility meets the criteria for CAM applicability. It is subject to a PM emission limit, has a baghouse to control PM emissions, and has a potential to exceed major source thresholds for PM prior to the control device.

MODIFICATIONS

Mineral Manufacturing was issued Air Permit No. X013 on July 12, 2021 for a 676 Hp Caterpillar diesel-fired emergency generator. This emergency generator is subject to Subpart ZZZZ. This source will be incorporated into the MSOP as a permitted source.

EMISSIONS STANDARDS AND POTENTIAL EMISSIONS

Unit 001 - 20 TPH Rotary Kiln/Cooler, Crushing and Conveying Circuit

This unit is subject to the following SIP rules and regulations:

Emissions Standards

Opacity:

ADEM Admin. Code r. 335-3-4-.01

- Opacity is limited to 20%, as determined by a six-minute average.
- During one six-minute period in any sixty minute period, a source of emission may discharge into the atmosphere particulate of an opacity not greater than 40%.

*Particulate Matter:***ADEM Admin. Code r. 335-3-4-.04**

- $E = 3.59 P^{0.62}$; ($P < 30$ tons/hr)
 where E = emissions in pounds per hour
 P = process weight per hour in tons per hour

This calculates to an allowable of 23.00 lbs/hr or 100.74 TPY.

Potential Emissions

Two types of minerals are processed at MMC, bauxitic clay and kaolin minerals. Both minerals vary in potential emissions for SO₂, NO_x, VOC, and CO.

Please see the potential emissions for each mineral listed in the tables below.

Bauxitic Clay Processing:

Pollutant	Potential (lbs/hr)	Potential (TPY)	Basis of Calculation	Allowable Emission Rate
PM	23.00	100.74	335-3-4-.04(1)	23.00 lbs/hr
SO ₂	193.24	846	Stack Test	N/A
NO _x	126.14	553	Stack Test	N/A
VOC	0.29	1.27	Stack Test	N/A
CO	1.68	7.36	Stack Test	N/A
HAPs	0.07	0.31	AP-42	N/A
GHG (CO ₂ e)	4,735	20,739	AP-42	N/A

Kaolin/Clay Processing:

Pollutant	Potential (lbs/hr)	Potential (TPY)	Basis of Calculation	Allowable Emission Rate
PM	23.00	100.74	335-3-4-.04(1)	23.00 lbs/hr
SO ₂	37.44	163.98	Stack Test*	N/A
NO _x	120.12	526.12	Stack Test*	N/A
VOC	27.31	119.66	Stack Test*	N/A
CO	5.00	21.90	Stack Test*	N/A
HAPs	9.2	40.3	AP-42	N/A
GHG (CO ₂ e)	15,628.8	68,454.2	AP-42	N/A

* Stack testing results used from a comparable facility.

Unit 002 - 200 TPH Conveying, Crushing and Extruding Circuit

All of the equipment utilized in this process, except the pug-sealer and pug extruder are subject to NSPS Subpart OOO regulations, with an allowable emission rate of 0.032 g/dscm. Since most of the equipment is located inside an enclosed building, emissions from any building vents must meet the applicable stack emission limits of 0.032 g/dscm. In addition, the crusher is subject to a 12% opacity standard and transfer points on conveyors, belt conveyors, and screens are subject to a 7% opacity standard. Fugitive emissions from building openings must not exceed 7% opacity.

Pollutant	Potential (lbs/hr)	Potential (TPY)	Basis of Calculation	Allowable Emission Rate
PM	2.24	9.8	AP-42	0.032 g/dscm

Unit 003 - 25 TPH Conveying, Crushing, Screening and Sacking Circuit

All of the equipment utilized in this process are subject to NSPS Subpart OOO regulations, with an allowable emission rate of 0.05 g/dscm. This circuit is controlled by a baghouse that is subject to a 7% opacity standard. All equipment in this circuit was manufactured prior to April 22, 2008. This circuit was previously permitted, but has not been in production for several years; therefore, it was not in the original Title V permit.

Pollutant	Potential (lbs/hr)	Potential (TPY)	Basis of Calculation	Allowable Emission Rate
PM	0.36	1.6	AP-42	0.05 g/dscm

Unit 004 – 676 Hp Caterpillar diesel-fired Emergency Generator

The 676 Hp Caterpillar emergency generator is an existing, emergency engine that is subject to 40 CFR Part 63, Subpart ZZZZ (RICE MACT). Potential emissions are based on a maximum of 500 hrs/yr. There are no emission limitations for this engine.

Pollutant	Potential (lbs/hr)	Potential (TPY)	Basis of Calculation	Regulatory Emission Limit
PM ₁₀	0.48	0.12	AP-42	NA
NO _x	16.24	4.06	AP-42	NA
CO	3.72	0.93	AP-42	NA
VOC	0.48	0.12	AP-42	NA
SO ₂	0.008	0.002	AP-42	NA
Formaldehyde	Neg	Neg	NA	NA

PERIODIC MONITORING AND RECORDKEEPING REQUIREMENTS

- MMC personnel, who are certified to determine opacity, shall perform weekly visible emissions observations on the 001 baghouse stack while unit is in operation. Each observation shall be accomplished for a minimum of six-minutes. If the average Method 9 opacity during the six-minute period exceeds 15%, MMC shall conduct a second Method 9 test within thirty (30) minutes of the initial observation. If the

average opacity during both six-minute observations exceeds 15%, MMC shall conduct an inspection of the applicable control device to determine the cause of the visible emissions. MMC shall notify the Department in writing within twenty-four (24) hours if the visible emissions are at or above 20% opacity during a Method 9 six-minute observation. Both Method 9 six-minute observations shall be submitted if notification is required.

The notification shall include the following:

- 1) The duration of the occurrence
 - 2) The results of the inspection of the control device
 - 3) The corrective action taken and/or preventative measures adopted
- Periodic emissions monitoring will consist of maintaining and utilizing a pressure differential measuring device on the baghouse. The pressure range should measure a pressure drop between 3 and 7 inches of water. MMC shall conduct daily monitoring and recording of the pressure drop across the baghouse while the unit is in operation. If problems are identified, corrective action shall be initiated within 24 hours.
 - MMC shall conduct monthly inspections of all hoppers, fans, hoods, ductwork, and cleaning cycles, as well as, all bags inside the baghouse to ensure proper operation. If problems are identified, corrective action should be initiated within 24 hours.
 - MMC shall be required to have personnel (whether staff or contractor) readily available who are certified to conduct EPA Reference Method 9 visible emissions observations and who are knowledgeable in the maintenance of emissions control equipment.
 - Since MMC is subject to 40 CFR Part 64, Compliance Assurance Monitoring for PM emissions, monitoring shall be conducted in accordance with the attached Compliance Assurance Monitoring located within the permit.
 - MMC is required to develop a maintenance plan and to keep records of the maintenance conducted on the 676 Hp Caterpillar emergency generator.

REPORTING REQUIREMENTS

In the event of deviations from permit requirements, MMC shall report to the Air Division of ADEM within 24 hours of the occurrence. The report shall include information regarding the probable cause of the deviation(s) and any corrective actions or preventative measures that were implemented. MMC is also required to submit an annual compliance certification and a semi-annual compliance report.

This draft permit will be subject to a 30-day public comment period and 45-day EPA review prior to issuance.



Delilah D. Simpson
Energy Branch
Air Division

10-1-26

Date

DRAFT