DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

A088471347

FACILITY: Billerud Escanaba LLC		**SRN / ID:** A0884
LOCATION: 7100 COUNTY 426 M.5 ROAD, ESCANABA		**DISTRICT:** Marquette
CITY: ESCANABA		**COUNTY:** DELTA
CONTACT: Frank Sliva (Omya Inc.) , PCC Plant Manager (6/2019)		**ACTIVITY DATE:** 03/21/2024
STAFF: Joe Scanlan	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Announced inspection at Omya to determine compliance with Section 2 of MI-ROP-A0884-2021b		
RESOLVED COMPLAINTS:		

REGULATORY AUTHORITY

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

FACILITY DESCRIPTION

Omya, Incorporated (Omya) produces and sells precipitated calcium carbonate (PCC). The PCC provides brightness, opacity, bulk, porosity, and smoothness to papers. Omya operates process equipment at Billerud Escanaba (Billerud) to produce PCC as part of the paper making process for Billerud. Equipment at the plant includes a carbonator system and lime silos. The process uses exhaust gases from the Lime Kiln as a CO2 source for PCC production. Process operations started July 5, 2014.

PROCESS DESCRIPTION

Water is added to lime to form calcium hydroxide (hydrated lime or slake). The addition of carbon dioxide and slaked lime produces calcium carbonate and water. Since the calcium carbonate is insoluble in water, it precipitates out.

$CaO + H_2O \rightarrow Ca(OH)_2$

$Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$

COMPLIANCE HISTORY

There have been no violations at the facility since the last inspection that occurred in 2022.

REGULATORY ANALYSIS

Omya is identified as a second section of the Billerud ROP and is subject to MI-ROP-A0884-2021b, Section 2– Omya, Incorporated.

EMISSIONS REPORTING

The facility is required to report annual emissions to SLEIS. The following are reported emissions for 2023:

Emission Unit	PM10 (tons)	PM2.5 (tons)
EUCARBONATORS	0.237	0.077
EULIME	0.034	0.034
EUCOOLTWR	0.093	Not reported
EUROAD	0.020	0.004
Total	0.384 tons	0.115 tons
Limit	6.46 tpy	6.40 tpy

INSPECTION

An on-site inspection was performed on 03/15/2024 to determine Omya's compliance with MI-ROP-A0884-2021b. The contact for the facility is Frank Sliva, Plant Manager. The carbonator system and lime silos were the emission units inspected at the source. At the time of the inspection, the plant was operating.

SOURCEWIDE—All process equipment at the stationary source including equipment covered by other permits, grandfathered equipment, and exempt equipment.

Other Requirements

SC IX.1 The facility has a Fugitive Dust Control Program implemented to control fugitive dust emissions on plant roadways, material storage piles, and other operations throughout the plant. Records of visible emissions inspections are on file and made available to AQD staff.

EUCARBONATORS—Three carbonators, two of which may be used at a time for PCC production. Carbon dioxide will be routed to the carbonators from the Lime Kiln or from liquid CO2. Non-particulate emissions are from the Lime Kiln gas and are not a product of PCC production. Gas from the lime kiln is pre-treated with a packed water spray scrubber/gas cooler which removes more particulate than added by the carbonation process. The exhaust from EUCARBONATORS is treated with a de-mister before reaching the PCC stack.

Emission Limits

SC I.1-3 The carbonator system contains PM, PM10, and PM2.5 limits. Compliance is demonstrated through performing weekly non-certified visible emission checks as an indicator of proper operation of the wet scrubber and demisters.

Copies of weekly inspections were provided during the inspection. Omya staff did not observe visible emissions while equipment was operating on any of the random weeks viewed.

Design/Equipment Parameters

SC IV.1-2 During the inspection, the wet scrubber was observed installed as part of the carbonator system. The carbonator system was in operation at the time of the inspection. The demisters were also observed as part of the carbonator system and are located directly above the carbonators before exhaust is routed out to the main stack.

Monitoring/Recordkeeping

SC VI.1-2 The facility performs weekly non-certified visible opacity observations on the main stack to check for proper operation of the wet scrubber and demisters. Records are kept of the date, time, name, and visible emissions status.

Copies of weekly inspections were provided during the inspection. Omya staff did not observe visible emissions while equipment was operating on any of the random weeks viewed.

Reporting

SC VIII.1-3 The facility is timely in submitting semiannual reporting of monitoring and deviations, and also the annual certification of compliance. No deviations were reported for 2023.

Stack/Vent Restrictions

SC VIII.1 AQD staff did not measure stack dimensions during the inspection. If possible, stack heights will be verified at a later date.

EULIME—A Lime silo is used in the precipitated calcium carbonate process to store lime prior to use. A baghouse at the top of the lime silo is used to control particulates.

Emission Limits

SC I.1-3 The lime silo contains PM, PM10, and PM2.5 limits. Compliance is demonstrated through performing weekly non-certified visible emission checks as an indicator of proper operation on the fabric filter baghouse.

Copies of weekly inspections were provided during the inspection. Omya staff did not observe visible emissions while equipment was operating on any of the random weeks viewed.

Process/Operational Restrictions

SC III.1-2 Emissions from the lime silo is routed to a baghouse. The lime silo is not operated for more than 12-hours per day.

Monitoring/Recordkeeping

SC VI.1-4 The facility performs weekly non-certified visible opacity observations on the lime silo baghouses to check for proper operation.

The facility maintains adequate records of the hours that EULIME emissions are routed to the baghouse. Records were provided for all of 2023 and January and February 2024.

Records are kept of the date, time, name, and visible emissions status. Weekly records were provided for review during the inspection.

Reporting

SC VII.1-3 The facility is timely in submitting semiannual reporting of monitoring and deviations, and also the annual certification of compliance. No deviations were reported for 2023.

Stack/Vent Restrictions

SC VIII.1 AQD staff did not measure stack dimensions during the inspection. If possible, stack heights will be verified at a later date.

EUCOOLTWR—Mechanical induced draft cooling tower used to reduce the temperature of the Lime Kiln exhaust gases and carbonators.

Emission Limits

SC I.1-3 The cooling tower contains PM, PM10, and PM2.5 limits. Compliance is demonstrated through (SC VI.2a) weekly calculations of TDS concentration in the cooling water and (SC VI.2b) determination of the cooling tower loop flow rate. Records were provided showing compliance with SC VI.2a & b and SC I.1-3.

Process/Operational Restrictions

SC VI.2-3

SC III.1 The facility provided records showing TDS concentrations are maintained below 1,656 ppm. 12-month average for 2023 was 657.8 ppm. Average TDS concentration for February 2024 was 642.7 ppm.

Design/Equipment Parameters

SC IV.1 AQD staff did not request vendor certification of the drift rate for the drift eliminators.

Monitoring/Recordkeeping

SC VI.2-3 Compliance with SC I.1-3 is demonstrated through weekly calculations of TDS concentration in the cooling water and determination of the cooling tower loop flow rate. Records were provided showing compliance with SC VI.2a & b.

PM emission rates are calculated on a monthly basis using the following calculation:

PM Emissions lb/hr = Cooling Loop Flow (GPM) x 60 min/hr x 0.0001 (drift lost fraction) x 8.34 lb/gal x TDS (PPM) x 1/1 E6 PPM

Monthly 12-month rolling PM emissions for January 2024 were 0.0354 ppm, and for February 2024 0.0325 ppm.

Reporting

SC VII.1-3 The facility is timely in submitting semiannual reporting of monitoring and deviations, and also the annual certification of compliance. No deviations were reported for 2023.

Stack/Vent Restrictions

SC VIII.1 AQD staff did not measure stack dimensions during the inspection. If possible, stack heights will be verified at a later date.

EUROAD—Fugitive emissions increase at the facility roads due to PCC Plant.

Emission Limits

SC I.1-3 EUROAD contains PM, PM10, and PM2.5 limits. Compliance is demonstrated through performing weekly non-certified visible emission checks during times of road traffic as an indicator of compliance with the emission limits.

Copies of weekly inspections were provided during the inspection. Omya staff did not observe visible emissions while equipment was operating on any of the random weeks viewed.

Reporting

SC VII.1-3 The facility is timely in submitting semiannual reporting of monitoring and deviations, and also the annual certification of compliance. No deviations were reported for 2023.

FGPCCPLANT—All process equipment utilized to produce precipitated calcium carbonate.

Emission Limits

SC I.1-2 FGPCCPLANT contains emissions limits for PM10 and PM2.5. Compliance with these emissions limits is monitoring and recordkeeping calculations of PM10 and PM2.5 from EUCARBONATORS, EULIME, EUCOOLTWR, and EUROAD per 40 CFR 52.21(r)(6)(iii), in tons per year on a calendar year basis.

The facility is adequately maintaining PM10 and PM2.5 calculations on an annual basis for most emission units; however, PM2.5 was not reported for EUCOOLTWR. Annual emissions reported to SLEIS for 2023:

Emission Unit	PM10 (tons)	PM2.5 (tons)
EUCARBONATORS	0.237	0.077
EULIME	0.034	0.034
EUCOOLTWR	0.093	Not reported
EUROAD	0.020	0.004

Total	**0.384 tons**	**0.115 tons**
Limit	**6.46 tpy**	**6.40 tpy**

Monitoring/Recordkeeping

SC VI.1-3 The facility maintains the number and weight of trucks transporting material to and from the emission units. Monthly records were provided for 2023 showing the total number of deliveries were 368 for the year, averaging 30.7 deliveries per month.

Compliance with SC I.1-2 is monitoring and recordkeeping calculations of PM10 and PM2.5 from EUCARBONATORS, EULIME, EUCOOLTWR, and EUROAD per 40 CFR 52.21(r)(6)(iii), in tons per year on a calendar year basis. The facility is adequately maintaining PM10 and PM2.5 emission rates for these emission units on an annual basis. Annual emissions reported for 2023 are shown in the table above.

The facility is adequately maintaining PM10 and PM2.5 emission rates for EULK29 on an annual basis. Annual emissions reported for 2023 show PM10 emissions were 30.88 tons and PM2.5 emissions were 28.21 tons.

Reporting

SC VII.1-3 The facility is timely in submitting semiannual reporting of monitoring and deviations, and also the annual certification of compliance. No deviations were reported for 2023.

Other Requirements

SC IX.1 The facility has adequate fencing, warning signs, video surveillance, regular patrols and/or other measure to prevent unauthorized individuals from entering the plant property and buildings. The facility is located with the confines of the Billerud Escanaba Mill and has only secure access.

Compliance

Based on the inspection performed, Omya appears to be in compliance with MI-ROP-A0884-2021b and all other applicable state and federal air quality regulations.

NAME _____ DATE 5-7-2024 SUPERVISOR _____