

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

B147071387

FACILITY: NEENAH PAPER - MICHIGAN INC		SRN / ID: B1470
LOCATION: 501 E MUNISING AVE, MUNISING		DISTRICT: Marquette
CITY: MUNISING		COUNTY: ALGER
CONTACT: Brian Ciupak , Environmental Engineer (2019)		ACTIVITY DATE: 02/08/2024
STAFF: Lauren Luce	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Targeted Inspection FY24		
RESOLVED COMPLAINTS:		

Facility: Neenah Paper (SRN: B1470)

Location: 501 E Munising Ave, Munising, MI 49862

Contact: Brian Ciupak, Environmental Engineer

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

Neenah Paper is global manufacturer of specialty materials headquartered in Alpharetta, Georgia. The Munising Mill is located in a commercial area on the shore of Lake Superior within the city limits of Munising in Alger County. The Munising Mill produces specialty paper products including tapes, abrasives, wash tags, and medical paper.

Process Description

The facility operates a non-integrated paper mill in Munising, Michigan. Large bales of pulp are obtained from outside suppliers and then soaked in water in a hydro-pulper. Additives may be added during the pulping depending on the product needed. Once the pulp leaves the pulper, it goes to refiners and then the headbox of the paper machine where the paper is formed. Water drains from the paper as it is fed through rapidly rotating rollers and dried. The mill has two (2) paper machines and operates a coater, saturator, and dryer in conjunction with their Paper Machine #1. Paper Machine #2 also has a saturator. The facility is permitted to operate three additional coatiers and two saturators that are all separate from the paper machines.

Emissions

The main source of emissions from the mill is EU05 (Boiler #1). A new baghouse was installed on this boiler in 1996 under Permit No. 218-96A to meet the 0.3 pound per 1,000-pound particulate limit. A Spray Dry Absorber (SDA) was installed on the same boiler in February 2015 to reduce HAP emissions and allow Neenah to become a synthetic minor source of HAPs. Other pollutants from coal combustion are particulate matter (PM), sulfur oxides (SOx), and nitrogen oxides (NOx). Some unburned combustibles, including carbon monoxide (CO) and numerous organic

compounds, are generally emitted even under proper boiler operating conditions. Water vapor is the primary emission from the paper machine. However, the potential exists for other air emissions to be vented during the paper manufacturing process. Paper coating can also be a source of air emissions. Some potential pollutants are formaldehyde, latexes, acrylics, synthetic polymers, and cellulose derivatives.

Emissions Reporting

Neenah Paper - Munising is required to report its annual emissions to Michigan Air Emissions Reporting System (MAERS). The table below shows the facility's MAERS submittal for reporting year 2022.

Pollutant	Pounds per Year (PPY)	Tons per Year (TPY)
CO	123124.24	61.56
NOx	271551.05	135.78
PM10 PRIMARY	3953.62	1.98
PM2.5 PRIMARY	1973.98	<1
SO2	473714.04	236.86
VOC	52900.56	26.45

Compliance History

The facility was last inspected in July 2022 and was found to be in compliance with all applicable air quality rules and federal regulations at that time.

Regulatory Analysis

Alger County is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

Neenah Paper - Munising is subject to MI-ROP-B1470-2019a. The source is considered major for CO, SOx, and NOx, because the potential-to-emit (PTE) for these pollutants is over 100 tpy. The facility is considered a synthetic minor source for HAPs because the source took source-wide limits to restrict the PTE to less than the major source thresholds of 10 tpy for individual HAPs and 25 tpy for aggregate HAPs.

EU05 (Boiler #1) and EU15 (Boiler #2) at the stationary source are subject to the National Emissions

Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and JJJJJJ. The emission limitations or standards for PM-10 and HAPs from EU05 (Boiler #1) at the stationary source are subject to the federal Compliance Assurance Monitoring rule under 40 CFR Part 64. FGEMERGENCYENGINES at the stationary source are subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ.

Inspection

On February 8, 2024, AQD Staff (Lauren Luce) conducted a targeted inspection of Neenah Paper in Munising, MI. Upon arrival, observations of the stacks were taken to inspect for visible emissions. No visible emissions were detected. AQD staff met with Brian Ciupak, Environmental Engineer, to discuss operations and records. A tour of the facility was then provided.

SOURCE-WIDE

Neenah Paper - Munising is considered a synthetic minor source for HAPs since the facility took emission limits to restrict the potential-to-emit to less than 9.5 tpy for individual HAPs and 23.5 tpy for aggregate HAPs. With having these source-wide emission limits, the facility is required to track the quantity of each HAP containing material used, the HAP emission factor of each HAP containing material, along with individual and aggregate HAP emission calculations for each calendar month and on a 12-month rolling time basis.

The facility maintains a spreadsheet that tracks monthly and 12-month rolling HAP emissions from all sources of HAP emissions at the mill including EU05, latex, and the emergency generators. Records were provided for January 2022 through June 2024. EU05 (Boiler #1) is the greatest source of HAP emissions at the facility. Most of the HAP emissions are HCl. Latex coatings used on site are also a source of HAP emissions. The twelve-month rolling total for HAPs in January 2024 were 5.163 tons for EU05, 2.849 tons for latex emissions, and 8.015 tons for aggregate HAP emissions. The highest twelve-month rolling individual and aggregate HAP emissions were in August 2022 at 8.768 tons individual and 12.007 tons aggregate for source-wide. HCl is the highest individual HAP. The equation used to calculate these emissions is documented within the CAM/MAP plan for the facility. HCl emissions from EU05 are calculated using emission factors multiplied by the fuel throughput in conjunction with its heating

value. Daily coal use is determined by using a gravimetric weigh belt feeder. The coal usage is shown in tons per hour and totalized on a daily and monthly basis. The HCl emission factor used is based on the November 2019 stack test data. The emission factor is 0.0219 lb HCl/MMbtu and the SDA during the test showed an average specific gravity setpoint of 1.034 and an outlet temperature of 290°F. Emissions from latex coatings are documented within the spreadsheet by specific coating.

The facility is required to determine emission rates for Hydrogen Chloride, Arsenic, Phosphorous, Manganese, Barium, Chromium, and Lead along with the Hydrogen Chloride control efficiency from EU05 at least once every five years. The last test was completed in October 2019. All results were within allowable limits. Compliance testing for these pollutants from EU05 was scheduled for March 5-6, 2024. As the time of this report, results were not yet available.

EU05 (BOILER #1)

This emission unit consists of a 202 MMBtu/hr boiler, baghouse, stack, coal, and ash handling. The boiler can burn coal and natural gas. The boiler is a CAM subject emission unit. Emissions are controlled by a baghouse and spray dry absorber (SDA). The baghouse is a CAM subject control device. Steam flow at the time of inspection (2:40PM on 2/8/24) was 77.3 kpph and the coal feed rate was 3.1 tons/hr. Steam flow is generally around 70-75 kpph in the summer and 100 kpph in the winter. The facility uses 110 kpph as the steam flow rate for stack testing.

SC I, SC II, SC V, SC VI.2

EU05 was tested in December 2021 for compliance with CO, PM, and mercury emissions. All results showed the emissions were below the established limit. Compliance testing was completed on March 5-6, 2024. At this time of this report, results were not yet available. Material limits on coal are a maximum sulfur content of 1.5% by weight based on 12,000 BTUs per pound of coal. A coal analysis was completed in September 2023 with results showing 0.73% sulfur content.

SC III

The facility has an approved Preventative Maintenance and Malfunction Abatement Plan (PM/MAP) dated December 6th, 2019. The plan contains all information required by their permit. The facility continues to operate within the parameters of the plan.

SC IV.1, 2

The baghouse is equipped with a pressure drop indicator. At the time of inspection (2:41PM on 2/8/24) the current reading was 5.25 in WC. Records were provided showing pressure drop readings. The readings from 2/5/24 were: Daily Average PDR = 4.43765, Maximum Reading = 9.37044, and Minimum = 0.290827.

As defined in the PM/MAP plan, if a malfunction occurs which causes, or may cause, excess emissions during EU05 operations, the equipment causing the potential excess emission rate will be evaluated – as soon as practicable in accordance with safe operating procedures – to determine the proper procedure to correct the issue or determine that the malfunction will not cause excess emissions. EU05 may continue to operate consistent with good air pollution control practices until the SDA and/or baghouse can be repaired and brought back on-line before resuming normal operation. EU05 can switch to natural gas firing; however, the unit cannot operate at loads higher than 35% of maximum capacity using only this fuel. SDA downtime logs are filled out by the Powerhouse crew and times are checked against records in the Process Information (PI) system to ensure accuracy. SDA downtimes greater than five minutes during EU05 operation are recorded and included in the emissions tracking spreadsheet. SDA downtime is reported in semiannual/annual ROP certifications. In 2023, there were 3 reports of the SDA being down for repairs or power interruptions. The longest instance was 5.33 hours due to power interruptions.

SC VI 1,3, 5-9, 11-14

The facility operates, maintains equipment, and documents within the procedures defined in their PM/MAP plan and permit.

SC VI.4

EU05 is equipped with a COMS. The COMS is calibrated daily. The six minute average at the time of inspection (2:41PM on 2/8/24) was 1.25%. The instant reading at the same time was 1.4%. Records were provided showing COMS system readings. The readings for 2/5/24 were: Daily Average of Six Minute Ave Opacity = 1.4%, Maximum Instantaneous Reading (excluding 11am calibration) = 2.7% , and Minimum Instantaneous Reading = 0.007%

SC VI.10

EU05 is equipped with a spray dry absorber (SDA) to control HCl emissions. The facility is required to continuously monitor the specific gravity of the SDA reagent and the SDA flue gas exit temperature and record hourly as an indicator of proper operation. When operating properly, the SDA reagent specific gravity will be greater than or equal to 1.010 and the SDA outlet temperature will be great than or equal to 220 degrees Fahrenheit. The SDA reagent specific gravity at the time of inspection (2:41PM on 2/8/24) was 1.034 and the flue gas exit temperature at the same time was 294.7 Records were provided showing SDA reagent specific gravity and flue gas exit temperature. The reading for 2/5/24 were: Daily Average for SDA Outlet Temperature = 294.9868 with a range of 296.68- 293.2457. SDA Reagent SG Average = 1.034029 with a range of 1.032-1.034. The SDA injector nozzle/lances are cleaned biweekly as specified in the PM/MAP.

SC VII

The facility reported 5 deviations in their 2023 ROP annual certification. The deviations were related to the SDA being down and maintenance on the COMS and baghouse. A description and corrective actions were included. Increased emissions are accounted for in the annual total using an uncontrolled emission factor. CAM monitor downtime and excursions/exceedance reports are also submitted. In 2023, there was no monitor downtime.

SC VIII

SV05 appeared to be at least 135 feet from the ground and no more than 86 inches in diameter.

EU15 (BOILER #2)

This emission unit consists of a 202 MMBtu/hr boiler and stack. The boiler burns #2 fuel oil. This boiler has not been operated in many years and the fuel delivery system is no longer operable, however, the facility plans to keep Boiler #2 in their permit.

FGPM1COATER

This flexible group consists of paper machine #1 coater, dryers, and stack. During the inspection, the coater was not in operation.

SC I

The facility maintains spreadsheets that track VOC and HAP content and usage of all coatings. Records were provided from January 2022-January 2024. The twelve-month rolling for VOC emissions as of January 2024 was 3.88 tons, which is below the established limit of 7.8 tpy. The

spreadsheets also document VOC emissions (lbs/hr), Acrylonitrile, and Formaldehyde emissions. All were within established limits.

SC III

The dryer only operates on natural gas. The natural gas line was observed during the inspection. Containers of VOC and/or HAP containing materials were covered during the inspection.

SC VI.1-3

The facility maintains spreadsheets that track VOC content and usage of all coatings. Records were provided for January 2022-December 2023. The twelve-month rolling total of VOC emissions in December 2023 was 3.65 tons. The facility also maintains SDS records for each coating used.

SC VI.4

The facility continuously monitors the Paper Machine #1 feed rate. At the time of the inspection, the feed rate was 723 ft/min for Paper Machine #1 and 928 ft/min for Paper Machine #2.

SC VIII

SVPM1COATER appeared to be at least 90 feet from the ground.

FGSATURATORS&COATERS

This flexible group consists of Paper Machine #1 saturator, Paper Machine #2 saturator, Saturator #15 and #18 and ovens, and Coaters #16, #17, and #19. Coater #17 is a two-headed coater. During the inspection, Saturators #15 and #18 and Coaters #16 and #19 were not operating. All other equipment was operating.

SC I, SC VI

The facility maintains spreadsheets that track VOC content and usage of all coatings. Records were provided for January 2022-January 2024. Emissions from VOCs are limited to 2.9lb/gal on a daily volume-weighted average. The facility limits all coating formulations to less than 2.9lb/gal. The maximum VOC content of any raw material is approximately 0.4lb/gal.

FGEMERGNECYENGINES

This flexible group consist of three emergency engines used to run the mill, fire pump, and wastewater treatment system in the event of a power failure.

SC II, SC VI.2, 3

A fuel analysis from U.S. Oil dated January 11, 2023 was provided showing the total sulfur content of the fuel oil was 8.575ppm within the established limit of 15ppm.

SC VI.1

The facility maintains a spreadsheet that tracks emergency engine use and hours. There were no hours logged as emergency use in 2022 or 2023. Total operating hours of all engines in January 2024 was 7.23 hours. The non-resettable hour meter for EUPOWERGENERATOR was 1139.8, EUFIREPUMPGEN was 2485.75, and EUWWTPGENERATOR was 285.8.

FGCOLDCLEANERS

There are three cold cleaners at the facility that use a ZEP Dyna solvent. The solvent does not contain any of the halogenated compounds listed in the permit. At the time of the inspection, the cold cleaners were not being used and the covers were closed. Instructions for the cold cleaners were on the interior cover. While parts are being cleaned, emissions from the solvent being used are released to the general in-plant environment.

FGJJJJJ-EU05

EU05 (Boiler #1) is subject 40 CFR Part 63, Subpart JJJJJJ, Conditions for any existing large (≥ 10 MMBtu/hour heat input) coal-fired industrial, commercial or institutional boiler

as defined in 40 CFR 63.11237 (excluding limited use boilers) that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in 40 CFR 63.2, except as specified in 40 CFR 63.11195.

SC I, SC V.1-11

EU05 was tested in December 2021 for compliance with CO, PM, and mercury emissions. The facility uses Method 29 performance testing to show compliance with the mercury limit. Fuel analysis is also completed. All results showed the emissions were below the established limit. Compliance testing was done on March 5-6, 2024. At the time of this report, results were not yet available.

During this inspection, it was determined Neenah Paper did not establish operating limits for boiler load from the previous CO performance test in December 2021. At the time of the inspection, Neenah Paper was not aware of the operating limit requirements and was unable to provide an operating limit for the boiler load.

SC III.1-3

Subpart JJJJJJ requires the facility to complete an energy assessment. The facility completed the assessment on April 20, 2015 and it is on file. EU05 must maintain opacity of 10% or less on a daily block average. On 2/5/24, the maximum instantaneous reading was 2.6% opacity. The daily block average was 1.9%. The facility continues to operate within the parameters defined in their PM/MAP plan to minimize emissions during startup and shutdown.

SC VI.1-13

The COMS is calibrated and maintained as defined in the PM/MAP plan and appendix B of 40 CFR Part 60. Records are kept on the amount of type of fuel burned. On 12/5/23, there was 74.89 tons of coal used and 386 MCF of natural gas used in EU05. The boiler is equipped with an oxygen trim system that continuously measures oxygen concentration. At the time of inspection (2:40PM on 2/8/24), the oxygen concentration was 8.61%.

During this inspection, it was determined Neenah Paper did not establish operating limits for the oxygen level from the previous CO performance test in December 2021. At the time of the inspection, Neenah Paper was not aware of the operating limit requirements and was unable to provide an operating limit for the oxygen trim system. Operating limits are confirmed or reestablished during performance tests for 40 CFR Part 63, Subpart JJJJJJ.

FGJJJJJ-EU15

This boiler has not been operated in many years and the fuel delivery system is no longer operable, however, the facility plans to keep Boiler #2 in their permit.

Compliance

Based on the site inspection and records reviewed, Neenah Paper – Munising Mill does not appear to be in compliance with MI-ROP-B1470-2019a and 40 CFR Part 63, Subpart JJJJJ. A Violation Notice will be issued for failing to establish operating limits for the oxygen level and boiler load from the previous CO performance test in December 2021. This is a violation of Special Condition V.3, and SC VI.8 under FGJJJJJ-EU05, and also of the standards in place in 40 CFR 40 CFR Part 63, Subpart JJJJJ.



Image 1: Paper Machine

NAME

DATE

4-8-2024

SUPERVISOR