

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

B147064086

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: 07/28/2022
STAFF: Lauren Luce	COMPLIANCE STATUS: Compliance
SUBJECT: Targeted Inspection FY22	SOURCE CLASS: MAJOR
RESOLVED COMPLAINTS:	

Facility: Neenah Paper (SRN: B1470)

Location: 501 E Munising Ave, Munising, MI 49862

Contact(s): 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. Chemicals can be added to the pulp to give the paper the desired qualities, such as color or strength. Some amount of these chemicals may be emitted to the atmosphere during paper production. Chemical additives include resins, dyes and pigments, defoamers, and slimicides. The composition of these additives varies greatly, and some additives may include hazardous air pollutants (HAP) and volatile organic compounds (VOCs). 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 2021 MAERS submittal.

Pollutant	Pounds per Year (PPY)	Tons per Year (TPY)
CO	134270.90	67.13
NOx	295745.73	147.87
PM10	3955.34	1.97
PM2.5	1697.90	<1
SO2	540145.37	270.07
VOC	51888.24	25.94

Compliance History

The facility has received two violation notices (VN) in the past five years. The VNs were related to reporting and emission limits. Both were resolved. The facility was last inspected in November 2019 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 JJJJJ. 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 July 28, 2022, AQD Staff (Lauren Luce & Michael Conklin) 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. Records were provided for January 2020 through June 2022. 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 average for June 2022 are 8.599 tons for EU05, 3.208 tons for latex emissions, and 11.811 tons for aggregate HAP emissions. The highest twelve-month rolling individual and aggregate HAP emissions were in March 2022 at 8.645 tons individual and 11.875 tons aggregate for source-wide. The equation used to calculate these emissions is documented within the CAM/MAP plan for the facility. The emission factor used for HCl is based upon the most recent stack test completed in 2019. 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.

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 bag house and spray dry absorber (SDA). The baghouse is a CAM subject control device. Steam flow at the time of inspection (11:23AM on 7/28/22) was 59.54 kpph. Steam flow was likely lower as Paper Machine #1 was undergoing a grade switch. Steam flow is generally around 70-75kpph in the summer and 100kpph in the winter. The facility uses 110kpph as the steam flow rate for stack testing.

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

EU05 was last tested in December 2021 for compliance with CO, PM, and mercury emissions. All results showed the emissions were below the established limit. 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 May 2022 with results showing 1.29% 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 (11:20AM on 7/28/22) the current reading was 5.27 in. Records were provided showing pressure drop readings. The readings from 7/14/22 were: Daily Average PDR = 5.152493 in., Maximum Reading = 6.057396 in., and Minimum = 4.064117 in.

AQD staff discussed operations at the facility while the SDA is down. Brian Ciupak referenced the PM/MAP plan and stated that the facility and boiler continue to operate as they are able to stay below their permitted HAP emissions with short time periods of down time on the SDA.

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.

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 hour average at the time of inspection (11:21AM on 7/28/22) was 2.141%. The instant reading at the same time was 2.446%. Records were provided showing COMS system readings. The readings for 7/14/22 were: Daily Average of Six Minute Ave Opacity = 1.325428, Maximum Instantaneous Reading (excluding 11am calibration) = 5.66913, and Minimum Instantaneous Reading = 1.366646.

SC VI.10

EU05 is equipped with a spray dry absorber (SDA) to control HAP 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 (11:24AM on 7/28/22) was 1.034 and the flue gas exit temperature at the same time was 291.1. Records were provided showing SDA reagent specific gravity and flue gas exit temperature. The reading for 7/14/22 were: Daily Average for SDA Outlet Temperature = 295.04 with a range of 291.6- 298.06. SDA Reagent SG Average = 1.034778 with a range of 1.034-1.035. Records were also provided on SDA lance maintenance.

SC VII

The facility reported 27 deviations in their 2021 ROP annual certification. The deviations were mostly related to the SDA being down and maintenance on the COMS and baghouse. A description and corrective actions were included.

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 in operation.

SC I

The facility maintains spreadsheets that track VOC and HAP content and usage of all coatings. Records were provided from January 2020-June 2022. The twelve-month rolling for VOC emissions as of June 2022 was 4.19 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 2020-June 2022. The monthly total of VOC emissions for June 2022 was 0.4 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 for the last 13 hours was 697 ft/min for Paper Machine #1 and 694 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 Coater #16 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 2020-June 2022 Emissions from VOCs are limited to 2.9lb/gal. 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.

FGEMERGENCYENGINES

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 June 28, 2022 was provided showing the total sulfur content of the fuel oil was 7.945ppm 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 2021 or 2022. Total operating hours of all engines in June 2022 was 5.84 hours. The non-resettable hour meter for EUPOWERGENERATOR was 1120.6, EUFIREPUMPGEN was 2422.13, and EUWWTPGENERATOR was 280.8.

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 cleaner 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 JJJJJ, 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 last tested in December 2021 for compliance with CO, PM, and mercury emissions. All results showed the emissions were below the established limit as documented in the table below.

	CO (ppmdv @ 3% O2)	PM (lbs/1,00lbs of exhaust gases corrected to 50% excess air)	Mercury (lbs/MMBtu)
Permit Limit	420	0.30	2.2×10^{-05}
December 2021 results	85.4	0.01	$<7.43 \times 10^{-07}$

SC III.1-3

Subpart JJJJJ 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 7/14/22, the daily block average was 1.3% opacity. The facility continues to operate within the parameters defined in their PM/MAP plan to minimize emissions during startup and shutdown.

SC VI

The facility appears to be following all monitoring and recordkeeping requirements as defined in the permit and Subpart JJJJJ. The COMS is calibrated and maintained as defined in the PM/MAP plan. Performance testing is completed within the requirements and reports are submitted timely.

FGJJJJ-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. The facility is required to complete biannual boiler tune-ups. The last tune-up was completed in August 2021.

Compliance

Based on the site inspection and records reviewed, Neenah Paper – Munising Mill appears to be in compliance with MI-ROP-B1470-2019a and all other applicable air pollution control rules and federal regulations. It was conveyed to the facility that no violations were noted during the inspection.



Image (1): Exhaust system and SDA tower



Image (2): Paper machine

NAME *Sam Sam*

DATE 8-17-2022

SUPERVISOR *Michael Kaplan*