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

A002371318

FACILITY: OTSEGO PAPER INC		**SRN / ID:** A0023
LOCATION: 320 N Farmer St., OTSEGO		**DISTRICT:** Kalamazoo
CITY: OTSEGO		**COUNTY:** ALLEGAN
CONTACT: Frank Knowles , Environmental Compliance		**ACTIVITY DATE:** 12/13/2023
STAFF: Cody Yazzie	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On December 12, 2023 Air Quality Division (AQD) staff (Cody Yazzie, Jared Edgerton, and Mariah Scott) arrived at 320 North Farmer Street, Otsego Michigan at 9:30 AM to conduct an unannounced air quality inspection of Otsego Paper, Inc. (hereafter Otsego Paper) SRN (A0023). Staff made initial contact with the environmental contact and stated the purpose of the visit. Frank Knowles, Otsego Paper, Environmental Compliance Supervisor, is the environmental contact and arrived shortly thereafter and escorted staff for the facility walkthrough. A records requests was briefly discussed in his office outlining records that staff would like to have submitted for review.

Otsego Paper manufactures the paper that is applied to the back of gypsum board. The facility has one paper machine that uses 100 percent recycled paper and corrugated materials. The paper machine has three fourdriniers and is capable of producing a triple ply sheet. Otsego Paper also supplies its own power. The power is produced from two turbines and HRSG trains that are capable of producing both power and steam. The package boiler produces steam only and is intended to be used in a backup role to the turbines.

Otsego Paper was last inspected by the AQD on December 10, 2021 and appeared to be in Compliance at that time with MI-ROP-A0023-2019 Staff asked, and Mr. Knowles stated that the facility does not have any emergency generators or boilers not listed in the ROP.

Mr. Knowles gave staff a tour of the facility. Required personal protective equipment are safety glasses, steel toe boots, hard hat, hearing protection, and high visibility vest. Staff observations and review of records provided during and following the inspection are summarized below:

SOURCE WIDE:

The facility has source wide HAP's limit for both individual HAP's and combined HAP's. The limits are 9.0 tons per year for each individual HAP, and 22.5 tons per year for all combined HAP's. The facility is tracking around 33 different HAP's. Formaldehyde is the most produced HAP in the facility. The largest 12-month rolling Aggregate HAP emissions were 1.759 TPY which is well below both the individual and aggregate limit.

Based on the records the facility only appears to be calculating HAPs emissions from the duct burners and turbines. The calculations should include all exempt, permitted, and grandfathered equipment. This would include the EUWAREHOUSEHEATERS, EUPAPERMACHINE, and emergency generators/fire pump engines.

The facility has a source wide NOx emission limit. The facility currently calculates the NOx emissions for EUTURBINE1, EUTURBINE2, EUDUCTBURNER1, and EUDUCTBURNER2. Staff was

provided with NOx emission records for the time period starting January 2022 through November 2023. The largest NOx emissions recorded during that time was 84.09 TPY which is well below the 224.9 TPY limit in Special Condition I.3.

The facility does appear to not include NOx emissions for the smaller combustion sources such as the emergency generators/fire pump engines and EUWAREHOUSE. These emission sources are likely much smaller sources of NOx and likely still in compliance with the source wide NOx limit.

Otsego Paper has a material limit that limits the source wide natural gas usage. The facility is limited to 5,189.8 MMSCF/yr in a 12-month rolling time period. The facility provided natural gas usage for the time period of January 2021 through December 2023. Otsego Paper initially submitted records that showed during this period records showed that the largest amount of natural gas usage was reported as 3,104,757.88 MCF/yr which converts to 3,104.76 MMCF/yr in December 2023. This calculation appeared to referencing the already 12-month rolling value for just the EUWAREHOUSEHEATERS gas usage. This was casuing the facility to overreport natural gas usage. The calculation was changed to just used monthly usage so natural gas usage was calculated correctly. The largest natural gas 12-month rolling natural gas usage appears to be recorded as 1989.99 MMCF which occured in May 2023. This is below the permitted limit. In these calculations the facility appears to be accounting for exempt natural gas source and the warehouse heaters.

Special Condition III.1 limits each emergency engine or emergency fire pump to less than 500 hours per 12-month rolling time period. The facility is recording hours each emergency engine or emergency fire pump is operated. During 2022 and 2023 the total run time for all emergency engine and emergency fire pumps combined were 41.6 and 45.7 hours. All units combined is well below the 500-hour limit for each. If the facility were to come close to the limit the facility may need to change recordkeeping to accurately individualize hours operated.

The facility should be calculating for all sources of HAPs and NOx for these limits. Staff indicated to Mr. Knowles that a violation notice would be sent to the facility for not complying with Special Condition VI.1,2, and 7 for not including all source wide emissions units required for the HAPs and NOx calculation.

EUPAPERMACHINE1:

This is a triple Fourdrinier former machine that produces a three-ply sheet. The top ply uses clean white recycled magazine stock and both the middle and bottom plies use other recycled paper or corrugated boxboard. Separate pulping, cleaning, and refining equipment are used to prepare the two types of furnish.

Nalco has a representative on-site at Otsego Paper that tracks and monitors the types of material used, usage rates, hours of operation and VOC emission calculations. Staff was provided SDS for the materials used in the process. The facility calculates VOC emissions by using the VOC content, density, and volumetric usage rates. Otsego Paper has two VOC limits that the facility is tracking. Since January 2022 the facility averages around 380 lbs/day, and the highest pounds per day emissions based on a monthly average occurred in September of 2022 at 415.1 lbs/day. The average 12-month rolling VOC emissions was 60 tons per year since January 2022. The largest 12-

month rolling VOC emissions occurred during April 2023 at 65.5 tons per year. These are all well below the EUPAPERMACHINE1 emission limits.

FGCOGEN:

This flexible group includes both turbines and duct burners. The package boiler has been removed as it was decommissioned and taken out of the recent ROP modification. This flexible group has a total heat input capacity limit of 576.2 MMBTU/hour as measured on HHV basis. The facility appears to comply with this limit by operating the duct burners only when the additional steam is needed for the turbines. Typically, only one duct burner is needed to produce the additional steam need.

Otsego Paper has provided recordkeeping of calculated 12-month rolling emissions. Since January 2022 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 84.09 TPY, 6.53 TPY, and 0.97 tons per year respectively for FGCOGEN. These are well below the permitted 217.8 TPY of NOx, 215.20 TPY of CO, and 23.2 TPY of VOC emissions allowed for FGCOGEN.

The facility provided records of all start up and shutdown events for the time period of January 2022 through December 2023. The record shows the amount of hours that the events last and date that they took place. The records show that the start-ups typically take less than 30 minutes and shutdowns take around 3 hours to complete. There are no limits specified in FGCOGEN that limits the amount of time that the facility can operate the emission units in startup, shutdown, or temperatures less than 0 degrees Fahrenheit. However, there are limits in EUTURBINE2 that limit the startup and shutdown hours.

In addition, the facility is maintaining a record of the amount of hours when the external temperature is 0 degrees Fahrenheit. The facility has a temperature monitor in the control station for the turbines. The records showed that the facility recorded 19 hours of operation in when the temperature was 0 degrees Fahrenheit or less in 2022. In the records it was also noted that 18 of the 19 hours occurred were likely due to data loss. The facility appears to be assuming cold weather operation when the data loss occurs even in months where it is not likely that the temperature would be below 0 degrees Fahrenheit.

Special Condition VI.1 requires that the facility monitor and record the total steam production per hour from all FGCOGEN units combined. The facility appears to be tracking and recording these parameters. The facility provided hourly steam production values for the year 2023. Otsego Paper appears to not have a limit on the steam production per hour. The facility appears to be satisfying Special Condition VI.1

EUTURBINE 1:

EUTURBINE has not been modified since the previous inspection, so the conditions have stayed the same. EUTURBINE2 has been modified, which is reflected in the modified ROP which has changed some conditions associated with EUTURBINE2. EUTURBINE1 is subject to NSPS Subpart GG.

EUTURBINE1 is only fueled by pipeline quality natural gas. The facility does have a sulfur content limit that shall not exceed 0.8% by weight. Otsego Paper had documentation of tested natural gas

sampling that the sulfur content was 6 ppm on September 10, 2020. This equates to 0.0006% sulfur content. The This is below the required limit for the facility. Otsego Paper is required to obtain a new copy of the vendor's fuel analysis at least once every five years. This would require the facility to obtain a new copy of the analysis in 2025.

During the inspection the facility was operating EUTURBINE1. EUTURBINE1 was operating at a load of 9950 KW.

During June 2019 the facility completed the requirement of MI-ROP-A0023-2019a that requires the facility to verify the CO and VOC emission rates from EUTURBINE1 and EUTURBINE2 at a minimum every five years from the date of the last test.

As stated in the previous inspection the report EUTURBINE1 emissions are calculated using data from June 2019 stack test results. The emission factors for CO and VOC from this stack test are 0.001 lbs/MMBTU and 0.0006 lbs/MMBTU.

Otsego Paper has provided recordkeeping to include accurately calculated 12-month rolling emissions. For the time period of January 2022 through December 2023 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 34.13 TPY, 0.47 tons per year, and 0.28 tons per year respectively for EUTURBINE1. These are well below the permitted 87.7 TPY of NOx, 74.2 TPY of CO, and 1.3 TPY of VOC emissions allowed for EUTURBINE1.

EUTURBINE1 is equipped with a NOx CEMs. These are to comply with the requirements of the CAIR Ozone NOx Budget Permit. The CEMs are calibrated, monitored, and recorded during the months of May through September. Otsego paper can and has historically elected to discontinue the monitoring October through April.

EUTURBINE2:

In 2021 the facility applied for a PTI modification that allowed EUTURBINE2 to have software adjusted and allowed to operate at a higher maximum heat capacity. The physical unit of EUTURBINE2 is the same the software has just been upgraded. The maximum heat capacity of EUTURBINE1 remained the same of 141.5 MMBTU/hour. EUTURBINE2 has a new maximum heat input capacity of 150.8 MMBTU/hour. EUTURBINE2 is subject to NSPS Subpart KKKK along with having additional conditions as a part of FGNSPSKKKK.

EUTURBINE2 is only fueled by pipeline quality natural gas. The facility does have a sulfur content limit that shall not exceed 0.8% by weight. Otsego Paper had documentation of tested natural gas sampling that the sulfur content was 6 ppm on September 10, 2020. This equates to 0.0006% sulfur content. The This is below the required limit for the facility.

During June 2019 the facility completed the requirement of MI-ROP-A0023-2019a that requires the facility to verify the CO and VOC emission rates from EUTURBINE1 and EUTURBINE2 at a minimum every five years from the date of the last test. With the PTI mod the facility had plans to conduct required stack testing in March 2022.

For EUTURBINE2 emissions are calculated using data from June 2019 stack test results. The emission factors for CO and VOC from this stack test are 0.001 lbs/MMBTU and 0.0007 lbs/MMBTU.

Otsego Paper has provided recordkeeping to include accurately calculated 12-month rolling emissions. For the time period of January 2021 through December 2023 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 19.51 TPY, 0.50 tons per year, and 0.35 tons per year respectively for EUTURBINE2. These are well below the permitted 55 TPY of NOx, 57 TPY of CO, and 3.4 TPY of VOC emissions allowed for EUTURBINE2.

EUTURBINE2 is equipped with a NOx CEMs. These are to comply with the requirements of the CAIR Ozone NOx Budget Permit. The CEMs are calibrated, monitored, and recorded during the months of May through September. Otsego paper can discontinue the monitoring October through April. The facility has indicated that it plans to conduct initial testing and preform the subsequent testing rather than have the CEMS be operated year-round. Staff indicated that the facility should follow testing requirements as apart of NSPS KKKK for subsequent testing which vary based on stack test results. Testing could either be every 14 calendar months or 26 calendar months based on results.

Special Condition III.2 limits the facility to operating EUTURBINE2 to less than 50 hours of total startup and shutdown operation in a 12-month rolling time period. Otsego Paper is recording the start up and shutdown events of the turbine. The total startup and shutdown operation of EUTURBINE2 was recorded as 10.28 hours for the time period of January 2022 through December 2023. This is well below the permitted 50 hours. From the records it appears that the average startup and shutdown event lasted around 0.18 hours.

FGNSPSKKKK:

This flexible group includes EUTURBINE2 and EUDUCTBURNER2 which are a natural gas fired combustion turbine with a natural gas-fired duct burner. These emission unit are subject to the NSPS Subpart KKKK regulation. As discussed in the EUTURBINE2 section the facility plans to test the initial performance testing of the turbine in March 2022. The facility does have a CEMS unit that monitors NOx emissions. During the inspection the facility indicated that it would likely preform the subsequent testing required so that the CEMS unit does not have to operate outside of Ozone season. The facility is maintaining a record of the fuel composition analysis provided by the gas provider. As stated in previously in FGCOGEN the facility is maintaining record of all start up and shutdown events. The record shows the amount of hours that the events last. In addition, the facility is maintaining a record of the amount of hours when the external temperature is 0 degrees Fahrenheit. The facility has a temperature monitor in the control station for the turbines.

The facility is keeping monthly natural gas usage and run hours records on a monthly basis. In addition, the facility provided documentation that the is determining the heating value of the natural gas in BTU per cubic foot on a monthly basis.

Special Condition III.1 requires the facility to submit, implement, and maintain a plain that describes how emissions will be minimized during startup and shutdown. The startup and shutdown procedures plan are included as part of the MAP. The MAP and startup and shutdown plans were submitted and received July 28, 2022 by the District Office.

EUDUCTBURNER 1 & 2:

These are two identical natural gas fired duct burners associated with the Heat Recovery Steam Generator (HRSG), coupled to turbines 1 and 2. These duct burners have a maximum heat input

of 152.4 MMBTU/hour measured on an HHV basis. EUDUCTBURNER1 is subject to 40 CFR 60, Subpart Db. EUDUCTBURNER2 is subject to 40 CFR 60, Subpart KKKK. In addition, EUDUCTBURNER2 is associated with FGNSPSKKKK.

Both units are equipped with a NOx CEMs. These are the same CEMs used to monitor the turbines. These are to comply with the requirements of the CAIR Ozone NOx Budget Permit. The CEMs are calibrated, monitored, and recorded during the months of May through September. Otsego paper can discontinue the monitoring October through April.

When the facility is not operating the CEMS unit during non-Ozone Season. The NOx emission factor is derived from the worst-case 24-hour average emission rate measured by the NOx CEM during the previous Ozone season. While the facility is in Ozone season the facility is using the average emission factor that the CEMS unit monitored and recorded.

During July 2019 the facility completed the requirement of MI-ROP-A0023-2019 that requires the facility to verify the CO and VOC emission rates from EUDUCTBURNER1 and EUDUCTBURNER2 at a minimum every five years from the date of the last test. The emission factors for CO and VOC from this stack test are 0.093 lbs/MMBTU and 0.0026 lbs/MMBTU respectively for EUDUCTBURNER1 and 0.082 lbs/MMBTU and 0.0051 lbs/MMBTU respectively for EUDUCTBURNER2. The Stack tests are planned to be conducted April 2024 to adhere to the every 5 year cycle required by the permit.

Otsego Paper has a contract with Wunderlich that produces reports that calculate the worst-case 24-hour average emission rate measured by the CEMs. The facility is using this to show compliance with the 30-day rolling time period 0.2 lb/MMBTU limit on the duct burners. Records show and average and a worst 24-hour average that the data was analyzed. During 2022 Ostego Paper's worst 24-hour average was 0.075 lb/MMBTU and 0.068 lb/MMBTU for EUDUCTBURNER1 and EUDUCTBURNER2 respectively. The worst 24-hour average during 2023 was 0.047 lb/MMBTU and 0.085 lb/MMBTU for EUDUCTBURNER1 and EUDUCTBURNER2 respectively. These are well below the permitted limit.

Otsego Paper is keeping record of calculated 12-month rolling emissions for NOx, CO, and VOC. Since For the time period of January 2022 through December 2023 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 0.41 TPY, 0.71 tons per year, and 0.2 tons per year respectively for EUDUCTBURNER1. The largest calculated 12-month rolling emissions for NOx, CO, and VOC for the same time period were 2.55 TPY, 5.35 TPY, and 0.33 TPY respectively for EUDUCTBURNER2. These are well below the permitted 115.1 TPY of NOx, 37.3 TPY of CO, and 9.6 TPY of VOC emissions allowed for EUDUCTBURNER1 and EUDUCTBUNER2.

EUWAREHOUSEHTRS:

This emission unit is for two natural gas-fired heaters that were installed for a storage warehouse that was recently built when EUTURBINE2 was modified. Only conditions for these are that the heaters are only fueled by natural gas and both heaters do not exceed a heat input capacity of 18.14 MMBTU/hr.

EUFIREPUMPEAST:

This is an emergency fire pump with 305 HP diesel engine. This engine was installed in 2007. This engine is subject to 40 CFR 60, Subpart IIII. The engine is equipped with a non-resettable hour meter that read 154.5 hours during the inspection. The facility is keeping track of the hours that the engine is used and what it was used for. Most of the hours are being used for readiness testing. Annual maintenance is being performed. During the last inspection it was noted that Otsego Paper was able to provide documentation that engine is certified to the emission standards to 40 CFR 60, Subpart IIII. A copy of the certification document can be found with the 2018 inspection report in the facility's correspondence file. The facility was able to provide the most recent work history order for EUFIREPUMPEAST. The last annual maintenance was performed on 3/12/2023 in which oil was replaced, the unit was inspected, the engine was fired up and tested. Otsego Paper is maintaining records of when the units are operating and for what reason. Total operating time for 2023 appears to be recorded as 13.7 hours.

FGRICEMACT:

This flexible group consist of two Reciprocating Internal Combustion Engines (RICE). These engines are subject to 40 CFR 63, Subpart ZZZZ. EUFRIEPUMPWEST is a 290 HP diesel emergency fire pump that was installed in 2001. EUBLACKSTART is a 433 HP diesel generator installed November 1, 1995. EUBLACKSTART is used to supply electricity that powers the hydraulic starters for both turbines.

There is a non-resettable hour meter on each engine. During the last inspection it was noted that the non-resettable hour meter on EUFIREPUMPWEST had recently been replaced. The facility is maintaining records of the both engines operation hours. From records it appears that the facility operated EUFIREPUMPWEST a total of 10.5 hours in 2023. Records also appeared to show that EUBLACKSTART operated for a total of 59.9 hour during 2023. The facility is recording the hours that the engine is used and for what reason. Otsego Paper is maintaining records of when the units are operating and for what reason.

The facility also has annual maintenance preformed on these engines. The annual maintenance included changing of the oil and inspection of the air cleaner, hoses, and belts. The facility was able to provide the most recent work history order for EUFIREPUMPWEST and EUBLACKSTART. The last annual maintenance was performed on 3/12/2023 in which oil was replaced, the unit was inspected, the engine was fired up and tested.

FGRULE290:

This facility does not have any current emission units operating under this flexible group. This flexible group table could possibly be taken out of the next ROP renewal if the facility does not have a Rule 290 emission unit at the time of the renewal.

RULE291:

In the previous inspection report it noted that EUTANKVENT1 and EUTANKVENT2 are relief vents installed on two takes associated with the pulping process. EUTANKVENT1 is installed on the Refined Filler Storage Chest on November 1, 2016, while the EUTANKVENT2 is installed on the Filler Blend Chest on October 1, 2017. The capacity of the two tanks are 59,840 gallons and 17,800 gallons respectively. These tanks mix acids and recycled paper to generate pulp for the paper

machine. The mixture of the acid and recycled paper produces hydrogen gas and hydrogen sulfide gas.

Otsego Paper installed the vents to avoid creating a dangerous operating condition. Emission factors for this process were derived from monitoring the headspace concentrations of the vent and, the maximum concentration from the monitoring was used to produce the emission factors. The potential emissions for EUTANKVENT1 are calculated to be 2.93 tons per year of hydrogen gas and 1.5 tons per year of hydrogen sulfide gas. These limits comply with the Rule 291 limits.

During the inspection the facility indicated that these units are still in operation and have not had any changes to operation.

TOOL CLEANER:

Staff was told that there was one cold cleaner located in the maintenance area of the facility. This is the same cold cleaner that was identified in the previous inspection. Safety Kleen maintains this unit for the facility. During the inspection Otsego Paper indicated that they operate the unit in the same manner as previously stated in past inspection reports. The product that is being used in the tool cleaner is identified as ARMAKLEEN 4 in 1 Cleaner – Cleaning Solution. It was reported that the solution gets diluted to 5% for use. The SDS provided shows that this dilution has a VOC content of 1.02% by weight. The Part One rule definition for "cold cleaner" under R336.1103(aa) is a tank containing organic solvent with a volatile organic compound content of 5% or more, by weight. Since the ARMAKLEEN 4 in 1 Cleaner product does not meet this definition the tool cleaner is not currently subject to the Part 7 rules.

EUNORTHFIREPUMP:

This is a fire pump that had been recently identified to Staff back in Spring 2023. The facility appeared to have should have included it as part of the permit application in the PTI No. 11-22 application. When discovered it was left out of the application the facility reported to AQD District Staff and indicated they would submit a permit application to have situation resolved. AQD received the application on August 1, 2023 and currently in the process of issuing a permit. Installing and operating the North fire pump does appear to be a Rule 201 violation as it was installed as a part of a project but since the application was submitted in a timely manner can be considered resolved. The facility does appear to be keeping records of hours of operation and maintenance in accordance to similar ways that the other engines are required.

Conclusion:

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in non-compliance with MI-ROP-A0023-2019b Special Condition VI.1, 2, and 7 of the Source-Wide Conditions for not including all source wide emission units for the HAP and NOx emissions calculations. Staff stated to Mr. Knowles that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 11:00 AM.-CJY

NAME Cody Yaggi DATE 5/9/24 SUPERVISOR