DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Complaint Investigation

A002352870

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:** 12/18/2019
STAFF: Cody Yazzie	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On December 18, 2019 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 320 Farmer Street Otsego, Michigan at 10:30 AM to conduct an unannounced air quality inspection of Otsego Paper Inc. (hereafter Otsego Paper). Staff made initial contact with Frank Knowles, Otsego Paper, Environmental Compliance Supervisor, is the Air Quality contact and arrived and took staff to his office for further discussions.

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 July 11, 2018 and was determined to be in Compliance at that time with MI-ROP-A0023-2013. Staff asked, and Mr. Knowles stated that the facility still does not have any emergency generators or boilers that were not included in the permit. He also stated that the facility does have the same tool cleaner in the maintenance area that was evaluated during the last inspection.

Mr. Knowles gave staff a tour of the facility. Required personal protective equipment are steel toe boots, safety glasses, hearing protection, and a 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. Hexane is the most produced HAP in the facility. Since August 2018 the largest 12-month rolling HAP emissions were 1.6 TPY and occurred during October 2019. This is well below the permitted limit.

Otsego Paper was reporting no HAPs emissions coming from the paper machine side of the process. Staff asked for a copy of the SDS for the Core Shell 61067 and Nalsize 7540 chemicals to see if there was any HAPs used. After reviewing the SDS there appeared to be no HAPs used in the composition. It appears Otsego Paper is appropriately accounting for HAP emission at the facility.

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 August 2018 the facility averages around 215.6 lbs/day, and the pounds per day emissions based on a monthly average occurred in October of 2019 at 269.9 lbs/day. The average 12-month rolling VOC emissions was 31.7 tons per year Since August 2018. The largest 12-month rolling VOC emissions occurred during November 2019 at 37.6 tons per year. These are all well below the EUPAPERMACHINE1 emission limits.

FGCOGEN:

This flexible group includes both turbines, duct burners, and the package boiler. This flexible group has a total heat input capacity limit of 567.3 MMBTU/hour as measured on HHV basis. The facility complies with this limit by operating the package boiler as a backup to the turbine for steam production. Duct burners are operated 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 redone the recordkeeping to include accurately calculated 12-month rolling emissions. Since August 2018 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 121.43 TPY, 2.66 tons per year, and 1.73 tons per year respectively for FGCOGEN. These are well below the permitted 312.0 TPY of NOx, 222.0 TPY of CO, and 22.0 TPY of VOC emissions allowed for FGCOGEN.

EUTURBINE 1 & 2:

These are two identical natural gas Solar Mars 100-15000S turbines with a maximum heat capacity of 141.5 MMBTU/hour as measured on a Higher Heating Value (HHV) basis. The facility refers to EUTURBINE1 as the North turbine and the EUTURBINE2 as the South Turbine. These turbines were installed on January 11, 1995. These turbines have identical special conditions within the ROP. These turbines are also subject to 40 CFR 60, Subpart GG.

These turbines are 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 from the natural gas provider that the sulfur content was 3.3 ppm on April 12, 2018. This equates to 0.00033% sulfur content. The Custom Fuel Monitoring Program (CFMP) shown in appendix 3 of the ROP states that the facility must keep a copy of the vendor's fuel analysis on file for a period of at least five years and made available to AQD upon request. The CFMP also states that the facility shall obtain a new copy of the vendor's fuel analysis at least once per ROP term. The date on the current certification predates the issuance of the current ROP. As the language in the CFMP suggest the facility has until April 26, 2024 to obtain a new analysis of the vendor's fuel. Staff informed Mr. Knowles that it would be better to obtain copy of the certification as soon as possible.

During the inspection the facility was operating both turbines and EUDUCTBURNER2. EUTURBINE1 was operating at 11037 KW and had a turbine temperature of 1324 degrees Fahrenheit. EUTURBINE2 was operating at 6292 KW and had a turbine temperature of 1310 degrees Fahrenheit. EUDUCTBURNER2 was also operating and helping produce 49.11 KPPH of steam.

During June 2019 the facility completed the requirement of MI-ROP-A0023-2019 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. From the period of August 2018 until the time of the inspection the facility uses two different testing results to calculate CO and VOC emissions from EUTURBINE1 and EUTURBINE2.

EUTURBINE1 emissions that were calculated from August 2018 - May 2019 the facility uses the December 2013 stack results. The emission factors for CO and VOC from the December 2013 stack test are 0.000869 lbs/MMBTU and 0.00 lbs/MMBTU respectively.

EUTURBINE2 emissions that were calculated from August 2018 - May 2019 the facility uses the April 2014 stack results. The emission factors for CO and VOC from this stack test are 0.002 lbs/MMBTU and 0.000 lbs/MMBTU respectively for EUTURBINE2 respectively.

For EUTURBINE1 and EUTURBINE2 emissions that were calculated from June 2019 until the time of the inspection the facility uses the June 2019 stack results. The emission factors for CO and VOC from this stack test are 0.001 lbs/MMBTU and 0.0006 lbs/MMBTU respectively for EUTURBINE1 and 0.001 lbs/MMBTU and 0.0007 lbs/MMBTU respectively for EUTURBINE2.

Otsego Paper has redone the recordkeeping to include accurately calculated 12-month rolling emissions. Since August 2018 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 37.61 TPY, 0.43 tons per year, and 0.14 tons per year respectively for EUTURBINE1. The largest calculated 12-month rolling emissions for NOx, CO, and VOC since August 2018 were 29.27 TPY, 0.77 TPY, and 0.15 TPY respectively for EUTURBINE2. 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 and EUTURBINE2.

Both units are 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.

EUTURBINE1 has recently undergone an engine overhaul in November of 2019. During this overhaul the facility stated that the engine was replaced, and the total cost of the overhaul was $1,398,677. A comparable skid would cost $6,546,700. This is below the 50% threshold that would trigger the definition of reconstruction and require a permit modification.

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. These turbines are also subject to 40 CFR 60, Subpart Db.

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 June 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. During the June 2019 testing EUDUCTBURNER1 test results were higher than the facility anticipated for CO and VOC emission and the facility stated they would likely retest the duct burners after tuning them. In July 2019 the facility retested EUDUCTBUNER1 and EUDUCTBURNER2. From the period of August 2018 until the time of the inspection the facility uses three different testing results calculate CO and VOC emissions from EUDUCTBURNER1 and EUDUCTBURNER2.

For emission that were calculated from the August 2018 - May 2019 the facility uses the 2014 stack results. The emission factors for CO and VOC from the 2014 stack test are 0.00487 lbs/MMBTU and 0.00006 lbs/MMBTU respectively for EUDUCTBURNER1 and 0.007 lbs/MMBTU and 0.00000 lbs/MMBTU respectively for EUDUCTBURNER2.

For emission that were calculated from in June 2019 the facility uses the June 2019 stack results. The emission factors for CO and VOC from this stack test are 0.134 lbs/MMBTU and 0.014 lbs/MMBTU respectively for EUDUCTBURNER1 and 0.062 lbs/MMBTU and 0.003 lbs/MMBTU respectively for EUDUCTBURNER2.

For emission that were calculated from in July 2019 until the time of the inspection the facility uses the July 2019 stack results. 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.

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 2018 Otsego Paper's worst 24-hour average was 0.135 lb/MMBTU and 0.225 lb/MMBTU during 2019 for EUTURBINE1 while, the worst 24-hour average during 2018 was 0.124 lb/MMBTU and 0.162 lb/MMBTU during 2019 for EUTURBINE2. The largest 30-day average was reported to occurred in July 2019 with 0.075 lb/MMBTU for EUDUCTBURNER1. The largest 30-day average was reported to occurred in MAY 2019 with 0.058 lb/MMBTU for EUDUCTBURNER2. These are well below the permitted limit.

Otsego Paper has redone the recordkeeping to include accurately calculated 12-month rolling emissions for NOx, CO, and VOC. Since August 2018 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 1.52 TPY, 0.58 tons per year, and 0.02 tons per year respectively for EUDUCTBURNER1. The largest calculated 12-month rolling emissions for NOx, CO, and VOC since August 2018 were 3.44 TPY, 1.02 TPY, and 0.06 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.

EUPACKAGEBOILER:

This is a natural gas and No. 2 oil fired package boiler used for back-up purposes. The facility currently doesn't have the ability to operate the boiler on the No. 2 oil. The piping that supplies the fuel oil has been removed. The

package boiler is also subject to the 40 CFR 60, Subpart Db.

This boiler has been utilized in recent years for space heating throughout the facility. In June of 2019 the boiler was scheduled for Stack Testing. Before the Stack Test could be conducted the boiler was found to be inoperable. The boiler combustion chamber was flooded. During the inspection the facility was working on removing the boiler. Staff was shown that the pipe feeding the boiler with natural gas had been removed and capped. Also, the doors on the boiler had been removed.

Otsego Paper is monitoring and recording the volume of natural gas consumption in the boiler in MCF. They are also required keep records of the annual capacity factor when burning natural gas and No. 2 fuel oil. The facility also tracks this on the COGENERATION PLANT MONTHLY AIR EMISSIONS RECORDS.

The facility is using data collected from the stack test that was performed on July 15, 2014 for the NOx, CO, and VOC that measured emissions in lbs/hour. These emission rates were used to produce emission factors for NOx, CO, and VOC. The emission factors that resulted from the stack test are 0.12 lbs/MMBTU, 0.001 lbs/MMBTU, and 0.0004 lbs/MMBTU respectively.

Otsego Paper has redone the recordkeeping to include accurately calculated 12-month rolling emissions for NOx, CO, and VOC. Since August 2018 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 1.32 TPY, 0.00 tons per year, and 0.00 tons per year respectively. These are well below the permit limits.

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 135.0 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 3/25/19 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.

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 previous inspection also mentioned that Otsego Paper kept track of the old hour meter reading which was noted as 251.1 hours. The hour meter reading during the inspection was noted as 18.5 hours. This bring the total engine hours to 269.6 hours. EUBLACKSTART's engine hour meter read 135.2 during the inspection. 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 3/25/19 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:

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.

With the current PTI application in house at the time of the inspection that was to increase the throughput capacity of the Paper Machine Staff mentioned that it could be possible for these emission units to have an increase in emissions. Staff suggested that Otsego Paper investigate if there would be any emissions increase before the PTI was issued. If an increase in emissions were expected, then the Rule 291 calculations would have to be updated to show that the necessary emission limits for hydrogen gas and hydrogen sulfide gas Rule 291 are still being met.

TOOL CLEANER:

Staff was told that there was one cold cleaner located in the maintenance area of the facility. Staff asked to see this unit during the inspection. Safety Kleen maintains this unit for the facility. 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.

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 compliance with MI-ROP-A0023-2019. 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 12:00 PM.-CJY

NAME Cody Yaggie DATE 3/19/2020 SUPERVISOR RIL 3/20/2020