

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B007035605

FACILITY: Georgia-Pacific Corrugated LLC-Owosso Facility		SRN / ID: B0070
LOCATION: 465 S DELANEY RD, OWOSSO		DISTRICT: Lansing
CITY: OWOSSO		COUNTY: SHIAWASSEE
CONTACT: Jessica Masternak , EHS Manager		ACTIVITY DATE: 06/29/2016
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection of Georgia-Pacific Corrugated in Owosso.		
RESOLVED COMPLAINTS:		

On June 29, 2016, I conducted an unannounced, scheduled inspection of Georgia-Pacific Corrugated (B0070) in Owosso. The last compliance inspection of Georgia-Pacific was on March 22, 2012.

Contacts:

Ms. Jessica Masternak, EHS Manager, 989-725-3057, jessica.masternak@gapac.com

Facility Description and Regulatory Overview:

This facility manufactures secondary packaging (corrugated cardboard boxes), primarily for the food industry. The facility is located on the west side of Owosso in an industrial park. The industrial park is surrounded by mixed use areas consisting of residential and commercial properties.

Georgia-Pacific Corrugated is a minor source of any regulated air contaminants including hazardous air pollutants (HAPs) and not subject to the Title V Renewable Operating Permit (ROP) program. Georgia-Pacific Corrugated has two active permits: Permit to Install (PTI) Nos. 743-92A and 69-72I. PTI 69-72I is for one (1) incinerator which is long gone from the facility and the permit can be voided.

PTI 743-92A is for a corn starch silo with baghouse, and a paper/cardboard baling operation with two cyclones. This permit was issued December 11, 2015 for a modification to the paper/cardboard baling operation. Georgia-Pacific proposed to replace the existing main process cyclone and baghouse system because the system is 30 or more years old and had physically deteriorated. The proposed replacement cyclone does not include a baghouse. The proposed new cyclone is an Ohio Blow Pipe Model 66, which has a rated capacity of 52,800 cfm. The emission units are defined as follows:

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)
EUSTARCHSILO	Storage silo for powdered corn starch. Emissions are controlled by a baghouse mounted to the top of the silo.
EUCYCLONES	Collection process for scrap material generated by the corrugated container manufacturing process. Scrap is collected by the main process cyclone (rated 52,800 cfm). During wax box production, the smaller wax cyclone (rated 35,200 cfm) is used instead.

The facility has a number of exempt processes.

Michigan Air Emissions Reporting System (MAERS):

The facility is not required to report emission information to MAERS.

Inspection:

I originally arrived at 10:07 AM, but the EHS contact had just stepped out. I then went first to another inspection, and came back at 12:19 PM. The weather conditions were a temperature of 72°F, sunny with a UV 7 High, and wind NNW@9 MPH. Outside the plant, I detected no odors or visible emissions from the plant either time I arrived.

A pre-inspection meeting was conducted with Ms. Jessica Masternak (EHS Manager), Mr. Tom Green (Customer Services), and Mr. Chris Reese. I gave a brief overview of the inspection process and provided an "Environmental Inspections" brochure.

The facility operations were discussed. The facility operates three (3) shifts per day, generally 5 days per week, with 6 days per week at most. During fruit and vegetable seasons, they employ about 120 people and during seasonal layoffs when not producing produce boxes, they employ about 85 people. The facility has no emergency generators.

A facility tour was then taken. The facility has food safety/PPE requirements. Hard hats, safety boots, and hearing protection are required. No jewelry may be worn, shirts tucked in, and hands must be washed before entering the production areas of the facility.

Corrugator Machine and Starch Kitchen:

The production process begins when industrial sized rolls of cardboard paper stock are fed into the corrugator, which makes flat sheets of corrugated board. Three (3) layers of cardboard are glued together using a starch-based glue. Steam-heated hot plates are used, to help the boards form and dry. The boards are cut into large sheets, and are made into cardboard boxes. The process is operated as exempt under Rule 290.

Powdered corn starch is mixed in the starch kitchen to make the water-based glue for the corrugator process. The powder is mixed with water, caustic, and borax to make the liquid glue for the boxes. The starch kitchen includes an emulsifier mixer, and two (2) tanks to feed the corrugator. The process is fully enclosed.

Printing Operations and Box Making:

There are two (2) die-cut presses, and three (3) flexographic presses. The die-cut presses print and cut flat sheets that can be assembled into boxes. The flexographic presses print, fold and glue the corrugated material that can be assembled into boxes. One (1) flexographic press was removed about a year ago from the facility, and there is an empty area in the plant where it used to be. The presses currently being operated are:

125 Diecutter – 2 color, no box folding, down (not operating) at the time of inspection
126 Diecutter – 5 color, no box folding, not operating at the time of inspection
130 Flex – 3 color, setting up for the next box run
132 Flex – 3 color, operating
136 Flex – 2 color, operating

The majority of the ink used is black. The black ink comes in large totes, and is pumped directly to the presses from the tote. Color ink is received in 5 gallon pails, and is pumped directly from the 5 gallon pails to the presses. The ink is water-based, and the only volatile component in the ink is dimethylaminoethanol (CAS No. 108-01-0) or DMEA. DMEA is a VOC but not a HAP. An MSDS for the black ink GCM1 90 BLACK shows the VOC content of the ink as 0.08 lb/gal or 0.0094 lb/lb. The green ink GCM1 20 GREEN has a VOC content of 0.09 lb/gal or 0.010 lb/lb. The blue ink GCM1 39 BLUE has a VOC content of 0.09 lb/gal or 0.010 lb/lb. The process is operated as exempt under Rule 290.

Cascader Machine:

Some of the boxes are coated with wax. This protects the boxes from moisture, if they are going to be used for carrying produce. The cascader is steam-heated at approximately 270°F, and wax is cascaded over the box in the warm environment. The cascade unit vents externally out the roof. The process is operated as exempt under Rule 290.

Process Steam Heat:

A 20.4 MMBtu/hr (500 hp) natural-gas fired Cleaver-Brooks boiler was installed in 2014. This replaced a 13.8 MMBtu/hr natural gas and fuel oil-fired boiler. The manufacture date of the boiler is 2000. It is capable of combusting fuel oil, but there is no fuel oil onsite. The boiler is vented out the roof and was operating at the time of inspection. A boiler operating log is posted on the side of the unit.

The boiler is exempt per Rule 282(b)(i). It is subject to the New Source Performance standard (NSPS), 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. If natural gas is combusted in the boiler, then compliance with 40 CFR 60, Subpart Dc requirements is assured.

There is a new Maximum Achievable Control Technology (MACT) standard, 40 CFR 63, Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources that could apply to the boiler. The applicability is listed below:

§63.11195 Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart....

(e) A gas-fired boiler as defined in this subpart.

§63.11237 What definitions apply to this subpart?

Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

The boiler meets the definition of a gas-fired boiler, and is not subject to 40 CFR 63, Subpart JJJJJJ.

PTI 743-92A corn starch silo with baghouse, and baling operation with two cyclones:

The starch silo holds dry powder starch that is conveyed to the starch kitchen. The fabric filter baghouse sits on top of the silo. The fabric filter baghouse just got new fabric filters and motor last month. No visible emissions from the cornstarch silo baghouse were seen from the exhaust vent and no white powder was on the pad. The process appears compliant with the permitted emission limits, and requirements to install, maintain, and operate the baghouse on the starch silo.

There are two balers to collect scrap cardboard from the processes. The baled paper and cardboard are sent offsite, for recycling. Pickups for scrap are located throughout the plant. The scrap is air conveyed to one of two cyclones located on the roof. The southernmost cyclone is the larger of the two, and is the one normally used, and the smaller cyclone is used when the large cyclone is down for maintenance. The scrap cardboard is separated in the cyclone, and drops down the chute into the baler for binding. The process was not operating during the inspection.

A permit modification to install a new cyclone system for the balers was obtained in December of 2015. The cyclone system has not been replaced yet and the project may be on hold. We discussed that if the new cyclone is not installed within 18-months, then a permit extension could be requested. Submission of a MAP for the modified system was required within 90-days of permit issuance. A MAP was submitted in January of 2016 to fulfill the permit requirement. A more detailed MAP will be submitted after the equipment is installed. If the project is cancelled, then the permit will need to be modified to go back to the permit conditions on PTI 743-92.

I left the site at 1:45 PM with copies of the record keeping of plant processes for the years 2014, 2015, and 2016. No concerns were identified while on-site.

Records:

Records of the monthly and annual material usage and emissions recordkeeping for the facility were obtained for the years 2014, 2015, and 2016. The records are attached.

Printing Operations and Box Making, Rule 290:

The only volatile compound in the inks is DMEA which has two (2) health-screening numbers: ITSL = 220 $\mu\text{g}/\text{m}^3$ (8-hr) and ITSL = 5.2 $\mu\text{g}/\text{m}^3$ (annual). Since both health-screening numbers are greater than 2.0 $\mu\text{g}/\text{m}^3$, uncontrolled emissions may not exceed 1,000 lb/month. According to the MSDS for the inks, 0.01 lb/lb of volatile material would be emitted from the inks.

The water-based glues used in the process contain corn starch (CAS No. 9005-25-8), sodium borate (CAS No. 1303-96-4), and sodium hydroxide (CAS No. 1310-73-2). Sodium hydroxide (CAS No. 1310-73-2) has a health-screening number of ITSL = 20 $\mu\text{g}/\text{m}^3$ (1-hr) and is probably the only volatile material in the process. Since the health-screening number is greater than 2.0 $\mu\text{g}/\text{m}^3$, uncontrolled emissions may not exceed 1,000 lb/month. A

conservative assumption of 0.01 lb/lb of volatile material could be emitted from the glue. The following emissions from the process were estimated by AQD staff:

For 2014, the highest usage of ink and glue combined was in July.

July Emissions = $(30404 \text{ lbs} \times 0.01 \text{ lb/lb}) + (6480 \text{ lbs} \times 0.01 \text{ lb/lb}) = 368.8 \text{ lb/month}$

2014 Emissions = $(308722 \text{ lbs} \times 0.01 \text{ lb/lb}) + (45803 \text{ lbs} \times 0.01 \text{ lb/lb}) = 3545 \text{ lb/year}$

For 2015, the highest usage of ink and glue combined was in August.

August Emissions = $(35493 \text{ lbs} \times 0.01 \text{ lb/lb}) + (5325 \text{ lbs} \times 0.01 \text{ lb/lb}) = 408.2 \text{ lb/month}$

2015 Emissions = $(309170 \text{ lbs} \times 0.01 \text{ lb/lb}) + (46715 \text{ lbs} \times 0.01 \text{ lb/lb}) = 3558 \text{ lb/year}$

Corrugator Machine, Rule 290:

If the same assumption is used that the water-based glues contain 0.01 lb/lb of volatile material, the following monthly emissions and annual emissions were estimated by AQD staff.

For 2014, the highest usage of glue was in July.

July Emissions = $13250 \text{ lbs} \times 0.01 \text{ lb/lb} = 132.5 \text{ lb/month}$

2014 Emissions = $131500 \text{ lbs} \times 0.01 \text{ lb/lb} = 1315 \text{ lb/year}$

For 2015, the highest usage of glue was in August (and October).

August (and October) Emissions = $14000 \text{ lbs} \times 0.01 \text{ lb/lb} = 140 \text{ lb/month}$

2015 Emissions = $142000 \text{ lbs} \times 0.01 \text{ lb/lb} = 1420 \text{ lb/year}$

Cascader Machine, Rule 290:

The cascader machine uses a liquid paraffin wax. Paraffin wax fume (CAS No. 8002-74-2) has a health-screening number of ITSL = $20 \mu\text{g}/\text{m}^3$ (8-hr). Since the health-screening number is greater than $2.0 \mu\text{g}/\text{m}^3$, uncontrolled emissions may not exceed 1,000 lb/month. A conservative assumption of 0.0002 lb/lb of volatile material is assumed to be emitted from the application of paraffin wax. The following monthly emissions and annual emissions were estimated by AQD staff.

For 2014, the highest usage of wax was in August.

August Emissions = $801129 \text{ lbs} \times 0.0002 \text{ lb/lb} = 160.2 \text{ lb/month}$

2014 Emissions = $4303220 \text{ lbs} \times 0.0002 \text{ lb/lb} = 860.6 \text{ lb/year}$

For 2015, the highest usage of wax was in July.

July Emissions = $795298 \text{ lbs} \times 0.0002 \text{ lb/lb} = 159.1 \text{ lb/month}$

2015 Emissions = $4604229 \text{ lbs} \times 0.0002 \text{ lb/lb} = 920.8 \text{ lb/year}$

The processes that are operated as exempt per Rule 290 appear to be in compliance.

Summary:

The facility appeared to be in compliance with all applicable rules and regulations. PTI 69-72I for an incinerator was voided on June 30, 2016.

NAME

Robert P. Kerner

DATE

7/30/16

SUPERVISOR

B.M.