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

A225466663

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| **FACILITY:** NUCRAFT FURNITURE CO | | **SRN / ID:** A2254 |
| **LOCATION:** 5151 W RIVER DR, COMSTOCK PARK | | **DISTRICT:** Grand Rapids |
| **CITY:** COMSTOCK PARK | | **COUNTY:** KENT |
| **CONTACT:** Scott Hubbard , Facilities Engineer | | **ACTIVITY DATE:** 02/14/2023 |
| **STAFF:** Michael Cox | **COMPLIANCE STATUS:** Compliance | **SOURCE CLASS:** SM OPT OUT |
| **SUBJECT:** Scheduled Unannounced Inspection | | |
| **RESOLVED COMPLAINTS:** | | |

**Air Quality Division (AQD) staff Michael Cox (MTC) arrived at the Nucraft Furniture Company facility located at 5151 West River Drive in Comstock Park, Michigan on February 14, 2023, at approximately 8:30am to complete a scheduled unannounced inspection. The purpose of the inspection was to determine the facility's compliance with state and federal air pollution regulations including Permit to Install (PTI) No. 155-95E. Prior to entering the facility, offsite odors and visible emission observations were completed. No odors or visible emissions were noted. Upon arrival onsite, AQD staff MTC met with Mr. Scott Hubbard, Facilities Manager, who provided a walkthrough of the facility, answered site specific questions, and provided records requested during the inspection. Also accompanying AQD staff MTC during the facility walkthrough was Mr. Will McFarland, Safety Specialist.**

## Facility Description

**Nucraft Furniture Company manufactures high-end conference room, reception, specialty, and custom wood furniture. The facility consists of various woodworking equipment with dust collection controls. There are also four coating lines for stains, sealers, clear coats, and paints, and consists of various assembly operations. The facility currently operates three shifts a day. The facility is in operation with Opt-Out Permit to Install (PTI) No. 155-95E and is a synthetic minor source for hazardous air pollutants (HAPs). No changes have occurred since the last inspection.**

## Compliance Evaluation:

### PTI No. 155-95E:

### EU-PAINTLINE:

**This emission unit consists of two booths and associated ovens including a primer spray booth (#10) and a topcoat spray booth (#6), each with a flash off booth and oven. Both of these coating booth systems are used for the application of paint to various substrates including wood furniture, metal parts, and plastic parts. Fabric filters were installed and maintained properly. Each booth was equipped with Devilbiss Compact High Volume Low Pressure (HVLP) spray guns. Waste containers appeared to be closed and spent filters are properly being disposed of.**

**This emission unit is subject to a volatile organic compound (VOC) emission limit of 2,000 pounds per month (lbs/month) per a calendar month time period and a VOC emission limit of 10.0 tons per year (tpy) per a 12-month rolling time period. VOC emission records were requested and reviewed for the time period of January 2022 through February 14, 2023. The highest calendar month VOC emission occurred**

during the month of September 2022 when 1,471.10 pounds of VOC was emitted. The highest 12-consecutive month VOC emissions occurred during the 12-month period ending in January 2023, when 7.67 tons of VOC emitted. Nucraft Furniture Company is keeping a chemical list, and usage records on site of all VOC and HAP containing materials. These records are attached to this report. No issues were noted during the review. VOC content for the materials is derived using Manufacturer's Formulation Data, which was approved for use in a letter dated March 24, 2010. Select Manufacturer's Formulation data was requested and provided. After a review of the records provided no inconsistencies were noted. The facility also uses Method 24 testing for VOC content of coatings that Manufacturer's Formulation Data is not available.

FG-FINISHING:

This flexible group includes wood furniture, metal, and plastic coating operations consisting of spray booths, associated application equipment, flash off areas/booths, and cleanup and purge solvents. Metal parts and plastic parts coating is only performed on EU-PAINTLINE. Emission units included in this flexible group are EU-PAINTLINE, EU-MAINLINE, EUCTLINE, and EUGEOCELL.

EU-PAINTLINE:

This emission unit consists of two booths and associated ovens including a primer spray booth (#10) and a topcoat spray booth (#6), each with a flash off booth and oven. Both of these coating booth systems are used for the application of paint to various substrates including wood furniture, metal parts, and plastic parts. Fabric filters were installed and maintained properly. Each booth was equipped with Devilbiss Compact High Volume Low Pressure (HVLP) spray guns. Waste containers appeared to be closed and spent filters are properly being disposed of.

EU-MAINLINE:

This emission unit consists of spray booths, flash off booths and ovens used for wood furniture coating including Stain booth (#1), Washcoat booth (#5), a Fill oven, Seal booth (#3), Seal Oven, Shade booth (#8), Topcoat booth (#4), topcoat flash off and topcoat oven. Parts may go through the entire line or portions of the line depending on the part. At the time of the inspection, fabric filters were noted to be in place in all the booths. The fabric filters appeared to be installed and maintained properly. In addition, each booth was equipped with either Devilbiss Compact HVLP or Graco G15 HVLP spray guns which meet requirements of PTI No. 155-95E. Waste containers appeared to be closed and spent filters are properly being disposed of. According to Mr. Hubbard HVLP test caps are maintained on site in accordance with the permit. The booths in this line are used for wood staining and finishing including clearcoats; no metal or plastic parts are coated in these booths.

**It is noted that the company is looking into expanding the Shade booth (#8) to accommodate larger sized parts. According to Mr. Hubbard, the change would eliminate the existing spray booth, but keep the existing fan and exhaust ductwork. A large 'room' would be used to conduct the spraying with some level of exhaust system. Mr. Hubbard was advised to contact AQD with specific project details to better determine whether the changes would require a permit revision.**

**EU-CTLINE:**

**This emission unit consists of two booths and one oven including CTStain booth (#11), CTSeal booth (#12) and CTSeal Oven. This line is used for wood furniture coating only. Fabric filters were installed in each booth and each booth was equipped with either Devilbiss Compact HVLP or Graco G15 HVLP spray guns which meet the requirements of PTI No. 155-95E. Waste containers appeared to be closed and spent filters are properly being disposed of.**

**EU-GEOCELL consists of one spray booth used to apply contact adhesive using Devilbiss Compact HVLP spray guns. A fabric filter was installed and maintained properly. Waste containers appeared to be closed and spent filters are properly being disposed of.**

**FG-FINISHING is subject to a VOC emission limit of 76.8 tpy per 12-month rolling time period. FG-FINISHING is also subject to VOC material limits of 3.5 pounds per pound solid of sealer and topcoat as well as 1.0 pound per pound solid of primer used. VOC emission and throughput records were requested and reviewed for the time period of January 2022 through February 14, 2023. The highest 12-conseciutive month VOC emission occurred during the 12-month period ending in January 2023, when 32.10 tons of VOC was emitted. After a review of the records, it appears that the facility is meeting the VOC material limits for the sealer, topcoat, and primer. All calculations included thinners and reducers to yield as applied emissions. VOC content for the materials is derived using Manufacturer's Formulation Data, which was approved for use in a letter dated March 24, 2010. Select Manufacturer's Formulation data was requested and provided. After a review of the records provided no inconsistencies were noted. The facility also used Method 24 testing for VOC content of coatings that Manufacturer's Formulation Data is not available.**

**FG-FINISHING is subject to an acetone emission limit of 14.6 tpy per 12-month rolling time period. Acetone emission records were requested and reviewed for the time period of January 2022 through February 14, 2023. The highest 12-consecutive month Acetone emission occurred during the 12-month period ending in January 2023, when 3.87 tons of acetone was emitted. All calculations included thinners and reducers to yield as applied emissions.**

FG-FINISHING is subject to a formaldehyde emission limit of 0.19 pound per hour (pph) per testing protocol. Emission records and material content records were requested and reviewed for the time period of January 2022 through February 14, 2023. Based on the review of the records, no formaldehyde was used, and no testing has been required.

FG-FINISHING is subject to a Xylene emission limit of 43.2 pounds per day on a calendar day basis. Xylene emission records were requested and reviewed for the time period of January 2022 through February 14, 2023. The highest daily average Xylene emission occurred during January 2022 when 29.10 pounds per day of Xylene was emitted. All calculations included thinners and reducers to yield as applied emissions.

The company is maintaining records in accordance with PTI No. 155-95E, no issues were noted.

Eighteen stacks are listed in association with FG-FINISHING. The stacks were observed venting unobstructed vertically. The stacks appeared to be consistent with the dimensions listed in PTI No. 155-95E.

FG-FACILITY:

This flexible group is for all process equipment source-wide including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

This flexible group is subject to an individual HAP emission limit of 9.0 tons per year (tpy) per a 12-month rolling time period and an aggregate HAP emission limit of 22.5 tpy per a 12-month rolling time period. HAP emission records were requested and reviewed for the time period of January 2022 through February 14, 2023. The highest 12-consecutive month rolling individual HAP emission occurred during the 12-month period ending in January 2023 when 2.8 tons of Xylene was emitted. The highest 12-consecutive month aggregate HAP emission occurred during the 12-month period ending in January 2023, when 4.43 tons of aggregate HAP was emitted. Not all HAPs appeared to be separated out in the records provided. It was recommended in the future to separate each individual HAP as to verify compliance more easily.

Woodworking Equipment

Nucraft Furniture Company operates three baghouse dust collectors to control particulate matter emissions from a variety of woodworking equipment. The woodworking equipment includes sawing, sanding, and planning.

A Carter Day Dust Collector is utilized by the facility. This dust collector has a maximum rated airflow of 52,800 cubic feet per minute and was installed under PTI No. 110-84. The dust collector appeared to be installed and operating properly. At the time, the dust collector was being vented back into the building for heat recovery. No visible emissions were observed during the site walkthrough. Bags for this unit were last replaced on October 1, 2021.

**A Steelcraft Dust Collector which has a maximum airflow of 40,000 cfm and was installed as exempt from Rule 201 permitting under Rule 285(2)(l)(vi). The dust collector appeared to be installed and operating properly. At the time, the dust collector was being vented back into the building for heat recovery. No visible emissions were observed from the process. Bags for this unit were last replaced on August 19, 2020.**

**There is a Torit Dust Collector which has a maximum airflow of 20,000 cfm and was installed as exempt from Rule 201 permitting under Rule 285(2)(l)(vi). The dust collector appeared to be installed and operating properly. At the time, the dust collector was being vented back into the building for heat recovery. No visible emissions were observed from the process. Bags for this unit were last replaced on September 24, 2022.**

**It is noted that the company is verifying proper operation of each baghouse by monitoring the pressure drop across the bags. Mr. Hubbard stated that a pressure drop range of 1 to 2 inches of water column is the preferred operating mode for all three baghouses. During the facility walkthrough, all three baghouses were operating within this range.**

**Additional Observations:**

- **A Research/Lab booth was observed onsite. This booth appears to be exempt from Rule 201 permitting per Rule 283(2)(b).**
- **Two adhesive rollcoaters were observed onsite. Monthly throughput records were requested and provided for the time period of January 2022 through February 14, 2023. Based on the review of the records provided the rollcoaters appear to be exempt from Rule 201 permitting per Rule 287(2)(c).**
- **A contact adhesive spray booth was observed onsite. Monthly throughput records were requested and provided for the time period of January 2022 through February 14, 2023. Based on the review of the records provided the contact adhesive spray booth appear to be exempt from Rule 201 permitting per Rule 287(2)(c).**
- **A distillation unit was observed onsite in the facility's coating storage room. This unit appears to be exempt from Rule 201 permitting per Rule 285(2)(u).**
- **Cold cleaner was noted onsite. This unit appears to be exempt from Rule 201 permitting per Rule 281(2)(h).**

- **Welding operations were observed and appear to be exempt from Rule 201 permitting per Rule 285(2)(i).**

- **An approximately 300-980 MMBtu/hr natural gas-fired, boiler to heat oil on the hot press installed was observed onsite. This boiler appears to be exempt from Rule 201 permitting per Rule 282(2)(b).**

- **A 47-horsepower emergency generator was noted onsite. The generator appears to be exempt from Rule 201 permitting per Rule 285(2)(g) and subject to 40 CFR Part 63 Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines. The unit is maintained in accordance with manufacturer specifications which satisfies Subpart ZZZZ requirements.**

## Conclusion

**Based on the observations made during the facility walkthrough and records received and reviewed, Nucraft Furniture Company appears to be in compliance with PTI No.155-95E and all other applicable State and Federal air quality rules and regulations.**

NAME Michael T. Cox DATE 3/15/2023 SUPERVISOR