

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

A070355348

FACILITY: AXIUM GROUP LLC		SRN / ID: A0703
LOCATION: 708 Sherman, CASSOPOLIS		DISTRICT: Kalamazoo
CITY: CASSOPOLIS		COUNTY: CASS
CONTACT: Jeff Schwartz ,		ACTIVITY DATE: 09/10/2020
STAFF: Rachel Benaway	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection to verify compliance with PTI #200-18 and all state and federal air use regulations.		
RESOLVED COMPLAINTS:		

Due to Covid-19 health and safety precautions, all AQD inspections are now announced and scheduled prior to entry to a facility. The purpose of this scheduled inspection on 9/10/2020 by AQD staff, Rachel Benaway, was to verify Axium Group, LLC (A0703) compliance with air use Permit to Install (PTI) #200-18 and all state and federal air use regulations. Axium Group, a wood parts coating operation, is a synthetic minor source of organic HAPS and VOCs. The facility was subject to the Title V program until they voided the ROP and obtained this PTI in June of 2019. Jeff Schwartz is the owner, Doug Elliot is the Environmental Compliance Project Manager, David Fuller completes recordkeeping and emissions tracking, and Cory Collins is the Plant Manager. All were present at the time of inspection.

There were no visible emissions observed outside of the facility and only a very faint paint odor detected near the building, within the limits of the parking lot. There was a NE wind at 7 mph with 88% humidity at 59 degrees F. No odors were detected while driving through the adjacent residential areas. The facility is operating 5 days a week with an occasional Saturday shift. They operate 1 shift per day, usually between the hours of 6:00am and 2:00pm, with approximately 22 employees at this time. The facility has no parts washers, boilers, or emergency generators. The only modifications, removals, or installations of equipment that have occurred since the last inspection on 3/28/2018 was the dismantling of an exempt rollcoat line.

Permitted equipment at the facility consists of 3 spray booths (EUSPRAYBOOHA-C), as well as two flat wood coating lines (EUFLATLINE1-2). The spray booths apply stains, paint/topcoat, sealers/topcoat, and cleanup/purge solvents. All booths and lines are equipped with fabric filters. EUFLATLINE1 applies stains, paints/topcoat, sealers/topcoat, and cleanup/purge solvents and has three curing ovens that gradually increase temperature through the curing process (between 100-110 degrees F) and finishes with ultraviolet light exposure. The applicators are arranged in a circular setup to ensure consistent coating across all pieces on the line. EUFLATLINE2 applies all beforementioned materials except stains. The coating application on EUFLATLINE2 occurs in a linear manner and the line has 2 curing ovens that operate in a stacked curing process, finishing with ultraviolet exposure. Typically, parts require multiple runs through a line for complete coverage, yet the facility can process 6-7 orders in a day. All wood product is received raw and is only processed by sanding for an even finish or removing excess paint product along the lines. There is no product manufactured on site, they are only a finishing facility.

Non-permitted equipment at the facility consists of the dismantled rollcoat line and three exempt booths for repairs, specialty projects, and research and development of new color combinations or for product presentation. There are various units for wood finishing processes located throughout the facility, but all are exempt units as they are exhausted within the plant boundaries.

### FGWOODCOATING

Five wood parts coating lines equipped with fabric filters.

#### PTI #200-18

SC	FGWOODCOATING Conditions	COMPLIANT?
III.1	Recover/reclaim, recycle, dispose of at least 90% by wt. all purge solvents	Y
III.2	Capture all waste and store in closed containers	Y
III.3-4	Minimizes outer air contamination from spent filters and cover containers	Y
IV.1	Do not operate unless filters installed/maintained properly	Y
IV.2	Use HVLP applicators, keep test caps for pressure testing	Y
V.1	Determine VOC content, water content, density of material, as applied and as received, using Method 24	Y

The facility has two acetone recyclers. The larger of the two was installed as a condition of a Secondary

Environmental Project (SEP). In an 8-10 hour period, the facility can process 1.5-2 drums of acetone which has resulted in a reclaim rate of approximately 106% of acetone used at the facility. At the time of inspection, all waste receptacles along the lines and within the storage area were observed with covers to minimize air contamination. A waste receptacle along the lines captures excess product that is scraped off after collecting on the line platform. The lines are rinsed out completely two times a day and filters are changed every hour. All booths and lines in operation at the time of inspection were equipped with properly fitted fabric filters. The filters on the booths are changed out as needed to ensure proper ventilation for the operators during use. Spent filters are bagged and stored in a dumpster behind the facility. The facility uses a three-stage filter system that consists of a paint arrestor layer for overspray (burlap-like material with a polyester backing), a pocketed nonwoven polyester highloft layer, and a fiberglass roll media layer. Safety Data Sheets (SDS) for the filter assemblage were sent along with records indicating the arrestor layer alone has an average overspray removal efficiency rate of 99.37%.

In April of 2019, Axium requested to use manufacturer's data in calculating the VOC content of all materials used instead of Method 24 testing. AQD responded that the request would be approved, provided that Axium receive satisfactory Method 24 testing results from the most frequently used stain, the stain with the highest VOC content per manufacturer's data, the most frequently used paint, and the most frequently used topcoat or sealant.

The facility has submitted Method 24 testing that demonstrates a (non-exempt) VOC content of one stain (stone) at 2.5 lb/gal, one stain (maple) at 1.59 lb/gal, one paint at 4.41 lb/gal, and one topcoat at 3.11 lb/gal. Staff was only able to verify compliance with the permit limits listed below for the 4 samples that were sent for Method 24 testing. The test results indicated all samples had 0% water content.

SC	Material limits: BASED ON METHOD 24 TESTING OF 4 SAMPLES	Compliant?
II.1	VOC content of stain: 6.4 lb/gal, minus water, as applied	Y
II.2	VOC content of paint: 4.5 lb/gal, minus water, as applied	Y
II.3	VOC content of sealer: 4.9 lb/gal, minus water, as applied	Y
II.4	VOC content of topcoat: 4.9 lb/gal, minus water, as applied	Y

During the post-inspection discussion on recordkeeping and monitoring, staff was able to discern more clearly the issues the facility has encountered with Method 24 testing. The facility has voluntarily undergone multiple reiterations of Method 24 testing on identical samples at their own expense as a fact-check on the testing company. After receiving conflicting results for those samples, Axium Group became unable to place trust in the abilities of the testing company. Furthermore, even samples that satisfied the VOC content limits of PTI #200-18 through Method 24 testing indicated incongruous VOC content information according to Axium's own calculations based on manufacturer's data. The facility is currently in the process of voluntarily conducting yet another round of Method 24 testing to verify the efficacy of the results submitted for this report.

The testing submitted for this report satisfies the condition AQD placed on approval of the facility's request to utilize manufacturer's data for VOC calculations instead of Method 24 testing, until the Department deems further testing is appropriate. Therefore, the facility appears to be in compliance with FGWOODCOATING SC V.1 and FGFACILITY SC V.2 and may cease Method 24 testing until further notice.

**PTI #200-18 Monitoring/Recordkeeping:**

SC	FGWOODCOATING Condition	COMPLIANT?	
VI.2	Maintain current list from manufacturer of chem comp of each material	Y	
VI.3	Separate for each unit AND combined for FGWOODCOATING, MONTHLY: a) VOC content (minus water and with water) of each material as applied b) Acetone, t-butyl acetate, dimethyl carbonate of each material as applied  c) VOC, acetone, t-butyl acetate, dimethyl carbonate: <b>separate and combined</b> mass emission calculations: monthly emission rate in TONS PER MONTH d) VOC, acetone, t-butyl acetate, dimethyl carbonate: <b>separate and combined</b> mass emission calculations: annual emission rate in TONS PER 12MRT	N	N
		Unit N	Total N
		Y	Y
VI.4	Acetone purge/cleanup solvent, FGWOODCOATING, MONTHLY: a) gallons of acetone used and reclaimed, monthly b) Acetone mass emissions calculations: TONS PER MONTH c) Acetone mass emissions calculations: ANNUAL TONS PER 12MRT d) Calculate % of purge solvents recovered, reclaimed, recycled, or disposed of	Y/Y	
		N	
		Y	
		N	
VI.5	FGWOODCOATING, MONTHLY:		

a) gallons (with water) of each formaldehyde containing material used	Y
b) gallons (with water) of each formaldehyde containing material reclaimed	N
c) Each formaldehyde content (with water) in lbs/gallon of each material used	N
d) formaldehyde mass emissions calculations: TONS PER MONTH	N
e) formaldehyde mass emissions calculations: ANNUAL TONS PER 12MRT	N

The facility keeps detailed records of the manufacturer-issued chemical composition of each material used. Staff confirmed that these records are maintained on-site and available for review or submission at any time. It is the recommendation of staff that the facility create a spreadsheet that lists the pertinent information for each of the materials used at the facility (VOC, HAP, and formaldehyde content of each) and is submitted whenever records are requested so this information can be readily accessed by staff at any time without having to do a site visit. This would also provide a more precise adherence to FGWOODCOATING SC VI.3(a-b) and VI.5(c) and GFACILITY V.1 and VI.2(c).

The facility submitted records with VOC plus permitted exempts (acetone, t-butyl acetate, and dimethyl carbonate) emissions on a 12-month rolling time (SC VI.3(e)) but not monthly (SC VI.3(d)). The facility tracks VOC emissions on a monthly basis and on a 12-month rolling time for FGWOODCOATING and for each unit separately. They also track permitted exempt emissions on a monthly basis and a 12-month rolling time for FGWOODCOATING and for each unit separately. However, they do not add these values together for monthly totals as the condition requires. Staff was able to verify compliance with permit limits because the limits are designated to a 12-month rolling time basis. Staff will still request that the facility list this information according to the permit requirements for more precise future compliance verification.

SC	FGWOODCOATING Emission limits:	Compliant?
I.1	VOC: 61.2 tpy (12 MRT)	Y
I.2	VOC, acetone from coatings, t-butyl acetate, and dimethyl carbonate combined: 116 tpy (12MRT)	Y
I.3	ANY SINGLE UNIT VOC, acetone, t-butyl acetate, and dimethyl carbonate combined: 37.9 tpy (12MRT)	Y
I.4	Acetone from purge/cleanup only: 8.3 tpy (12MRT)	Y
I.5	Formaldehyde: 0.07 tpy (12MRT)	Y

PTI #200-18 was issued in May of 2019 so staff was only able to verify compliance with the limits listed above for the previous year. In that year, the highest 12-month rolling time VOC emission was 27.16 tpy, well below the permit limit of 61.2 tpy (SC I.1). The highest 12-month rolling time VOC, acetone, t-butyl acetate, and dimethyl carbonate combined total was 65.17 tpy, well below the permit limit of 116 tpy (SC I.2). The highest 12-month rolling time emission limit for VOC, acetone, t-butyl acetate, and dimethyl carbonate combined from any single unit (SC I.3) was 22.99 tpy, below the permit limit of 37.9 tpy. The highest 12-month rolling time emission for acetone from purge and cleanup only was 5.78 tpy, well below the permit limit of 8.3 tpy (SC I.4).

The facility is tracking formaldehyde monthly and 12-month rolling time emissions for GFACILITY instead of FGWOODCOATING as the permit requires (FGWOODCOATING SC VI.5(a-e)). Staff was able to verify compliance with the 0.07 tpy emission limit in SC I.5 based on the fact the total including all exempt units is below the emission limit for only the units in FGWOODCOATING. The highest value for all units in GFACILITY was 0.047 tpy. Staff will suggest that this information is listed according to permit requirements for more precise compliance verification in the future.

The facility is in compliance with all conditions of FGWOODCOATING at this time.

#### GFACILITY

Source-wide process equipment, including all covered by other permits, grandfathered, or exempt equipment.

SC	GFACILITY Conditions	COMPLIANT?
II.1	Shall not operate each unit for more than 4,000 hrs per 12MRT	Y
V.1	Determine HAP content, as received and as applied, using manufacturer's data	N
V.2	Determine VOC content, water content and density, as received and as applied, using Method 24	Y

The facility is tracking the hours of operation on all units and the hours tally is included with this report. No unit exceeds 40 hours in one week.

Similar to FGWOODCOATING: The facility keeps detailed records of the manufacturer-issued chemical

composition of each material used. Staff confirmed that these records are maintained on-site and available for review or submission at any time. It will be the recommendation of staff that the facility create a spreadsheet that lists the pertinent information for each of the materials used at the facility (VOC, HAP, and formaldehyde content of each) where this information can be readily accessed by staff at any time without having to do a site visit and for a more precise adherence to FGWOODCOATING SC VI.3a-b and VI.5c and FGFACILITY V.1 and VI.2(c).

The facility has submitted Method 24 records indicating the VOC content of 4 materials used regularly. See above comments on Method 24 testing results.

**Monitoring/Recordkeeping:**

SC	FGFACILITY Conditions	COMPLIANT?
VI.2	MONTHLY: a) gallons or pounds of each HAP containing material used b) gallons or pounds of each HAP containing material reclaimed c) HAP content (gallons or lbs) of each HAP containing material used d) Individual and aggregate HAP mass emissions calculations: TONS PER MONTH e) Individual and aggregate HAP mass emissions calculations: TONS/12MRT	Y N N N/Y N/Y
VI.3	MONTHLY: a) gallons or pounds of each VOC containing material used b) gallons or pounds of each VOC containing material reclaimed c) VOC content (lbs per gallon) of each VOC containing material used d) VOC emissions calculations: TONS PER MONTH e) VOC emissions calculations: TONS/12MRT	Y N N Y Y
VI.4	Keep log of yearly hours of operation for each emission unit of FGFACILITY	Y

SC	FGFACILITY EMISSION LIMITS	COMPLIANT?
I.1	Each Individual HAP: 8.9 tpy (12MRT)	Y
I.2	Aggregate HAPs: 22.4 tpy	Y
I.3	VOC: 89.9 tpy	Y

The facility submitted HAPs emissions records for FGFACILITY listing emissions for the highest single HAP and for aggregate HAPs. In the post-inspection conference, staff explained that a list of all HAPs emitted by the facility, including mass emissions calculations per month and 12-month rolling time for each, is required (FGFACILITY SC VI.2(d-e)). Staff was able to verify compliance with the 8.9 tpy emission limit for any single HAP because all other HAPs emitted are below this emission rate (FGFACILITY SC I.1). The highest 12-month rolling time value of this single HAP emission was 3.68 tpy. Staff will require this information is submitted according to permit requirements for more precise compliance verification in the future. The highest aggregate 12-month rolling time HAPs emission value was 4.25 tpy, well below the 22.4 tpy limit (FGFACILITY SC I.2).

The facility lists "Gallons Used" monthly for FGFACILITY (FGFACILITY SC VI.2(a) and VI.3(a)). They do not specifically track the gallons of HAP or VOC material reclaimed for FGFACILITY although there is a value listed in FGWOODCOATING for the amount of acetone reclaimed from just those units (FGFACILITY VI.2(b) and VI.3 (b)). If the facility also reclaims acetone used on the exempt units, they should be tracking that value for FGFACILITY as well.

The facility is tracking the VOC emissions in pounds per month for FGFACILITY and in tons per 12-month rolling time (FGFACILITY SC VI.3(d-e)). The highest 12-month rolling time emission value listed is 64.91 tpy, which is below the 89.9 tpy limit (FGFACILITY I.3).

The facility appears to be in compliance with the conditions of FGFACILITY at this time.

Since the facility has had minimal time to adjust to becoming an opt-out source instead of a Title V source and has only had PTI #200-18 for one year, it is the prerogative of this inspector to work with the facility in organizing their records to the standards and preferences of the District Office, rather than issuing a violation notice for the inconsistencies of their recordkeeping addressed in this report.

NAME Rache Benaway

DATE 9/25/2020

SUPERVISOR RIL 10/1/20