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

B177271120

FACILITY: CECIL COMPOSITES, LLC		SRN / ID: B1772		
LOCATION: 151 LAFAYETTE ST, MOUNT CLEMENS		DISTRICT: Warren		
CITY: MOUNT CLEMENS		COUNTY: MACOMB		
CONTACT: Jeff Kirby , Plant Manager	CONTACT: Jeff Kirby , Plant Manager			
STAFF: Shamim Ahammod COMPLIANCE STATUS: Compliance		SOURCE CLASS: MAJOR		
SUBJECT: Conducted a scheduled inspection of Cecil Composite, LLC, to determine the company's compliance with the requirements				
Permit to Install (PTI) No. 94-21B.				
RESOLVED COMPLAINTS:				

On March 6, 2024, Michigan Department of Environment, Great Lakes, and Energy (EGLE)-Air Quality Division (AQD) staff, I (Shamim Ahammod) conducted a scheduled inspection of Cecil Composites, LLC, State Registration Number (SRN): B1772, located at 151 Lafayette Street, Mt. Clemens, Michigan 48043. The purpose of the inspection was to determine the company's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and the conditions established in Permit to Install (PTI) No. 94-21B.

History of the Permit

Cecil Composites, LLC was initially issued Permit to Install (PTI) No. 94-21 on November 23, 2021, for the manufacturing of composite poles.

However, this permit was voided on April 13, 2022. Subsequently, PTI No. 94-21A was granted on the same day to allow additional time for installing the stack associated with the composite pole processing unit. On July 7, 2023, the facility submitted a PTI application (App-2023-0168) to update the exhaust stack parameters and emission limit conditions. This led to the approval of PTI No. 94-21B on October 26, 2023.

Source Description

Cecil Composites, LLC operates a utility pole manufacturing facility at 151 Lafayette Street in Mount Clemens, Michigan in Macomb County. The company is owned by the parent company DWM Holdings. Cecil Composites plans to utilize approximately 1.6 million pounds of resin annually in the manufacturing process of composite utility poles. To maintain low emissions, the resins used will have restricted styrene content. Additionally, acetone serves as a clean-up solvent to reduce volatile organic compound (VOC) emissions.

Cecil Composites LLC is located in Macomb County which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment for all criteria pollutants. The facility is considered a major source of Hazardous Air Pollutants (HAP) emissions due to its potential to emit more than 10 tons per year of any single HAP regulated under Section 112 of the federal Clean Air Act, as well as a combined potential to emit of over 25 tons per year for all HAPs. As a result, the facility is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) WWWW (4W).

Being subject to NESHAP WWWW (4W), Cecil Composite LLC is obligated to submit a Renewable Operating Permit (ROP) application within 12 months of commencing operations. The facility began its operations on July 1, 2022. The initial ROP application for Cecil Composite was received by the Air Quality Division (AQD) on June 26, 2023. Subsequently, an updated initial ROP application for

Cecil Composites was resubmitted on January 26, 2024, to include the revised Permit to Install (PTI) No. 94-21B.

Process Description

Cecil Composites, LLC (Cecil) manufactures utility poles using a process that involves taking extended fiberglass strands coated in resin and wrapping them around **a form** known as a mandrel. After the mandrel is adequately covered to achieve the desired thickness, the resin is cured either with or without the aid of infrared heaters. Subsequently, the mandrel is extracted, leaving behind the completed hollow utility composite pole.

In composite pole making, a mandrel is a cylindrical object around which composite materials such as fibers and resin are wound or pultruded to form the shape of the pole. The mandrel serves as a temporary support structure during the manufacturing process and helps define the internal shape and dimensions of the pole being produced. Once the composite materials have been shaped and cured around the mandrel, it is removed to leave behind the final hollow structure of the composite pole

The facility uses a dual spindle filament system (two poles coiled simultaneously) with a resin delivery system. The dual spindle winder is fully automatic. However, right now, the facility coils one pole at a time.

Onsite Inspection

On March 6, 2024, at 11:35 AM, I arrived at the facility and was greeted by Jeff Kirby, Plant Manager, of Cecil Composite. I presented my photo credentials and explained the purpose of the inspection. I walked through the facility to learn the process and verified the PTI's general and special conditions outlined in PTI No. 94-21B.

Compliance Evaluation

PTI No. 94-21B

EUFIBERGLASS

Flexible Group ID: FGMACTWWWW

Emission Limits

Per SC I.1, The permittee provided me with a record of the 12-month rolling VOC and acetone emissions from July 2022 through February 2024. The permittee has used the Unified Emission Factors-UEF (Image 1) for filament application to determine the VOC emissions (including styrene). The permittee has used mass balance for non-styrene VOC emissions and acetone emissions. Acetone is assumed that 100% of the materials evaporated. Details are explained in SC VI.3.a through SC VI.3.g (recordkeeping and monitoring section).

The records indicate that the highest VOC emission from EUFIBERGLASS was 2.91 tons, for the 12-month rolling period ending in February 2024, which was less than the permit limit of 65.1 tpy. The highest acetone emissions were 6.94 tons, for the 12-month rolling period ending in February 2024, which was less than the permit limit of 15.6 tpy.

Image 1: Unified Emission Factors for Open Molding of Composites

MACES- Activity Report

EF Table 1: Unified Emission Factors for Open Molding of Composites Revised and Approved: 10/13/2009 Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed >50 (2) Styrene content in resin/gelcoat, % (1) 33 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 45 46 47 48 49 50 129 134 140 146 152 157 163 169 174 180 0.126 x %styrene x 2000 ((0.286 x %styrene) - 0.0529) x 2000 Manual Manual w/ Vapor Suppressed Resin VSR (3) Manual emission factor [listed above] x (1 - (0.50 x specific VSR reduction factor for each resin/suppress ant formulation)) 154 168 183 197 211 225 240 254 268 283 297 311 325 340 354 Mechanical Atomized 0.169 x %styrene x 2000 111 ((0.714 x %styrene) - 0.18) x 2000 Mechanical Atomized emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation) Mechanical Atomized with VSR (3) 152 163 174 185 196 207 218 229 240 251 262 273 119 130 141 Mechanical Atomized Controlled Spray (4) 0.130 x %styrene x 2000 0.77 x ((0.714 x %styrene) - 0.18) x 2000 Mechanical Controlled Spray with VSR Mechanical Atomized Controlled Spray emission factor (fisted above) x (1 - 0.45 x specific VSR reduction factor for each resin/suppress ant formulation) 99 102 105 108 111 93 96 Mechanical Non-Atomized 0.107 x %styrene x 2000 Mechanical Non-Atomized emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation) Mechanical Non-Atomized with VSR (3) Mechanical Non-Atomized Application of Resins Mechanical Non-Atomized Styrene Monomer Emissions Factor (listed above) x 0.55 That Contain Methyl Styrene Monomer (10) 0.144 x %styrene x 2000 95 98 101 104 108 111 114 117 120 124 127 130 133 135 140 143 145 149 ((0.1603 x %styrene) - 0.0055) x 2000 Mechanical Non-Atomized Filled DCPD Resins 210 215 122 127 133 138 144 149 155 160 166 171 182 188 193 199 204 Filament application 0.184 x %styrene x 2000 ((0.2746 x %styrene) - 0.0298) x 2000 125 97 122 100 104 108 111 115 118 129 133 136 140 Filament application with VSR (3) 0.120 x %styrene x 2000 0.65 x ((0.2746 x %styrene) - 0.0298) x 2000 0.445 x %styrene x 2000 398 439 460 481 501 522 543 564 584 605 626 646 Gelcoat Application ((1.03646 x %styrene) -0.195) x 2000 305 321 336 351 366 260 275 290 381 396 411 427 442 457 472 Gelcoat Controlled Spray Application (4) 0.325 x %styrene x 2000 0.73 x ((1.03646 x %styrene) -0.195) x 2000 214 223 232 241 250 259 268 278 287 296 305 314 323 332 341 350 SEE Note 9 below ((0.4506 x %styrene) - 0.0505) x 2000 Gelcoat Non-Atomized Application for < 30: 0.323 x %styrene Lesser Atomized Gelcoat Application (12) x 2000 Covered-Cure after Roll-Out Covered-Cure without Roll-Out Emission Rate in Pounds of Methyl Methacrylate Emitted per Ton of Gelcoat Processed MMA content in gelcoat, % (8) 9 10 11 12 13 14 15 16 18 19 ≥20 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 Gel coat application 15 30 45 0.75 x %MMA x 2000

MATERIAL LIMIT(S)

Per II.1, the styrene content of all resins used in EUFIBERGLASS shall not exceed 45.3 percent by weight as applied. The permittee provided me with a list of materials currently in use and their styrene content (Table 1):

Material	Use	Styrene Content (wt%)
Unsaturated polyester resin	Styrene Monomer Resin	34.22%
HT VIPEL F421	Styrene Monomer Resin	38%
PCU DX Dion FR	Styrene Monomer Resin	30%
Bonding putty	Styrene Monomer Resin	20%

Table 1 Styrene Content in Resins

Cecil Composite recently provided an update regarding the styrene content in their saturated polyester resin 449-4773. The new information indicates that the styrene content has been reduced from 37.42 % to 34.22%

PROCESS/OPERATIONAL RESTRICTION(S)

Per SC III.1, The permittee shall capture all waste materials used in EUFIBERGLASS and store them in closed containers. The permittee shall dispose of waste materials in an acceptable manner in compliance with all applicable state rules and federal regulations. During the period of inspection, I did not observe any waste material located outside of the designated containers.

Per SC III.2, The permittee shall handle all resins, catalysts, additives, and cleaning solvents in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times except when operator access is necessary. All containers were covered during my visit.

Per SC III.3, The permittee shall store the finished composite poles inside the facility until they are transported offsite. During the inspection, I observed the finished composite poles stored inside the facility. I did not see any finished composite stored outside.

Per SC III.4. the Nuisance Management Plan (NMP) was received on January 6, 2022, within 45 days of permit issuance. The initial Permit No. 94-21 was issued on November 23, 2021. I reviewed the plan, and it appears to be sufficient for addressing potential nuisance odors. Currently, AQD has not received any odor complaints against this facility.

As per the guideline outlined in the Nuisance Management Plan (NMP), the permittee has installed an exhaust system known as SVFIBERGLASS. This exhaust system is equipped with a fabric filter to prevent the release of resin into the external environment. The fabric filter is specifically designed to manage a capacity of 20000 CFM (Cubic Feet per Minute) of air and directs it outdoors through a stack located on the side wall of the building. The exhaust fan only turns on while filament operations are being performed.

According to the Nuisance Management Plan (NMP), the exhaust system for the EUFIBERGLASS process will be regularly maintained as recommended by the manufacturer. Regular maintenance includes daily monitoring of the equipment to ensure that adequate flow occurs. Filters will be replaced periodically to ensure the pressure drop is not too large. The permitte provided an inspection report of the new exhaust system that includes balancing the fans and other items referenced in the NMP. The inspection is conducted by ADM Air Balancing.

The facility plans to complete the following inspection form for each quarter to ensure the requirements in the NMP.

Task	Completed?	Comments:
Inspect for obstructions and deterioration		
Repair all leaks and cracks		
Verify fan performance		
Check fan belts for tension and wear. Replace as necessary		
Inspect and grease bearings		
Check fan belts for tension and wear. Replace as necessary		
Check sheaves for alignment. Adjust as necessary		
Check fan shaft and wheel. Adjust as necessary		
Balance fan wheel, if required.		
Check draw at filter.		
Check base for corrosion.		

Design/Equipment parameters.

Per SC IV.1, Filament winding shall be carried out by use of the dual-spindle 4-axis system with an automated resin delivery system. The facility uses dual-spindle 4-axis system filament winding fabrication techniques to manufacture composite poles. This is the process of laying a band of resin -impregnated fibers onto a rotating mandrel surface in a precise geometric pattern and curing them to form the product. Details are explained in the process description.

MONITORING/RECORDKEEPING

Per SC VI.2, The permittee provided me with a list of materials currently in use and the chemical composition of each material, including the weight percent of each component. See more details in SC II.1 (material limit section).

Per SC VI.3, the permittee provided me with records that include a list of materials currently in use and the chemical composition of each material, including styrene content (table 1), VOC content (Table 2), and acetone content. The permittee also provided the emission factors, monthly VOC and acetone emission, and 12-month rolling VOC and acetone emission. See more details in SC I.1 (emission limit section) for monthly and 12-month rolling VOC and acetone emissions (table 3).

Per SC VI.3.a, the permittee provided an Excel sheet that includes the name of the material used in each month and the amount of material used in pounds for open molding corrosion-resistant and/or high-strength (Table 2 & 3). Details are given below:

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		VI.3.f			VI.3.c	VI.3.b
					VOC Content	Styrene
Material	Use	Emissio	n Factor	Density		100-42-5
Resin 779-4772 (updated)	Styrene Monomer Resin	76.2	lb/ton	9.10	34%	34%
Norox MEKP-900 Clear	Catalyst	1	%	9.51	100%	
Acetone	Clean-up Solvent	100	%	6.59	0%	
PCU DX DION FR 6900	Styrene Monomer Resin			12.18	0%	
XG-2814	Styrene Monomer Resin					
Putty	Styrene monomer resin					20%
HT VIPEL F421 (XG- 2762)	Styrene Monomer Resin	149	lb/ton	9.17	38%	38%

Table 2 VOC Content in Resins

				12-mo rolling Organic
	HAP Material	Material	Organic HAP	HAP Emission Rate
Date	Content (lb.)	Usage (ton)	Content (lb./ton)	(lb./ton)
Jul-22	97.8963	0.6515	150.2629317	149.2806399
Aug-22	99.1595	0.6655	149	149.2806399
Sep-22	44.7	0.3	149	149.2806399

Oct-22	216.0651	1.4475	149.267772	149.2806399
Nov-22	57.812	0.388	149	149.2806399
Dec-22	128.2145	0.8605	149	149.2806399
Jan-23	272.855861	1.736585	157.1220879	151.5315945
Feb-23	211.302408	1.31236	161.0094852	153.2211486
Mar-23	212.436238	1.40065	151.6697519	152.9731669
Apr-23	313.34849	2.10301	149	152.2041706
May-23	226.16114	1.51786	149	151.8114306
Jun-23	242.423	1.627	149	151.4849462
Jul-23	474.519555	3.184695	149	151.0547117
Aug-23	185.674115	1.246135	149	150.9850424
Sep-23	29.991465	0.201285	149	150.9965518
Oct-23	746.72244	5.01156	149	150.6321243
Nov-23	836.748985	5.615765	149	150.3016355
Dec-23	291.59002	1.95698	149	150.2486065
Jan-24	1262.77	7.566	166.900608	153.731843
Feb-24	1070.83252	6.35948	168.3836603	155.9447598

Table 3 Material usage records, Organic HAP Content, 12-month rolling organic HAP content
Per SC VI.3.b and SC VI.3.c, the permittee provided a record that indicates the styrene content
and VOC content of each resin they used (Table 2).

Per SC VI.3.d, acetone usage is equivalent to emissions. The material that contains any acetone is the acetone which is 100% acetone (Table 4).

Per SC VI.3.e, acetone usage is equivalent to emissions. Therefore, no acetone is recovered and reclaimed.

Per SC VI.3.f, the permittee provided Unified emission factors (UEF) for the VOC (including styrene) calculations. The permittee uses mass balance for non-styrene-VOC emissions and acetone emissions.

Per SC VI.3.g, the permittee provided the monthly and 12-month rolling VOC emissions and acetone emissions from July 2022 through February 2024 (Table 4). Details are given below.

	Poles Produced	VOC Emissions		Acetone Emis	ssions
	SC III.1	SC VI.3.g	SC I.1	SC VI.3.h	SC 1.2
Limit	300		65.1		15.6
Date	#/month	ton/month	tpy	ton/month	tpy
Jul-22	61	0.04909815	0.049098	0	0
Aug-22	75	0.04972975	0.098828	0.365	0.365
Sep-22	25	0.0225	0.121328	0.365	0.73
Oct-22	119	0.10818255	0.22951	0.365	1.095
Nov-22	73	0.029056	0.258566	0.5475	1.6425
Dec-22	125	0.06425725	0.322824	0.1825	1.825
Jan-23	156	0.551978396	0.874802	0.365	2.19

Feb-23	156	1.007029098	1.881831	0.1825	2.3725
Mar-23	218	0.957092671	2.838924	0.365	2.7375
Apr-23	191	0.861242456	3.700166	0.365	3.1025
May-23	221	0.861373955	4.56154	0.73	3.8325
Jun-23	98	0.561963158	5.123503	0.5475	4.38
Jul-23	29	0.433171413	5.507577	0.73	5.11
Aug-23	50	0.292983276	5.75083	0.5475	5.2925
Sep-23	39	0.015025833	5.743356	0.365	5.2925
Oct-23	45	0.450687003	6.085861	0.73	5.6575
Nov-23	52	0.53204305	6.588848	0.73	5.84
Dec-23	63	0.461279222	6.98587	0.365	6.0225
Jan-24	63	0.690902303	7.124793	0.73	6.3875
Feb-24	63	0.578173388	6.695938	0.365	6.57

Table 4 Acetone emissions, VOC emissions and Pole Produced.

As required in SC VI.4, the permittee is required to keep a record of the number of composite poles manufactured during the initial low period of EUFIBERGLASS monthly (Table 4). See details in SC III.1 (Process/Operational Restrictions).

Reporting

NA

Stack/Vent restrictions.

During my last inspection dated July 7, 2023, I sent a VN to the facility for not installing the stack (SVFIBERGLASS). I observed, during my inspection on March 6, 2024, the permittee installed a stack. During this inspection, I observed, the stack is unobstructed and vertical upward and the stack height of SVFIBERGLASS would be approximately 63.75 feet.

Other requirements

NA

FGMACTWWWW

Emission Units: EUFIBERGLASS
POLLUTION CONTROL EQUIPMENT

Dry fabric filters

EMISSION LIMIT(S)

Emission limit table Special Condition (SC) I.1 through SC I. 4.

Per **40 CFR 63.5835(a) of** FGMACTWWWW, the organic HAP emission limit for Open Molding-Corrosion Resistant and/or High Strength (CR/HS) Resin is 171 lb/ton for filament application per 12 -month rolling average as determined at the end of each calendar month (Table 3).

SC I.2 (No CR/HS resin), SC I.3 (Low flame spread/low-smoke products), and SC I.4 (shrinkage-controlled resins) do not apply due to the exclusive use of corrosion-resistant/high-strength resin in the facility.

SC I.5.a, the permittee must use one or a combination of the methods in 40 CFR 63.5810 (a) through (d) to meet the standards for open molding operations in Table 3 of 40 CFR Part 63, Subpart WWWW.

The permittee may switch between the compliance options in 40 CFR 63.5810 (a) through (d). When changing to an option based on a 12-month rolling average, the permittee must base the average on the previous 12 months of data calculated using the compliance option changing to,

unless previously used an option that did not require the permittee to maintain records of resin or gel coat. In this case, the permittee must immediately begin collecting resin and gel coat use data and demonstrate compliance 12 months after changing options.

The facility complies with 40 CFR 63.5810(a): Demonstrate that an individual resin or gel coat, as applied, meets the applicable emission limit in Table 3 of 40 CFR Part 63, Subpart WWWW.

According to Table 3 of 40 CFR Part 63, the organic HAP emissions limit for open molding—corrosion-resistant and/or high strength (CR/HS) is 171 lb/ton for filament application. Details are explained in the Monitoring/record keeping section of FGMACTWWWW (Table 3: Material usage records, Organic HAP Content, 12-month rolling organic HAP content).

Material Limit; N/A

PROCESS/OPERATIONAL RESTRICTION(S)

SC III.1, At all times, including periods of startup, shutdown, and malfunction, the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

- Requirement in SC III.1 is explained in SC III.4 in the Process/Operational Restriction section in EUFIBERGLASS.
- SC III.2.c, at the time of inspection, I observed, the HAP-containing containers were closed.
- SC III.2.d-f, at the time of inspection, I did not observe any mixing operation. Therefore, compliance with SC III.2.d-f will be determined in the next onsite inspection.

Design/equipment parameter: NA.

TESTING/SAMPLING

As allowed in SC V.1, the facility uses safety data sheets and other technical information from the manufacturer, if necessary to determine the HAP contents of the resin in use.

MONITORING/RECORDKEEPINGSC VI.1.a-d requirements are discussed in the Emission Limit and Monitoring/recordkeeping section in EUFIBERGLASS.

SC VI.3.a notification requirement is explained in the reporting section in FGMACTWWWW.

REPORTING

As required in SC VII.1, The permittee must submit all of the notifications in Table 13 of 40 CFR Part 63, Subpart WWWW that apply by the dates specified in Table 13 of 40 CFR Part 63, Subpart WWWW. (40 CFR 63.5905(a)). Cecil Composites is a new affected source because they commenced construction after August 2, 2001 and there were no existing reinforced plastic composite production sources. Therefore, as a new source, the facility must submit the notification specified in 63.9 (b)(4) and (5).

63.9 (b)(4), Provide the following information in writing to the Administrator:

(i) A notification of intention to construct a new major-emitting affected source, reconstruct a major-emitting affected source, or reconstruct a major source such that the source becomes a major-emitting affected source with the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i).

- Cecil Composites, LLC was initially issued Permit to Install (PTI) No. 94-21 on November 23, 2021, to manufacture composite poles. The facility started construction on February 1, 2022, and began operation on July 1, 2022.
 - (v) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.
- The facility started operation on July 1, 2022, and they did not notify AQD within the timeframe. AQD received the initial startup notification on August 21, 2023. On September 20, 2023, a Violation Notice (VN) was issued to the facility for failure to notify the Air Quality Division (AQD) within 15 days of the start of operation date. The facility responded to the VN on October 3, 2023, explaining that due to significant turnover in the management team, they were unable to inform AQD on time. They acknowledged the oversight and committed to being more vigilant about meeting deadlines in the future.

As required in SC VII.2, AQD received a semi-annual certification report via email on January 30, 2024, and a hard copy was received on February 8, 2024. The compliance report included the company name and address, a statement by a responsible official, the date of the report, the beginning and ending dates of the reporting period, and whether there were any deviations or not.

As required in SC VII.3, the permittee must submit semiannual compliance reports to the EPA via CEDRI, which can be accessed through the EPA's CDX (https://cdx.epa.gov/). The permittee must use the appropriate electronic report template on the CEDRI website (https://www.epa.gov/electronic-reporting-air-emissions/cedri). The report must be submitted by the deadline specified in 40 CFR Part 63, Subpart WWWW. According to records provided by Cecil Composites, it appears that they submitted a semiannual compliance report to the EPA via CEDRi on January 25, 2024.

Stack/Vent restrictions. NA Other Requirements

SC IX.1; The permittee is required to comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subparts A and WWWW for Reinforced Plastic Composites Production. Compliance with the applicable requirements in 40 CFR Part 63, Subparts A and WWWW have been explained above.

Conclusion

Based on the on-site inspection and review of the records, Cecil Composites is operating in compliance with the requirements of PTI No. 94-21B.

NAME Shamim Aha	ımmod	_{DATE} 05/09/2024	SUPERVISOR /	Kelly	
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