

***TITLE V OPERATING PERMIT
RENEWAL AND MODIFICATION
APPLICATION
EVALUATION AND REVIEW***

***Memphis Cellulose, LLC
Permit No. 00055-01TV***

January 2025

***SHELBY COUNTY HEALTH DEPARTMENT
AIR POLLUTION CONTROL SECTION
MAJOR SOURCES BRANCH***

PERMIT APPLICATION EVALUATION

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TITLE V OPERATING PERMIT RENEWAL AND MODIFICATION APPLICATION EVALUATION AND REGULATORY REVIEW

This narrative was prepared to assist the reviewer in understanding the facility and sources being permitted, and the content, the regulatory basis, and decisions made in preparing this Title V operating permit. This document was also prepared to meet the requirements for the statement of basis in 40 CFR § 70.7(a)(5). This document will become a part of the permanent facility record maintained by the Pollution Control Section of the Shelby County Health Department.

I. FACILITY INFORMATION

Facility Name:	Memphis Cellulose LLC
Facility/Mailing Address:	1001 Tillman Street Memphis, Tennessee 38112
Property Entrance:	920 Scott Street Memphis, Tennessee 38112
Facility Owner:	Georgia-Pacific Cellulose LLC
Owner Address:	Same as above
Responsible Official, Title:	Charles G. LaPorte, Mill Manager
Mailing Address:	Same as above
Telephone:	(912) 672-6871
Mailing Address:	Same as above
Telephone:	(901) 320-8683
Environmental Contact:	Katherine Terry, Mill Sustainability Manager
Mailing Address:	Same as above
Telephone:	(901) 320-8142 (Office) (901) 857-3463 (Cell)
Billing Contact:	Katherine Terry, Mill Sustainability Manager
Mailing Address:	Same as above
Telephone:	Same as above
Owner's Registered Agent:	C T Corporation System
Agent Address:	300 Montvue Road Knoxville, Tennessee 37919-5546
Facility's Primary Activity:	Cotton Linter Pulp Mill
NAICS/SIC Code(s):	322110/2611

Existing Permits:

Permit No.	Type of Permit	Description	Issued	Expires
00055-01TV	Major	Cotton Linter Pulp Mill	XX/XX/2025	XX/XX/2030

II. APPLICATION INFORMATION

Application Received: December 11, 2023 *(Renewal and Administrative Amendment)*
(Corrected Table 1, Insignificant Activities Listing, removed redundant conditions, and removed CO emission limit from EU-2)
December 14, 2023 *(change in Responsible Official)*

Application Dated: December 11, 2023 *(Renewal and Administrative Amendment)*
(Corrected Table 1, Insignificant Activities Listing, removed redundant conditions, and removed CO emission limit from EU-2)
December 14, 2023 *(change in Responsible Official)*

Permit Engineer: Gregg P. Fortunato

Public Notice (Draft Permit): March 11, 2024

Surrounding States Notice: March 12, 2024

Public Hearing: Not requested

Comments Received: Yes (See Appendix C)

EPA Notice (Proposed Permit): January 30, 2025

EPA Comments Received: PENDING

Permit Issue Date: PENDING

Facility classification:

☒ Major-NSR/PSD

☒ Major-Title V

☒ NSPS (40 CFR Part 60) *(Subpart A, IIII – T&IC Generator and Fire Pump Engine)*

☐ NESHAP (40 CFR Part 61)

☒ MACT (40 CFR Part 63) *(Subpart A, ZZZZ – 3 x Emergency Generators, Fire Pump Engine and Boiler House Emergency Compressor and Subpart CCCCCC – Gasoline Dispensing Facility (GDF) with less than 10,000 gallons monthly throughput)*

☐ LAER/BACT/RACT

Type of permit:

☐ New Construction

☐ Minor Operating

☐ Synthetic Minor Operating

☒ Title V Operating

☐ Modification

- ☒ Amendment (*Corrected Table 1, Insignificant Activities Listing, removed redundant conditions, removed CO emissions limit from EU-2, and change in Responsible Official*)
- ☒ Permit renewal requested

Emission change:

- ☒ Emissions increase (*Increases to SO₂ and VOCs*)
- ☒ Emissions decrease (*Decrease in CO*)
- ☐ Emissions the same

III. SPECIFIC REASON for APPLICATION

The Memphis Cellulose facility has submitted a renewal and modification application for the existing Title V air operating permit (00055-01TV). The modification is for the insignificant increases to some of the pollutant limits based on corrections to emission factors and calculations. Along with this renewal application, the Department is also making administrative changes that do not increase the emissions or requirements of the facility. Administrative changes requested by Memphis Cellulose include removing No. 2 fuel oil as a backup fuel for the boilers and correcting the CO emissions from Emission Unit 2, the bleach plant. Since the bleach plant does not use chlorine dioxide substitution, CO emissions are not generated in this step; therefore, the CO emission limit will be removed. The removal of No. 2 fuel oil required Memphis Cellulose to update their monitoring plan in the renewed permit.

Administratively, Table 1 is being corrected to properly identify two emission point vent numbers, remove two pieces of equipment, and correct two of the emergency engine hp ratings. The Insignificant Activities listing is being updated to reflect equipment that has been removed and to update the correct exemption citations. Also, redundant conditions identified during the January 24, 2024 annual compliance inspection, are being deleted from the permit.

IV. EMISSION UNITS, POINTS and CONTROLS

Emission Unit (EU)	Process	Description	Emission Point No.
Emission Group A – Purification			
EU1 (Physical Cleaning)	<i>West Beater System and Charging</i>	West Beater Primary Cyclone and Scrubber	0400S
		West Beater Secondary Cyclone and Scrubber	0410S
		West Hydropulper Cyclone and Scrubber	0420S
	<i>East Beater System and Charging</i>	East Hydropulper Cyclone and Scrubber	0320S
	<i>Other (Cutting and Charging)</i>	South Beater Primary Cyclone and Scrubber	0240S
		North Beater Primary Cyclone and Scrubber	0250S
		South Cyclone and Scrubber	0360S
		Recleaner Cyclone and Scrubber	0350S
		South Hydropulper Scrubber	0610S
	<i>Common to East and West Beater System</i>	East and West Beater Rejects Scrubber 2	0340S
EU2 (Chemical Cleaning)	<i>Digesting Cotton Linter Pulp and Purification</i>	Digester	0705S
		Digester Vent Tank	0705S
		Blow Tanks	0710S
		Brown Stock Washer and Brown Stock Repulper	0711S
		Brown Stock Surge Tank	0720S
		Caustic- Packed Bed Scrubber Wet Scrubber	0730S

EU2 (Chemical Cleaning) (continued)	Digesting Cotton Linter Pulp and Purification (continued)	Initial Bleach Tower, Ring Press, Hypo Tower	0730S
		Sour Stock Washer and Sour Stock Repulper	0741S
		Sour Stock Tank	0750S
	Caustic Washing System	Extraction Chest	0810S
		Extraction Washers	0821S
		Extraction Washers	0822S
		Extraction Filtrate Tank	0830S
		Vacuum Pumps and Separators	0841S – 0848S
Emission Group B – Finishing			
EU3 (Cellulose Production)	No. 1 Sheet Mill	Sheet Mill Fourdrinier Wet End Vacuum Pumps, and Separators	1011S - 1012S
		Sheet Mill Presses, Vacuum Pumps and Separators	1021S - 1022S
		Sheet Mill Dryers	1031S – 10354S
Emission Group C – Power Plant			
EU4 (Power Plant)	Boilers	Natural Gas-Fired Boiler No. 1 (88.68 MMBtu/hr)	1410S
		Natural Gas-Fired Boiler No. 6 (121.48 MMBtu/hr)	1460S
		Natural Gas-Fired Boiler No. 7 (121.48 MMBtu/hr)	1470S
		Natural Gas-Fired Package Boiler (8.4 MMBtu/hr)	05B
Emission Group D – Emergency Engines			
EU5 (Emergency Engines)	Emergency Generators, Compressor and Fire Pump Engine	Headquarter Emergency Diesel Generator (322 hp CI) (Manufactured 1985)	EE1
		Boiler House Emergency Natural Gas Generator (60 hp SI) (Manufactured 1994)	EE2
		Boiler House Emergency Natural Gas Compressor (175 cfm SI) (Manufactured 1974)	EE3
		T&IC Diesel Generator (324 hp CI) (Manufactured 2014)	EE4
		Fire Pump Diesel Engine (99 hp CI) (Manufactured 2015)	EE5

V. PROCESS DESCRIPTION

The following sections provide a brief description of facility operations and emission points. Please refer to the process flow diagrams contained in Appendix B of the permit renewal application received December 27, 2017 for additional details of facility operations.

5.1 Production Process

The Memphis Cellulose production process is composed of three principal areas:

- 1) Physical cleaning (EU1), which includes cotton lint receiving and unloading, lint charging, beater systems, hydropulping, refining and a slushing;
- 2) Chemical Cleaning (EU2), which includes digesting, bleaching and sour stock preparation, and
- 3) Cellulose Production (EU3), which includes preparation of cellulose. In addition, the Boiler (EU4) provides steam to the chemical cleaning and finishing operations.

5.2 Physical Cleaning

Operations at Memphis Cellulose begin with the loading of raw cotton stripped bales through the dispensing system and eventually to the charging lines. The purpose of the three charging lines – Nos. 1, 4, and 5, is to introduce raw cotton lint into the physical cleaning process. The raw cotton lint then passes through the North and South Beater Cyclones and then into the four Primary Beaters – two each for the North and South Cyclones. Emissions from the beater systems and associated cyclones are controlled by wet venturi-type scrubbers, designated as the North Beater Primary Cyclone and Scrubber (0250S) and the South Beater Primary Cyclone and Scrubber (0240S). The purpose of the Primary Beaters is to mechanically separate and remove impurities in the cotton lint from the pulp stream. These impurities are comprised of field trash, fines, seeds, stalks, and hull fragments. The “accepts” are materials that are cleaned and discharged from the beater where they continue to either the South or Recleaner Cyclones which are controlled by a wet venturi-type scrubber (designated as the South Cyclone and Scrubber [0360S] and the Recleaner Cyclone and Scrubber (0350S)).

Rejects from the Primary Beaters are fed to the West Beater Primary Cyclone for lint recovery. Emissions from this system are controlled by a wet venturi-type scrubber (designated as the West Beater Primary Cyclone and Scrubber [0400S]). The West Beater Primary and West Beater Secondary accept lint from the cyclone. It is then transferred for recovery to the East Hydropulper Cyclone, which is controlled by a wet venturi-type scrubber (designated as the East Hydropulper Cyclone and Scrubber (0320S)). The West Beater rejects are recycled to the West Beater Secondary/Tertiary Cyclone which is controlled by a wet venturi-type scrubber (designated as the West Beater Secondary Cyclone and Scrubber (0410S)). The rejects from the North, South, West Primary and West Secondary cyclone systems are directed to the Beater Reject system controlled by a wet venturi-type scrubber (designated as the Rejects Scrubber (0340S)). The West Hydropulper Cyclone can be charged separately by the charging lines and is controlled by a wet

venturi-type scrubber (designated as the West Hydropulper Cyclone and Scrubber (0420S)). The dry lint from the Recleaner Cyclone, South Cyclone, West Hydropulper and the East Hydropulper Cyclone systems are conveyed to the South Hydropulper system, which is controlled by a wet venturi-type scrubber (designated as the South Hydropulper Vent Scrubber (0610S)). The materials from the South Hydropulper then pass through the Refiner and into a four-stage centrifugal cleaning system. The cleaned stock goes to the Slusher, which is a rotating drum used to dewater the stock to a consistency of approximately 7 percent.

5.3 Chemical Cleaning

The stock then goes through digestion, bleaching, extraction and sour stock washing stages.

5.4 Digesting Process

The lint from the Slusher is prepared for the digesting process by passing through the Thune Presses where the stock is dewatered and the consistency of the stock is increased to approximately 40 percent. The stock, along with the cooking solution, passes through the Mixing Tube before entering the continuous digester system, which consists of four interlinked digesting tubes. A combination of chemicals, heat and pressure are used in the digesting process to begin converting the cotton stock to pulp by removing waxes, oils and lignin. The Digesters are vented through the Digester Vent Tank (0705S). Fiber flows from the digesters into Blow Tanks (0710S), where a rapid change in pressure separates the individual fibers. The cotton linter cooking process is mild and takes place at a lower pressure and temperature than a wood pulping cook. The pulp then passes through the Brown Stock Washer and Brown Stock Repulper (0711S) where the pulp is washed thoroughly to remove chemicals and dissolved waxes and oils. The pulp is then stored in the Brown Stock Surge Tower (0720S).

5.5 Bleaching Process

Following storage, the stock enters bleaching process, which consists of initial bleach, enhanced bleaching, hypo and sour wash stages. The stock initially flows from the Brown Stock Surge Tower and enters the Initial Bleach Tower. The primary function of the Bleach Tower is to provide retention time necessary for the reactions to take place with the stock by using chlorine solution, sulfuric acid and sodium chlorite. The stock then passes through the Ring Press, where the consistency is raised to 50% and the dissolved impurities and color bodies are removed from the pulp. The acidic filtrate that is removed from the stock at the Ring Press flows to the Initial Bleach Filtrate Tank (BFT) for use as dilution at the base of the Brown Stock Tower. After passing through the Ring Press, hypo filtrate from the Hypo Filtrate Storage Tank is added at the Ring Press repulping conveyor depending on the grade requirement. This stream is then diluted with caustic filtrate. The Caustic Packed Bed Scrubber (0730S) neutralizes the Chlorine that might collect in various process units, such as sour filtrate tank, hypo bleach tower, initial bleach tower, Nos. 2 & 4 MC degas pumps, filtrate overflow tank (FOO), initial bleach filtrate tank (BFT) and ring press.

5.6 Hypo and Sour Stock Washing Process

Additional equipment used for enhanced bleaching includes: Chests (0810S), Vacuum Pumps, Separators (0841S to 0848S), Washers (0821S and 0822S) and a Filtrate Tank (0830S) to remove weak caustic and dissolved impurities from the stock. The stock then enters the Hypo Tower for further retention and is then transferred to the Hypo Washer. The Hypo Washer is nearly identical to the Brown Stock Washer. The Hypo washing prepares the stock for the sour stage, where color bodies and caustic hypo liquor are removed. The primary purpose of the Sour Wash (Sour Stock Washer and Sour Stock Repulper (0741S)) is to help remove minerals by reacting them with sulfuric acid and then washing them from the pulp. The Sour Stock Tank (0750S) aids in washing between the Hypo Washer and the sour washing methods.

5.7 Cellulose Production

The stock for the finishing operation is processed in the No.1 Sheet Mill which consists of a Fourdrinier section (1011S and 1012S), Presses (1021S and 1022S) and Dryers (1031S to 1034S). The Fourdrinier is essentially a table over which a wire mesh moves. A pulp slurry is deposited on the Fourdrinier section from the headbox and a pulp web is formed by removing additional water from the stock upon the wire. The fibers in the pulp align in the direction the wire travels. The sheet then enters the presses, where additional water removal occurs. When the sheet leaves the press section, it is typically at a moisture content of 65 percent. As the web continues its way through the steam heated dryers, additional moisture is evaporated and adjusted according to different grade requirements.

5.8 Boilers

The steam for the facility operations is provided by three natural gas-fired boilers. Boilers No. 1 (1410S), 6 (1460S), and 7 (1470S) are rated at 88.68, 121.48, and 121.48 MMBtu/hr, respectively. In addition, the facility operates a natural gas package boiler rated at 8.4 MMBtu/hr (05B). The boilers, except for the package boiler, have the capability of burning No.2 fuel oil only during periods of natural gas curtailment.

5.9 Ancillary Activities

In addition to the main production activities, there are several activities that support the main operation of the facility. These include one emergency diesel fire pump, two emergency diesel generators, one emergency natural gas compressor and one emergency natural gas generator.

VI. REGULATORY ANALYSIS *(See Appendix A for a full regulatory applicability overview)*

6.1 New Source Review

6.1.1 Non-Attainment New Source review (NSR):

The United States Environmental Protection Agency was designated Shelby County as in attainment of the national ambient air quality standard for ozone within the Federal Register (effective July 25, 2016). Shelby County is in attainment for all NSR pollutants at this time; therefore, NSR is not applicable to this permit action.

6.1.2 Prevention of Significant Deterioration of Ambient Air Quality (PSD)

Under PSD an affected source is a facility with emissions exceeding 250 tons per year of any regulated NSR pollutants or emissions exceeding 100 tons per year of any regulated NSR pollutants at sources in specific categories.

This Memphis Cellulose facility is defined under the specific source category for “Fossil-fuel boilers (or combinations thereof) totaling more than 250 million BTU per hour heat input”; therefore, the nested boiler source group is subject to the major source threshold of 100 tons per year. Potential NO_x and CO emissions from the boilers exceed 100 tons per year; therefore, this facility is subject to PSD. Furthermore, Allowable NO_x emissions from this facility are also > 250 tpy.

This permit action does not trigger a PSD review.

6.2 New Source Performance Standards (NSPS)

NSPS require new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology as specified in the applicable provisions. NSPS requirements are promulgated under 40 CFR 60 pursuant to Section 111 of the Clean Air Act.

6.2.1 Subpart A – General Provisions

All sources subject to an NSPS standard are also subject to the general provisions of NSPS Subpart A, unless specifically excluded by the source-specific NSPS. Subpart A requires initial notification and performance testing, recordkeeping, and monitoring, provides reference methods, and mandates general control device requirements for all other subparts as applicable.

6.2.2 Subpart Db - Industrial-Commercial-Institutional Steam Generating Unit

NSPS Subpart Db regulates steam generating units with capacities greater than 100 MMBtu/hr for which construction, modification, or reconstruction commenced after June 19, 1984. In February 2006, a revision to NSPS Subpart Db was promulgated to establish a more stringent PM emission limit for units that are constructed, reconstructed, or modified after February 28, 2005, and are capable of combusting coal, oil, wood, or a mixture of these fuels.

Boilers No. 6 and 7 are rated above 100 MMBtu/hr, but both of these boilers were constructed before 1984 and have not been subsequently modified or reconstructed; therefore, these boilers are not subject to this subpart.

6.2.3 Subpart Dc – Small Industrial-Commercial-Institutional Steam Generating Unit

NSPS Subpart Dc regulates small steam generating units with maximum heat input capacities greater than 10 MMBtu/hr and less than 100 MMBtu/hr for which construction, modification, or reconstruction was commenced after June 9, 1989. Boiler No. 1, rated at 88.68 MMBtu/hr, was constructed before 1989, and has not been subsequently modified or reconstructed; therefore, it is not subject to this subpart.

The package boiler has a heat input rating of 8.4 MMBtu/h and is not subject to this subpart due to size.

6.2.4 Subpart Kb – Volatile Organic Liquid Storage Vessels

Subpart Kb applies to storage vessels with a capacity greater than 75 cubic meters (m^3) (19,813 gallons) that are used to store Volatile Organic Liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. Subpart Kb specifies that process tanks are not considered storage tanks and defines a process tank as *“a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw materials.”*

Many of the units commonly referred to as storage tanks at Memphis Cellulose are process tanks under the Subpart Kb definition.

In addition to size-based thresholds for applicability, Subpart Kb does not apply to certain tanks based on the maximum true vapor pressure of the material stored. 40 CFR 60.110b(b) states *“this subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.”*

Of the tanks at the Mill that may store VOL and are not classified as process tanks, the maximum true vapor pressures of the liquids stored are normally below 0.51 psi (3.5 kPa). The following table summarizes the non-applicability of Subpart Kb to the various non-process tanks at Memphis Cellulose. Based on the classification as process tanks or the size and vapor pressure thresholds, no tanks at Memphis Cellulose are subject to Subpart Kb.

Tank or Equipment Name	Location	Contents	Tank Capacity		NSPS Kb Applicability
			(gal)	(m^3)	
Tall Oil Tank South	43	Tall Oil	32,899	125	No, Vp <3.5 kPa ^a
Diesel Tank	27	No. 2 Diesel	500	1.8	No, Capacity less than 75 m^3
Gasoline Tank	27	Gasoline	2,000	7.5	No, Capacity less than 75 m^3
Fuel Oil Tank	22	No. 2 Diesel	100,000	379	No, Vp <3.5 kPa ^b

6.2.5 NSPS Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and NSPS Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The Headquarter Emergency Generator is a CI engine that is potentially subject to Subpart IIII. The Boiler House Emergency Generator and Boiler House Emergency Compressor are SI engines potentially subject to Subpart JJJJ. Although categorized, each of these engines was constructed prior to the applicability date of the relevant standard; therefore, these engines are not subject to NSPS.

The T&IC Generator engine and the Fire Pump Engine are subject to Subpart IIII based on the construction dates noted in the following table:

Applicability of NSPS Subparts IIII and JJJJ to Stationary Internal Combustion Engines					
Engine/Generator	Emergency Unit?	Fuel (Engine Type)	Date of Manufacture	Engine Rating	NSPS IIII/JJJJ Applicability
Headquarter Emergency Generator	Yes	Diesel (CI)	1985	322 hp (240 kW)	No – Constructed prior to 4/1/2006
Boiler House Emergency Generator	Yes	Natural Gas (SI)	1994	60 hp (45 kW)	No – Constructed prior to 7/1/2007
Boiler House Emergency Compressor	Yes	Natural Gas (SI)	1974	175 cfm	No – Constructed prior to 7/1/2007
T&IC Generator	Yes	Diesel (CI)	2014	324 hp (241 kW)	Yes – IIII
Fire Pump Engine	Yes	Diesel (CI)	2015	99 hp (74kW)	Yes – IIII

The T&IC Generator engine and the Fire Pump Engine are subject to the fuel type specifications and work practice standards identified in the following table:

Applicable 40 CFR Part 60, Subpart IIII Citation(s)	Requirement
§60.4207(b) and §1090.305	The sulfur content of the diesel fuel fired in each engine must not exceed 15 parts per million by weight (ppm _w) and either a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
§60.4209(a)	A non-resettable hour meter must be installed on each emergency engine that does not meet the standards applicable to non-emergency engines.
§60.4211(a)	Operate and maintain the CI ICE according to the manufacturer's emissions-related written instructions and may change only those emission-related settings that are permitted by the manufacturer.
§60.4211(c)	Comply with the relevant emissions standards by purchasing a certified engine and installing and configuring it according to the manufacturer's emission-related specifications.
§60.4211(f)	<ol style="list-style-type: none"> 1) There is no time limit on the use of the emergency engine in emergency situations. 2) The emergency engine may be operated for up to 100 hours per calendar year for maintenance checks and readiness testing. 3) The emergency engine may be operated for up to 50 hours per calendar year in non-emergency, non-maintenance and testing situations, but these hours count as part of the 100 hours allowed for maintenance and testing.

Memphis Cellulose currently complies with all relevant requirements of Subpart IIII for the T&IC Generator engine and the Fire Pump Engine.

6.3 National Emission Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR Part 61

None of the 7 hazardous air contaminants regulated by this part are emitted at this facility.

6.4 NESHAP - 40 CFR Part 63

6.4.1 Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines (RICE)

Memphis Cellulose is an area source of HAP emissions and operates five engines for various purposes at the Mill (See table below). All engines are subject to this rule as it applies to both new and existing sources. .

Applicability of NESHAP Subpart ZZZZ to Stationary Internal Combustion Engines					
Engine/Generator	Emergency Unit?	Fuel (Engine Type)	Date of Manufacture	Engine Rating	New or Existing
Headquarter Emergency Generator	Yes	Diesel (CI)	1985	322 hp (240 kW)	Existing
Boiler House Emergency Generator	Yes	Natural Gas (SI)	1994	60 hp (45 kW)	Existing
Boiler House Emergency Compressor	Yes	Natural Gas (SI)	1974	175 cfm	Existing
T&IC Generator	Yes	Diesel (CI)	2014	324 hp (241 kW)	New
Fire Pump Engine	Yes	Diesel (CI)	2015	99 hp (74 kW)	New

Applicable requirements for new RICE include the following:

Memphis Cellulose operates two emergency engines that are considered “new stationary RICE” under §63.6590(a)(2)(iii) since they are located at an area source and constructed after June 12, 2006. According to §63.6590(c)(1), the new stationary RICE must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines. No further requirements apply for the new emergency engines under Subpart ZZZZ.

Applicable requirements for existing RICE include the following:

§63.6603 - What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

Table 2d to Subpart ZZZZ

For each . . .	You must meet the following requirement, except during periods of startup . . .
4. Emergency stationary CI RICE and black start stationary CI RICE.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
5. Emergency stationary SI RICE; black start stationary SI RICE.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Note: Not applicable to emergency engines subject to 40 CFR Part 60, Subpart IIII (T&IC Generator and Fire Pump Engine).

§63.6640 - How do I demonstrate continuous compliance with the emission limitations and operating limitations?

- a) You must demonstrate continuous compliance with each emission limitation and operating limitation in Tables 1a and 1b (neither applicable > 500 HP only), Tables 2a and 2b (neither applicable > 500 HP only), Table 2c (applicable), and Table 2d (not applicable – area sources only) to this subpart that apply to you according to methods specified in Table 6 to this subpart.

Table 6 to Subpart ZZZZ - Continuous Compliance With Emission Limitations, Operating Limitations, Work Practices, and Management Practices

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP....	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

- f) *Requirements for emergency stationary RICE.* (1) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions....., you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1)(i) through (iii) of this section. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1)(i) through (iii) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1)(i) through (iii) of this section, the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency engines.
- (i) There is no time limit on the use of emergency stationary RICE in emergency situations.

- (ii) You may operate your emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year.
- (iii) You may operate your emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph (f)(1)(iii), as long as the power provided by the financial arrangement is limited to emergency power.

§63.6655(f)(1) - What records must I keep?

- f) If you own or operate any of the stationary RICE in paragraphs (f)(1) or (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.
 - 1. An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

6.4.2 Subpart CCCCCC – Gasoline Dispensing Facilities

This facility has a gasoline tank (2,000 gallons) with a dispensing facility with annual throughput well under 10,000 gallons.

Gasoline Dispensing Facilities applies to each Gasoline Dispensing Facility (GFD) located at an area source. Memphis Cellulose has an existing Gasoline Dispensing Facility (GFD) with monthly throughput less than 10,000 gallons and the requirements of 40 CFR 63.11116 apply. The applicability date for existing unit is January 10, 2011 as defined in 40 CFR 63.1113. Requirements for facilities with throughputs less than 10,000 gallons include the following:

- a) You must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:
 1. Minimize gasoline spills;
 2. Clean up spills as expeditiously as practicable;
 3. Cover all open gasoline containers and all gasoline storage tank fill pipes with a gasketed seal when not in use; and
 4. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
- b) You are not required to submit notifications or reports as specified in §63.11125, §63.11126, or subpart A of this part, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.
- c) You must comply with the requirements of this subpart by the applicable dates specified in §63.11113.
- d) Portable gasoline containers that meet the requirements of 40 CFR part 59, subpart F, are considered acceptable for compliance with paragraph (a)(3) of this section”.

6.4.3 Subpart JJJJJ – Area Sources: Industrial, Commercial, and Institutional Boilers

The four boilers at Memphis Cellulose are categorized but not subject to this subpart because they meet the definition of a natural gas-fired boiler under this subpart. § 63.11195 exempts “any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.”

6.5 Risk Management Plan (RMP)

Subpart B of 40 CFR Part 68 outlines requirements for risk management plans pursuant to Section 112(r) of the Clean Air Act. Applicability of the subpart is determined based on the type and quantity of chemicals stored at the facility. Memphis Cellulose evaluated the amount of Section 112(r) substances stored at the facility and determined that usage of Chlorine for their process is subject to RMP. A revised version of the plan was updated by Memphis Cellulose on May 30, 2014 and is maintained at the facility.

6.6 Greenhouse Gases (GHG) (40 CFR Parts 52, 70 and 98)

Maximum potential annual CO₂e emissions from the four natural gas-fired boilers at this facility (121.48, 121.48, 88.68 and 8.4 MM Btu/hr), as calculated using the EPA Simplified GHG Emissions Calculator (SGEC) spreadsheet, assuming 1,020 btu/ft³ natural gas and 8,760 hours per year (2,920,344,000 scf/yr), are approximately 175,429 U.S. tons (159,146 metric tonnes).

- 40 CFR Parts 52 and 70 (PSD Applicability and Title V Permitting)

The GHG Tailoring Rule sets the threshold for both Title V permitting and PSD applicability at 100,000 tons per year (tpy).

For existing PSD sources, only GHG increases of 75,000 tpy or more of total GHG, on a CO₂e basis, would need to determine the Best Available Control Technology (BACT) for their GHG emissions.

- U.S. Supreme Court Decision in *Utility Air Regulatory Group v. EPA*

On June 23, 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146). The Court said that EPA may not treat greenhouse gases as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or title V permit. The Court also said that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on greenhouse gases emissions based on the application of Best Available Control Technology.

Based on this decision, GHG permitting regulations are currently not applicable to this facility.

- 40 CFR Part 98 (Mandatory Greenhouse Gas Reporting)

Memphis Cellulose is subject to this rule because potential CO₂e emissions are greater than the 25,000 metric tonnes per year applicability threshold. Reporting is based on actual emissions.

Although subject, this is not an “applicable requirement” and will not be incorporated into the permit. Memphis Cellulose is required to submit these reports directly to the EPA.

VII. POTENTIAL to EMIT (PTE) EVALUATION

This Memphis Cellulose facility is defined under the specific source category for “Fossil-fuel boilers (or combinations thereof) totaling more than 250 million BTU per hour heat input”; therefore, the nested boiler source group is subject to the major source threshold of 100 tons per year. Potential NO_x and CO emissions from the boilers exceed 100 tons per year; therefore, this facility is subject to PSD.

Allowable NO_x emissions from this Memphis Cellulose facility are also > 250 tpy; therefore, a full PTE analysis was not performed based on allowable emissions.

VIII. FEES

The following fees are applicable to these permit actions:

No.	Permit Action	Description	Fee
1	Modification	Modification (< 10 tons)	\$ 400.00
2	Public Notice	Publication of Public Notice	\$ 250.00
		Total	\$ 650.00

APPENDIX A

Regulatory Applicability Overview Table

Memphis Cellulose LLC
Permit No. 00055-01TV
Federal Applicable Requirements Overview
October 10, 2024

CFR Part	Description	Applicable Req.	Notes
40 CFR 50.1 — 50.18	National Primary and Secondary Ambient Air Quality Standards	Yes	Contains general requirements
40 CFR 52	Approval and Promulgation on TN's State Implementation Plan (SIP)	Not Applicable (NA)	Not applicable with the exception of 52.16 and 52.21 if triggered
40 CFR 60 (Subpart A)	Standards of Performance for New Stationary Sources: General Provisions	Yes	Contains general requirements
40 CFR 60 (Subpart Db)	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	NA	Boilers No. 6 and 7 installed prior to 1984
40 CFR 60 (Subpart IIII)	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Yes	Applicable to T&IC Emergency Generator and Fire Pump Engine. Note the Headquarter Emergency Generator is categorized but not subject to this subpart due to the manufacture date of the unit.
40 CFR 60 (Subpart JJJJ)	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	NA	The Boiler House Natural Gas Compressor and Boiler House Emergency Natural Gas Generator are categorized but not subject to this subpart due to the manufacture date of the units.
40 CFR 61 (Subpart A)	National Emission Standards for Hazardous Air Pollutants: General Provisions	Yes	Contains general requirements
40 CFR 61 (Subpart M)	National Emission Standard for Asbestos	Yes	Contains general requirements for asbestos
40 CFR 63 (Subpart A)	NESHAP: General Provisions	Yes	Contains general requirements
40 CFR 63 (Subpart ZZZZ)	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Yes	Contains specific requirements applicable to all five of the emergency generator engines.
40 CFR 63 (Subpart CCCCCC)	National Emission Standards for Source Category: Gasoline Dispensing Facilities (GDF)	Yes	Applicable to GDF of < 10,000 gallons/month
40 CFR 63 (Subpart JJJJJJ)	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	NA	The four (4) boilers at this facility are all defined as gas-fired boilers under this Subpart and are therefore not subject to this Subpart.
40 CFR 68	Chemical Accident Prevention Provisions	Yes	Applicable to specific 112(R) listed chemicals
40 CFR 70	State Operating Permit Programs	Yes	Contains general requirements for Title V major source operating permits.

40 CFR 82 (Subpart A)	Protection of Stratospheric Ozone — Production and Consumption Controls	Yes	Contains general requirements
40 CFR 82 (Subpart B)	Servicing of Motor Vehicle Air Conditioners	Yes	Contains general requirements
40 CFR 82 (Subpart C)	Ban on Nonessential Products Containing Class I Substances and Ban on Nonessential Products Containing or Manufactured with Class II Substances	Yes	Contains general requirements
40 CFR 82 (Subpart D)	Federal Procurement	Yes	Contains general requirements
40 CFR 82 (Subpart E)	The Labeling of Products Using Ozone Depleting Substances	Yes	Contains general requirements
40 CFR 82 (Subpart F)	Recycling and Emissions Reduction	Yes	Contains general requirements
40 CFR 98	Mandatory Greenhouse Gas Reporting	Yes	Contains EPA reporting requirements. Although subject, this is not an “applicable requirement” and will not be incorporated into the Title V permit.
40 CFR 1090 (Subpart D) (1090.305)	USLD Standards	Yes	Contains specific applicable requirements regarding the use of diesel fuel in the emergency generator engines.

Memphis Cellulose LLC
Permit No. 00055-01TV
State and Local Applicable Requirements Overview
October 10, 2024

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
CHAPTER 1200-3-2(3-1A)(16-46)	DEFINITIONS		
1200-3-2-.01	General Definitions	Not Applicable (NA)	Defines terms used in chapter
1200-3-2-.02	Abbreviations	NA	
CHAPTER 1200-3-3(3-6)(16-49)	AMBIENT AIR QUALITY STANDARDS		
1200-3-3-.01	Primary Air Quality Standard	Yes	Contains general requirements
1200-3-3-.02	Secondary Air Quality Standard	Yes	Contains general requirements
1200-3-3-.03	Tennessee's Ambient Air Quality Standard	Yes	Contains general requirements
1200-3-3-.04	Nondegradation Standard	Yes	Contains general requirements
CHAPTER 1200-3-5(3-17)(16-83)	VISIBLE EMISSIONS		
1200-3-5-.01	General Standards	Yes	Contains specific requirements applicable to EU-1 through 4
1200-3-5-.02	Exceptions	Yes	Contains specific requirements applicable to EU-1 through 4
1200-3-5-.03	Method of Recording	Yes	Contains general requirements
1200-3-5-.04	Exemption	Yes	Contains general requirements
CHAPTER 1200-3-6(3-21)(16-79)	NON-PROCESS EMISSION STANDARDS (PM)		
1200-3-6-.01	General Non-Process Emissions	Yes	Contains general requirements
1200-3-6-.02	Non-Process Particulate Emission Standards	Yes	Requested permit application limits are more stringent than process weight rates
CHAPTER 1200-3-7(3-20)(16-78)	PROCESS EMISSION STANDARDS (PM)		
1200-3-7-.01	General Process Particulate Emission Standards	Yes	Contains general requirements
1200-3-7-.02	Choice of Particulate Emission Standards	Yes	Applicable for EU-1 and EU-3 (Processes 3.1 and 3.3). Provides the facility options to use diffusion equations for determining particulate emissions.
1200-3-7-.03	New Processes	Yes	Applicable for EU-2 and EU-3 (Processes 3.2)

1200-3-7-.04	Limiting Allowable Emissions	Yes	Applicable for EU-1, EU-2 and EU-3
CHAPTER 1200-3-9(3-5)(16-77)	CONSTRUCTION AND OPERATING PERMITS		
1200-3-9-.01	Construction Permits	Yes	Contains general requirements
1200-3-9-.02	Operating Permits	Yes	Contains general requirements
1200-3-9-.03	General Provisions	Yes	Contains general requirements
1200-3-9-.04	Exemptions	Yes	Contains general requirements
1200-3-9-.05	Appeal of Permit Application Denials and Permit Conditions	Yes	Contains general requirements
CHAPTER 1200-3-10(3-7)(16-85)	REQUIRED SAMPLING, RECORDING, AND REPORTING		
1200-3-10-.01	Sampling Required to Establish Air Contaminant Emissions Levels	Yes	Contains general requirements
1200-3-10-.02	Monitoring of Source Emissions, Recording and Reporting of Same are Required	Yes	Contains general requirements
1200-3-10-.03	Repealed	NA	
1200-3-10-.04	Sampling, Recording and Reporting Required for Major Stationary Sources	Yes	Contains general requirements
CHAPTER 1200-3-11(3-25)(16-81)	HAZARDOUS AIR CONTAMINANTS		
1200-3-11-.02	Asbestos	Yes	Contains general requirements for demolition and renovation
CHAPTER 1200-3-12(3-8)(16-86)	METHODS OF SAMPLING AND ANALYSIS		
1200-3-12.01	General	Yes	Contains general requirements
1200-3-12-.02	Procedures for Ambient Air Sampling and Analysis	Yes	Contains general requirements
1200-3-12-.03	Source Sampling and Analysis	Yes	Contains general requirements
CHAPTER 1200-3-14(3-24)(16-82)	SULFUR OXIDE EMISSIONS		
1200-3-14-.01	General Provisions	Yes	Contains general requirements
1200-3-14.02	Non-Process Emission Standards	Yes	Contains specific requirements applicable to EU-4
1200-3-14-.03	Process Emission Standards	Yes	Contains general requirements
CHAPTER 1200-3-16(3-15)(16-76)	NEW SOURCE PERFORMANCE STANDARDS		
CHAPTER 1200-3-18(3-22)(16-80)	VOLATILE ORGANIC COMPOUNDS		

CHAPTER 1200-3-20(3-9)(16-87)	LIMITS ON EMISSIONS DUE TO MALFUNCTIONS, STARTUPS, AND SHUTDOWNS		
1200-3-20-.01	Purpose	Yes	Contains general requirements
1200-3-20-.02	Reasonable Measures Required	Yes	Contains general requirements
1200-3-20-.03	Notice Required When Malfunction Occurs	Yes	Contains general requirements
1200-3-20-.04	Logs and Reports	Yes	Contains general requirements
1200-3-20-.05	Copies of Logs Required	Yes	Contains general requirements
1200-3-20-.06	Report Required Upon the Issuance of a Notice of Violation	Yes	Contains general requirements
1200-3-20-.07	Special Reports Required	Yes	Contains general requirements
1200-3-20-.08	Rights Reserved	Yes	Contains general requirements
1200-3-20-.09	Additional Sources Covered	Yes	Contains general requirements
CHAPTER 1200-3-21(3-28)(16-90)	GENERAL ALTERNATE EMISSION STANDARDS		
CHAPTER 1200-3-22(3-29)(16-91)	LEAD EMISSION STANDARDS		
CHAPTER 1200-3-24(3-40)(16-52)	GOOD ENGINEERING PRACTICE STACK HEIGHT REGULATIONS		
1200-3-24-.01	General Provisions	Yes	Contains general requirements
1200-3-24-.02	Definitions	NA	Defines terms used in chapter
1200-3-24-.03	Good Engineering Practice Stack Height Standards	Yes	Contains general requirements
1200-3-24-.04	Specific Emission Standards	Yes	Contains general requirements
CHAPTER 1200-3-25(3-39)(16-91.1)	STANDARDS FOR INFECTIOUS WASTE INCINERATORS		
CHAPTER 1200-3-30(3-36)(16-91.2)	ACIDIC PRECIPITATION CONTROL		
CHAPTER 1200-3-31(3-37)(16-91.3)	CASE BY CASE DETERMINATIONS OF HAZARDOUS AIR POLLUTANT CONTROL REQUIREMENTS		
1200-3-31-.01	General Provisions - Reserved	Yes	Contains general requirements
1200-3-31-.02	Definitions	NA	Defines terms used in chapter
1200-3-31-.03	Intent of the Board for Case by Case Determinations of Hazardous Air Pollutant Control Requirements	Yes	Contains general requirements
1200-3-31-.04	Standard for Existing Sources	Yes	Contains general requirements
1200-3-31-.05	Standard for New Sources	Yes	Contains general requirements
1200-3-31-.06	Opportunity for Early Reductions Schedule	Yes	Contains general requirements
1200-3-31-.07	Residual Risk and Revisions to MACT	Yes	Contains general requirements

CHAPTER 1200-3-32(3-38)(16-91.4)	PREVENTION OF ACCIDENTAL RELEASES		
1200-3-32-.01	Purpose and Intent	Yes	Specific process applicability to 112(r) listed chemicals
1200-3-32-.02	Definitions	Yes	Specific process applicability to 112(r) listed chemicals
1200-3-32-.03	Duty to File an Accidental Release Plan and Authority of the Technical Secretary to Request Information	Yes	Specific process applicability to 112(r) listed chemicals
OTHER (LOCAL ONLY)			
(3-3)(16-57)(96.99)	Penalties - Misdemeanor, Civil, and Noncompliance	Yes	Contains general requirements
(3-4)(16-59)(96.07)	Enforcement - Emergency Powers of Health Officer	Yes	Contains general requirements
(3-10)(16-58)(96.06)	Enforcement - Variances	Yes	Contains general requirements
(3-11)(16-51)(96.04)	Severability	Yes	Contains general requirements
(3-12)(16-48)(96.01)	Words, Phrases Substituted in State Regulations Adopted by Reference	Yes	Contains general requirements
(3-13)(16-61)(96.25)	Right Of Entry	Yes	Contains general requirements
(3-16)(16-50)(96.03)	Open Burning	Yes	Contains general requirements
(3-18)(16-89)(96.10)	Fugitive Dust	Yes	Contains general requirements
(3-19)(16-88)(96.09)	Nuisance Abatement	Yes	Contains general requirements
(3-35)(16-71)(96.08)	Created; Membership; Term of Office; Jurisdiction; Hearings; Appeals	Yes	Contains general requirements
(14.5-27-28, 30-32, 34-36)(16-93 through 100)(96.26-96.33)	Permits and Fees (Various)	Yes	Contains general requirements
(14.5-35)(16-101)(96.99)	Penalty Provisions	Yes	Contains general requirements
(14.5-36)(16-102)(96.33)	Annual Review of Fee Structure and Financial Need	Yes	Contains general requirements

APPENDIX B

Emission Summary Table

DATE	SOURCE #		FACILITY NAME	FACILITY CLASSIFICATION			LAST INSPECTION	RECORD NO.	RECORD DATE			
02/08/24	00055		Memphis Cellulose, LLC	MAJOR	MINOR	SYNTHETIC MINOR	01/24/24					
				X				5810	12/11/2023			

ALLOWABLE PERMITTED POLLUTANT (tons per 12-month rolling period)

PERMIT #	ISSUED	REVISED	EXPIRES	PM/PM ₁₀	SO ₂	VOC	CO	NO _x	PB	Dioxin/furans Total	HCL	Cd	Hg	CL	HAP	GHG's	Check if Applicable			
																	MACT (40 CFR Part 63)	NESHAP (40 CFR Part 63)	NSPS (40 CFR Part 63)	PSD or MSR
00055-01TV	12/XX/2024		12/XX/2029						Not Applicable (NA)	NA	NA	NA	NA	NA	<9.9 (Individual HAP) <24.9 (Combined HAPs)	174,753	Yes	No	Yes	No
Emission Group A (Purification)																				
Emission Unit 1 - Physical Cleaning				32.70																
Emission Unit 2 - Chemical Cleaning						11.15								3.85						
Emission Group B (Finishing)																				
Emission Unit 3 - Cellulose Production				4.60		4.14														
Emission Group C - Power Plant																				
Emission Unit 4 - Boilers				11.10	0.88	8.03	122.70	333.81	0.00											
Emission Unit 5 - Emergency Engines				0.30	0.38	1.25	2.10	14.57												
TOTAL TONS:				48.70	1.26	24.57	124.80	348.38	0.00	0.00	0.00	0.00	0.00	<9.9/<24.9		174,753				
Classification for each pollutant should be added here based on number of tons: A = Major SM = Synthetic Minor B = Minor				B	B	SM	A	A							B					
CHECK IF NONATTAINMENT STATUS APPLIES:																				
																	Subparts:	A, ZZZZ, CCCCCC	A, III	
																	Pollutant:	HAP	PM, SO ₂ , NO _x	

APPENDIX C

Public Comments and Responses

Comments

**SOUTHERN
ENVIRONMENTAL
LAW
CENTER**

1033 Demonbreun Street, Suite 205
Nashville, TN 37203

Telephone 615-921-9470
Facsimile 615-921-8011

April 10, 2024

Via Electronic Mail: Wasim.Khokhar@shelbycountyttn.gov

Wasim Khokar, Technical Manager
Shelby County Health Department
Air Pollution Control Division
1826 Sycamore View Road
Memphis, TN 38134

RE: Public Comment on Draft Title V Permit No. 00055-01TV for Memphis Cellulose

Dear Mr. Khokar:

On behalf of Memphis Community Against Pollution, the Chickasaw Group of the Tennessee Chapter of the Sierra Club, the Tennessee Chapter of the Sierra Club, Climate Reality Project Memphis Chapter, and First Baptist Church-Broad, the Southern Environmental Law Center submits these public comments on the draft Title V renewal permit No. 00055-01TV for Memphis Cellulose out for notice and comment by Shelby County Health Department (SCHD). The facility is a cotton pulp mill located at 1001 Tillman Ave., Memphis, Tennessee.¹

This major air pollution source is located in the Binghamton neighborhood of Memphis. Binghamton, once independent, has long been integrated and has worked through segregation, population flight and poverty due to loss of industry.² Notably, this facility is a major source of NOx. NOx is a precursor for ozone, and the Memphis Metropolitan Statistical Area (MSA) was recently designated a maintenance area for ozone.³ The ozone levels in Shelby County are at risk of violating the ozone 8-hour NAAQS. The high levels of ozone can worsen asthma and other respiratory problems for Memphians.⁴

The facility is regulated as an area source for hazardous air pollutants and as a major source for criteria pollutants. In this application, among other administrative changes, the facility is updating the emissions because they are no longer using No. 2 fuel oil as a backup fuel source. Our comments point out a lack of enforceability and lack of adequate monitoring to assure compliance. Moreover, the permit application evaluation contains information that is not correct.

¹ The Draft permit lists the facility address as 1001 Tillman Ave, Memphis, Tennessee 38108. The Memphis Chamber of Commerce lists the address as 1001 Tillman St, Memphis, TN 38112. *GP Cellulose*, GREATER MEMPHIS CHAMBER, <https://members.memphischamber.com/list/member/gp-cellulose-1385> (last visited Apr. 9, 2024). The Tillman Ave. address does not seem to exist on mapping websites like Google maps.

² *Our Story*, Binghamton Development Corp., <https://www.bdcmemphis.org/our-story> (last visited Apr. 8, 2024).

³ *Counties Designated "Nonattainment" or "Maintenance"*, ENV'T PROT. AGENCY, (Mar. 31, 2024), <https://www3.epa.gov/airquality/greenbook/map/mapnmpoll.pdf>; *Green Book National Area and County-Level Multi-Pollutant Information*, ENV'T PROT. AGENCY, (Mar. 27, 2024), <https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information>.

⁴ *FAQ's Health and Ozone*, SHELBY CNTY. TENN., <https://shelbycountyttn.gov/FAQ.aspx?QID=243> (last visited Apr. 8, 2024).

Charlottesville Chapel Hill Atlanta Asheville Birmingham Charleston Nashville Richmond Washington, DC

These issues must be addressed or else the public will not have sufficient information to be able to properly enforce the permit as intended.

I. The Draft Permit Lacks Adequate Monitoring, Recordkeeping, and Reporting Requirements.

The facility operates four boilers, including two boilers with heat inputs that exceed 120 MMBtu/hr. These boilers are subject to both 12-month rolling emission limits, including up to 333.81 tons/year (tpy) of NO_x, as well as hourly emission standards. The draft permit, however, does not contain any periodic monitoring to measure actual emission rates from these boilers.

Title V permits must include “periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance with the permit.”⁵ When underlying applicable requirements do not contain adequate monitoring to assure compliance, Title V permits must include supplemental periodic monitoring.⁶ Moreover, when a facility or particular unit does not use continuous emissions monitoring, Title V permits must include periodic monitoring requirements “that provide sufficiently reliable and timely information for determining compliance.”⁷ We note that EPA has objected to Title V permits due to the lack of adequate periodic stack testing requirements.⁸

The only monitoring provisions that apply to these boilers are recordkeeping requirements and opacity monitoring. Nothing in the permit requires the facility to conduct monitoring that actually assures real-world compliance with these emission limits,⁹ and the draft permit is therefore deficient.

Critically, the larger boilers at the facility would be subject to New Source Performance Standard (NSPS) Subpart Db, except that these boilers are grandfathered because they were constructed before 1984 and apparently have not been modified since that time.¹⁰ We note that similar boilers that are subject to Subpart Db are required to conduct periodic compliance tests and/or utilize Continuous Emissions Monitoring Systems (CEMS) for NO_x, PM, and SO₂, meaning that EPA has determined that these types of boilers need more than just recordkeeping to assure compliance with emission limits.

Given that the Memphis MSA has been designated as a maintenance area for ozone (i.e., that the MSA is at risk of violating the ozone NAAQS), SCHD should require the use of CEMS for the ozone precursor NO_x. At a minimum, however, in order to comply with Title V’s periodic monitoring mandates, SCHD must at least implement periodic stack testing (i.e., at least

⁵ 40 C.F.R. § 70.6(a)(3)(i)(B) (2023).

⁶ *Id.*

⁷ 42 U.S.C. § 7661c(b).

⁸ EPA has objected to Title V permit conditions on the basis that once-per-permit-term testing requirements do not constitute periodic monitoring sufficient to comply with 40 C.F.R. § 70.6(a)(3)(B). *See In re Consolidated Edison Co. of NY, Inc. Ravenswood Steam Plant*, Order on Petition No. II-2001-08, at 21 (EPA Sept. 30, 2003), <https://perma.cc/3Y3H-33HY>.

⁹ *Supra*, note 7.

¹⁰ Title V Operating Permit Renewal and Modification Application Evaluation and Review, Memphis Cellulose, LLC Permit No. 00055-01TV, Shelby Cnty. Health Dep’t at 10–11 (Feb. 2024) [hereinafter “draft Evaluation”].

annually) for NO_x, PM, SO₂, and potentially other pollutants. We note finally that these boilers are at least 40 years old, meaning comprehensive stack testing is especially important to assure these boilers are capable of complying with the underlying emission limits.

II. The Draft Permit's synthetic minor HAP limits are not enforceable as a practical matter.

Condition 1 of the draft permit limits individual and total HAP emissions to less than 9.9 tpy and 24.9 tpy for major-source MACT avoidance. Condition 5, meanwhile, requires the company to submit a semiannual report to SCHD that includes monthly and 12-month rolling HAP emission records. The permit, however, fails to include any details on how the facility shall calculate these HAP emissions. For instance, if the facility is to use emission factors and equations, neither are listed as enforceable conditions in the draft permit.

Without further requirements pertaining to how the facility shall monitor HAP emissions and compliance with the MACT-avoidance limits, these limits are unenforceable as a practical matter. Specifically, as EPA has consistently explained, a limit intended to restrict PTE “can be relied upon . . . only if it is legally and practicably enforceable.”¹¹ EPA has further explained practical enforceability as such:

In order to be considered practically enforceable, an emissions limit must be accompanied by terms and conditions that require a source to effectively constrain its operations so as to not exceed the relevant emissions threshold. These terms and conditions must also be sufficient to enable regulators and citizens to determine whether the limit has been exceeded and, if so, to take appropriate enforcement action.¹²

Without the emission factors, emission equations, or even an identification of the monitoring method in the permit, it is impossible for citizens to “determine whether the limit has been exceeded.”¹³

Moreover, and perhaps even more fundamentally, the draft permit does not propose any emissions testing requirements to verify the underlying emission factors and assumptions. We note that Memphis Cellulose is assuming that its cotton-based pulping operation emits vastly lower rates of HAPs as compared to testing conducted at wood-based pulping operations. In particular, Memphis Cellulose states in its application that:¹⁴

¹¹ *In re Kentucky Syngas, LLC*, Order on Petition No. IV-2010-9, at 30 (E.P.A. June 22, 2013), https://www.epa.gov/sites/production/files/2015-08/documents/kentuckysyngas_response2010.pdf.

¹² *In re Orange Recycling & Ethanol Prod. Facility, Pencor-Masada Oxydol, Inc.*, Order on Petition No. II-2001-05, at 7 (E.P.A. Apr. 8, 2002), https://www.epa.gov/sites/production/files/2015-08/documents/masada-2_decision2001.pdf; see also *In re Piedmont Green Power, LLC*, Order on Petition No. IV-2015-2 at 14 (Dec. 13, 2016), https://www.epa.gov/sites/default/files/2016-12/documents/piedmont_response2015.pdf.

¹³ *In re Orange Recycling* *supra*, note 12.

¹⁴ Memphis Cellulose, LLC, Title V Renewal Application, at 3-2 (Dec. 11, 2023) [hereinafter “Renewal Application”]. The application also specifically cites to NCASI emission factors for HAPs from the Chemical Cleaning units in Appendix F at 5-6.

A correction factor of 10% is applied to the NCASI emission factors, based on a 1-to-20 cotton-to-wood lignin ratio and a safety factor of two. This results in decreasing the emission factors estimated in the list of NCASI guidance documents mentioned above by 90% to make them appropriate for the processes at Memphis Cellulose.

To our knowledge, no stack testing has ever been conducted to confirm this substantial assumption regarding HAP emissions, or, at minimum, Memphis Cellulose does not cite to any such testing. Moreover, when selecting emission factors from the various NCASI documents, Memphis Cellulose states in several instances that it selected “median” or “mean” values,¹⁵ which is generally not appropriate for calculating PTE, since PTE is meant to be a “worst-case” emissions calculation, not an average emissions calculation.¹⁶

Given the foregoing, SCHD must require stack testing for the significant HAPs emitted by the facility; at minimum, this should include chlorine, methanol, formaldehyde, and hexane, as these comprise a significant portion of the facility’s HAP emissions. This testing is required both to ensure that the draft permit’s synthetic minor limits are enforceable and that the Title V permit assures compliance with these same limits. Finally, at minimum, SCHD should require that Memphis Cellulose calculate its PTE using the maximum NCASI emission factors rather than median, mean, or average factors, unless the facility is required to conduct source-specific testing.

III. SCHD’s Application Evaluation and Review Contains Misleading or Inaccurate Information.

Title V permits must be accompanied by permit reviews, typically known as a “Statement of Basis,” that satisfy Part 70 requirements.¹⁷ In particular, this statement of basis must set forth “the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions).”¹⁸ SCHD’s “Application Evaluation and Review” (hereafter, the “draft Evaluation”), which presumably serves as the Statement of Basis for the draft permit, is misleading or defective on several counts.

¹⁵ Renewal Application, Appendix F, at 5-6.

¹⁶ As courts have explained, “PTE is not to be confused with actual emissions, which may be significantly lower.” *Voigt v. Coyote Creek Mining Co., LLC*, 329 F. Supp. 3d 735, 772 (D.N.D. July 3, 2018). Stated more plainly, PTE is a “worst case emissions calculation.” *In re Peabody Western Coal Co.*, 12 E.A.D. 22, at *11 (EAB February 18, 2005) (quoting RTC from EPA Region IX). EPA has further explained that emission factors that are produced as an average or median of multiple tests, such as many AP-42 emission factors, are not to be used to calculate PTE. As EPA has explained, “Because [AP-42] emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.” *Emission Factors*, ENV’T PROT. AGENCY, (available at <https://www3.epa.gov/ttnchie1/ap42/c00s00.pdf>)

¹⁷ 40 C.F.R. § 70.7(a)(5).

¹⁸ *Id.*

First, the draft Evaluation misstates that the facility is subject to the 250 tpy PSD threshold that is generally applicable to all sources rather than the 100 tpy threshold required for a specific list of 28 source categories (i.e. the “list of 28” sources).¹⁹ Memphis Cellulose’s air permit application correctly identifies that it is instead subject to the 100 tpy PSD threshold because its boilers jointly have a heat input capacity that exceeds 250 MMBtu/hr.²⁰ These boilers and heat inputs have been consistent since at least 2012, meaning the facility has been subject to the 100 tpy threshold since at least that time. Notably, this means the facility must also include fugitive emissions when assessing PSD applicability.²¹ To the extent SCHD has mistakenly classified the facility as being subject to the 250 tpy threshold, SCHD must assess whether any past modifications would have triggered major source PSD in light of the 100 tpy threshold and the requirement to include fugitive emissions.

Second, the draft Evaluation also claims that this facility does not qualify as a kraft pulp mill for purposes of the PSD threshold because the facility processes cotton rather than wood. While this issue is currently moot since the size of the boilers also subjects the facility to the 100 tpy threshold, we cannot find any support for the specific claim that ‘kraft pulp mills’ under PSD regulations include only wood pulp mills. We note that this facility is classified under the same SIC and NAICS codes as wood kraft pulp mills,²² and Memphis Cellulose cites to NCASI emission factors from wood kraft pulp mills in numerous instances.²³ SCHD should therefore identify why it believes only wood kraft mills meet the definition of ‘kraft pulp mills’ under the PSD regulations.

Finally, the draft Evaluation is also deficient because it fails to explain why SCHD has not implemented CEMS and/or periodic stack testing requirements for the boilers. To comply with the statement of basis requirement in 40 C.F.R. § 70.7(a)(5), a permitting authority must ensure that the rationale for selected monitoring is “clear and documented in the permit record.”²⁴ The draft Evaluation is totally silent on why the recordkeeping—and lack of real-world emissions monitoring—is sufficient to assure compliance with the draft permit’s emission limits.

IV. The Draft Permit’s Limits for Emissions Unit 1 are Too Vague to be Enforceable as a Practical Matter.

In Emission Group A, condition 4 requires that all control devices in Emission Unit 1 are operated and maintained in accordance with the manufacturer’s recommendations during operation.²⁵ The permit fails to include any information on the manufacturer’s recommendations.

¹⁹ Draft Evaluation at 10. For the list of 28 source categories, see 40 C.F.R. § 52.21(b)(1)(i)(a).

²⁰ Renewal Application at 4-1. See also

²¹ 40 C.F.R. 52.21(b)(1)(iii)(u).

²² SIC Code 2611, NAICS Code 322110.

²³ See, e.g., Renewal Application at 3-1 (citing NCASI Emission Factor memos for the pulp and paper industry generally).

²⁴ *In re United States Steel Corporation—Granite City Works*, Order on Petition V-2009-03 (Jan. 11, 2011), at 7.

²⁵ See Memphis Cellulose Draft Permit 00055-01TV at 9. The condition number in the table does not correspond to the text condition, due to a misnumbering. In Table 3, the condition we refer to is condition 4; in the text the same condition is numbered as condition 5.

In fact, there is no information on the manufacturers or models for the pollution control devices included in the permit.

Title V requires that permit conditions be practically enforceable, this is true in the PTE context as well as other contexts. As stated previously “terms and conditions must also be sufficient to enable regulators and *citizens* to determine whether the limit has been exceeded.”²⁶ Without information on what maintenance and operation is recommended included in the permit, the permit is not enforceable. While the regulators at SCHD may know what the manufacturer’s recommendations are without inclusion in the permit, these emissions limits are not practically enforceable by citizens.

These maintenance recommendations must be included as a part of the permit; at the very least the make and model of the pollution control devices must be included in the permit. Without these additions, citizens cannot take appropriate enforcement action.

V. The Draft Permit Must Include Further Testing Requirements to Ensure Emissions Limits Are Met for Emissions Unit 3.

Condition 1 for Emissions Unit 3 limits the throughput of cotton linter pulp.²⁷ The draft permit limits the throughput to 120,000 tons per 12-month rolling period for air-dried cotton linter pulp. The permit goes on to clarify that an air-dried ton contains 10% moisture. There are, however, no methods to guarantee that the cotton is dried to 10% moisture content. In order to ensure that the permit limit is not exceeded, this limit must also require that the air-dried pulp is tested to ensure its moisture content is 10% at minimum.

Without testing for moisture content, the actual throughput may be greater than the limit due to lower moisture content. On this scale, even a moisture content of 9% could mean an excess throughput of 1,200 tons over the 12-month rolling period. Inclusion of regular moisture testing can ensure that the throughput is actually meeting the emissions limit.

VI. SCHD Cannot Restrict Public Comments on Title V Permits.

Commenters recently learned that SCHD intends to restrict public comments on air permits, or at least minor SIP permits, to Shelby County residents, and that the department imposes additional requirements like including the home address of all commenters.²⁸ While we believe these restrictions are not lawful in the context of minor source permits and also not reasonable given the that the Department claims to be “committed to creating cleaner air for everyone by righting historic wrongs and integrating environmental justice into all programs, policies and activities,”²⁹

²⁶ *In re Orange Recycling & Ethanol Prod. Facility, Pencor-Madada Onxynal*, Order at 7.

²⁷ Draft Permit at 17.

²⁸ Email from Wasim Khokhar, Technical Manager, Shelby Cnty. Health Dep’t., to Sami Harrell, S. Env’t L. Ctr. (Apr. 2, 2024). We note that we cannot find any authority for these types of residency or address requirements in either Memphis City, Shelby County, or Tennessee law. These requirements are also not listed in SCHD’s public notices.

²⁹ Shelby Cnty. Health Dep’t., Monthly E-Newsletter, “Shelby County Celebrates Clean Air Month” (May 2023) (Emphasis added), <https://www.shelbytnhealth.com/CivicSend/ViewMessage/message/201088>.

any such restrictions absolutely cannot be applied to Title V permits. Public notice and comment requirements for Title V permits are governed by 40 C.F.R. § 70.7(h), which requires consideration of and a response to “all significant comments.”³⁰

VII. SCHD Should Incorporate Cumulative Impacts Analysis into Its Air Permitting Analysis.

In a May 2023 newsletter, the Department pledged their “commit[ment] to creating cleaner air for everyone by righting historic wrongs and integrating environmental justice into all programs, policies and activities.”³¹ Cumulative impacts analysis has been held out as a powerful tool to correct environmental injustice. The EPA’s guidance, *Legal Tools to Advance Environmental Justice*, points out that cumulative impacts have been a concern of environmental justice communities for decades.³² SCHD should incorporate cumulative impact analysis into their permitting decisions to protect Memphians.

Some local permitting authorities have opted to incorporate cumulative impacts analysis into their decisions. Massachusetts recently required its permitting authority to consider cumulative impacts in their analysis of air quality permits.³³ This is aligned with EPA’s recent guidance on how to incorporate cumulative impact analysis into all permitting decisions.³⁴ When discussing EPA’s ability to reopen and examine Title V permits, the guidance states “EPA may consider cumulative impacts to help prioritize and decide which among the thousands of Title V operating permits the Agency will scrutinize to ensure that they are consistent with the requirements of the CAA.”³⁵ Shelby County can avoid this fate by incorporating cumulative impact analysis into the initial stage of permitting.

The Binghampton community is subject to emissions from multiple pollution sources, such that Memphis Cellulose adds to the cumulative impacts in the community. EPA’s EJ screen shows that particulate matter in a 3-mile ring around the facility is in the 90th percentile in the state.³⁶ The same 3-mile ring has ozone levels in the top 98th percentile in the state.³⁷ These high levels of pollution have a clear effect on the community’s health, in the ring around the facility asthma rates are in the 78th percentile statewide.³⁸ Closer to the facility the asthma rates are even higher,

³⁰ 40 C.F.R. § 70.7(h)(5) (Emphasis added).

³¹ Monthly E-Newsletter, *supra* note 29.

³² See Env’t Prot. Agency, EPA Legal Tools To Advance Environmental Justice at 6 (May 2022), <https://www.epa.gov/ogc/epa-legal-tools-advance-environmental-justice>.

³³ Press Release, Mass. Dept. of Env’t Prot., Massachusetts Becomes First State to Require Analysis of Cumulative Impacts for Air Quality Permits near Environmental Justice Populations (Mar. 28, 2024) (available at <https://www.mass.gov/news/massachusetts-becomes-first-state-to-require-analysis-of-cumulative-impacts-for-air-quality-permits-near-environmental-justice-populations>).

³⁴ See Env’t Prot. Agency, EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum (Jan. 2023), <https://www.epa.gov/system/files/documents/2022-12/bh508-Cumulative%20Impacts%20Addendum%20Final%202022-11-28.pdf>.

³⁵ *Id.*

³⁶ Attachment A, Env’t Prot. Agency, *3 Mile Ring Centered at Memphis Cellulose*, EJ SCREEN COMMUNITY REPORT 3 (created Apr. 9, 2024); *supra* note 1.

³⁷ *Id.* at 3.

³⁸ *Id.* at 4.

the census tract containing the facility and all neighboring census tracts have asthma rates in the top 95th percentile nationally.³⁹ According to EPA guidance, non-pollutant stressors also contribute to cumulative impacts and include “indicators of sensitive populations (such as incidence of asthma . . . and socioeconomic factors.”⁴⁰ Memphis Cellulose is one of many contributors to the health impacts on Shelby County residents. In order to facilitate the Department’s commitment to environmental justice, the impacts of this facility must be considered cumulatively.

Conclusion

We appreciate the opportunity to provide public comment on Memphis Cellulose’ Title V permit renewal; as discussed above, however, the draft permit does not contain adequate monitoring, recordkeeping, and reporting requirements to assure compliance with key emission limits. SCHD must address these and the other deficiencies described above and must revise the draft permit accordingly. We ask that SCHD inform the undersigned of any updates regarding this permit.

Respectfully submitted,

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³⁹ Env’t Prot. Agency, EJ Screen (Version 2.2) (last visited Apr. 9, 2024), <https://ejscreen.epa.gov/mapper/> (using the Health Disparities Indicator for Toxic Releases to Air surrounding the Memphis Cellulose facility).

⁴⁰ Env’t Prot. Agency, EPA Legal Tools to Advance Environmental Justice at 6 (May 2022), <https://www.epa.gov/ogc/epa-legal-tools-advance-environmental-justice>.

**TABLE OF ATTACHMENTS TO MEMPHIS COMMUNITY AGAINST POLLUTION'S
APR. 10, 2024 PUBLIC COMMENTS ON TITLE V PERMIT APPLICATION FOR
MEMPHIS CELLULOSE, LLC**

**Attachment A, Env't Prot. Agency, 3 Mile Ring Centered at Memphis Cellulose, EJ SCREEN
COMMUNITY REPORT** (created Apr. 9, 2024).

Attachment A



EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Memphis, TN

3 miles Ring Centered at 35.156933,-89.962020

Population: 91,277

Area in square miles: 28.27

A3 Landscape



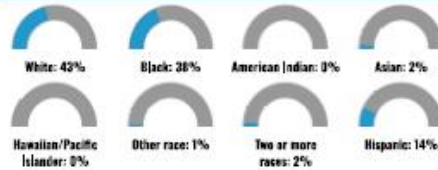
April 9, 2024
Data by Esri and OpenStreetMap contributors

Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021
EPA/2024/001

COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE



LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	85%
Spanish	12%
Vietnamese	1%
Arabic	1%
Other and Unspecified	1%
Total Non-English	15%

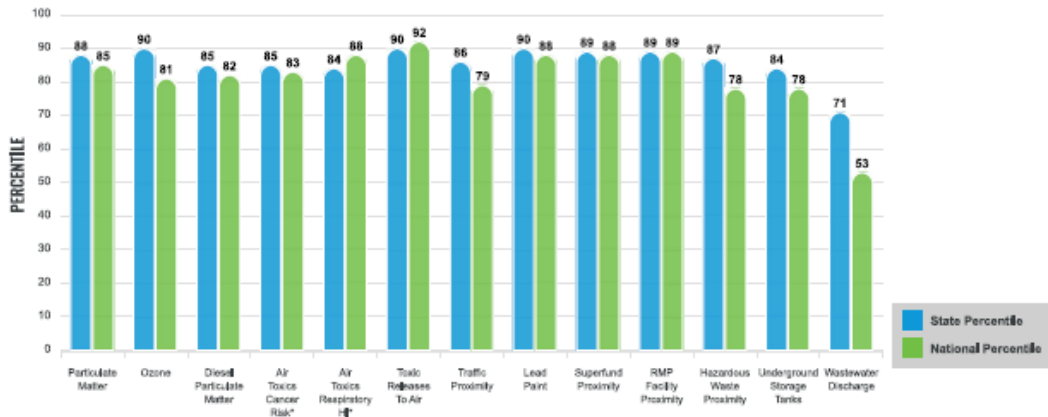
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

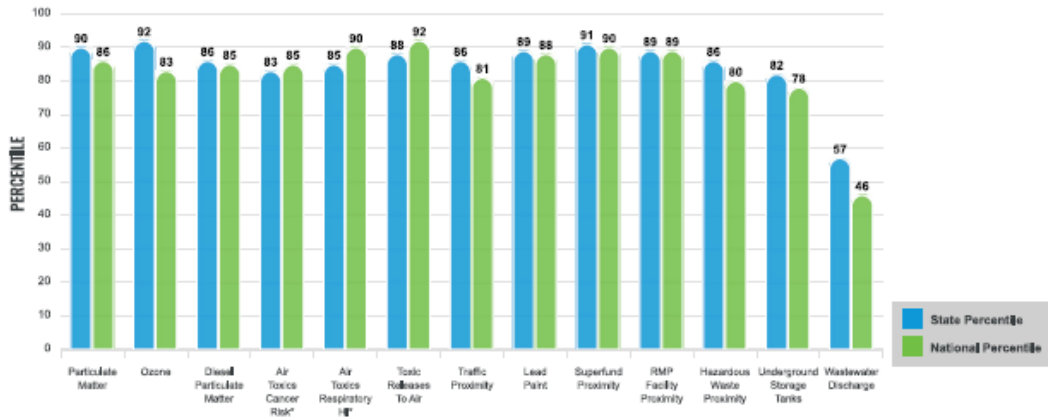
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 3 miles Ring Centered at 35,156933,-89.962020

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter ($\mu\text{g}/\text{m}^3$)	9.03	7.95	90	8.08	74
Ozone (ppb)	63.1	60	98	61.6	64
Diesel Particulate Matter ($\mu\text{g}/\text{m}^3$)	0.328	0.228	79	0.261	73
Air Toxics Cancer Risk* (lifetime risk per million)	30	29	15	25	52
Air Toxics Respiratory HI*	0.41	0.36	47	0.31	70
Toxic Releases to Air	13,000	5,300	90	4,600	94
Traffic Proximity (daily traffic count/distance to road)	210	87	89	210	75
Lead Paint (% Pre-1960 Housing)	0.67	0.21	94	0.3	84
Superfund Proximity (site count/km distance)	0.33	0.078	96	0.13	92
RMP Facility Proximity (facility count/km distance)	1.3	0.35	93	0.43	92
Hazardous Waste Proximity (facility count/km distance)	1.2	0.7	81	1.9	64
Underground Storage Tanks (count/km ²)	3.2	1.3	85	3.9	68
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0005	0.029	64	22	42
SOCIOECONOMIC INDICATORS					
Demographic Index	52%	32%	83	35%	76
Supplemental Demographic Index	20%	15%	75	14%	77
People of Color	57%	28%	82	39%	70
Low Income	49%	35%	74	31%	79
Unemployment Rate	7%	6%	70	6%	70
Limited English Speaking Households	3%	2%	84	5%	66
Less Than High School Education	15%	12%	66	12%	71
Under Age 5	8%	6%	73	6%	72
Over Age 64	15%	17%	42	17%	46
Low Life Expectancy	22%	22%	46	20%	75

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/air-toxics-data-update>

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	3
Water Dischargers	84
Air Pollution	20
Brownfields	3
Toxic Release Inventory	22

Other community features within defined area:

Schools	36
Hospitals	2
Places of Worship	213

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for 3 miles Ring Centered at 35.156933,-89.962020

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	22%	22%	46	20%	75
Heart Disease	7	7	45	6,1	67
Asthma	11,6	10,8	78	10	86
Cancer	5,5	6,4	24	6,1	35
Persons with Disabilities	13,9%	16,1%	39	13,4%	59

CLIMATE INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	6%	11%	33	12%	49
Wildfire Risk	0%	3%	0	14%	0

CRITICAL SERVICE GAPS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	27%	18%	78	14%	85
Lack of Health Insurance	15%	11%	81	9%	85
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Report for 3 miles Ring Centered at 35.156933,-89.962020

SCHD Responses



LEE HARRIS
MAYOR

SHELBY COUNTY HEALTH DEPARTMENT



Public Health
Prevent. Promote. Protect.
Shelby County Health Department
MICHELLE A. TAYLOR, MD DRPH, MPA
HEALTH DIRECTOR & OFFICER

January 30, 2025

Via Electronic Mail: sharrell@selctn.org

Ms. Sami Harrell, Associate Attorney
Southern Environmental Law Center
1033 Demonbreun Street, Suite 205
Nashville, Tennessee 37203

RE: Response to Public Comments on the Draft Renewal and Modification of Memphis Cellulose LLC Title V Operating Permit No. 00050-01TV

Dear Ms. Harrell:

The Shelby County Health Department, Pollution Control Section (the Department) would like to thank you for the comments provided by the Southern Environmental Law Center (SELC) regarding the Draft Renewal and Modification of Memphis Cellulose LLC Title V Operating Permit No. 00055-01TV in a correspondence received by the Department on April 10, 2024.

Following review of these comments, the Department has made several revisions to the draft permit prior to submitting it to the United States Environmental Protection Agency (USEPA), Region 4, as a proposed permit. Responses to each SELC comment and permit revisions are discussed below and a copy of the proposed permit to be sent to USEPA concurrently with this submittal is attached.

Facility address correction

The Department concurs with SELC that the street address on the Memphis Cellulose LLC permit is in error. The Department has corrected the address within the permit and permit application evaluation (PAE) document as follows:

Memphis Cellulose LLC
1001 Tillman Street
Memphis, Tennessee 38112

Comment I Summary: *"The Draft Permit Lacks Adequate Monitoring, Recordkeeping, and Reporting requirements"*

This comment refers to lack of periodic monitoring to measure actual emission rates from non-NSPS natural gas-fired boilers No. 1 (88.68 MMBtu/hr), No. 6 (121.48 MMBtu/hr), No. 7 (121.48 MMBtu/hr) and the Package Boiler (8.4 MMBtu/hr). SELC requested utilization of Continuous Emissions Monitoring Systems (CEMS) or periodic compliance tests (annual) for Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), and Particulate Matter (PM).

SCHD Response

The Department notes that Boilers No. 1, 6 and 7 at Memphis Cellulose LLC (the facility) are grandfathered out of New Source Performance Standard (NSPS) 40 CFR Part 60, Subpart Db. Had this NSPS been applicable, these boilers would not have been required to initially performance test for any pollutant other than NO_x or be required to operate Continuous Emissions or Opacity Monitoring Systems (CEMS or COMS) for or SO₂ (Reference § 60.49b(r)) or PM (Reference § 60.48b(j)) because they are limited to the use of only natural gas.

SELC stated “Given that the Memphis MSA has been designated as a maintenance area for ozone (i.e., that the MSA is at risk of violating the ozone NAAQS), SCHD should require the use of CEMS for the ozone precursor NO_x” and “At a minimum, however, in order to comply with Title V’s periodic monitoring mandates, SCHD must at least implement periodic stack testing”. The Department notes that promulgation of a NAAQS does not, in itself, result in an applicable requirement in the form of an emission limit or require the use of CEMS. Construction permit programs are meant to assure compliance with NAAQS, not title V permits.

Due to the current status of attainment with the National Ambient Air Quality Standard for ozone in the Memphis MSA and the age of these boilers, the Department believes NO_x performance testing of Boilers No. 1, 6 and 7 at least every 5 years is reasonable if the facility also develops a site-specific monitoring plan meeting the requirements of § 60.49b(c) or equivalent. These requirements have been incorporated into the Title V permit for this facility. Initial testing will be required to be completed within one year of permit renewal issuance and the site-specific monitoring plan will be required within 60-days of receipt of performance testing results.

The Department believes NO_x performance testing is not necessary for the 8.4 MMBtu/hr Package Boiler. The Department considers the margin of error in estimating emissions from this boiler using published United States Environmental Protection Agency (USEPA) AP-42 emission factors to be minimal due to its size and use of only natural gas. The Department also considers the margin of error in estimating criteria pollutant emissions other than NO_x from the other boilers at this facility using published USEPA AP-42 emission factors to be minimal due to the use of only natural gas in these boilers and the facility’s commitment to maintenance of the boilers. The Department notes that the variability of emissions from the units in question and the likelihood of a violation of permit requirements are low¹. Additionally, no add-on controls are being used to meet emission limits.

The Department considers adding periodic NO_x performance testing of Boilers No. 1, 6 and 7 to the permit and existing permit conditions that limit fuel use to only natural gas, limit quantity of natural gas used at each boiler and require periodic (monthly) tracking of natural gas usage sufficient to yield reliable data for all boilers that assure and are representative of the source’s compliance with the permit terms and conditions and not necessarily to measure actual emission rates in accordance with 40 CFR § 70.6(a)(3)(i)(B)¹. Compliance with boiler emission limits can be determined by the quantity of fuel combusted. Performance testing of Boilers No. 1, 6 and 7 every 5 years will also help to ensure that accurate NO_x emission factors are used in emission calculations.

¹ Reference Citgo Refining and Chemicals Company L.P., EPA Order, Petition Number VI-2007-01

These monitoring requirements have been properly incorporated into the Title V permit as required under 40 CFR § 70.6(a)(3)(i)(A).

The Department has also incorporated a requirement within the permit that requires the facility to maintain the boilers in accordance with the facility "Boiler Monitoring & Maintenance Plan"; therefore, making these maintenance activities enforceable within the permit. The plan is included as Appendix D within the permit.

Furthermore, the Department has incorporated a biennial boiler tune up requirement for each boiler compliant with 40 CFR Part 63, Subpart JJJJJJ (Reference § 63.11223) or equivalent.

These maintenance items will provide an additional level of assurance that variability of emission levels from each boiler is minimal.

Comment II Summary: "The draft permit's *synthetic minor HAP limits are not enforceable as a practical matter*"

This comment states that the permit fails to include any details on how the facility shall calculate HAP emissions and that factors and equations are not included as enforceable within the permit. SELC requests that the permit require at a minimum stack testing for significant HAPs such as chlorine, methanol, formaldehyde and hexane to insure emission factor accuracy and MACT avoidance is maintained.

SCHD Response

The Department concurs that the basis for HAP emission estimates from the facility should be clarified within the permit and validated based on performance testing. The Department has updated the permit to identify details on HAP emission factors utilized by the facility and provided sample calculations. The Department will also require the facility to maintain HAP emission calculations on site and available for review by the Department.

The HAP emission factors provided by the facility are based on testing at mills using wood to manufacture pulp. A major component of wood is lignin, which is a polymer that acts as a binder for the wood cellulose. The HAP emissions in the pulping manufacturing process are proportional to the lignin content of the pulped material, with the exception of chlorine, which is based on the types and amount of chlorine containing materials used in the bleaching process.

The facility manufactures pulp from cotton linter, which has 1-to-20 cotton-to-wood lignin ratio. Therefore, the non-chlorine HAP emission factors for the facility are expected to be 5% of the emission factors for a wood pulp mill. To be conservative, the facility calculates emissions based on 10% of the emission factors for a wood pulp mill. Since the non-chlorine HAP PTE already contains a safety factor of two times what the expected values are, mean and median values with no additional safety factors are considered appropriate for HAP emission calculation by the facility. The facility also assumes HAP emissions are uncontrolled.

Based on this understanding, use of the maximum NCASI emission factor would be excessive, but the Department supports the need to verify these assumptions and will require the facility to test for the most significant HAPs associated with the process.

Each HAP referenced in the SELC comment letter (chlorine, methanol, formaldehyde, and hexane) was evaluated by the facility and the most significant HAPs associated with the Chemical Cleaning processes were determined to be chlorine and methanol. Greater than 97.3% of formaldehyde and 99.9% of hexane emissions from the facility are associated with non-process combustion sources (boilers and emergency engines) and the purpose of HAP testing is to ensure that HAP emissions from process sources are not underestimated; therefore, the Department accepts testing for chlorine and methanol to both verify the validity of emission factors chosen by the facility and to more accurately reflect HAP emissions from the Chemical Cleaning operations/processes.

Due to the number of emission points and complexity of testing the Department will require that a HAP Performance Test Plan be submitted within 180 days from permit renewal issuance for Chemical Cleaning operations/processes. Once the plan is approved by the Department, the facility will be required to complete testing within one year.

Use of these factors with confirmation testing, monthly recording of total cotton lint pulp input into Emission Unit 2, and monthly recording of HAP emission calculations (if emission factor verification testing results in potential HAP emissions from the facility being above major source levels), will assure that citizens will be able to determine whether HAP limits have been exceeded.

Comment III Summary: *"SCHD's Application Evaluation and Review Contains misleading or inaccurate information"*

SCHD Response

PSD Threshold

SELC correctly identified that the Department must correct the permit application evaluation (PAE) where it states the facility is subject to the 250-ton PSD threshold that is generally applicable to all sources, rather than to 100-ton threshold due to its boilers having a joint capacity over 250 MMBtu/hr. The boilers are a nested source subject to the 100-ton threshold.

This has been revised in the PAE. Additionally, records review indicated that no past modifications would have triggered PSD review with this considered.

Boiler CEMS

SELC stated that the Department failed to explain why it did not implement CEMS and/or periodic testing of boilers and that a permitting authority must comply with the statement of basis requirement in 40 CFR §70.7(a)(5). This requires that the rationale for selected monitoring be "clear and documented in the permit record".

The Department has accepted published emission factors for natural gas boilers in the past and has not required CEMS or routine performance testing in most cases if not specifically required by regulation. Due to the size and age of these boilers, the Department has re-evaluated this and will require testing of Boilers # 1, 6 and 7 at this facility every 5 years for NO_x and biennial tune ups (See Comment I).

Kraft Pulp Mills

SELC disputes the Department claim that this facility does not qualify as a "kraft pulp mill" for the purposes of the PSD threshold because the facility processes cotton rather than wood. SELC

also notes that the facility is classified under the same SIC and NAICS codes as kraft pulp mills and that the facility cites NCASI emission factors from wood kraft pulp mills in numerous instances.

The Department has determined this facility does not meet the definition of a “Kraft Pulp Mills” under PSD regulations. Under 40 CFR Part 60, Subparts BB [§60.281] and BBa [§60.281a] kraft pulp mills are defined as “any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered part of the kraft pulp mill”.

Furthermore the “Kraft Pulp Mill Compliance Assessment Guide”, May 1999, USEPA archive document EPA/310-B-99-001, section 4.2.1, states “Kraft pulping entails cooking, or digesting wood chips at elevated temperature and pressure with an alkaline pulping liquor that contains sodium sulfide (Na₂S) and sodium hydroxide (NaOH)”. Additionally, USEPA, AP 42, Fifth Edition, Volume I Chapter 10, Section 10.2.2.1 uses a definition consistent with those above.

In regards to the SIC and NAICS codes, various pulp mills may be included in a generic code group, but PSD rules specifically reference “kraft” pulp mills, that are well defined by the USEPA. The SIC code for kraft (sulfate) pulp is 26110101 and would not include Memphis Cellulose LLC.

Lastly, the basis for using NCASI emission factors from wood kraft pulp mills is discussed in the response to Comment II.

Comment IV: *“The Draft Permit’s Limits for Emissions Unit 1 are Too Vague to be Enforceable as a Practical Matter”*

This comment states that Title V Operating Permit No. 00055-01TV, Section IV, Emission Group A, Emission Unit 1, Emission Limits and Restrictions, Condition 4 requires that “all air pollution control devices associated with Emission Unit 1 (see Table 1) shall be operated and maintained in accordance with manufacturer recommendations (or other approved specifications) whenever the associated processes are in operation” and that the permit fails to include any information on the manufacturer’s recommendations.

SCHD Response

Emission Unit 1 consists of 10 scrubbers used for the control of particulate matter emissions from Physical Cleaning operations at the facility. These scrubbers are greater than 30 years old and both model number and manufacturer data is not available; therefore, references to manufacturer recommendations have been removed from the permit. Identification of each scrubber is by emission point number only.

To correct this issue, the facility has added a scrubber preventative maintenance program to the “Title V Operating Permit Inspection & Monitoring Plan” in Appendix C of the permit to ensure these units are maintained in good operating condition. Condition No. 4 referenced above has been modified to require compliance with this plan; therefore, making these inspection and monitoring activities enforceable within the permit and available to the public.

Comment V: *"The Draft Permit Must Include Further Testing Requirements to Ensure Emission Limits Are Met for Emissions Unit 3"*

This comment states that the permit limits the throughput to Emissions Unit 3 to 120,000 tons per 12-month rolling period for air-dried cotton linter pulp and that the permit noted that the air-dried cotton linter pulp contains 10% moisture. SELC stated that there are no methods to guarantee the cotton is dried to 10% moisture content and that without moisture content testing, the actual throughput may be greater than the limit due to lower moisture content.

SCHD Response

Pulp gains and loses moisture as the humidity and temperature change. The levels of moisture may also vary dependent on production specifications, ambient humidity and how much time has elapsed since production. When individual rolls/bales are weighed, the gross weight is corrected to 10% moisture to yield the air-dried metric ton (ADMT).

The facility measures the moisture continuously with a microwave sensor scanner as the sheet is produced. The digital inventory system calculates "air dried metric tons" – a commodity term that means the pulp has 90% solids and 10% moisture using the scaled weight and the moisture data.

This is a conversion so the weight is correctly reported. Examples: 200 tons at 10% moisture is $200 \times (0.90 \text{ solids}/0.90 \text{ solids basis}) = 200 \text{ ADMT}$; 200 tons at 6% moisture is $200 \times (0.94 \text{ solids}/0.90 \text{ solids basis}) = 208.89 \text{ ADMT}$; 200 tons at 10.5% moisture is $200 \times (0.895/0.90 \text{ solids basis}) = 198.89 \text{ ADMT}$.

Based on the above, the facility correctly reports throughput. The comment in the permit stating "an air dried ton contains 10% moisture" has been replaced with "Tonnage is based on 10% moisture (An industry standard); therefore, reported tonnage is corrected to 10% moisture". Additionally, a monitoring condition has been added to the permit requiring the facility to continuously measure moisture content as the sheet is produced. If the continuous moisture gauge is down due to maintenance or malfunction, the facility will be required to conduct manual testing daily.

Comment VI: *"SCHD Cannot Restrict Public Comments on Title V Permits"*

SCHD Response

The Department will continue to comply with the Title V permit public notice and comment requirements within 40 CFR § 70.7(h) and will generally do the same for synthetic minor permits.

The Department has accepted all comments, even those without addresses, and will post responses on our website within the PAE document.

Comment VII: *"SCHD Should Incorporate Cumulative Impact Analysis into Its Air Permitting Analysis"*

SCHD Response

The Shelby County Health Department is dedicated to the health and wellbeing of the citizens of Shelby County, but does not have the resources or expertise to incorporate cumulative impact analysis into its air permitting process. Furthermore, the Department considers this permit to meet all applicable regulations and is not required by rule or regulation to conduct this analysis.

This response will become part of the PAE and will be available to the public upon request. Your comments are always welcomed and encouraged, and the Department thanks you for your input.

If you have any questions regarding this issue, please contact me at (901) 222-9592.

Sincerely,



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