

**Statement of Basis**  
**Essity Professional Hygiene North America, LLC.**  
**701-0055**

On December 18, 2019, the Department received an application from Essity Professional Hygiene North America, LLC to renew their Title V permit. Essity is considered a major source for particulate matter, particulate matter 10 micrometers or less in diameter, nitrogen oxide, carbon monoxide, and volatile organic compounds since it has the potential to emit greater than 100 tons per year of each of these pollutants. There will be no major changes to the Title V permit during this renewal; however, a number of administrative changes will be incorporated at this time.

**Background**

Essity Professional Hygiene is a tissue mill located in Cherokee, Colbert County, Alabama. Essity produces tissue, towel, and napkin grades of paper entirely from recycled paper products. Construction on the Cherokee site was completed on March 14, 2004. Essity has two operating lines. The facility is a major source with respect to Title V. The mill has two package boilers subject to 40 CFR Part 60 Subpart Dc.

Recycled paper converting mills fall outside the 28-source category list; therefore, Essity would be considered a major source for PSD only if their potential to emit became larger than 250 TPY for any criteria pollutant. Essity has taken a VOC emission limit of 235 TPY (excluding combustion sources) so that it will be a synthetic minor source with respect to PSD.

**Emissions**

The main pollutants emitted from this facility are nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOCs), hazardous air pollutants (HAPS), and particulate matter (PM). The emissions for associated with Essity's operations can be found in Table 1 below and are based on permitted allowable emission rates and/or operating 8,760 hours a year.

<b>Table 1: Essity Potential Emissions</b>		
<b>Regulated Pollutant</b>	<b>Potential Emissions (tons/yr)</b>	<b>Major Source? (Yes/No)</b>
PM	125	Yes
PM-10	108	Yes
PM-2.5	46	No
SO <sub>2</sub>	1.08	No
NO <sub>x</sub>	103	Yes
CO	131	Yes
VOC	228.5	Yes
Total HAPs	16.7	No
Maximum HAP	5.80	No
CO <sub>2e</sub>	191,354	Yes

## **Basis for limits and monitoring**

### **Package Boiler No. 1 (BO-01, 99.3 MMBtu/hr)**

This boiler produces steam for the No. 12 paper machine. The primary fuel for this boiler is natural gas with propane as a backup. Essity estimated the potential emissions for the No. 1 Package Boiler using AP-42 emission factors and assuming 8,760 hours per year of operation at the maximum rated capacity. This unit is subject to 40 CFR Part 60 Subpart Dc and is not subject to 40 CFR Part 63 Subpart JJJJJ as defined in 40 CFR 63.11195(e).

#### *Control Equipment:*

There are no add on control devices on this unit. However, the boiler is equipped with low-NO<sub>x</sub> burners to reduce the NO<sub>x</sub> emission from this source.

#### *Emission Limits and Proposed Periodic Monitoring*

The No. 1 Power Boiler is subject to PSD synthetic minor limits for sulfur dioxide and volatile organic compounds. Essity is also limited to firing no more than 5,000,000 gallons of propane per 12 month rolling cycle for all fuel burning equipment at the Barton Operations site.

The No. 1 Power Boiler has the following limits:

Particulate matter	18.12 lb/hr and 0.1825 lb/MMBtu
Nitrogen oxide	Natural Gas: 9.95 lb/hr Propane: 20.85 lb/hr
Sulfur dioxide	13.74 lb/hr and 4.0 lb/MMBtu & 220 tpy Facility wide
Opacity	20 percent with one six-minute period up to 40 percent in any one-hour period

### **Package Boiler No. 2 (BO-02, 89.4 MMBtu/hr)**

This boiler produces steam for the No. 14 paper machine. The primary fuel for this boiler is natural gas with propane as a backup. Essity estimated the potential emissions for the No. 2 Package Boiler using AP-42 emission factors and assuming 8,760 hours per year of operation at the maximum rated capacity. This unit is subject to 40 CFR Part 60 Subpart Dc and is not subject to 40 CFR Part 63 Subpart JJJJJ as defined in 40 CFR 63.11195(e).

#### *Control Equipment:*

There are no add on control devices on this unit. However, the boiler is equipped with low-NO<sub>x</sub> burners to reduce the NO<sub>x</sub> emission from this source.

#### *Emission Limits and Proposed Periodic Monitoring*

The No. 2 Power Boiler is subject to PSD synthetic minor limits for sulfur dioxide and volatile organic compounds. Essity is also limited to firing no more than 5,000,000 gallons of propane per 12 month rolling cycle for all fuel burning equipment at the Barton Operations site.

The No. 2 Power Boiler has the following limits:

Particulate matter	17.09 lb/hr and 0.1911 lb/MMBtu
Nitrogen oxide	Natural Gas: 8.96 lb/hr Propane: 18.77 lb/hr
Sulfur dioxide	12.37 lb/hr and 4.0 lb/MMBtu & 220 tpy Facility wide
Opacity	20 percent with one six-minute period up to 40 percent in any one-hour period

#### *Monitoring Plan*

Essity has proposed to keep records of monthly fuel usage for all fuels fired in the boilers to ensure that the NO<sub>x</sub> emissions rates are not exceeded. No monitoring will be necessary at this time for opacity, PM, and SO<sub>2</sub> since boilers are fired with natural gas with a propane back-up, both of which are clean burning low sulfur fuels.

#### **Deink Line 12, Paper Machine 12, and Converting Operations**

Deinking line No. 12 (DL01) has a maximum capacity of 450 MDTPD (37,500 dry lb/hr of pulp) and emits VOC's and HAPs. The No. 12 Paper Machine (PM 12) is a wet crepe machine which produces towel and napkin grades of paper. PM 12 has a maximum capacity of 450 MDTPD (37,500 dry lb/hr of pulp) and emits VOC's, HAPs, and particulate emissions. The converting operations produce VOCs, HAPs, and particulate emissions. The VOC/HAP emissions estimates were based on chemical composition, usage, and production capacity. PM emissions are based on emissions test factors from similar operations at an Essity facility with the unit operating 8,760 hours per year.

#### *Control Equipment:*

There are no add on control devices on these units.

#### *Emission Limits and Proposed Periodic Monitoring*

Essity has accepted a facility wide VOC emission limit of 235 TPY in any 12-month period so that it will be a synthetic minor source with respect to PSD.

The Deink Line 12, Paper Machine 12, and Converting Operations have the following limits:

Particulate matter	$E = 3.59P^{0.62}$
VOC	235 tons/yr
Opacity	20 percent with one six-minute period up to 40 percent in any one-hour period

#### *Monitoring Plan*

The facility has proposed to keep records on consumption of VOC containing materials. This VOC tracking is required in order to show compliance to the 235 ton limit on the emissions of VOCs from the facility in any 12 month rolling period. The facility must have copies of records and supporting background documents that pertain to its air permit. Quarterly reports shall be submitted to the Department which summarizes VOC



emissions for the previous 12 months. Since the PM and Opacity emissions are based on production rates, the above emission limit for tracking of VOC's should also ensure that the PM and Opacity limits are not violated.

#### **No. 1 Air Cap Dryer (DR01)**

Air Cap Dryer, DR01, has two 28.75 MMBtu/hr burners, and has the capability to fire natural gas or propane. Essity estimated the potential emissions for the No. 1 Air Cap Dryer using AP-42 emission factors and assuming 8,760 hours per year of operation at the maximum rated capacity.

#### *Control Equipment:*

There are no add on control devices on these units. However, the dryers are equipped with low-NO<sub>x</sub> burners to reduce the NO<sub>x</sub> emission from these sources.

#### *Emission Limits and Proposed Periodic Monitoring*

Essity is limited to firing no more than 5,000,000 gallons of propane per 12 month rolling cycle for all fuel burning equipment at the Barton Operations site.

The No. 1 Air Cap Dryer has the following limits:

Particulate matter	13.34 lb/hr and 0.232 lb/MMBtu
Nitrogen oxide	Natural Gas: 11.52 lb/hr Propane: 21.8 lb/hr
Sulfur dioxide	7.95 lb/hr and 4.0 lb/MMBtu & 220 tpy Facility wide
Opacity	20 percent with one six-minute period up to 40 percent in any one-hour period

#### *Monitoring Plan*

Essity has proposed to keep monthly records of fuel usage for all fuels fired in the boilers to ensure that the NO<sub>x</sub> emissions rates are not exceeded. Each unit has natural gas permitted as its primary fuel with propane as a stand-by fuel; therefore, PM and Opacity monitoring are not necessary at this time.

#### **Deink Line 14, and Paper Machine 14**

Deinking line No. 14 (DL02) has a maximum capacity of 350 MDTPD (29,167 dry lb/hr of pulp) emits VOC's and HAPs. The No. 14 Paper Machine (PM 14) is a dry crepe machine which produces towel and napkin grades of paper. PM 14 has a maximum capacity of 320 MDTPD (26,667 dry lb/hr of pulp) and emits VOC's, HAPs, and particulate emissions. The VOC/HAP emissions estimates were based on chemical composition, usage, and production capacity. PM emissions are based on emissions test factors from similar operations at an Essity facility with the unit operating 8,760 hours per year.

*Control Equipment:*

There are no add on control devices on these units.

*Emission Limits and Proposed Periodic Monitoring*

Essity has accepted a facility wide VOC emission limit of 235 TPY in any 12-month period so that it will be a synthetic minor source with respect to PSD.

The Deink Line 14 and Paper Machine 14 have the following limits:

Particulate matter	$E = 3.59P^{0.62}$
VOC	235 tons/yr
Opacity	20 percent with one six-minute period up to 40 percent in any one-hour period

*Monitoring Plan*

The facility has proposed to keep records on consumption of VOC containing materials. This VOC tracking is required in order to show compliance to the 235 ton limit on the emissions of VOCs from the facility in any 12 month rolling period. The facility must have copies of records and supporting background documents that pertain to its air permit. Quarterly reports shall be submitted to the Department which summarizes VOC emissions for the previous 12 months. Since the PM and Opacity emissions are based on production rates, the above emission limit for tracking of VOC's should also ensure that the PM and Opacity limits are not violated.

**No. 2 Air Cap Dryer (DR02)**

Air Cap Dryer, DR02, has two 28.75 MMBtu/hr burners, and has the capability to fire natural or propane. Essity estimated the potential emissions for the No. 2 Air Cap Dryer using AP-42 emission factors and assuming 8,760 hours per year of operation at the maximum rated capacity.

*Control Equipment:*

There are no add on control devices on these units. However, the dryers are equipped with low-NO<sub>x</sub> burners to reduce the NO<sub>x</sub> emission from these sources.

*Emission Limits and Proposed Periodic Monitoring*

Essity is limited to firing no more than 5,000,000 gallons of propane per 12 month rolling cycle for all fuel burning equipment at the Barton Operations site.

The No. 2 Air Cap Dryer has the following limits:

Particulate matter	13.34 lb/hr and 0.232 lb/MMBtu
Nitrogen oxide	Natural Gas: 11.52 lb/hr Propane: 21.8 lb/hr
Sulfur dioxide	7.95 lb/hr and 4.0 lb/MMBtu & 220 tpy Facility wide
Opacity	20 percent with one six-minute period up to 40 percent in any one-hour period

### *Monitoring Plan*

Essity has proposed to keep records of monthly fuel usage for all fuels fired in the boilers to ensure that the NO<sub>x</sub> emissions rates are not exceeded. Each unit has natural gas permitted as its primary fuel with propane as a stand-by fuel; therefore, PM and Opacity monitoring are not necessary at this time.

### **Emergency Fire Pump**

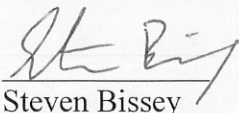
The Emergency Fire Pump Generator is an existing (manufactured as a certified NFPA fire pump engine before June 12, 2006) 460 brake horsepower (hp) compression ignition (CI) 4-stroke Reciprocating Internal Combustion Engine (RICE) and is used for emergency purposes only. Since this engine was manufactured prior to June 12, 2006, it is not subject 40 CFR Part 60 Subpart IIII. The Fire Pump is subject to 40 CFR Part 63 Subpart ZZZZ and is limited to less than 100 hr per year of non-emergency use. The Emergency Fire Pump is also subject to ADEM Admin. Code 335-3-4-.1 (1)(a and b), which states the pump may not emit an opacity greater than 20%, as determined by a 6-minute average, except for one 6-minute period per 60-minute period where they are not allowed to emit an opacity greater than 40%.

### **Storage Tanks**

This facility has six storage tanks at the site equal to or greater than 10567 gallons (40m<sup>3</sup>), but less than 19,813 gallons (75 m<sup>3</sup>). Only two of the six tanks in this classification contain VOCs. There are no VOC storage tanks over 1,000 gallons in capacity containing liquids with vapor pressure greater than 1.5 psia; therefore, avoiding ADEM loading and storage of VOC requirements.

### **Recommendations**

I recommend that Essity Professional Hygiene North America, LLC be issued the attached Title V permit.



Steven Bissey  
Industrial Chemicals Section  
Chemical Branch  
Air Division

May 4, 2020  
Date