

Air Permit Review

Permit Issue Date: **June 26, 2008**

Region: Raleigh Regional Office
County: Johnston
NC Facility ID: 5100014
Inspector's Name: Steven Carr
Date of Last Inspection: 06/14/2007
Compliance Code: 3/In Compliance – Insp.

Facility Data			Permit Applicability		
Applicant (Facility's Name): PGI Nonwovens DBA Chicopee, Inc. 1203 South Chicopee Road Benson, NC 27504 SIC: 2297 / Nonwoven Fabrics NAICS: 31323 / Nonwoven Fabric Mills Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: 2D .0503, .0515, .0516, .0521 + .0958 NSPS: Not applicable NESHAP: MACT, Subpart OOOO PSD: Not applicable PSD Avoidance: 2Q .0317 to avoid 2D .0530 NC Toxics: 2D .1100, 2Q .0705 + .0711 112(r): Not applicable Other: 2D .1806		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 5100014.07B Date Received: 08/03/2007 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 03422/T22 Existing Permit Issue Date: 07/10/2007 Existing Permit Expiration Date: 04/30/2008		
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Review Engineer: David Putney Review Engineer's Signature: _____ Date: _____			Comments / Recommendations: Issue 03422/T23 Permit Issue Date: June 26, 2008 Permit Expiration Date: May 31, 2013		

I Reason for Application:

Facility Description: PGI Nonwovens DBA Chicopee, Inc. (PGI) manufactures disposable and semi-durable nonwoven fabrics such as gauze, hospital gowns, diaper materials, wipes, etc. The manufacturing process starts with large bales of polyester, rayon and natural fibers. These bales are opened and formed into webs. In many of the products a latex finish is applied, and with all the products the fabric is dried by the use of dry cans or a rotary drum dryer.

Modification: The Permittee submitted application 5100014.07B to provide a last MACT facility-wide toxics evaluation for this facility and to renew current Title V Permit No. 03422T22. No modifications to the equipment or operations at this facility were included with this application.

II Regulatory Review:

A. Four natural gas/Nos. 2 through 6 fuel oils-fired boilers (ID Nos. B-1, B-2, B-3 and B-4) with maximum heat input rates of 25, 25, 48.1 and 29.3 million Btu per hour, respectively.

Process Description: These boilers provide process steam to the facility. According to the review for Permit No. 03422T16, the manufacture dates for boilers B-1, B-2, B-3 and B-4 are 1969, 1969, 1979 and 1971 (January), respectively. Note that boiler B-4 is a boiler at another facility that has not yet been relocated to this facility. Application 5100014.07B includes a request to remove B-4 from the permit as the Permittee no longer intends to install this boiler.

1. 2D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"

This rule applies to these boilers and limits the allowable PM emissions (E) from these indirect heat exchangers to those described in the following equations:

$$E = \begin{cases} 0.10 & \text{If } Q \geq 10,000, \\ 0.60 & \text{If } Q \leq 10, \text{ and} \\ 1.090(Q)^{-0.2594} & \text{If } Q \text{ is any other value} \end{cases}$$

Where: E = allowable emissions (lb PM/10⁶ Btu), and
Q = maximum heat input (10⁶ Btu/hr)

Boilers B-1 through B-3 were permitted prior to 2/1/83, whereas boiler B-4 was not permitted until 1996. Therefore, in accordance with paragraph 2D .0503(e):

For B-1, B-2 and B-3: Q = 98.1 (10⁶ Btu/hr) [i.e. 25 + 25 + 48.1]; and
E = 0.33 (lb PM/10⁶ Btu)

Whereas, for B-4: Q = 127.4 (10⁶ Btu/hr) [i.e. 25 + 25 + 48.1 + 29.3]; and
E = 0.31 (lb PM/10⁶ Btu)

Tables 1.3-1 and 1.3-2 of Supplement E to the 5th edition of the AP-42 document predict total PM emissions of 24 (lb/10³ gallons) from No. 6 fuel oil combustion (the worst-case fuel) if we assume a sulfur content of 2.1% (i.e. the permit limits under rule 2D .0516 and 2Q .0317, see discussion below) for No. 6 fuel oil. If we assume a No. 6 fuel oil heat value of 150,000 (Btu/gallon) then we can calculate a PM emission rate of:

$$[24 \text{ (lb/10}^3 \text{ gallons)}] / [150 \text{ (10}^6 \text{ Btu/10}^3 \text{ gallons)}] = 0.16 \text{ (lb PM/10}^6 \text{ Btu)}$$

Compliance with this rule is predicted.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0503 and (since the listed fuels are inherently compliant) will not require any testing or monitoring/recordkeeping/reporting (MRR) to demonstrate compliance for these boilers.

2. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This rule applies to these boilers and limits the sulfur dioxide (SO₂) emissions from these devices to 2.3 (lb SO₂/10⁶ Btu). Table 1.3-1 of Supplement E to the 5th edition of the AP-42 document predicts SO₂ emissions of 157S (lb/10³ gallons) from the combustion of residual fuel oil (the worst-case fuel) in a small boiler, where S is the sulfur content of the fuel oil in weight %. If we assume a heat value of 150,000 (Btu/gallon) and sulfur contents of 2.1% and 2.2% by weight for residual fuel oil we can calculate SO₂ emission rates of:

$$\begin{aligned} [(157)(2.1) \text{ (lb SO}_2\text{/10}^3 \text{ gallon)}][10^3 \text{ (gallon)/150 (10}^6 \text{ Btu)}] &= 2.198 \text{ (lb SO}_2\text{/10}^6 \text{ Btu); and} \\ [(157)(2.2) \text{ (lb SO}_2\text{/10}^3 \text{ gallon)}][10^3 \text{ (gallon)/150 (10}^6 \text{ Btu)}] &= 2.303 \text{ (lb SO}_2\text{/10}^6 \text{ Btu)} \end{aligned}$$

Compliance with this rule for the boilers is predicted when the fuel oil sulfur content is maintained at a level ≤ 2.1% by weight.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0516 and limit the residual fuel oil sulfur content to ≤ 2.1% by weight. Permit No. 03422T23 will reference the MRR associated with PSD avoidance (see discussion of 2Q .0317, below) to ensure compliance with 2D .0516.

3. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Boilers B-1, B-2 and B-4 were manufactured before 7/1/71 whereas boiler B-3 was manufactured after 7/1/71. Therefore, except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraphs (c) and (d) of this rule requires that 6-minute average VEs be ≤ 20% opacity from boiler B-3 and ≤ 40% opacity from boilers B-1, B-2 and B-4 with the following exceptions:

- One six-minute average VE per hour may exceed 20% (40%) opacity (as applicable) as long as it does not also exceed 87% (90%) opacity (as applicable); and
- Up to four six-minute average VEs per 24-hour period may exceed 20% (40%) opacity (as applicable) as long as they do not also exceed 87% (90%) opacity (as applicable).

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0521 and will not require any testing to demonstrate compliance for these boilers.

Permit No. 03422T23 will include daily monitoring (with an allowance to miss up to 3 observations per semiannual period) and recordkeeping, and semiannual reporting requirements associated with rule 2D .0521 for these boilers.

4. **2D .0524 “New Source Performance Standards”**

Boilers B-1 through B-4 meet the capacity thresholds of 40 CFR Part 60, Subpart Dc [heat input capacities from 10 to 100 million Btu per hour] but **are not subject** to its requirements since they pre-date that rule (i.e. applicability date of 6/9/89).

5. **2D .1806 “Control and Prohibition of Odorous Emissions”**

Refer to the discussion in section II K.4 of this document, below.

6. **2D .1100 “Control of Toxic Air Pollutants”**

Permit No. 03422T22 listed these boilers in condition 2.2 B associated with 2D .1100 due to a previous NC toxics evaluation performed for this facility. The Permittee submitted a toxics demonstration with application 5100014.07B and requested to have the boilers removed from this condition. NC DAQ - AQAB staff evaluated and approved that demonstration (see memo from Tom Anderson of AQAB, dated 03/11/08). Therefore, in accordance with rule 2Q .0707 “Previously Permitted Facilities”, these boilers, which meet the definition of “combustion sources” in 2Q .0703(6) are **not currently subject** to section 2D .1100, pursuant to 2Q .0702(a)(18). Condition 2.2 B is altered accordingly in Permit No. 03422T23.

7. **2Q .0317 “Avoidance Conditions”**

The Permittee has elected to avoid major source classification for purposes of PSD (due to potential SO₂ emissions in excess of 250 tons per year) via the acceptance of an avoidance condition under 2Q .0317 (see PSD discussion under Section III of this document, below).

The avoidance condition in Permit No. 03422T22 applies only to boilers B-1 through B-4 [i.e. it does not address potential SO₂ emissions from the 14.4 million Btu/hr natural gas/propane-fired rotary drum dryer (ID No. ES-4) or the 12 million Btu/hr natural gas/propane-fired tenter frame (ID No. ES-22)]. Therefore, that condition is not a facility-wide limit (as required by rule). The PSD avoidance condition in Permit No. 03422T22 requires the Permittee to:

1. Perform monthly recordkeeping of quantities of fuel oils burned in the boilers;
2. Make monthly calculations of boiler SO₂ emissions;
3. Perform monthly recordkeeping of fuel supplier certifications of fuel oil sulfur content by weight percent; and
4. Submit quarterly reports of these monitoring and recordkeeping activities.

The avoidance condition in Permit No. 03422T23 will differ from the one in Permit No. 03422T22 in two ways:

1. It will limit (and require the Permittee to track) facility-wide SO₂ emissions; and
2. The reporting will be relaxed to semiannual instead of quarterly.

B. Plant 30, consisting of:

- **Dry Form Lines 1 through 6 (ID Nos. ES-6 through ES-11, respectively); and**
- **Associated steam-heated dry cans (ID No. ES-27)**

Process Description: Plant 30 consists of 3 dry form lines where the web fibers are randomized on a dual rotor to form non-woven fabric before applying a binder (water and finishing emulsions). This randomizing is conducted such that all associated PM emissions are emitted within the facility. The web fibers are then dried on steam-heated dry cans. These dry cans are simply hollow steel cylinders that are spun on their axis and have steam circulated through them. The fabric is dried by rolling it over these hot cylinders. Therefore, only VOC emissions are associated with the dry cans (i.e. PM is not emitted from these devices). Note that Dry Form Lines 1, 2 and 6 - ID Nos. ES-6, -7 and -11, respectively, are removed from Permit No. 03422T23 at the request of the Permittee.

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

According to the review associated with Permit No. 03422T16, all of the PM emissions from Plant 30 pass through a Pneumafil filter and are discharged within the facility. Therefore, rule 2D .0515 **does not apply** and will not be listed as applicable to the Plant 30 emission sources in Permit No. 03422T23.

2. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” According to the review associated with Permit No. 03422T16, all of the PM emissions from Plant 30 pass through a Pneumafil filter and are discharged within the facility. The VOCs from Plant 30 are exhausted to atmosphere – but visible emissions are not expected. Therefore, rule 2D .0521 **does not apply** and will not be listed as applicable to the Plant 30 emission sources in Permit No. 03422T23.

3. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

4. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

5. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

6. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

C. Plant 40 (Line B), consisting of:

- **One web forming machine (ID No. ES-26) and its associated cartridge filter (ID No. CD-22) and bagfilter (ID No. CD-23);**
- **One natural gas/propane-fired rotary drum dryer (14.4 million Btu per hour maximum heat input; ID No. ES-4); and**
- **Associated steam-heated dry cans (ID No. ES-14)**

Process Description: Plant 40 operations consist of entangling textile fibers to form non-woven textile fabrics (i.e. a web) before applying water and finishing emulsions. The treated fabric is then dried on a propane-fired rotary drum dryer and steam-heated dry cans. Again, only VOC

emissions are associated with the dry cans (i.e. PM is not emitted from these devices – see the process description of Plant 30, above). The rotary drum dryer is similar to the dry cans except that the heat is not provided by steam but rather by combustion. Therefore, PM emissions are expected from the rotary drum dryer – but only from combustion. Note that Plant 40 (Line B) is changed to Plant 40 (Line C) in Permit No. 03422T23 at the Permittee’s request.

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

This rule limits the allowable PM emissions from ES-26 and ES-4 (not subject to 2D .0503 since it is direct-fired) to those described in the following two equations:

$$E \leq 4.10(P)^{0.67} \quad \text{If } P \leq 30 \text{ (ton/hr), or}$$
$$E \leq 55.0(P)^{0.11} - 40 \quad \text{If } P > 30 \text{ (ton/hr)}$$

Where: P = the process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

The review associated with Permit No. 03422T22 indicates that, for source ES-26 (and, therefore, for source ES-4):

$$P = 3 \text{ tons per hour; and}$$
$$E \leq 4.1[3]^{0.67} = 8.56 \text{ lb PM/hr}$$

Source ES-26: That review also indicates that before-control and after-control emissions from ES-26 are about 60 pounds and 0.6 of PM per hour, respectively. Therefore, compliance with this rule is expected for ES-26, after controls.

Source ES-4: Table 1.4-2 of Supplement D to the 5th edition of the AP-42 document predicts total PM emissions of 7.6 (lb/10⁶ ft³) from natural gas combustion. If we assume a natural gas heat value of 1,020 (Btu/ft³) then we can calculate PM emissions of

$$[7.6 \text{ (lb PM/10}^6 \text{ ft}^3\text{)}]/[1,020 \text{ (Btu/ft}^3\text{)}] = 0.0075 \text{ (lb PM/10}^6 \text{ Btu)}$$

Table 1.5-1 of the current AP-42 document predicts PM emissions of 0.6 (lb/10³ gallons) from propane combustion. If we assume a propane heat value of 90,500 (Btu/gallon) then we can calculate PM emissions of

$$[0.6 \text{ (lb/10}^3 \text{ gallons)}]/[90.5 \text{ (10}^6 \text{ Btu/10}^3 \text{ gallons)}] = 0.007 \text{ (lb PM/10}^6 \text{ Btu)}$$

Compliance with this rule is predicted for ES-4.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0515 and (since compliance with this rule by a comfortable margin is expected) will not require any testing to demonstrate compliance for ES-4 or ES-26.

Permit No. 03422T23 will require that emissions from source ES-26 be controlled via control devices CD-22 and CD-23 and include monthly external and annual internal monitoring and recordkeeping and semiannual reporting requirements associated with rule 2D .0515 for control devices CD-22 and CD-23.

Permit No. 03422T23 will not include any MRR for ES-4 for 2D .0515 since ES-4 is inherently compliant with this rule.

2. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This rule applies to the natural gas/propane-fired rotary drum dryer (ID No. ES-4) and limits the SO₂ emissions from this device to 2.3 (lb SO₂/10⁶ Btu).

Table 1.4-2 of Supplement D to the 5th edition of the AP-42 document predicts SO₂ emissions of 0.6 (lb SO₂/10⁶ ft³) from the combustion of natural gas. Assuming a heat value of 1,020 (Btu/ft³) for natural gas we can estimate

$$[0.6 \text{ (lb SO}_2\text{/10}^6 \text{ ft}^3\text{)}]/[1,020 \text{ (Btu/ft}^3\text{)}] = 0.00059 \text{ (lb SO}_2\text{/million Btu)}$$

Table 1.5-1 of Supplement B to the 5th edition of the AP-42 document predicts SO₂ emissions of 0.1S (lb SO₂/10³ gallon) from the combustion of propane, where S = the sulfur concentration in the gas vapor (grains S/100 ft³). The DAQ spreadsheet for emissions from LPG combustion indicates that a value of 0.1 (grains S/100 ft³) is reasonable. Assuming a heat value of 90,500 (Btu/gallon) for propane we can calculate

$$[0.1*0.1 \text{ (lb SO}_2\text{/10}^3 \text{ gallon)}][10^3 \text{ (gallon)/90.5 (million Btu)}] = 0.00011 \text{ (lb SO}_2\text{/million Btu)}$$

Compliance with this rule is predicted.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0516 and (since the permitted fuels are inherently compliant) will not require any testing or MRR associated with 2D .0516 for ES-04.

3. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from ES-4 and ES-26 be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Since these sources do not have a history of compliance issues, Permit No. 03422T23 will include the standard language for the emission limits of 2D .0521 but will not require any testing to demonstrate compliance for these sources.

Permit No. 03422T23 will include weekly monitoring and recordkeeping and semiannual reporting requirements associated with rule 2D .0521 for these sources.

4. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

5. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

6. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

7. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

D. Plant 42 (Line 8), consisting of:

- **Two textile opening machines (ID Nos. ES-16A and ES-16B) and associated screen filters (ID Nos. CD-21A and CD-21B);**
- **One steam-heated modified entangled fiber (MEF) line (ID No. ES-12);**
- **One modified aperture fiber (MAF) line (ID No. ES-21) and**
- **Associated steam-heated dry cans (ID No. ES-28)**

Process Description: Plant 42 operations consist of opening bales of fiber, entangling textile fibers to form non-woven textile fabrics and then applying water and finishing emulsions. PM emissions from the MEF line (ID No. ES-12) and the MAF line (ID No. ES-21) are exhausted within the facility. The treated fabric is then dried on steam-heated dry cans. Again, only VOC emissions are associated with the dry cans (i.e. PM is not emitted from these devices – see the process description of Plant 30, above). Note that the modified aperture fiber (MAF) line (ID No. ES-21) is removed from Permit No. 03422T23 at the Permittee’s request (it has been removed from Plant 42).

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

This rule limits allowable PM emissions (E) from ES-16A and ES-16B to those described in the following two equations:

$$E \leq 4.10(P)^{0.67} \quad \text{If } P \leq 30 \text{ (ton/hr), or}$$
$$E \leq 55.0(P)^{0.11} - 40 \quad \text{If } P > 30 \text{ (ton/hr)}$$

Where: P = the process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

The review associated with Permit No. 03422T21 indicates that, for ES-16A and ES-16B:

P = 1.08 tons per hour; and
 $E \leq 4.1[1.08]^{0.67} = 4.32 \text{ lb PM/hr}$

That review also indicates that before-control emissions from these sources are about 0.36 pounds of PM per hour. Therefore, compliance with this rule is expected for ES-16A and ES-16B, before controls.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0515 and (since compliance with this rule is expected without controls) will not require any testing to demonstrate compliance for ES-16A or ES-16B.

Permit No. 03422T23 will not require that emissions from sources ES-16A and ES-16B be controlled via control devices CD-21A and CD-21B (since compliance is expected before controls) but will require the Permittee to conduct the monitoring recommended by the equipment manufacturer (or developed through operating experience), maintain records and submit reports within 30 days of receipt of a written request from NC DAQ.

2. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from sources ES-16A and ES-16B be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Since these sources do not have a history of compliance issues, Permit No. 03422T23 will include the standard language for the emission limits of 2D .0521 but will not require any testing to demonstrate compliance for these sources.

Permit No. 03422T23 will include weekly monitoring and recordkeeping and semiannual summary reporting requirements associated with rule 2D .0521 for these sources.

3. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

4. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

5. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

6. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

E. Plant 44 (Line A), consisting of:

- **One textile opening machine (ID No. ES-17) and associated roll fabric filter system (ID No. CD-19A); and**
- **Associated steam-heated dry cans (ID Nos. ES-13)**

Process Description: Plant 44 operations consist of opening bales of fiber, entangling textile fibers to form non-woven textile fabrics and then applying water and finishing emulsions. The entangling of fibers is conducted such that all associated PM emissions are emitted within the facility. The treated fabric is then dried on steam-heated dry cans. Again, only VOC emissions are associated with the dry cans (i.e. PM is not emitted from these devices – see the process description of Plant 30, above).

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

This rule limits the allowable PM emissions (E) from ES-17 to those described in the following two equations:

$$E \leq 4.10(P)^{0.67} \quad \text{If } P \leq 30 \text{ (ton/hr), or}$$
$$E \leq 55.0(P)^{0.11} - 40 \quad \text{If } P > 30 \text{ (ton/hr)}$$

Where: P = the process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

The review associated with Permit No. 03422T16 indicates that, for ES-17:

$$P = 1.09 \text{ tons per hour; and}$$
$$E \leq 4.1[1.09]^{0.67} = 4.34 \text{ lb PM/hr}$$

That review also indicates that before-control emissions from this source are about 1.82 pounds of PM per hour, indicating compliance before controls.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0515 and (since compliance with this rule is expected before controls) will not require any testing to demonstrate compliance for ES-17.

Permit No. 03422T23 will not require that emissions from sources ES-17 be controlled via control devices CD-19A (since compliance is expected before controls) but will require the Permittee to conduct the monitoring recommended by the equipment manufacturer (or developed through operating experience), maintain records and submit reports within 30 days of receipt of a written request from NC DAQ.

2. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be

expected to occur...” Except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from source ES-17 be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Since these sources do not have a history of compliance issues, Permit No. 03422T23 will include the standard language for the emission limits of 2D .0521 but will not require any testing to demonstrate compliance for ES-17.

Permit No. 03422T23 will include weekly monitoring and recordkeeping and semiannual reporting requirements associated with rule 2D .0521 for ES-17.

3. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

4. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

5. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

6. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

F. Plant C (Line C), consisting of:

- **One textile processing machine (ID No. ES-23); and**
- **One natural gas/propane-fired tenter frame (12.0 million Btu per hour maximum heat input; ID No. ES-22)**

Process Description: Plant C operations consist of entangling textile fibers to form non-woven textile fabrics before applying water and finishing emulsions. The entangling of fibers in ES-23 is conducted such that all associated PM emissions are emitted within the facility (the textile processing machine does not have an emission stack). The treated fabric is then dried on a natural gas/propane-fired tenter frame. Application 5100014.07B indicates that ES-22 emits only combustion emissions and that ES-23 emits only steam (the process is conducted at low temperatures that do not drive off the low-volatility VOC).

Note that the cited facility is changed from Plant C (Line C) to Plant M1 (Line A1) in Permit No. 03422T23 at the Permittee’s request.

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

This rule limits the allowable PM emissions (E) from ES-22 to those described in the following two equations:

$$E \leq 4.10(P)^{0.67} \quad \text{If } P \leq 30 \text{ (ton/hr), or}$$
$$E \leq 55.0(P)^{0.11} - 40 \quad \text{If } P > 30 \text{ (ton/hr)}$$

Where: P = the process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

The review associated with Permit No. 03422T16 indicates that, for the natural gas/propane-fired tenter frame (ID No. ES-22):

$$P = 1.79 \text{ tons per hour; and}$$
$$E \leq 4.1[1.79]^{0.67} = 6.1 \text{ lb PM/hr}$$

That review also indicates that the emissions from this source are about 5.74 pounds of PM per hour, indicating compliance.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0515 and (since compliance with this rule is expected before controls) will not require any testing to demonstrate compliance for ES-22 or ES-23.

Permit No. 03422T23 will require the Permittee to maintain a record of the types and amounts of materials processed through these sources and make those records available to authorized personnel upon request.

2. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This rule applies to the natural gas/propane-fired tenter frame (ID No. ES-22) and limits the SO₂ emissions from this device to 2.3 (lb/10⁶ Btu).

Table 1.4-2 of Supplement D to the 5th edition of the AP-42 document predicts SO₂ emissions of 0.6 (lb SO₂/10⁶ ft³) from the combustion of natural gas. Assuming a heat value of 1,020 (Btu/ft³) for natural gas we can calculate

$$[0.6 \text{ (lb SO}_2\text{/10}^6\text{ ft}^3\text{)}]/[1,020 \text{ (Btu/ft}^3\text{)}] = 0.00059 \text{ (lb SO}_2\text{/million Btu)}$$

Table 1.5-1 of Supplement B to the 5th edition of the AP-42 document predicts SO₂ emissions of 0.1S (lb SO₂/10³ gallon) from the combustion of propane, where S = the sulfur concentration in the gas vapor (grains S/100 ft³). The DAQ spreadsheet for emissions from LPG combustion indicates that a value of 0.1 (grains S/100 ft³) is reasonable. Assuming a heat value of 90,500 (Btu/gallon) for propane we can calculate

$$[0.1 * 0.1 \text{ (lb SO}_2\text{/10}^3\text{ gallon)}][10^3 \text{ (gallon)/90.5 (million Btu)}] = 0.00011 \text{ (lb SO}_2\text{/million Btu)}$$

Compliance with this rule is indicated.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0516 and (since the listed fuels are inherently compliant) will not require any testing or MRR requirements to demonstrate compliance with 2D .0516 for the tenter frame.

3. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from source ES-22 be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Since this source does not have a history of compliance issues, Permit No. 03422T23 will include the standard language for the emission limits of 2D .0521 but will not require any testing to demonstrate compliance for ES-22.

Permit No. 03422T23 will include daily monitoring (with an allowance to miss up to 3 observations per semiannual period) and recordkeeping, and semiannual reporting requirements associated with rule 2D .0521 for ES-22.

4. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

5. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

6. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

7. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

G. Laser engraving station (ID No. IES-5) and associated natural gas-fired thermal oxidizer (0.2 million Btu per hour maximum heat input; ID No. CD-5)

Process Description: The laser engraving operation is currently permitted but has not been constructed yet. The laser engraving operation will utilize an electric-powered laser to engrave specified patterns (in relief) in polymeric materials brought to the facility from off site. The engraving operation will operate intermittently.

Note that this operation was included on the equipment list of previous permits for this facility with a footnote indicating that the operation is an insignificant activity for Title V purposes and is listed only because of its toxics applicability. This operation will instead be listed on the insignificant activities list of Permit No. 03422T23 since it is understood that exemption from permitting requirements is not exempt a source from the toxics program.

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

This rule limits the allowable PM emissions (E) from ES-5 to those described in the following two equations:

$$E \leq 4.10(P)^{0.67} \quad \text{If } P \leq 30 \text{ (ton/hr), or}$$
$$E \leq 55.0(P)^{0.11} - 40 \quad \text{If } P > 30 \text{ (ton/hr)}$$

Where: P = the process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

The review associated with Permit No. 03422R08 indicates that, for ES-5:

P = 0.0004 tons per hour; and
 $E \leq 4.1[0.0004]^{0.67} = 0.02 \text{ lb PM/hr}$

Compliance with this rule is anticipated due to the insignificant amount of particulate matter generated and the presence of the thermal oxidizer.

2. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This rule applies to the natural gas-fired thermal oxidizer (ID No. CD-5) and limits the SO₂ emissions from this device to 2.3 (lb SO₂/10⁶ Btu). Table 1.4-2 of Supplement D to the 5th edition of the AP-42 document predicts SO₂ emissions of 0.6 (lb SO₂/10⁶ ft³) from the combustion of natural gas. Assuming a heat value of 1,020 (Btu/ft³) for natural gas we can estimate SO₂ emissions as follows:

$$[0.6 \text{ (lb SO}_2\text{/10}^6\text{ ft}^3\text{)}]/[1,020 \text{ (Btu/ft}^3\text{)}] = 0.00059 \text{ (lb SO}_2\text{/million Btu)}$$

Compliance with this rule is predicted.

3. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from source ES-5 be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Compliance with this rule is anticipated due to the insignificant amount of particulate matter generated and the presence of the thermal oxidizer.

3. 2D .1100 “Control of Toxic Air Pollutants”

The laser engraving station has not been installed yet and was not included in the facility-wide last MACT toxics demonstration submitted by the Permittee with permit application 5100014.07B. Subsequent installation of the laser engraving station may trigger a new NC toxics evaluation at that time.

4. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

H. Mixing room consisting of nine latex/binder bulk storage tanks (Tanks 1 through 5 - 14,219 gallon capacity, each, ID Nos. ES-15.1 through ES-15.5; and Tanks 6 through 9 - 5,265 gallon capacity, each, ID Nos. ES-15.6 through ES-15.9)

Process Description: The Permittee stores binders and latexes for use in the various dyeing operations in nine vertical, fixed-roof bulk storage tanks in the mixing room.

These nine bulk storage tanks have capacities of 14,219 gallons, each (ID Nos. ES-15.1 through ES-15.5) or 5,265 gallons, each (ID Nos. ES-15.6 through ES-15.9).

The stored liquids are delivered to their points of application via portable batch tanks.

1. 2D .0524 “New Source Performance Standards”

The nine binder/latex storage tanks **are not subject** to 40 CFR Part 60, Subpart Kb due to their individual storage capacities being below that rule’s applicability threshold of 75 m³ (19,814 gallons) [refer to §60.110b(b) and the discussion of Subpart Kb in Section III of this document, below, for more information].

2. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

3. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

4. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

5. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

I. Pilot Line 3, consisting of:

- **One textile opening machine (ID No. ES-25A);**
- **One finisher (ID Nos. ES-25B); and**
- **One electric dryer (ID No. ES-25C)**

Process Description: Pilot Line 3 is a small (maximum fabric width of 20 inches) process line used to test experimental product lines. The operations of Pilot Line 3 include opening of the bales of fiber, application of binder/finishing materials, and drying on an electric dryer. The opening and finishing operations are conducted such that all associated PM emissions are emitted within the facility. Only VOC emissions are associated with Pilot Line 3. The Permittee only operates Pilot Line 3 intermittently.

1. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

Refer to the discussion in section II K.1 of this document, below.

2. 2D .1100 “Control of Toxic Air Pollutants”

Refer to the discussions in sections II K.2 and K.5 of this document, below.

3. 2D .1111 “Maximum Achievable Control Technology”

Refer to the discussion in section II K.3 of this document, below.

4. 2D .1806 “Control and Prohibition of Odorous Emissions”

Refer to the discussion in section II K.4 of this document, below.

J. Diatomaceous earth storage silo (ID No. ES-20) and associated bagfilter (ID No. CD-20)

Process Description: The Permittee stores diatomaceous earth in a storage silo for subsequent, infrequent use as a filtration aid in the wastewater treatment plant. This silo is pneumatically filled from a bulk delivery truck.

1. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

This rule limits the allowable PM emissions (E) from this storage silo (ID No. ES-20) to those described in the following two equations:

$$\begin{aligned} E &\leq 4.10(P)^{0.67} && \text{If } P \leq 30 \text{ (ton/hr), or} \\ E &\leq 55.0(P)^{0.11} - 40 && \text{If } P > 30 \text{ (ton/hr)} \end{aligned}$$

Where: P = the process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

The review associated with Permit No. 03422T16 indicates that, for ES-20:

P = 10 tons per hour; and
 $E \leq 4.1[10]^{0.67} = 19.2 \text{ lb PM/hr}$

That review also indicates that the before-control emissions from this source are about 7.6 pounds of PM per hour, indicating compliance before controls.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0515 and (since compliance with this rule by a comfortable margin is expected) will not require any testing to demonstrate compliance for ES-20.

Permit No. 03422T23 will require that particulate emissions from ES-20 be controlled via control device CD-20 (although compliance with 2D .0515 is indicated before controls, these controls are required to comply with 2D .0521). The permit will require the Permittee to

conduct the monitoring recommended by the equipment manufacturer (minimum monthly external and annual internal inspections), recordkeeping and semiannual summary reporting requirements associated with rule 2D .0515 for control device CD-20. Permit No. 03422T23 will also require the Permittee to submit a report of inspection and maintenance activities within 30 days of a written request by DAQ.

2. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from the storage silo (ID No. ES-20) be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Permit No. 03422T23 will include the standard language for the emission limits of 2D .0521 but (since this source does not have a history of noncompliance with this rule) will not require any testing to demonstrate compliance for ES-20.

Permit No. 03422T23 will require the Permittee to monitor visible emissions from ES-20 whenever it is being loaded. The Permittee is also required to keep records of these observations and submit semiannual summary reports for ES-20.

3. 2D .1806 “Control and Prohibition of Odorous Emissions”

Although not specifically exempted from this rule at 2D .1806(d) the permit writer believes that this source cannot reasonably be expected to produce “objectionable odors” as defined at 2D .1801(9) and therefore does not meet the applicability requirements of 2D .1806(c). Therefore, this source will not be listed as subject to this rule in Permit No. 03422T23.

K. Rules applicable to multiple categories of emission sources:

1. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

This rule applies to the operations in this facility that use VOCs as solvents, carriers, material processing media, etc. and requires the Permittee to follow certain procedures when using or storing the VOC-containing materials or cleaning or draining the equipment used to apply these materials.

Probable compliance with this rule was observed during the inspection on 6/14/07.

Permit No. 03422T23 will include the standard language for work practice standards and MRR associated with this rule for the facility-wide affected sources.

2. 2D .1100 “Control of Toxic Air Pollutants”

The Permittee first triggered the requirements of the NC Toxics Program when it applied for Permit No. 03422R08 in 1993. The resulting toxics demonstration (and every one since then) included TAP emissions from the boilers as required by the rule at that time.

The Permittee submitted a toxics demonstration with application 5100014.07B as additional information with a request to simplify these toxics requirements per 2Q .0707. That demonstration was reviewed and approved by AQAB (refer to the memo from Tom Anderson dated 03/11/08).

Therefore, the portion of the permit conditions that address TAP emissions from the boilers has been removed from Permit No. 03422T23 and the standard language for facilities that have performed the last MACT modeling is added.

3. 2D .1111 “Maximum Achievable Control Technology”

Applicability: The subject PGI facility is subject to rule 2D .1111 because it meets the criteria for applicability of regulation 40 CFR Part 63, Subpart OOOO (i.e. the NESHAP for Printing, Coating, and Dyeing of Fabrics and Other Textiles) as listed in §63.4281, and is therefore subject to the requirements of that rule. The Permittee performs dyeing and finishing but not coating. [§63.4371]

Compliance Date: This facility is considered an existing source [refer to §63.4282(e)] in the dyeing and finishing subcategory with a compliance date of 5/29/06. [§63.4283(b)]

Emission Standard: The Permittee is required to limit organic HAP emissions to the atmosphere from dyeing and finishing operations at this facility to ≤ 0.016 kg of organic HAP per kg of dyeing and finishing materials applied. [§63.4290 and item 3.c of Table 1 of Subpart OOOO]

Affected Sources: The affected source for the Permittee is the collection of all items listed below that are used in dyeing and finishing operations: [§63.4282(d)]

- (1) All dyeing and finishing equipment used to apply dyeing or finishing materials, to fix dyeing materials to the substrate, to rinse the textile substrate, or to dry or cure the dyeing or finishing materials;
- (2) All containers used for storage and vessels used for mixing dyeing or finishing materials;
- (3) All equipment and containers used for conveying dyeing or finishing materials;
- (4) All containers used for storage, and all equipment and containers used for conveying, waste materials generated by a dyeing or finishing operation; and
- (5) All equipment, structures, and/or devices(s) used to convey, treat, or dispose of wastewater streams or residuals generated by a dyeing or finishing operation.

Compliance Options: According to the Notification of Compliance Status, dated 6/28/07, submitted for this facility, the Permittee has opted for the compliance option described in §63.4291(c)(2) [i.e. emission rate without add-on controls].

Note that §63.4291(c) allows the Permittee to switch compliance options for their operations at any time as long as the Permittee documents the switch as described in §63.4312(c) and reports the switch in the next semiannual compliance report.

Compliance Requirements: Since the Permittee has opted to comply with the emission rate without add-on controls, the Permittee has the following compliance requirements:

- The Permittee must comply with the applicable parts of the General Provisions (i.e. §§63.1 through 63.15). [§63.4301 and Table 3 of Subpart OOOO]
- Organic HAP emissions from dyeing and finishing operations at this facility [calculated in accordance with 63.4331(b)] must meet the emission standard for all compliance periods. [§63.4300(a)(2) and §63.4332(a)]

Note that §63.4332(a) includes: “Each month following the initial compliance period described in §63.4330 is a compliance period consisting of that month and the preceding 11 months. You must perform the calculations in §63.4331 on a monthly basis.”

- The Permittee must make a continuous compliance demonstration monthly for each compliance period (described as that month and the preceding 11 months): [§63.4332(a)]

- **Step 1:** Determine the mass fraction of organic HAP for each material in accordance with §63.4321(e)(1)(iv). That is, the Permittee may either: [§63.4331(b)(1)]
 - Use test methods; or
 - Information from the material manufacturer or supplier - if that information includes each organic HAP that is present at $\geq 0.1\%$ by mass for OSHA carcinogens and at $\geq 1.0\%$ by mass for other compounds].
- **Step 2:** Determine the mass of each dyeing and finishing material applied during the compliance period by measurement or usage records. [§63.4331(b)(2)]
- **Step 3:** Calculate the mass of organic HAP emissions utilizing equation 4: [§63.4331(b)(3)]

$$H_e = A - R_w - WW \quad (\text{Equation 4})$$

Where: H_e = Mass of organic HAP emissions during the compliance period, kg.

A = Total mass of organic HAP in the dyeing and finishing materials applied during the compliance period, kg, as calculated in Equation 4A of §63.4331(b)(3)(i)

$$A = \sum_{i=1}^m (M_{c,i})(W_{c,i}) \quad (\text{Equation 4A})$$

Where: $M_{c,i}$ = Mass of dyeing or finishing material, i , applied during the compliance period, kg.

$W_{c,i}$ = Mass fraction of organic HAP in dyeing or finishing material, i , kg organic HAP per kg of material.

m = Number of dyeing and finishing materials applied during the compliance period.

R_w = Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF for treatment or disposal during the compliance period, kg, determined according to §63.4331(b)(3)(ii). (You may assign a value of zero to R_w if you do not wish to use this allowance.)

WW = Total mass of organic HAP in wastewater discharged to a POTW or receiving onsite secondary treatment during the compliance period, kg, determined according to §63.4331(b)(3)(iii) and §63.4331(c). (You may assign a value of zero to WW if you do not wish to use this allowance.)

- **Step 4:** Calculate the total mass of dyeing and finishing material applied during the compliance period utilizing equation 5: [§63.4331(b)(4)]

$$M_t = \sum_{i=1}^m (M_{c,i}) \quad (\text{Equation 5})$$

Where: M_t = Total mass of dyeing and finishing materials applied during the compliance period, kg.

$M_{c,i}$ = Mass of dyeing or finishing material, i , applied during the compliance period, kg.

m = Number of dyeing and finishing materials applied during the compliance period.

Note that §63.4331(b) includes “Use the procedures in this section on each regulated material in the condition it is in when it is received from its manufacturer or supplier and prior to any alteration. Water added in mixing at the affected source is not a regulated material and should not be included in the determination of the total mass of dyeing and finishing materials applied during the compliance period, using Equation 5 of this section.”

- **Step 5:** Calculate the organic HAP emission rate, kg organic HAP emitted per kg dyeing and finishing material applied, utilizing equation 6: [§63.4331(b)(5)]

$$H_{yr} = \frac{H_e}{M_t} \quad (\text{Equation 6})$$

Where: H_{yr} = The organic HAP emission rate for the compliance period, kg of organic HAP emitted per kg of dyeing and finishing materials.

H_e = Total mass of organic HAP emissions during the compliance period, kg, as calculated by Equation 4.

M_t = Total mass of dyeing and finishing materials applied during the compliance period, kg, as calculated by Equation 5.

- **Step 6:** Make a continuous compliance demonstration (i.e. compare emission rate, H_{yr} , to [§63.4290 and the applicable limit of Table 1). [§63.4331(b)(6)]
- The Permittee must submit reports in accordance with §63.4311 and §63.4332.
- The Permittee must maintain records in accordance with §63.4312, §63.4313 and §63.4332.

Monitoring: Since the Permittee has opted to comply with the emission rate without add-on controls, the Permittee is not subject to any operating limits [§63.4292(a)] or work practice standards [§63.4293(a)].

Recordkeeping: Since the Permittee has opted to comply with the emission rate without add-on controls, the Permittee must comply with the following recordkeeping requirements:

- The Permittee must maintain the following records: [§63.4312]
 - A copy of each notification and report required by Subpart OOOO and their supporting documentation. [§63.4312(a)]
 - A current copy of information provided by materials suppliers or manufacturers (e.g. formulation or test data) used to determine the mass fraction of organic HAP for materials regulated under Subpart OOOO: [§63.4312(b)]
 - If the supplier or manufacturer of a material conducted the testing, then only a copy of the summary sheet of test results is required.
 - If the Permittee conducted the testing, then the Permittee must keep a copy of the complete test report.
 - For each compliance period, a record of the dyeing/finishing operations on which you used each compliance option and the beginning and end dates you used each option. [§63.4312(c)(2)]
 - For each month, a record of the following calculations: [§63.4312(c)(2)]

- The total mass of organic HAP emissions for the dyeing and finishing materials applied each compliance period using equations 4 and 4A in §63.4331;
 - The calculations required by §63.4331(b)(3)(ii) if credit is taken for organic HAP in waste materials;
 - The calculations required by §63.4331(b)(3)(iii) if credit is taken for organic HAP in wastewater streams;
 - The total mass of dyeing and finishing materials applied each compliance period using equation 5 in §63.4331; and
 - The organic HAP emission rate for each compliance period using equation 6 in §63.4331.
- The name and mass of each regulated material applied in the dyeing and finishing subcategory during each compliance period. [§63.4312(d)]
 - The mass fraction of organic HAP for each regulated material applied during the compliance period. [§63.4312(e)]
 - The information required by §63.4312(g) if credit is taken for organic HAP in wastewater sent to a POTW (as allowed under §63.4331(b)(3)(ii)). [§63.4312(g)]
 - The information required by §63.4312(h) if credit is taken for organic HAP in waste materials sent to a TSD (as allowed under §63.4331(b)(3)(iii)). [§63.4312(h)]
 - The date, time and duration of each deviation. [§63.4312(i)]
- The Permittee must meet the following records retention requirements: [§63.4332(d)]
 - The Permittee must maintain the records required by Subpart OOOO for at least 5 years in written or electronic (where appropriate) form. [§63.10 and §63.4313]
 - The Permittee must maintain the records required by Subpart OOOO onsite for at least the first 2 years. [§63.4313]

Reporting: Since the Permittee has opted to comply with the emission rate without add-on controls, the Permittee must comply with the following reporting requirements:

- The Permittee must submit semiannual compliance reports for the affected source that include the following: [§70.6(a)(3)(iii)(A) and §63.4311(a)]
- The semiannual compliance reports must include the following: [§63.4311(a)]
 - The compliance option(s) utilized (and the beginning/ending dates of application of each compliance option, if applicable). [§63.4311(a)(3)(iv) and §63.4332(c)]
 - The results of calculations required by Subpart OOOO for each compliance period ending each month during the reporting period. [§63.4311(a)(3)(v)]
 - A statement that there were no deviations from the emission limits during the reporting period, if applicable. [§63.4311(a)(4) and §63.4332(c)]
 - A statement that there were deviations from the emission limits during the reporting period, if applicable, with the following: [§63.4332(b)]
 - The beginning and ending dates of each compliance period during which the organic HAP emission rate exceeded the applicable limit. [§63.4311(a)(6)(i)]
 - The calculations used to determine the organic HAP emission rate for the compliance period in which the deviation occurred [§63.4311(a)(6)(ii)].
 - A statement of the cause of each deviation. [§63.4311(a)(6)(iii)]

4. 2D .1806 “Control and Prohibition of Odorous Emissions”

This rule applies to all sources at the facility (except for the diatomaceous earth storage silo) and requires the Permittee to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility’s boundary. Apparent compliance with this rule was observed during the inspection on 6/14/07. Permit No. 03422T23 will include the standard language associated with this rule for the facility-wide affected sources.

5. 2Q .0705 “Existing Facilities and SIC Calls”

The Permittee submitted a facility-wide evaluation of the compliance status of this facility with the NC toxic demonstration with application 5100014.07B. That demonstration was reviewed and approved by AQAB (refer to the memo from Tom Anderson dated 03/11/08). The appropriate shell language has been added to Permit No. 03422T23 for the TAP emitted at rates below their TPERs.

III NSPS/NESHAP/PSD/Toxics/112(r)/CAM Applicability:

NSPS: The subject facility is not currently subject to any New Source Performance Standards (i.e. 40 CFR Part 60), as explained below:

Subpart Dc: Boilers B-1, B-2 and B-3 at this facility are not subject to the relevant standard for Small Industrial-Commercial-Institutional Steam Generating Units. These boilers meet the capacity thresholds [heat input capacities from 10 to 100 million Btu per hour] but pre-date this regulation (applicability date of 6/9/89).

Subpart Kb: This facility utilizes 2 fuel oil storage tanks and 9 binder/latex storage tanks. The fuel oil tanks are 125,000 gallons, each, and were built in 1986. The fuel tanks are not subject to the relevant standard for volatile organic liquid (VOL) storage tanks at this time due to the low vapor pressure of the stored liquids [refer to §60.110b(b)]. If these tanks are ever used to store a VOL with a maximum true vapor pressure of 3.5 kPa (0.51 psi) or greater, they will be subject to this rule. These 2 fuel oil storage tanks are included on the list of insignificant activities attached to Permit No. 03422T23.

The binder/latex storage tanks have storage capacities of either 14,219 gallons, each (ES-15.1 through ES-15.5) or 5,265 gallons, each (ES-15.6 through ES-15.9). The binder/latex storage tanks are not subject to Subpart Kb due to their storage capacities being below the threshold of 75 m³ (19,814 gallons) [refer to §60.110b(b)].

Subpart VVV: The operations at this facility are not subject to the requirements of the relevant standard for Polymeric Coating of Supporting Substrate because the facility does not engage in polymeric coating operations [refer to §60.740(a), §60.741(a) and the 09/13/07 email].

NESHAP: The applicability of any NESHAP standards (i.e. 40 CFR Part 63) to this facility is discussed below:

Subpart DDDDD: Permit No. 03422T22 listed the boilers at this facility (ID Nos. B-1 through B-4) as subject to the Industrial/Commercial/Institutional Boilers and Process Heaters category MACT. This is no longer the case due to the decision of the DC circuit court to vacate this rule. All references to Subpart DDDDD have been removed from Permit No. 03422T23.

Subpart OOOO: PGI is subject to the relevant standard for Printing, Coating, and Dyeing of Fabrics and Other Textiles (see discussion in Section II K.3, above). Specific permit language associated with this rule is added to Permit No. 03422T23 (i.e. in condition 2.2 D).

PSD: This facility does not fall into one of the “named” PSD categories with major source thresholds of 100 ton per year but does have the unlimited potential to emit > 250 tons of SO₂ per year. To avoid being classified as major for PSD purposes the Permittee previously requested PSD

avoidance conditions for this pollutant (refer to the discussion of rule 2Q .0317 in section II A.7 of this document, above, for more information). Application No. 5100014.04B (i.e. this permit renewal) does not involve any physical modification or increase in emissions. Therefore, neither PSD review nor increment tracking is triggered at this time.

Toxics: Permit No. 03422T22 includes subsection 2.2 B that includes limits associated with section 2D .1100 and rule 2Q .0711. The section 2D .1100 limits address emissions of several TAP from the boilers and from process equipment. The rule 2Q .0711 limits address facility-wide emissions of several more TAPs. The Permittee submitted a last MACT facility-wide toxics demonstration as additional information associated with application 5100014.07B. That demonstration included a request to remove the boilers from the toxics conditions in accordance with 2Q .0707. The requested change is reflected in Permit No. 03422T23 (refer to the discussions of Section 2D .1100 and rule 2Q .0705 in sections II K.2 and K.5 of this document, above). The standard language for last MACT toxics demonstrations is added to Permit No. 03422T23.

112(r): According to Section AA2 of permit application 5100014.07B, this facility is not subject to the requirements of this regulation. Note that propane is stored at this facility in quantities above the threshold of 2D .2100 and section 112(r) of the CAA but is not covered by these rules since it is stored for use as a fuel [refer to 2D .2100(b)(2) and §68.126, respectively].

CAM: According to application 5100014.07A, this facility is not subject to this rule since none of its emission sources has the before-control potential to emit regulated pollutants at rates above the major source thresholds.

IV Permit Modifications/Changes:

The following table summarizes the changes made to Permit No. 03422T23 resulting from Permit Application No. 5100014.07B:

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
Part I			
Global	Global	N/A	<ul style="list-style-type: none"> • Change permit revision number to T23 • Change the issuance/effective dates of the permit • Amend the application number and complete date • Modify descriptions to remove applicability of MACT Subpart DDDDD from boilers • Remove equipment: <ul style="list-style-type: none"> ○ Boiler B-4; ○ Dry Form Lines 1, 2 and 6 (Plant 30 - ID Nos. ES-6, -7 and -11); and ○ The MAF line (Plant 42 - ID No. ES-21) • Update the monitoring/recordkeeping requirements associated with 2D .0521 to the current shell • Modify descriptions to refer to steam-heated dry cans generally (i.e. include the phrase “and associated steam-heated dry cans”) • Changes in names of sub-facilities: <ul style="list-style-type: none"> ○ Plant 40 (Line B) in Permit No. 03422T22 is Plant 40 (Line C) in Permit No. 03422T23; and ○ Plant C (Line C) in Permit No. 03422T22 is Plant M1 (Line A1) in Permit No. 03422T23

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
3-4	3-4	Equipment List	<ul style="list-style-type: none"> • Add rows for steam-heated dry cans associated with Plant 30 and Plant 42 (i.e. “assign” dry cans ES-27 to Plant 30 and dry cans ES-28 to Plant 42) • Remove asterisk language for source ES-26 and control devices CD-22 and CD-23 • Split “grouped” sources into individual rows • Change sources ES-13A,B; -14A,B; and -22A,B to ES-13, 14 and 22 respectively (these are each 1 source with 2 stacks) • Remove process weight rates from descriptions • Add capacities of the nine bulk storage tanks in the mixing room (ID Nos. ES-15.1 through ES-15.9)
4	5	2.1 A	Remove reference to 2D .1806 and 2D .1100 from limits/standards summary table for boilers
5	5	2.1 A.1.c	Specify that no monitoring, recordkeeping or reporting requirements (MRR) apply to boilers for 2D .0503
5	5	2.1 A.2.c-e	Specify that the MRR requirements of 2D .0516 only apply to fuel oils Nos. 4, 5 and 6
6-7	N/A	2.1 A.4 (03422T22)	Relocate the PSD avoidance condition to section 2.2 C of Permit No. 03422T23
7	7	2.1 B	Change sub-facility name from Plant 40 (Line B) to Plant 40 (Line C)
7	7	2.1 B.1.a	Modify text to indicate that rule 2D .0515 applies to rotary drum dryer ES-4 as well as to web forming machine ES-26
N/A	8	2.1 B.2.b	Add standard language allowing for testing to verify compliance with rule 2D .0516 and re-designate the MRR requirements for this rule as paragraph “c”
8	8	2.1 B.3.a	Modify text to indicate that 2D .0521 applies to both rotary drum dryer ES-4 and to web machine ES-26
8	8	2.1 B.3.c	Remove the requirement to define “normal” VE emissions for web forming machine ES-26
10	9	2.1 C.1.d-e	Update the recordkeeping and reporting associated with 2D .0515 for the textile opening machines in Plant 42 to current shell language
10	9	2.1 C.2.a	Specify that rule 2D .0521 applies to the two Plant 42 textile opening machines ES-16A and ES-16B
11	11	2.1 D.1.d	Update the recordkeeping language associated with rule 2D .0515 for textile processing machine ES-17 in Plant 44 to the current shell language
12	12	2.1 E	Change sub-facility name from Plant C (Line C) to Plant M1 (Line A1) and source ES-22A,B to ES-22
12 - 13	12	2.1 E.1.a+c	Alter text to indicate that rule 2D .0515 applies to the tenter frame (as opposed to textile processing machine ES-23 which exhausts inside the building) and update the associated recordkeeping language to the current shell language

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
N/A	12	2.1 E.2.b	Add standard language allowing for testing to verify compliance with rule 2D .0516 and re-designate the MRR requirements for this rule as paragraph “c”
14	13	2.1 F.1.c	Alter this condition to update the monitoring requirements associated with rule 2D .0515 for the diatomaceous earth storage silo ES-20 to the current shell language
15	14	2.1 F.1.d	Alter this condition to include the current shell language for recordkeeping requirements associated with rule 2D .0515 for the diatomaceous earth storage silo ES-20
N/A	14	2.1 F.1.e-f	Add new permit conditions to include the current shell language for the reporting requirements for ES-20 associated with rule 2D .0515
15 – 16, 18	15 – 16	2.2 A	Modify permit section to: <ul style="list-style-type: none"> • Apply to facility-wide affected sources; and • Include requirements associated with rule 2D .1806
16 – 18	16 – 18	2.2 B	Modify permit section to: <ul style="list-style-type: none"> • Remove last MACT trigger for toxics; • Remove conditions involving the boilers; and • Insert shell language for facilities that have already performed their last MACT toxics demonstration
N/A	18 – 19	2.2 C	Alter this permit section to include MRR requirements associated with rule 2Q .0317 to avoid 2D .0530 [i.e. PSD avoidance formerly in section 2.1 A.4 of Permit No. 03422T22] and alter the MRR to: <ul style="list-style-type: none"> • Limit facility-wide emissions of SO₂ from all fuels (i.e. including natural gas and propane); • Add item allowing for testing to verify compliance with the associated emission limit; and • Relax the associated reporting frequency from quarterly to semiannually
19	19 – 22	2.2 D	Replace “placeholder” language for 40 CFR Part 63, Subpart OOOO (i.e. the MACT for Printing, Coating, and Dyeing of Fabrics and Other Textiles) with detailed permit language
19	N/A	2.2 E	Remove this permit section for 40 CFR Part 63, Subpart DDDDD (i.e. the MACT for boilers) since that MACT has been vacated by the courts
19 - 27	23 - 30	3	Update Section 3 “General Conditions” to the current shell language
Part II			
29 - 30	N/A	Sections 1, 2 and 3	Remove Part II

Note: The Condition/Item listed in the table above are as listed in Permit No. 03422T23 unless otherwise stated.

V Title V Permit History:

The following table provides a brief summary of Title V permit revisions for this facility:

Permit No.	Issuance Date	Description of Revision
03422T16	09/14/98	Issue initial Title V permit. Also the section 112(r) requirements were added to the permit due to propane tanks.
03422T17	11/01/99	Administrative amendment to correct the emission limits for 2 TAPs.
03422T18	03/20/00	Administrative amendment to correct the emission limits for 1 TAP.
03422T19	07/12/01	Administrative amendment to correct the emission limits for 4 TAPs, replace 2D .0518 with 2D .0958, and to remove Part II of the permit.
03422T20	08/28/01	Add temporary boiler B-5 to permit
03422T21	05/28/03	<ul style="list-style-type: none">Permit renewal. Some administrative changes and clarifications were also included in this revision.Remove boiler B-5 from permit (it was removed from facility)Remove the 112(r) provisions since facility was only subject due to propane which is used as fuel [exempt per 2D .2101(b)(2)]
03422T22	07/05/07	<ul style="list-style-type: none">Remove Textile Opening Machine (Line B) (ES-18) and the associated automatic dry-type air filter (CD-19B) from permitAdd Web Forming Machine (Line B) (ES-26) and the associated cartridge filter (CD-22) and bagfilter (CD-23) to permit
03422T23	06/26/08	<ul style="list-style-type: none">Renewal of Title V permitLast MACT toxics demonstrationRemove Boiler 4 (B-4); Dry Form Lines 1, 2 and 6 (ES-6, ES-7, and ES-11); and MAF line (ES-21)

VI Application Fee:

No fee was submitted (or required) with application 5100014.07B (no fee is required for a Title V permit renewal that does not also include a modification).

VII Compliance Status:

The facility was most recently inspected on 6/14/07 by Steve Carr (of the RRO) and David Putney (of the RCO) and appeared to be operating in compliance with applicable air quality standards and regulations during that inspection.

Note that the Forms E4 and E5 submitted with application 5100014.07B indicate that all sources at the subject facility are in compliance with all applicable requirements.

VIII Zoning Consistency:

No zoning consistency determination was submitted (or required) with application 5100014.07B (a determination is not required for a Title V permit renewal that does not also include a modification).

IX Permit Review:

A copy of DRAFT Permit No. 03422T23 was sent to the Permittee and the RRO for a review and comment period on 05/09/08. The resulting changes to the draft permit are summarized below:

- Clarification of MMR requirements for SO₂ emissions from the natural gas-fired rotary dryer (ID No. ES-4) in Plant 40 and the natural gas-fired tenter frame (ID No. ES-22) in Plant M1 (i.e. to show that the statement of “no MMR requirements” applies only to 2D .0516); and

- Administrative changes for clarification (e.g. changing of the ID Nos. of the steam-heated dry cans in Plants 30, 40, 42 and 44 and listing 2D .1806 in the boilers' permit section).

X Miscellaneous:

Certification by Responsible Official: In accordance with 2Q .0520, Dave Wood (i.e. the responsible official for PGI Nonwovens DBA Chicopee, Inc.) provided the required certification on Form E5 of application 5100014.07B.

Shield, Renewal and Expiration: Application 5100014.07B was post-marked July 30, 2007 (i.e. 9 months prior to expiration of Permit No. 03422T22). Therefore, pursuant to 2Q .0512(b)(1) and 2Q .0513(b), the Permittee qualifies for the application shield until issuance of Permit No. 03422T23.

Public Participation: In accordance with 2Q .0521, NC DAQ must provide the opportunity for public participation during the renewal of a Title V permit (such as that represented by application 5100014.07B). NC DAQ met this obligation with the public notice of PROPOSED Permit No. 03422T23 posted in [The Clayton News Star of Johnston County on 05/09/08](#). A copy of the proposed permit was also sent to everyone on the Title V mailing list and the environmental/legal group list maintained by NC DAQ. The following items summarize the comments received and the resulting changes made to the proposed permit:

[More here!?](#)

EPA & Affected States Review: In accordance with 2Q .0522, NC DAQ must provide EPA and Affected States [as defined in 2Q .0503(1)] staff the opportunity to review a proposed renewal of a Title V permit (such as that represented by application 5100014.07B). NC DAQ met this obligation by sending a copy of Proposed Permit No. 03422T23 to the EPA on [05/09/08](#). Note that there are no Affected States for this facility. The following items summarize the comments received and the resulting changes made to the proposed permit:

[More here!?](#)

XI Recommendation:

The Title V Permit renewal application for the PGI Nonwovens DBA Chicopee, Inc. facility in Benson, Johnston County, North Carolina has been reviewed by NC DAQ personnel to determine compliance with all applicable procedures and requirements. NC DAQ personnel have determined that this facility is complying or will achieve compliance with all applicable requirements as specified in Permit No. 03422T23.

Issuance of Permit No. 03422T23 is recommended.