

Air Permit Review

Permit Issue Date: **September 13, 2008**

Region: Raleigh Regional Office
County: Northampton
NC Facility ID: 6600016
Inspector's Name: Will Wike
Date of Last Inspection: 09/18/2007
Compliance Code: 3/In Compliance – Insp.

Facility Data			Permit Applicability		
Applicant (Facility's Name): Georgia - Pacific Chemicals, LLC - Conway 200 Ampac Road Conway, NC 27820 SIC: 2821 / Plastics Materials And Resins NAICS: 325211 / Plastics Material and Resin Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: 2D .0503, .0515, .0516, .0521, .0614, .0949 and .0958. NSPS: 40 CFR 60, Subpart Dc NESHAP: 40 CFR 63, Subparts F, G, H, UU, OOO and ZZZZ PSD: Not applicable PSD Avoidance: 2Q .0317 (for NO _x) NC Toxics: 2D .1100 and 2Q .0705 112(r): 2D .2100 Other: 2D .1806		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 6600016.07A Date Received: 03/30/2007 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 04243/T21 Existing Permit Issue Date: 08/07/2007 Existing Permit Expiration Date: 02/28/2008		
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Review Engineer: David Putney Review Engineer's Signature: _____ Date: _____			Comments / Recommendations: Issue 04243/T22 Permit Issue Date: September 13, 2008 Permit Expiration Date: August 31, 2013		

I Reason for Application:

Facility Description: Georgia-Pacific Chemicals, LLC operates a formaldehyde production process, a resin production process, and a spray dry resin production process at its facility in Conway, North Carolina. The formaldehyde production process produces aqueous formaldehyde via a catalyzed reaction between methanol and oxygen (in air) and reportedly has an operational date of 1980. Solutions in various concentrations are produced by absorbing the formaldehyde into water and are either sold or used in the production of resins.

The resin production process produces urea-formaldehyde (UF) resins, phenol-formaldehyde (PF) resins, insulating resins and specialty resins in batch operations and reportedly has an operational date of 1969. The associated batch reactor vessels are steam-heated. These resins are either sold directly or (in the case of the PF resins) may be used in the spray dry process. The spray dry resin production process sprays liquid PF resin through a heated air stream and seven cyclones to produce a dried resin powder and reportedly has an operational date of 1995.

Requested Permit Modifications: The Permittee submitted permit application 6600016.07A to renew Permit No. 04243T21. This application also addresses Compliance Assurance Monitoring (CAM) requirements for bagfilter ID No. CD-5A installed on the spray dry resin production process. Those CAM requirements are added into Permit No. 04243T22. The toxics demonstration required by 2Q .0705 (originally submitted as application 6600016.05C) has been consolidated into this renewal.

II Regulatory Review for Individual Source Categories:

A. One natural gas/propane-fired boiler (25.1 million Btu per hour maximum heat input, ID No. ES-B1); and

One natural gas/propane/No. 2 fuel oil-fired temporary boiler (less than 25 million Btu per hour maximum heat input, ID No. ES-B2)

These boilers are used to generate process heat for use throughout the facility. Boiler ES-B1 was manufactured in January of 2006. Boiler ES-B2 is a temporary boiler that the Permittee brings on-site for 4 – 6 weeks per year while boiler ES-B1 is down for maintenance. Since a different temporary boiler may be rented year-to-year, Permit No. 04243T21 did not list a specific heat input rating for ES-B2 but rather a maximum of 25 million Btu per hour. Both boilers, ES-B1 and ES-B2, were first permitted in Permit No. 04243T20 (issued on 03/09/06) with the removal of the previous boiler (maximum heat input of 24.0 million Btu per hour).

The Permittee also utilizes a natural gas/propane-fired heat transfer fluid heater (formerly known as the Dowtherm Heater) at this facility (installed in 1994) that is included on the list of insignificant activities (2.3 million Btu per hour maximum heat input, ID No. I-HTF).

i. 2D .0503 “Particulates from Fuel Burning Indirect Heat Exchangers”

This rule applies to boilers ES-B1 and ES-B2 and heat transfer fluid heater I-HTF 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)

Therefore, in accordance with 2D .0503(e):

For I-HTF: $Q = 26.3 (10^6 \text{ Btu/hr})$ [i.e. 24.0 + 2.3] and
 $E = 0.47 (\text{lb PM}/10^6 \text{ Btu})$

For conservatism, the maximum heat input allowed under Permit No. 04243T20 for ES-B2 (i.e. 25 million Btu per hour) is assumed. Therefore:

For ES-B1 and -B2: $Q = 52.4 (10^6 \text{ Btu/hr})$ [i.e. 25.1 + 25.0 + 2.3] and
 $E = 0.39 (\text{lb PM}/10^6 \text{ Btu})$

Each of these devices is capable of utilizing natural gas and/or propane as fuel. 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 estimate PM emissions of:

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

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

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

Boiler ES-B2 is capable of burning No. 2 fuel oil. 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 3.3 (lb/10³ gallons) from No. 2 fuel oil combustion. If we assume a No. 2 fuel oil heat value of 141,000 (Btu/gallon) then we can estimate PM emissions as follows:

$$[3.3 (\text{lb}/10^3 \text{ gallons})]/[141 (10^6 \text{ Btu}/10^3 \text{ gallons})] = 0.0234 (\text{lb PM}/10^6 \text{ Btu})$$

For boilers ES-B1 and ES-B2, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0503 and the methods of testing for compliance (if/when required by

DAQ) but will not (since the permitted fuels are inherently compliant with this rule) require any additional testing or any monitoring, recordkeeping or reporting (MRR) to demonstrate compliance with 2D .0503.

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

This rule applies to boilers ES-B1 and ES-B2, fluid transfer heater I-HTF and 3 propane-fired startup heaters I-PH1 through I-PH3 and limits the SO₂ emissions from these combustion devices to 2.3 (lb/10⁶ Btu). Paragraph 2D .0516(b) exempts sources that are subject to an emission standard for sulfur dioxide pursuant to a NSPS from the 2D .0516 sulfur dioxide limits. The boilers are subject to a NSPS (refer to the discussion of 2D .0524 below). However, the sulfur dioxide emission standards in that NSPS [refer to 40 CFR §60.42c] only apply to boiler ES-B2 while burning No. 2 fuel oil. Therefore, rule 2D .0516 applies to boiler ES-B1 at all times and to boiler ES-B2 only while burning natural gas or propane.

Each of these devices is capable of utilizing natural gas and/or propane as fuel. 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 of:

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

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 gallons) 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

$$[0.1 * 0.1 \text{ (lb SO}_2\text{/10}^3 \text{ gallon)}][10^3 \text{ (gallons)/90.5 (10}^6 \text{ Btu)}] = 0.00011 \text{ (lb SO}_2\text{/10}^6 \text{ Btu)}$$

For boilers ES-B1 and ES-B2 Permit No. 04243T22 will include the standard language for the emission limits of 2D .0516 (when applicable) and the methods of testing for compliance (if required by DAQ) but will not (since the permitted fuels are inherently compliant) require any additional testing or any MRR to demonstrate compliance with 2D .0516.

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

Boiler ES-B1 was manufactured after 7/1/71. For conservatism the same will be assumed of boiler ES-B2. Therefore, except for those visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under Rule 2D .0535, paragraph (d) of this rule requires that the 6-minute average VEs from these boilers 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 that VE 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 those VEs do not also exceed 87% opacity.

Note that paragraph 2D .0521(b) exempts sources that are subject to an opacity limit pursuant to a NSPS from the opacity limits in 2D .0521. Although these boilers are subject to a NSPS (refer to the discussion of 2D .0524 below), the opacity limit in that NSPS [refer to 40 CFR §60.43c(c)] does not apply to these boilers (they are below the 30 million Btu per hour threshold for applicability of the subject opacity limit). Therefore, rule 2D .0521 does apply to boilers ES-B1 and ES-B2.

For these boilers, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0521 and the methods of testing for compliance (if/when required by DAQ) but

will not require any additional testing or any MRR to demonstrate compliance with 2D .0521 since No. 2 fuel oil/natural gas/propane-fired boilers are unlikely to violate this standard.

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

This rule applies to boilers ES-B1 and ES-B2 due to the applicability of 40 CFR Part 60, Subpart Dc. However, only the requirements of §60.42c “Standard for Sulfur Dioxide” and §60.48c “Reporting and Recordkeeping Requirements” apply (see discussions of 2D .0516 and 2D .0521, above). Specifically, §60.42c(d) requires emissions of sulfur dioxide from boiler ES-B2 to be less than 0.5 pounds per million Btu of heat input while burning No. 2 fuel oil.

Table 1.3-1 of Supplement E to the 5th edition of the AP-42 document predicts sulfur dioxide emissions of $142S$ (lb/10³ gallons) from the combustion of No. 2 fuel oil in a small boiler, where S is the sulfur content of the fuel oil in weight %. If we assume a heat value of 142,000 (Btu/gallon) and a sulfur content of 0.5% by weight for No. 2 fuel oil we can estimate sulfur dioxide emissions as follows:

$$[(142)(0.5) (\text{lb SO}_2/10^3 \text{ gallon})][10^3 (\text{gallon})/142 (10^6 \text{ Btu})] = 0.50 (\text{lb SO}_2/10^6 \text{ Btu})$$

Paragraph §60.42c(h)(1) allows the use of fuel oil supplier certifications as verification of compliance with this rule for boiler ES-B2. Paragraph §60.48c(a) requires notification of construction, reconstruction and actual startup. Paragraphs §60.48c(e) and (f) require submittal of fuel oil supplier certification summary reports. Paragraph §60.48c(g)(2) requires the Permittee to maintain monthly records of No. 2 fuel oil use. Finally, paragraph §60.48c(i) requires the Permittee to maintain all records required by Subpart Dc for at least 2 years from the date of the record.

Permit No. 04243T22 will include the emission limits and MRR requirements associated with Subpart Dc for ES-B2 while burning No. 2 fuel oil.

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

Although sources of NC TAPs, the boilers at this facility qualify as “combustion sources” [as defined at 2Q .0703(6)] and are therefore currently exempt from the requirement to conduct a toxics demonstration pursuant to paragraph 2Q .0702(a)(18).

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

Permit No. 04243T21 includes a condition under 2D .1111 limiting boiler ES-B2 to 180 consecutive days of use so as to satisfy the definition of “temporary boiler” found in the (now defunct) MACT for boilers (i.e. 40 CFR Part 63, Subpart DDDDD - §63.7575), thereby avoiding the applicability of that MACT standard [refer to §63.7491(n)]. Due to subsequent court actions, Subpart DDDDD no longer exists, making this 2D .1111 condition unnecessary. Therefore, this 2D .1111 condition is not included in Permit No. 04243T22.

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

See discussion in Section III D of this document, below.

B. Two No. 2 fuel oil-fired emergency generators (500 kW maximum rated power output, each, ID Nos. ES-GEN1 and ES-GEN2):

These emergency generators are used to generate electricity for the facility during outages of the electric power grid. Generator ES-GEN1 was manufactured in 2003 whereas ES-GEN2 was manufactured in 1988. Note that these generators are subject to neither 2D .0503 (since they are not indirect heat exchangers) nor 2D .0515 (in accordance with the Appendix to the North Carolina Air Quality Rules – refer to page 5-11 of version S-9).

The B2 forms submitted with application 6600016.07A indicate that these generators are used as peak shaving generators for < 1,000 hours per year. The Permittee confirmed that this is an error

and that these generators are used strictly as emergency generators (see 03/25/08 phone log). The 1,000 hour of operation per year limit is a PSD avoidance limit.

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

This rule applies to the 2 emergency generators (ID Nos. ES-GEN1 and ES-GEN2) and limits the SO₂ emissions from these combustion devices to 2.3 (lb/10⁶ Btu).

Note that paragraph 2D .0516(b) exempts sources that are subject to an emission standard for sulfur dioxide pursuant to a NSPS or a MACT from the sulfur dioxide limits in 2D .0516. Although these emergency generators are subject to a MACT (refer to the discussion of rule 2D .1111 below), that standard does not include a sulfur dioxide emission limit for these sources. Therefore, 2D .0516 does apply to these emergency generators.

Table 3.4-1 of the 5th edition of the AP-42 document predicts SO_x emissions from large (i.e. those with power outputs of 600 HP or more) stationary diesel engines of 0.505 (lb/10⁶) Btu of heat input (assuming fuel sulfur content of 0.5% by weight).

For generators ES-GEN1 and ES-GEN2, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0516 and the methods of testing for compliance (if required by DAQ) but will not require any additional testing or any MRR to demonstrate compliance with 2D .0516 since the permitted fuel is inherently compliant.

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

Emergency generators ES-GEN1 and ES-GEN2 were manufactured after 7/1/71. Therefore, except for those visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under Rule 2D .0535, paragraph (d) of this rule requires that the 6-minute average VEs from these emergency generators 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 that VE 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 those VEs do not also exceed 87% opacity.

Note that paragraph 2D .0521(b) exempts sources that are subject to an opacity limit pursuant to a NSPS or a MACT from the opacity limits in 2D .0521. Although these emergency generators are subject to a MACT (refer to the discussion of rule 2D .1111 below), that standard does not include opacity limits for these sources. Therefore, 2D .0521 does apply to these emergency generators.

For these emergency generators, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0521 and the methods of testing for compliance (if/when required by DAQ) but will not require any additional testing or any MRR to demonstrate compliance with 2D .0521 since the No. 2 fuel oil-fired emergency generators only operate intermittently and are considered very unlikely to violate this standard.

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

The emergency generators **are not subject** to 2D .0524. The performance standards for this source category [i.e. compression ignition internal combustion engines – (CI ICE)] applies to owners/operators of stationary CI ICE that: [refer to 40 CFR §60.4200(a)]

- Commence construction after 07/11/05 where the stationary CI ICE are:
 - Manufactured after 04/01/06 and are not fire pump engines; or
 - Manufactured as a certified NFPA fire pump engine after 07/01/06.

- Modify or reconstruct their stationary CI ICE after 07/11/05.

ES-GEN1 and ES-GEN2 were manufactured in 2003 and 1988, respectively. Further, the Permittee has indicated that neither of these sources has been modified or reconstructed since 07/11/05 (refer to letter dated 04/15/08). Therefore, the two emergency generators ES-GEN1 and ES-GEN2 **are not subject** to this regulation.

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

These emergency generators are included in the toxics condition of Permit No. 04243T21 and table of subject sources in Section 2 of permit application 6600016.07A.

The updated last MACT/toxics demonstration for this facility, received by DAQ on 07/11/07 and approved by AQAB (see memo dated 08/06/07) omitted these emergency generators. These emergency generators are categorized as “combustion sources” [defined at 2Q .0703(6)] and are therefore currently exempt from the toxics requirements pursuant to 2Q .0702(a)(18). Therefore, the omission of these emergency generators is allowed pursuant to 2Q .0707 unless DAQ determines that this will result in the exceedance of an AAL.

Formaldehyde is the TAP of concern from the emergency generators. According to the NC DAQ emission spreadsheet for large diesel-fired internal combustion engines these emergency generators will emit 0.0008 pounds of formaldehyde per hour, combined. This represents an increase of about 0.01% over the modeled formaldehyde emission rate. The AQAB memo dated 08/06/07 indicates that the modeled formaldehyde impact from this facility is 34.4% of the associated AAL. Therefore, the addition of the formaldehyde from the emergency generators would not result in the exceedance of the formaldehyde AAL, and the omission of these sources from the toxics demonstration is acceptable.

Therefore, these emergency generators are not included in the NC toxics conditions found in Permit No. 04243T22.

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

The emergency generators are subject to 2D .1111 due to the applicability of 40 CFR Part 63, Subpart ZZZZ (i.e. the MACT for reciprocating internal combustion engines - RICE). Permit Application No. 6600016.07A provides operational dates of 2003 and 1988 for ES-GEN1 and ES-GEN2, respectively. Therefore, ES-GEN1 is considered a new affected source whereas ES-GEN2 is considered an existing affected source in accordance with §63.6590.

In accordance with §63.6590(b)(1)(i) ES-GEN1 does not have to meet the requirements of Subparts ZZZZ or A except for the initial notification requirements of §63.6645(f). In accordance with §63.6590(b)(3) ES-GEN2 does not have to meet the requirements of Subparts ZZZZ or A (no initial notification is necessary). Permit No. 04243T22 is modified to show applicability of Subpart ZZZZ and include the associated notification requirement.

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

See discussion in Section III D of this document, below.

vii. 2Q .0317 “Avoidance Conditions”

Permit No. 04243T21 includes an avoidance condition for each of the emergency generators to avoid PSD. These avoidance conditions limit the NO_x emissions from each of these emergency generators to < 40 tons per consecutive 12-month period. To accomplish this, the hours of operation for each of these emergency generators is limited to ≤ 1,000 hours per consecutive 12-month period. Permit No. 04243T22 will require the Permittee to maintain monthly records of hours of operation of the emergency generators but will not require any reporting of this information.

C. Continuous process vent stream (ID No. VS5A) consisting of emissions from the spray dry resin production process including a natural gas/propane-fired atomizing air heater (14.6 million Btu per hour maximum heat input rate), a spray dryer, several transfer cyclones and a product bagging operation (ID No. ES-5) and associated bagfilter (14,500 square feet of filter area, ID No. CD-5A):

Some of the resin produced in the resin production process is spray dried in this source to produce a dry powdered resin. This process uses a direct-fired atomizing air heater with a spray dryer and seven transfer cyclones to produce the dry powdered resin. The filter surface areas of CD-5A is administratively changed from 18,600 square feet (as listed in Permit No. 04243T21) to 14,500 square feet in this renewal (refer to the Permittee's letter dated 04/15/08).

i. 2D .0515 "Particulates from Miscellaneous Industrial Processes"

This rule applies to the spray dry resin production process and limits the allowable PM emissions (E) from this source 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)

According to application 6600016.07A the maximum process weight rate of these sources is 6.5 tons per hour, therefore only the first equation listed above will be included in Permit No. 04243T22. Now we can calculate the allowable emissions as:

$$E \leq 4.1[6.5]^{0.67} = 14.4 \text{ lb PM per hour}$$

That application also cites maximum before-control emissions of 260 lb PM per hour and after-control emissions of 5.14 lb PM per hour indicating compliance, after controls.

For the spray dry resin production process, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0515 and the methods of testing for compliance (if/when required by DAQ) but will not require any additional testing since compliance with this rule by a comfortable margin is expected, after control.

The MRR requirements associated with 2D .0515 in Permit No. 04243T22 for the spray dry resin production process will include use of bagfilter CD-5A (this bagfilter is required to comply with 2D .0515), monthly external inspections of the ductwork/bagfilter, annual internal inspections of the bagfilter, and semiannual MRR summary reporting to NC DAQ.

Note that the MRR requirements are not applied to bagfilter CD-5B in Permit No. 04243T22 (as they were in Permit No. 04243T21) because that device exhausts into bagfilter CD-5A during normal operations and is located inside the facility. That is, the PM that passes through CD-5B is either (1) subject to the MRR requirements associated with 2D .0515 and 2D .0521 for CD-5A, or (2) exhausted within the facility (i.e. in the event of a filter failure in CD-5B) and is therefore not subject to 2D .0515 or 2D .0521. Therefore, the bagfilter referred to as CD-5B in Permit No. 04243T21 is considered part of source ES-5 ("product bagging") and is not separately listed (as a control device or otherwise) in Permit No. 04243T22.

ii. 2D .0516 "Sulfur Dioxide Emissions from Combustion Sources"

This rule applies to the spray dry resin atomizing air heater and limits the SO₂ emissions from this direct-fired combustion device to 2.3 (lb/10⁶ Btu).

This device is capable of utilizing natural gas and/or propane as fuel. 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 of:

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

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 gallons) 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

$$[0.1 * 0.1 \text{ (lb SO}_2\text{/10}^3 \text{ gallon)}][10^3 \text{ (gallons)/90.5 (10}^6 \text{ Btu)}] = 0.00011 \text{ (lb SO}_2\text{/10}^6 \text{ Btu)}$$

For the spray dry resin atomizing air heater, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0516 and the methods of testing for compliance (if required by DAQ) but will not (since the permitted fuels are inherently compliant) require any additional testing or any MRR to demonstrate compliance with 2D .0516.

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

The spray dry resin production process ES-5 was manufactured after 7/1/71. Therefore, except for those visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under Rule 2D .0535, paragraph (d) of this rule requires that the 6-minute average VEs from this source 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 that VE 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 those VEs do not also exceed 87% opacity.

For 2D .0521 (as applicable to the spray dry resin production process), Permit No. 04243T22 will include the following MRR:

- The standard language for the emission limits of, and the methods of testing for compliance (if/when required by DAQ) with this rule;
- Monthly monitoring and recordkeeping requirement of visible emissions; and
- Semiannual summary reporting of VE observations to NC DAQ.

iv. 2D .0614 “Compliance Assurance Monitoring”

Applicability [§64.2]: This rule applies to the existing spray dry resin production process (ID No. ES-5) due to the applicability of 40 CFR Part 64 “Compliance Assurance Monitoring.” This regulation applies to the spray dry resin production process since it:

- (1) Is subject to an emission standard that is not exempt under §64.2(b)(1) for a regulated pollutant (i.e. the 2D .0515 limits for PM/PM₁₀);
- (2) Uses a control device (i.e. bagfilter CD-5A) to comply with that emission standard; and
- (3) Has before-control potential emissions of the regulated pollutant in excess of the threshold for being considered major for Title V. According to application 6600016.07A, the before-control and after-control potential PM/PM₁₀ emissions for the spray dry resin production process are 1,139 tons per year and 22.5 tons per year, respectively.

Monitoring [§64.3, §64.6 and §64.7]:

- (1) **Indicators:** The Permittee submitted a CAM plan with application 6600016.07A. That CAM plan states that the Permittee will use visible emissions (VEs) of ES-5 (i.e. emitted from CD-5A) as the indicator for this operation. The Permittee has since indicated their preference to use differential pressure as the indicator. Permit No. 04243T22 will require the Permittee to monitor differential pressure across CD-5A.

- (2) **Frequency:** The after-control potential emissions of PM₁₀ from ES-5 are 22.5 tons per year (i.e. less than the major source threshold). Therefore, the Permittee's proposal to monitor differential pressure across CD-5A hourly satisfies the requirements of §64.3(b)(4) and is included in Permit No. 04243T22.
- (3) **Bypass:** The spray dry resin production process is configured such that bypass of the associated control device (ID No. CD-5A) is not possible. Therefore, monitoring of indicators of bypass described in §64.3(a)(2) does not apply to this emission source.
- (4) **Indicator Range:** According to the Permittee, the differential pressure across CD-5A will range from 0 inches of water column (with new bags) to 8 inches of water column when operating properly. An excursion is defined as a differential pressure across CD-5A in excess of 8 inches of water column and triggers inspection, corrective action and recordkeeping requirements.
- (5) **QA/QC Practices:** The Permittee must conduct monthly external inspections (for leaks) and annual internal inspections (for structural integrity) of bagfilter CD-5A and maintain the differential pressure gauge according to the manufacturer's recommendations.

Recordkeeping [§64.9(b)]: The Permittee is required to maintain records of the differential pressure drop across bagfilter CD-5A, the external and internal inspections of bagfilter CD-5A, and any corrective actions taken.

Reporting [§64.9(a)]: The Permittee must submit semiannual summary reports of the monitoring to NC DAQ. The report must clearly identify any excursions (if applicable) and identify their duration and cause (including unknown cause).

Quality Improvement Plan (QIP) [§64.8]: The observation of six or more excursions during a consecutive six-month period will trigger the requirement for the Permittee to develop a QIP for spray dry resin production process ES-5 and bagfilter CD-5A.

v. 2D .1100 "Control of Toxic Air Pollutants"

See discussion in Section III C of this document, below.

vi. 2D .1111 "Maximum Achievable Control Technology"

See discussion in Section III B of this document, below.

vii. 2D .1806 "Control and Prohibition of Odorous Emissions"

See discussion in Section III D of this document, below.

D. Batch reactor kettle K3 urea unloading hopper (ES-UH-K3) and associated bin vent filter (378 square feet of filter area, ID No. CD-UH-K3); and

Batch reactor kettle K8 urea unloading hopper (ES-UH-K8) and associated bin vent filter (378 square feet of filter area, ID No. CD-UH-K8)

Granulated urea used in the resin production plant is delivered to the facility via railcars or trucks. This granulated urea is subsequently pneumatically unloaded into either the urea hopper associated with batch reactor kettle K3 or the urea hopper associated with batch reactor kettle K8.

i. 2D .0515 "Particulates from Miscellaneous Industrial Processes"

This rule applies to the urea unloading hoppers and limits the allowable PM emissions (E) from these sources 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)

According to application 6600016.07A the maximum process weight rate of these sources is 25 tons per hour, therefore only the first equation listed above will be included in Permit No. 04243T22. Now we can calculate the allowable emissions as:

$$E \leq 4.1[25]^{0.67} = 35.4 \text{ lb PM per hour}$$

That application also cites maximum before-control emissions of 50 lb PM per hour and after-control emissions of 0.1 lb PM per hour indicating compliance, after controls.

For the urea unloading hoppers, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0515 and the methods of testing for compliance (if/when required by DAQ) but will not require any additional testing since compliance with this rule by a comfortable margin is expected, after control.

The MRR requirements associated with 2D .0515 in Permit No. 04243T22 for the urea unloading hoppers will include use of the bin vent filters (they are required to comply with rule 2D .0515), monthly external inspections of the ductwork/bin vent filters, annual internal bin vent filter inspections and semiannual summary reporting of the inspections to NC DAQ.

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

Urea unloading hoppers ES-UH-K3 and ES-UH-K8 were manufactured after 7/1/71. Therefore, except for those visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under Rule 2D .0535, paragraph (d) of this rule requires that the 6-minute average VEs from these sources 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 that VE 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 those VEs do not also exceed 87% opacity.

For 2D .0521 (as applicable to urea unloading hoppers ES-UH-K3 and ES-UH-K8), Permit No. 04243T22 will include the following MRR:

- The standard language for the emission limits of, and the methods of testing for compliance (if/when required by DAQ) with this rule;
- Monthly monitoring and recordkeeping requirement of visible emissions; and
- Semiannual summary reporting of VE observations to NC DAQ.

iii. 2D .0614 “Compliance Assurance Monitoring”

According to application 6600016.07A, the before control potential PM emissions from the urea unloading hoppers is 71.5 tons per year, combined (i.e. less than the associated major source threshold). Therefore, this rule **does not apply** to the urea unloading hoppers.

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

The urea unloading hoppers do not emit any NC Toxic Air Pollutants and are therefore not subject to the NC toxics program.

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

See discussion in Section III D of this document, below.

E. Extender storage silo (ID No. ES-11.1) and associated bin vent filter (400 square feet of filter area, ID No. CD-11.1); and

Extender storage silo (ID No. ES-11.2) and associated bin vent filter (400 square feet of filter area, ID No. CD-11.2)

Solid raw extender material is delivered to the facility in trucks and pneumatically unloaded into the extender silos. These extender materials (e.g. corn, wheat, pecan shells and various flours) are subsequently used in the resin production process.

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

This rule applies to the extender storage silos and limits the allowable PM emissions (E) from these sources 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)

According to application 6600016.07A the maximum process weight rate of these sources is 24 tons per hour, therefore only the first equation listed above will be included in Permit No. 04243T22. Now we can calculate the allowable emissions as:

$$E \leq 4.1[25]^{0.67} = 34.5 \text{ lb PM per hour}$$

That application also cites maximum before-control emissions of 48 lb PM per hour and after-control emissions of 0.07 lb PM per hour indicating compliance, after controls.

For the extender storage silos, Permit No. 04243T22 will include the standard language for the emission limits of 2D .0515 and the methods of testing for compliance (if/when required by DAQ) but will not require any additional testing since compliance with this rule by a comfortable margin is expected, after control.

The MRR requirements associated with 2D .0515 in Permit No. 04243T22 for the extender storage silos will include use of the bin vent filters (these filters are required to comply with 2D .0515), monthly external inspections of the ductwork/bin vent filters, annual internal bin vent filter inspections and semiannual summary reporting of the inspections to NC DAQ.

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

Extender storage silos ES-11.1 and ES-11.2 were manufactured after 7/1/71. Therefore, except for those visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under Rule 2D .0535, paragraph (d) of this rule requires that the 6-minute average VEs from these sources 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 that VE 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 those VEs do not also exceed 87% opacity.

For 2D .0521 (as applicable to extender storage silos ES-11.1 and ES-11.2), Permit No. 04243T22 will include the following MRR:

- The standard language for the emission limits of, and the methods of testing for compliance (if/when required by DAQ) with this rule;
- Monthly monitoring and recordkeeping requirement of visible emissions; and
- Semiannual summary reporting of VE observations to NC DAQ.

iii. 2D .0614 “Compliance Assurance Monitoring”

According to application 6600016.07A, the before control potential PM emissions from the extender storage silos is 70 tons per year, combined (i.e. less than the associated major source threshold). Therefore, this rule **does not apply** to the extender storage silos.

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

The extender storage silos do not emit any NC Toxic Air Pollutants and are therefore not subject to the NC toxics program.

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

See discussion in Section III D of this document, below.

F. Various storage tanks, including:

- **One methanol storage tank (507,852 gallons capacity, ID No. ES3M1) and eight storage tanks (26,212 gallon capacity, each, ID Nos. ES7F1 through ES7F8) storing either formaldehyde (primary operating scenario) or methanol (alternate operating scenario) and associated:**

Primary compliance scenario:

Natural gas/propane-fired catalytic oxidizer (4.5 cubic feet of catalyst, 4.0 million Btu per hour maximum heat input primary burner, ID No. CD-2A); or

Alternate compliance scenario:

Natural gas/propane-fired thermal oxidizer (2.9 million Btu per hour maximum heat input, ID No. CD-4A):

- **One aqueous ammonia storage tank (9,924 gallons capacity, ID No. ES-S19) and associated scrubber tank (56 inch minimum liquid level from tank bottom, ID No. CD-S19);**
- **Three resin tank farms including 52 phenol-formaldehyde resin tanks of various capacities (ID No. PFTF), 7 urea-formaldehyde resin tanks of various capacities (ID No. UFTF) and 6 acetone-formaldehyde tanks of various capacities (ID No. AFTF);**
- **Four phenol storage tanks (22,548 gallon capacity, each, ID Nos. ESR1, ESR2, ESR5 and ESR10); and**
- **One urea-formaldehyde concentrate storage tank (25,366 gallon capacity, ID No. ESR8)**

Storage tank ES3M1 stores methanol (delivered via tank truck or railcar) on-site for use in the formaldehyde production process (ID No. ES-2). Permit application 6600016.07A provides an operation date of 1980 for this source.

Storage tanks ES7F1 through ES7F8 normally store formaldehyde produced in the formaldehyde production process (ID No. ES-2). Occasionally (i.e. when methanol storage tank ES3M1 is out of service) some or all of these tanks store methanol. Permit application 6600016.07A provides an operation date of 1974 for these sources.

Storage tank ES-S19 stores aqueous ammonia (delivered to this facility via tank truck) on-site for subsequent use in the resin production processes.

Resin tank farms PFTF, UFTF and AFTF store the various resins produced at this facility. These tanks were previously listed as insignificant activities on Permit No. 04243T21 but are included in Permit No. 04243T21 due to their inclusion in the toxics demonstration (see Section III C, below).

Storage tanks ESR1, ESR2, ESR5 and ESR10 store phenol (delivered via railcar) and stored on-site for subsequent use in the resin production processes.

Storage tank ESR8 stores urea-formaldehyde concentrate (UFC - delivered to this facility via tank truck) on-site for subsequent use in the resin production processes.

i. 2D .0949 “Storage of Miscellaneous Volatile Organic Compounds”

Only methanol storage tank ES3M1 is subject to this rule. This rule applies to the storage of liquid VOCs in stationary tanks, reservoirs, or containers with capacity greater than 50,000 gallons that are not subject to 2D .0925 or 2D .0933. The Permittee shall not place, store or

hold in any vessel subject to this rule any liquid VOC with vapor pressure greater than or equal to 1.5 psia under actual storage conditions unless the vessel:

1. Is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor gas loss into the atmosphere; or
2. Is designed and equipped with one of the following vapor loss control devices;
 - a. A floating pontoon, double deck type floating roof or internal pan type floating roof equipped with closure seals (note that this control option is not permitted for VOCs with vapor pressure \geq 11.0 psia under actual storage conditions); or
 - b. A vapor recovery system (or other equipment or means of air pollution control) that reduces organic material emissions into the atmosphere by \geq 90% by weight.

The Permittee complies with this rule by venting the emissions from tank ES3M1 either through catalytic oxidizer CD-2A (i.e. while formaldehyde is in production) or through thermal oxidizer CD-4A (i.e. while formaldehyde is not in production).

For methanol storage tank ES3M1, Permit No. 04243T22 will include the standard language for the methods of testing for compliance (if/when required by DAQ) but will not require any additional testing to demonstrate compliance with 2D .0949.

The MMR requirements of 2D .1111 (i.e. 40 CFR Part 63, Subparts F, G and H – refer to the discussion of 2D .1111 in Section III A of this document, below) are considered sufficient to ensure compliance with 2D .0949 for this source. Therefore, MRR requirements for ES3M1 in Permit No. 04243T22 will simply refer to the associated MRR requirements under 2D .1111.

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

See discussion in Section III D of this document, below.

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

See discussion in Section III C of this document, below.

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

See discussions in Sections III A and III B of this document, below.

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

See discussion in Section III D of this document, below.

vi. 2D .2100 “Risk Management Program”

The Permittee is subject to the requirements found in 40 CFR Part 68 “Chemical Accident Prevention Provisions” [i.e. Section 112(r)] due to storage of ammonia and formaldehyde in quantities above their threshold amounts. The Permittee submitted the required RMP on 06/11/04 and is due to submit the renewal on 06/11/09. The standard shell language associated with this rule has been added to Permit No. 04243T22.

III Regulatory Review for Multiple Source Categories:

A. One heat exchange system (ID No. HX1);

Natural gas/propane-fired catalytic oxidizer (4.5 cubic feet of catalyst, 4.0 million Btu per hour maximum heat input primary burner, ID No. CD-2A) associated with:

- **Process vent stream (ID No. VS2A) comprised of emissions from:**
 - **One formaldehyde production process (ID No. ES-2); and**
 - **One formaldehyde tank truck loading rack (ID No. ES-FL) and nine formaldehyde/methanol storage tanks (ID Nos. ES7F1 - ES7F8 and ES3M1) while operating under their primary compliance scenario**

Natural gas/propane-fired thermal oxidizer (2.9 million Btu per hour maximum heat input rate, ID No. CD-4A) associated with:

- **Vent stream (ID No. VS4A.2) comprised of emissions from:**
 - **One formaldehyde tank truck loading rack (ID No. ES-FL) and nine formaldehyde/methanol storage tanks (ID Nos. ES7F1 - ES7F8 and ES3M1) while operating under their alternate compliance scenario; and**
 - **One aggregate batch process vent stream comprised of emissions from twelve resin production process vessels including six batch reactor vessels (ID Nos. ES4.1, ES4.2, ES4.3, ES4.5, ES4.7 and ES4.8) and six batch non-reactor vessels (five weigh tanks, ID Nos. ES4.9 through ES4.13 and one mix/blend tank, ID No. S-13)**

These sources are subject to the MACT provisions of 40 CFR Part 63, Subparts F, G and H for existing sources.

**i. 2D .1111 “Maximum Achievable Control Technology”
40 CFR Part 63, Subparts F, G and H**

This rule applies to the listed sources due to the applicability of 40 CFR Part 63, Subparts F (i.e. HON from the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) - §§63.100 through 63.107), G (i.e. HON from the SOCMI for process vents, storage vessels, transfer operations and wastewater - §§63.112 through 63.153) and H (i.e. HON for equipment leaks - §§63.160 through 63.183) as follows:

a. §63.104 “Heat exchange system requirements”

The Permittee operates heat exchange system HX1 such that the minimum pressure on the cooling water side is at least 35 kilopascals greater than the maximum pressure on the process side. Therefore, in accordance with paragraph (a)(1) of this section, the Permittee is not required to perform the monitoring of paragraph (b) or (c) of this section.

The leak monitoring, repair and reporting provisions in paragraphs (d), (e) and (f) of this section do not apply to the Permittee since they comply via the pressure differential option discussed in the previous paragraph of this document.

b. §63.113 “Process vent provisions”

Paragraph (a)(2) of this section requires the Permittee to reduce emissions of total organic HAP from Group 1 process vent streams (i.e. VS2A) by 98% by weight or to a concentration of 20 ppm by volume, whichever is less stringent.

The Permittee complies with this control requirement by controlling total organic HAP emissions from VS2A through the catalytic oxidizer (ID No. CD-2A).

c. §63.114 “Process vent provisions – monitoring requirements”

Paragraph (a)(1)(ii) of this section requires the Permittee to continuously monitor and record the vent stream temperature immediately upstream and immediately downstream of catalytic oxidizer CD-2A.

Paragraph (d) of this section contains monitoring requirements for bypass lines [certain safety equipment (e.g. analyzer vents or pressure relief valves) are not subject to the requirements of this paragraph].

d. §63.118 “Process vent provisions – Periodic reporting and recordkeeping requirements”

Paragraph (a) of this section requires the Permittee to maintain continuous records of monitoring data collected as required by §63.114(a)(1) and specifies the records required for monitoring of bypass lines as required by §63.114(d).

Paragraph (f) of this section specifies the information the Permittee is required to include in the Periodic Reports submitted for this facility.

Paragraphs (g) through (k) of this section specifies the reporting requirements associated with process changes that the Permittee may undertake which result in changing a Group 2 process vent to become a Group 1 process vent.

e. §63.119 “Storage vessel provisions – reference control technology”

Methanol storage tank ES3M1 and storage tanks ES7F1 through ES7F8 (when used to store methanol) are Group 1 storage vessels that store a liquid with maximum true vapor pressure less than 76.6 kilopascals. Therefore, paragraph (a)(1) of this section applies to emissions from these storage vessels and requires control of the associated HAP emissions. These Group 1 storage vessel emissions are commingled with either (1) vent stream VS2A (i.e. when operating under their primary compliance scenario), or (2) vent stream VS4A.2 (i.e. when operating under their alternate compliance scenario).

The Permittee complies with this section via the option of paragraph (e)(1). This involves use of a closed vent system and control device that reduces inlet emission of total organic HAP by at least 95% by weight. The Permittee uses either catalytic oxidizer CD-2A (i.e. when the emissions are part of VS2A) or thermal oxidizer CD-4A (i.e. when the emissions are part of VS4A.2) to comply with this requirement.

Note that when storage tanks ES7F1 through ES7F8 are used to store formaldehyde they are considered Group 2 storage vessels that are subject only to the recordkeeping of §63.123(a) [i.e. the controls are not required].

f. §63.122 “Storage vessel provisions – reporting”

Paragraph (a) of this section addresses the generally applicable reporting requirements for Group 1 storage vessels (e.g. Initial Notification, Notification of Compliance Status, Periodic Reporting, etc.).

Paragraphs (b) and (c) of this section address the Monitoring Plan and Notification of Compliance Status more specifically for sources using closed vent systems and control devices to comply with §63.119(e).

Paragraph (g) of this section addresses the Periodic Reporting more specifically for sources using closed vent systems and control devices to comply with §63.119(e).

g. §63.123 “Storage vessel provisions – recordkeeping”

Paragraph (a) of this section requires the Permittee to maintain records of dimensions and capacities of Group 1 and Group 2 storage vessels for as long as those vessels are in operation and retain Group 1 or Group 2 status.

Paragraph (f) of this section requires the Permittee to maintain records of the measured operating parameter values of the control devices (i.e. catalytic oxidizer CD-2A and thermal oxidizer CD-4A) associated with Group 1 storage vessels’ emissions.

This paragraph also includes recordkeeping steps the Permittee may take to excuse uncontrolled emissions from the storage vessels during planned routine maintenance of the associated control devices. These provisions are not included in Permit No. 04243T22 since the storage vessels’ emissions are always commingled with sources (i.e. in VS2A or VS4A.2 – see discussion of §63.119 above) that have no such allowance.

h. §63.126 “Transfer operations provisions – reference control technology”

Paragraph (c) of this section indicates that Group 2 transfer racks are subject only to the recordkeeping of §63.130(f).

The Permittee has restricted their transfer operations such that they are considered Group 2 operations via a permit limit restricting annual loadout to less than 650,000 liters of liquid products that contain organic HAP with a rack weighted average vapor pressure greater than or equal to 10.3 kilopascals.

i. §63.130 “Transfer operations provisions – periodic recordkeeping and reporting”

Paragraph (f) of this section requires the Permittee to maintain the following records (updated annually) for each transfer rack:

- An analysis demonstrating the design and actual annual throughput of the transfer rack;
- An analysis documenting the weight-percent organic HAP in the liquid loaded; and
- An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred.

j. §63.132 “Process wastewater provisions – general”

The Permittee indicated (see phone log dated 05-09-08) that this facility produces Group 2 wastewater but does not produce any Group 1 wastewater.

Paragraph (a)(3) of this section indicates that Group 2 wastewater streams are subject only to the recordkeeping and reporting requirements of §63.146(b)(1) [i.e. the Notification of Compliance Status] and §63.147(b)(8) [i.e. records of process unit description and identification, flow rates, stream identification and concentrations of pollutants].

k. §63.148 “Leak inspection provisions”

This section **is not applied** to the Permittee since paragraph (k) of this section indicates that sources subject to §63.172 of Subpart H are exempt from this section and shall instead comply with §63.172 of 40 CFR Part 63, Subpart H. Subpart H **is applied** and requires a leak detection and repair (LDAR) program for all equipment that contains or contacts 5 weight percent HAP or greater and operates 300 hours per year or more.

l. §63.152 “General recordkeeping and continuous records”

Paragraph (a) of this section contains the generally applicable reporting requirements associated with Initial Notification, Implementation Plan, Notification of Compliance Status, Periodic Reports, etc. for the affected sources.

Paragraph (b) of this section contains the specific reporting requirements associated with the Notification of Compliance Status for the affected sources.

Paragraph (c) of this section contains the specific reporting requirements associated with the Periodic Reports for the affected sources.

Paragraphs (d) and (e) of this section contains the specific reporting requirements associated with “Other Reports” that may apply to the affected sources (e.g. SSM reports).

Paragraph (f) of this section lists the generally applicable continuous recordkeeping requirements for the affected sources at this facility – however, paragraph (f)(7) specifically states that monitoring data obtained during start-ups, shutdowns, malfunctions, periods of non-operation of the affected source, and/or monitoring system breakdowns/repairs/calibration/etc. shall not be included in the calculation of any averages – however, the Permittee must keep records of these periods.

Paragraph (g) of this section provides conditions under which the Permittee may implement a reduced recordkeeping program.

m. 40 CFR Part 63, Subpart H “National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks” - §§63.160 – 63.183

The Permittee is required to implement a leak detection and repair (LDAR) program for all subject equipment components (e.g. pumps, compressors, pressure relief devices, etc.).

B. Four phenol storage tanks (ID Nos. ESR1, ESR2, ESR5 and ESR10);

One urea-formaldehyde concentrate (UFC) storage tank (ID No. ESR8);

One aqueous ammonia storage tank (ID No. ES-S19) and associated scrubber tank (ID No. CD-S19);

One heat exchange system (ID No. HX2);

Three resin tank farms (ID Nos. PFTF, UFTF and AFTF), as described in Section II F, above;

One continuous process vent stream (ID No. VS5A), as described in Section II C, above, and associated bagfilter (ID No. CD-5A);

One batch non-reactor vessel, mix/blend tank kettle 6 (ID No. ES4.6); and

Natural gas/propane-fired thermal oxidizer (2.9 million Btu per hour maximum heat input rate, ID No. CD-4A) associated with:

- **Aggregate batch process vent stream (ID No. VS4A.1) comprised of emissions from twelve resin production process vessels including six batch reactor vessels (ID Nos. ES4.1, ES4.2, ES4.3, ES4.5, ES4.7 and ES4.8) and six batch non-reactor vessels (five weigh tanks, ID Nos. ES4.9 through ES4.13 and one mix/blend tank, ID No. S-13) and associated natural gas/propane-fired thermal oxidizer (ID No. CD-4A); or**
- **Vent stream (ID No. VS4A.2), as described in Section III A, above:**

These sources are subject to the MACT provisions of 40 CFR Part 63, Subparts OOO and UU for existing sources.

**i. 2D .1111 “Maximum Achievable Control Technology”
40 CFR Part 63, Subparts OOO and UU**

This rule applies to the listed sources due to the applicability of 40 CFR Part 63, Subparts OOO (i.e. the NESHAP for Manufacture of Amino/Phenolic Resins- §§63.1400 through 63.1419) and UU (i.e. the NESHAP for Equipment Leaks – Control Level 2 Standards - §§63.1019 through 63.1039).

a. §63.1403 “Emission standards”

Paragraph (a) of this section requires that the closed vent systems utilized to vent emissions to control devices to comply with Subpart OOO meet the requirements of 40 CFR Part 63, Subpart SS “National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process.”

b. §63.1404 “Storage vessel provisions”

Paragraph (a) of this section only applies emission standards to certain storage tanks at new affected facilities. The subject facility owned/operated by the Permittee is considered an existing affected facility. Therefore, the phenol, UFC and resin storage tanks are subject to Subpart OOO but there are **no applicable requirements** for the Permittee.

c. §63.1405 “Continuous process vent provisions”

Paragraph (a) of this section applies emission standards to certain continuous process vent streams at new affected facilities. The spray dry resin production process (ID No. ES-5) is considered an existing affected facility. Therefore, this section includes **no applicable requirements** for the associated continuous process vent stream (ID No. VS5A).

- d. §63.1406 “Reactor batch process vent provisions”
§63.1408 “Aggregate batch process vent provisions”

Although this facility has 6 reactor batch process vents (i.e. the vent streams from ES4.1, ES4.2, ES4.3, ES4.5, ES4.7 and ES4.8) the provisions of §63.1406 are not applied to the Permittee because these vent streams are combined with emissions from 6 non-reactor process vent streams (i.e. the vent streams from 5 weigh tanks, ES4.9 through ES4.13, and 1 mix/blend tank, S-13) to form an aggregate batch process vent stream (i.e. VS4A.1) which is subject to §63.1408. The Permittee has opted to comply with §63.1408 by reducing the organic HAP emissions of this aggregate vent stream by at least 83% by weight as allowed under paragraph §63.1408(a)(2)(ii). This reduction is achieved by routing the vent stream through thermal oxidizer CD-4A.

Note that when this aggregate batch process vent stream is commingled with the storage vessel and loadout operation emissions from the formaldehyde production to form vent stream VS4A.2 the requirements of §63.119 also apply and require a 95% reduction (see discussion of §63.119 in Section III A.1.e of this document, above).

- e. §63.1407 “Non-reactor batch process vent provisions”

The Permittee operates one non-reactor batch process vent (i.e. the vent stream from mix/blend tank ES4.6) that is subject to this section (the other 6 non-reactor process vent streams are covered under §63.1408 – see discussion above). The Permittee has opted to comply by reducing the facility-wide organic HAP emissions from non-reactor batch vent streams by at least 62% by weight as allowed under paragraph §63.1407(a)(3)(ii). Although the vent stream from ES4.6 is uncontrolled, the required reduction is achieved (on a facility-wide weighted average) by routing the vent streams of ES4.9 through ES4.13 and S-13 through thermal oxidizer CD-4A.

- f. §63.1409 “Heat exchange system provisions”

The Permittee does not meet the conditions for exemption listed in paragraph (a) of this section and therefore must monitor the cooling water of the heat exchange system that is used to cool process equipment of their MACT OOO-affected sources (ID No. HX2). The Permittee complies by monitoring either formaldehyde or total organic carbon as allowed under paragraph (b) of this section. These samples must be collected at least quarterly.

If a leak is detected [according to the criteria of paragraph (b) of this section], then paragraph (d) requires the Permittee to repair the leak as soon as practical, but not later than 45 calendar days after receiving results of testing indicating the leak. The Permittee is also required to confirm the leak repair within 7 days of the repair or startup, whichever is later. Paragraph (e) lists conditions under which the leak repairs may be delayed.

- g. §63.1410 “Equipment leak provisions”
40 CFR Part 63, Subpart UU “National Emission Standards for Equipment Leaks – Control Level 2 Standards” - §§63.1019 – 63.1039

This section requires the Permittee to comply with the requirements of 40 CFR Part 63, Subpart UU for all equipment that contains or contacts 5 weight percent HAP or greater and operates 300 hours per year or more. The Permittee complies by implementing the required leak detection and repair (LDAR) program for all subject equipment components (e.g. pumps, compressors, pressure relief devices, etc.).

- h. §63.1415 “Monitoring requirements”

Paragraph (b)(5)(i) of this section requires the Permittee to continuously monitor and record the firebox temperature of thermal oxidizer CD-4A.

Paragraph (d) of this section contains monitoring requirements for bypass lines [certain safety equipment (e.g. analyzer vents or pressure relief valves) are not subject to the requirements of this paragraph].

i. §63.1416 “Recordkeeping requirements”

Paragraph (a) of this section requires the Permittee to retain copies of all records and reports required by Subpart OOO for at least 5 years. The most recent 6 months of data must be retained on site. Paragraph (b) of this section requires the Permittee to develop and maintain an SSM plan and keep the associated records.

Paragraph (c) of this section contains the generally applicable recordkeeping requirements of monitoring and includes specific requirements on measurement frequency, averaging periods, etc. for the affected sources. Note that although continuous monitoring and record keeping requirements apply, compliance with MACT OOO (as with MACT G) is based on daily average control device parameter values [see §63.1413(h)].

Paragraph (c)(4) of this section specifically states that monitoring data obtained during start-ups, shutdowns, malfunctions, periods of non-operation of the affected source, and/or monitoring system breakdowns/repairs/calibration/etc. shall not be included in the calculation of any averages – however, the Permittee must keep records of these periods.

Paragraphs (d) and (e) of this section contain more specific recordkeeping requirements for batch process vents and aggregate batch vent streams, respectively.

Paragraph (g) of this section requires the Permittee to maintain records of calibration checks and maintenance of the continuous monitoring systems used to comply with Subpart OOO. This paragraph also requires the Permittee to retain records of the heat exchange system leak checks required under §63.1409.

Paragraph (h) of this section provides conditions under which the Permittee may implement a reduced recordkeeping program.

j. §63.1417 “Reporting requirements”

Paragraph (a) of this section requires the Permittee to submit reports and notifications required by 40 CFR Part 63, Subpart A (these are listed in Table 1 of Subpart OOO) and any other applicable reports listed in paragraphs (d) through (i) of this section (e.g. Precompliance reports, Periodic reports, Notifications of added emission points or process changes, etc. – these are listed in Table 5 of Subpart OOO).

C. Continuous process vent stream (ID No. VS5A), as described in Section II C, above, and associated bagfilter (ID No. CD-5A);

One aqueous ammonia storage tank (ID No. ES-S19) and associated scrubber tank (ID No. CD-S19);

Four phenol storage tanks (ID Nos. ESR1, ESR2, ESR5 and ESR10);

Urea-formaldehyde concentrate (UFC) storage tank (ID No. ESR8);

Three resin tank farms (ID Nos. PFTF, UFTF and AFTF), as described in Section II F, above;

Phenol unloading operations (ID No. ES-PU);

One batch non-reactor vessel, mix/blend tank kettle 6 (ID No. ES4.6);

Leak detection and repair (LDAR) program equipment associated with the formaldehyde production processes;

LDAR program equipment associated with the resin production processes;

Process vent stream (ID No. VS2A), as described in Section III A, above, and associated natural gas/propane-fired catalytic oxidizer (ID No. CD-2A); and

Aggregate batch process vent stream (ID No. VS4A.1), as described in Section III B, above, and vent stream (ID No. VS4A.2), as described in Section III A, above, and associated natural gas/propane-fired thermal oxidizer (ID No. CD-4A)

The Permittee is subject to the NC toxics program due to emissions of three TAPs (ammonia, formaldehyde and phenol) at rates above the associated TPERs. The Permittee included the above-listed sources in the facility-wide toxics demonstration submitted for this facility (i.e. application 6600016.05C) pursuant to 2Q .0705.

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

The last MACT toxics demonstration submitted for this facility did not include the emergency generators (refer to the discussion of 2D .1100 in Section II B.iv of this document, above) but did take credit for 75% control of ammonia emissions from tank ES-S19 via a water/glycol scrubber tank. Therefore, the 2D .1100 condition in Permit No. 04243T22 will not include the emergency generators but will require use of the glycol/water scrubber tank. The operational limitations for these sources associated with 2D .1100 include:

- (1) Control emissions from process vent stream (ID No. VS2A) with the associated catalytic oxidizer (ID No. CD-2A);
- (2) Control emissions from aggregate batch process vent stream (ID No. VS4A.1) and vent stream (ID No. VS4A.2) with the associated thermal oxidizer (ID No. CD-4A);
- (3) Control emissions from the aqueous ammonia storage tank (ID No. ES-S19) with the associated scrubber tank (ID No. CD-S19);
- (4) Maintain a minimum upstream temperature of 685 °F and a minimum temperature drop of 228 °F across the bed for catalytic oxidizer CD-2A;
- (5) Maintain a minimum liquid level of 56 inches above the bottom of scrubber tank (ID No. CD-S19); and
- (6) Maintain a minimum firebox temperature of 1,250 °F for thermal oxidizer CD-4A.

The feed rate limit of 13,000 pound per hour for the spray dry resin production process (ID No. ES-5) in Permit No. 04243T21 is removed from Permit No. 04243T22 since that feed rate is the potential feed rate for ES-5 (as cited in application 6600016.07A).

The MRR requirements in Permit No. 04243T22 associated with 2D .1100 for the above-listed sources will refer to the parallel MRR requirements associated with 2D .1111 for vent streams VS2A, VS4A.1 and VS4A.2. For ES-S19, the MRR requirements in Permit No. 04243T22 will include scrubber tank CD-S19 liquid level monitoring and recordkeeping immediately prior to each filling of ES-S19 and semiannual summary reporting.

Semiannual reporting is considered adequate due to the higher level of MRR requirements associated with the MACT-subject sources and the infrequent use of scrubber tank CD-S19 (i.e. it is only used during filling of ES-S19, reportedly about once per month).

D. Facility-wide affected sources:

i. 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. The Permittee does conduct the subject operations. Therefore, this rule is added to Permit No. 04243T22 which will include the standard language for work practice standards and MRR associated with this rule for the facility-wide affected sources.

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

This rule requires the Permittee to prevent odorous emissions from the facility from causing or contributing to objectionable odors [as defined at 2D .1801(9)] beyond the facility’s boundary. The Permittee conducts operations that would reasonably be expected to create objectionable odors but does not have a history of violations of this rule. Therefore, this rule is added to Permit No. 04243T22, but with only the standard shell language.

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

The Permittee submitted the last MACT toxics demonstration for this facility as application 6600016.05C. On 07/11/07 DAQ received additional information from the Permittee that included a new modeling demonstration that incorporated the most recent emission rate estimates. That toxics demonstration has been consolidated into permit application 6600016.07A (i.e. this renewal). The AQAB reviewed and approved that modeling demonstration (refer to the memo from Chuck Buckler dated 8/6/07).

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

NSPS: The two boilers at this facility are subject to New Source Performance Standards pursuant to rule 2D .0524 and 40 CFR Part 60:

- **Subpart Dc** for Small Steam Generating Units: Boiler ES-B1 is subject to this regulation which applies to steam generating units with heat input capacities from 10 million Btu per hour to 100 million Btu per hour, inclusive, for which construction, modification or re-construction is commenced after 6/9/89. Boiler ES-B1 has a heat input capacity of 25.1 million Btu per hour and was manufactured in 2006. Applicability is conservatively assumed for temporary boiler ES-B2 (see the discussion of rule 2D .0524 in Section II A.iv of this document, above).

- **Subpart Kb** for VOL Storage Vessels: The storage tanks at this facility **are not subject** to this regulation which applies to VOL storage tanks that were constructed/reconstructed/modified after 7/23/84, and either (1) have storage capacities > 151 m³ (39,898 gallons) and store liquids with maximum true vapor pressures ≥ 3.5 kPa; or (2) have storage capacities of ≥ 75 m³ (19,817 gallons) but < 151 m³ and store liquids with maximum true vapor pressures of ≥ 15.0 kPa.

According to the information provided in permit application 6600016.07A, most of the tanks are exempted based on maximum storage capacity and/or vapor pressure of the contents (the resins have very low vapor pressures). The only tank that meets the storage capacity and content vapor pressure thresholds is the methanol storage tank (ID No. ES3M1) – however that tank has an operational date of 1980 and therefore pre-dates this regulation.

- **Subparts VV and VVa** for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI): This facility is not subject because it pre-dates these regulations (applicability dates of 01/05/81 for VV and 11/07/06 for VVa).
- **Subpart III** for VOC Emissions From the SOCMI Air Oxidation Unit Processes: This facility is not subject because it pre-dates this regulation (applicability date of 10/21/83).
- **Subpart NNN** for VOC Emissions From SOCMI Distillation Operations: This facility is not subject because it pre-dates this regulation (applicability date of 12/30/83).
- **Subpart RRR** for VOC Emissions From SOCMI Reactor Processes: This facility is not subject because it pre-dates this regulation (applicability date of 06/29/90).
- **Subpart IIII** for Compression Ignition Internal Combustion Engines (CI ICE): Emergency Generators ES-GEN1 and ES-GEN2 **are not subject** to this regulation (they pre-date the rule - refer to the discussion of rule 2D .0524 in Section II B.iii, above).

NESHAP: Several sources at this facility are subject to National Emission Standards for Hazardous Air Pollutants pursuant to rule 2D .1111 and 40 CFR Part 63:

- **Subpart ZZZZ** for Reciprocating Internal Combustion Engines (RICE): Emergency generators ES-GEN1 and ES-GEN2 are subject to this regulation with the only applicable requirement being an initial notification for ES-GEN1 (see discussion in Section II B.v, above).
- **Subpart DDDDD** for Industrial/Commercial/Institutional Boilers and Process Heaters: Boilers ES-B1 and ES-B2 are not subject to this regulation because it has been vacated.
- **Subparts F, G and H** for the Synthetic Organic Chemical Manufacturing Industry (F and G) and equipment leaks (H): The formaldehyde production process (ES-2), nine formaldehyde/methanol storage tanks (ES3M1 and ES7F1 through ES7F8), two process vent streams (VS2A and VS4A.2), the formaldehyde unloading operations (ES-FL) and one heat exchange system (HX1) are subject to the requirements of these regulations. Refer to the discussion in Section III A of this document, above, for more information.
- **Subparts OOO and UU** for Manufacture of Amino/Phenolic Resins (OOO) and equipment leaks (UU): The resin production process (S-13, ES4.1 through ES4.3 and ES4.5 through ES4.13), the spray dry resin production process (ES-5), the four phenol storage tanks (ESR1, ESR2, ESR5 and ESR10), the UFC storage tank (ESR8), the three resin tank farms (PFTF, UFTF and AFTF), one process vent stream (VS4A.1) and one heat exchange system (HX2) are subject to the requirements of these regulations. Refer to the discussion in Section III B of this document, above, for more information.
- **Note:** According to Application 6600016.07A this facility is also subject to 2D .1110 and 40 CFR Part 61, Subparts M (for asbestos) and FF (for benzene in waste) but with no applicable requirements under current operations. Therefore, neither these rules nor any associated conditions will be included in Permit No. 04243T22.

PSD: This facility falls into one of the “named” PSD categories with major source thresholds of 100 tons per year and has uncontrolled potential to emit > 100 tons of VOC. Therefore, this facility is classified as major for PSD purposes. In a previous permit application the Permittee accepted PSD avoidance conditions to limit NO_x emissions from the emergency generators (ID Nos. ES-GEN1 and ES-GEN2) to less than 40 tons per consecutive 12-month period, each.

Application 6600016.07A is a renewal without modification and does not represent a major modification for PSD purposes – therefore a PSD review is not triggered.

Toxics: The Permittee has submitted a facility-wide toxics demonstration for this facility. For more information refer to the discussions of 2D .1100 and 2Q .0705 in Sections III C and D of this document, above.

112(r): This facility is subject to the requirements of this regulation due to the applicability of Section 2D .2100 “Risk Management Program” and 40 CFR Part 68 “Chemical Accident Prevention Provisions.” Specifically, the facility is subject due to its use/handling/storage of ammonia and formaldehyde onsite in quantities in excess of the associated thresholds.

A Risk Management Plan (RMP) was developed and submitted (on 6/11/04) as required. That RMP was corrected by the Permittee in a submittal received by NC DAQ on 7/2/07 and is due for its renewal on 6/11/09.

CAM: This facility is subject to the requirements of 40 CFR Part 64 “Compliance Assurance Monitoring.” Specifically, the spray dry resin production process (ID No. ES-5) is subject to these requirements pursuant to rule 2D .0614 “Compliance Assurance Monitoring” [refer to the discussion in Section II C.iv of this document, above, and the Summary of CAM Applicability (Attachment A to this document) for more information].

RACT: This facility is not located in an area listed in either paragraph 2D .0902(f) or 2D .1402(d). Therefore, existing source RACT requirements are not applicable or discussed here.

V Permit Modifications/Changes:

The following table summarizes the changes to Permit No. 04243T22 resulting from Permit Application No. 6600016.07A:

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
Global	Global	N/A	<ul style="list-style-type: none"> Update format to current shell version; Change the issuance/effective dates of the permit; Amend the application number and complete date; Change permit revision number to T22; Include PF/UF/AF resin and ammonia tanks and formaldehyde/methanol/phenol unloading/loading operations (previously considered insignificant activities) due to the applicability of 2D .1100; and Change description of CD-2A from catalytic <i>incinerator</i> to catalytic <i>oxidizer</i>
3 - 5	3 - 5	Equipment List	<ul style="list-style-type: none"> Completely reorganize equipment list and modify descriptions for correctness and clarity; Correct the filter surface area of CD-5A and the tank capacities of ESR1, ESR2, ESR5, ESR8 and ESR10; Remove tanks ES-6.1 and -6.2 (these were actually duplicates of phenol tanks ESR5 and ESR10); and Remove asterisk language for multiple sources pursuant to public comment/EPA review
5	6	2.1 A	Modify limits/standards table to add 2D .1806 and remove 2D .1111 (boiler MACT has been vacated)
7	6	2.1 A.2.a and A.3.a	Modify text to correctly reflect 2D .0516 and 2D .0521 applicability to the boilers
7	N/A	2.1 A.5 (04243T21)	Remove permit section addressing 2D .1111 avoidance [the boiler MACT (Subpart DDDDD) was vacated]
8	8	2.1 B	Modify limits/standards table to add 2D .1111 (MACT Subpart ZZZZ) and 2D .1806
8 - 9	8	2.1 B.3	Combine the PSD avoidance requirements of the two generators into one subsection
9	9	2.1 C	Modify limits/standards table to add 2D .1806 and modify descriptions to match equipment list
10	10	2.1 C.2.c	Update the monitoring associated with 2D .0521, add requirement to conduct monitoring during loading, and remove the requirement to establish “normal” for VEs
11	11	2.1 D	Modify limits/standards table to add 2D .1806
12	12	2.1 D.2.c	Update the monitoring associated with 2D .0521, add requirement to conduct monitoring during loading, and remove the requirement to establish “normal” for VEs
N/A	13 - 15	2.1 E	Add a permit section to address MRR requirements associated with the spray dry resin production
N/A	16	2.1 F	Add a permit section to address MRR requirements associated with methanol/formaldehyde tanks ES3M1 and ES7F1 through ES7F8; and ammonia tank ES-S19

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
13 - 15	17 - 21	2.2 A	<ul style="list-style-type: none"> Modify list of sources subject to MACTs F, G and H for clarity/correctness and consistency; Modify limits/standards table to more accurately reflect the associated requirements; and Reorganize the MRR requirements of this subsection for clarity and include more detailed language for those requirements
15 - 17	22 - 25	2.2 B	<ul style="list-style-type: none"> Modify list of sources subject to MACTs OOO and UU for clarity/correctness and consistency; Modify limits/standards table to more accurately reflect the associated requirements; and Reorganize the MRR requirements of this subsection for clarity and include more detailed language for those requirements
17 - 18	26 - 27	2.2 C	<ul style="list-style-type: none"> Modify list of sources subject to NC toxics and the limits/standards table to reflect the information in the facility-wide toxics demonstration; and Modify the MRR requirements of this subsection to more accurately reflect the associated requirements
N/A	28 - 29	2.2 D	Add permit section for facility-wide affected sources subject to 2D .0958, 2D .1806 and 2Q .0705
18 - 27	30 - 37	Section 3	Update Section 3 General Conditions
29 - 33	N/A	N/A	Remove Part II pursuant to application 6600016.07A and the new permit shell

Note: Condition/Item numbers are as they appear on Permit No. 04243T22 unless otherwise noted.

VI Title V Permit History:

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

Permit No.	Issuance	Description of Revision
04243T13	03/04/03	Initial Title V permit (effective date of 03/17/03)
04243T14	05/30/03	Replace a resin storage tank (on the list of insignificant activities)
04243T15	09/11/03	Replace emergency generator with ES-GEN1
04243T16	11/19/03	Add packed tower scrubber to reduce acetone emissions
04243T17	01/21/04	Add non-reactor batch process tank
04243T18	02/25/04	Administrative amendment
04243T19	08/05/05	Add bin filters to existing urea resin hoppers
04243T20	03/09/06	<ul style="list-style-type: none"> Replace existing boiler with boilers ES-B1 and ES-B2 Add MACT requirements to permit
04243T21	08/07/07	Add bin filters to existing urea resin feed hoppers
04243T22	09/13/08	<ul style="list-style-type: none"> Renewal of Title V permit Add 2D .0614, 2D .0958, 2D .1806, 2D .2100 and 2Q .0705 requirements to permit

VII Application Fee:

No fee is required for the renewal without modification requested via application 6600016.07A, the last MACT/NC toxics demonstration (i.e. an administrative amendment) requested via application 6600016.05C (and consolidated into application 6600016.07A), or the applicability determinations requested via letters dated 02/18/08, 10/30/07 and 02/05/08.

VIII Compliance Status:

The facility was most recently inspected on 09/18/07 by Will Wike of RRO and Jenny Kelvington of RCO and appeared to be operating in compliance with DAQ requirements during that inspection.

IX Zoning Consistency:

No zoning consistency determination is required for the modifications requested under permit applications 6600016.07A or 6600016.05C or the applicability determinations requested via letters dated 02/18/08, 10/30/07 and 02/05/08.

X Miscellaneous:

Applicability Determinations: In addition to the modifications requested by the Permittee via application 6600016.07A discussed in Section I, above, the Permittee notified NC DAQ of three changes to operations that did not require modification of Permit No. 04243T21 via applicability determination letters dated 02/18/08, 10/30/07 and 02/05/08. The subject changes include:

- The like-for-like replacement of phenol storage tank ESR1;
- The change in service of tanks I-U1, I-U2 and I-U3 from urea-formaldehyde resin storage to alcohol soluble resin storage; and
- The like-for-like replacement of two phenol-formaldehyde resin storage tanks I-P5 and I-P8.

Equipment List: Note that although not specifically requested by application 6600016.07A, the formaldehyde/methanol/phenol loading/unloading operations (ID Nos. ES-FL, ES-MU and ES-PU); the aqueous ammonia storage tank (ID No. ES-S19) and associated scrubber tank (ID No. CD-S19); and the PF, UF and AF resin storage tank farms are added to the equipment list of Permit No. 04243T22. All of these sources were included on the list of insignificant activities attached to Permit No. 04243T21 but were included in the modeling conducted to show facility-wide compliance with NC toxics – making them ineligible for listing as insignificant activities (see discussions in Sections III A, B and C, above). The loading/unloading operations are also subject to monitoring and recordkeeping requirements under 40 CFR Part 63, Subpart G to ensure Group 2 status.

Note that 2D .0948 “VOC Emissions from Transfer Operations” does not apply to the loading/unloading operations because the transferred materials have vapor pressures below the associated applicability threshold of 1.5 psi.

Also, to be consistent with permits issued to other chemical processing plants, the equipment list of Permit No. 04243T22 is altered (for the chemical processes) to replace the individual equipment listings with a listing of the vent streams since the relevant MACT standards are written such that the associated MRR requirements apply to the vent streams.

Finally, when batches containing acetone are processed in kettle K8 (ID No. ES4.8), the exhaust from that kettle is run through an acetone scrubber (the only use for this scrubber) before being sent to thermal oxidizer CD-4A. This acetone scrubber was listed separately as an emission source (ID No. ES4.14) on Permit No. 04243T21 but is included as part of ES4.8 in Permit No. 04243T22 since its emissions are part of vent streams VS4A.1 or VS4A.2.

Insignificant Activities List: Application 6600016.07A included a longer list of insignificant activities than what was attached to Permit No. 04243T21. This longer list of insignificant activities

is attached to Permit No. 04243T22 after removal of the sources that are ineligible for listing as insignificant activities due to applicability of 2D .1100.

Control Device Evaluation: The Permittee utilizes scrubber tank (ID No. CD-S19) to control emissions from the aqueous ammonia storage tank (ID No. ES-S19) during filling operations. This scrubber tank is filled with a water/glycol mixture. When ES-S19 is filled the displaced vapors are routed through CD-S19 where they are forced through the water/glycol mixture to strip out the ammonia. According to the associated Form C6, if the liquid level in this scrubber tank is at least 56 inches above the bottom of the scrubber tank, then scrubber tank CD-S19 will achieve a control efficiency of 95%. The associated Form D5 was sealed by Cliff Bowling in accordance with 2Q .0112. According to the NC Board of Engineers and Surveyors' website, Cliff Bowling is a registered professional engineer in North Carolina (license number 025385 with a status of current).

Certification by Responsible Official: In accordance with 2Q .0520, Ronald Walls (i.e. the responsible official for Georgia-Pacific Resins Conway) provided the required certification on Form E5 of application 6600016.07A.

XI Permit Review:

A draft version of Permit No. 04243T22 and the associated review were sent to the Permittee and the RRO for a review and comment period on 06/16/08. The Permittee submitted several comments (mostly administrative/clarification) on that draft version. Please refer to Attachment B to this document for a summary of the associated comments submitted and the responses by NC DAQ.

Public Participation: In accordance with 2Q .0521, NC DAQ must provide the opportunity for public participation prior to the renewal of a Title V permit (such as that represented by application 6600016.07A). NC DAQ met this obligation with the public notice posted in the Daily & Herald of Roanoke Rapids, Halifax County, North Carolina on 07/30/08.

EPA & Affected States Review: In accordance with 2Q .0522, NC DAQ must provide EPA and any Affected States [as defined at 2Q .0503(1)] the opportunity to review a proposed renewal of this Title V permit. NC DAQ met this obligation by sending those agencies a copy of Proposed Permit No. 04243T22 and the associated review on 07/30/08. A summary of the associated comments submitted and the responses by NC DAQ is provided below:

[More here.](#)

XII Recommendation:

The Title V Permit renewal application for the Georgia-Pacific Resins facility in Conway, Northampton 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. 04243T22.

Issuance of Permit No. 04243T22 is recommended.

Attachment A: Summary of CAM Applicability

Emission Source(s)	Control Device(s)	Controlled Pollutant(s)	Pre-Control PTE (tons per year)	CAM Disqualifications/Exemption(s)	CAM Applicable?
Boilers: ES-B1 and ES-B2	N/A	N/A	All pollutants < 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
Emergency generators: ES-GEN1 and ES-GEN2	N/A	N/A	All pollutants < 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
Formaldehyde production:					
ES-2	CD-2A	VOC/HAP	> 100	15A NCAC 2D .0614(b)(1)(A) [post 1990 MACT]	No
		CO	> 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
		All others	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
ES3M1, ES7F1 through ES7F8, and ES-MU	CD-2A or CD-4A	VOC/HAP	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
Spray dry resin production: ES-5	CD-5A	PM	> 100	This source is subject to a post 1990 MACT but is not subject to an emission limit under that MACT	Yes
Resin production:					
ES-UH-K3	CD-UH-K3	PM	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
ES-UH-K8	CD-UH-K8	PM	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
ES-11.1	CD-11.1	PM	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
ES-11.2	CD-11.2	PM	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
ES-S19	CD-S19	NH ₃	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
ESR1, ESR2, ESR5, ESR8, ESR10, ES-PU, and ES4.6	N/A	VOC/HAP	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No
S-13, ES4.1, ES4.2, ES4.3, and ES4.5 through ES4.14	CD-4A	VOC/HAP	< 100	Does not meet criteria of 15A NCAC 2D .0614(a)	No