NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: XXXX XX, 2023

Region: Winston-Salem Regional Office
County: Guilford
NC Facility ID: 4100823
Inspector's Name: Andrew Kormos
Date of Last Inspection: 03/16/2022
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): St. Johns Packaging USA, LLC

Facility Address:
St. Johns Packaging USA, LLC
2619 Phoenix Drive
Greensboro, NC 27406

SIC: 2759 / Commercial Printing, Nec
NAICS: 323111 / Commercial Gravure Printing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0515, .0516, .0521, & .1806
NSPS: N/A
NESHAP: N/A
PSD: N/A
PSD Avoidance: N/A
NC Toxics: 15A NCAC 02Q .0711
112(r): N/A
Other: 15A NCAC 02Q .0317: Avoidance Condition for 15A NCAC 02D .1111 - Subpart KK

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Craig Bonde Packaging Innovation Manager (336) 292-9911 2619 Phoenix Drive Greensboro, NC 27406	Craig Bonde Packaging Innovation Manager (336) 292-9911 2619 Phoenix Drive Greensboro, NC 27406	Craig Bonde Packaging Innovation Manager (336) 292-9911 2619 Phoenix Drive Greensboro, NC 27406

Application Data

Application Number: 4100823.21A
Date Received: 08/03/2021
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 02221/T20
Existing Permit Issue Date: 06/28/2017
Existing Permit Expiration Date: 05/31/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	---	0.7000	224.71	0.5800	---	0.0130	0.0125 [Hexane, n-]
2020	---	0.7400	180.56	0.6200	0.0500	0.0005	0.0005 [Glycol Ethers, Unlisted - Spec]
2019	---	0.5400	310.50	0.4500	---	0.0005	0.0005 [Glycol Ethers, Unlisted - Spec]
2018	---	0.7400	322.79	0.6200	0.0500	0.0005	0.0005 [Glycol Ethers, Unlisted - Spec]
2017	---	0.7400	368.79	0.6200	0.0500	0.0134	0.0134 [Hexane, n-]

Review Engineer: David B. Hughes

Review Engineer's Signature: **Date: XXXX XX, 2023**

Comments / Recommendations:
Issue 02221/T21
Permit Issue Date: XXXX XX, 2023
Permit Expiration Date: XXXX XX, 2028

1. Purpose of Application

Application No. 0800044.21A

This permitting action is a renewal of an existing Title V permit pursuant to 02Q .0513. The existing Title V permit (**02221T20**) was issued on **June 28, 2017**, with an expiration date of **May 31, 2022**. The renewal application **4100823.21A** was received on **August 3, 2021**, or at least six months prior to the original expiration date **May 31, 2022**. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

N. S. Flexibles, LLC (N. S. Flexibles) requested a name change to St. Johns Packaging USA, LLC (St. Johns Packaging).

St. Johns Packaging has also requested the following changes to Air Permit No. 02221T20:

(1) St. Johns Packaging sent in an Applicability Determination Request on August 3, 2017 for the addition of one CleanPlanet Distillation Still (ID No. AC001). A permit applicability determination dated August 15, 2017 was conducted by Judy Lee (North Carolina Division of Air Quality (NCDAQ) permitting section and concluded that the unit was considered to be a Insignificant Activity per 15A NCAC 02Q .0503(a). The CleanPlanet Distillation Still (ID No. IAC001) will be added to the permit during this renewal. The ID No. will be changed from (ID No. IAC001) to (ID No. I8)
(2) St. Johns Packaging sent in an Air Permit 502(b)(10) change notification request on January 10, 2018 (received January 16, 2018) to replace one existing 65" Wide Web Flexographic Printing Press **(ID No. ES-C7)** controlled by a natural gas-fired Regenerative Thermal Oxidizer (RTO) **(ID No. CD-1)** with a new 52" Wide Web Flexographic Printing Press **(ID No. ES-MI-14)** controlled by RTO **(ID No. CD-1)**. Brian Bland (NCDAQ) approved the 502(b)(10) request in an email to St. Johns Packaging on January 23, 2018. The replacement of equipment will be implemented in this renewal application.

2. Facility Description

St. Johns Packaging is a contract package printing facility that produces multicolor plastic packaging materials. The facility operates printing presses that use ink and solvents to print on flexible plastic that will be used for packaging (e.g., potato chip bags, bread bags, etc.). The facility includes several printing stations, a print plate shop, seam and shear stations, and a solvent recovery area. The facility operates 24 hours per day, five to seven days per week, and 52 weeks per year.

3. Application Chronology

June 28, 2017 – Permit No. **02221T20** issued as a Title V renewal.

August 3, 2017 – Applicability Determination No. 3095 received to add one CleanPlanet Distillation Still (ID No. IAC001). The ID No. will be changed from (ID No. IAC001) to (ID No. I8)

August 15, 2017 – Judy Lee of the North Carolina Division of Air Quality (NCDAQ) permitting section approved the Applicability Determination No. 3095 to add one CleanPlanet Distillation Still (ID No. IAC001) as an Insignificant Activity in the next permit action. The ID No. will be changed from (ID No. IAC001) to (ID No. I8).

January 16, 2018 – Received an Air Permit 502(b)(10) Applicability Determination Request to replace one existing 65" Wide Web Flexographic Printing Press (ID No. ES-C7) controlled by a natural gas-fired Regenerative Thermal Oxidizer (RTO) (ID No. CD-1) with a new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14) controlled by RTO (ID No. CD-1).

January 23, 2018 – Brian Bland (NCDAQ) permitting section acknowledge the 502(b)(10) request via email. The replacement of equipment will be implemented at the next permit action.

August 3, 2021 – DAQ received Permit Application **4100823.21A**, as a Title V renewal. The application was deemed complete for processing.

March 22, 2022 – Andrew Kormos of the Winston-Salem Regional Office (WSRO) completed the annual compliance inspection of the facility.

January 11, 2023 - DRAFT permit sent to Permittee, Supervisor, WSRO and Samir Parekh for comment. Nicolas Pace (St. Johns Packaging) provided comments on draft permit via e-mail on **January 16, 2023**. Samir Parekh (NCDAQ) Stationary Source Compliance Branch (SSCB) via email on **January 17, 2022** with no comments pertaining to CAM. Andrew Kormos (WSRO) had no comments on the air permit and review. He did provide a Regional Technical Review via email on **August 26, 2021**.

April 12, 2023 – David B. Hughes (NCDAQ) sent Nicolas Pace (St. Johns Packaging) an email about adding Distillation Still (ID No. I8) to the permit under 2.2 A.1.j and requested Application Forms B, B5, C3, D1, and D5 for the 502(b)(10) request to replace existing 65" Wide Web Flexographic Printing Press (ID No. ES-C7) with a new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14).

May 2, 2023 – Nicolas Pace responded to the April 12, 2023 email by stating that the Distillation Still (ID No. I8) could be included in the permit under 2.2 A.1.j and that he was working on filling out the requested application forms for the new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14). He also requested replacing an existing Plate Making Room and Solvent Still (ID No. ES-6) with a new Plant Making Room and Solvent Still.

June 9, 2023 – Beth Morton (Morton Environmental Consulting, Inc.) emailed David B. Hughes stating that she will be assisting Nicolas Pace with the renewal.

August 14, 2023 – Received requested Application Forms B, B5, B9, C3, D1, D5, E2, and E5 for the 502(b)(10) request to replace existing 65" Wide Web Flexographic Printing Press (ID No. ES-C7) with a new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14) for completion of technical review.

August 30, 2023 – David B. Hughes sent Beth Morton an email requesting potential to emit VOC emissions for Insignificant Activities from emission sources (ID Nos. I2, I4, I7, and I8 (previously ID No. IAC001).

October 6, 2023 – Craig Bonde (Packaging Innovation Manager, St. Johns Packaging) sent David B. Hughes an email with attached letter with the potential to emit VOC emissions from emission sources (ID Nos. I2, I4, I7, and I8).

October 20, 2023 – Revised DRAFT permit sent to Craig Bonde and Beth Morton for comment. Craig Bonde/Beth Morton provided comments on draft permit via e-mail on **October 27, 2023**.

XXXX XX, 2023 - Draft permit and review sent to 30-day public comment and 45-day EPA review periods.

XXXX XX, 2023 - 30-day public comment period ended; no comments received.

XXXX XX, 2023 – 45-day EPA Review period ended; no comments received.

XXXX XX, 2023 – Mark Cuilla/Connie Horne (DAQ) verified TVEE from David B. Hughes's changes.

XXXX XX, 2023 – Air Permit No. **02221T21** issued as a Title V permit.

4. Changes to Existing Permit

Page(s)	Section	Description of Change(s)
Global	Global	-Updated the application number and complete date. -Updated permit revision number to T21. -Updated the issuance/effective dates to permit.
Cover Letter	Cover Letter	-Updated language and PSD increment tracking statement.
3	List of Acronyms	-Moved List of Acronyms from end of permit.
4	Section 1 Table	-Replaced existing 65" Wide Web Flexographic Printing Press (ID No. ES-C7) with new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14) as addressed in the 502(b)(10) request.
5	2.1 A	-Replaced existing 65" Wide Web Flexographic Printing Press (ID No. ES-C7) with new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14).
5	2.1 A Table	-Replaced existing 65" Wide Web Flexographic Printing Press (ID No. ES-C7) with new 52" Wide Web Flexographic Printing Press (ID No. ES-MI-14).
6	2.1 A.1.a 2.1 A.1.c 2.1 A.2.a 2.1 A.2.c 2.1 A.3.a 2.1 A.3.c	-Replaced the equipment (ID No. ES-C7) with (ID No. ES-MI-14) in the corresponding allowable pollutant conditions.
9	2.3 A.1.a.i	-Replaced the equipment (ID No. ES-C7) with (ID No. ES-MI-14) in the corresponding VOC PAL limits.
9	2.3 A.1.a.iii	-Added one CleanPlanet Distillation Still (ID No. IAC001). Changed ID No. from IAC001 to I8.
10	2.3 A.1.g	-Replaced the equipment (ID No. ES-C7) with (ID No. ES-MI-14) in the corresponding requirement for calculation of VOC emissions.
11	2.3 A.1.j	-Added one CleanPlanet Distillation Still (ID No. IAC001) to the estimate of 1 ton per rolling 12-month period of VOC emissions. Changed ID No. from IAC001 to I8.

Page(s)	Section	Description of Change(s)
13	Section 3 Insignificant Activities	-Moved Insignificant Activities list and removed footnote 3. -Added one CleanPlanet Distillation Still (ID No. IAC001) per a previous Applicability Determination (8/15/17). Changed ID No. from IAC001 to I8.
14 - 22	Section 4 General Conditions	-Updated General Conditions (v7.0 08/21/2023).

5. Emissions

St. Johns Packaging is a major Prevention of Significant Deterioration (PSD) source as potential emissions of VOC are above 250 tons per year. Additionally, the facility has an actual Plantwide Applicability Limit (PAL) of 407 tons per year of VOC emissions per rolling 12-month period. While recent facility-wide emissions are reflected in the header of this document, actual VOC emissions from specific emission groups are provided in Table 1 below.

Table 1: VOC Emissions

Emission Sources	Actual VOC Emissions (tons/per year)		
	2019	2020	2021
ES-U10, MA20, WH11	247.91	129.6	191.4
ES-C7, WH12, WH13	59.62	46.3	27.5
Plate Making Room and Solvent Still	2.84	4.54	5.7

Notes:
- Emission data of significant sources of VOC as shown in IBEAM-ED for calendar years 2019 through 2021

Table 2 is only for proposed project emissions. The facility's potential emissions have been updated due to adding the Air Permit 502(b)(10) change notification request to replace one existing 65" Wide Web Flexographic Printing Press **(ID No. ES-C7)** controlled by a natural gas-fired Regenerative Thermal Oxidizer (RTO) **(ID No. CD-1)** with a new 52" Wide Web Flexographic Printing Press **(ID No. ES-MI-14)** controlled by RTO **(ID No. CD-1)**.

Table 2: Criteria and Hazardous Air Pollutants

Criteria Air Pollutant Emissions						
Pollutant	Expected Actual		Potential Emissions			
	(After Controls / Limits)		(Before Controls / Limits)		(After Controls / Limits)	
	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PM (TSP)	0.00	0.00	0.00	0.00	0.00	0.00
PM_{10}	0.00	0.00	0.00	0.00	0.00	0.00
$PM_{2.5}$	0.00	0.00	0.00	0.00	0.00	0.00
SO_2	0.00	0.00	0.00	0.00	0.00	0.00
NO_x	0.12	0.25	0.12	0.51	0.12	0.51
CO	0.01	0.01	0.10	0.43	0.10	0.43
VOC	10	407	656	2154	51	168
Hazardous Air Pollutant Emissions						
Glycol Ether	5.84E-05	2.50E-04	5.97E-05	2.61E-04	5.97E-05	2.61E-04
Hexane n-	2.33E-03	1.00E-02	2.39E-03	1.05E-02	2.39E-03	1.05E-02

The updated facility wide potential to emit (PTE), with controls, for criteria and hazardous air pollutants is presented in Table 3 below. The facility's potential emissions have been updated due to adding the Air Permit 502(b)(10) change notification request to replace one existing 65" Wide Web Flexographic Printing Press **(ID No. ES-C7)** controlled by a natural gas-fired Regenerative Thermal Oxidizer (RTO) **(ID No. CD-1)** with a new 52" Wide Web Flexographic Printing Press **(ID No. ES-MI-14)** controlled by RTO **(ID No. CD-1)**.

Table 3: Facility-Wide Emissions Summary

Pollutant	Expected Actual After Controls / Limitations tons/year	Potential Before Controls / Limitations tons/year	Potential After Controls / Limitations tons/year
PM (TSP)	0.00	0.02	0.02
PM_{10}	0.00	0.01	0.01
$PM_{2.5}$	0.00	0.01	0.01
SO_2	0.00	0.02	0.02
NOx	0.7	3.03	3.03
CO	0.58	2.55	2.55
VOC	224.71	3943 (PAL=407)	1687 (PAL=407)
Highest HAP Hexane (natural gas)	1.25E-02	5.45E-02	5.45E-02
Glycol ethers	5.00E-04	5.00E-04	5.00E-04
Ozone	1.67	1.67	1.67

The Natural gas-fired Regenerative Thermal Oxidizer **(ID No. CD-1)** is the control device for emission sources **(ID Nos. ES-WH13, ES-WH12, and ES-MI-14)**. The PTE with controls for VOC emissions is presented in Table 4 below.

Table 4: VOC Emissions – Regenerative Thermal Oxidizer (ID No. CD-1)

Pollutant	Before Control lb/hr	Capture Efficiency %	Control Device Efficiency %	Corresponding Overall Efficiency %	Total After Control lb/hr
VOC	805	88.1[1]	98.3[1]	86	113

Pressure Drop (In. H_2O)	Minimum – 1 Maximum - 2
Inlet Temperature (ºF)	Minimum – 160 Maximum - 220
Inlet Air Flow (SCFM)	10,000
Auxiliary Fuel Used	Natural Gas
Outlet Temperature (ºF)	Minimum – 200 Maximum - 600
Residence Time (Seconds)	120 - 140
Combustion Temperature (ºF)	1400 (chamber can withstand up to 2,300)
Total Maximum Firing Rate (MMBtu/hr)	2.9

[1] Capture Efficiency and Control Device Efficiency calculated from October 20, 2004 Stack Test. See Paula Hemmer, Stationary Source Compliance Branch (SSCB), April 18, 2005 Memorandum for Stack Test Results.

Insignificant Activities

Potential emissions from the Insignificant Activities list, Emission sources (ID Nos. I2, I4, I7, and I8 (previously ID No. IAC001)). Section 2.3 A.1.j states " The Permittee shall use an estimate of 1 ton per rolling 12-month period of VOC emissions from these sources combined: (ID Nos. I2, I4, I7, and I8)." A brief description of potential to emit for each emission source and a summary of emissions is summarized in Table 5 below.

Emission Sources I2 and I4 storage tanks

Capacity is determined by production needs. For purposes of determining the potential to emit for these sources, the tank losses of 166.6 pounds VOC per month (0.083 tons VOC per month), reflects the maximum potential estimate for VOC for each of the 12 months. This VOC estimate includes all losses from the tanks considering their construction parameters and operating conditions and the maximum number of turnovers projected.

Emission Source I7 Ink Mixing

Potential VOC losses from the ink mixing area are based on inf formulations calculations for each individual press at the maximum potential capacity of ink usage. The facility uses good management practices to prevent any losses from the printing ink mixing. The maximum ink VOC loss from ink mixing per month is 0.006 pounds VOC per month (3.0E-06 ton VOC per month) for all presses combined. The worst case monthly potential ink mixing VOC loss was applied for the entire year for the estimate.

Emission Source I8 Clean Planet

For purposes of determining the potential to emit for this source, the monthly emission rate of 12 pounds VOC per month (0.006 ton VOC per month) was applied for each of the 12 months. This rate would be a potential if the plant operated at that worst case monthly maximum capacity.

Table 5: Insignificant Activities Potential VOC Emissions

Date	I2 and I4 VOC Emissions (tons per month)	I7 VOC Emissions (tons per month)	I8 VOC Emissions (tons per month)	Combined Insignificant Sources VOC Emissions (tons per year)
January to December 2022	0.083	3.0 E-06	0.006	1.07

6. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 02D .0515, "Particulates from Miscellaneous Industrial Processes"
15A NCAC 02D .0516, "Sulfur Dioxide Emissions from Combustion Sources"

15A NCAC 02D .0521, "Control of Visible Emissions"
15A NCAC 02D .0530, "Prevention of Significant Deterioration" – PAL Requirements
15A NCAC 02Q .0711, "Emission Rates Requiring a Permit"
15A NCAC 02D .1806, "Control and Prohibition of Odorous Emissions" *(State-Enforceable Only)*
15A NCAC 02Q .0317, "Avoidance Conditions for 15A NCAC 02D .1111–40 CFR Part 63, Subpart KK"

The permit was updated to reflect the most current stipulations for all applicable regulations.

- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – This regulation is applicable to all six of the permitted Web Flexographic Printing Presses (ID Nos. ES-WH13, ES-WH12, ES-MI-14, ES-WH11, ES-U10, and ES-MA20). ID Nos. ES-WH13, ES-WH12 and ES-MI-14 that vent through the Natural gas-fired Regenerative Thermal Oxidizer (ID No. CD-1, 2.9 million Btu per hour heat input), while the others are uncontrolled. Due to the small amount of particulate matter (PM) emissions from these sources, continued compliance is anticipated. As described in full in the July 12, 2012 review document for 02221T17, *"Due to the amount of particulates expected from the presses being negligible; DAQ agreed to allow North State to submit a compliance demonstration utilizing maximum process rates to determine the maximum allowables as calculated using the equation found in 02D .0515 for their printing presses and keep that record on file to avoid MRR requirements since the actual particulate emissions are less than 1 tpy from all sources at the facility combined."*

  The current permit does not require any monitoring, recordkeeping, or reporting for particulate matter because the potential to emit are expected to be negligible. DAQ agrees that no monitoring, recordkeeping, or reporting is required.

- 15A NCAC 02D .0516 "Sulfur Dioxide Emissions from Combustion Sources" – Emissions of sulfur dioxide from the Web Flexographic Printing Presses (ID Nos. ES-WH13, ES-WH12, ES-MI-14, ES-WH11, ES-U10, and ES-MA20) shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. Compliance is expected based on the low sulfur dioxide emissions associated with natural gas combustion. No monitoring, recordkeeping, or reporting is required for sulfur dioxide emissions from firing natural gas in these sources.

- 15A NCAC 02D .0521, Control of Visible Emissions – This regulation requires the facility to control any visible emissions from emission sources that may be discharged from vents or stacks. The six permitted web flexographic printing presses (ID Nos. ES-WH13, ES-WH12, ES-MI-14, ES-WH11, ES-U10, and ES-MA20) at St. Johns Packaging are subject to this regulation. These presses were manufactured after July 1, 1971 and must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d). No monitoring, recordkeeping, or reporting is required for visible emissions from firing natural gas in these sources. Continued compliance is expected.

- 15A NCAC 02D .0530, Prevention of Significant Deterioration - PAL Requirements

  The PAL of 407 tons per year of VOC emissions Per Rolling 12-Months period shall not be exceeded from the following PAL Emissions Units:

  i. Presses controlled by the natural gas-fired regenerative thermal oxidizer (CD-1):

     53" Wide Web Flexographic Printing Press with eight (8) printing stations and two (2) natural gas-fired bake ovens (1.02 MMBTU/hr total heat input) (ID No. ES-WH13),

52” Wide Web Flexographic Printing Press with ten (10) printing stations and two (2) natural gas-fired bake ovens (0.64 MMBTU/hr total heat input) (ID No. ES-WH12), and

52” Wide Web Flexographic Printing Press with eight (8) printing stations and two (2) natural gas-fired bake ovens (0.549 MMBTU/hr total heat input) (ID No. ES-MI-14),

ii. Sources with no controls:

16” Narrow Web Flexographic Printing Press with six (6) printing stations (ID No. ES-MA20),

49” Wide Web Flexographic Printing Press with eight (8) printing stations. one (1) rotogravure printing station and six (6) natural gas-fired bake ovens (3.56 MMBTU/hr total heat input) (ID No. ES-U10),

52” Wide Web Flexographic Printing Press with ten (10) printing stations and two (2) natural gas-fired bake ovens (0.64 MMBTU/hr total heat input) (ID No. ES-WH11), and

Plate Making Room and Solvent Still (ID No. ES-6)

iii. Insignificant emission sources with VOC emissions:

Propyl alcohol underground storage tank (8,000 gallons) (ID No. I2),
Recycled solvent storage tank (4,000 gallons) (ID No. I4), and
Ink Mixing, Ink Storage (ID No. I7),
CleanPlanet Distillation Still (ID No. I8)

Effective and Expiration Date

iv. The Effective Date for this PAL shall be on April 8, 2015; and
v. The Expiration Date for this PAL shall be on March 31, 2025;

To comply, the facility must calculate and record the VOC emissions from the printing presses, natural gas-fired RTO and bake ovens, storage tanks, and waste inks and solvents on a monthly basis, including 12-month rolling totals. The permit condition details how these VOC emissions shall be calculated. In addition, the RTO shall maintain a minimum chamber temperature of 1,450°F. The facility shall perform inspections and maintenance of the RTO, including monthly external inspections of the structural integrity and annual internal inspections of the structural integrity, valves, and burner. The results of the inspection and maintenance shall be maintained in a logbook with dates, times, results, and maintenance actions recorded. The facility shall submit semi-annual reports of the 12-month rolling total VOC emissions for each month in the reporting period and include all data used to calculate the emissions. If any modifications, shutdowns, or deviations occurred, they must also be detailed in the reports.

As shown above, the PAL has a separate expiration date from the permit. St. Johns Packaging is required to submit an application before the expiration date to continue using the PAL.

The PAL requires that the emission factors used at the facility be re-validated every five years. The first data revalidation is due March 31, 2020. St. Johns Packaging state in a Permit Applicability Determination letter (May 13, 2021) to Gautam Patnaik (NCDAQ) permitting section that the emission factors have not changed since the issue date of PAL. In a June 29, 2021 letter, Gautam Patnaik responds via Applicability Determination letter that NCDAQ has determined that no

revalidation is required for any emission factors or data utilized or estimated control efficiency in calculating VOC emissions for various emissions units.

Continued compliance is expected.

- 15A NCAC 02Q .0711, Emission Rates Requiring a Permit
  For each of the listed (see Section 8) toxic air pollutants (TAPs), the Permittee has made a demonstration that facility-wide actual emissions do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 02Q .0711. The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 02Q .0711.

- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions *(State-Enforceable Only)* The permit requires the Permittee to provide for the control and prohibition of objectionable odorous emissions. This rule applies to all operations at the facility that may produce odorous emissions that can cause or contribute to objectionable odors beyond the facility's boundaries. Compliance with this standard is expected.

- 15A NCAC 02Q .0317 – Avoidance Condition for 15A NCAC 02D .1111 – 40 CFR Part 63 – Subpart KK
  In order to be classified as a minor source for HAPs and avoid applicability of MACT Subpart KK "National Emission Standards for the Printing and Publishing Industry," the permit includes an avoidance condition that limits rolling 12-month facility-wide emissions to:
  (1) 10 tons of each individual HAP and
  (2) 25 tons of any combination of HAPs.

  To comply, the facility must maintain monthly records of each material emitted containing HAPs so that the quantities of each individual and all combined HAP emissions per month can be determined. The facility must submit a semi-annual summary report of individual and total HAP emissions over the 12-month period for each of the previous 17 months.

7. NSPS, NESHAPS/MACT, NSR/PSD, RACT, 112(r), CAM

NSPS
The Permittee is not currently subject to any New Source Performance Standards. This permit renewal does not affect this status.

NESHAP/MACT/GACT
The Permittee is not currently subject to any NESHAP/MACT/GACT. This permit renewal does not affect this status.

NSR/PSD
The facility is a PSD Major source for VOC. Instead of complying with PSD through the normal process, St. Johns Packaging has elected to operate under a PAL. Provided that the facility emits less than 407 tons/year of VOC, any modification made will not be considered a major modification. See Section 6 for details of the PAL.

112(r)

As confirmed in Form A3 of the application, the facility "does not store any of the listed chemicals in excess of their threshold quantity." Therefore, St. Johns Packaging does not have any increased requirements under Section 112(r) of the Clean Air Act.

RACT

The facility is not located in an area of ozone nonattainment or maintenance. Therefore, RACT does not apply.

CAM

CAM applies to a control device if the following criteria are met:

1. The unit being controlled is subject to a non-exempt emission standard (as defined by 15A NCAC 02D .0614(b)(1)),
2. The control device is being used to comply with the emission standard, and
3. The unit being controlled has potential emissions of the pollutant subject to the emission standard of greater than major source thresholds.

The only control device at the facility is the Natural gas-fired Regenerative Thermal Oxidizer (ID No. CD-1) that is used to control VOC as part of the facility's PAL. 15A NCAC 02D .0614(b)(1)(E) allows for an exemption from CAM if the control device is subject to "an emissions cap that is approved under the rules of this Subchapter and Subchapter 15A NCAC 02Q and incorporated in a permit issued under 15A NCAC 02Q .0500." The PAL meets this requirement, therefore CAM does not apply.

8. Facility Wide Air Toxics

Ethyl acetate, formaldehyde, methyl isobutyl ketone, n-hexane, toluene, and xylene are included in the current permit under the 15A NCAC 02Q .0711 condition. All of these toxic air pollutants (TAPs) are emitted at levels below their respective toxic permitting emission rates (TPERs).

As part of the last permit renewal, Permit No. 02221T17 issued July 12, 2012, pursuant to Application No. 4100823.11A, the air toxics were reviewed and found to be used in quantities less than their respective TPERs. The only change to permitted emissions sources that changed air toxics emissions since the last renewal was Permit No. 02221T18 issued December 18, 2012, pursuant to Application No. 4100823.12A. This application was for the installation of a new printing press (ID No. ES-WH13). Emissions from ethyl acetate, which is an ingredient in the ink, increased with the installation of the printing press.

The following table shows the triggered TAPs the facility emits with the associated TPERs. The actual emissions are from the CY2020 and CY2021 emissions inventory. The facility's TAP records were reviewed, and the facility has used 41 pounds of ethyl acetate in 2022 to date.

Table 5: TPER Limitations

Toxic Air Pollutant (CAS Number)	TPERs Limitations				CY2020 Actual Emissions	CY2021 Actual Emissions
	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)		
Ammonia (7664-41-7)				0.68	Not Reported	0.0051 lb/hr
Ethyl acetate (141-78-6)			36		0.021 lb/hr	0.021 lb/hr
Formaldehyde (50-00-0)				0.04	Not Reported	Not Reported

Toxic Air Pollutant (CAS Number)	TPERs Limitations				CY2020 Actual Emissions	CY2021 Actual Emissions
	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)		
n-Hexane (110-54-3)		23			Not Reported	0.0028 lb/hr
Methyl isobutyl ketone (108-10-1)		52		7.6	Not Reported	Not Reported
Toluene (108-88-3)		98		14.4	Not Reported	Not Reported
Xylene (1330-20-7)		57		16.4	Not Reported	Not Reported

The sum of CY2020 and CY2021 for Ethyl acetate (0.021 lb/hr + 0.021 lb/hr) equals 0.042 lb/hr. This is below the Ethyl acetate emission limit of 36 lb/hr.

The TPER Comparison Table 6 below provides a summary of the proposed facility-wide emissions of TAPs following the replacement of one new 52" Wide Web Flexographic Printing Press **(ID No. ES-MI-14)** controlled by RTO **(ID No. CD-1)**. As shown in the table, Ammonia, Ethyl Acetate, and n-Hexane are below the limits requiring a permitted emission rate.

Table 6: Facility-Wide TPER Review

Pollutant	Facility-Wide PTE			TPER Limit			Exceed TPER Limit?
	lb/yr	lb/day	lb/hr	lb/yr	lb/day	lb/hr	
Ammonia	44.24	0.12	5.05E-03	-	-	0.68	No
Ethyl Acetate	192.66	0.53	2.20E-02	-	-	36	No
n-Hexane	24.91	6.82E-02	2.84E-03	-	23	-	No

9. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day public comment period, with an opportunity for a public hearing. EPA's 45-day review period, as required per 02Q .0518, will run concurrently with public participation period (30-day), as specified per DAQ's agreement with EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521.

10. Other Changes

Removal of Affirmative Defense Provision from General Condition J

EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions[1]. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions

[1] NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

involving affirmative defenses[2] and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

11. Conclusions, Comments, and Recommendations

PE Seal

Pursuant to 15A NCAC 02Q .0112 "Application Requiring a Professional Engineering Seal," a professional engineer's seal (PE Seal) is required to seal technical portions of air permit applications for new sources and modifications of existing sources as defined in Rule .0103 of this Section that involve:

(1) design;
(2) determination of applicability and appropriateness; or
(3) determination and interpretation of performance; of air pollution capture and control systems.

A professional engineer's seal (PE Seal) was required for the new 52" Wide Web Flexographic Printing Press **(ID No. ES-MI-14)** controlled by RTO **(ID No. CD-1)** for the 502(b)(10) application that was received by DAQ before the renewal application. Beth Morton P.E. status is current, and his License No. is 19695.

Zoning

A zoning consistency determination was not required for this renewal.

Recommendations

WSRO recommends issuance of the permit and was sent a DRAFT permit prior to issuance (See Section 3 of this document for a discussion).

The Raleigh Central Office (RCO) recommends issuance of Air Permit No. 02221T21.

[2] In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).