

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Asheville Regional Office
County: Jackson
NC Facility ID: 5000119
Inspector's Name: Patrick Ballard
Date of Last Inspection: 07/25/2018
Compliance Code: 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
<p>Applicant (Facility's Name): Jackson Paper Manufacturing Company</p> <p>Facility Address: Jackson Paper Manufacturing Company 152 West Main Street Sylva, NC 28779</p> <p>SIC: 2631 / Paperboard Mills NAICS: 32213 / Paperboard Mills</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p>SIP: 02D .0503, 02D .0504, 02D .0516, 02D .0521, 02D .0614, 02D .1111, 02D .1806, 02Q .0317, 02Q .0711 NSPS: N/A NESHAP: GACT 6J PSD: N/A PSD Avoidance: Yes NC Toxics: Yes 112(r): N/A Other: Title V Permit Renewal</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 5000119.18A Date Received: 09/25/2018 Application Type: Renewal Application Schedule: TV-Renewal</p> <p style="text-align: center;">Existing Permit Data</p> <p>Existing Permit Number: 04665/T16 Existing Permit Issue Date: 11/17/2015 Existing Permit Expiration Date: 07/31/2019</p>
Kiesha Bridges Manager of Safety, Env. and Technical (828) 586-5534 PO Box 667 Sylva, NC 28779	Carr Tyndall Vice President of Operations (828) 586-5534 PO Box 667 Sylva, NC 28779	Kiesha Bridges Manager of Safety, Env. and Technical (828) 586-5534 PO Box 667 Sylva, NC 28779	

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2017	10.55	100.53	35.05	158.56	49.94	14.52	3.81 [Methanol (methyl alcohol)]
2016	10.77	102.68	36.54	161.95	51.01	14.26	3.80 [Methanol (methyl alcohol)]
2015	11.18	102.19	37.86	161.18	50.77	14.30	3.84 [Methanol (methyl alcohol)]
2014	9.81	102.20	38.78	161.18	50.77	13.04	3.85 [Methanol (methyl alcohol)]
2013	9.99	73.66	33.28	237.92	72.56	13.27	3.74 [Methanol (methyl alcohol)]

<p>Review Engineer: Betty Gatano</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 04665/T17 Permit Issue Date: Permit Expiration Date:</p>
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1. Purpose of Application

Jackson Paper Manufacturing Company (Jackson Paper) currently holds Title V Permit No. 04665T16 with an expiration date of July 31, 2019 for a recycled corrugated cardboard manufacturing facility in Sylva, Jackson County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on September 25, 2018, or at least nine months prior to the expiration date. 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.

2. Facility Description

The manufacturing process at Jackson Paper begins with bales of old corrugated cardboard (OCC) that are emptied into the pulper (or hydropulper) where the cardboard is mechanically pulped at 115°F. Plastic and metal chord are removed in the pulper by a rag rope and are landfilled. Water and magnesium hydroxide are added to the pulper. The pulp solution is then conveyed to cyclonic cleaners and screens to remove the “sinkers and floaters.” The pulp is pumped to the paper machine where it is calendared and dried into paper. The boiler provides steam for heating the process and for driving the turbine that runs the paper machine. The boiler is fired primarily on wood waste from outside sources but can also burn paper mill sludge, coal, tire-derived fuel (TDF), waste oil, and limited plastic waste. The roll stock manufactured on site is used by other facilities as the corrugated medium or “flute” inside the wall of a piece of cardboard.

An overview of the paper making process, which was included in the permit application for Title V renewal, is provided below in Figure 1.

3. History/Background/Application Chronology

Permit History

August 26, 2014	TV permit renewal issued. Air Permit No. 04665T15 was issued on August 26, 2014 with an expiration date of July 31, 2019.
October 7, 2014	Jackson Paper withdrew application no. 5000119.10A. This application had been submitted as a “Maximum Feasible Control Technology” (MFCT) demonstration in accordance with 15A NCAC 02Q .0709, “Demonstrations.”
November 17, 2015	Air Permit No. 04665T16 issued. This application was a state-only application to increase the maximum allowable amount of paper mill sludge that can be combusted in boiler (ID No. JP-021) to 800 pounds per hour on a dry-basis.

HOW WE MAKE OUR PAPER

1 We start with bales of Old Corrugated Containers (OCC) from recycling centers (pizza boxes, grocery store boxes, etc.).



2 We feed the OCC into a large blender called a pulper. The water and paper mix to form pulp. Next, contaminants are removed from the fiber. Common contaminants are dirt, staples, wire, tape, plastics, adhesives and short fibers –



anything that will not contribute to making a high-quality sheet of recycled paper.



6 Rolls of paper are stacked in the warehouse awaiting delivery by truck or rail to box manufacturers across the Southeast.



3 The pulp is processed through refiners to develop necessary strength. Then, it's sent onto the paper machine to be formed into a sheet of paper.



5 The paper is wound onto a reel and then cut into rolls.



4 The paper moves through 64 dryer cans where it is dried with steam.



Figure 1. Overview of Paper Making Process at Jackson Paper

Application Chronology

September 25, 2018	Received application for permit renewal.
October 1, 2018	Sent acknowledgment letter indicating the application for permit renewal was complete.
October 19, 2018	Forwarded draft permit and permit review to DAQ staff for comment.
October 19, 2018	Comments received from Patrick Ballard from the Asheville Regional Office (ARO).
October 24, 2018	Comments received from Samir Parekh of the Stationary Source Compliance Branch (SSCB). Mr. Parekh recommended basing the Quality Improvement Plan (QIP) threshold under Compliance Assurance Monitoring (CAM) to the number of excursions rather than percent operating time.
October 26, 2018	Comments received from Mark Cuilla, Supervisor of the Permitting Section.
October 29, 2018	Draft permit and review forwarded to Jackson Paper for comments.
November 13, 2018	Initial comments received from Jackson Paper. The facility expressed concerns regarding changes in the CAM condition and requested a meeting to discuss their concerns.
November 15, 2018	DAQ staff participated in a conference call with staff from Jackson Paper and their consultants to discuss their concerns. Notes for this meeting are provided in Attachment 1.
December 18, 2018	Final comments on draft permit received from Jackson Paper. The facility disagreed with DAQ's proposed language under CAM and proposed 18 excursions to trigger CAM.
Dec. 20 & 21, 2018	DAQ discussed the proposal internally and concluded 18 excursions were too high. Betty Gatano e-mailed Jackson Paper and indicated 18 excursions were not appropriate and proposed 10 excursions. Jackson Paper responded via e-mail. Ms. Gatano called Courtney Adcock, consultant for the facility, to discuss the facility's concerns.
January 4, 2019	Kiesha Bridges of Jackson Paper e-mailed a letter to Betty Gatano. In her letter, Ms. Bridges requested, "to understand the basis for the change and how it is consistently administered."
January 28, 2019	Betty Gatano issued a letter addressing Ms. Bridges letter. In her letter, Ms. Gatano stated "DAQ intends to send the draft to public notice within the next week with the proposed CAM change to ten excursions."
January 30, 2019	Draft of permit review and permit forwarded to public notice.

4. Permit Changes and TVEE Discussion

The table below lists changes to the current permit under this renewal.

Pages	Section	Description of Changes
Cover page and Throughout	-	Updated all dates and permit revision numbers.
4	2.1 A – Regulation Table	<ul style="list-style-type: none"> • Added reference to 15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .1111. • Updated language for reference to 15A NCAC 02Q .0711.
5	2.1 A.1.e	Updated testing date for compliance with 15A NCAC 02Q .0504.
5	2.1 A.1.f	Added statement that annual inspection is “each 12-month period following initial inspection” for instrumentation associated with the scrubber.
7	2.1 A.3.c	Updated testing date for compliance with 15A NCAC 02D .0521.
7 and 8	2.1 A.3.d and e	Updated monitoring requirements under 15A NCAC 02D .0521 to most current permitting language.
9	2.1 A.5.c	Updated testing date for compliance with 15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .0530.
10	2.1 A.5.f	Added statement indicating “all instances of deviations from the requirements of this permit must be clearly identified” in the annual report.
10 – 11	2.1 A.6.c	Modified the definition of QIP threshold under CAM and removed the associated footnote.
11	2.1 A.6.d and e	Updated recordkeeping and reporting requirement under 15A NCAC 02D .0614 to most current permitting language.
11 – 14	2.1 A.7	Updated permit condition for 15A NCAC 02D .1111, “Maximum Achievable Control Technology” as promulgated in 40 CFR 63, Subpart JJJJJ, “National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.”
14	2.1. B – Regulation Table	<ul style="list-style-type: none"> • Removed all reference to 15A NCAC 02D .0958. The rule is no longer applicable state-wide, effective November 1, 2016. • Updated language for reference to 15A NCAC 02Q .0711.
--	2.1 B.1 (old numbering)	Removed permit condition for 15A NCAC 02D .0958. The rule is no longer applicable state-wide, effective November 1, 2016.
14	2.1. C – Regulation Table	Updated language for reference to 15A NCAC 02Q .0711.
16	2.2. A – Regulation Table	Updated language for reference to 15A NCAC 02Q .0711.
17	2.2 A.1.f	Added statement indicating “all instances of deviations from the requirements of this permit must be clearly identified” in the annual report
20 – 29	Section 3	Updated the General Conditions to the most recent revision (V5.3 08/21/2018).
30	Attachment	Updated the list of acronyms.

No equipment changes in the Title V Equipment Editor were required under this permit renewal.

5. Regulatory Review

Jackson Paper is subject to the following regulations. The permit will be updated to reflect the most current stipulations for all applicable regulations.

- 15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchanger – The temporary boiler (ID No. JP-023) is subject to 02D .0503. The particulate matter (PM) emission limit for the boiler is calculated by the equation $E = 1.090(Q)^{-0.2594}$, where E is the allowable emission limit for PM in pounds per million Btu and Q is maximum heat input in million Btu per hour. Using the maximum heat input of 145 million Btu per hour, the PM limit for this boiler is 0.30 pounds per million Btu. The emission factor for firing natural gas in a boiler is 0.0005 pounds per million Btu as provided in DAQ’s “Natural Gas Combustion Emission Calculator Revision N” (01/05/2017). Thus, no monitoring, recordkeeping, or reporting is required to ensure compliance for this rule.
- 15A NCAC 02D .0504, Particulates from Wood burning Indirect Heat Exchanger – The wood/coal/ TDF/paper mill sludge/plastic waste/waste oil-fired boiler (ID No. JP-021) is subject to 02D .0504. When burning wood only, allowable PM emissions are determined from the equation $E = 1.1698(Q)^{-0.2230}$, where E equals the allowable emission limit for PM in pounds per million Btu and Q equals the maximum heat input in million Btu per hour. With a Q of 145.1 million Btu per hour for wood, the PM emission limit for the wood fired boiler is 0.39 pounds per million Btu. When burning wood in combination with other permitted fuels, allowable PM emissions are determined from the following equation:

$$E = [(0.39)(Q_w) + (0.33)(Q_o)]/(Q_t)$$

Where: E = allowable emission in pounds per million Btu
 Q_w = actual wood heat input rate in million Btu per hour
 Q_o = actual other fuel heat input rate in million Btu per hour
 Q_t = Q_w + Q_o

Jackson Paper is required to conduct source testing for PM emissions within five years from the previous testing (i.e., approximately once per permit cycle) to ensure compliance with 02D .0504. The most recent source testing was conducted on December 16, 2014. The following table summarizes the PM emission testing conducted on the boiler, while firing on wood, sludge and plastic. Compliance with the allowable limit was demonstrated during testing. Additional PM testing will be required by December 16, 2019, which is approximately five years from the previous testing.

Pollutant	Emission Rate	Emission Limit	Applicable Regulation	Compliance
PM	0.121 lb/mmBtu	0.39 lb/mmBtu	15A NCAC 02Q .0503	Yes
Notes:				
<ul style="list-style-type: none"> lb/mmBtu = pound per million Btu David Hughes of the Stationary Source Compliance Branch reviewed the source test and approved the results in a memorandum dated May 12, 2015. 				

In addition to periodic testing, the facility must conduct inspections of the mutlicyclone and venturi scrubber, as well as maintain pressure drop and flow rate of the venturi scrubber for compliance. Jackson Paper has limits on the amount of TDF and paper mill sludge that can be burned in the boiler to ensure compliance with 02D .0504. Jackson Paper is also required to conduct PM testing within 180 days of re-commencement of firing on coal or TDF.

- 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources – Sulfur dioxide from the combustion sources shall not exceed 2.3 pounds per million Btu heat input. No monitoring, recordkeeping, or reporting is required when firing wood, paper mill sludge, TDF, plastic waste, waste oil, or natural gas because these fuels are inherently low enough in sulfur to always be in compliance with this rule. The facility must certify the sulfur content of coal when coal is burned in boiler (ID No. JP-021) to ensure compliance.
- 15A NCAC 02D .0521, Control of Visible Emissions – The following equipment was 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).
 - Boiler (ID No. JP-021) – The facility must conduct daily visible emission (VE) observations of the boiler to ensure compliance. Jackson Paper is also required to conduct Method 9 visible emission testing within five years from the previous testing (i.e., approximately once per permit cycle) to ensure compliance with 02D .0521. The most recent source testing was conducted on December 16, 2014. The following table summarizes the VE testing conducted on the boiler, while firing on wood, sludge and plastic. Compliance with the allowable limit was demonstrated during testing. Additional VE testing will be required by December 16, 2019, which is approximately five years from the previous testing.

Pollutant	Emission Rate	Emission Limit	Applicable Regulation	Compliance
VE	0%	20%	15A NCAC 02Q .0521	Yes
<u>Notes:</u>				
<ul style="list-style-type: none"> • Highest six-minute average opacity during testing was 0% as noted above. • David Hughes of the Stationary Source Compliance Branch reviewed the source test and approved the results in a memorandum dated May 12, 2015. 				

- Temporary boiler (ID No. JP-023) – Visible emissions are typically not expected from natural gas fired boilers, and no monitoring, recordkeeping, and reporting are required for the temporary boiler to ensure compliance for this rule.
- 15A NCAC 02D .0614, Compliance Assurance Monitoring – The venturi scrubber (ID No. CD-1-2) on the boiler (ID No. JP-021) is subject to CAM. More discussion on CAM is provided in Section 6.
- 15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT) – The boiler (ID No. JP-021) is subject to “NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources” 40 CFR 63 Subpart JJJJJ. This rule is commonly referred to as the Generally Available Control Technology 6J (GACT 6J). More discussion on GACT 6J is contained in Section 6.

- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – This condition is applicable facility-wide and is state enforceable only.
- 15A NCAC 02Q .0317, Avoidance Conditions – The facility has taken avoidance conditions for the following regulations:
 - 15A NCAC 02D .1111, Maximum Achievable Control Technology and the “NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,” 40 CFR 63 Subpart DDDDD. More discussion on MACT avoidance is found in Section 6.
 - 15A NCAC 02D .0530, Prevention of Significant Deterioration (PSD), for sulfur dioxide (SO₂) and carbon monoxide (CO). More discussion on PSD avoidance is found in Section 6.
 - 15A NCAC 02Q .0700, Toxic Air Pollutant Procedures. More discussion on avoidance of air toxics is found in Section 7.
- 15A NCAC 02Q .0711, Emission Rates Requiring a Permit - The facility is subject for several toxic air pollutants (TAPs). See Section 7 for further discussion regarding air toxics.
- NCGS 143-215.108 – Control of Sources of Air Pollution: Permits Required – This regulation prohibits the temporary boiler (ID No. JP-023) from being operated simultaneously with the wood/coal/ TDF/paper mill sludge/plastic waste/waste oil-fired boiler (ID No. JP-021). The facility also must notify DAQ and record the dates when the temporary boiler is put into operation.

On November 1, 2016, amendments to 15A NCAC 02D .0902 were finalized to narrow applicability of work practice standards in 15A NCAC 02D .0958 from statewide to the maintenance area for the 1997 8-hour ozone standard. This change is being made primarily because the abundance of biogenic VOC emissions in North Carolina results in ozone formation being limited by the amount of available nitrogen oxides (NO_x) emissions. Provisions of the Clean Air Act require VOC requirements previously implemented in an ozone nonattainment area prior to redesignation remain in place. However, facilities outside the maintenance area counties for the 1997 8-hour ozone standard would no longer be required to comply with the work practice standards in 15A NCAC 02D .0958. Jackson County was never in nonattainment for ozone and 15A NCAC 02D .0958 is no longer applicable to facilities, including Jackson Paper, within the county. The permit condition for 15A NCAC 02D .0958 will be removed under this permit renewal.

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

NSPS

Jackson Paper is not currently subject to any New Source Performance Standards (NSPS). The facility’s status with respect to several NSPS is discussed in this section.

NSPS Subparts CCCC

According to a previous inspection report,¹ boiler JP-021 at Jackson Paper was manufactured by the Bigelow / Hoffman Combustion Engineering Company in 1982. It is permitted to burn wood, coal, TDF, paper mill sludge, limited plastic waste, and waste oil. Emissions from the boiler are controlled by a multicyclone and venturi scrubber, in series. The unit recovers some heat (i.e., energy recovery) from the exhaust from the boiler via a pre-heater.

¹ Brendan Davey (January 8, 2003).

Determining the NSPS regulations applicable to boiler JP-021 at Jackson Paper is complicated. The NSPS for commercial and industrial solid waste incineration (CISWI) units are established in 40 CFR 60 Subpart CCCC. CISWI units covered under this rule are those that commenced construction after November 30, 1999 or commenced reconstruction or modification on or after June 1, 2001. Boiler JP-021 was constructed well before 1999 and has not been modified or reconstructed as defined under NSPS. Therefore, it is not subject to NSPS Subpart CCCC.

NSPS Subparts DDDD

NSPS 40 CFR 60 Subpart DDDD establishes emission guidelines (EG) and compliance schedules for the control of emissions from CISWI units constructed prior to November 30, 1999. This subpart does not directly affect CISWI unit owners and operators. Instead, it requires States to develop their own plans to implement the emission guidelines contained in the subpart. The CISWI unit owners and operators must then comply with the State plans.

DAQ rules developed as required by NSPS Subpart DDDD are found in 15A NCAC 02D .1200, “Control of Emissions from Incinerators.” Previous versions of this rule exempted “energy recover units,” like the boiler at Jackson Paper, from the definition of a CISWI unit. The material burned in boiler JP-021 was not considered commercial and industrial waste at that time because boiler JP-021 has heat recovery.

The EPA originally published revised EG on March 21, 2011, and the final notice of reconsideration of the guidelines was published on June 23, 2016.² Among other changes, the revised EG expands the definition of a CISWI unit to include “energy recovery units,” such as the boiler at Jackson Paper. DAQ amended 15A NCAC 02D .1210 to be consistent with EPA’s revised EG for CISWI units pursuant to 40 CFR 60 Subpart DDDD, and the amended rule became effective on July 1, 2018.

In anticipation of the change to 15A NCAC 02D .1210, Jackson Paper submitted a letter on August 11, 2017 requesting a determination of whether lubrication oil and recycled plastic material are considered solid wastes when used a fuel in a combustion unit for the purposes of determining applicability of the CISWI rules. The boiler (ID No. JP-021) is currently permitted to burn wood, coal, TDF, paper mill sludge, plastic waste, and waste oil. Under 40 CFR 241.4(a)(1) and (4), TDF and paper mill sludge are not solid wastes when used as a fuel in a combustion unit and, therefore, were not evaluated in the applicability determination.

The request was reviewed by Jeff Twisdale of the Permitting Section in the Raleigh Central Office, and Applicability Determination No. 3100 was issued on September 15, 2017. A copy of the applicability determination is provided in Attachment 2 to this review. The applicability determination concluded the following:

As described in your letter dated August 11, 2017 summarizing your use of used lubricating oil and the OCC rejects containing plastic waste, the used lubricating oil does meet the definition of traditional fuel provided in 40 CFR 241.2, and the OCC rejects containing small amounts of plastic waste does meet the categorical exemption criteria pursuant to 40 CFR 241.4(a)(6). Therefore, the NC DAQ has determined that used lubricating oil is a traditional fuel when used as fuel in a combustion unit, and OCC rejects containing small amounts of plastic waste are not a solid waste when used as fuel in a solid fuel-fired combustion unit. As

² Federal Register Vol. 81, No. 121, Thursday, June 23, 2016, pp 40956-41034.

a result of this determination, the existing boiler would not be subject to the combustion source emission standards for biomass fuel promulgated pursuant to Section 129 of the Clean Air Act.

Based on the applicability determination, the boiler (ID No. JP-021) at Jackson Paper is not subject to CISWI rules.

NSPS Subpart Db

The “NSPS for Industrial-Commercial-Institutional Steam Generating Units,” 40 CFR 60 Subpart Db, is applicable to steam generating units that commence construction, modification, or reconstruction after June 19, 1984 and have a heat input capacity of greater than 100 million Btu/hour. As noted previously, boiler JP-021 was constructed prior to this date and, thus, is not subject to NSPS Subpart Db.

Temporary boilers are not subject to NSPS Subpart Db per 40 CFR 60.40b(m). A temporary boiler is defined under NSPS Subpart Db as one that combusts natural gas or oil; that is designed or capable of being moved from one location to another; and that will remain on site for no more than 180 consecutive days. Temporary boiler JP-023 meets all these criteria. The temporary boiler fires on natural gas. It will be trailer mounted and will be onsite for no more than 180 consecutive days. Thus, the temporary boiler JP-023 is not subject to NSPS Subpart Db.

MACT/GACT

Jackson Paper has accepted a facility-wide emission limit for hazardous air pollutants (HAPs). The permit limits emissions of any single HAP to less than 10 tpy and to less than 25 tpy for any combination of HAPs. These limitations establish this facility as a minor facility for HAPs so that Jackson Paper avoids applicability of “NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,” 40 CFR 63 Subpart DDDDD.

Certain boilers at area sources of HAPs are subject to the “NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources,” 40 CFR 63 Subpart JJJJJ, or GACT 6J. Boilers that are not subject to GACT 6J are listed under 40 CFR 63.11195. In particular, the rule does not cover “any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act.” Section 129 of the CAA, titled “Solid Waste Combustion,” requires the EPA to develop and adopt standards for commercial and industrial solid waste incineration units, and NSPS Subparts CCCC and DDDD were developed as required by Section 129. Thus, boilers that are subject to NSPS Subparts CCCC or DDDD are not subject to GACT 6J, per 40 CFR 63.11195(b). As noted previously, boiler JP-021 is NOT subject to NSPS Subparts CCCC or DDDD and, therefore, is not excluded from GACT 6J for this reason.

As an area or minor source of HAPs not subject to NSPS Subparts CCCC or DDDD, boiler JP-021 becomes subject to GACT 6J. Boiler JP-021 is considered an existing boiler under this rule because it was constructed prior to June 4, 2010. Additionally, the boiler falls in the Biomass subcategory under GACT 6J, which means any boiler that burns at least 15 percent biomass on an annual heat input basis.³ Further, biomass means “any biomass-based solid fuel that is not a solid waste.”

³ As defined under 40 CFR 63.11237, the biomass subcategory includes any boiler that burns any biomass and is not in the coal subcategory and the coal subcategory includes any boiler that burns any solid fossil fuel and no more than 15 percent biomass on an annual heat input basis

The permit condition for GACT 6J was modified under this renewal to be consistent with the most updated permit language. Dates for the initial tune-up, energy assessment, and notice of compliance statement (NOCS), as provided in the table below, were memorialized in the permit

Requirement Due	Date Achieved
Initial tune-up due 3/21/14	Conducted 1/14/14 by Steven Davis of McBurney Corporation.
Energy Assessment due 3/21/14	Conducted 3/10/14 by the E.I. Group of Morrisville, NC. The energy assessment appeared timely and complete.
NOCS due 7/19/14	Received 7/18/14 via EPA's CEDRI interface.
<u>Notes:</u> Dates and comments were provided in the compliance inspection report by Brendan Davey of the ARO, dated 02/12/2015.	

As specified in 40 CFR 63.11195(e), gas fired boilers are not subject to GACT 6J. Thus, the temporary boiler (ID No. JP-023), which will fire only natural gas, is not subject to GACT 6J.

PSD

Jackson Paper currently operates under two separate PSD avoidance conditions as follows:

- Section 2.1 A.4 limits emissions of SO₂ from the boiler (ID No. JP-021) to less than 250 tpy. To ensure compliance, the facility is required to monitor fuel usage and sulfur content.
- Section 2.1 A.5 limits emissions of CO from the boiler (ID No. JP-021) to less than 250 tpy. To ensure compliance, the facility is required to monitor fuel usage and complete monthly records of the usage and CO emissions. Jackson Paper is also required to conduct source testing for CO emissions within five years from the previous testing (i.e., approximately once per permit cycle). The most recent source testing was conducted on December 16, 2014, and the results for CO emissions are summarized in the table below. Compliance with the avoidance limit was demonstrated during testing. Additional CO testing will be required by December 16, 2019, which is approximately five years from the previous testing.

Pollutant	Emission Rate	Emission Limit	Applicable Regulation	Compliance
CO	0.377 lb/mmBtu measured during testing 162 tpy based on conditions during testing 239.6 tpy potential emissions	250 tpy	15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .0530	Yes
<u>Notes:</u> <ul style="list-style-type: none"> • lb/mmBtu = pound per million Btu. • Potential emissions calculated as follows: CO (tpy) = (0.377 lb/mmBtu) * (145.1 mmBtu/hr)*(8,760 hours/yr) * (ton/2000 lbs) = 239.6 tpy • David Hughes of the Stationary Source Compliance Branch reviewed the source test and approved the results in a memorandum dated May 12, 2015. 				

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the 112(r) thresholds. No change with the respect to 112(r) is anticipated under this permit renewal.

CAM

As indicated in the review for a previous TV permit renewal,⁴ the venturi scrubber (ID No. CD-1-2) on the wood, coal, TDF, plastic waste, paper mill sludge, and waste oil-fired boiler (ID No. JP-021) is subject to CAM for PM10.

CAM requirements were updated under this permit renewal to reflect current guidance and permitting language. First, the QIP threshold for the flow meter on the venturi scrubber was modified. Particulate matter emissions from the boiler at Jackson Paper are controlled via a venturi scrubber. Under CAM language in the current permit, Jackson Paper is required to monitor flow rate of the venturi scrubber once per 12-hour shift. An excursion under CAM in the permit is defined as a flow rate reading less than 550 gallons per minute (gpm). The current permit specifies a QIP will be triggered “any time if the total duration of the excursions is greater than 5% of the total boiler operating time during the reporting period.”

The general definition of excursion in 40 CFR 64.1 means “a departure from an indicator range established for monitoring under this part, consistent with any averaging period specified for averaging the results of the monitoring.” No averaging period is associated with the flow rate reading conducted by Jackson Paper. These measurements are considered instantaneous readings. The QIP trigger for instantaneous readings is more appropriately based on the number of excursions (i.e., the number of times the flow rate is less than 550 gpm) rather than the duration of excursion. Therefore, DAQ changed the QIP trigger to the number of excursions in the draft Title V permit.

DAQ initially proposed 8 excursions per six-month period as the QIP trigger. Jackson Paper disagreed with this value and requested 18 excursions⁵ DAQ ultimately proposed 10 excursions and provided justification to Jackson Paper of this value in a letter dated January 28, 2019.

Finally, updated permit language regarding recordkeeping and reporting for CAM were added to the permit under this permit renewal.

7. Facility Wide Air Toxics

Facility-wide affected sources are subject to the toxic permitting emission rate (TPER) as listed in 15A NCAC 02Q .0711 for the TAPs in permit condition 2.2 A.2. Jackson Paper has demonstrated emissions of these TAPs do not exceed their TPER. A permit to emit any of these pollutants in quantities above the TPER rates requires the submittal of a permit application. No changes to the condition are needed under this permit renewal.

Waste Oil

To avoid applicability to NC Air Toxics, Jackson Paper has accepted a limit to combust no more than 10 tons per year of on-site generated waste oil. Previously, the facility had a limit to combust no more than 5 lbs/hour of waste oil for avoidance of NC Air Toxics. The limit was modified under Air Permit 04665T14 issued on April 25, 2013. A detailed discussion on the modification of the waste

⁴ Mark Cuilla (September 3, 2009).

⁵ CAM requires Jackson Paper to measure flow rate of the venturi scrubber once per shift. The facility arrived at 18 excursions by assuming one shift represents 12 operating hours. Eighteen excursions then represent roughly 216 operating hours per six-month period or slightly less than 5% of the operating time of the boiler (8,760 hours per year / 2 * 0.05 = 219 hours).

oil limit is provided in the review associated with that permit.⁶ The facility also must ensure the waste oil meets the criteria cited in the permit by testing the waste oil annually. No changes to the condition are needed under this permit renewal.

Paper Mill Sludge

Jackson Paper is permitted to burn no more than 5,256,000 dry pounds of paper mill sludge on an annual basis, which is equivalent to 600 dry pounds burned continuously throughout the year. In Air Permit No. 04665T16 issued on November 17, 2015, the hourly limit was increased to 800 dry pounds of sludge per hour to allow for the natural variability in the fuel. A detailed discussion on the modification of the limit on paper mill sludge is provided in the review associated with that permit.⁷ No changes to the condition are needed under this permit renewal.

Director’s Call

On April 27, 2009, DAQ issued a letter to Jackson Paper notifying the facility it was subject to a Director’s Call pursuant to 15A NCAC 02Q .0712, “Calls by the Director.” Under the Director’s Call, Jackson Paper was required to submit a permit application demonstrating emissions of TAPs from the facility (including combustion sources) would not cause an acceptable ambient level (AAL) listed in 15A NCAC 02D .1104 to be exceeded beyond the property boundary. In response to the Director’s Call, the facility submitted a permit application on February 2, 2010 requesting the current emission controls at the facility be considered MFCT under 15A NCAC 02Q .0709, “Demonstrations.”

Since the submittal of the permit application for MFCT, the AAL for arsenic has been reviewed by the NC Scientific Advisory Board, and a revised value has been proposed. On November 14, 2013, the Environmental Management Commission approved the revised AAL for arsenic, and the revised AAL became effective on July 7, 2014.

Once the AAL was effective, DAQ re-evaluated the MFCT permit application and determined air modeling for the revised arsenic AAL was needed to determine compliance with NC Air Toxics. Tom Anderson of the Air Quality Analysis Branch conducted air modeling with the most current version of AERSCREEN (at that time) and the emission source parameters for the boiler (ID No. JP-021) as provided in the 2010 air modeling submitted in support of the MFCT application. The revised modeling was conducted using a unit emission rate of 1 lb/hour. The results were then scaled using the highest actual emissions of arsenic during years 2010 through 2013,⁸ as reported in DAQ’s emission inventory. The results are provided in the table below.

Pollutant	Modeled Concentration based on Unit Emission Rate		Modeled Concentrations based on Actual Emissions			
	Emission Rate (lb/hr)	Modeled Concentration (mg/m ³)	Emission Rate (lb/hr)	Modeled Concentration (mg/m ³)	Revised AAL (mg/m ³)	% of AAL
Arsenic & compounds	1.0	3.29E-3	4.8E-4	1.61E-6	2.1E-6	76.7%

⁶ Betty Gatano (April 25, 2013).

⁷ Betty Gatano (November 17, 2015).

⁸ Emission data prior to 2009 was not used because Jackson Paper conducted source testing in 2009 to establish emission factors for arsenic. Emission inventories prior to 2010 were not based on the site-specific emission factors and were not considered as representative of actual emissions at the facility.

As shown above, the scaled air modeling was compared with the revised AAL for arsenic, and the resulting maximum concentration was 76.7% of the revised AAL. The revised air modeling for arsenic demonstrated compliance with the AALs for arsenic. The MFCT permit application was withdrawn on October 7, 2014.⁹

8. Facility Wide Emissions Review

Potential emissions have not changed. Actual emissions for criteria pollutants and HAPs are provided in the header of this permit review.

9. Compliance Status

DAQ has reviewed the compliance status of this facility. During the most recent inspection, conducted on July 25, 2018 by Patrick Ballard of the ARO, the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating the facility is in compliance with all applicable requirements was included with the permit application.

The facility has had no compliance history within the past five years.

10. 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 comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to 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 provided to the public under 02Q .0521 above. South Carolina, Tennessee, and the Western North Carolina Regional Air Quality Agency are affected areas within 50 miles of this facility and will be notified accordingly.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this application.
- A zoning consistency determination is NOT required for this application.

12. Recommendations

The permit renewal application for Jackson Paper Manufacturing Company located in Sylva, Jackson County, NC has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 04665T17.

⁹ Betty Gatano (October 7, 2014).

Attachment 1

Notes of Meeting between NC DAQ and Jackson Paper Manufacturing Company
November 15, 2018

Attendees:

Patrick Ballard – Asheville Regional Office (ARO)
Mark Cuilla, Betty Gatano, and Samir Parekh – Raleigh Central Office
Keisha Bridges, Josh Carnes, and Carr Tyndall – Jackson Paper
Courtney Adcock – Ramboll Consultants

Summary:

NC DAQ staff participated in a conference call with personnel from Jackson Paper and their consultant regarding changes to Compliance Assurance Monitoring (CAM) in the draft TV permit.

The venturi scrubber on the facility's boiler is subject to CAM. The threshold to trigger a Quality Improvement Plant (QIP) under CAM was modified in the draft TV permit. Because the flow meter reading is an instantaneous measurement with no averaging period, the number of excursions is a better indicator of normal operations of the venturi scrubber than the duration of the excursion. Therefore, the QIP threshold was modified to reference the number of excursions per reporting period rather than the duration of the excursion (i.e., 5% of the operating time of the boiler).

Jackson Paper expressed concerns that unforeseen monitoring downtime (such as when the primary monitor is being certified and the backup unexpectedly fails) would be considered an excursion. Jackson Paper sought clarification about how such situations would be handled under CAM.

Samir Parekh explained that facilities are expected to monitor at all times, and failure to monitor the flowrate may be considered a permit deviation rather than an excursion under CAM. Jackson Paper should report such situations to the ARO, as provided in General Condition 3.I.A:

General Condition 3.I.A

Permit Deviations

3. Pursuant to 15A NCAC 02Q .0508(f)(2), the Permittee shall report deviations from permit requirements (terms and conditions) as follows:
 - a. Notify the Regional Supervisor or Director of all other deviations from permit requirements not covered under 15A NCAC 02D .0535 quarterly. A written report to the Regional Supervisor shall include the probable cause of such deviation and any corrective actions or preventative actions taken. The responsible official shall certify all deviations from permit requirements.

ARO staff will review the information submitted and determine if additional action is warranted.

NC DAQ recommended that Jackson Paper review its historical operating data to determine an appropriate number of excursions for the venturi scrubber. NC DAQ also suggested that Jackson Paper revisit its indicator range (i.e., flow rate reading less than 550 gpm) to ensure it is appropriate.

Attachment 2
Copy of the NHSM Determination



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

MICHAEL A. ABRACZINSKAS
Director

September 15, 2017

Ms. Nicki Slusser
President/COO
Jackson Paper Manufacturing Company
152 West Main Street
Sylva, NC 28779

SUBJECT: → Applicability Determination No. 3100: Non-Hazardous Secondary Material Determination
Jackson Paper Manufacturing Company
Facility ID No.: 5000119
Sylva, Jackson County

Dear Ms. Slusser:

The North Carolina Division of Air Quality (NC-DAQ) received your letter dated August 11, 2017 summarizing your analysis of used lubricating oil and recycled plastic waste. Jackson Paper Manufacturing Company (JPMC) burns used lubricating oil and plastic waste as a fuel in the existing boiler (ID No. JP-021) at JPMC's paper recycling mill in Sylva, North Carolina. The boiler is currently permitted to burn wood, coal, tire-derived fuel (TDF), paper mill sludge, plastic waste, and waste oil. The boiler constructed in 1982 has a heat input of 145.1 million Btu per hour from wood combustion and a heat input of 99.1 million Btu per hour for non-wood combustion.

Evaluation of Used Lubricating Oil

JPMC uses lubricating oil that is derived from crude or synthetic oils in its paper machines as lubrication for the bearings. The oil becomes contaminated with paper fiber, dust and other particulates as a result of that use, and is then collected and burned in the boiler after it is no longer being used in the paper machines (such as when an oil leak occurs). The used oil is not discarded and is both generated and burned by JPMC. Therefore, the used lubricating oil meets the definition of being a used oil under 40 CFR 279.1. 40 CFR 279.11 provides specifications of allowable levels for certain constituents/properties in used oil being burned for energy recovery. Specifically, Table 1 in 40 CFR 279.11 provides allowable levels for arsenic, cadmium, chromium, lead, flash point, and total halogens.

Similarly, JPMC already demonstrates compliance with the required allowable limits for the used oil in Section 2.2.A.4. of JPMC's Title V permit (04665T16) for certain constituents/properties in used oil including arsenic, cadmium, chromium, lead, flash point, total halogens, sulfur, and ash. The allowable limits under JPMC's Title V permit are equal to or more stringent than those listed in 40 CFR 279.11 for each constituent/property. JPMC conducts annual analytical testing of its used oil to demonstrate compliance with the specifications in its permit, the results of which are submitted to NC-DAQ each year. The summarized results (see Attachment) of the annual analytical testing for the last five years (2012 through 2016) demonstrate that JPMC's used oil meets the specifications in 40 CFR 279.11 to be classified as an on-specification used oil.

Therefore, NC-DAQ concurs that JPMC's used lubricating oil meets the definition of a traditional fuel under 40 CFR 241.2 since the used oil meets the definition under 40 CFR 279.1 and the associated specifications under 40 CFR 279.11.

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Evaluation of the Plastic Wastes

JPMC receives old corrugated containers (OCC) to be recycled in its papermaking process. The OCC is fed into a pulper with water to break down the cardboard stock into pulp. The pulped OCC is sent through a mechanical plastic separator, a scavenger, and junk tower operations to separate out undesirable components including rag rope plastics and metals that are landfilled. Other OCC rejects that consist of a mixed stream of organic material as well as polyethylene film and other lightweight plastics (tape, labels, etc.) are also known as plastic waste and are burned in the boiler as a fuel. Plastic waste defined in JPMC's Title V permit (04665T16) is limited to the lightweight plastics from tape, labels, etc., that comes into the plant attached to the cardboard and is recycled in the mechanical plastic separator, scavenger, and junk tower operations, but excludes rag rope plastics and metal portions of the waste collected from the pulper which are landfilled.

Paper recycling residuals (PRRs) defined under 40 CFR 241.2 means the secondary material generated from the recycling of paper, paperboard and corrugated containers composed primarily of wet strength and short wood fibers that cannot be used to make new paper and paperboard products. PRRs that contain more than small amounts of non-fiber materials including polystyrene foam, polyethylene film, other plastics, waxes and adhesives, dyes and inks, clays, starches and other coating and filler material are not PRRs for purposes of the definition. PRRs generated from the recycling of recovered paper, paperboard, and corrugated containers and burned by paper recycling mills whose boilers are designed to burn solid fuel are considered to be a non-hazardous secondary material (NHSM) by category pursuant to 40 CFR 241.4(a)(6).

The OCC rejects including small amounts of the defined above plastic waste would meet the PRR definition as long as the OCC rejects continue to contain small amounts of non-fiber materials while continuing to maintain an as-received average heat value of greater than 3,700 Btu per pound as you've demonstrated. Therefore, NC DAQ has determined that the OCC rejects with small amounts of the plastic waste described in your letter referenced above is not a solid waste when used as fuel in a solid fuel-fired combustion unit and would be an NHSM within the meaning of Title 40 CFR 241. This determination relies on the language of the current Federal regulations defining the NHSM rule.

Conclusion

As described in your letter dated August 11, 2017 summarizing your use of used lubricating oil and the OCC rejects containing plastic waste, the used lubricating oil does meet the definition of traditional fuel provided in 40 CFR 241.2, and the OCC rejects containing small amounts of plastic waste does meet the categorical exemption criteria pursuant to 40 CFR 241.4(a)(6). Therefore, the NC DAQ has determined that used lubricating oil is a traditional fuel when used as fuel in a combustion unit, and OCC rejects containing small amounts of plastic waste are not a solid waste when used as fuel in a solid fuel-fired combustion unit. As a result of this determination, the existing boiler would not be subject to the combustion source emission standards for biomass fuel promulgated pursuant to Section 129 of the Clean Air Act. If you have any questions regarding this NHSM determination, please contact Mr. Jeff Twisdale at (919) 707-8472 or Jeff.Twisdale@ncdenr.gov.

Sincerely,

William D. Willets, P.E., Chief, Permitting Section
Division of Air Quality, NC-DEQ

Attachment

- c: Asheville Regional Office
- Central Files