NORTH CAROLINA
DIVISION OF AIR QUALITY
Application Review

Issue Date: xx

Region: Mooresville Regional Office
County: Catawba
NC Facility ID: 1800206
Inspector's Name: Denise Hayes
Date of Last Inspection: 02/08/2021
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Shurtape Technologies - Hickory/Highland Plant

Facility Address:
Shurtape Technologies - Hickory/Highland Plant
1620 Highland Avenue, NE
Hickory, NC 28601

SIC: 2672 / Paper Coated And Laminated, Nec
NAICS: 322222 / Coated and Laminated Paper Manufacturing

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

Permit Applicability (this application only)

SIP: 02Q .0516
NSPS: N/A
NESHAP: N/A
PSD: GHGs PAL Renewal
PSD Avoidance: N/A
NC Toxics: N/A
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Mark Hawes Director of EHS-C (828) 267-8428 P. O. Box 1530 Hickory, NC 28603-1530	Andy Buckland Manufacturing Manager (828) 322-2700 P. O. Box 1530 Hickory, NC 28603-1530	Mark Hawes Director of EHS-C (828) 267-8428 P. O. Box 1530 Hickory, NC 28603-1530

Application Data

Application Number: 1800206.21A
Date Received: 07/14/2021
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 02218/T37
Existing Permit Issue Date: 07/14/2021
Existing Permit Expiration Date: 12/31/2023

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	0.0600	10.66	338.55	8.95	3.59	219.73	215.70 [Toluene]
2018	0.0700	11.26	334.99	9.46	3.97	227.36	222.53 [Toluene]
2017	0.0700	10.93	283.12	9.19	3.45	192.85	188.52 [Toluene]
2016	0.0600	10.72	258.77	9.00	3.37	180.24	176.21 [Toluene]
2015	0.0600	10.83	281.77	9.11	4.51	206.53	202.51 [Toluene]

Review Engineer: Rahul Thaker

Review Engineer's Signature: **Date:** October 1, 2021

Comments / Recommendations:
Issue 02218/T38
Permit Issue Date: xx
Permit Expiration Date: xx

1. Purpose of Application

Shurtape Technologies – Hickory/Highland Plant ("Shurtape"), Hickory, Catawba County, North Carolina, submitted a permit application on July 14, 2021 to renew the current PAL (Actuals Plantwide Applicability Limitation) for GHGs (Greenhouse Gases) of 114,271 tons per year (TPY) CO_2e. The application was deemed a "significant modification" to its current Title V permit; thus, it will be processed in accordance with 15A NCAC 02Q .0516.

2. Facility Description

The facility makes both solvent and water-based pressure sensitive tapes. Adhesive resin is applied to a substrate, primarily paper, on coating lines using continuous rolls (web) of material. The coated web is dried via ovens. Additional coatings can be applied to the dried web if necessary. In the last step of production, the dried web is sent to finishing, where the material is sliced and rolled to customer specifications.

3. Application Chronology

7/14/21	DAQ received and deemed the application complete for processing.
7/22/21	DAQ discussed and hand-delivered the additional information request via a meeting at its office.
8/13/21	DAQ received the requested information.
8/19/21	DAQ discussed with the applicant, face-to-face, its September 13th submittal and questioned the appropriateness of inclusion of comfort heating sources as part of the PAL. Requested clarifications and accurate information on its previous information request.
9/1/2021	DAQ received all requested information.

4. Statement of Compliance

Based on the compliance inspection of February 8, 2021, conducted by the Mooresville Regional Office, "this facility appeared to be in compliance with the applicable air quality regulations." In addition, the RO of the facility certified that the "facility is in compliance with all applicable requirements" through the completed Form E5 "Title V Compliance Certification".

5. Permit Modification/Changes

5.1 Renewal of Current PAL

The Permittee obtained an initial PAL of 114,271 tons/yr for GHGs for its Hickory/Highland facility on November 8, 2011 (02218T31), which is effective from January 1, 2012 to December 31, 2021[1]. As stated above, the Permittee requested to renew this PAL on July 14, 2021. The DAQ will process the application in accordance with its SIP (State Implementation Plan)-approved PSD regulation in 15A NCAC 02D .0530 which incorporates the requirements in §51.166(w)(10) "Renewal of PAL" with one exception in 02D .0530(i). Each of the elements for PAL renewal are discussed below:

§51.166(w)(10)(i)

The reviewing authority shall follow the procedures specified in paragraph (w)(5) of this section in approving any request to renew a PAL for a major stationary source, and shall provide both the proposed PAL level and a written rationale for the proposed PAL level to the public for review and comment. During such public review, any person may propose a PAL level for the source for consideration by the reviewing authority.

[1] The DAQ had made a typographical error with respect to the expiration date of the initial PAL. Instead of the correct expiration date of December 31, 2021 for the initial GHGs PAL, the permit had included December 31, 2022 date. This error was corrected through the issuance of air quality permit 02218T37 (July 14, 2021).

Before finalizing the renewed GHGs PAL for the facility, the DAQ will propose the permit to the general public for seeking comments pursuant to §51.166(w)(5) "public participation". Since the application is processed in accordance with the Title V procedures in 02Q .0500, the DAQ will ensure that the requirement in 02Q .0521 "public participation" is met as well.

§51.166(w)(10)(ii) Application Deadline

The plan shall require that a major stationary source owner or operator shall submit a timely application to the reviewing authority to request renewal of a PAL. A timely application is one that is submitted at least 6 months prior to, but not earlier than 18 months from, the date of permit expiration. This deadline for application submittal is to ensure that the permit will not expire before the permit is renewed. If the owner or operator of a major stationary source submits a complete application to renew the PAL within this time period, then the PAL shall continue to be effective until the revised permit with the renewed PAL is issued.

The Permittee submitted a PAL renewal application for GHGs on July 14, 2021, which does not meet the requirement to submit a timely application for renewal at least 6 months before its expiry. As stated above, the Permittee understood that the expiration date for the initial PAL was December 31, 2022 and not December 31, 2021. Because the DAQ had made an error with the initial PAL expiration date, which was not discovered and corrected until the current permit 02217T37 issuance on July 14, 2021. Thus, the applicant did not submit the application for GHGs PAL renewal in a timely fashion (i.e., at least 6 months prior to the December 31, 2021 expiration date). But, it should be emphasized that since the DAQ corrected the GHGs PAL expiration date on July 14, 2021, the applicant complied on the same day with the requirement to submit the renewal application in a timely manner (i.e., at least 6 months prior to the expiration deadline for this PAL), which was as expeditiously as possible, given the permit condition specified in the effective permit. In summary, the DAQ will attempt to complete the processing of this application, as expeditious as possible, so that the renewed PAL for GHGs can be issued prior to December 31, 2021.

§51.166(w)(10)(iii) Application Requirements

The application to renew a PAL permit shall contain the information required in paragraphs (w)(10)(iii)(a) through (d) of this section.

(a) The information required in paragraphs (w)(3)(i) through (iii) of this section.

§51.166(w)(3)(i)
A list of all emissions units at the source designated as small, significant or major based on their potential to emit. In addition, the owner or operator of the source shall indicate which, if any, Federal or State applicable requirements, emission limitations, or work practices apply to each unit.

The Table 5-1 below provides a complete list of emissions units at the facility, along with their classifications (small, significant, or major) based on the potential to emit, and the applicable requirements for each unit. It should be noted that there are no source-specific requirements (either state or federal) for GHGs emissions for any of these listed sources, except that all sources are currently subject to the GHGs PAL.

Table 5-1: Emissions Units, Types, and Applicable Requirements

Source	Existing or New	Small, Significant, or Major[2]	Applicable Requirements											
			40 CFR 60			40 CFR 63			15A NCAC 02D					
			Subpart Dc	Subpart RR	Subpart JJJJ	Subpart JJJJ	Subpart ZZZZ	Subpart DDDDD	.0503 (PM)	.0515 (PM)	.0516 (SO_2)	.0521 (VE)	.0530 (VOCs, GHGs)	.1806 (Odors)
ES-33-BLR-B3	Existing	Small						X	X		X	X	X	X
ES-33-	Existing	Small						X	X		X	X	X	X

[2] To determine "Small", "Significant", or "Major", a threshold of 75,000 TPY as CO_2e has been used in accordance with 40 CFR 51.166(b)(48)(iii). Any individual source with a PTE less than 75,000 TPY CO_2e has been listed as "Small". No individual source has a PTE equal to or greater than 75,000 TPY CO_2e.

Source	Existing or New	Small, Significant, or Major[2]	Applicable Requirements											
			40 CFR 60			40 CFR 63			15A NCAC 02D					
			Subpart Dc	Subpart RR	Subpart JJJJ	Subpart JJJJ	Subpart ZZZZ	Subpart DDDDD	.0503 (PM)	.0515 (PM)	.0516 (SO_2)	.0521 (VE)	.0530 (VOCs, GHGs)	.1806 (Odors)
BLR-B4														
ES-33-BLR-B5	Existing	Small	X					X	X		X	X	X	X
ES-33-BLR-TEMP	Existing	Small	X					X (if no longer "temporary"	X		X	X	X	X
ES-BLR-B1	Existing	Small	X					X	X		X	X	X	X
ES-33-5-01	Existing	Small		X		X				X		X	X	X
ES-33-6-02	Existing	Small				X				X		X	X	X
ES-33-07-02	Existing	Small				X				X		X	X	X
ES-33-09-02	Existing	Small		X		X				X		X	X	X
ES-36-CL-1	Existing	Small				X				X		X	X	X
IES-R&D-Gen	Existing	Small			X		X				X	X	X	X
IES-GEN1	Existing	Small			X		X				X	X	X	X
IES-GEN2	Existing	Small			X		X				X	X	X	X
CD-33-56-RTO	Existing	Small				X						X	X	X
CD-36-RTO-1	Existing	Small				X						X	X	X
Heated Air Make-up Units and Heaters	Existing	Small											X	X

All of the above requirements are enforced upon by EPA, citizens as defined in Clean Air Act (CAA), and NCDAQ, except the odorous emissions control requirement (02D .1806), which is enforceable by the DAQ only. All of these requirements are adequately included in the current permit 02218T37.

§51.166(w)(3)(ii)
Calculations of the baseline actual emissions (with supporting documentation). Baseline actual emissions are to include emissions associated not only with operation of the unit, but also emissions associated with startup, shutdown, and malfunction.

Tables 5-2 and 5-3 below provide the information on baseline actual emissions (BAEs) including the supporting basis. The BAE for each emission unit is determined based upon the actual emissions for 24 consecutive months from October 2017 through September 2019. All GHGs emissions are point source emissions; thus, no fugitive emissions are expected. The BAEs include emissions due to start-up, shut-down and malfunction. There are no units permanently shut-down after this selected baseline period which would otherwise require removal of the associated BAE for the unit from the PAL level. There is only one "new unit" which is coater 10 (ES-33-COAT10). This coater was constructed after the selected baseline period; hence as per the PAL provision, potential to emit (PTE) shall be added to the PAL level instead of the BAE.

As shown in Table 5-2, the BAEs for GHGs are 15,597 tons/yr CO_2e. The DAQ has verified the BAEs for the facility and found them to be accurate.

Table 5-2: BAEs

MONTH	GHGs from Natural Gas Burning (Tons CO_2e / month)	GHGs from Propane Burning (Tons CO_2e / month)	GHGs from No. 2 Fuel Oil Burning (Tons CO_2e / month)	GHGs from Line 5 RTO (Tons CO_2e/month)	TOTAL GHG Emissions (Tons CO_2e /month)	TOTAL 12-Months Rolling GHGs Emissions (Tons CO_2e / 12 months)	TOTAL 24-Months Rolling GHGs Emissions (Tons CO_2e / 24 months)
Oct-17	1,027.5	0.00	0.000	149.7	1,177.2	14,359	28,305
Nov-17	1,193.6	0.00	0.000	147.8	1,341.4	14,516	28,421
Dec-17	1,015.9	0.00	0.000	132.5	1,148.4	14,639	28,532
Jan-18	1,276.8	0.00	0.000	187.8	1,464.6	14,771	28,650
Feb-18	1,093.3	0.00	0.000	144.7	1,238.0	14,780	28,651
Mar-18	1,348.5	0.00	0.000	252.8	1,601.3	15,133	29,012
Apr-18	1,086.9	0.00	0.000	210.8	1,297.7	15,219	29,156
May-18	1,110.6	0.00	0.000	99.8	1,210.4	15,238	29,279
Jun-18	1,096.4	0.00	0.000	147.1	1,243.5	15,279	29,483
Jul-18	1,080.6	0.00	0.000	142.4	1,223.1	15,218	29,627
Aug-18	1,082.0	0.00	0.000	149.1	1,231.1	15,337	29,775
Sep-18	**1,011.2**	**0.00**	**0.000**	**209.3**	**1,220.6**	**15,397**	29,826
Oct-18	1,230.2	0.00	0.000	138.4	1,368.6	15,589	29,947
Nov-18	1,248.5	0.00	0.000	10.7	1,259.2	15,506	30,023
Dec-18	884.6	0.00	0.000	341.8	1,226.4	15,584	30,224
Jan-19	1,245.7	0.00	0.000	210.5	1,456.1	15,576	30,347
Feb-19	1,145.8	0.00	0.000	254.7	1,400.4	15,738	30,518
Mar-19	1,207.6	0.00	0.000	216.8	1,424.4	15,562	30,694
Apr-19	1,118.2	0.00	0.000	203.1	1,321.3	15,585	30,804
May-19	1,066.9	0.00	0.000	253.5	1,320.4	15,695	30,933
Jun-19	1,000.9	0.00	0.000	282.6	1,283.5	15,735	31,014
Jul-19	937.9	0.00	0.000	234.2	1,172.1	15,684	30,903
Aug-19	1,113.7	0.00	0.000	226.0	1,339.7	15,793	31,129
Sep-19	**984.5**	**0.00**	**0.000**	**239.2**	**1,223.8**	**15,796**	**31,193**
Baseline Actual Emissions (tons/yr)							**15,597**

Table 5-3: BAEs Supporting Basis

	Monthly Readings		Piedmont Natural Gas Invoices via Their Flow Meters			Monthly Readings	SAP (inventory data)	
Month	**Plant 33 Generator Usage (hours/month)**	**R&D Generator Usage (hours/month)**	**Natural Gas Usage Plant 33 (ft^3)**	**Natural Gas Usage Plant 36 (ft^3)**	**Natural Gas for R&D (ft^3)**	**No. 2 Fuel Oil Plant 36 (gallons)**	**Propane Usage Plant 33 (gallons)**	**VOC to Plant 33 RTO (lb/month) (applied)**
Oct-17	0.0	1.9	13,978,350	3,056,796	777	0	0	96,387
Nov-17	0.0	2.0	16,802,718	2,967,961	18,350	0	0	95,181
Dec-17	0.0	1.0	13,860,777	2,912,816	69,029	0	0	85,337
Jan-18	0.2	2.0	17,446,893	3,471,650	250,000	0	0	120,940
Feb-18	0.0	1.9	15,518,252	2,469,126	138,447	0	0	93,182
Mar-18	0.0	1.4	19,286,796	2,977,282	93,398	0	0	162,819
Apr-18	0.0	1.6	15,456,505	2,524,563	39,612	0	0	135,729
May-18	0.0	1.7	15,865,922	2,543,883	3,495	0	0	64,283

	Monthly Readings		Piedmont Natural Gas Invoices via Their Flow Meters			Monthly Readings	SAP (inventory data)	
Month	**Plant 33 Generator Usage (hours/month)**	**R&D Generator Usage (hours/month)**	**Natural Gas Usage Plant 33 (ft^3)**	**Natural Gas Usage Plant 36 (ft^3)**	**Natural Gas for R&D (ft^3)**	**No. 2 Fuel Oil Plant 36 (gallons)**	**Propane Usage Plant 33 (gallons)**	**VOC to Plant 33 RTO (lb/month) (applied)**
Jun-18	0.0	0.4	15,779,903	2,397,087	388	0	0	94,749
Jul-18	0.0	2.5	15,477,087	2,438,932	485	0	0	91,738
Aug-18	0.0	1.6	15,266,214	2,672,427	485	0	0	96,022
Sep-18	0.0	1.4	14,271,748	2,493,495	388	0	0	134,808
Oct-18	0.2	1.5	17,672,427	2,723,204	485	0	0	89,123
Nov-18	0.0	1.8	17,640,971	2,996,408	62,039	0	0	6,899
Dec-18	0.0	1.3	11,462,136	2,978,738	225,631	0	0	220,113
Jan-19	0.0	1.7	17,114,757	3,316,408	221,748	0	0	135,536
Feb-19	0.0	2.0	16,198,252	2,659,612	138,447	0	0	164,002
Mar-19	0.4	1.3	16,961,942	2,797,282	262,136	0	0	139,631
Apr-19	1.8	1.5	15,733,301	2,659,806	145,437	0	0	130,807
May-19	1.4	2.1	14,941,553	2,735,146	12,621	0	0	163,247
Jun-19	0.7	1.6	13,922,427	2,671,262	680	0	0	181,988
Jul-19	0.0	1.4	12,881,650	2,667,184	485	0	0	150,832
Aug-19	0.0	1.6	15,540,194	2,923,786	680	0	0	145,521
Sep-19	0.0	1.7	13,688,252	2,633,786	680	0	0	154,080

§51.166(w)(3)(iii)
The calculation procedures that the major stationary source owner or operator proposes to use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(13)(i) of this section.

The applicant has proposed the same monitoring approach as included in the current PAL for GHGs, which is the use of emissions factors for estimating emissions for various emissions units. Refer to Section 2.4.i. and j. of the current permit.

(b) A proposed PAL level.

The applicant initially proposed to renew the PAL at the current PAL level of 114,271 tons as CO_2e per rolling 12 months. However, the PTE for GHGs is now estimated to be 106,205 tons CO_2e per year (Refer to paragraph (c) below). In brief, the PTE has reduced below the current PAL level. Since the PAL cannot be renewed higher than the facility's PTE, the applicant has amended its initial proposal and requested to renew the GHGs PAL at 106,205 tons CO_2e per rolling 12-month period.

(c) The sum of the potential to emit of all emissions units under the PAL (with supporting documentation).

As shown in the Table 5-4 below, facility's current potential to emit (PTE) is 106,275 TPY as CO_2e, which is a sum of the PTE for each of the emission units emitting greenhouse gases. The applicant has provided the PTE emissions calculations for each emissions unit and the DAQ has found them correctly determined.

Table 5-4: PTE Estimate

Source	Heat Input Rate (Million Btu/Hour)	GHGs PTE (Tons/Yr CO_2e)
Line 5	12.5	
Line 5 RTO	11.5	
Line 6	24.0	
Line 7	24.5	
Line 9	12.5	
Boiler 3	7.1	
Boiler 4	8.4	
Boiler 5	25.1	
Boiler 1	10.5	
P36 RTO	2.4	
P36Line1	17.2	
#5 Air Makeup Unit	7.7	
#6/7 Air Makeup Unit	2.0	
#8/9 Air Makeup Unit	7.7	
Mixing Air Makeup Unit	2.0	
Plant 36/27 Heaters	8.1	
Coater 10 Building Heater	0.9	
Total Fuel Burning, million Btu/Hour	184.18	
Subtotal, Natural Gas Usage, million ft^3/year	1,566.4	
Emergency Generators (Assuming 500 hours/year operation) Natural Gas Usage, million ft^3/yr	1.59	
Potential Natural Gas Usage, million ft^3/year	1,568.0	
Potential GHGs Emissions (Natural Gas Usage), tons/yr CO_2e		94,574
Potential GHGs Emissions (Toluene Destruction in RTO (CD-33-56-RTO), from Original Application), tons/yr CO_2e		11,631
Total Potential GHGs Emissions, tons/yr CO_2e		**106,205**

(d) Any other information the owner or operator wishes the reviewing authority to consider in determining the appropriate level for renewing the PAL.

Refer to the next section.

§51.166(w)(10)(iv) PAL Adjustment

In determining whether and how to adjust the PAL, the reviewing authority shall consider the options outlined in paragraphs (w)(10)(iv) (a) and (b) of this section. However, in no case may any such adjustment fail to comply with paragraph (w)(10)(iv)(c) of this section.

(a) If the emissions level calculated in accordance with paragraph (w)(6) of this section is equal to or greater than 80 percent of the PAL level, the reviewing authority may renew the PAL at the same level without considering the factors set forth in paragraph (w)(10)(iv)(b) of this section; or

(b) The reviewing authority may set the PAL at a level that it determines to be more representative of the source's baseline actual emissions, or that it determines to be appropriate considering air quality needs, advances in control technology, anticipated economic growth in the area, desire to reward or encourage the source's voluntary emissions reductions, or other factors as specifically identified by the reviewing authority in its written rationale.

(*c) Notwithstanding paragraphs (w)(10)(iv)(a) and (b) of this section:*

(1) If the potential to emit of the major stationary source is less than the PAL, the reviewing authority shall adjust the PAL to a level no greater than the potential to emit of the source; and

(2) The reviewing authority shall not approve a renewed PAL level higher than the current PAL, unless the major stationary source has complied with the provisions of paragraph (w)(11) of this section (increasing a PAL).

It should be noted that NC's SIP-approved PSD provision in 02D .0530(i) includes the following requirement:

(i) For the purposes of this Rule, 40 CFR 51.166(w)(10)(iv)(a) shall read: "If the emissions level calculated in accordance with Paragraph (w)(6) of this Section is equal to or greater than 80 percent of the PAL level, the Director shall renew the PAL at the same level." 40 CFR 51.166(w)(10)(iv)(b) is not incorporated by reference.

Because the provision §51.166(w)(10)(iv)(b) is not incorporated into NC's PSD regulation and the provision in §51.166(w)(10)(iv)(a) is replaced with 02D .0530(i), the facility request shall conform to the requirements both in 02D .0530(i) and §51.166(w)(10)(iv)(c) for renewing the current PAL for GHGs.

The emission level at the time of renewal is determined by adding the significance level of GHGs to its BAEs. That is 15,597 TPY CO_2e + 75,000 CO_2e = 90,597 TPY CO_2e, which is 79.3% of the current PAL (114,271 TPY CO_2e). This level of emissions (90,597 TPY CO_2e) do not meet the criteria in 02D.0530(i) (i.e., at least 80% of the current PAL). Therefore, the DAQ cannot approve / renew the PAL at the current level of 114,271 TPY CO_2e without the rationale basis for a higher PAL. Based upon the DAQ request, the applicant has provided justifications for a higher PAL, which are discussed below:

First, the Permittee argues that the BAEs of 15,597 TPY CO_2e (Table 5-2 above) do not represent the facility's true baseline and they do not capture the underutilized capacity the facility is capable of producing and emitting at a higher level.

The PAL guidance[3] on page 7 discussed situations where a facility may manufacture multiple products including those with lower emissions and those with higher emissions. Relevant passage is copied below:

> "Similarly, your source might be designed to manufacture several different products, and your permit might allow you to switch from one product to another. During the initial term of the PAL, you might produce a product associated with low emissions, resulting in source-wide emissions that were consistently less than 80 percent of the PAL level. However, you might be planning to produce a product that would cause the source to emit at a higher level following PAL renewal. This is another example of a circumstance in which the reviewing authority could reasonably determine that a higher level was more representative of your source's baseline actual emissions."

[3] *"Guidance on Plantwide Applicability Limitation Provisions Under New Source Review Regulations"*, Anne L. Austin, Principal Deputy Assistant Administrator, EPA, August 4, 2020.

That guidance clarifies that in such cases, the emissions during the initial term of a PAL may not be representative of the facility' true baseline. It specifies that the reviewing authority may consider this, and other, relevant source-specific factors to determine that a higher level would be more representative of facility's baseline actual emissions.

The DAQ recently renewed the referenced facility's VOC PAL. During that renewal process, the state agency recognized the facility's actual emissions were not reflective of its BAEs based upon the relevant source-specific factors outlined in the above EPA memorandum. During that renewal, the Permittee had demonstrated that Coating Lines 5 and 8, which result in the majority of the VOC emissions at the facility, have the ability to operate 8760 hours per year to manufacture a wide range of products with varying VOC content. Factors such as equipment availability, workforce availability, raw material availability, and market demand, impact which coating lines, and thus, which coating technology (ex. solvent-based technology, water-based technology, hot melt technology) is utilized at any given time. The Permittee had demonstrated that both Coating Lines 5 and 8 could have VOC usage and emissions significantly above the actual values for the contemporaneous period (calendar years 2018 and 2019 were used as a baseline period for the VOC PAL renewal). The agency had concurred with the assessment, including the actual utilization of coatings, during the contemporaneous period, which, if used in greater quantities due to market demands or resource availability, would increase the facility's actual emissions.

The above 24-months baseline period for the VOC PAL renewal is approximately the same period used for this GHGs PAL renewal (October 2017 through September 2019). Since the DAQ previously concurred with the facility's assessment of these coatings and the reflective increase to actual emissions associated with greater utilization, the Permittee evaluated these same coatings with the increased utilization for estimating actual emissions from their combustion when controlled by the RTO.

Table 5-5 below displays the products manufactured for 2018 and 2019 on Coating Line 5 and the solvent application rates. As said earlier, any of the products included in this Table could be produced in significantly greater quantities than shown. Any of the products run on Coating Line 5 can be exhausted to the RTO. Exhausting to the RTO increases the actual emissions due to the oxidation of organic compounds to CO_2. The Permittee has previously demonstrated, using a mass balance method, that with toluene as the solvent, approximately 3.35 lbs of CO_2 are produced for each pound of toluene destroyed by the RTO.

Table 5-5: Coating Line 5 Actual Production Summary for 2018-2019

Tape Name	**2018 Actual Coater 5 Production (yd^2)**	**2019 Actual Coater 5 Production (yd^2)**	**Solvent Application Rate (oz/yd^2)**	**Solvent Application Rate (lbs/hr)**
Tape 1	336,594	284,245	1.80	782
Tape 2	219,706	293,592	2.12	729
Tape 3	396,061	235,390	3.27	727
Tape 4	25,282	20,966	2.16	717
Tape 5	238,407	288,669	3.38	715
Tape 6	2,765,886	368,652	1.72	697
Tape 7	760,478	774,389	2.69	681
Tape 8	2,002,661	2,044,218	1.35	628
Tape 9	448,025	478,561	1.53	618
Tape 10	38,146	-	1.53	615
Tape 11	1,913,857	355,299	1.47	591
Tape 12	320,625	286,727	2.40	580
Tape 13	476,397	504,637	1.10	512
Tape 14	458,039	547,401	1.15	511
Tape 15	5,504,126	5,949,303	2.55	511
Tape 16	149,363	188,595	1.67	488
Tape 17	176,473	248,749	1.50	482
Tape 18	85,905	133,364	1.63	444
Tape 19	137,520	223,053	1.53	386

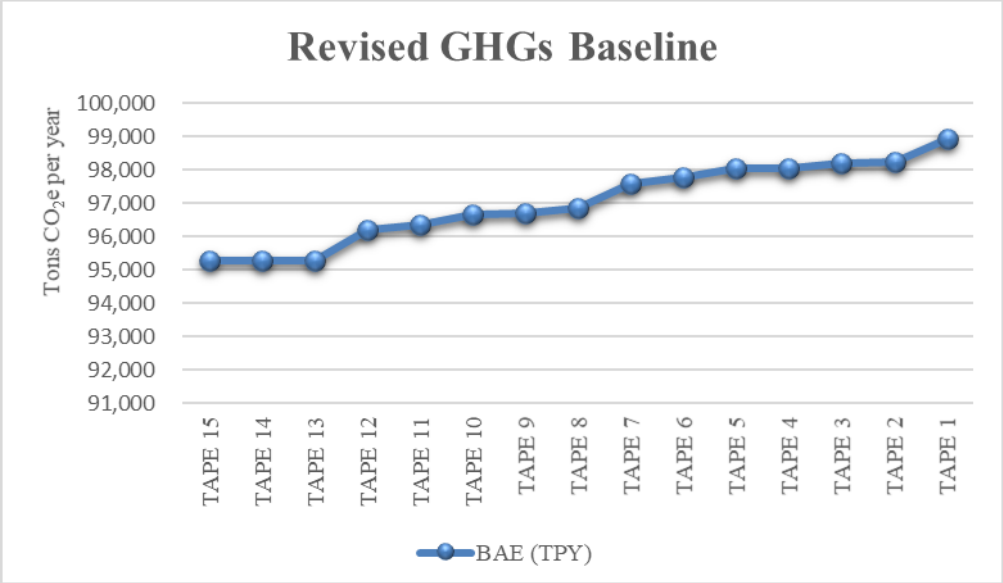
Tape Name	2018 Actual Coater 5 Production (yd^2)	2019 Actual Coater 5 Production (yd^2)	Solvent Application Rate (oz/yd^2)	Solvent Application Rate (lbs/hr)
Tape 20	33,872	1,553,418	3.61	372
Tape 21	144,213	-	1.78	352
Tape 22	2,675,267	3,078,417	1.73	343
Tape 23	102,777	107,920	1.32	334
Tape 24	588,970	512,658	0.45	205
Tape 25	40,805	5,761	0.65	181
Tape 26	254,103	243,733	0.65	181
Tape 27	90,917	72,032	1.43	112
Tape 28	29,461	18,434	1.43	112
Tape 29	-	5,437	1.17	92

Table 5-6 below shows the calculated additional GHGs emissions that would result due to manufacturing of any of the top 15 products (i.e., Tape 1 through Tape 15 in Table 5-5 above) on Coating Line 5 for 8760 hours and exhausting to the RTO. The additional GHGs emissions generated from manufacturing these top 15 products for 8760 hours per year range from 4,339 TPY to 8,663 TPY as CO_2e, above the levels in the baseline calculations. Thus, the revised baseline is estimated to be between 95,262 and 98,948 TPY as CO_2e, which is also charted in Figure 5-1 below. Thus, in accordance with the said EPA guidance, a more representative BAEs, reflective of realistic facility emissions from actual coatings utilized during the contemporaneous period, is above 80% of the current GHG PAL Level. More specifically, it ranges between 83.4% to 86.6% of the current PAL.

Table 5-6: Revised GHGs Baseline Using Top 15 Products Produced in Coating Line 5

	Baseline Period for GHGs PAL Renewal	Actual GHGs Emissions (TPY)	Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO	Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)	Average (TPY)	Significance Level (TPY)	Revised GHGs Baseline (TPY)	Proximity To Current PAL
Tape 1	10/01/2017 - 09/30/2018	15,397	8,663	24,060	23,941	75,000	98,941	86.6%
	10/01/2018 - 09/30/2019	15,796	8,025	23,821				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 2	10/01/2017 - 09/30/2018	15,397	7,942	23,339	23,220	75,000	98,220	86.0%
	10/01/2018 - 09/30/2019	15,796	7,304	23,100				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 3	10/01/2017 - 09/30/2018	15,397	7,915	23,312	23,193	75,000	98,193	85.9%
	10/01/2018 - 09/30/2019	15,796	7,277	23,073				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 4	10/01/2017 - 09/30/2018	15,397	7,779	23,176	23,057	75,000	98,057	85.8%
	10/01/2018 - 09/30/2019	15,796	7,141	22,937				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
	10/01/2017 - 09/30/2018	15,397	7,752	23,149	23,029	75,000	98,029	85.8%
Tape 5	10/01/2018 - 09/30/2019	15,796	7,114	22,910				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 6	10/01/2017 - 09/30/2018	15,397	7,507	22,904	22,784	75,000	97,784	85.6%
	10/01/2018 - 09/30/2019	15,796	6,869	22,665				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 7	10/01/2017 - 09/30/2018	15,397	7,289	22,686	22,567	75,000	97,567	85.4%
	10/01/2018 - 09/30/2019	15,796	6,652	22,447				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 8	10/01/2017 - 09/30/2018	15,397	6,568	21,965	21,846	75,000	96,846	84.8%
	10/01/2018 - 09/30/2019	15,796	5,931	21,727				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 9	10/01/2017 - 09/30/2018	15,397	6,432	21,829	21,710	75,000	96,710	84.6%
	10/01/2018 - 09/30/2019	15,796	5,795	21,590				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 10	10/01/2017 - 09/30/2018	15,397	6,391	21,789	21,669	75,000	96,669	84.6%
	10/01/2018 - 09/30/2019	15,796	5,754	21,550				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 11	10/01/2017 - 09/30/2018	15,397	6,065	21,462	21,343	75,000	96,343	84.3%
	10/01/2018 - 09/30/2019	15,796	5,427	21,223				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 12	10/01/2017 - 09/30/2018	15,397	5,915	21,312	21,193	75,000	96,193	84.2%
	10/01/2018 - 09/30/2019	15,796	5,278	21,074				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 13	10/01/2017 - 09/30/2018	15,397	4,990	20,388	20,268	75,000	95,268	83.4%
	10/01/2018 - 09/30/2019	15,796	4,353	20,149				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 14	10/01/2017 - 09/30/2018	15,397	4,977	20,374	20,255	75,000	95,255	83.4%
	10/01/2018 - 09/30/2019	15,796	4,339	20,135				
	Baseline Period for GHGs PAL Renewal	**Actual GHGs Emissions (TPY)**	**Additional GHGs Emissions Due to Increased Product Demand (TPY) RTO**	**Actual Emissions After Accounting Emissions Due to Increased Product Demand (TPY)**	**Average (TPY)**	**Significance Level (TPY)**	**Revised GHGs Baseline (TPY)**	**Proximity To Current PAL**
Tape 15	10/01/2017 - 09/30/2018	15,397	4,977	20,374	20,255	75,000	95,255	83.4%
	10/01/2018 - 09/30/2019	15,796	4,339	20,135				

Figure 5-1:
Revised GHGs Baseline Using Top 15 Products Produced in Coating Line 5



Finally, the Permittee has specified other relevant source-specific factors below in Table 5-7 that could also result in a higher and more representative BAEs. Examples of these include:

Table 5-7: Other Source-Specific Factors

Factor	Impact
Increased utilization of any Plant 33 Coating Line (Lines 5, 6, 7, 8, or 9)	Fuel burning to heat the oven(s) would increase. Also, please note that increased utilization of Lines 5, 6, or 8, would result in a similar increase in utilization of Lines 7 and 9, which prepare substrates for use on the other lines.
Increased utilization of Coating Lines 5 or 8 emitting to the solvent-recovery system	Fuel burning in the boilers to make steam for the solvent-recovery system
Increased utilization of Coating Line 5 while emitting to the RTO	Fuel burning to heat the RTO would increase
Increased utilization of Coating Line 1 at Plant 36	Fuel burning to heat the ovens would increase. Additionally, fuel burning in Boiler 1 would increase to generate additional steam. Likewise, increased utilization of Coating Line 1 would likely result in increased utilization of Lines 7 or 9, which prepare substrates for use on Coating Line 1.
Resin Blending System Unavailability	If the Plant 33 resin blending system were unavailable, the facility would revert to receipt of resin via rail car, which would necessitate increased utilization of boilers to produce sufficient steam to heat the rail cars to the point the materials are flowable and pumpable.

The Permittee has not quantified effects of these other factors on the estimated BAEs; however, the Permittee has stated that they do reflect source-specific factors and conditions that would also be representative of the BAE within 80% of the current PAL.

Considering the totality of circumstance and the reasoned basis above, DAQ agrees that the facility's actual emissions for GHGs during the selected baseline period (October 2017 through September 2019) could be as high as 84-86% of the current PAL, when factored into source-specific factors as discussed above. Thus, they do meet the 02D .0530(i) criteria for renewing the GHGs PAL at the current PAL (114,271 TPY CO_2e). However, as discussed earlier and shown in Table 5-4 above, the facility's PTE has decreased below the current PAL to a level of 106,205

TPY CO_2e. Thus, in accordance with 15A NCAC 02D .0530(i) and §51.166(w)(10)(iv)(c), the DAQ adjusts the current GHGs PAL and proposes to renew it at a level of 106,205 TPY CO_2e. The DAQ concludes that this renewed level is reasonably representative of facility's baseline actual emissions.

5.2 PAL Revalidation

In accordance with §51.166(w)(12)(ix), the PAL permit requires the Permittee to revalidate the emissions factors and any other data used in calculating GHGs emissions through performance test or other scientifically valid means once every five years. Refer the Section 2.4.e. of the current permit. The Permittee had submitted the last revalidation for GHGs PAL on November 14, 2016 which was supplemented on January 5, 2017; thus, the next revalidation request is due from the applicant by November 14, 2021. The Permittee has used this PAL renewal application processing opportunity to also submit its revalidation request as discussed below:

The Permittee has argued that the PAL monitoring for GHGs includes exclusively the use of EPA-approved emissions factors (40 CFR 98, Subpart C, Tables C-1 and C-2) and global warming potentials (GWP) for constituent gases (Part 98, Subpart A, Table A-1), and these emissions factors and the GWPs have not changed since the last revalidation request as above. Further, the emission factor for CO_2 for toluene destruction in the RTO (ID No. CD-33-56-RTO) of 3.35 lb CO_2/lb toluene is the worst-case emission factor and remains valid. The Permittee has stated that the formulations of solvents utilized in the Coating Line No. 5 (discharging to this RTO) has not changed in a manner that would impact this emission factor.

In brief, the DAQ approves the applicant's revalidation request consisting of the use of emissions factors and GWPs, as discussed above.

6. NSPS, NESHAPS, PSD, Attainment Status, 112(r), and CAM

NSPS

The applicable NSPSs for the facility sources have been listed in in Section 5.1 above. This GHGs PAL renewal request does not change the status of the facility sources with respect to NSPSs.

NESHAP/MACT

The applicable NESHAPSs or MACTs for the facility sources have been listed in Section 5.1 above. The PAL renewal request does not change the status of the facility sources with respect to NESHAPs or MACTs.

PSD

The facility is a major stationary source for PSD and it has obtained PAL permits for both VOCs and GHGs. The GHGs PAL renewal request does not trigger any major source (or major modification) requirements for PSD.

Attainment Status

Catawba County is currently in attainment or unclassifiable/attainment for all NAAQSs.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act.

CAM

Not applicable. The applicability to CAM is generally required to be addressed during processing of renewal or significant modification applications. This application is not a renewal of the Title V permit. It is a significant modification application solely to renew the existing GHGs PAL. Thus, CAM applicability does not need to be addressed with this permit revision.

7. Facility Wide Air Toxics

The facility is currently not subject to NC's air toxics program requirements in 02Q .0700 and 02D .1100. As per the application review supporting the air permit 02218T36 (January 11, 2019), "the air toxics limits were removed from the permit under Air Permit No. 02218T32 issued on December 12, 2012" because it was "determined [that] the facility did not present an unacceptable risk to human health, pursuant to NCGS §143-215.107(a)(5)b. (i.e., Ratified Session Law 2012-91 and House Bill 952 on 6/28/2012)

8. Facility Emissions Review

Page 1 of this application review above includes actual emission for 2015 through 2019.

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

With respect to the Title V procedures for public participation, pursuant to 15A NCAC 02Q .0521, a notice of the DRAFT Title V Permit was placed on the NCDEQ website on xx with the comment period beginning on xx. The notice provided for a 30-day comment period with an opportunity for a public hearing. Copies of the public notice were sent to the persons on the Title V mailing list and EPA on xx. Pursuant to 15A NCAC 02Q .0522, a copy of the permit application and the proposed permit (in this case, the draft permit) were provided to EPA for their 45-day review on xx. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit was provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. A copy of the final permit will also be provided to the EPA upon issuance as per 02Q .0522.

It should be noted here that the above Title V procedure for public participation in 02Q .0521 conforms to the public participation requirement for PAL renewals in §5.166(w)(5) (i.e., 30-days period for submittal for public comments). Additionally, pursuant to this PAL provision and the significant modification procedure in §70.7(h)(6), the DAQ will respond in writing to all public comments, whether received during the public comment period or raised during public hearing (if any) before taking a final action on the submitted PAL renewal application.

10. Stipulation Review

The following Table 10-1 lists the changes to the Shurtape Technologies LLC – Hickory/Highland Plant's Air Quality Permit No. 02218T37:

Table 10-1 Summary of Changes to Current Permit

Old Page Air Quality Permit No. 02218T37	**Old Section** Air Quality Permit No. 02218T37	**New Page** Air Quality Permit No. 02218T38	**New Section** Air Quality Permit No. 02218T38	**Description of Change(s)**
Cover letter & first page of permit				Amended the permit numbers and dates. Included Mr. Paul Scott as responsible official per the submitted application (in addition to Mr. Andy Buckland).
-	-	-	-	Revised the insignificant activity list (attachment to the cover letter) to add natural gas-fired air makeup units and heaters (ID Nos. IES-33-5-MA, IES-33-6,7-MA, IES-33-8,9-MA, IES-33-Mix-MA, IES-36-H, IES-33-C10-H).
43	Section 2.4.a. Table and Note Below	43, 44	Section 2.4.a. Table and Note Below	Revised the Actuals PAL to state 106,205 tons per consecutive 12-months period as CO_2e. Included air makeup units and heaters (ID Nos. IES-33-5-MA, IES-33-6,7-MA, IES-33-8,9-MA, IES-33-Mix-MA, IES-36-H, IES-33-C10-H) as PAL emissions units.
44	Section 2.4.f.	44	Section 2.4.f.	Included air makeup units and heaters and emergency generators.
44	Section 2.4.i., and	44, 45	Section 2.4.i., and Equation Legends A	Included air makeup units and heaters. For legend A, included air makeup units and heaters and

Old Page Air Quality Permit No. 02218T37	**Old Section** Air Quality Permit No. 02218T37	**New Page** Air Quality Permit No. 02218T38	**New Section** Air Quality Permit No. 02218T38	**Description of Change(s)**
	Equation Legends A and B		and B	emergency generators. For legend B, included air makeup units and heaters and emergency generators, as applicable.
45	Section 2.4.j.	45	Section 2.4.j.	Included a stipulation for allowing the use of the same emission factor of 3.35 lb CO_2/lb toluene destructed in an RTO for similar sources combusting organic materials (if found to be representative), or allowing to develop an alternate (different) emission factor. If a different emission factor is to be developed by the Permittee, it shall be first reviewed and approved by the DAQ, and the permit needed to be revised before the Permittee can use it for monitoring requirement.

11. Conclusions, Comments, and Recommendations

- The application does not involve any air pollution control device on a new or modified source at the facility, requiring review of a design or determination of its performance by a professional engineer licensed in NC. Thus, the requirement in 02Q .0112 "Applications Requiring Professional Engineer Seal" does not apply.

- The submitted PAL renewal application does not entail expansion of the existing facility; thus, the zoning consistency requirement in 02Q .0507(d)(1) does not apply.

- The draft permit was emailed to the Permittee for review on September 21, 2021. Mr. Jerry Eplin of Shurtape Technologies emailed on September 27, 2021 with a few typographical errors on page 3 of the application review. The DAQ will take care of those minor comments and no discussion is required here. In addition, on the same page of the application review, the applicant commented that the DAQ should state that it did submit the renewal application for GHGs PAL, as expeditiously as was possible, on the same day (July 14, 2021) the DAQ corrected the issue with the expiration date from December 31, 20212 to December 31, 2021. The DAQ agrees with the applicant and will amend the page 3 of application review to state the above.

- The draft permit was emailed to the Mooresville Regional Office (MRO) for review on September 21, 2021. Denise Hayes of the MRO emailed on October 1, 2021 indicating that she had no comments on the draft permit.

- This engineer recommends renewal of the GHGs PAL after the completion of both the public comment and EPA review periods.