

## Air Permit Review

Permit Issue Date: MM/DD/YYYY

**Region:** Mooresville Regional Office  
**County:** Catawba  
**NC Facility ID:** 1800184  
**Inspector's Name:** Jim Hafner  
**Date of Last Inspection:** 03/25/2008  
**Compliance Code:** 3/In Compliance - Inspection

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>		
<b>Applicant (Facility's Name):</b> Plastic Packaging Inc  <b>Facility Address:</b> Plastic Packaging Inc 1246 Main Avenue SE Hickory, NC 28602  <b>SIC:</b> 2673 / Bags: Plastics, Laminated And Coated <b>NAICS:</b> 326111 / Plastics Bag Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> <b>NSPS:</b> <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b>		
<b>Contact Data</b>			<b>Application Data</b>		
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 1800184.08B <b>Date Received:</b> 06/06/2008 <b>Application Type:</b> Modification <b>Application Schedule:</b> TV-Significant <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 04691/T16 <b>Existing Permit Issue Date:</b> 07/24/2008 <b>Existing Permit Expiration Date:</b> 03/31/2011		
Ron Windley Technical Manager (828) 328-2466 PO Box 2029 Hickory NC, 28603	Preston Bryant V.P. of Manufacturing (828) 328-2466 PO Box 2029 Hickory NC, 28603	Ron Windley Technical Manager (828) 328-2466 PO Box 2029 Hickory NC, 28603			
<b>Review Engineer:</b> Joseph Voelker  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____		<b>Comments / Recommendations:</b> Issue 04691/T17 <b>Permit Issue Date:</b> MM/DD/YYYY <b>Permit Expiration Date:</b> 03/31/2011			

### I. Purpose of Application

Plastic Packaging, Inc. (PPI) is a plastic converter who prints customer designs, patterns and/or writing onto plastic (polyethylene / polypropylene) film utilizing wide web flexographic printing presses and then converts the material into plastic bags for various products manufactured by other industries.

This application was submitted to satisfy the following requirement in Permit No. T15 (and T16)

The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 2Q .0504 for the air emission source(s) (ID No(s). Press 12 and Press 13) on or before 12 months after commencing operation.

### II. History/Background/Application Chronology

Date	Description
April 28, 2006	Permit <b>T13</b> was issued as a result of a renewal application.
May 18, 2006	Permit <b>T14</b> was issued as a result of an administrative correction. No substantive changes were made to T13.
June 6 2007	Permit <b>T15</b> was issued in response to application <b>1800184.07A</b> as a 501(c)(2) modification for the construction and operation of two flexographic printing presses (Press 12 and Press 13) that were to replace three existing printing presses (Press 6, Press 7 and Press 8). The permit required the submittal of a complete title V application within 12 months of operation of the new presses.
June 2007	Presses 12 and 13 begin operation
September	Permit application <b>1800184.08A</b> was received for a 501(c)(2) modification for the removal of presses

Date	Description
27, 2007	<b>(ID Nos. ES-8 and ES-10)</b> and the construction and operation of the Laminator <b>(ID No. ES-14)</b> .
June 6, 2008	A permit application ( <b>1800184.08B</b> ) was submitted to modify the TV permit pursuant to 15A NCAC 2Q .0504 to address the addition of presses 12 and 13 per application <b>1800184.07A</b>
July 24, 2008	Permit <b>T16</b> was issued. The permit required the submittal of a complete title V application within 12 months of operation of the new laminator <b>(ID No. ES-14)</b> .
August 26, 2008	JMV (permit engineer) contacts consultant to ask if the Laminator <b>ES-14</b> had begun operation. Mr. Voelker asked for the permit application to be revised to include Laminator <b>ES-14</b> if it has begun operation in order to process both modifications at the same time.
August 28, 2008	Christine Brenk sent an email to JMV stating that the new laminator <b>(ID No. ES-14)</b> had not begun operation.
September 19, 2008	Draft permit and review sent to the Mooresville Regional Office (MRO).
September 23, 2008	Comments on the draft permit received from the MRO. There was some discussion on if the bake ovens and dryer associated with each press should be permitted as individual pieces of equipment. Given that these sources are an integral part of each of the press operations and are the primary source of emissions, it was decided they should not be as separate pieces of equipment for permitting purposes.

### III. Permit Modifications/Changes and ESM Discussion

The modifications discussed above resulting in the issuance of permit no. T15 [under the NC State permitting rules (15A NCAC 2Q .0300)] have been reviewed for compliance with all applicable State and Federal air quality regulations by the NC DAQ.

To satisfy the NC Title V permitting rules (15 A NCAC 2Q .0500), the facility had to submit another application that would (upon verification that the modifications were performed as requested previously) be submitted to public and EPA notice for comments. The subsequent revised permit would as a result contain a permit shield for the new sources (Presses 12 and 13).

As seen in the chronology, the permit has subsequently been modified that affected presses 12 and 13 indirectly, namely the PSD avoidance condition. As a result the permit review for application **1800184.08A** will also be attached to this review document to aid in understanding the ultimate result of the modification considered here.

**To review changes to the air permit since it was last presented for public and EPA review (permit no T13) see the attached permit review documents.**

The following table presents all significant changes to the current permit (T16).

Condition No.	Changes
Cover letter	Updated, dates and other relevant information for this modification
Permitted equipment list	Removed 2Q .0501(c)(2) footnote for Press 12 and Press 13
All Testing [15A NCAC 2D .0501 (c)(3), (4) and (8)] Conditions	For all Testing [15A NCAC 2D .0501 (c)(3), (4) and (8)] Conditions the regulatory citation was revised to 15A NCAC 2D .2601 to reflect recent rule changes

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

TBD

### V. Conclusions, Comments, and Recommendations

TBD

ATTACHMENT A  
Review T16

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

**Permit Issue Date: July 24, 2008**

<b>Facility Data</b>			<b>Region:</b> Mooresville Regional Office <b>County:</b> Catawba <b>NC Facility ID:</b> 1800184 <b>Inspector's Name:</b> Jim Hafner <b>Date of Last Inspection:</b> 03/25/2008 <b>Compliance Code:</b> 3/In Compliance - Inspection	
<b>Applicant (Facility's Name):</b> Plastic Packaging Inc  <b>Facility Address:</b> Plastic Packaging Inc 1246 Main Avenue SE Hickory, NC 28602  <b>SIC:</b> 2673 / Bags: Plastics, Laminated And Coated <b>NAICS:</b> 326111 / Plastics Bag Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>Permit Applicability (this application only)</b>  <b>SIP:</b> 2D .0515, .0516, .0521, .0958, <b>NSPS:</b> NA <b>NESHAP:</b> NA <b>PSD:</b> NA <b>PSD Avoidance:</b> yes, three conditions <b>NC Toxics:</b> yes <b>112(r):</b> NA <b>Other:</b> .1806	
<b>Contact Data</b>			<b>Application Data</b>	
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 1800184.08A <b>Date Received:</b> 04/02/2008 <b>Application Type:</b> Modification <b>Application Schedule:</b> TV-Sign-501(c)(2) <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 04691/T15 <b>Existing Permit Issue Date:</b> 06/07/2007 <b>Existing Permit Expiration Date:</b> 03/31/2011	
Ron Windley Technical Manager (828) 328-2466 PO Box 2029 Hickory NC, 28603	Preston Bryant V.P. of Manufacturing (828) 328-2466 PO Box 2029 Hickory NC, 28603	Ron Windley Technical Manager (828) 328-2466 PO Box 2029 Hickory NC, 28603		
<b>Review Engineer:</b> Joseph Voelker		<b>Comments / Recommendations:</b>		
<b>Review Engineer's Signature:</b>	<b>Date:</b>	<b>Issue</b> 04691/T16 <b>Permit Issue Date:</b> July 24, 2008 <b>Permit Expiration Date:</b> 03/31/2011		

**I. Purpose of Application**

Plastic Packaging, Inc. (PPI) is a plastic converter who prints customer designs, patterns and/or writing onto plastic (polyethylene / polypropylene) film utilizing wide web flexographic printing presses and then converts the material into plastic bags for various products manufactured by other industries.

This application is for a new lamination process proposed for construction. In addition PPI has removed two existing presses (ID Nos. ES-8 and ES-10).

Since the facility wishes to begin construction in July 2008, it was discussed that the most expedient manner to obtain a permit prior to July is to process it as a "two step modification" per 15A NCAC 2Q .0501(c)(2) which allows:

*c) With the exception in Paragraph (d) of this Rule, the owner or operator of an existing facility, new facility, or modification of an existing facility (except for minor modifications under Rule .0515 of this Section), including significant modifications that would not contravene or conflict with a condition in the existing permit, subject to the requirements of this Section shall not begin construction without first obtaining:*

(2) a construction and operation permit following the procedures under Rule .0504 and filing a complete application within 12 months after commencing operation to modify the construction and operation permit to meet the requirements of this Section.

It will be shown that although existing PSD avoidance conditions will be changed, it can be argued that the changes will not contravene or conflict with a condition in the existing permit in the sense that the conditions will become less stringent.

## II. Chronology

Date	Description
04/02/2008	Application received and accepted for processing
05/08/2008	JMV discussed with John Evans and William Willets the nuances of modifying two existing PSD avoidance conditions resulting from a single modification. Although a few options were created it was decided to let the Permittee address how they would like to be restricted since there could be more than one option and some options could be more constraining than others.
05/08/2008	JMV spoke with the consultant regarding: <ul style="list-style-type: none"> <li>▪ Confusing calculations – the netting analysis used data that did not match to the emissions inventories. It also unclear which years were used.</li> <li>▪ Ethyl acetate: consultant listed it as a HAP. It does not appear to be listed in 112(b).</li> <li>▪ Requested MSDS to verify ethyl acetate/VOC composition of materials</li> </ul> This discussion was followed up with a letter stopping the processing clock.
05/16/2008	Additional information requested on 05/08/2008 was received via email from consultant. Some of the data supplied needed to be corrected. An email was sent to consultant asking for a corrected response letter.
05/19/2008	JMV spoke with Chrisine Brenk regarding the modeling analysis. It appeared that the analysis did not include the emissions associated with the existing permit exempt laminator.
05/22/2008	A revised modeling analysis (including the revisions requested on May 16) was submitted via email.
06/24/2008	The revised modeling analysis was approved by the AQAB
07/03/2008	JMV contacted consultant by phone requesting in which existing PSD avoidance condition the previously insignificant IES-5 should be included (See 2D .0530 discussion)
07/15/2008	Email was received from consultant stating “Please put the existing laminator in PSD Clause No. 2 (with Press 11)”
07/15/2008	Sent draft permit and review to region for review and comments
07/22/2008	Comments submitted via email have been addressed and incorporated into permit

## III. Modification Description

PPI would like to add the following emission sources to the air permit.

Equipment ID No.	Equipment Description	Control System ID No.	Control System Description
ES-14	Laminator, including a natural gas-fired dryer ( 1.0 million Btu per hour maximum heat input)	NA	NA

PPI would like to remove the following emission sources. Note that the control devices will remain.

Equipment ID No.	Equipment Description	Control System ID No.	Control System Description
Press 8 <b>CAM</b>	56 inches Wide Web Flexographic Press with eight printing stations and one natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)	CD1.1 and CD1.2 ( <i>optional</i> )	natural gas-fired pilot burner (10 million Btu per hour heat input rate, catalytic fume oxidizer (manganese dioxide catalyst) with a heat exchanger
Press 10	45 inches Wide Web Flexographic Press with eight printing stations and one natural gas-fired bake oven (2.8 million Btu per hour heat input capacity)	NA	NA

### Emissions

#### ▪ Laminator

The solvents to be used in the laminator will be ethyl acetate (TAP/VOC) or methyl acetate (not HAP/TAP/VOC). Thus, ethyl acetate is the only solvent of concern.

Based on the application the PTE if operated continuously would be 59.5 lb/hr or 260.61 tpy. However, the facility wishes to avoid BACT limits and will be requesting PSD avoidance associated with this source. The facility has also performed dispersion modeling to comply with 2D .1100. See regulatory review for further discussion.

#### ▪ Dryer

The dryer will fire natural gas and therefore will have products of combustion for emissions in addition to the VOC/TAP emissions from the process. Given the small heat input (one million Btu per hour) the emissions will be minimal.

#### ▪ Removal of Presses 8 and 10

The removal of these presses and the associated emissions will offset the addition of the emissions associated with the new laminator.

Press 8 reported emissions of VOCs in 2006\*. Press 10 reported emissions of VOCs and glycol ethers in 2006\*.

\* Last year of data in IBEAM

## IV. **Regulatory Review**

The following regulations are applicable to the new laminator

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	As given by equations in Condition 2.1.C.1	15A NCAC 2D .0515
Sulfur Dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Volatile organic compounds	Work practice standards See Subsection 2.2 C.1	15A NCAC 2D .0958
Ethyl Acetate (Toxic Air Pollutant)	See Subsection 2.2 C.2; <i>State-enforceable only</i>	15A NCAC 2D .1100
Odorous emissions	See Subsection 2.2 B.1; <i>State-enforceable only</i>	15A NCAC 2D .1806
Volatile organic compounds	Less than 132.7 tons per consecutive 12-month period	15A NCAC 2Q .0317 (Avoidance of 2D .0530)

**15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS**

The laminator will not have any pollution control and its emissions will emit out of its own stack, EP-14. Given this is not a unique process and the facility had a small laminator on site previously and had no opacity issues, compliance with this regulation is expected.

**15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES**

The PM emissions will most likely be condensable PM from the combustion of natural gas and possibly from the VOC. These PM emissions are small in comparison to the large throughput of the process. Compliance with this regulation is expected.

**15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES**

Sulfur dioxide from natural gas combustion is very small and no sulfur dioxide emissions are expected from the process. No M/R/R will be required as is typical for natural gas combustion sources.

**15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS**

The facility is already subject to this regulation and the additional source will not require anything unique. Compliance is expected with this regulation.

**15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**

The facility is already subject to this regulation and the additional source will not require anything unique. Compliance is expected with this regulation

**15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS**

The installation of the new laminator (ES-14) will involve the use of ethyl acetate (CAS No. 141-78-6) in quantities that could result in emissions greater than its TPER. The maximum hourly emissions will be 59.5 lb/hr. This is the only TAP associated with this modification. Ethyl acetate (as evidenced by the emissions inventory submittal) is also emitted by the existing laminator (IES-5). Ethyl acetate is utilized at IES5 to clean its rolls. The maximum solvent use is 5 gallons per day (37.6 pounds per day). As a worst case assessment it was assumed that this amount would be emitted in one hour. Thus the total potential hourly emissions are 97.1 pounds per hour. The existing laminator is located in the same room in which ES-14 will be located, thus it is assumed that the ethyl acetate emitted into the room during the cleaning of IES 5 will be exhausted out of ES-14's two stacks. Thus, there will be two permitted sources of ethyl acetate emitting out two common stacks.

The facility submitted a modeling demonstration utilizing the SCREEN3 model, which was reviewed by the AQAB. Mark Yoder issued a memo on April 11, 2008 stating, "the modeling analysis adequately demonstrates compliance with the respective standard on a facility-wide basis." Mr. Yoder analyzed the resubmitted data as discussed in the **Chronology** and issued a memo on June 24, 2008 stating, "the modeling analysis continues to demonstrate compliance with respective standard on a facility-wide basis."

No M/R/R will be required given that the facility modeled its maximum emission rate with a conservative model and only had a maximum impact of 53% of the AAL guideline.

**15A NCAC 2Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION**

The facility currently has two PSD avoidance conditions in its permit. The Permittee would like to take a restriction to keep the emissions from the modification (i.e., the new laminator) to the less than significant level. Since the facility is removing two presses 8 and 10, the facility has conducted netting calculations to determine what the PSD avoidance condition for the new source and the remaining sources will be.

**Existing conditions**

The PSD avoidance conditions in the current permit T15 are as follows:

In order to avoid applicability of this regulation, the above emission sources (**ID Nos. Press 8, Press 12 and Press 13**) shall discharge into the atmosphere less than 189 tons of VOCs per consecutive 12-month period. [15A NCAC 2D .0530]

In order to avoid applicability of this regulation, the above emission sources (**ID Nos. Press 10 and Press 11**) shall discharge into the atmosphere less than 250 tons of VOCs per consecutive 12-month period. [15A NCAC 2D .0530]

For the netting calculations the facility chose calendar years 2004 and 2005. These data were readily available and are similar to the data from 2006. Since the data was similar no concerns were raised that the facility was trying to inflate the baseline emissions to achieve a less restrictive PSD avoidance condition.

There were some concerns about the actual magnitudes of the 2004 VOC data used in the netting analysis. The 2004 emissions inventory (in paper form, as the 2004 data was not uploaded into IBEAM) and the data submitted in the application did not match. Upon investigation an email was found that the data was corrected on July 2005. For the relevant sources the emissions are as follows:

**Table 1 \***

Emission Source	Emission (tons/yr)		
	2004	2005	Ave
Press 10	59.39	47.41	53.4
Press 11	33.7	38.8	36.25
Press 8	39.17	39.45	39.31

\* Table from May 21, 2008 letter Air Permit Application Addendum

During the TAP modeling review for the new laminator it was “discovered” that the existing laminator (IES-5) did utilize VOC containing solvents for maintenance (**see the 2D .1100 discussion**). Thus it should have been included in one of the existing PSD avoidance conditions. Therefore it will be added, based on the response of the Permittee, to the condition affecting Press 11.

The new and revised PSD avoidance conditions were determined as follows. These values were discussed with William Willets and John Evans.

**Table 2**

PSD Clause	Emission Sources	Emission Limits
1	Press 12 & 13	Current limit minus Press 8 = 189 - 39.3 = <b>149.7 tons/year</b>
2	Press 11 & ES-5	Current limit minus Press 10 = 250 - 53.4 = <b>196.6tons/yr</b>
3 (new)	Laminator	Press 8 + Press 10 + 40 = 39.3 + 53.4 + 40 = <b>132.7 tons/yr</b>

In summary, the baseline emissions for the removed presses were given to the new laminator with the additional 40 tpy (significance level).

## **V. NSPS, NESHAPS, PSD, Attainment Status, 112(r), and CAM**

### **NSPS**

The proposed modification is not subject to any NSPS regulations.

### **NESHAP/MACT**

The facility is not a major source of any HAPs and as such is not subject to any MACT standards.

### **PSD**

See the Section IV for PSD avoidance discussion. The facility is a PSD major source with two PSD avoidance conditions.

**112(r)**

Ethyl Acetate has no Threshold quantity under 112(r).

**CAM**

The laminator will not utilize a control device. Thus CAM does not apply.

**VI. Compliance History**

Date	Comments
03/25/2008	Compliance inspection by Jim Hafner. As stated in the conclusion of the inspection report "Based on my observations during this inspection, this facility appeared to be in compliance with the applicable air quality regulations."
03/28/2007	Compliance inspection by Jim Hafner. As stated in the conclusion of the inspection report "Based on my observations during this inspection, this facility appeared to be in compliance with the applicable air quality regulations".
06/15/2006	Compliance inspection by Jim Hafner. As stated in the conclusion of the inspection report "Based on my observations during this inspection, this facility appeared to be in compliance with the applicable air quality regulations".
03/09/2005	Compliance inspection by Jim Hafner. As stated in the conclusion of the inspection report "Based on my observations during this inspection, this facility appeared to be in compliance with the applicable air quality regulations".
03/24/2004	Compliance inspection by Jim Hafner. As stated in the conclusion of the inspection report "Based on my observations during this inspection, this facility appeared to be in compliance with the applicable air quality regulations".

**VII. Permit History**

Permit No.	Issuance Date	Description (taken from permit reviews verbatim)
T15	June 7, 2007	This application is for construction and operation of two flexographic printing presses (Emission source Id. No. Press 12 and Press 13) that will replace three existing printing presses (Emission source Id. No. Press 6, Press 7 and Press 8). As requested by Permittee, this application will be processed pursuant to the two-step procedure outlined in 15A NCAC 2Q .0501(c)(2). Two new presses will be constructed after obtaining an air permit in accordance with 15A NCAC 2Q .0300. A second application for the title V modification will be filed within 12 months of operation, in accordance with 15A NCAC 2Q .0504.
T14	May 18, 2006	This permitting action is an administrative amendment of an existing Title V permit pursuant to 2Q .0514. The existing Title V permit (04691T13) was issued on April 28, 2006 and will expire on March 31, 2011. The administrative request was received on May 12, 2006 by Raleigh Central Office (RCO) and deemed complete. PPI requested on May 12, 2006 that the expiration date in header for the Air Quality Permit be corrected.
T13	April 28, 2006	This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (04691T12) was issued on October 4, 2000 and expired on September 30, 2005. The renewal application was received on December 22, 2004 by the Mooresville Regional Office (MRO) and deemed complete. The renewal application was received at least nine months prior to the expiration date. Therefore, the existing permit will not expire until the renewal permit has been issued or denied with submittal of a complete and timely application, and the terms and conditions of the existing permit will remain in effect until the renewal permit has been issued or denied pursuant to 2Q .0513.

**VIII. Changes Implemented in Revised Permit**

Condition No.	Changes
Cover letter	Updated, dates and other relevant information for this modification
Insignificant activities list	Revised layout to current DAQ standards Removed IES-5
Permitted equipment list	<ul style="list-style-type: none"> <li>▪ Removed Presses 8 and 10</li> <li>▪ Added the Laminator (ES-14)</li> <li>▪ Added IES-5 as ES-5</li> </ul>
2.1A.1, 2 and 3.	Removed reference to Press 8 from all conditions
2.1.A.3.	Changed the PSD avoidance condition from: emission sources (ID Nos. Press 8, Press 12 and Press 13) shall discharge into the atmosphere less than 189 tons of VOCs per consecutive 12-month period; to emission sources (ID Nos. Press 12 and Press 13) shall discharge into the atmosphere less than 149.7 tons of VOCs per consecutive 12-month period.
2.1.A.4	Added a 2D. 0516 condition since the associated bake oven combusts fuel. No M/R/R required since combustion involves only Natural Gas.
2.1.B	<ul style="list-style-type: none"> <li>• Added reference to ES-5</li> <li>• In the applicable regulations table, reference to 2D. 1100 was added because of its applicability to ES-5</li> </ul>
2.1B.1., 2. and 3	Removed reference to Press 10 from all conditions
2.1.B.2.	Added reference to ES-5
2.1.B.3.	Changed the PSD avoidance condition from: emission sources (ID Nos. Press 10 and Press 11) shall discharge into the atmosphere less than 250 tons of VOCs per consecutive 12-month period; to emission sources (ID No. Press 11 and ES-5) shall discharge into the atmosphere less than 196.6 tons of VOCs per consecutive 12-month period.
2.1.B.4	Added a 2D. 0516 condition since the associated bake oven combusts fuel. No M/R/R required since combustion involves only Natural Gas.
2.1.C	Added conditions for the new laminator (ES-14). Applicable regulations include: <ul style="list-style-type: none"> <li>▪ 2D .0516 (sulfur dioxide) – No M/R/R since only combustion of Natural Gas</li> <li>▪ 2D .0521(opacity standard) – similar requirements to the existing sources without control devices</li> <li>▪ 2D .0530 PSD avoidance – The new source will have an avoidance limit of 132.7 tpy</li> <li>▪ 2D .0958 (work practices for VOCs) - condition is contained in Section 2.2. Requirements identical to the existing sources subject to this regulation</li> <li>▪ 2D .1100 (Toxic air Pollutants) – condition contained in Section 2.2.C.</li> <li>▪ 2D.1806 (odors) - condition is contained in Section 2.2. Requirements identical to the existing sources subject to this regulation</li> <li>▪ Added a commencement of operation notification requirement per the Regional Office’s request</li> </ul>
2.2.A.1.	Removed reference to Press 8 from the CAM condition
2.2.C.2	Added a condition to address 2D .1100 (toxic air pollutants). The facility emits only a single TAP (non-exempt, that is). The Permittee modeled its maximum emission rates using the conservative SCREEN3 model and had maximum impacts of 53% of the AAL guideline. No M/R/R will be required given the margin of compliance with a conservative modeling strategy using the maximum emission rate..
General Conditions	Updated to version v.2.22.1, which includes the new conditions: <ul style="list-style-type: none"> <li>•MM, which is for 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources", a state enforceable only condition and</li> <li>• NN, which addresses application guidance for modifications made pursuant to 15A NCAC 2Q .0501(c)(2), 15A NCAC 2Q .0501(d)(2), and 502(b)(10), in accordance with 15A NCAC 2Q .0523(a)(1)(C)</li> </ul>
<b>PART II</b>	
ALL	Removed all of PART II conditions. TV permits will no longer include PART II. Requirements previously contained in PART II are contained in the revised General Conditions or in the new permit body.

**IX. Recommendations**

It is recommended that permit no. 04691T16 be issued.

# ATTACHMENT B

## Review T15

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

**Permit Issue Date: June 7, 2007**

<p><b>Region:</b> Mooresville Regional Office  <b>County:</b> Catawba  <b>NC Facility ID:</b> 1800184  <b>Inspector's Name:</b> Jim Hafner  <b>Date of Last Inspection:</b> 03/28/2007  <b>Compliance Code:</b> 3/In Compliance - Inspection</p>									
<p><b>Facility Data</b></p> <p><b>Applicant (Facility's Name):</b> Plastic Packaging Inc</p> <p><b>Facility Address:</b>  Plastic Packaging Inc  1246 Main Avenue SE  Hickory, NC 28602</p> <p><b>SIC:</b> 2673 / Bags: Plastics, Laminated And Coated  <b>NAICS:</b> 326111 / Plastics Bag Manufacturing</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>			<p><b>Permit Applicability (this application only)</b></p> <p><b>SIP:</b> 2D .0515, .0521, .01806, .0958, .0614  2Q .0317 (avoidance of 2D .0530)</p> <p><b>NSPS:</b>  <b>NESHAP:</b>  <b>PSD:</b>  <b>PSD Avoidance:</b> 2Q .0317  <b>NC Toxics:</b>  <b>112(r):</b>  <b>Other:</b></p>						
<p><b>Contact Data</b></p> <table border="1"> <thead> <tr> <th>Facility Contact</th> <th>Authorized Contact</th> <th>Technical Contact</th> </tr> </thead> <tbody> <tr> <td>Bart Wright Product Planner (828) 328-2466 P O Box 2029 Hickory NC, 28602</td> <td>Bert Brinkley President (828) 328-2466 P O Box 2029 Hickory NC, 28603</td> <td>Bart Wright Product Planner (828) 328-2466 P O Box 2029 Hickory NC, 28602</td> </tr> </tbody> </table>			Facility Contact	Authorized Contact	Technical Contact	Bart Wright Product Planner (828) 328-2466 P O Box 2029 Hickory NC, 28602	Bert Brinkley President (828) 328-2466 P O Box 2029 Hickory NC, 28603	Bart Wright Product Planner (828) 328-2466 P O Box 2029 Hickory NC, 28602	<p><b>Application Data</b></p> <p><b>Application Number:</b> 1800184.07A  <b>Date Received:</b> 03/05/2007  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Sign-501(c)(2)  <b>Existing Permit Data</b>  <b>Existing Permit Number:</b> 04691/T14  <b>Existing Permit Issue Date:</b> 05/18/2006  <b>Existing Permit Expiration Date:</b> 03/31/2011</p>
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<p><b>Review Engineer:</b> Purva Prabhu</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____</p>		<p><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 04691/T15  <b>Permit Issue Date:</b> 06/07/2007  <b>Permit Expiration Date:</b> 03/31/2011</p>							

**1. Purpose of application**

Application for permit modification was received from Plastic Packaging Inc., Hickory plant on March 5, 2007. This application is for construction and operation of two flexographic printing presses (Emission source Id. No. Press 12 and Press 13) that will replace three existing printing presses (Emission source Id. No. Press 6, Press 7 and Press 8).

As requested by Permittee, this application will be processed pursuant to the two-step procedure outlined in 15A NCAC 2Q .0501(c)(2). Two new presses will be constructed after obtaining an air permit in accordance with 15A NCAC 2Q .0300. A second application for the title V modification will be filed within 12 months of operation, in accordance with 15A NCAC 2Q .0504.

**2. Facility description**

Plastic Packaging, Inc. (PPI) is a plastic converter who prints customer designs, patterns and/or writing onto plastic (polyethylene / polypropylene) film utilizing wide web flexographic printing presses and then converts the material into plastic bags for various products manufactured by other industries.

### 3. Application Chronology:

March 5, 2007	Application was received in the RCO for modification. RCO received the following: <ul style="list-style-type: none"> <li>• Application forms</li> <li>• Fee \$834.00</li> <li>• Zoning consistency determination</li> </ul>
March 8, 2007	Acknowledgement letter was sent to the facility.
March 13, 2007	Letter requesting additional information was sent to the facility. The letter is attached and it requested the following: <ol style="list-style-type: none"> <li>1. MSDS supporting emission calculations.</li> <li>2. Information regarding toxic air pollutants (TAPs) emissions from the two added flexographic printing presses.</li> <li>3. Results of the stack test that was referenced in the emission calculations.</li> </ol>
March 21, 2007	Above requested information was received from the facility.
April 5, 2007	P & O for this application was received from MRO and it is attached.
May 16, 2007	Email was sent to the facility and consultant to get information regarding optional control devices for new presses and actual emissions from presses 6, 7 and 8.
May 17, 2007	Received information regarding actual emission from presses 6, 7 and 8.
May 22, 2007	Called Mr. Bart Wright. He informed that Press No. 6 and 7 have been removed from the site and Press No. 8 will be removed after Press No. 12 becomes operational. Also new presses will have an optional control device system.
May 24, 2007	Phone conversation with Mr. Bart Wright. It was confirmed that the destruction efficiency (34.9 %) that was used to calculate VOC emissions is achieved by recirculating the captured VOC's through the drying ovens associated with each press.
June 1, 2007	Sent draft air permit to the region and the Permittee.
June 5, 2007	Email received from Mr. Bart Wright. The facility did not have any comments on the draft permit.
June 6, 2007	Email received from Mr. Jim Hafner of MRO and it is attached.

### 4. Permit History:

Permit No.	Issuance Date	Description of revision
04691T14	May 18, 2006	TV-administrative Corrected the expiration date in header for the Air Quality Permit
04691T13	April 28, 2006	TV-Renewal
04691T12	October 3, 2000	Initial Title V permit issued.

### 5. Statement of compliance

This facility was last inspected by Mr. Jim Hafner of MRO on March 28, 2007. The facility was in compliance with all air quality requirements. P & O for this application was received on April 5, 2007 from regional office and it is attached. Mr. Jim Hafner recommended including the following stipulation to the permit as part of this modification:

1. CONTINUED OPERATIONS - The existing equipment being replaced is permitted to operate in compliance until their replacement equipment is operational, per the following:

Existing Source(s)	Replacement Source(s)
wide-web flexographic press with six printing stations and natural gas-fired bake oven (ID No. Press 8, 1.6 mm Btu/hr)	wide-web flexographic press with ten printing stations and natural gas-fired bake oven (ID Press 13, 2.4 mm Btu/hr)

Note: According, to Mr. Bart Wright, Production Planner, the facility plans to have flexographic press (ID No. Press 12) operational prior to removing flexographic press (ID No. Press 8). Prior to the installation of flexographic press (ID No. Press 13), flexographic press (ID No. Press 8) will be removed.

2. NOTIFICATION REQUIREMENT - In accordance with 15A NCAC 2D .0611, within 15 days after start-up of flexographic presses (ID Nos. Press 12 and Press 13), the Permittee shall NOTIFY, in WRITING, the Regional Supervisor, DAQ, of the start-up.

3. The wording in conditions 2.1.A.3.e.ii and 2.1.B.3.e.ii (reporting for PSD avoidance condition) should be changed from:

A summary report of the monitoring and recordkeeping activities conducted on the catalytic oxidizer system (ID Nos. CD1.1 and CD1.2).

to:

A summary report of the monitoring and recordkeeping activities conducted on the catalytic oxidizer system (ID Nos. CD1.1 and CD1.2) if control system operated during the semi-annual reporting period.

**6. New Equipment/Change in Emission and Regulatory Review:**

**New equipment**

The facility wants to replace three existing printing presses (Id Nos. Press 6, Press 7, Press 8) with two new printing presses (Id No. Press 12 and Press 13). The two new presses will have 10 print stations and will be equipped with drying ovens. These presses are estimated to operate at a 25 percent higher printing rate than existing presses.

Following changes are made to ESM as part of this modification:

Existing emission source Id. No.	Changed to	Enddated
Press 6	Press 6.07A	Press 6.07A
Press 7	Press 7.07A	Press 7.07A
Oven 6	Oven 6.07A	Oven 6.07A
Oven 7	Oven 7.07A	Oven 7.07A
Oven 8	Oven 8.07A	Oven 8.07A

Mr. Bart Wright informed that Press No. 6 and 7 have already been removed from the site. Press No. 8 will be removed from the site only after Press No. 12 becomes operational. For PSD purposes Press No. 8 cannot be removed from the permit at this time.

Added the following new emission sources to ESM and permit and created association between these sources and existing control system CS-1 as part of this modification.

<b>Emission Source ID</b>	<b>Emission Source Description</b>	<b>Control System ID</b>	<b>Control System Description</b>
Press 12 CAM	59 inches Wide Web Flexographic Press 12 with ten printing stations and a natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)	CD1.1 and CD1.2 (optional)	natural gas-fired pilot burner (10 million Btu per hour heat input rate, and a catalytic fume oxidizer (manganese dioxide catalyst) with a heat exchanger
Press 13 CAM	59 inches Wide Web Flexographic Press 13 with ten printing stations and a natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)	CD1.1 and CD1.2 (optional)	natural gas-fired pilot burner (10 million Btu per hour heat input rate, and a catalytic fume oxidizer (manganese dioxide catalyst) with a heat exchanger

Following changes are also made to ESM and removed oven 10 and 11 from the permit.

Existing emission source Id. No.	Changed to	Enddated
Oven 10	Oven 10.07A	Oven 10.07A
Oven 11	Oven 11.07A	Oven 11.07A

Also updated description of Press 8, 10 and 11 as follows to incorporate oven description and to add width of the presses:

<b>Emission Source ID</b>	<b>Emission Source Description</b>
Press 8	56 inches Wide Web Flexographic Press with eight printing stations and one natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)
Press 10	45 inches Wide Web Flexographic Press with eight printing stations and one natural gas-fired bake oven (2.8 million Btu per hour heat input capacity)
Press 11	36 inches Wide Web Flexographic Press with eight printing stations and one natural gas-fired bake oven (0.8 million Btu per hour heat input capacity)

### Emissions review

#### **Potential Emissions**

Potential emissions from press 12 and 13 are calculated in the permit application. These calculations are based on an average 25 percent increase in current products used within presses 6 and 8. As per the permit application, the actual emissions from Press 6 in 2006 are 30.1 tons per year and Press 7 are 78 tons per year. After reviewing the actual usage, as emailed by Ms. Christine Brenk on May 17, 2007, and also from past year's actual emissions data, it appears that actual emissions from Press 6 are 78 tons per year and from Press 7 are 30.1 tons per year. Following table represents the corrected potential emissions from Press 12 and Press 13:

	2006 actual emissions tons per year	Actual hours of operation	Potential emissions tons per year (8760 hrs)
Press 6	78.0	3460	197.5
<b>Press 12</b>			<b>246.85</b>
Press 8	43.31	2018	188
<b>Press 13</b>			<b>235</b>

## PSD review

This facility is a PSD major source as the facility has the potential to emit more than 250 tons per year of VOCs. The current permit has two PSD avoidance conditions. Emissions from three printing presses (ID Nos. Press 6, Press 7 and Press 8) are limited to 250 tons per year and also emissions from two printing presses (ID Nos. Press 10 and Press 11) are limited to 250 tons per year.

The facility wants to replace three existing printing presses (Id Nos. Press 6, Press 7, Press 8) with two new printing presses (Id No. Press 12 and Press 13). Presses No. 6 and 7 have already been removed from the site. Press No. 8 will be removed from the site only after Press No. 12 becomes operational. For PSD purposes Press No. 8 cannot be removed from the permit at this time.

In the permit application, the Permittee calculated the difference between the potential emissions of the presses that are being replaced (Press 6 and Press 8) and the potential emissions from the new presses (Press 12 and Press 13). There are two errors in this calculation as follows:

- The facility did not use the correct potential emissions from Press 6.
- The facility deducted potential emissions of the removed presses. For PSD calculation purposes, the 24 consecutive month baseline actual emissions from Presses 6, 7 and 8 needs to be deducted from the potential emissions of Presses 12 and 13. Calculations as submitted in the permit application conclude that the emission increase from this modification is less than 40 tons per year and the modification is minor for PSD purposes. After correcting the errors in the calculation it appears that the emission increase from this modification is greater than 40 tons per year and the facility needs to take a PSD avoidance limit.

Average actual emissions from Press 6, 7 and 8 for year 2004 and 2005 = 149.725 tons

Potential emissions from Press 12 and 13 = 481.85 tons

Emission increase from this modification = 481.85-149.725 = 332.125 tons >40 tons

The Permittee has requested to take PSD avoidance limit for the two new presses via letter that was received on May 25, 2007. Emission reduction of 149 tons will be added to 40 tons per year and a new PSD avoidance limit will be given to the group of Presses (Press 12, Press 13 and Press 8). Existing PSD avoidance limit of 250 tons for Presses 6, 7 and 8 will be removed from the permit. Press 8 will be added to this new avoidance group, as it will only be removed from the site after Press 12 becomes operational.

## Regulatory review associated with modification

Regulation:	What is expected:	Compliance shown by:
2D .0515 – Particulates from Miscellaneous Industrial Sources	Emissions of particulate matter from the presses (ID Nos. Press 12 and Press 13) shall not exceed an allowable emission rate as calculated by the following equation: $E = 4.10 \times P^{0.67}$ Where, E = allowable emission rate in pounds per hour P = process weight in tons per hour	Particulate matter emissions from the solids in the inks printed are negligible; therefore, compliance with any allowable emission limit is expected for these emission sources.
2D .0521 – control of visible emissions.	Limits the visible emissions from any source, manufactured after July 1, 1971 to 20 percent opacity limit.	Compliance is expected and will be verified upon inspection.
15A NCAC 2D .0958 - Work Practices for Sources of Volatile Organic Compounds	As a source of Volatile organic compounds (VOCs), the proposed equipment is subject to the work practice standards of this regulation. The Permittee is required to comply with the housekeeping activities in the rule, as well as perform monthly visual inspections of all operations and processes utilizing VOCs. The results of these inspections are to be maintained in a logbook and reported semiannually.	Compliance is expected

Regulation:	What is expected:	Compliance shown by:
2D .1806 Control and Prohibition of Odorous Emissions	The Permittee is required, facility wide, to not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundaries.	Compliance is expected
15A NCAC 2Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)	Limit VOC emissions to less than 189 tons per consecutive 12 month period	Compliance is expected and will be verified from semiannual reports.

#### 7. NSPS, NESHAPS, PSD, CAM, attainment status and 112r:

##### NSPS

The facility is not currently subject to any New Source Performance Standards. This permit modification does not change this status.

##### NESHAP

The facility is not currently subject to any National Emission Standards for Hazardous Air Pollutants as they are a minor source of HAPs. This permit modification does not affect this status.

##### PSD

Refer Section 6.

##### CAM

New Presses 12 and 13 will be controlled by the existing optional control system consisting of a natural gas-fired pilot burner (10 million Btu per hour heat input rate), and a catalytic fume oxidizer (manganese dioxide catalyst) with a heat exchanger. As explained in the air permit review document for revision T14, the facility has not used this control system since 1995. It is confirmed from Mr. Bart Wright that the facility does not have any immediate plans to use this optional control system to reduce VOC emissions.

Press 12 and 13 are CAM-affected units and are identified in the permit. The permit has a requirement that Plastic Packaging Inc. shall obtain a Title V permit that includes a unit-specific CAM Plan and shall be in compliance with the CAM Plan prior to operating the associated control system (ID Nos. CD1.1 and CD1.2).

Also note that a portion of the exhaust from these presses gets recirculated through drying ovens, which results in VOC destruction. There was stack testing done in 1995 showing a 34.5 percent destruction efficiency. These ovens are an integral part of the presses and hence no CAM plan is required for the ovens.

##### Attainment status

This facility is located in Catawba County, which is currently non-attainment for ozone. However, it is part of the Early Action Compact (EAC) and is considered to be attainment for ozone as long as the status reports of the EAC are submitted timely. This county must attain national air quality standards for 8-hour ozone no later than December 2007.

##### 112r

The facility is not subject to 112(r) requirements because it does not store any of the covered chemicals. This application does not affect this status.

#### 8. Facility Wide Air Toxics:

Additional information received by Permittee on March 21, 2007, states that press 12 and press 13 will not use any material that contains any TAPs and hence toxics review is not required.

**9. Facility Emissions Review:**

The following table represents facility-wide emissions. Actual emissions are for year 2005 as reported by the facility in its emissions inventory.

<i>Pollutant</i>	<i>Actual Emissions (tons per year)</i>
<i>Particulate (TSP)</i>	<i>0.03</i>
<i>Particulate (PM-10)</i>	<i>0.03</i>
<i>NOx</i>	<i>0.35</i>
<i>Carbon Monoxide</i>	<i>0.3</i>
<i>SO2</i>	
<i>Volatile Organic Compounds</i>	<i>233.64</i>
<i>Single largest HAP</i>	<i>5.75 pounds</i>
<i>All HAPs (combined)</i>	<i>7.74 pounds</i>

**10. Stipulation Review/ Permit Modifications/Changes**

The following table describes the modifications to the current permit as part of the renewal process.

<b>Page(s)</b>	<b>Section</b>	<b>Description of Change(s)</b>
Cover	-	-amended all dates and permit revision numbers
Attachment	Insignificant Activities	-rearranged insignificant activities table
All	Header	-amended permit revision number
-	Table of Contents	-added reference to Part II Sections
3	Equipment table	-added new presses (Press 12 and Press 13) with 501(c)(2) asterisk language. New presses will be controlled by existing optional control device system -removed existing presses (Press 6 and Press 7) -updated equipment descriptions of current equipment -updated description of control device to match ESM
4	2.1 A	-added reference to new presses (Press 12 and Press 13) -removed reference to existing presses (Press 6 and Press 7)
4	2.1 A (table)	-added new PSD avoidance limit of 189 tons per consecutive 12 month period for the group of presses (Press 8, Press 12 and Press 13)
5	2.1 A.3.a	-added new PSD avoidance limit of 189 tons per consecutive 12 month period for the group of presses (Press 8, Press 12 and Press 13)
6	2.1 A.3.e.ii	-updated language
8	2.1 B.3.e.ii	-updated language
9	2.2 A	-added reference to new presses (Press 12 and Press 13) -removed reference to existing presses (Press 6 and Press 7)
11-18	3	-updated general conditions as per latest shell language
20-22	Part II, Section 1, 2 and 3	-added Part II for the construction of new presses (Press 12 and Press 13)

**11. Other Regulatory considerations**

- A 30-day public notice period is not required for this application.
- The Permittee is required to submit an application pursuant to 15A NCAC 2Q .0504 within 12 months of commencing operation of either of the new presses.

**12. Conclusions, Comments, and Recommendations:**

All applicable DAQ air requirements should be met. I recommend issuance of the air permit.