



**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
ENGINEERING AND COMPLIANCE DIVISION**

Coating, Printing, Aerospace & Metal Finishing Team

PERMIT APPLICATION EVALUATION

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A/Ns See below

Processed by WW
Reviewed by SMKE.

Date 11/4/09

PERMITS TO CONSTRUCT

New Flexographic Heat-Set Press & Winder Jogger

Applicant's Name: *Graphic Packaging International, Inc*

Facility ID: 157259

Mailing Address: 1600 Barranca Pky, Irvine, CA 92606

Equipment Address: 1600 Barranca Pky, Irvine, CA 92606

EQUIPMENT DESCRIPTION

A/N (501987) - Title V permit revision

Deminimus significant permit revision

A/N 490182 (NEW) replacement of A/N 490168 (PO # G3374)

FLEXOGRAPHIC PRINTING SYSTEM CONSISTING OF:

1. *FLEXOGRAPHIC PRINTING PRESS, ROBINETTE, MODEL 1066, ONE COLOR, 66" WIDTH, WEB FED.*
2. *DRYER, WITH A 1,500,000 BTU PER HOUR NATURAL GAS FIRED ECLIPSE MINNOX LOW NO_x BURNER, AND ONE 10 HP EXHAUST FAN.*

A/N 501988 (NEW) replacement of A/N 490172 (PO # G3377)

WINDER JOGGER, WOODWARD, MODEL NO. 550, 7'-0" W. X 14'-7" L. X 9'-7" H., WITH ONE 5 H.P. HYDRAULIC PUMP AND 15-H.P. BLOWER.

Conditions (Flexographic heat press)

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 1130 AND 1171.



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4. THE VOLATILE ORGANIC COMPOUND (VOC) CONTENT OF INKS USED IN THIS EQUIPMENT SHALL NOT EXCEED 1.5 POUNDS PER GALLON, AS APPLIED, LESS WATER AND EXEMPT SOLVENTS.
5. THE TOTAL QUANTITY OF INKS USED IN THIS EQUIPMENT SHALL NOT EXCEED 400 POUNDS IN ANY ONE DAY.
6. THE TOTAL QUANTITY OF VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS FROM THIS FACILITY SHALL NOT EXCEED 2,165 POUNDS IN ANY ONE DAY.
7. IN ADDITION TO THE RECORD KEEPING REQUIREMENTS IN RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THIS EQUIPMENT TO VERIFY THE DAILY VOC EMISSIONS IN POUNDS, AND THE VOC CONTENT OF EACH MATERIAL AS APPLIED INCLUDING WATER AND EXEMPT COMPOUNDS. ALL RECORDS SHALL BE PREPARED IN A FORMAT WHICH IS ACCEPTABLE TO THE DISTRICT, SHALL BE RETAINED ON THE PREMISES FOR A PERIOD OF FIVE YEARS AND BE MADE AVAILABLE UPON REQUEST OF THE EXECUTIVE OFFICER OR HIS REPRESENTATIVE.
8. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF MARCH 7, 2008 OR EARLIER, WITH THE EXCEPTION OF AMMONIA (CAS# 7664-41-7).
9. MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS USED AT THIS FACILITY AND SUBJECT TO DISTRICT RULES SHALL BE KEPT CURRENT AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
10. THIS EQUIPMENT SHALL NOT BE OPERATED SIMULTANEOUSLY WITH THE FLEXOGRAPHIC PRINTING PRESS UNDER P/O G3374 (A/N 490168).

Conditions (Winder Jogger)

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.



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3. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS IT IS VENTED TO AIR POLLUTION CONTROL EQUIPMENT, WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED A VALID PERMIT BY THE EXECUTIVE OFFICER.
4. THIS EQUIPMENT SHALL NOT BE OPERATED SIMULTANEOUSLY WITH THE WINDER-JOGGER UNDER P/O G3377 (A/N 490172).

BACKGROUND

Graphic Packaging International (GPI) submitted three applications on 10/17/08 to install two lithographic printing presses and one heat-set flexographic printing press. Permits to Construct were issued for the two lithographic printing presses on June 12, 2009. The permit evaluation for the flexo press (A/N 490185) was done separately due to the permit moratorium. This application is to replace an existing flexographic heat press with an active permit no. G3374, A/N 490168. The new press will have a 1,500,000 Btu/hr low NOx burner (30 ppm); the press to be replaced has a 2,000,000 Btu/hr burner. Combustion emissions from the new press will be less than the replaced press. The press to be replaced has a 400 lb/day ink usage limit on the current permit. The new press will also be operated under the 400 lb/day ink usage limit. This meets the requirements for functionally identical replacement under Rule 1403.

GPI also submitted an application (A/N 501988) for a new winder jogger replacing their old winder jogger with active P/O F3377 (A/N 490172). The old winder jogger is vented to a permitted baghouse. The new replacement winder-jogger will also be vented to the baghouse.

The facility is operating under a facility-wide VOC emission limit of 2,165 pounds per day. These two pieces of equipment are replacements and the new press will operate under the existing facility VOC limit. The combustion emissions from the new press oven will be less than that from the replaced press. There are negligible PM10 emissions from the winder-jogger, and no other pollutant emissions. Therefore, there will be no emission increases from the facility as a result of this project.

GPI is a Title V facility. A Title V permit revision application (A/N 501987) was also submitted with this application. There was a change of operator for all the permitted equipment under the previous operator, Bluegrass Folding Carton (ID 148535). The Title V facility permit for Bluegrass Folding Carton (previous owner) was issued on 10-11-06, which was for change of operator from Smurfit-Stone Container (ID 007089). Smurfit-Stone Container was issued their Title V renewal permit on 6-18-06. The Title V permit for change of operator from Smurfit Stone to GPI was issued on June 12, 2009.

The company also requested inactivation of the paperboard scrap collection and baling system under permit P/O G3375 (A/N 490170). This equipment was originally permitted in 1979. Rule 219 in effect at that time did not have an exemption for this type of equipment. Currently Rule 219(p)(10)



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exempts “Paper shredding and associated conveying systems, baling equipment, and control equipment venting such equipment.” This exemption was added to Rule 219 in June 1988, after the permit was originally issued. Therefore, this equipment is now exempt from written permit, will be removed from their facility permit, and the permit will be inactivated.

PROCESS DESCRIPTION

GPI specializes in the production of packaging boxes for various commercial products. The majority of the boxes are made with soft cardboard stock with graphics printed externally by the lithographic printing presses. Labels for the boxes are printed on the flexographic printing presses. In the folding carton manufacturing process, sheets are directed to the printing systems through rollers, where images are applied using different low-VOC printing inks. The printing systems impart necessary images per customer requests. Dry starch is applied on the printed sides in enclosed compartments so that the printed sheets do not stick to each other. The stack of printed sheets is placed on the winder-jogger for realignment prior to cutting. The air-bar on the winder jogger vibrates the stack of paper and blows air across the sheets to jog the sheets into an evenly stacked load. The air blowing across the sheets causes some of the starch to become airborne, which is vented to the baghouse. In a previous field evaluation made when the original winder-jogger was being permitted, the engineer indicated that no emissions were observed from the exhaust.

EMISSION CALCULATIONS

The new press and winder jogger will have the same emissions as the replaced equipment therefore there is no emission increase. The facility is operating under a facility-wide VOC emission limit of 2,165 pounds per day. Based on usage information supplied by the consultant, the maximum emissions from this press could be up to 200 lb/day. The oven will have an Eclipse Minnox low NOx burner < 30 ppm NOx @ 3% O₂ therefore there is a decrease in emissions from the combustion of natural gas (see attached spreadsheet for combustion emission calculations)

Operating schedule: 24 hrs/day, 5 days/wk, 52 wks/yr (maximum)
 AEIS: VOC = 200 lb/day ÷ 24 hr/day = 8.3 lb/hr (average R1 & R2)
 NSR: 2165 lb/day ÷ 24 hr/day = 72 lb/hr (maximum R1 & R2)
 30 day average entry = 0 (bubble)

Summary of emissions from the flexo oven combustion of natural gas:

NO _x		CO		PM/PM ₁₀	
lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day
0.056	1.3	0.05	1.2	0.011	0.26



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From previous evaluation for winder-jogger:
Baghouse efficiency assumed to be 95%

$$R1 = 1.96 \text{ lb/hr}$$

$$R2 = 1.96 \times (1-0.95) = 0.098 \text{ lb/hr}$$

RULE EVALUATION

RULE 212(c)(1) *This section requires a public notice for all new and modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.*

Since there are no schools within 1,000 feet of the facility, a public notice will not be required by this section.

RULE 212(c)(2)&(g) *These sections require a public notice for all new and modified equipment and facilities which have on-site emission increases exceeding any of the daily maximums specified in subdivision (g).*

These are both functionally identical replacements. The new flexo press VOC emissions will be the same as the previous press, and will be limited to 400 lb/day ink as on the previous press permit. The combustion emissions from the press oven will be lower than the previous press. The new winder-jogger will be operated in the same manner as the existing winder-jogger, and will be likewise vented to the baghouse. Therefore, there will be no emission increase from this facility due to this project. Pursuant to the Rule implementation guidance for Rule 212 public notices, a public notice is not required under these sections (p. 7 of 14, example 4).

RULE 212(c)(3) *This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than $1E^{-6}$ per permit unit or greater than $10E^{-6}$ per facility.*

The flexo press is a replacement unit and the emissions calculated of TAC listed in Rule 1401 with an effective date of 3/7/08 or earlier from the combustion of natural gas and use of inks (contain some ammonia) resulted in MICR less than in a million and HIA/HIC below one. The proposed project is expected to comply with all applicable R1401 requirements. Public notice will not be required per this section.



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RULE 401 *Visible Emissions*

Visible emissions are not expected with proper maintenance and operation of this equipment. The system shows no visible emissions complaints at this location for similar presses or the winder-jogger.

RULE 402 *Nuisance*

Operation of this equipment is not expected to create complaints or nuisance with proper maintenance and operation. The system shows no nuisance complaints at this location for similar presses or the winder-jogger.

RULE 1130 *Graphic Arts*

This operation complies with the VOC content requirements.

<i>Material</i>	<i>Rule1130 VOC Limit</i>	<i>Actual VOC Content</i>
Flexo Inks	300 g/l (2.5 lb/gal) of coating	0 – 1.5 lb/gal of coating

RULE 1171 *Solvent Cleaning Operations*

Hot water and acetone will be used to clean the flexographic printing system and other general cleaning operations. Compliance is expected.

REG XIII *Rule 1303(a), Best Available Control Technology (BACT)*

BACT is met by use of low VOC inks with VOC contents less than 1.5 lb/gal coating (less water and es). In addition, the oven will be equipped with a low NOx burner expected to meet 30 ppm NOx @ 3% O₂. The winder-jogger will be vented to a baghouse which meets BACT for PM₁₀.

Rule 1303 (b)(1), Modeling

This is a functionally identical replacement with a decrease in combustion emissions and no increase in VOC. The controlled PM₁₀ emission from the winder-jogger are negligible. The calculated values for the combustion emissions are less than the screening limits in Table A-1, therefore no further modeling analysis is required.

A/N	NOx (lbs/hr)		CO (lbs/hr)		PM10 (lbs/hr)	
	Allowed	Actual	Allowed	Actual	Allowed	Actual
490182-flexo	0.20	0.06	11.0	0.05	1.2	0.011
501988-w-jogger	-	-	-	-	0.41	0.098



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Rule 1304 (c)(1), Offsets Exemption

Offsets are not required since there is no emission increase from the facility. These are functionally identical replacements that will be limited to the same VOC cap (and ink usage limit), and with a lower Btu/hr burner as the press to be replaced. The replacement of the winder-jogger will not cause an emission increase. This meets the offset exemption of Rule 1304(a)(1), therefore offsets are not required for this project.

RULE 1401

New Source Review of Toxic air Contaminants

The inks to be used in the flexo press contain a small amount of ammonia listed in Rule 1401 as amended 3/7/08 due to the identical replacement. However, there are no carcinogenic compounds present; or other acute and chronic compound emissions.

400 lb/day ink x 0.0021 lb ammonia/lb ink = 0.84 lb/day, 0.035 lb/hr ammonia. Screening risk assessment is in the file for the ammonia emissions from the ink and the combustion emissions from the press oven. MICR is less than 1 in a million, and HIA/HIC below 1.

REG XXX

This facility is not in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” to the Title V permit for this facility.

Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx	40
PM10	30
SOx	60
CO	220



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To determine if a project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “de minimis significant permit revision”. This proposed project is the 3rd permit revision to the Title V renewal permit issued to the original operator Smurfit Stone Container on 6/18/06, which went through a change of operator to Bluegrass Folding Carton and issued a Title V permit on 10/11/06. The following table summarizes the cumulative emission increases resulting from all permit revisions since the last Title V renewal permit was issued:

<i>Revisions since Renewal</i>	<i>HAP</i>	<i>VOC</i>	<i>NOx</i>	<i>PM₁₀</i>	<i>SOx</i>	<i>CO</i>
(1 st) Revision - (administrative): change of operator from Smurfit-Stone Container (ID# 007089) to Bluegrass Folding Carton (ID# 148535) issued 10/11/06 (Revision 0).	0	0	0	0	0	0
(2 nd) Revision - (administrative): change of operator from Bluegrass Folding Carton (ID 148535) to Graphic Packaging Int'l (ID 157259) & -(deminimis significant) add two lithographic printing presses (Revision 0)	0	0	0	0	0	0
(3rd) Revision - (deminimis significant) add flexographic heat-set printing press (A/N 490182) to replace A/N 490168 in future. Add winder jogger A/N 501988 to replace A/N 490172 in future -P/Cs. Also remove paperboard scrap collection and baling system under permit P/O G3375 (A/N 490170) since it is now exempt from written permit under Rule 219(p)(10)	0	0	0	0	0	0
Cumulative Total since Renewal (6-18-06)	0	0	0	0	0	0
Maximum Daily Limit	30	30	40	30	60	220

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility with the addition of two Permits to Construct for the new heatset flexographic printing press and the new winder jogger, and removal of the paperboard scrap collection and baling system under permit P/O G3375 (A/N 490170).