PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 05 2014-007
Project Number: 2014-03-030
Installation Number: 161-0039

Parent Company: Manchester Packaging Company
Parent Company Address: 2000 East James Blvd., St. James, MO 65559
Installation Name: Manchester Packaging Company
Installation Address: 2000 East James Blvd., St. James, MO 65559
Location Information: Phelps County, S16, T38N, R6W

Application for Authority to Construct was made for:
The installation of a new P-6 Flexographic Printing Press capable of printing a 60-inch web, equipped with two natural gas fired dryers. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, Construction Permits Required.

☐ Standard Conditions (on reverse) are applicable to this permit.
☑ Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

MAY 22 2014
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES
STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department’s Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual startup of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources’ personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.
SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. “Conditions required by permitting authority.”

Manchester Packaging Company

1. VOC Emission Limit
   A. Manchester Packaging Company shall emit less than 250.0 tons of VOCs in any consecutive 12-month period from the entire installation (see table below).

Table 1: Manchester Packaging Company VOC Emission Units

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP-01</td>
<td>L-1 Extruder Inline Flexographic Press – Ink</td>
</tr>
<tr>
<td></td>
<td>L-1 Extruder Inline Flexographic Press – Solvent</td>
</tr>
<tr>
<td>EP-02</td>
<td>Portable Inline Flexographic Press – Ink</td>
</tr>
<tr>
<td></td>
<td>Portable Inline Flexographic Press – Solvent</td>
</tr>
<tr>
<td>EP-03</td>
<td>P-3 Flexographic Printing Press – Ink</td>
</tr>
<tr>
<td></td>
<td>P-3 Flexographic Printing Press – Solvent</td>
</tr>
<tr>
<td></td>
<td>P-4 Flexographic Printing Press – Solvent</td>
</tr>
<tr>
<td>EP-05</td>
<td>Overhead Press Dryer</td>
</tr>
<tr>
<td></td>
<td>P-5 Flexographic Printing Press – Ink</td>
</tr>
<tr>
<td></td>
<td>P-5 Flexographic Printing Press – Solvent</td>
</tr>
<tr>
<td>EP-06</td>
<td>Deck Press Dryer</td>
</tr>
<tr>
<td></td>
<td>P-5 Flexographic Printing Press – Ink</td>
</tr>
<tr>
<td></td>
<td>P-5 Flexographic Printing Press – Solvent</td>
</tr>
<tr>
<td>EP-08</td>
<td>Space Heating</td>
</tr>
<tr>
<td>EP-09</td>
<td>Space Heating</td>
</tr>
<tr>
<td>EP-12</td>
<td>Space Heating</td>
</tr>
<tr>
<td>EP-15</td>
<td>Extruders</td>
</tr>
<tr>
<td>EP-16</td>
<td>Overhead Press Dryer</td>
</tr>
<tr>
<td></td>
<td>P-6 Flexographic Printing Press – Ink</td>
</tr>
<tr>
<td></td>
<td>P-6 Flexographic Printing Press – Solvent</td>
</tr>
<tr>
<td>EP-17</td>
<td>Deck Press Dryer</td>
</tr>
<tr>
<td></td>
<td>P-6 Flexographic Printing Press – Ink</td>
</tr>
<tr>
<td></td>
<td>P-6 Flexographic Printing Press – Solvent</td>
</tr>
</tbody>
</table>

B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A.
SPECIAL CONDITIONS:
The permittee is authorized to construct and operate subject to the following special conditions:

2. Operational Requirement - Solvent/Ink Cloths
   A. Manchester Packaging Company shall keep all inks, solvents, and cleaning solutions in sealed containers whenever the materials are not in use. Manchester Packaging Company shall provide and maintain suitable, easily read, permanent markings on all inks, solvents, and cleaning solution containers used at the installation.

3. Record Keeping and Reporting Requirements
   A. Manchester Packaging Company shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources’ personnel upon request.

   B. Manchester Packaging Company shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.
REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW
Project Number: 2014-03-030
Installation ID Number: 161-0039
Permit Number:

Manchester Packaging Company Complete: March 18, 2014
2000 East James Blvd.
St. James, MO 65559

Parent Company:
Manchester Packaging Company
2000 East James Blvd.
St. James, MO 65559

Phelps County, S16, T38N, R6W

REVIEW SUMMARY

- Manchester Packaging Company has applied for authority to install a new P-6 Flexographic Printing Press capable of printing a 60-inch web, equipped with two natural gas fired dryers.

- HAP emissions are expected from the combustion of natural gas in the overhead and deck dryer (EP-16 and EP-17).

- None of the New Source Performance Standards (NSPS) apply to the installation.

- 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart KK, National Emissions Standards for Printing and Publishing Industry does not apply to this facility as it is an area source of HAPs.

- No air pollution control equipment is being used in association with the new equipment.

- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of VOC for this project are above de minimis levels, but below major source levels. The VOC emissions for the entire installation were conditioned to below major source levels.

- This installation is located in Phelps County, an attainment area for all criteria pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
• Ambient air quality modeling was not performed for this review. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.

• Emissions testing is not required for the equipment.

• An application to amend your Part 70 Operating Permit is required for this installation within one year of equipment startup.

• Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Manchester Packaging Company (MPC) is an existing polyethylene film products manufacturing facility in St. James, Missouri. The polyethylene film products produced by the installation are printed and unprinted polyethylene film and printed and unprinted polyethylene bags.

The installation receives polyethylene resin by rail. The polyethylene resin is unloaded from the railcar by the Railcar Unloader Transfer System (EP-10) and transferred to a resin storage silo. The stored polyethylene resin is transferred to the master blenders by Vacuum Loader 2 (EP-14) and then transferred to the auxiliary blenders by Vacuum Loader 1 (EP-13). After blending, the polyethylene resin is transferred to the Extruder (EP-14) by Hopper Loader Transfer System (EP-11) to produce unprinted polyethylene film.

The unprinted polyethylene film is either sold as is or it can be printed and/or formed into bags. The installation operates five flexographic presses (EP-01, EP-02, EP-03, EP-04, EP-05, and EP-06).

The installation operates 15 bag machines to form unprinted or printed polyethylene film into bags.

Unprinted and printed polyethylene scrap is ground down and reused.


The installation currently operates under the Part 70 Operating Permit OP2008-020, which expired March 16, 2013 however a Part 70 Operating Permit renewal application has been received and is currently being reviewed therefore MPC is operating under the operating permit application shield.

The following New Source Review permits have been issued to Manchester Packaging Company from the Air Pollution Control Program.
PROJECT DESCRIPTION

MPC is installing a new Carint-Gemini 1590 flexographic press designated a P-6 (EP-16 and EP-17). This printer will have the capacity to print six colors on polyethylene films up to 60 inches wide and is equipped with two in-process heaters to dry ink and solvents. One heater will be utilized “overhead” on the line and the other will be utilized in between the decks. The amount of polyethylene film available for print will not be increased as a result of this project. Therefore the only emissions increase as a result of this project will be from the new equipment being installed.

No controls are being used to control the emissions from the new P-6 printing press. The expected pollutants from the new P-6 printing press are volatile organic compounds (VOC) from the inks and solvents and combustion emission from the overhead and deck dryers. The inks or solvents being used by MPC do not contain any HAPs. The total maximum hourly usage rate of the new P-6 printing press is 0.00270 tons of ink per hour and 0.00704 tons of solvent per hour. As this press is separated into two different emission units, EP-16 for the overhead dryer portion and EP-17 for the deck dryer portion, the maximum hourly usage rate is split evenly between the two, calculating out to be 0.00135 ton of ink per hour and 0.00352 tons of solvent per hour for each emission unit (EP-16 and EP-17). The two dryers being implemented by the new P-6 printing press are both fired by natural gas and each have a maximum hourly design rate of 0.394 MMBtu per hour or 0.003863 MMcf of natural gas per hour.

EMISSIONS/CONTROLS EVALUATION

The potential emissions from the new P-6 printing press were calculated using the product Material Safety Data Sheets and a mass balance calculation. All VOCs within the ink and solvents were assumed to be emitted. The inks or solvents being used by MPC do not contain any HAPs therefore no HAP emissions are expected. To calculate the annual emissions from the new P-6 printing press the worst case ink and solvent was assumed to be used 100 percent of the time. The table lists the inks and solvents considered for this project.

Table 2: Ink and Solvents Evaluated for the Project

<table>
<thead>
<tr>
<th>Code</th>
<th>Manufacturer</th>
<th>Material Name</th>
<th>Chemical Type</th>
<th>Density (lb/gal)</th>
<th>% VOC (wt.)</th>
<th>% HAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Ink-001</td>
<td>Sun Chemical</td>
<td>HT Resist Blend Varnish: D947 (CHLFS0030759)</td>
<td>Ink</td>
<td>7.73</td>
<td>73.14%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-002</td>
<td>Sun Chemical</td>
<td>Black Base (90081193/90167-116)</td>
<td>Ink</td>
<td>8.55</td>
<td>46.76%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-003</td>
<td>Sun Chemical</td>
<td>Cyan Blue Base/D947 (90002142/54447-116)</td>
<td>Ink</td>
<td>8.06</td>
<td>57.10%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-004</td>
<td>Sun Chemical</td>
<td>Polyamide Carb. Violet (90823481/6047-1165)</td>
<td>Ink</td>
<td>7.85</td>
<td>58.12%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-005</td>
<td>Sun Chemical</td>
<td>Polyamide Phyhal. Green</td>
<td>Ink</td>
<td>8.21</td>
<td>52.46%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Code</td>
<td>Manufacturer</td>
<td>Material Name</td>
<td>Chemical Type</td>
<td>Density (lb/gal)</td>
<td>% VOC (wt.)</td>
<td>% HAP</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td>------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>Ink-006</td>
<td>Sun Chemical</td>
<td>NS (72129-1165/K537)</td>
<td>Ink</td>
<td>8.20</td>
<td>54.68%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-007</td>
<td>Sun Chemical</td>
<td>PA Methyl Violet Base (90080822/60181-116)</td>
<td>Ink</td>
<td>8.06</td>
<td>49.86%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-008</td>
<td>Sun Chemical</td>
<td>SL APA YS Rodamine Base:K25 (466215-1165)</td>
<td>Ink</td>
<td>8.09</td>
<td>53.53%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-009</td>
<td>Sun Chemical</td>
<td>Rubine Red Base/D947 (46150-1165/D947)</td>
<td>Ink</td>
<td>7.83</td>
<td>53.90%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-010</td>
<td>Sun Chemical</td>
<td>Polymide Y/S Naphtol Concentrate (46797-1165)</td>
<td>Ink</td>
<td>7.81</td>
<td>53.90%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-011</td>
<td>Sun Chemical</td>
<td>Mod Sunshrink White/D947 (90005559/SSNFS1111)</td>
<td>Ink</td>
<td>11.86</td>
<td>31.65%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-012</td>
<td>Sun Chemical</td>
<td>877 Sunsheen Silver (KCPFSM11S220/K5380)</td>
<td>Ink</td>
<td>7.86</td>
<td>56.04%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-013</td>
<td>Sun Chemical</td>
<td>GA23100000 poly rib imp o.white (90817948)</td>
<td>Ink</td>
<td>10.45</td>
<td>43.97%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-014</td>
<td>Sun Chemical</td>
<td>Truweather Y/S Red (TLQFS4030290/K540)</td>
<td>Ink</td>
<td>7.98</td>
<td>61.48%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-015</td>
<td>Sun Chemical</td>
<td>Truweather Pro Black (TLQFS9030344/K540)</td>
<td>Ink</td>
<td>8.17</td>
<td>60.16%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-016</td>
<td>Sun Chemical</td>
<td>Truweather Pro Cyan (TLQFS5030343/K540)</td>
<td>Ink</td>
<td>8.10</td>
<td>61.80%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-017</td>
<td>Sun Chemical</td>
<td>Truweather Pro Magenta (TLQFS4030342/K540)</td>
<td>Ink</td>
<td>7.94</td>
<td>66.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-018</td>
<td>Sun Chemical</td>
<td>2217-1165 Polyamide G/S Yellow (90084155)</td>
<td>Ink</td>
<td>7.91</td>
<td>55.98%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-019</td>
<td>Sun Chemical</td>
<td>Truweather White (90867393 TLQFS1030)</td>
<td>Ink</td>
<td>10.08</td>
<td>45.03%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-020</td>
<td>Sun Chemical</td>
<td>Truweather Pro Yellow (TLQFS2030341/K540)</td>
<td>Ink</td>
<td>8.04</td>
<td>65.83%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-021</td>
<td>Sun Chemical</td>
<td>Truweather Oxide Red K540 (90978208 TLSFS4031)</td>
<td>Ink</td>
<td>10.21</td>
<td>50.12%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-022</td>
<td>Sun Chemical</td>
<td>Truweather Cyan Green K540 (90978172/K540)</td>
<td>Ink</td>
<td>8.24</td>
<td>61.86%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-023</td>
<td>Sun Chemical</td>
<td>Truweather Carb Violet K540 TLQFS6030294</td>
<td>Ink</td>
<td>7.73</td>
<td>65.17%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ink-024</td>
<td>Sun Chemical</td>
<td>Sunshrink SP White (TXLFS114812/K538)</td>
<td>Ink</td>
<td>9.98</td>
<td>46.91%</td>
<td>0.00%</td>
</tr>
<tr>
<td>InkAdd-001</td>
<td>Sun Chemical</td>
<td>DPI-317 Wax Compound NS (11-K-14/K537)</td>
<td>Ink Additive</td>
<td>7.38</td>
<td>53.22%</td>
<td>0.00%</td>
</tr>
<tr>
<td>InkAdd-002</td>
<td>Sun Chemical</td>
<td>CHKFSX110691 (HR Wax 90072353)</td>
<td>Ink Additive</td>
<td>7.54</td>
<td>46.54%</td>
<td>0.00%</td>
</tr>
<tr>
<td>InkAdd-003</td>
<td>Sun Chemical</td>
<td>Extender/D947 (90083782/11-V-100)</td>
<td>Ink Additive</td>
<td>7.56</td>
<td>57.10%</td>
<td>0.00%</td>
</tr>
<tr>
<td>InkAdd-004</td>
<td>Sun Chemical</td>
<td>High Scuff Wax/K525 (90005657/T9K1-4118)</td>
<td>Ink Additive</td>
<td>7.91</td>
<td>42.91%</td>
<td>0.00%</td>
</tr>
<tr>
<td>InkAdd-005</td>
<td>Sun Chemical</td>
<td>Truweather Extender (TWFS0030286/K540)</td>
<td>Ink Additive</td>
<td>7.47</td>
<td>72.59%</td>
<td>0.00%</td>
</tr>
<tr>
<td>InkAdd-006</td>
<td>Sun Chemical</td>
<td>Banner Polyamide Pro Ext./K538 (90012554/WKIFS0110)</td>
<td>Ink Additive</td>
<td>7.56</td>
<td>66.55%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
The emission factors used for the combustion of natural gas in the overhead and deck dryers were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 *Natural Gas Combustion* (July 1998).

The following table provides an emissions summary for this project. Existing potential emissions were taken from construction permit 112012-014. Existing actual emissions were taken from the installation’s 2013 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 3: Emissions Summary (tons per year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>25.0</td>
<td>3.51</td>
<td>N/D</td>
<td>0.0064</td>
<td>1.66**</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>15.0</td>
<td>3.51</td>
<td>0.0016</td>
<td>0.026</td>
<td>3.54</td>
</tr>
<tr>
<td>PM(_{2.5})</td>
<td>10.0</td>
<td>0.07</td>
<td>0.0016</td>
<td>0.026</td>
<td>3.54**</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>40.0</td>
<td>0.01</td>
<td>0.0004</td>
<td>0.0020</td>
<td>0.0075</td>
</tr>
<tr>
<td>NO(_x)</td>
<td>40.0</td>
<td>0.88</td>
<td>0.053</td>
<td>0.34</td>
<td>1.24</td>
</tr>
<tr>
<td>VOC</td>
<td>40.0</td>
<td>219.94</td>
<td>70.11</td>
<td>79.09</td>
<td>&lt;250.0</td>
</tr>
<tr>
<td>CO</td>
<td>100.0</td>
<td>0.74</td>
<td>0.0106</td>
<td>0.28</td>
<td>1.04</td>
</tr>
<tr>
<td>GHG (CO(_{2})e)</td>
<td>75,000 / 100,000</td>
<td>1,059.16</td>
<td>N/D</td>
<td>407.27</td>
<td>1499.09</td>
</tr>
<tr>
<td>GHG (mass)</td>
<td>0.0 / 100.0 / 250.0</td>
<td>N/D</td>
<td>N/D</td>
<td>406.07</td>
<td>1490.29</td>
</tr>
<tr>
<td>HAPs</td>
<td>10.0/25.0</td>
<td>0.09</td>
<td>0.00</td>
<td>0.0064</td>
<td>0.036***</td>
</tr>
</tbody>
</table>

N/A = Not Applicable; N/D = Not Determined
*New Installation Conditioned Potential includes an installation wide VOC limit. Potential emissions for the whole facility were recalculated based on the ink and solvent list provided.
**PM potential emission only includes the filterable portion of combustion emissions. Assumed all PM\(_{10}\) to be PM\(_{2.5}\) including the potential emissions from the extruders.
***Installation wide HAP emissions decrease due to discontinued use of inks and solvents that contain HAPs. All HAP emission come from the combustion of natural gas and the extruding process.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC for this project are above de minimis levels, but below major source levels. The VOC emissions for the entire installation were conditioned to below major source levels.
APPLICABLE REQUIREMENTS

Manchester Packaging Company shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110
- Operating Permits, 10 CSR 10-6.065
- Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170
- Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220
- Restriction of Emission of Odors, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405 applies to the new equipment and it is in compliance as they solely burn pipeline grade natural gas.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, Construction Permits Required, I recommend this permit be granted with special conditions.

Gerad Fox  
New Source Review Unit

PERMIT DOCUMENTS
The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 14, 2014, received March 18, 2014, designating Manchester Packaging Company as the owner and operator of the installation.

### Manchester Packaging Company
Phelps County, S16, T38N, R6W
Project Number: 2014-03-030
Installation ID Number: 161-0039

This sheet covers  (month, year) (Copy this sheet as needed.)

<table>
<thead>
<tr>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
<th>(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ink, Solvent or Additive (Name, Product #)</strong></td>
<td><strong>Amount of Ink, Solvent or Additive Used (gallon)</strong></td>
<td><strong>Density (lb/gal)</strong></td>
<td><strong>VOC Content (Weight %)</strong></td>
<td><strong>VOC Emissions (Tons)</strong></td>
</tr>
<tr>
<td>Example: Cyan Blue Base/D947 (90002142/54447-116)</td>
<td>10</td>
<td>7.73</td>
<td>73.14%</td>
<td>0.0283</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(f)</th>
<th>(g)</th>
<th>(h)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount of Polyethylene Film Produced (tons)</strong></td>
<td><strong>Emission Factor (lb/ton)</strong></td>
<td><strong>VOC Emissions (Tons)</strong></td>
</tr>
<tr>
<td>Extruders (EP-15)</td>
<td>0.0398</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(i)</th>
<th>(j)</th>
<th>(k)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount of Natural Gas Used (MMcf)</strong></td>
<td><strong>Emission Factor (lb/MMcf)</strong></td>
<td><strong>VOC Emissions (Tons)</strong></td>
</tr>
<tr>
<td>Total Natural Gas Combustion</td>
<td>5.5</td>
<td></td>
</tr>
</tbody>
</table>

(l) Total VOC Emissions Calculated for this Month in Tons
(m) 12-Month VOC Emissions Total (o) from Previous Month’s Worksheet in Tons
(n) Monthly VOC Emissions Total (l) from Previous Year’s Worksheet in Tons
(o) Current 12-month Total of VOC Emissions in Tons:  (o) = [(l) + (m) - (n)]

(a) Record the name of all inks, solvents and additives used this month.
(b) Record the respective gallons of inks, solvents and additives used this month.
(c) Record the respective density of inks, solvents and additives from the MSDS.
(d) Record the respective VOC content of inks, solvents and additives. Obtain VOC content of other inks, solvents and additives from their respective MSDS. If a range is given for the VOC content, use the highest value in the range.
(e) Calculate VOC emissions from inks, solvents and additives:  (e) = [(b) x (c) x (d)] / 2000.
(f) Record the tons of Polyethylene Film produced by the extruders
(g) VOC emission factor for the extruder process
(h) Calculate VOC emissions from the extruders: (h) = [(f) x (g)] / 2000
(i) Record the MMcf of natural gas used by the Manchester Packaging
(j) VOC emission factor for natural gas combustion
(k) Calculate VOC emissions from natural gas combustion: (k) = [(i) x (j)] / 2000
(l) Sum each individual VOC emissions for this month: (l) = [sum of all VOC emissions in (e)] + (h) + (k)
(m) Record the 12-month total VOC emissions (o) from last month’s Attachment A.
(n) Record the monthly VOC emissions total (l) from previous year’s Attachment A.
(o) Calculate the current 12-month total VOC emissions. A value less than 250.0 tons of VOC indicates compliance.
APPENDIX A

Abbreviations and Acronyms

% ........ percent
°F .......... degrees Fahrenheit
acfm ...... actual cubic feet per minute
BACT ..... Best Available Control Technology
BMPs ..... Best Management Practices
Btu......... British thermal unit
CAM ...... Compliance Assurance Monitoring
CAS .......... Chemical Abstracts Service
CEMS ..... Continuous Emission Monitor System
CFR ........ Code of Federal Regulations
CO .......... carbon monoxide
CO₂ ......... carbon dioxide
CO₂e........ carbon dioxide equivalent
COMS ..... Continuous Opacity Monitoring System
CSR......... Code of State Regulations
dscf ....... dry standard cubic feet
EIQ ........ Emission Inventory Questionnaire
EP ........... Emission Point
EPA ......... Environmental Protection Agency
EU ........... Emission Unit
fps .......... feet per second
ft .......... feet
GACT ..... Generally Available Control Technology
GHG ...... Greenhouse Gas
gpm .......... gallons per minute
gr .......... grains
GWP ...... Global Warming Potential
HAP ........ Hazardous Air Pollutant
hr .......... hour
hp .......... horsepower
lb .......... pound
lbs/hr ...... pounds per hour
MACT ..... Maximum Achievable Control Technology
µg/m³ ...... micrograms per cubic meter
m/s ........ meters per second
Mgal ...... 1,000 gallons
MW .......... megawatt
MHDR ...... maximum hourly design rate
MMBtu .... Million British thermal units
MCF ...... million cubic feet
MSDS ..... Material Safety Data Sheet
NAAQS ... National Ambient Air Quality Standards
NESHAPs ........ National Emissions Standards for Hazardous Air Pollutants
NOₓ ........ nitrogen oxides
NSPS ...... New Source Performance Standards
NSR ...... New Source Review
PM .......... particulate matter
PM₂.₅ .... particulate matter less than 2.5 microns in aerodynamic diameter
PM₁₀ ...... particulate matter less than 10 microns in aerodynamic diameter
ppm .......... parts per million
PSD ........ Prevention of Significant Deterioration
PTE ....... potential to emit
RACT ...... Reasonable Available Control Technology
RAL ...... Risk Assessment Level
SCC ........ Source Classification Code
scfm ...... standard cubic feet per minute
SIC ......... Standard Industrial Classification
SIP .......... State Implementation Plan
SMAL .... Screening Model Action Levels
SOₓ ........ sulfur oxides
SO₂ ......... sulfur dioxide
tph .......... tons per hour
tpy .......... tons per year
VMT ....... vehicle miles traveled
VOC ....... Volatile Organic Compound
Mr. Michael Bryant  
Vice President of Manufacturing  
Manchester Packaging Company  
2000 East James Blvd.  
St. James, MO 65559


Dear Mr. Bryant:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Gerad Fox, at the Department of Natural Resources’ Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:gfk

Enclosures

c: Southeast Regional Office  
PAMS File: 2014-03-030

Permit Number:

Celebrating 40 years of taking care of Missouri’s natural resources.  
To learn more about the Missouri Department of Natural Resources visit [dnr.mo.gov](http://dnr.mo.gov).