

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

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: 082011-006 Project Number: 2011-04-002
Installation Number: 095-0203

Parent Company: Shamrock Cabinet

Parent Company Address: 10201 East 65th Street, Raytown, MO 64133

Installation Name: Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances

Installation Address: 10201 East 65th Street, Raytown, MO 64133

Location Information: Jackson County, S4, T48, R32

Application for Authority to Construct was made for:
Addition of paint booth #3 (EP-14). This review was conducted in accordance with Section (5), 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.

AUG 19 2011

EFFECTIVE DATE


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 Departments' Air Pollution Control Program of the anticipated date of start up 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 start up 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.

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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."

Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances
Jackson County, S4, T48, R32

1. **Superseding Condition**

The conditions of this permit supersede the following special conditions found in the previously issued construction permit (Permit Number 072009-020) from the Air Pollution Control Program

 - A. Special Conditions 2.A, 2.B, 2.D and 2.E, and
 - B. Special Condition 3.
2. **VOC and HAPs Emission Limitations**
 - A. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall emit less than 40.0 tons of Volatile Organic Compounds (VOCs) from the installation as defined in Special Condition 2.D in any consecutive 12-month period.
 - B. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall emit less than 5.0 tons individually or 12.50 tons combined of Hazardous Air Pollutants (HAPs) from the installation as defined in Special Condition 2.D in any consecutive 12-month period.
 - C. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall emit less than 2.0 tons of formaldehyde from Paint Booth #3 (EP-14) in any consecutive 12-month period.
 - D. The limitations specified in Special Condition 2.A and 2.B apply to all equipment and processes that emit VOCs or HAPs and were installed or permitted at the Shamrock Cabinet facility as of the date of this permit's issuance. The known VOC and HAP sources at this installation consist of the following emission points: EP05: Paint Booth #1, EP06: Lamination Area, EP-13: Paint Booth #2, and EP-14: Paint Booth #3.

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SPECIAL CONDITIONS:

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

- E. Attachment A, Attachment B and Attachment C or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A, 2.B and 2.C. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall maintain all records required by this permit for not less than 5 years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used at this installation.
 - F. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which the records from Special Condition Number 2.E indicate that the source exceeds the limitation of Special Conditions Number 2.A, 2.B or 2.C.
3. Use of Alternative Coatings in the Paint Booths (EP-05, EP-13 & EP-14)
- A. When considering using an alternative material in the new paint booth that is different than a material listed in the Application for Authority to Construct, Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall calculate the potential emissions of each individual HAP in the alternative material.
 - B. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall seek approval from the Air Pollution Control Program before use of the alternative material if the potential individual HAP emissions for the alternative material is greater than the Screening Model Action Levels (SMAL) for any compound listed in the Attachment - *Air Pollution Control Program Table of Hazardous Air Pollutants, Screening Model Action Levels and Risk Assessment Levels* but less than 5.0 tons per year. (Note: Those HAPs with SMALs greater than 5.0 tons per year are already limited by Special Condition 2.B and therefore cannot exceed their SMAL. All other individual HAPs have the potential to exceed their SMAL and must be evaluated on a case-by-case basis.)
 - C. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances may scale (ratio) the potential emissions of the individual HAP with a SMAL less than 5.0 tons per year to any of the limitations stated in Special Condition 2. If the potential HAP emissions for the alternative material is equal to or greater than the Screen Modeling Action Levels (SMAL), then Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances must

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SPECIAL CONDITIONS:

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

seek approval from the Air Pollution Control Program before use of the alternative material.

- D. Attachment D or an equivalent form shall be used to show compliance with Special Condition 3.A, 3.B and 3.C. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall maintain all records required by this permit for not less than 5 years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
- 4. Solvent Cloths
Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall keep the solvents and cleaning solutions in sealed containers whenever the materials are not in use. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall provide and maintain suitable, easily read, permanent markings on all solvent and cleaning solution containers used with this equipment.
- 5. Control Device Requirements
 - A. Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances shall control emissions from the spray gun using a paint booth (EP-14) equipped with panel filters as specified in the permit application. This paint booth and panel filters shall be maintained in accordance with the manufacturer's specifications. Replacement filters shall be kept on hand at all times.
 - B. Only one spray gun may be operated in the paint booth (EP-14) at a time.
- 6. Material Safety Data Sheets (MSDSs)
 - A. The spray booth being permitted in this permit shall use approved materials identical to those permitted in Permit No. 072009-020. Lists of the previously approved materials are contained in Attachment D and E of Permit No. 072009-020.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2011-04-002
Installation ID Number: 095-0203
Permit Number:

Shamrock Cabinet & Fixture
DBA Shamrock Cabinet & Appliances
10201 East 65th Street
Raytown, MO 64133

Complete: April 1, 2011

Parent Company:
Shamrock Cabinet
10201 East 65th Street
Raytown, MO 64133

Jackson County, S4, T48, R32

REVIEW SUMMARY

- Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances has applied for authority to construct Paint Booth #3 (EP-14).
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are ethylene glycol, toluene, xylene, ethyl benzene, formaldehyde and methyl isobutyl ketone.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations applies to the proposed equipment. Since the wood furniture component of the manufacturing operations account for a least 90 percent of annual HAP emissions at the plant site, the facility is allowed via the MACT to take HAP emission limitations of 5 tons per year on individual HAPs and 12.5 tons per year on combined HAPs in order to be identified as an area source per the MACT and not be subject to the other provisions of this subpart.
- The paint booth with panel filters is being used to control the particulate matter less than 10 microns in diameter (PM₁₀) emissions from Paint Booth #3.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of VOC are conditioned below de minimis levels for the installation. Potential emissions of HAPs are conditioned to below 12.5 tons per year for aggregate HAPs and 5 tons per year for individual HAPs.

- This installation is located in Jackson County, a maintenance area for ozone and an attainment area for all other 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 since potential emissions of the application are below de minimis levels.
- Emissions testing are not required for the equipment.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup since the installation potential to emit for all pollutants is below 100 tons per year.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Shamrock Cabinets is an existing manufacturer of custom kitchen cabinets located in Raytown, Missouri. This facility has been conditioned to less than de minimis levels for VOCs and HAPs in construction permit No. 072009-020 and is a minor source of PM₁₀. No other pollutants are emitted at this facility. Shamrock Cabinets received a Basic Operating Permit renewal on January 12, 2007.

The following permits have been issued to Shamrock Cabinet from the Air Pollution Control Program.

Table 1: Previously Issued Construction Permits

Permit Number	Description
0496-019	Addition of one 18' x 10' paint spray booth.
0199-008	Installation of an edgebander, a panel saw, and a new waste loadout area.
072009-020	Construction of paint booth #2 (EP-13)

PROJECT DESCRIPTION

Shamrock Cabinets is seeking to construct an additional paint booth (EP-14). The new paint booth, also known as paint booth #3, will use the same materials and spray gun type as used in paint booth #2 permitted in Permit No. 072009-020. The new booth will not increase production, but is being installed in order to create efficiencies in the flow of work processed. The maximum hourly design rate for the spray gun used in the paint booth #3 is 2.95 gallons per hour. Panel filters are used to control PM₁₀ emissions.

Shamrock Cabinets has chosen to supersede the 40 tons of VOC per year installation-

wide limit given in Permit No. 072009-020 and re-establish it in this permit to include the new paint booth (EP-14). In addition, the alternative coatings special condition was also superseded and replaced with a less complicated version that is for all of the paint booths located the facility. This is acceptable since the calculation sheet is tied the 40 tons per year installation-wide VOC limit and there are no HAPs used in the other VOC source, the lamination area. In the event that Shamrock Cabinets needs approval from the Air Pollution Control Program to add a coating, the potential emissions of the HAP can be evaluated on an individual paint booth basis. Note that the formaldehyde limitation for paint booth #2 (EP-13) remains and has not been superseded. Another formaldehyde limitation has been added for paint booth #3 (EP-14). The use of formaldehyde should be tracked for each paint booth. The recordkeeping associated with the previous formaldehyde limit has been combined with the individual HAP recordkeeping and formaldehyde recordkeeping required by this permit.

EMISSIONS/CONTROLS EVALUATION

The project's potential emissions are primarily VOCs and HAPs that are associated with the new spray booth. Potential emissions for the spray booth were estimated using a mass balance approach and information obtained from the HAP Compliance Worksheet supplied by the applicant in conjunction with Permit No. 072009-020. 100 percent of the VOC and volatile HAP content of the coating mixtures are assumed to be emitted into the atmosphere. The potential emissions of each individual HAP was determined for each material proposed.

PM₁₀ emissions (including HAPs that are considered particulate) from the application of the materials were evaluated based on the solids content of the paint and transfer efficiency associated with air-atomized spray application. A 50 percent transfer efficiency was assumed. If not specifically stated in the applicant's worksheet, the solids content of the material was estimated by taking the density of the material and subtracting out the volatile content and assuming the remainder to be PM₁₀. The panel filters in the paint booth were assumed to have a PM₁₀ control efficiency of 90 percent.

The highest potential emissions for total VOCs, combined HAPs, each individual HAPs and PM₁₀ were then used to determine the worst case potential emissions for the project. Scaling (ratioing) of the potential emissions due to the installation-wide VOC and HAP limitations were not taken into consideration.

The following table provides an emissions summary for this project. Existing potential emissions represent the facility's emission prior to this project and were taken from Permit Number 072009-020. The existing emissions include conditioned potential emissions for VOCs, individual and combined HAPs as well as PM₁₀. Existing actual emissions were taken from the installation's 2010 Emission Inventory Questionnaire (EIQ). Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels ¹	Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	<37.5	1.15	7.45	N/A
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	<40	7.21	<40	<40
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	<12.5	N/D	<12.5	<12.5 combined HAPs, < 5.0 individual HAPs
Methanol	10.0	<1,870 lbs	N/D	4.3	
Ethylene Glycol	10.0	<9,071 lbs	N/D	<5.0	
Toluene	10.0	N/D	N/D	<5.0	
Xylene	10.0	N/D	N/D	<5.0	
Ethyl benzene	10.0	N/D	N/D	<5.0	
Formaldehyde	2.0	N/D	N/D	<2.0	
Methyl Isobutyl Ketone	10.0	N/D	N/D	<5.0	
Ethylhexanoate 2-cobalt ²	0.1	N/D	N/D	0.02	

N/A = Not Applicable; N/D = Not Determined

¹The regulatory level listed for this individual HAP is the Screen Modeling Action Level (SMAL).

²Potential emissions and SMAL represent only the cobalt portion of the compound.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are conditioned below de minimis levels. Potential emissions of HAPs are conditioned to below 12.5 tons per year for aggregate HAPs and 5 tons per year for individual HAPs.

APPLICABLE REQUIREMENTS

Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances 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

The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.

- *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

- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Wood Furniture Manufacturing Operations*, 40 CFR Part 63, Subpart JJ

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 23, 2011, received April 1, 2011, designating Shamrock Cabinet as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated April 18, 2011.

Attachment D – Hazardous Air Pollutants (HAP) Calculation Sheet
 Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances
 Jackson County, S4, T48, R32
 Project Number: 2011-04-002
 Installation ID Number: 095-0203
 Permit Number:

Copy this sheet as needed.

Column 1	Column 2	Column 3 (a)	Column 4 (b)	Column 5 (c)	Column 6 (d)	Column 7 (e)
Material Used and HAP	VOC Installation Wide Limit	Individual HAP Content (Weight %)	VOC Content (Weight %)	Scaled Individual HAP Emissions (Tons Per Year)	Screen Modeling Action Level (Tons per Year)	Comments
<i>Example: Paint ABC, formaldehyde</i>	<i>40 tpy</i>	<i>3.0</i>	<i>80.12</i>	<i>1.49</i>	<i>2.0</i>	<i><SMAL, OK to use</i>
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					
	<i>40 tpy</i>					

Instructions: Calculate the scaled potential emissions of each individual HAP contained in the material.

- Fill in the weight percent of the individual HAP.
- Fill in the VOC weight percent of the material.
- $40 \times [\text{Column 3}] / [\text{Column 4}] = [\text{Column 5}]$
- Fill in the Screening Model Action Level (SMAL) for the individual HAP. The SMALs for individual HAPs can be found in Attachment: *Air Pollution Control Program Table of Hazardous Air Pollutants, Screening Model Action Levels, and Risk Assessment Levels.*
- Compare potential emissions of the scaled individual HAP in [Column 5] to the SMAL in [Column 6]. If [Column 5] is greater than [Column 6], obtain permission from Air Pollution Control Program before using this material.

Note: If needed, Individual HAPs can also be scaled to other individual HAPs limited to 5 tons per year and total HAPs limited to 12.5 tons per year. Please include these calculations with this attachment.

Ms. Peggy Medina
Office Manager
Shamrock Cabinet & Fixture DBA Shamrock Cabinet & Appliances
10201 East 65th Street
Raytown, MO 64133

RE: New Source Review Permit - Project Number: 2011-04-002

Dear Ms. Medina:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 Susan Heckenkamp, at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:shl

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-04-002

Permit Number: