

STATE OF MISSOURI



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: 052009-005 Project Number: 2009-03-016

Parent Company: Independent Stave Co., Inc.

Parent Company Address: P.O. Box 104, Lebanon, MO 65536

Installation Name: Independent Stave Co., Inc.

Installation Address: 1078 S. Jefferson Street, Lebanon, MO 65536

Location Information: Laclede County, S34, T12N, R16W

Application for Authority to Construct was made for:

The installation of a new screening line and the permitting of existing equipment for a wood chip roasting line. 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.

MAY 11 2009

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 this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. 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 this (these) air contaminant source(s).

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 source(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."*

Independent Stave Co., Inc.  
Laclede County, S34, T12N, R16W

1. **Superseding Condition**  
This permit supersede special condition number 1 found in the previously issued construction permit (Permit Number 082006-007) from the Air Pollution Control Program.
2. **Carbon Monoxide (CO) Emission Limitation**
  - A. Independent Stave Co., Inc. shall emit less than 250.00 tons of carbon monoxide (CO) from the entire installation in any consecutive 12-month period. Equipment that emit CO from the installation is given below in Table 1.

**Table 1: Equipment That Emit CO**

<b>Emission Point</b>	<b>Description</b>
EP3	Wood Fired Heine Boiler
EP4	Wood fired Clever Brooks Boiler
EP5	Wine Head Toaster
EP6	Bourbon Head Char
EP7	Wine Barrel Toaster/Bending
EP8	Bourbon Barrel Char – Wood
EP8	Bourbon Barrel Char – Propane
EP11	Barrel Pre-Heater No. 1
EP24	Drum Heater No. 1 – Wood
EP24	Drum Hater No. 1 – Propane
EP36	Wine Barrel Laser
EP40	Stave Toaster
EP45	Alternatives Batch Oven Propane Burner
EP47	Electric Tank Stave Toaster
EP50	Used Oil Burner
EP51	Four (4) Propane Fired Chip Roasters

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**SPECIAL CONDITIONS:**

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

- B. Independent Stave Company, Inc. shall maintain an accurate record of CO emitted into the atmosphere from the entire installation. Attachment A or equivalent form(s) shall be used for this purpose.
  - C. Independent Stave Co., Inc. shall maintain all records required by special condition 2.B. for not less than five (5) years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
  - D. Independent Stave Co., Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 2.B. indicate that the source exceeds the limitation of Special Conditions Number 2.A.
3. Control Device Requirement - Cyclones
- A. Independent Stave Co., Inc. shall control emissions from the four (4) chip roasters (EP51) by using cyclones as specified in the permit application. The cyclones shall be in use at all times when the chip roasters are in operation.
  - B. The cyclones shall be operated and maintained in accordance with the manufacturer's specifications. The cyclone shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the DNR employees may easily observe them.
  - C. Independent Stave Co., Inc. shall maintain an operating and maintenance log (in either written or electronic form) for each of the cyclones that shall include the following;
    - 1) Incidents of malfunction, with impacts on emissions, duration of events, probable causes and corrective actions.
    - 2) Maintenance activities, with inspection schedule, repair actions and replacements.

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

Project Number: 2009-03-016  
Installation ID Number: 105-0001  
Permit Number:

Independent Stave Co., Inc.  
1078 S. Jefferson Street  
Lebanon, MO 65536

Complete: March 3, 2009

Parent Company:  
Independent Stave Co., Inc.  
P.O. Box 104  
Lebanon, MO 65536

Laclede County, S34, T12N, R16W

REVIEW SUMMARY

- Independent Stave Co., Inc. has applied for authority to construct a new wood chip screening line and to permit an existing wood chip roasting line.
- Hazardous Air Pollutant (HAP) emissions are expected from the combustion of propane for the chip roasters in amounts less than the Screening Model Action Levels (SMAL).
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Cyclones are being used to control the particulate matter less than ten (10) microns in diameter (PM<sub>10</sub>) emissions from the four (4) chip roasters in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below *de minimis* levels.
- This installation is located in Laclede County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- The installation shall either submit a request to modify its intermediate operating permit within 90 days of equipment startup or submit a part 70 operating permit application within one (1) year of equipment startup.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

Independent Stave Co., Inc. operates a wine barrel toasting facility in Lebanon, Missouri. The installation accepted an annual CO limit of 250.00 tons per year in the previous permit (082006-007) issued to the installation in order to be a minor source for construction permitting. The installation is considered an intermediate source for operating permit and submitted an intermediate operating permit renewal request in 2007. With the addition of this project, the installation will be required to either submit a request to modify its intermediate operating permit application or submit a part 70 operating permit application.

The following permits have been issued to Independent Stave Co., Inc. from the Air Pollution Control Program.

**Table 2: Permit History**

Permit Number	Description
0995-014	Installation of a wood/bark waste fired boiler for wine barrel toasting
072001-008	Installation of a bucket loader, a metering bin and a hammermill
0995-014A	Changing to the use of electric elements for barrel toasting instead of using wood scraps burning.
092009-024	Installation of a process to draw oak wood dust out of an enclosed fuel bin and drop it to a storage pile.

### PROJECT DESCRIPTION

The installation proposes to install a screening line to screen out wood particles smaller than 2 mm. The installation would also like to permit an existing wood chip roasting line. The roasting line consists of four chip roasters and associated conveyors and bins. When the chip roasters were first installed, it was determined that no permit would be required (Project 2008-05-028). However, this determination did not include any other equipment used by the line. The company realized that some of the equipment that were installed required a permit and decided to permit the entire roasting line through this project.

## EMISSIONS/CONTROLS EVALUATION

There are currently no PM<sub>10</sub> emission factors for the processing of wood chips, so PM<sub>10</sub> emission factors from similar processes were used instead. The emission factors were taken from either Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, or from EPA's Factor Information Retrieval (FIRE) data System. The emission factor for sawdust pile handling (SCC code 3-07-008-03) was used to estimate wood chip handling emissions. This emission factor was revoked by the EPA in 2002 but should still give emissions closest to the wood chip handling process than other emission factors in the current AP-42 or FIRE. PM<sub>10</sub> Emissions from the roaster were estimated using the emission factor for a coffee roaster (SCC code 3-02-002-21).

Cyclones are used to control emissions from the wood chip roasters. A capture efficiency of 100% was used for the cyclone because emissions are ducted from the roaster to the cyclone. A device control efficiency of 65% was used for the cyclone because they are medium efficiency cyclones. Combustion emissions from the chip roasters were estimated using emission factors in AP-42, Chapter 1.5, *Liquefied Petroleum Gas Combustion (10/96)*.

A metering bin supplies materials to both the screening line and the roasting line. Since the raw material for each line is different, the metering bin has to be cleaned out before using each of the lines. Also, one of the belt conveyors has to be moved into location and part of the screen has to be installed in order for the material to be transported to the screening line. Therefore, it is very difficult to change from one line to another and the two (2) lines cannot run concurrently. The potential emissions of the project are from the roasting line, assuming continuous operation during the year (8760 hours), because this line is expected to have higher emissions than the screening line. When the screening line is in operation, the metering bin can supply a maximum of 0.975 tons of material per hour, and when the roasting line is in operation, the metering bin can supply a maximum of 0.67 tons per hour. The metering bin is considered one of the bottlenecks of the system. If the facility ever eliminates this bottleneck to allow both lines to run concurrently, a new permit review will be required.

The following table provides an emissions summary for this project.

**Table 2: Emissions Summary (tons per year)**

Pollutant	Regulatory De Minimis Levels	<sup>1</sup> Existing Potential Emissions	Existing Actual Emissions (2007EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>10</sub>	15.0	117.73	21.05	9.46	N/A
SO <sub>x</sub>	40.0	1.89	3.01	0.056	N/A
NO <sub>x</sub>	40.0	61.74	60.11	5.79	N/A
VOC	40.0	73.78	4.61	0.45	N/A
CO	100.0	<250.00	72.35	3.34	<250.00
HAPs	10.0/25.0	N/D	0.00	0.070	N/A

## 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 all pollutants are below *de minimis* levels.

## APPLICABLE REQUIREMENTS

Independent Stave Co., Inc. 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 10-3.090

### SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

## 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.

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Chia-Wei Young  
Environmental Engineer

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated 2/26/2009, received 3/3/2009 designating Independent Stave Co., Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southwest Regional Office Regional Office Site Survey.



Mr. Dale Eichmeyer  
Engineer  
Independent Stave Company, Inc.  
2078 South Jefferson Street  
Lebanon, MO 65536

RE: New Source Review Permit - Project Number: 2009-03-016

Dear Mr. Eichmeyer:

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 Chia-Wei Young, at the departments' 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:cyl

Enclosures

c: Southwest Regional Office  
PAMS File: 2009-03-016

Permit Number: