



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:

092015-008

Project Number: 2014-07-055

Installation Number: 225-0040

Parent Company: Ozark Hardwood Pellets, LLC

Parent Company Address: 191 Highway AB, Seymour, MO 65746

Installation Name: Ozark Hardwood Pellets, LLC

Installation Address: 191 Highway AB, Seymour, MO 65746

Location Information: Webster County, S36, T29N, R17W

Application for Authority to Construct was made for:

Eliminate time of day restrictions from operations. 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.

SEP 17 2015

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 Department's 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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Permit No.	
Project No.	2014-07-055

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."

Ozark Hardwood Pellets, LLC
Webster County, S36, T29N, R17W

1. **Superseding Condition**
The conditions of this permit supersede Special Conditions 5 and 6 found in the previously issued construction permit 062010-002B issued by the Air Pollution Control Program.
2. **Equipment Dismantle**
 - A. Ozark Hardwood Pellets, LLC may not operate the equipment listed below upon this issuance of this permit
 - 1.) Wood chipper (EU-13a)
 - 2.) Debarker (EU-14a)
 - 3.) Lumber saw (EU-15)
 - B. Ozark Hardwood Pellets, LLC shall notify the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, the date the existing equipment (as indicated in Special Condition 2.A.) was rendered inoperable.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2014-07-055
Installation ID Number: 225-0040
Permit Number:

Ozark Hardwood Pellets, LLC
191 Highway AB
Seymour, MO 65746

Complete: December 16, 2014

Parent Company:
Ozark Hardwood Pellets, LLC
191 Highway AB
Seymour, MO 65746

Webster County, S36, T29N, R17W

REVIEW SUMMARY

- Ozark Hardwood Pellets, LLC has applied for authority to eliminate time of day restrictions from operations.
- HAP emissions are from combustion of sawdust and propane.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Watering of haul roads and cyclones are being used to control the particulate emissions from the equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are above de minimis levels.
- This installation is located in Webster 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 performed to determine the ambient impact of PM₁₀.
- Emissions testing is not required for the equipment.

- A Part 70 Operating Permit application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Ozark Hardwood Pellets, LLC is located at 191 Highway AB in Seymour, Missouri. Ozark Hardwood Pellets, LLC processes sawdust into pellets for use in pellet stoves. The process involves milling the raw sawdust into a uniform size, drying the sawdust and processing it in pellet mills. The finished pellets are cooled and bagged for shipping. The installation’s maximum production capacity is 14.95 tons of pellets per hour. This facility is above the de minimis level for CO, PM, and PM₁₀ emissions.

Sawdust is delivered on site by truck. This sawdust has an average moisture content of 33 percent. The sawdust is dried in a rotating drum dryer heated by a 45 million British thermal unit per hour (MMBtu/hr) sawdust fired burner. Exhaust from the dryer passes through a set of cyclones that remove the dry sawdust from the exhaust. The dried sawdust is conveyed to the pellet mills that convert the sawdust to pellets. The pellets are conveyed to a pellet cooler. The cooler is a large hopper connected to a fan that pulls air from inside the plant to cool the pellets to a temperature at which they can be bagged. The pellet cooler’s fan is exhausted to a cyclone. Once the pellets are cooled, they are conveyed to a bagger, bagged and palletized for shipping. During the summer months, Ozark Hardwood Pellets, LLC stores pallets in their stock yard.

Ozark Hardwood Pellets, LLC currently operates under a Part 70 operating permit. This installation is considered a minor source for construction permit purposes.

The following New Source Review permits have been issued to Ozark Hardwood Pellets, LLC from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
082006-013	Wood Pellet Mill
062010-002	Increase Production
062010-002A	Correct Dryer Fuel
062010-002B	Operation Changes

PROJECT DESCRIPTION

Ozark Hardwood Pellets, LLC would like to relax the time of day restrictions found in permit number 062010-002B. Ozark Hardwood Pellets, LLC has dismantled the wood chipper (EU-13a), the debarker (EU-14a), and the lumber saw (EU-15). The relaxation of the time of day restrictions associated with this project results in an increase in particulate emissions for the equipment remaining on site. However, overall potential emissions from the installation decrease due to the removal of equipment (EU-13a, EU-14a, and EU-15). Since the potential to emit PM₁₀ from this project exceeds the de minimis level, modeling for PM₁₀ was conducted as part of this project. The potential emissions of all other pollutants are unaffected by this project, and therefore were not remodeled.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the following sections of the Environmental Protection Agency (EPA) document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition:

- The emissions from sawdust handling were calculated using the predictive equation in AP-42 section 13.2.4 "Aggregate Handling and Storage Piles," November 2006.
- Emissions from the hammermill were calculated using the controlled emission factor for a rock-crusher found in AP-42 section 11.19.2 "Crushed Stone Processing and Pulverized Mineral Processing," August 2004.
- PM₁₀ and NOX emissions from the dryer were based on stack test results submitted by the company. Ozark Hardwood Pellets, LLC has requested that these results remain confidential (confidential file 2010-02-089). Emissions from the pellet process were also included in the submitted stack test.
- Emissions of VOC, SOX, CO and many individual HAPs from the dryer were calculated using the emission factor from AP-42 section 1.6 "Wood Residue Combustion in Boilers," September 2003.
- The emission factors for the remaining individual HAPs were obtained from the National Council for Air and Stream Improvement (NCASI) Technical bulletin No. 858, Table 20A. The NACSI paper reassessed emission factors for many HAPs based on data pertaining to only those boilers that were considered relevant to the burning of wood residues in forest products industry boilers. Thus, emissions data corresponding to wood combustion in furniture industry boilers and combustion of biomass other than virgin wood residues (e.g., agricultural waste, treated wood, etc.) were not included.
- Emissions of chlorinated dibenzo-p-dioxins and chlorinated dibenzo-p-furans were calculated using emission factors found in an EPA document entitled Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds National Academy Sciences (NAS) Review Draft, Section 4 "Combustion Sources of CDD/CDF: Power/Energy Generation."
- Emissions from haul roads and vehicular activity on unpaved surfaces were calculated using the predictive equation in AP-42 section 13.2.2 "Unpaved Roads," November 2006. A control efficiency of 90% was applied for documented watering.
- Emissions from paved surfaces were calculated using the predictive equation in AP-42 section 13.2.1 "Paved Roads," November 2006. The sawdust storage area was tested for silt loading. The results of this test were used in developing the emission factor.

Existing potential emissions were taken from permit number 062010-002B. Potential emissions of the application represent the potential of the all equipment remaining at this installation, assuming continuous operation (8760 hours per year). The new installation potential accounts for the dismantling of equipment as required by Special Condition 2 of this permit. Existing actual emissions were obtained from the 2013 EIQ. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Potential
PM	25.0	N/D	N/D	N/D	N/D
PM ₁₀	15.0	44.2	4.99	41.64	41.64
PM _{2.5}	10.0	N/D	4.45	N/D	N/D
SO _x	40.0	4.93	0.63	N/A	4.93
NO _x	40.0	13.02	1.66	N/A	13.02
VOC	40.0	3.35	0.42	N/A	3.35
CO	100.0	118.26	15.12	N/A	118.26
GHG (CO ₂ e)	75,000 / 100,000	N/D	N/D	N/A	N/D
GHG (mass)	0.0 / 250.0	N/D	N/D	N/A	N/D
HAPs	10.0/25.0	4.71	0.0	N/A	4.71

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

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 PM₁₀ and CO are above de minimis levels.

APPLICABLE REQUIREMENTS

Ozark Hardwood Pellets, LLC 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 Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of PM₁₀, PM₁₀ emissions were modeled using AERMOD to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) and increment standards.

The modeling results show violations of both the 24-hour and annual NAAQS for PM₁₀ and the 24-hour increment standard from PM₁₀. EPA guidance states that a permit may be issued if the installation demonstrates that they do not have a significant impact at any violating receptor. Ozark Hardwood Pellets, LLC did not have a significant impact at any violating receptor.

For a more detailed modeling analysis, consult the memorandum “Ambient Air Quality Impact Analysis for Ozark Hardwood Pellets, LLC Amendment”

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.

J Luebbert
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated Month Day, Year, received Month Day, Year, designating Ozark Hardwood Pellets, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Stephen DeVoe Sr.
Executive Vice President
Ozark Hardwood Pellets, LLC
P.O. Box 748
Marshfield, MO 65706

RE: New Source Review Permit - Project Number: 2014-07-055

Dear Mr. DeVoe Sr.:

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 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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 or certified mail, it will be deemed filed on the date it is mailed; if sent by any other method it will be deemed filed on the date it is received by the Administrative Hearing Commission, Truman State Office Building, Jefferson City, MO phone: 573-751-2422, www.oa.mo.gov/ahc. If you have any questions regarding this permit, please contact J Luebbert, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:jll

Enclosures

c: Southwest Regional Office
PAMS File: 2014-07-055
Permit Number: