

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: **122014-001**

Project Number: 2014-07-033  
Installation Number: 091-0072

Parent Company: TFP Holdings, LLC

Parent Company Address: 3772 Hwy. 160 West, West Plains, MO 65775

Installation Name: Timberland Forest Products

Installation Address: 3772 Hwy. 160 West, West Plains, MO 65775

Location Information: Howell County, S22, T23N, R9W

Application for Authority to Construct was made for:  
Installation of a firewood kiln and associated sawdust burner. 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.

**DEC 03 2014**

EFFECTIVE DATE

Handwritten signature of Kyras L. Moore in black ink.  
\_\_\_\_\_  
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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### 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."*

Timberland Forest Products  
Howell County, S22, T23N, R9W

1. Annual Emission Limit
  - A. Timberland Forest Products shall not exceed 0.04 tons of Acrolein in any 12-month period from the Webb burner and wood drying kiln (EP-21A and EP-21B).
  - B. Timberland Forest Products shall demonstrate compliance with Special Condition 1.A. using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
2. Process Material Limitation – Hardwoods
  - A. Timberland Forest Products shall exclusively heat treat hardwoods including but not limited to, Hickory, Red Oak, White Oak, Sycamore, Poplar, Gum, and Maple in the wood drying kiln (EP-21B). Hardwoods are tree species classified as angiosperms.
  - B. Attachment B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A.
3. Fuel Requirement-Sawdust
  - A. Timberland Forest Products shall burn exclusively untreated wood sawdust in their Webb Burner (EP-21A).
  - B. Timberland Forest Products shall demonstrate compliance with Special Condition 3.A by obtaining shipping receipts for each shipment of sawdust.
  - C. Timberland Forest Products shall keep the records required by Special Condition 3.B with the unit and make them available for Department of Natural Resources' employees upon request.

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#### SPECIAL CONDITIONS:

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

4. Undocumented Haul Road Watering
  - A. Timberland Forest Products shall water haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
  - B. Watering may be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
5. Record Keeping and Reporting Requirements
  - A. Timberland Forest Products 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. Timberland Forest Products shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2014-07-033  
Installation ID Number: 091-0072  
Permit Number:

Timberland Forest Products  
3772 Hwy. 160 West  
West Plains, MO 65775

Complete: August 14, 2014

Parent Company:  
Timberland Forest Products  
3772 Hwy. 160 West  
West Plains, MO 65775

Howell County, S22, T23N, R9W

REVIEW SUMMARY

- Timberland Forest Products has applied for authority to install a firewood kiln and associated sawdust burner.
- HAP emissions are expected from the proposed equipment in small amounts; acrolein has been conditioned to not exceed its respective Screen Modeling Action Levels.
- 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.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of acrolein are conditioned below its SMAL.
- This installation is located in Howell 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 since potential emissions of the application are all pollutants are below their respective de minimis levels and SMALs.

- Emissions testing is not required for the equipment.
- A Basic Operating Permit Application is required for this installation within 30 days of permit issuance.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Timberland Forest Products, located in West Plains, Missouri, produces pallets and rough lumber for market and pallet manufacturing. In addition, Timberland owns and operates twelve charcoal kilns (Kilns # 1-12). Kilns # 1-6 operate as one charcoal kiln system known as (EP-06A). The emissions from these kilns are controlled by one thermal oxidizer (EP-06B). Kilns # 7-12 and thermal oxidizer (CD-10) operate as one charcoal kiln system known as (EP-18).

Timberland Forest Products, Inc. produces a broad selection of standard hardwood pallets and skids, wood byproducts such as mulch, firewood, and hardwood lump charcoal, and sawmill products such as railroad ties, grade lumber, and flooring.

The following New Source Review permits have been issued to Timberland Forest Products from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
032002-008	Installation of six new charcoal kilns controlled by one thermal oxidizer afterburner
072005-043	Installation of nine new charcoal kilns controlled by three thermal oxidizer afterburners
062012-005	Installation of six new charcoal kilns controlled by one thermal oxidizer afterburner

## PROJECT DESCRIPTION

Timberland Forest Products has requested to install a firewood drying kiln and sawdust burner (Webb Burner). The purpose of the dryer is to heat firewood to destroy invasive pests. Dry sawdust will be brought in by tractor trailer and unloaded to an enclosed storage shed by a walking floor trailer. The sawdust will be transferred to the burner by a front-end loader. Hot gases from combustion exhaust flow into the hot gas transfer duct at the top of the biomass burner, and are drawn through the duct into the downstream process by induced draft fan. The maximum hourly design rate (MHDR) of the burner is 695 pounds of dry sawdust per hour. The sawdust will have a moisture content of less than 20% by weight. The dryer MHDR is 2,268 pounds of green firewood per hour. This system is referred to as the firewood heat treatment system (EP-21).

## EMISSIONS/CONTROLS EVALUATION

The emission factors used to estimate sawdust combustion emissions were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.6, Wood Residue Combustion in Boilers, September, 2003. The emissions of the Webb Burner were calculated using a MHDR of 695 pounds of dry sawdust per hour.

Wood drying releases volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) from the wood. AP-42 does not contain emission factors for wood drying. Kiln drying emission factors were supplied by the applicant. Kiln drying emission factors came from the document, *APG-573: Lumber Kiln Emissions Calculations*, Commonwealth of Virginia, Department of Environmental Quality, September 30, 2010. Timberland Forest Products are only allowed to dry hardwood (angiosperm) tree species, thus, the hardwood emission factors for kiln drying were used and are listed in Table 1. It was assumed that the wood being dried weighs 5.5 pounds per board foot.

Table 1: Uncontrolled Wood Drying Kiln Emission Factors (pounds per thousand board feet)

Pollutant	Hardwood
VOC	0.358
Acetaldehyde	0.00032

Source: *APG-573: Lumber Kiln Emissions Calculations*, Commonwealth of Virginia, Department of Environmental Quality, September 30, 2010

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006. A 50% control efficiency for PM and PM<sub>10</sub> and a 22.22% control efficiency for PM<sub>2.5</sub> are applied to the emission calculations for the use of undocumented watering.

The following table provides an emissions summary for this project. Existing potential emissions were taken from previously issued permits, excluding Permit 072005-043 because the associated emission sources were never installed. 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 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels/SMAL	<sup>1</sup> Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	Conditioned Potential Emissions of the Application	<sup>2</sup> New Installation Conditioned Potential
PM	25.0	N/D	N/D	9.80	4.03	N/D
PM <sub>10</sub>	15.0	58.34	13.71	9.33	3.83	62.17
PM <sub>2.5</sub>	10.0	N/D	10.64	7.55	3.10	N/D
SOx	40.0	<80.00	N/D	0.61	0.25	80.25
NOx	40.0	<80.00	24.61	11.93	4.90	84.90
VOC	40.0	2.10	0.25	1.06	0.44	2.54
CO	100.0	15.34	4.46	14.61	6.00	21.34
GHG (CO <sub>2</sub> e)	N/A	N/D	N/D	4748.80	1950.0	N/D
HAPs	10.0/25.0	N/D	N/D	0.90	0.37	N/D
Acrolein	0.04	N/D	N/D	0.097	<0.04	N/D

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

<sup>1</sup> An error was found in Permit 062012-005 when calculating the existing potential emissions but has been corrected here. In addition, previous permits indicate that SOx emissions were unable to be calculated, however, were expected to be greater than zero but less than de minimis. Similar projects of this nature consider SOx emissions to be not determined since no emission factor is available for SOx emissions from charcoal kilns. Thus, the potential SOx emissions were considered not determined in the existing potential emissions of this project.

<sup>2</sup> Potential emissions of the application have been conditioned below the SMAL of 0.04 tons per year of acrolein.

### 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 acrolein are conditioned not to exceed the SMAL.

### APPLICABLE REQUIREMENTS

Timberland Forest Products 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 Sulfur Compounds*, 10 CSR 10-6.260 does apply to the Webb Burner, however it is in compliance.
- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 does apply to the Webb Burner, However it is in compliance.

## 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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Bryce Mihalevich  
New Source Review Unit

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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 July 15, 2014, received July 15, 2014, designating Timberland Forest Products as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- *APG-573: Lumber Kiln Emissions Calculations*, Commonwealth of Virginia, Department of Environmental Quality, September 30, 2010





## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....percent	<b>m/s</b> ..... meters per second
<b>°F</b> .....degrees Fahrenheit	<b>Mgal</b> ..... 1,000 gallons
<b>acfm</b> .....actual cubic feet per minute	<b>MW</b> ..... megawatt
<b>BACT</b> ..... Best Available Control Technology	<b>MHDR</b> ..... maximum hourly design rate
<b>BMPs</b> ..... Best Management Practices	<b>MMBtu</b> .... Million British thermal units
<b>Btu</b> ..... British thermal unit	<b>MMCF</b> ..... million cubic feet
<b>CAM</b> ..... Compliance Assurance Monitoring	<b>MSDS</b> ..... Material Safety Data Sheet
<b>CAS</b> ..... Chemical Abstracts Service	<b>NAAQS</b> ... National Ambient Air Quality Standards
<b>CEMS</b> ..... Continuous Emission Monitor System	<b>NESHAPs</b> National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> ..... Code of Federal Regulations	<b>NO<sub>x</sub></b> ..... nitrogen oxides
<b>CO</b> ..... carbon monoxide	<b>NSPS</b> ..... New Source Performance Standards
<b>CO<sub>2</sub></b> ..... carbon dioxide	<b>NSR</b> ..... New Source Review
<b>CO<sub>2</sub>e</b> ..... carbon dioxide equivalent	<b>PM</b> ..... particulate matter
<b>COMS</b> ..... Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> ..... particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> ..... Code of State Regulations	<b>PM<sub>10</sub></b> ..... particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> ..... dry standard cubic feet	<b>ppm</b> ..... parts per million
<b>EQ</b> ..... Emission Inventory Questionnaire	<b>PSD</b> ..... Prevention of Significant Deterioration
<b>EP</b> ..... Emission Point	<b>PTE</b> ..... potential to emit
<b>EPA</b> ..... Environmental Protection Agency	<b>RACT</b> ..... Reasonable Available Control Technology
<b>EU</b> ..... Emission Unit	<b>RAL</b> ..... Risk Assessment Level
<b>fps</b> ..... feet per second	<b>SCC</b> ..... Source Classification Code
<b>ft</b> ..... feet	<b>scfm</b> ..... standard cubic feet per minute
<b>GACT</b> ..... Generally Available Control Technology	<b>SDS</b> ..... Safety Data Sheet
<b>GHG</b> ..... Greenhouse Gas	<b>SIC</b> ..... Standard Industrial Classification
<b>gpm</b> ..... gallons per minute	<b>SIP</b> ..... State Implementation Plan
<b>gr</b> ..... grains	<b>SMAL</b> ..... Screening Model Action Levels
<b>GWP</b> ..... Global Warming Potential	<b>SO<sub>x</sub></b> ..... sulfur oxides
<b>HAP</b> ..... Hazardous Air Pollutant	<b>SO<sub>2</sub></b> ..... sulfur dioxide
<b>hr</b> ..... hour	<b>tph</b> ..... tons per hour
<b>hp</b> ..... horsepower	<b>tpy</b> ..... tons per year
<b>lb</b> ..... pound	<b>VMT</b> ..... vehicle miles traveled
<b>lbs/hr</b> ..... pounds per hour	<b>VOC</b> ..... Volatile Organic Compound
<b>MACT</b> ..... Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> .....micrograms per cubic meter	

Mr. Mark Gencarelli  
Vice President of Operations  
Timberland Forest Products  
3772 Hwy. 160 West  
West Plains, MO 65775

RE: New Source Review Permit - Project Number: 2014-07-033

Dear Mr. Gencarelli:

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 of 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 mail or certified mail, it will be deemed filed on the date it is received by: Administrative Hearing Commission, Truman State Office Building, P.O. Box 1557, Jefferson City, MO 65102, 573-751-2422, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).

If you have any questions please contact Bryce Mihalevich, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:bml

Enclosures

c: Southeast Regional Office  
PAMS File: 2014-07-033  
Permit Number: