

Aemilia Hamel

From: Air.Pollution Control
Sent: Tuesday, 31 May, 2022 12:12
To: APC Permitting
Subject: FW: [EXTERNAL] Facility 26-0217 S&S Firewood application corrections
Attachments: APC 100 Strickland Wood Kiln-signed.pdf; APC 101 Emission Point Strickland (1).pdf; APC 102 Process or Fuel Burning Strickland-signed.pdf; S&S Firewood LLC - Wood Kiln Data (1).xlsx

From: S&S Firewood, LLC <sandsfirewoodllc@gmail.com>
Sent: Tuesday, May 31, 2022 11:48 AM
To: Elizabeth Terranova <Elizabeth.Terranova@tn.gov>; Air.Pollution Control <Air.Pollution.Control@tn.gov>
Subject: [EXTERNAL] Facility 26-0217 S&S Firewood application corrections

***** This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. *****

Good morning,

I am attaching the requested documents that have been adjusted to reflect the corrected information. This is for the construction application for S&S Firewood LLC with corrected APC 101 to address questions asked per the letter dated April 19, 2022. Also, there are a total of four boilers on the property. The three other boilers are not currently in operation, but we are planning to bring one more into operation. We would also like a construction permit for a new source of air emissions so we can apply for that as well prior to use. Please let me know if there is anything else needed to continue.

Thank you,

--



Megan Strickland

S&S Firewood, LLC | Office Manager

phone: 931.691.9191

245 Red Hawk Ln Winchester, TN 37398

w: <https://www.sandsfirewood.com/>

e: sandsfirewoodllc@gmail.com

fb: <https://www.facebook.com/sandsfirewood/>



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor, Nashville, TN 37243
Telephone: (615) 532-0554, Email: Air.Pollution.Control@TN.gov

APC 100

**NON-TITLE V PERMIT APPLICATION
FACILITY IDENTIFICATION**

Type or print and submit. Attach appropriate source description forms.			
SITE INFORMATION			
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] S&S Firewood LLC - 001276137			
2. Site name (if different from legal name) S&S Firewood LLC			
3. Is a construction permit application fee being submitted? Yes <input type="checkbox"/> No <input type="checkbox"/> (see instructions for appropriate fee to submit)			
4. Site address (St./Rd./Hwy.) 245 Red Hawk Lane			County name Franklin
City Winchester		Zip code 37398	5. NAICS or SIC code 321999
6. Site location (in lat. /long.)	Latitude 35.180810	Longitude -86.209170	
CONTACT INFORMATION (RESPONSIBLE PERSON)			
7. Responsible person/Authorized contact James Michael Strickland			Phone number with area code 931-446-6525
Mailing address (St./Rd./Hwy.) 245 Red Hawk Lane			Fax number with area code N/A
City Winchester	State TN	Zip code 37398	Email address mstrickland2208@gmail.com
CONTACT INFORMATION (TECHNICAL)			
8. Principal technical contact Christopher Strickland			Phone number with area code 931-691-9313
Mailing address (St./Rd./Hwy.) 245 Red Hawk Lane			Fax number with area code N/A
City Winchester	State TN	Zip code 37398	Email address sweetandsunnyfarms@gmail.com
CONTACT INFORMATION (BILLING)			
9. Billing contact Megan Strickland			Phone number with area code 931-691-9191
Mailing address (St./Rd./Hwy.) 245 Red Hawk Lane			Fax number with area code N/A
City Winchester	State TN	Zip code 37398	Email address sandsfirewoodllc@gmail.com

AIR CONTAMINANT SOURCE(S) INFORMATION

10. Description of air contaminant source(s) and Unique Source ID(s). List, identify, and briefly describe process emission sources, fuel burning installations, and incinerators that are contained in this application and include a Unique Source ID for each source. The Unique Source ID is a name/number/letter, which uniquely identifies the air contaminant source(s), like Boiler #1, Paint Line #1, Engine #1, etc. (see instructions for more details)

Wood-fired kiln for drying of wood for firewood as a product. Provides radiant heat via hot water radiant piping to buildings for drying wood.

Wood-fired Kiln #1

11. Is the air contaminant source(s) in a nonattainment area? If "Yes", then minor source BACT must be addressed. Yes ☐ No ☒

12. Normal operation:	Hours/Day 9	Days/Week 6	Weeks/Year 50	Days/Year 300
13. Percent annual throughput	Dec. – Feb. 30%	March – May 20%	June – August 20%	Sept. – Nov. 30%

TYPE OF PERMIT REQUESTED (check appropriate box)

14. Operating permit <input type="checkbox"/>	Date construction started	Date completed	Date of ownership change (if applicable)
	Last permit number(s)	Emission Source Reference Number(s)	
Construction permit <input checked="" type="checkbox"/>	Last permit number(s)	Emission Source Reference Number(s)	

If you chose Construction permit above, then choose either New Construction, Modification, or Location Transfer

New Construction <input checked="" type="checkbox"/>	Starting date	Completion date
Modification <input type="checkbox"/>	Date modification started or will start	Date completed or will complete
Location Transfer <input type="checkbox"/>	Transfer date	Address of last location

15. Describe changes that have been made to this equipment or operation(s) since the last construction or operating permit application:

New application. Application being submitted due to request of APC and per complaint investigation. Source emissions as calculated indicate source is an insignificant source of air emissions. However, as it can be considered a wood-fire boiler, 40 CFR 63 Subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers.

16. Comments

Source is used for heating water which is piped into greenhouse style building for providing radiant heat for heat treatment of wood for use as firewood. Firewood and used pallets are burned in the wood-fired kiln. All wood used is pine (listed as white pine per Engineering Toolbox options). Source averages 1/3 rick/day with a maximum of 1/2 rick/day. Due to wood being planned to be used as firewood, size of wood would average 16 inches in length in order to best fit in fireplaces. As such, rick would be considered a face cord and less than the 128 cubic feet of wood within a full cord which is a 4 feet high, 8 feet long, and 4 feet deep stack of wood. A face cord is approximately 1/3 of a full cord.

Emission factors from AP-42 Chapter 1.6 and considered as no controls. Emission calculations indicate source should be considered an insignificant source of air emissions. However, it can be considered a wood-fire boiler, 40 CFR 63 Subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers.

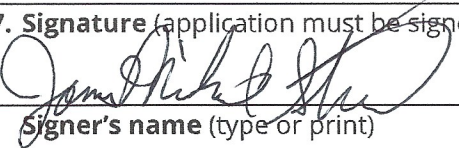
SIGNATURE

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

17. Signature (application must be signed before it will be processed)

Date

04/07/2022


Signer's name (type or print)

Title

Phone number with area code

James Michael Strickland

CEO

931-446-6525



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
William R. Snodgrass Tennessee Tower
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Telephone: (615) 532-0554, Email: Air.Pollution.Control@TN.gov

APC 101

**NON-TITLE V PERMIT APPLICATION
EMISSION POINT DESCRIPTION**

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.					
GENERAL IDENTIFICATION AND DESCRIPTION					
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] S&S Firewood LLC - 001276137					
2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) Wood-fired Kiln #1					
3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) Wood-fired Kiln #1					
4. Brief description of air contaminant source (Attach a diagram if appropriate): Wood-fired kiln for drying of wood for firewood as a product. Provides radiant heat via hot water radiant piping to buildings for drying wood.					
5. Emission point location	Latitude 35.180810	Longitude -86.209170	6. Distance to nearest property line (Ft.) 70 ft.		
STACK AND EMISSION DATA					
7. Stack or emission point data: →	Height above grade (Ft.) 35 ft	Diameter (Ft.) 1 ft	Temperature (°F) ~600	% of time over 125°F 35%	Direction of exit (Up, down or horizontal) Up
Data at exit conditions: →	Flow (actual Ft. ³ /Min.) 1739 CFM	Velocity (Ft. /Sec.) 9.226	Moisture (Grains/Ft. ³) ambient		Moisture (Percent) ambient
Data at standard conditions: →	Flow (Dry std. Ft. ³ /Min.)	Velocity (Ft. /Sec.)	Moisture (Grains/Ft. ³)		Moisture (Percent)
8. Monitoring device and recording instrument (check all that apply):					
Opacity monitor <input type="checkbox"/>	SO ₂ monitor <input type="checkbox"/>	NO _x monitor <input type="checkbox"/>	Strip chart <input type="checkbox"/>	Electronic data logger <input type="checkbox"/>	Other (specify in comments) <input type="checkbox"/>
					No monitor (none) <input checked="" type="checkbox"/>
9. Control device. Description of proposed monitoring, recordkeeping, and reporting to assure compliance with emission limits. Include operating parameters of control device (flow rate, temperature, pressure drop, etc.). Currently just monitoring the heat of water inside the boiler with thermocouples and probes, as well as within the aquastat on the boiler itself.					

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concentration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Efficiency %
Particulate matter (PM)	0.1342	0.20	**	0.18	0.89	3		
Sulfur dioxide (SO ₂)	0.0084	0.01	***	0.01	0.06	3		
Carbon monoxide (CO)	0.2013	0.31	PPM	0.27	1.34	3		
Volatile organic compounds (VOC)	0.0057	0.01	PPM	0.01	0.04	3		
Nitrogen oxides (NO _x)	0.1644	0.25	PPM	0.22	1.09	3		
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify) Formaldehyde	0.0015	0.0022		0.0020	0.0098	3		
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

11. Comments

Source is used for heating water which is piped into greenhouse style building for providing radiant heat for heat treatment of wood for use as firewood. Firewood and used pallets are burned in the wood-fired kiln. All wood used is pine (listed as white pine per Engineering Toolbox options). Source averages 1/3 rick/day with a maximum of 1/2 rick/day. Due to wood being planned to be used as firewood, size of wood would average 16 inches in length in order to best fit in fireplaces. As such, rick would be considered a face cord and less than the 128 cubic feet of wood within a full cord which is a 4 feet high, 8 feet long, and 4 feet deep stack of wood. A face cord is approximately 1/3 of a full cord.

Emission factors from AP-42 Chapter 1.6 and considered as no controls. Emission calculations indicate source should be considered an insignificant source of air emissions. However, it can be considered a wood-fire boiler, 40 CFR 63 Subpart JJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers.

SIGNATURE

If this form is being submitted at the same time as an APC 100 form, then a signature is not required on this form. Date this form regardless of whether a signature is provided. If this form is NOT being submitted at the same time as an APC 100 form, then a signature is required.

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

12. Signature**Date**

05/31/2022

Signer's name (type or print)

James Michael Strickland

Title

CEO

Phone number with area code

931-446-6525

- * Refer to the tables in the instructions for estimation method and control device codes.
- ** Exit gas particulate matter concentration units: Process – Grains/Dry Standard Ft³ (70°F), Wood fired boilers - Grains/Dry Standard Ft³ (70°F), all other boilers – Lbs. /Million BTU heat input.
- *** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input



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APC 102

**NON-TITLE V PERMIT APPLICATION
 PROCESS OR FUEL BURNING SOURCE DESCRIPTION**

Type or print. Submit with the APC 100.			
GENERAL IDENTIFICATION AND DESCRIPTION			
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] S&S Firewood LLC - 001276137			2. Emission Source Reference Number
3. Is this air contaminant source subject to an NSPS or NESHAP rule? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If Yes, list rule citation, including Part, Subpart, and applicable Sections: 40 CFR 63 Subpart JJJJJJ NESHAP for Industrial, Commercial, and Institutional Boilers			
4. Unique Source ID (see instructions) Wood-fired Kiln #1		5. Unique Emission Point ID (see instructions) Wood-fired Kiln #1	
6. Description of air contaminant source Wood-fired kiln for drying of wood for firewood as a product. Provides radiant heat via hot water radiant piping to buildings for drying wood.			
7. Type of air contaminant source (Check only one option to the right)			
Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14)			<input type="checkbox"/>
Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14)			<input type="checkbox"/>
Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 10 through 14)			<input checked="" type="checkbox"/>
PROCESS EMISSION SOURCE DESCRIPTION AND DATA			
8. Type of operation: Continuous <input type="checkbox"/> Batch <input checked="" type="checkbox"/>		Normal batch time 72 hours	Normal batches/day 1 per every 3 days
9. Process material inputs and In-process solid fuels	Diagram reference	Input rates (pounds/hour)	
		Design	Actual
A. Wood			
B.			
C.			
D.			
E.			
F.			
G.			
Totals			

* A simple process flow diagram must be attached.

DESCRIPTION OF BOILER, BURNER, ENGINE, OR OTHER FUEL BURNING SOURCE							
10. Boiler or burner data: (Complete lines 10 through 14 using a separate form for each boiler, burner, etc.)							
Serial Number 620037				Type of firing*** wood (has to be started by someone manually)			
Rated horsepower N/A		Rated input capacity (10 ⁶ BTU/Hr.) 0.51 MMBTU/hr.		Other rating (specify capacity and units) N/A			
Date constructed set in place where currently 01/01/2022		Date manufactured N/A		Date of last modification (explain in comments below) added longer stack 03/22/2022			
** Source with a common stack will have the same stack number. *** Cyclone, spreader (with or without reinjection), pulverized (wet or dry bottom, with or without reinjection), other stoker (specify type, hand fired, automatic, or other type (describe below in comments)).							
FUEL USED IN BOILER, BURNER, ENGINE, OR OTHER FUEL BURNING SOURCE							
11. Fuel data: (Complete for a process emission source with in process fuel or a non-process fuel burning source)							
Primary fuel type (specify) Wood				Standby fuel type(s) (specify)			
Fuels used	Annual usage	Hourly usage		% Sulfur	% Ash	BTU value of fuel	(For APC use only) SCC code
		Design	Average				
Natural gas:	10 ⁶ Cu. Ft.	Cu. Ft.	Cu. Ft.	//////// ////////	//// ////	1,000	
#2 Fuel oil:	10 ³ Gal.	Gal.	Gal.		//// ////		
#5 Fuel oil:	10 ³ Gal.	Gal.	Gal.		//// ////		
#6 Fuel oil:	10 ³ Gal.	Gal.	Gal.		//// ////		
Coal:	Tons	Lbs.	Lbs.				
Wood:	Tons 638.55	Lbs. 79.63	Lbs. 52.56	//////// ////////	//// ////	6383/lb	
Liquid propane:	10 ³ Gal.	Gal.	Gal.	//////// ////////	//// ////	85,000	
Other (specify type & units):							
12. If Wood is used as a fuel, specify types and estimate percent by weight of bark 0% bark							
13. If Wood is used with other fuels, specify percent by weight of wood charged to the burner.							

14. Comments

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James Michael Strickland

Title

CEO

Phone number with area code

931-446-6525

Hours of operation	9.00 Hours/Day	Facility operates 10 hours/day, Boilers are run 24 hours/day. Boilers are interchangeably run in low fire hold, rotating on a monthly basis.
Hour of operation	2700.00 hours/year	Facility operates 6 days/week, 50 weeks/year
Avg. Rate of fuel consumption:	0.33 Rick/day	Max wood is 1/2 rick/day. Avg is 1/3 (ranges from 1/2 to 1/4 rick/day)
Rick to Cord conversion	0.33 cord per rick	A cord is 128 cubic feet of wood, usually 4 feet x 8 feet x 4 feet. A rick is usually 4 feet x 8 feet, but often only 16 inches deep so as to fit into a fireplace.
Avg. Rate of fuel consumption:	0.11 cord/day	
Avg. Rate of fuel consumption:	0.24 Ton/Day	Pine weighs 2.15 tons/cord.
Avg. Rate of fuel consumption:	0.03 Ton/hour	
Total yearly fuel usage:	638.55 tons of wood/year	
Wood Heating value	0.0064 MMBTU/lb.	Calculated with values from https://www.engineeringtoolbox.com/wood-combustion-heat-d_372.html
Boiler rating	hp	
Boiler rating	0.51 MMBTU/hr.	
Wood loss usage	0.04 tons/hr.	Based on amount used and weight of pine/cord (https://www.revenue.nh.gov/mun-prop/property/documents/timber-conversion-formulas.pdf)
Max is logs or used pallets, no bark with a 8% moisture content. This is considered dry wood. Wood is Pine		

Emissions (factors from AP-42 1.6 Wood Residue Combustion. Dry wood, no controls)

Hazardous Air Pollutants

[illegible]