CTI CONVERSION TECHNOLOGY INC.
Environmental & Safety Consulting Engineers

Your partner in compliance since 1986

January 12, 2022

Mr. Jaricus Whitlock
Mississippi Dept. of Environmental Quality
P.O. Box 2261
Jackson, MS 39225

RE: PSD PERMIT APPLICATION
INTERFOR U.S. INC. – BAY SPRINGS SAWMILL
PERMIT NUMBER 1300-00019

Dear Mr. Whitlock:

Please find enclosed a copy of a PSD Permit Application for the Interfor U.S. Inc. facility located in Bay Springs, MS. The permit application proposes to modify the existing batch Kiln No. 1 (AB-002) to a new direct-fired continuous dry kiln (CDK). The CDK will have a potential drying capacity of 120 MMBF/yr with a 35 MMBtu/hr burner. The facility proposes to increase the facility-wide production limit to 232 MMBF/yr. No modifications are being made to existing Kiln No. 3 (AB-004).

Net emission increases for VOCs for this project exceed the 40 tpy Significant Emission Rate (SER) threshold. A PSD review is required for VOCs for proposed CDK No. 1. Emission increases for all other pollutants are below their respective SER thresholds.

If you have any questions or comments, please do not hesitate to contact me at (770) 500-5370 or by email at pscarborough@conversiontechnology.com.

Sincerely,

T. Parker Scarborough
Project Engineer

Enclosures: One PSD Permit Application

Z:\IFP.BMS\AP21\3. Permit Application\IFP.BMS_AP21_MDEQ_LTR.docx;PS

PSD PERMIT APPLICATION

Prepared for:

INTERFOR U.S. INC. – BAY SPRINGS SAWMILL

71 Georgia Pacific Road
Bay Springs, MS 39422
(601) 967-8300

Prepared for submittal to:

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Office of Pollution Control Air Division
515 East Amite Street
Jackson, MS 39201

Prepared in:
DECEMBER 2021

Prepared by:

Conversion Technology Inc.

2190 N. Norcross Tucker Rd., Suite 202
Norcross, Georgia 30071
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conversiontechnology.com

Environmental and Safety Consulting Engineers

SECTION **PERMIT APPLICATION FORMS**

SECTION **PROCESS AND FACILITY DESCRIPTION**

SECTION **EMISSION CALCULATIONS**

SECTION **REGULATORY REVIEW**

SECTION **AIR QUALITY MODELING ANALYSIS**

SECTION **BACT ANALYSIS**

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SECTION 1

PERMIT APPLICATION FORMS

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

1. Name, Address, and Location of Facility

A. Owner/Company Name: Interfor U.S. Inc.

B. Facility Name *(if different than A. above)*: Bay Springs Sawmill

C. Facility Air Permit No. *(if known)*: 1300-00019

D. Agency Interest No. *(if known)*: 838

E. Physical Address
1. Street Address: 71 Georgia Pacific Road
2. City: Bay Springs
3. State: MS
4. County: Jasper
5. Zip Code: 39422
6. Telephone No.: 601-967-8300
7. Fax No.:

F. Mailing Address *(if different from physical address)*
1. Street Address or P.O. Box: P.O. Box 570
2. City: Bay Springs
3. State: MS
4. Zip Code: 39422

G. Latitude/Longitude Data
1. Collection Point *(check one)*:
☒ Plant Entrance ☐ Other:
2. Method of Collection *(check one)*:
☐ GPS Specify coordinate system (NAD 83, etc.)
☒ Map Interpolation (Google Earth, etc.) ☐ Other:
3. Latitude *(degrees/minutes/seconds)*: 31 57’ 29” N
4. Longitude *(degrees/minutes/seconds)*: 89 16’ 59” W
5. Elevation: 400 feet

H. SIC/NAICS Codes *(primary code listed first)*
SIC: 2421
NAICS: 321113
(NAICS Code should correspond with the SIC Code directly above.)

2. Name and Address of Facility Contact

A. Name: Rob Oehrli Title: Mill Manager

B. Mailing Address
1. Street Address or P.O. Box: P.O. Box 570
2. City: Bay Springs
3. State: MS
4. Zip Code: 39422
5. Email: Rob.oehrli@interfor.com

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT
Facility (Agency Interest) Information		**Section A**
6. Telephone No.: 601-397-5285		7. Fax No.:

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

3. Name and Address of Air Contact *(if different from Facility Contact)*

A. Name: _____ Title: _____

B. Mailing Address

1. Street Address or P.O. Box: _____
2. City: _____ 3. State: _____
4. Zip Code: _____ 5. Email: _____
6. Telephone No.: _____ 7. Fax No.: _____

4. Name and Address of the Responsible Official for the Facility

The Responsible Official is defined as one of the following:

a. For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated in accordance with corporate procedures.

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

c. For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For purposes of these regulations, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA). A principal executive officer of a military facility includes the facility commander, chief executive officer, or any other similar person who performs similar policy or decision-making functions for the institution.

A. Name: Nick Ausman Title: Vice President, Southern Operations

B. Mailing Address

1. Street Address or P.O. Box: P.O. Box 570
2. City: Bay Springs 3. State: MS
4. Zip Code: 39422 5. Email: Nick.Ausman@interfor.com
6. Telephone No.: 470-225-0061 7. Fax No.: _____

C. Is the person above a duly authorized representative and not a corporate officer? ☐ Yes ☒ No

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

If yes, has written notification of such authorization been submitted to MDEQ?

☐ Yes ☐ No ☐ Request for authorization is attached

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

5. Type of Permit Application *(Check all that apply)*

State Permit to Construct (i.e., non-PSD or PSD avoidance)

☐ Initial Application ☐ Modification

New Source Review (NSR) Permit to Construct (includes both Prevention of Significant Deterioration (PSD) and Nonattainment)

☐ Initial Application ☒ Modification

Title V Operating Permit

☐ Initial Application

☐ Re-issuance: *Are any modifications to the permit/facility being requested?* ☐ Yes ☐ No
(If yes, provide a separate sheet identifying the modification(s) and resulting change to emissions.)

☒ Modification (*Specify type):* ☒ Significant ☐ Minor ☐ Administrative

Synthetic Minor Operating Permit *(Appendix B must be completed and attached.)*

☐ Initial Application

☐ Re-issuance: *Are any modifications to the permit/facility being requested? If yes, address such on a separate sheet.* ☐ Yes ☐ No

☐ Modification

State Permit to Operate a Significant Minor Source *(defined in 11 Miss. Admin. Code Pt. 2, R.2.1.C(25).)*

☐ Initial Application

☐ Re-issuance: *Are any modifications to the permit/facility being requested? If yes, address such on a separate sheet.* ☐ Yes ☐ No

☐ Modification

True Minor Determination

☐ Uncontrolled potential to emit air pollutants is below the Title V thresholds

6. Process/Product Details

A. List Significant Raw Materials *(if applicable)*:
Southern Yellow Pine

B. List All Products *(if applicable)*: Dimensional Lumber

C. Brief Description of Principal Process(es):
Logs are debarked, cut into dimensional pieces, kiln-dried, planed, and shipped.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

6. Process/Product Details (continued)

D. Maximum Throughput for Raw Material(s) *(if applicable)*:

Raw Material	Throughput	Units
Southern Yellow Pine	1,005,266	Tons

E. Maximum Throughput for Principal Product(s) *(if applicable)*:

Product	Throughput	Units
Dimensional Lumber	232	MMBf/yr

7. Facility Operating Information

A. Number of employees at the facility: 135

		Average Actual	Maximum Potential
B.	Hours per day the facility will operate:	24	24
C.	Days per week the facility will operate:	7	7
D.	Weeks per year the facility will operate:	52	52
E.	Months the facility will operate:	12	12

8. Maps

A. Attach a topographical map of the area extending to at least ½ mile beyond the property boundaries. The map must show the outline of the property boundaries.

B. Attach a site map/diagram showing the outline of the property, an outline of all buildings and roadways on the site, and the location of each significant air emission source.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

9. Zoning

A. Is the facility (either existing or proposed) located in accordance with any applicable city and/or county zoning ordinances? If no, please explain.
Yes

B. Is the facility (either existing or proposed) required to obtain any zoning variance to locate/expand the facility at this site? If yes, please explain.
No

10. Risk Management Plan

A. Is the facility required to develop and register a risk management plan pursuant to Section 112(r), regulated under 40 CFR Part 68? ☐ Yes ☒ No

B. If yes, to whom was the plan submitted? _____
Date submitted: _____

11. *Is confidential information being submitted with this application?* ☐ Yes ☒ No

If so, please follow the procedures outlined in the Mississippi Code Ann. Sections 49-17-39 and 17-17-27(6), as outlined in MCEQ-2 – "Regulation regarding the review and reproduction of public records".

12. MS Secretary of State Registration / Certificate of Good Standing

No permit will be issued to a company that is not authorized to conduct business in Mississippi. If the company applying for the permit is a corporation, limited liability company, a partnership or a business trust, the application package should include proof of registration with the Mississippi Secretary of State and/or a copy of the company's Certificate of Good Standing. The name listed on the permit will include the company name as it is registered with the Mississippi Secretary of State.

It should be noted that for an application submitted in accordance with 11 Miss. Admin. Code Pt. 2, R. 2.8.B. to renew a State Permit to Operate or in accordance with 11 Miss. Admin. Code Pt. 2, R. 6.2.A(1)(c). to renew a Title V Permit to be considered timely and complete, the applicant shall be registered and in good standing with the Mississippi Secretary of State to conduct business in Mississippi.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

13. Certification

Note: If approved by MDEQ, a duly authorized representative (DAR) may sign the air permit application. The DAR must be listed in Section 4 of this application.

I certify that to the best of my knowledge and belief formed after reasonable inquiry, the statements and information in this application are true, complete, and accurate, and that as a responsible official, my signature shall constitute an agreement that the applicant assumes the responsibility for any alteration, additions, or changes in operation that may be necessary to achieve and maintain compliance with all applicable Rules and Regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Nick Ausman
Signature of Responsible Official/DAR

01/12/2022
Date

Nick Ausman
Printed Name

VP of Southern Operations
Title

Section B.0: Emission Point Descriptions & Status

This form should list all the of the Emission Points and descriptions as proposed or as otherwise identified in an existing permit. This worksheet should be updated to reflect changes to the Status of the emission points over time. Emission Point ID's should match those assigned in the current MDEQ permit. Facility ID is optional. For proposed emission points, the facility should leave the Emission Point ID blank but may complete the Facility ID (if any). Under "Status," for Emission Points that are proposed or under construction but not yet operating, indicate their status as "Proposed." For emissions points already operating or for which construction has been certified complete, indicate their status as "Operating." Include all control devices for each emission point and the pollutant(s) the device controls. Control devices may be specified in general terms (e.g., baghouse, catalytic oxidizer, fabric filter, wet ESP, etc.). When an Emission Point is removed, indicate so by changing the "Status" to "Removed." Remove the emissions on the subsequent worksheets or indicate they are removed with a "-" for all pollutants.

Emission Point ID	Facility ID	Description	Status	Control Device	Controlled Pollutant(s)	Control Device	Controlled Pollutant(s)	Control Device	Controlled Pollutant(s)
AB-001		Dimensional Lumber Sawmill	Operating						
AB-002		No. 1 Continous Dry Kiln	Proposed						
AB-004		No. 3 Continuous Dry Kiln	Operating						
AB-005		Planer Mill	Operating	Cyclone	PM				
AB-006		Roads	Operating						
AB-007		Firewater Emergency Diesel Engine	Operating						
AB-009		Shavings Truck Loading with a Cyclone	Operating	Cyclone	PM				
AB-010		Sawdust Fuel Silo Cyclone	Operating	Cyclone	PM				
FS-001		North and South Bucking Line and Crook Saws	Operating						
FS-002		North and South Ring Debarker	Operating						
FS-003		Bark Hog and Screen and Truck Bark Bin	Operating						
FS-004		Lillypad and Block Chipper	Operating						
FS-005		Chipper	Operating						
FS-006		Shaker Screen	Operating						
FS-007		Truck Chip Bin and Railcar Loading	Operating						
FS-008		Sawdust Truck Bin	Operating						
FS-009		Planer Mill Truck Bin	Operating						

Section B.1: Maximum Uncontrolled Emissions (under normal operating conditions)

Maximum Uncontrolled Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless operating capacity and/or hours of operation are specifically limited in an enforceable permit. (Existing limits on operating conditions, not emissions or use of a control device, may be used when determining uncontrolled emissions.) Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Emissions ≥ 0.01 ton/yr from a specific emission unit must be included. Please do not change the column widths on this table.

Emission	TSP[1] (PM)		PM-10[1]		PM-2.5[1]		SO_2		NOx		CO		VOC		TRS[2]		Lead		Total HAPs	
Point ID	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AB-001	9.901	34.18	3.730	12.88	1.881	6.494														
AB-002 AB-004	2.410	10.56	3.893	17.05	2.887	12.64	0.7700	3.373	7.000	30.66	36.40	159.4	145.4	636.8			6.38E-03	2.79E-02	6.915	30.29
AB-005	4.293	16.10	4.293	16.10	2.560	9.600														
AB-006	9.409	32.48	2.016	6.960	0.2218	0.7656														
AB-009	0.2057	0.7714	0.2263	0.8486	8.23E-02	0.3086														
AB-010	0.4517	1.694	0.4969	1.863	0.1807	0.6776														
FS-001	0.1456	0.5026	5.24E-02	0.1809	2.77E-02	9.55E-02														
FS-002	2.912	10.05	1.602	5.529	0.5533	1.910														
FS-003	0.2510	0.8664	0.1380	0.4764	4.76E-02	0.1644														
FS-004	2.91E-02	0.1005	1.60E-02	5.53E-02	5.53E-03	1.91E-02														
FS-005	5.24E-02	0.1809	2.88E-02	9.95E-02	9.96E-03	3.44E-02														
FS-006	0.8008	2.764	0.4405	1.520	0.1522	0.5253														
FS-007	1.69E-03	5.85E-03	8.01E-04	2.76E-03	1.21E-04	4.19E-04														
FS-008	1.20E-03	4.16E-03	5.70E-04	1.97E-03	8.62E-05	2.98E-04														
FS-009	1.48E-03	5.54E-03	6.99E-04	2.62E-03	1.06E-04	3.97E-04														
Totals	30.87	110.3	16.93	63.57	8.609	33.24	0.7700	3.373	7.000	30.66	36.40	159.4	145.4	636.8	0.00	0.00	6.38E-03	2.79E-02	6.915	30.29

[1] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

[2] **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide (H_2S), methyl mercaptan (CH_4S), dimethyl sulfide (C_2H_6S), and dimethyl disulfide ($C_2H_6S_2$).

Section B.2: Proposed Allowable Emissions

Proposed Allowable Emissions (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Emissions ≥ 0.01 ton/yr from a specific emission unit must be included. Additional columns may be added if there are regulated pollutants (other than HAPs and GHGs) emitted at the facility. List HAPs in Section B.3 and GHGs in Section B.4 (if applicable).

Emission Point ID	TSP[1]		PM10[1]		PM2.5[1]		SO_2		NOx		CO		VOC		TRS		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AB-001	0.9901	3.418	0.3730	1.288	0.1881	0.6494												
AB-002 AB-004	2.410	10.56	3.893	17.05	2.887	12.64	0.770	3.373	7.000	30.66	36.40	159.4	145.4	636.8			6.38E-03	0.028
AB-005	4.293	16.10	4.293	16.10	2.560	9.600												
AB-006	9.409	32.48	2.016	6.960	0.2218	0.7656												
AB-009	0.2057	0.7714	0.2263	0.8486	8.23E-02	0.3086												
AB-010	0.4517	1.694	0.4969	1.863	0.1807	0.6776												
FS-001	0.1456	0.5026	5.24E-02	0.1809	2.77E-02	9.55E-02												
FS-002	2.912	10.05	1.602	5.529	0.5533	1.910												
FS-003	0.2510	0.8664	0.1380	0.4764	4.76E-02	0.1644												
FS-004	2.91E-02	0.1005	1.60E-02	5.53E-02	5.53E-03	1.91E-02												
FS-005	5.24E-02	0.1809	2.88E-02	0.0995	9.96E-03	3.44E-02												
FS-006	0.4004	1.382	0.2202	0.7602	7.61E-02	0.2626												
FS-007	1.69E-03	5.85E-03	8.01E-04	2.76E-03	1.21E-04	4.19E-04												
FS-008	1.20E-03	4.16E-03	5.70E-04	1.97E-03	8.62E-05	2.98E-04												
FS-009	1.48E-03	5.54E-03	6.99E-04	2.62E-03	1.06E-04	3.97E-04												
Totals	21.55	78.12	13.36	51.22	6.840	27.13	0.7700	3.373	7.000	30.66	36.40	159.4	145.4	636.8	0.00	0.00	6.38E-03	2.79E-02

[1] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

[2] **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide (H_2S), methyl mercaptan (CH_4S), dimethyl sulfide (C_2H_6S), and dimethyl disulfide ($C_2H_6S_2$).

Section B.3: Proposed Allowable Hazardous Air Pollutants (HAPs)

Proposed Allowable HAPs (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Select an inidividual HAP from the dropdown list provided. **Emissions ≥ 0.01 ton/yr of an indiviudal HAP from a specific emission unit must be provided.** Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or are below the reporting threshold. Select the appropriate HAP from the drop down menu in the header cell of the given column in the table below. Additional columns may be added as necessary to address each HAP.

Emission Point ID	Total HAPs		Acetaldehyde		Acrolein		Formaldehyde		Hexane		Methanol		Phenol		Choose Pollutant Name from Drop Down Menu		Choose Pollutant Name from Drop Down Menu	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AB-002 AB-004	6.915	30.29	1.192	5.220	0.1589	0.6960	1.022	4.478	5.15E-03	2.25E-02	4.264	18.68	0.2728	1.195				
Totals:	6.915	30.29	1.192	5.220	0.1589	0.6960	1.022	4.478	5.15E-03	2.25E-02	4.264	18.680	0.2728	1.195				

Section B.4: Greenhouse Gas (GHG) Emissions

This form is required for facilities that have or will require a Title V Operating Permit and for all industries in the energy and oil and gas sectors (i.e., SIC codes beginning with 13, 29, 46, and 49). Proposed Allowable GHGs (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard; or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Applicants must report potential emission rates in SHORT TONS per year, as opposed to metric tons required by Part 98. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Only those emission points with emissions of greenhouse gases are required to be provided on this form.

		CO_2 (non-biogenic) ton/yr	CO_2 (biogenic)[2] ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC[3] ton/yr				Total GHG Mass Basis ton/yr[5]	Total CO_2e ton/yr[6]
Emission Point ID	**GWPs [1]**	**1**	**1**	**298**	**25**	**22,800**	**footnote 4**					
AB-002	**mass GHG**		31,701	2.433	4.867						31,709	
AB-004	**CO_2e**											64,250
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
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	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
FACILITY	**mass GHG**		31,701	2.433	4.867						31,709	
TOTAL	**CO_2e**											64,250

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] Biogenic CO2 is defined as carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms.

[3] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[4] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[5] Greenhouse gas emissions on a **mass basis** is the ton per year greenhouse gas emission before adjustment with its GWP. Include both biogenic and non-biogenic GHG in this total.

Section B.5: Stack Parameters and Exit Conditions

Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit.

Emission Point ID	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Base Elevation (ft)	Exit Temp. (^{o}F)	Inside Diameter or Dimensions (ft)	Velocity (ft/sec)	Moisture by Volume (%)	Geographic Position (degrees/minutes/seconds)	
									Latitude	Longitude
AB-002	V	No	36.5	400	230	-	41.77	-	31/57/22.4N	89/17/6.3W

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AB-002

B. Process Description: Direct fired continous lumber drying kiln. The kiln dries rough sawn lumber. The kiln has a sawdust gasifier and natural gas burner.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 120 MMBf/yr total
Equivalent to: _____ tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: June 2022

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANITITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Green Lumber	TBD	13.7 MBF	120 MMBf/yr

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANITITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Dry Lumber	TBD	13.7 MBF	120 MMBf/yr

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Recordkeeping — Section M8

1. Applicable Emission Point Description

A. Emission Point Designation (Ref. No.): AB-002

B. Emission Point Description: Continous Dry Kiln No. 1

C. For what emission limit or standard does the recordkeeping demonstrate compliance?
Opacity shall be less than 40%, record monthly lumber drying and 12-month rolling total, develop and implement a maintenance/inspection plan.

D. Is there an applicable underlying requirement for the recordkeeping?
☒ Yes ☐ No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…, etc.)?
11 Miss. Admin. Code pt. 2, R. 1.3B, 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)

2. Recordkeeping Information

A. Data/information recorded:

Parameter/Material	Units	Recordkeeping Frequency	Sampling and analysis method (e.g., EPA Method 24)
Visible Emissions	% Opacity	Weekly	Visual Observation
Lumber Drying	BF	Monthly	Recordkeeping
Good Work Practice	N/A	Multiple	Maintenance Log

B. Compliance is determined…:

☐ Daily ☐ Weekly ☐ Monthly

☒ Other: Semiannually

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Applicable Requirements and Status — Section N

1. Summary of Applicable Requirements

Provide a list of all applicable federal standards for which your facility is or will be subject to, as well as a list of all Construction Permits establishing limits or restrictions issued to your facility. The specific emission standards and limitations applicable to each emission point shall be provided on the following pages (Parts 2 and 3).

Federal Regulations:

40 CFR Part	63	Subpart	DDDD
	63		ZZZZ
	60		IIII

State Construction Permits[1]:

	MM/DD/YY[2]	PSD	PSD Avoidance[3]	Other
Permit to Construct issued:		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

[1] Any Construction Permits containing requirements that are currently applicable to the facility should be addressed in this section.
[2] If the permit has been modified, give the most recent modification date.
[3] Because permits are issued on a pollutant-by-pollutant basis, a PSD permit may be significant for one pollutant while also containing PSD avoidance limits for another pollutant. Therefore, you may check multiple boxes for each permit.

Applicable Requirements and Status — Section N

2. Current Applicable Requirements

List all applicable state and federal requirements to the level of detail needed to identify each applicable emission standard and/or work practice standard and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Applicable provisions from any relevant Permit to Construct shall also be listed. Provide the compliance status as of the day the application is signed.

EMISSION POINT NO.	APPLICABLE REQUIREMENT (Regulatory citation)	POLLUTANT	LIMITS/ REQUIREMENTS	TEST METHOD/ COMPLIANCE MONITORING	COMPLIANCE STATUS (In/Out)[1,2]
AB-002	11 Miss. Admin. Code Pt. 2, R. 1.3A or B	Opacity	40%	Weekly visible observations	In
AB-002	NESHAP Subpart DDDD, 40 CFR 63.2231	HAP	Applicability	Initial Notification	In
AB-002	11 Miss. Admin. Code Pt. 2, R. 2.2B(10)	Fuel Limitation	Only natural gas and uncontaminated wood waste may be burned as fuel	Monitoring and Recordkeeping	In

[1] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

[2] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(c).

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Applicable Requirements and Status — Section N

3. Future Applicable Requirements

List all future applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring to be used to demonstrate compliance with each applicable requirement. Applicable provisions from any Permit to Construct for which certification of construction has not yet been submitted shall also be listed.

EMISSION POINT NO.	FUTURE APPLICABLE REQUIREMENT (Regulation citation)	POLLUTANT	LIMITS/ REQUIREMENTS	TEST METHOD/ COMPLIANCE MONITORING	COMPLIANCE DATE[1]

[1] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(2). for Title V sources, I (the applicant) am certifying that I will meet future applicable requirements which will become effective during the permit term on a timely basis.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Air Quality Analysis Checklist — Appendix C

SUBMIT	
Yes	N/A

Note: Appendix C must be completed and included with the application for a Prevention of Significant Deterioration (PSD) Permit to Construct. All elements of the checklist should be addressed. See the Application Instructions for further information.

Yes	N/A	
☒	☐	**I. Applicant and Consultant Information** a. Name, address, and location of facility b. Facility Air Permit Number c. Facility contact name and phone number d. Modeling contact name, phone number, and e-mail address
☒	☐	**II. Description of Facility Operations** *A brief description of each process to be carried out in the facility and the function of the equipment used in the process. The descriptions must be complete and particular attention must be given to explaining all stages in the process where the discharge of any materials might contribute in any way to air pollution. Control procedures must be described in sufficient detail to show the extent of control of air contaminants anticipated in the design, specifying the expected efficiencies of the capture systems and the control devices. All obtainable data must be supplied concerning the nature, volumes, particle size, weights, chemical composition and concentrations of all types of air contaminants.*
☒	☐	**III. Project Description** *A written description of the proposed project to include, but not limited to, a description of the project purpose and scope, general geographical location, types of emission sources and scenarios, pollutants evaluated, applicable averaging periods, and any special considerations (e.g., startup and shutdown operations, varying operational loads, operating restrictions, alternative operating scenarios) that will be included in the compliance demonstration modeling.*
☐	☒	**IV. Modeling Protocol** *Prior to submitting the PSD application and prior to performing any significant air dispersion modeling, the applicant is required to submit a modeling protocol to MDEQ for review. Upon review, the applicant will receive notification of acceptance of the modeling approach as well as guidance on any outstanding issues. Please be advised, an approved modeling protocol does not necessarily limit the extent of the modeling that will be required to demonstrate compliance with the applicable standards.* **Submittal Date: N/A, VOC only** **Approval Date: N/A, VOC only**

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Air Quality Analysis Checklist — Appendix C

SUBMIT		
Yes	N/A	
☐	☒	**V. Model Selection**

The Preferred/Recommended dispersion models are listed in 40 CFR 51Appendix W and are required to be used. All air quality analyses should be performed using the most currently available versions of EPA guideline models. Access to all current models is possible through the EPA Web Page http://www.epa.gov/scram/.

a. Discuss the general modeling approach (e.g., project impacts vs. cumulative impacts) and highlight any unique items.
b. Identify the dispersion model(s), including the version number that was used in the modeling analysis.
c. Discuss modeling options used and why they were considered appropriate for the proposed project.
d. List the time-averaged pollutants modeled.
e. Discuss any other modeling parameters or considerations used in the modeling analysis.

Alternative Model or Modeling Technique
Any deviation from an EPA preferred air quality model or development of an alternative modeling technique is subject to the alternative modeling requirements of Appendix W – Guideline on Air Quality Models, Section 3.2. Appropriate justification for the proposed alternative model or modeling technique must be provided to the EPA Regional Office for consideration and approval with concurrence of the EPA Model Clearinghouse.

☐	☒	**VI. Meteorological Data**

The meteorological data should be the most recent available and adequately representative. It may be site-specific data, data from a nearby National Weather Service (NWS) or comparable station, or prognostic meteorological data.

The use of five (5) years of adequately representative NWS or comparable meteorological data, at least one (1) year of site-specific data, or at least three (3) years of prognostic meteorological data are required. If one (1) year or more (up to 5 years) of site-specific data are available, these data are preferred for use in air quality analyses, provided that the data meets quality-assurance requirements. The submittal must include a discussion of meteorological site representation based on recommendations in Appendix W, Guideline on Air Quality Models, Section 8.4.2(b).

☐	☒	**VII. Receptor and Terrain Discussion**

Receptor grids may be polar, cartesian, or discrete with receptor placement along the property boundary of the land owned or controlled by the facility and precluded from access by the general public through physical barriers or other measures and extending sufficiently outward to identify the maximum impacts from both the onsite and offsite emission sources for each pollutant and pollutant averaging periods evaluated. Receptor resolution may vary; however, receptors near the facility fenceline and in the area of controlling concentrations must be no greater than 100-meters. Controlling concentrations are those receptors that indicate a predicted concentration greater than 90% of an applicable standard.

The most recent version of AERMAP should be used to import terrain and source elevations.

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Air Quality Analysis Checklist — Appendix C

SUBMIT Yes	SUBMIT N/A	
☐	☒	**VIII. Emission Source Information**

Tables are required for identifying all baseline and increment sources used in the modeling, including all applicable stack parameters (UTM coordinate locations, emission rate, stack height, exit velocity, exit temperature and inner diameter), area source parameters (emission rate, southwest coordinates, height, width), and volume source parameters (emission rate, center coordinates, height, horizontal and vertical dimensions).

a. Identify all emission units included in the modeling analysis. Provide a listing of the identifiers assigned to these sources for modeling purposes.

b. Identify maximum potential short-term emission rates for all modeled pollutants in lb/hr and the associated g/sec emission rate. The maximum short-term emission rates for each source should be used to demonstrate compliance with all short-term averaging standards and guidelines.

c. Identify maximum potential long-term emission rates for all modeled pollutants in ton/yr and the associated g/sec emission rate.

d. Identify any operational limitation assumed for an emission unit.

☐	☒	**IX. Modeling Analysis**

a. Significant Impact Analysis

The preliminary analysis evaluates the potential increase in emissions from the project or the net increase in emissions associated with the modification. The results of the preliminary analysis determines whether or not a full impact analysis is required. If predicted concentrations from the project are below the applicable PSD Significant Impact Levels, a Full Impact Analysis is not required.

b. Preconstruction Monitoring Analysis

The initial screening modeling analysis must address pre-construction monitoring requirements for all proposed sources whose predicted ambient impact exceeds any of the PSD De Minimis Impact Levels (to support ambient monitoring exemption).

c. Full Impact Analysis

A full impact analysis consists of separate analysis for the National Ambient Air Quality Standards (NAAQS) and PSD Increments and will consider emissions from the proposed source or source modification, any existing on-site sources, off-site sources, and for the NAAQS analysis, background concentrations. The full impact analysis is conducted for Class II and Class I Areas. Each of these topics are discussed in detail in the EPA New Source Review Workshop Manual.

i. NAAQS Analysis
ii. PSD Increment Analysis

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Air Quality Analysis Checklist — Appendix C

SUBMIT Yes	SUBMIT N/A	
		IX. Modeling Analysis (continued)

iii. Additional Impact Analysis

Discuss the impacts the proposed project will have on residential, commercial, and industrial growth in the area, and on soils, vegetation and visibility in the vicinity of the proposed project location.

1. Vegetation and Soils Impact
2. Associated Growth Impact
3. Class I Area Impact Analysis

Comprised of the Class I Increment Analysis and the Air Quality Related Value (AQRV) Analysis. When a Class I AQRV Analysis is required, the National Parks Service (NPS) - Air Resources Division, FWS - Air Quality Branch and FS - Air Quality Program have produced a guidance document entitled Federal Land Managers' Air Quality Related Values Workgroup (Flag) Phase I Report – Revised (2010). The guidance set forth in this document is followed in PSD review for Class I area impacts.

☐ ☒ **X. Figures, Maps, Electronic Data, etc.**

Figures and maps should be inserted with the narrative, when possible. Large maps, data CD's, etc., should be referenced in the text and included in the appendices.

a. The Air Quality Analysis should include or reference a scaled site plan showing:
   i. Emission release locations
   ii. Nearby buildings
   iii. Property lines
   iv. Fence lines
   v. Roads
   vi. Coordinates (preferably UTM). If UTM coordinates are used, the datum should be specified (e.g., NAD27 or NAD83)
   vii. True North arrow
   viii. Other pertinent items (as applicable)

b. The Air Quality Analysis Should include a topographic map and/or aerial photograph showing:
   i. Source location
   ii. Facility boundaries
   iii. Terrain features
   iv. Nearby buildings, roads, and adjacent facilities (e.g., other major existing sources, other major sources subject to PSD requirements
   v. NWS meteorological tower/observations (surface and upper air)
   vi. On-site/local meteorological tower/observations (surface and upper air)
   vii. State/local/on-site air quality monitoring stations
   viii. Pre-construction monitoring site (if applicable)
   ix. Nearby Class I Areas

c. Provide an electronic file of the facility plot plans (e.g., GIS or other mapping file)

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Air Quality Analysis Checklist	Appendix C

SUBMIT		
Yes	N/A	
		X. Figures, Maps, Electronic Data, etc. (continued) d. Provide all electronic modeling files, including: i. "Readme" textfile that describes the submitted files, including any files that are provided in a compressed format. ii. Model Input/Output files iii. BPIP Input/Output files iv. Meteorological data files v. Post processing programs and files (including spreadsheets)

SECTION 2

PROCESS AND FACILITY DESCRIPTION

SECTION 2: PROCESS AND FACILITY DESCRIPTION

2.1 FACILITY DESCRIPTION

Interfor U.S. Inc. owns and operates the Bay Springs Sawmill facility located in Bay Springs, MS. The facility produces dimensional southern yellow pine (SYP) lumber and is categorized under North American Industrial Classification System (NAICS) code 321113 for sawmills. The facility is currently a Title V Major Source and a PSD Major Source operating under Permit No. 1300-00019. The annual production at the facility is currently limited to 170,600 MBF/yr for existing Dry Kilns 1 and 3 (AB-002 and AB-004) combined by Construction Permit No. 1300-00019.

The current facility production process is composed of three principal manufacturing processes: Green End Processing, Lumber Manufacturing, and By-Product Processing. This process includes a Sawmill, a Planer Mill, associated debarking and wood processing equipment, a batch drying kiln and a continuous drying kiln. The process begins at the north and south bucking lines and crook saws where oversized or crooked logs are cut out by the crook saw and sent offsite to other end users. Logs without apparent defects bypass the crook saw operations and are sent directly to the bucking saw. The cut logs are then sent to the north and south debarkers, which begins the sawmill operation. From the debarker, the logs are sent to the cut-off saw to be cut to length, then the logs are stored at the log decks. Undersized log lengths from the cut-off saw are sent to the lilypad and block chipper. From the log decks, the logs with acceptable length are sent to the chip-n-saw machine where the cylindrical logs are processed with high speed saws to create a rectangular cant. The sideboards are sent to the chipping edger. The cants are sent to the vertical saw arbor to be cut into dimensional lumber and then trimmed to length at the trim saw. The dimensional lumber is then sent to the green sorter where it is separated by dimension and length. The green lumber is sent to the lumber dry kilns and planer mills for further processing. The cut-off saw, chip-n-saw, vertical saw arbor, trim saw, and sorter are located inside a building with comfort fan vents.

The green lumber is removed from the sorter and sent to a stacker where the lumber is stacked prior to being moved to the two kilns to dry. The No. 1 Kiln (AB-002) is a batch kiln, while No. 3 Kiln (AB-004) is a continuous dry kiln (CDK). Both kilns are direct-fired kilns with a 35 MMBtu/hr sawdust gasifier and a natural gas burner. Dried lumber is sent to the planer mill where it is planed, trimmed, sorted, and packaged for shipping. The packaged finished material may be stored in lumber sheds prior to shipment offsite. The planer mill building operations generate dry planer shavings. Trim blocks may be hogged and shipped offsite. Exhaust from the planer and dry waste hog is routed to the planer mill cyclone. Hogged material and shavings are pneumatically conveyed to the shavings bin. Material collected in the shavings bin is shipped offsite.

The sawing and trimming of green and dry lumber create wood by-products that are either used onsite or sold off-site for various end uses (examples include: dry shavings for

particleboard and green sawdust for chicken house bedding). Green sawdust from various points in the process is now conveyed to a sawdust fuel silo to be used as fuel in the kiln sawdust gasifiers. A switch gate allows sawdust to flow either to the truck bin or fuel silo. PM emissions from the sawdust fuel silo are controlled by a cyclone. The existing truck bin continues to operate to allow the facility to sell a portion of the green sawdust. Bark from log processing is sent to the bark hog and screen and then sold. The chip-n-saw machine, chipper, and lilypad and block chipper produce green chips that are conveyed to a shaker chip screen. The screen sorts chips by size, then conveys them to a truck or rail bin to be shipped off-site, typically for use in pulp and paper manufacturing. The lilypad and block chipper, bark hog, chipper, shaker screen, and truck chip bins operate outside and generate fugitive PM emissions.

2.2 PROPOSED MODIFICATION

The facility is proposing to modify the current batch kiln No. 1 (AB-002) into a new direct-fired continuous dry kiln, with a drying capacity of 120 MMBF/yr and a 35 MMBtu/hr sawdust gasifier and natural gas burner. Fuel for the burner will be supplied on site as sawdust. The fuel will consist of green sawdust generated by the Sawmill Operations. In addition, natural gas can be used as fuel for the burner in the case that there is not enough sawdust.

The facility proposes to increase the facility-wide production limit to 232 MMBF/yr. No modifications are being made to existing Kiln No. 3 (AB-004).

Net emission increases for VOCs for this project exceed the 40 tpy Significant Emission Rate (SER) threshold. A PSD review is required for VOCs for proposed Kiln No.1 (AB-002). Emission increases for all other pollutants are below their respective SER thresholds.

GENERAL AREA MAP

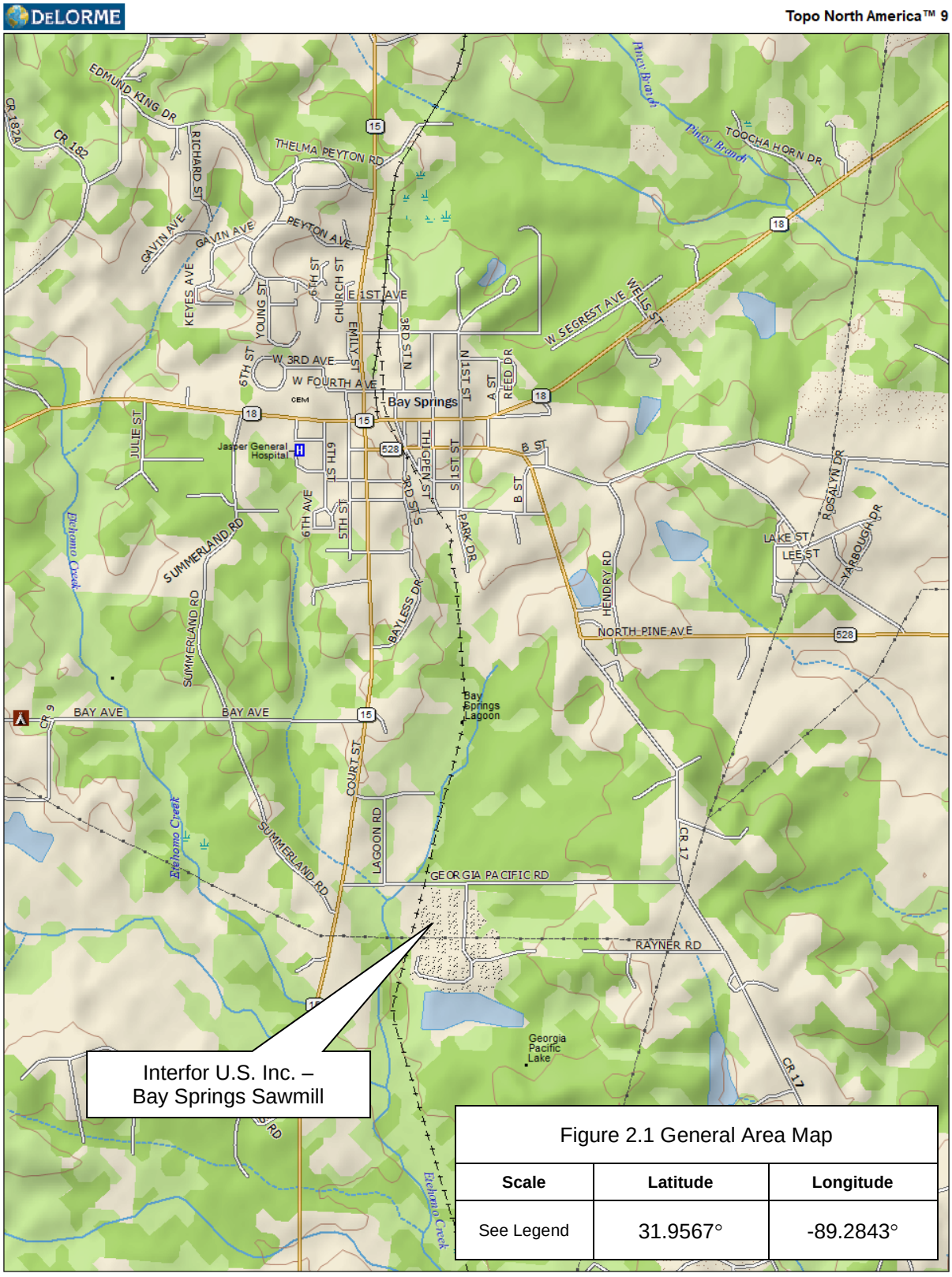
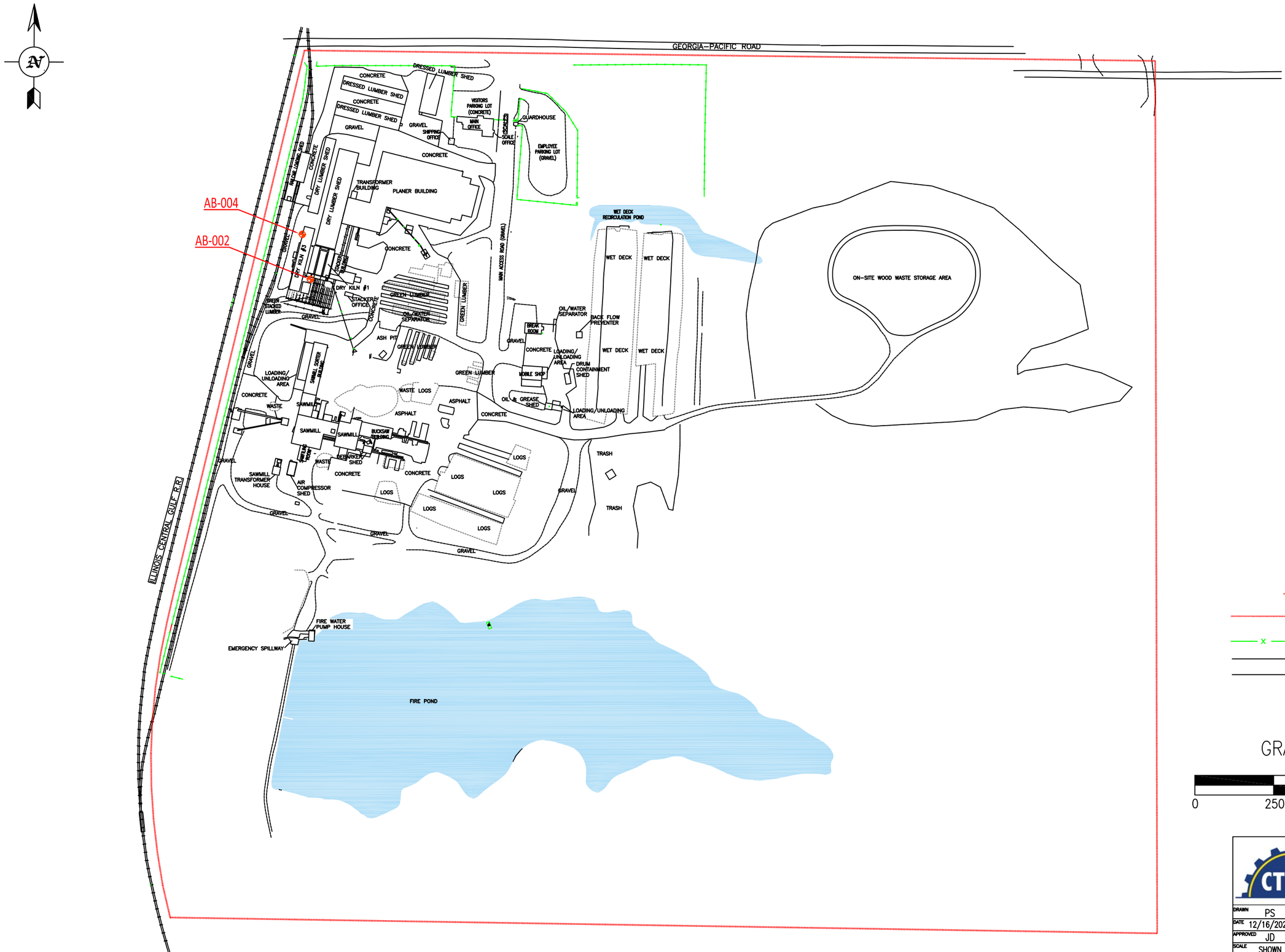


Figure 2.1 General Area Map		
Scale	**Latitude**	**Longitude**
See Legend	31.9567°	-89.2843°

FACILITY LAYOUT



LEGEND

- AIR EMISSION POINT
- PROPERTY BOUNDARY
- FENCE LINE
- PAVED AND UNPAVED ACCESS ROADS

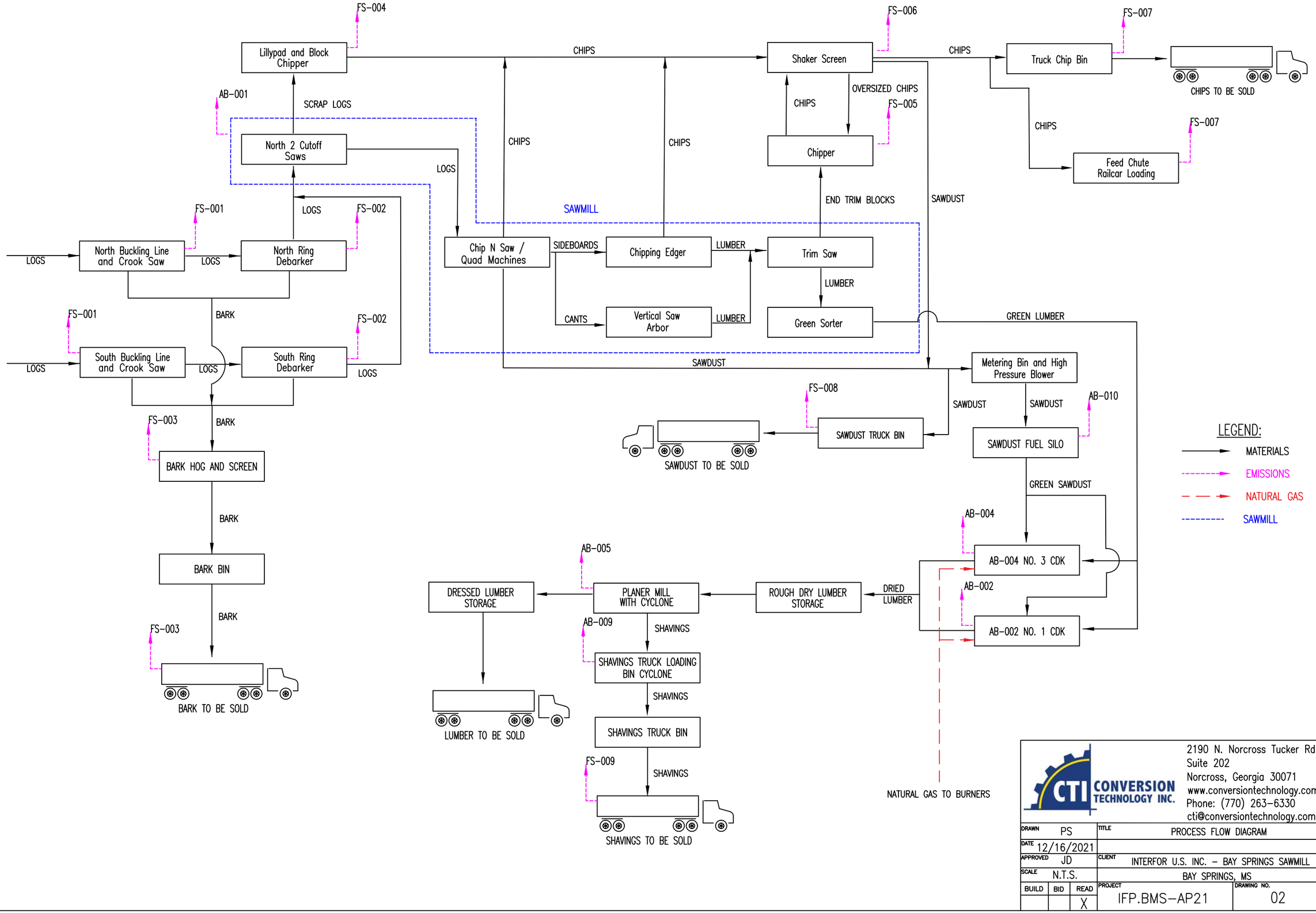
GRAPHIC SCALE (FEET)

0 250 500 100

CTI CONVERSION TECHNOLOGY INC.
2190 N. Norcross Tucker Rd., Suite 202
Norcross, Georgia 30071
www.conversiontechnology.com
Phone: (770) 263-6330
cti@conversiontechnology.com

DRAWN	PS
DATE	12/16/2022
APPROVED	JD
SCALE	SHOWN
BUILD / BID / READ	/ / X
TITLE	FACILITY LOCATION
CLIENT	INTERFOR U.S. INC. – BAY SPRINGS SAWMILL
	BAY SPRINGS, MS
PROJECT	IFP.BMS-AP21
DRAWING NO.	01
REV.	0

PROCESS FLOW DIAGRAM



CTI CONVERSION TECHNOLOGY INC.
2190 N. Norcross Tucker Rd., Suite 202
Norcross, Georgia 30071
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Phone: (770) 263-6330
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DRAWN	PS	TITLE	PROCESS FLOW DIAGRAM
DATE	12/16/2021		
APPROVED	JD	CLIENT	INTERFOR U.S. INC. – BAY SPRINGS SAWMILL
SCALE	N.T.S.		BAY SPRINGS, MS
BUILD / BID / READ	X	PROJECT	IFP.BMS-AP21
		DRAWING NO.	02
		REV.	0

SECTION 3

EMISSION CALCULATIONS

SECTION 3: EMISSION CALCULATIONS

This section provides a discussion of the methodologies used in calculating emissions from the proposed project. Sources for emission factors and assumptions used in the calculations are also discussed. Detailed emission calculations can be found at the end of Section 3.

3.1 EMISSION FACTORS

3.1.1 DIRECT-FIRED LUMBER DRYING KILN No. 1 (AB-002)

Existing Kiln No. 1 (AB-002) will be converted to a direct-fired continuous dry kiln (CDK) with a 35 MMBtu/hr burner fueled by green sawdust generated on site and natural gas. Kiln No. 1 will have a maximum lumber drying capacity of 120 MMBF/yr. The facility currently has a permitted drying limit of 170.6 MMBF/yr on existing kilns AB-002 and AB-004 combined. The proposed maximum potential drying capacity from Kilns No. 1 and No. 3 will be 232 MMBF/yr.

Emission factors for direct-fired kilns using wood fuel are based on a review of several sources. The emission factors for PM, PM_{10}, $PM_{2.5}$, VOC, HAPs, and lead from lumber drying and CO and NO_x from combustion are taken from publicly available applications, permit narratives, and/or NCASI emission factors. The specific sources are described further in the detailed emission calculations at the end of Section 3.

The emission factors for SO_2 from combustion are AP-42 emission factors for wood combustion in boilers. Greenhouse gas (GHG) emission factors are from 40 CFR 98, the Mandatory Greenhouse Gas Reporting Rule.

3.1.2 WOOD PROCESSING OPERATIONS

Emissions from debarking, sawing operations, and screening are calculated based on the estimated potential quantity of logs the facility is capable of processing in a year. The quantity of logs is based on the ratio of logs processed to lumber dried.

Wood processing emission factors for the Indoor Saws, Bucking Line and Crook Saws are based on the FIRE database for SCC 3-07-008-03 for sawdust storage pile handling. The emission factors for the Indoor Edger, Bark and Hog Screen, Truck Bark Bin, Lillypad and Green Chipper and Shaker screen are based on the FIRE database, SSCC Code 3-07-008-01.

The emission factors for chips, sawdust, and dry shavings were determined using the drop point equation from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles. The specific sources are described further in the detailed emission calculations at the end of Section 3.

The emission factors for the facility roads was from the PSD Permit Application

submitted to MDEQ in June 2017 for the Bay Springs, MS facility (Previously Georgia-Pacific Wood Products, LLC).

3.2 SIGNIFICANT EMISSION INCREASES

The facility is an existing Major Source under PSD. For any project that occurs at an existing Major Source, it must be determined whether the project is considered a Major Modification. A project is considered a Major Modification if it causes both significant emission increases (Step 1) and significant net emission increases (Step 2). To determine if the project will cause any significant emission increases, the potential emissions of new, existing, and associated emission units that will be affected by this project were compared to their baseline emissions. The baseline period used for all pollutants is the 24-month period from January 2016 to December 2017. Table 3.1 summarizes the emission increases from this project.

3.2.1 NEW EMISSION UNITS

There are no new emission units in this project.

3.2.2 EXISTING EMISSION UNITS

The existing batch kiln, Kiln No. 1, is being upgraded to a CDK as part of this project. There will be emission increases from the modification of Kiln No. 1. No other existing emission units are being modified.

3.2.3 ASSOCIATED EMISSION UNITS

The debarking, sawing, chipping, hogging, screening operations, roads and associated material handling operations are not being modified, however, there is expected to be increases in emissions from these sources due to an increased throughput as a result of the increase in lumber production from this project. These units are considered associated emission units. There will also be associated emission increases from roads due to increased truck traffic.

No associated emission increases are expected from the Planer Mill or the Planer Mill Operations. Emissions from the Sawdust Fuel Silo Cyclone, Planer Mill Cyclone, and Shavings Truck Loading Bin Cyclone are based on hours of operation, not material throughput. The hours of operation for these processes will not change as a result of this project.

3.2.4 CONTEMPORANEOUS EMISSION INCREASES

There are no creditable emission increases from the contemporaneous period dating from five (5) years before the date that construction for this project will commence to the date the modifications will be fully operational.

Table 3.1 Emission Increases Attributable to Project

Pollutant	New Units Emission Increases[1] (tpy)	Existing Units Emission Increases[2] (tpy)	Associated Units Emission Increases[3] (tpy)	Total Emission Increases (tpy)	PSD Significant Emission Rate Threshold (tpy)	PSD Review Required?
CO	0	0	0	0	100	No
NO_x	0	11.04	0	11.04	40	No
SO_2	0	0	0	0	40	No
PM	0	4.386	20.36	24.74	25	No
PM_{10}	0	7.085	6.380	13.46	15	No
$PM_{2.5}$	0	5.253	1.621	6.874	10	No
VOC	0	264.6	0	264.6	40	Yes
GHG (CO_2e)	0	0	0	0	75,000	No

[1] No new unit emissions.
[2] AB-002 is being upgraded to a CDK
[3] Associated units include wood processing equipment in the Sawmill and Planer Mill

As shown in Table 3.1 above, emission increases from this project will only exceed the SER threshold for VOCs. It can be determined that this project is considered a Major Modification, and a PSD review is required for VOCs.

3.3 FACILITY-WIDE EMISSIONS SUMMARY

Table 3.2 summarizes the facility-wide emissions after the proposed modifications. Detailed emission calculations are provided at the end of Section 3.

Table 3.2 Facility-Wide Emissions

Pollutant	Uncontrolled Emissions (tpy)	Potential Emissions (tpy)
CO	159.4	159.4
NO_X	30.66	30.66
PM	110.3	78.12
PM_{10}	63.57	51.22
$PM_{2.5}$	33.24	27.13
SO_2	3.373	3.373
Lead	2.79E-02	2.79E-02
VOC	636.8	636.8
Acetaldehyde	5.220	5.220
Acrolein	0.6960	0.6960
Hexane	2.25E-02	2.25E-02
Formaldehyde	4.478	4.478
Methanol	18.68	18.68
Phenol	1.195	1.195
Total HAPs	30.29	30.29
Total GHG (CO_2e)[(1)]	58,286	58,286
Total GHG (CO_2e)	64,250	64,250

[(1)] GHG emissions in metric tons/yr.

DETAILED EMISSION CALCULATIONS

Table 3.3 Kilns AB-002 & AB-004 Past Total Monthly Production

Month	Total Lumber Produced (MBF)	24-Month Average Annual Production (MBF/yr)
January 13	8,162	N/A
February 13	8,719	N/A
March 13	7,430	N/A
April 13	8,586	N/A
May 13	9,547	N/A
June 13	8,653	N/A
July 13	8,399	N/A
August 13	9,932	N/A
Septembe 13	8,231	N/A
October 13	8,871	N/A
November 13	9,292	N/A
December 13	8,265	N/A
January 14	8,935	N/A
February 14	8,219	N/A
March 14	8,732	N/A
April 14	7,627	N/A
May 14	8,363	N/A
June 14	8,335	N/A
July 14	9,159	N/A
August 14	9,126	N/A
Septembe 14	8,439	N/A
October 14	8,189	N/A
November 14	8,650	N/A
December 14	8,213	103,037
January 15	7.419	98,960
February 15	8.382	94,605
March 15	8.000	90,894
April 15	8.820	86,605
May 15	8.601	81,836
June 15	1.583	77,511
July 15	6.806	73,314
August 15	9.744	68,353
Septembe 15	9.561	64,242
October 15	8.825	59,811
November 15	7.047	55,169
December 15	8.880	51,041
January 16	11,751	52,448
February 16	11,127	53,903
March 16	12,016	55,544
April 16	11,334	57,398
May 16	11,528	58,980

June 16	12,578	61,102
July 16	12,331	62,687
August 16	10,545	63,397
Septembe 16	9,612	63,984
October 16	11,767	65,773
November 16	9,808	66,351
December 16	12,099	68,294
January 17	11,552	74,067
February 17	12,238	80,181
March 17	12,379	86,367
April 17	11,689	92,207
May 17	11,559	97,982
June 17	10,547	103,255
July 17	8,577	107,540
August 17	11,654	113,362
Septembe 17	8,973	117,844
October 17	12,313	123,996
November 17	11,390	129,688
December 17	11,858	**135,612**
January 18	9,424	134,448
February 18	9,639	133,705
March 18	9,866	132,630
April 18	11,029	132,478
May 18	11,765	132,596
June 18	9,731	131,173
July 18	8,730	129,373
August 18	10,991	129,596
Septembe 18	7,876	128,728
October 18	9,818	127,753
November 18	7,172	126,435
December 18	6,879	123,825
January 19	8,200	122,149
February 19	6,752	119,407
March 19	8,824	117,629
April 19	10,909	117,239
May 19	10,340	116,629
June 19	9,166	115,939
July 19	9,712	116,506
August 19	10,579	115,969
Septembe 19	10,470	116,717
October 19	10,813	115,967
November 19	10,133	115,339
December 19	7,886	113,353
January 20	11,704	114,493
February 20	11,119	115,233

March 20	8,058	114,329
April 20	5,543	111,585
May 20	8,228	109,817
June 20	8,794	109,348
July 20	9,330	109,648
August 20	9,773	109,039
Septembe 20	8,558	109,380
October 20	9,984	109,464
November 20	8,939	110,347
December 20	8,686	111,250
January 21	11,195	112,748
February 21	9,039	113,891
March 21	9,639	114,299
April 21	10,663	114,176
May 21	11,125	114,568
June 21	10,122	115,046
July 21	8,208	114,294
August 21	10,917	114,463
Max[(1)]	N/A	**135,612**

[(1)] Baseline period to be used is January 2016-December 2017

Table 3.4A Kilns AB-002 and AB-004 Baseline Operational Information

Emission Unit	Kiln Annual Throughput (MMBF/yr)	Burner Capacity (MMBtu/hr)
AB-002 (BATCH)	67.43	35
AB-004 (CDK)	68.18	35
Total	135.61	70

Table 3.4B Kilns AB-002 and AB-004 Baseline Emissions

Pollutant	Emission Factor[1]		Reference	Baseline Emissions (lb/hr)	Baseline Emissions (tpy)
Lumber Drying/Wood Combustion Emissions					
CO	0.520	lb/MMBtu	2	36.40	159.4
NO_x	0.064	lb/MMBtu	2	4.480	19.62
PM	0.091	lb/MBF	1	1.409	6.170
PM_{10}	0.147	lb/MBF	1	2.276	9.967
$PM_{2.5}$	0.109	lb/MBF	1	1.687	7.391
SO_2	0.011	lb/MMBtu	3	0.7700	3.373
Lead	9.11E-05	lb/MMBtu	4	6.38E-03	2.79E-02
VOC	5.490	lb/MBF	2	84.99	372.3
Acetaldehyde	0.045	lb/MBF	5	0.6966	3.051
Acrolein	6.00E-03	lb/MBF	6	9.29E-02	0.4068
Formaldehyde	0.0386	lb/MBF	7	0.5976	2.617
Methanol	0.1610	lb/MBF	7	2.492	10.92
Phenol	0.0103	lb/MBF	6	0.1595	0.6984
Total HAPs				4.039	17.69
Wood Combustion Greenhouse Gas Emissions[2]					
CO_2	93.80	kg/MMBtu	8	6,566	57,518
CH_4	7.2E-03	kg/MMBtu	8	0.5040	4.415
N_2O	3.6E-03	kg/MMBtu	8	0.2520	2.208
Total GHG (CO_2e)				6,654	58,286
Total GHG (CO_2e)[3]				14,669	64,250

[1]Emission Factors are used for both continuous and batch fired kilns as they represent the collection of the best data available for direct fired kilns.

[2]GHG emissions in kg/hr and metric tons/yr.

[3]GHG emissions in lb/hr and short tons per year.

Emission Factor References:

1) Based on Georgia-Pacific developed emission factors using test data for Columbia, McCormick, and Bibler Brothers - Russellville and Rex Lumber. The maximum value of the average median plus 1 standard deviation was selected. PM includes on filterable particular matter. PM_{10} and $PM_{2.5}$ based on average % of filterable PM to filterable PM_{10} and $PM_{2.5}$ from Columbia and McCormick fractional analysis plus condensable PM.

2) Based on Georgia-Pacific developed emission factors using test data for Columbia, McCormick, and Bibler Brothers - Russellville and Rex Lumber. The selected factor is the median plus one standad deviation of available data. VOC is based on the WPP1 methodology where COX (as WPP1) equals VOX (as C_3H_8) plus MEOH and HCHO minus 0.458 times 0.65 times methanol emission rate.

3) NCASI Technical Bulletin 1020 (December 2013), Table 10.4, mean value.

4) NCASI Technical Bulletin 1013 (March 2013), Table 4.3, maximum of the mean and median values plus two standard deviations for all available classes of boilers/control devices.

5) Average of acetaldehyde emission factors from NCASI Technical Bulletin 845, Table BB.1.

6) Emission factor for lumber kilns from NCASI February 2013 Wood Products Air Emission Factor Database.

7) Emission factor for direct-fired southern pine drying kilns based on NCASI data.

8) 40 CFR 98 - Mandatory Greenhouse Gas Reporting Rule Tables C-1 and C-2. CH4 and N2O emissions are multiplied by the global warming potentials found in Table A-1 in order to calculate total GHG emissions.

Table 3.5A Wood Processing Emission Factors

Source	Emission Factors				Control Efficiency (%)	Reference
	PM	PM_{10}	$PM_{2.5}$	Units		
AB-001 - Dimensional Lumber Sawmill (Indoor Saws)	1.00E+00	3.60E-01	1.90E-01	lb/ton sawdust	90%	1, 4
AB-001 - Dimensional Lumber Sawmill (Indoor Edger)	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	90%	2, 4
AB-006 - Plant Roads	1.40E-04	3.00E-05	3.30E-06	ton/MBF	0%	6
FS-001 - North and South Bucking Line and Crook Saws	1.00E+00	3.60E-01	1.90E-01	lb/ton sawdust	0%	1
FS-002 - North and South Ring Debarkers	2.00E-02	1.10E-02	3.80E-03	lb/ton logs processed	0%	2
FS-003 - Bark and Hog Screen	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	0%	2
FS-003 - Truck Bark Bin	4.23E-05	2.00E-05	3.03E-06	lb/ton throughput	0%	3
FS-004 - Lillypad and Block Chipper	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	0%	2
FS-005 - Green Chipper	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	0%	2
FS-006 - Shaker Screen	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	50%	2, 5
FS-007 - Green Chip Truck Bin and Railcar Loading	4.23E-05	2.00E-05	3.03E-06	lb/ton throughput	0%	3
FS-008 - Green Sawdust Truck Bin	4.23E-05	2.00E-05	3.03E-06	lb/ton throughput	0%	3
FS-009 - Dry Planer Shavings Truck Loadout	2.28E-04	1.08E-04	1.63E-05	lb/ton throughput	0%	3

Emission Factor References:

1) Emission factor based on the FIRE database for SCC 3-07-008-03 for sawdust storage pile handling. Emissions assumed similar since sawing is creating sawdust. PM CALC: SCC Code 3-07-008-02 (Log Sawing): $PM_{2.5}$ = 19% of PM

2) Emission factor per FIRE database, SSCC Code 3-07-008-01, Log Debarking, EPA PM CALC database for SCC Code 3-07-008-01 (Log Debarking) $PM_{2.5}$ = 19% of PM

3) Emission factors determined using the drop point equation from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles. The equation used to calculate the emission factors shown below.

4) Source is located indoors. Therefore, assumed control efficiency = 90%

5) Source is covered. Therefore, assumed control efficiency = 50%

6) Plant road emission factors from PSD Permit Application submitted to MDEQ in June 2017 for the Bay Springs, MS facility (previously Georgia-Pacific Wood Products LLC).

Table 3.5B Aggregate Handling and Storage Pile Emission Factor Equation

Emission Factor Equation			
E = k(0.0032) x [(U/5)^1.3] / [(M/2)^1.4]			
Equation Inputs			Source
PM Particle Size Multiplier (k) (sawdust)	0.74	dimensionless	1
PM_{10} Particle Size Multiplier (k) (sawdust)	0.35	dimensionless	1
$PM_{2.5}$ Particle Size Multiplier (k) (sawdust)	0.053	dimensionless	1
Mean Wind Speed (U)	7.24	miles/hour	2
Material Moisture Content (M) (Dry Shavings)	15	%	3
Material Moisture Content (M) (Green)	50	%	4

Source Notes:
1) AP 42, Chapter 13.2.4 Aggregate Handling and Storage Piles.
2) 30-year mean wind speed observed at Jackson Municipal Airport.
3) Estimate for dry shavings.
4) Estimate for green wood.

Table 3.5C Aggregate Handling and Storage Pile Emission Factors

Particulate Emission Factors (Material Handling)	Green Wood		Dry Wood	
PM Emission Factor	4.23E-05	lb/ton	2.28E-04	lb/ton
PM_{10} Emission Factor	2.00E-05	lb/ton	1.08E-04	lb/ton
$PM_{2.5}$ Emission Factor	3.03E-06	lb/ton	1.63E-05	lb/ton

Table 3.5D Wood Processing Baseline Throughputs

Material	Baseline Throughput	
Lumber Produced[(1)]	135,611,963	BF lumber
Lumber Produced (green basis)[(2)]	338,465	tons lumber
Lumber Produced (dry basis)[(3)]	213,589	tons lumber
Sawdust from AB-001	36,432	tons sawdust
Sideboards from AB-001	176,284	tons sideboards
Sawdust from FS-001	588	tons sawdust
Logs Processed	587,613	tons logs
Bark Produced	50,535	tons bark
Blocks from FS-004	5,876	tons blocks
Blocks from FS-005	10,577	tons blocks
Chips Produced	161,593	tons chips
Dry Planer Shavings	28,407	tons dry shavings

[(1)]Actual production from baseline period January 2016-December 2017.
[(2)]Weight of lumber calculated based on 12 BF/ft3 conversion factor and green pine density of 59.9 lb/ft3.
[(3)]Weight of lumber calculated based on 12 BF/ft3 conversion factor and dry pine density of 37.8 lb/ft3.

Table 3.5E Wood Processing Baseline Emissions

Source	Baseline Throughput		Baseline Emissions (tpy)		
			PM	PM_{10}	$PM_{2.5}$
AB-001 - Dimensional Lumber Sawmill (Indoor Saws)	36,432	tons sawdust	1.822	0.6558	0.3461
AB-001 - Dimensional Lumber Sawmill (Indoor Edger)	176,284	tons sideboards	0.1763	9.70E-02	3.35E-02
AB-006 - Plant Roads	135,612	MBF	18.99	4.068	0.4475
FS-001 - North and South Bucking Line and Crook Saws	588	tons sawdust	0.2938	0.1058	5.58E-02
FS-002 - North and South Ring Debarkers	587,613	tons logs	5.876	3.232	1.116
FS-003 - Bark and Hog Screen	50,535	tons bark	0.5053	0.2779	9.60E-02
FS-003 - Truck Bark Bin	50,535	tons bark	1.07E-03	5.05E-04	7.65E-05
FS-004 - Lillypad and Block Chipper	5,876	tons blocks	5.88E-02	3.23E-02	1.12E-02
FS-005 - Green Chipper	10,577	tons blocks	0.1058	5.82E-02	2.01E-02
FS-006 - Shaker Screen	161,593	tons green chips	0.8080	0.4444	0.1535
FS-007 - Green Chip Truck Bin and Railcar Loading	161,593	tons green chips	3.42E-03	1.62E-03	2.45E-04
FS-008 - Green Sawdust Truck Bin	36,432	tons sawdust	7.70E-04	3.64E-04	5.52E-05
FS-009 - Dry Planer Shavings Truck Loadout	28,407	tons dry shavings	3.24E-03	1.53E-03	2.32E-04
		Totals	28.64	8.976	2.281

Table 3.6A Kilns AB-002 and AB-004 Potential Operational Information

Emission Unit	Kiln Annual Throughput[1] (MMBF/yr)	Burner Capacity (MMBtu/hr)
AB-002 (CDK)	120	35
AB-004 (CDK)	112	35
Total	232	70

[1]Based on drying capacity of kilns: 120,000 MBF/yr for AB-002, 112,000 MBF/yr for AB-004.

Table 3.6B Kilns AB-002 and AB-004 Potential Emissions with Wood Burner

Pollutant	Emission Factor[1]		Reference	Potential Emissions (lb/hr)	Potential Emissions (tpy)
Lumber Drying/Wood Combustion Emissions					
CO	0.520	lb/MMBtu	1	36.40	159.4
NO_x	0.064	lb/MMBtu	1	4.480	19.62
PM	0.091	lb/MBF	2	2.410	10.56
PM_{10}	0.147	lb/MBF	2	3.893	17.05
$PM_{2.5}$	0.109	lb/MBF	2	2.887	12.64
SO_2	0.011	lb/MMBtu	3	0.7700	3.373
Lead	9.11E-05	lb/MMBtu	4	6.38E-03	2.79E-02
VOC	5.490	lb/MBF	1	145.4	636.8
Acetaldehyde	0.045	lb/MBF	5	1.192	5.220
Acrolein	6.00E-03	lb/MBF	6	0.1589	0.6960
Formaldehyde	0.0386	lb/MBF	7	1.022	4.478
Methanol	0.1610	lb/MBF	7	4.264	18.68
Phenol	0.0103	lb/MBF	6	0.2728	1.195
Total HAPs				6.910	30.26
Wood Combustion Greenhouse Gas Emissions[2]					
CO_2	93.80	kg/MMBtu	8	6,566	28,759
CH_4	7.2E-03	kg/MMBtu	8	0.5040	4.415
N_2O	3.6E-03	kg/MMBtu	8	0.2520	2.208
Total GHG (CO_2e)				6,654	58,286
Total GHG (CO_2e)[3]				14,669	64,250

[1]Emission Factors are used for both continuous and batch fired kilns as they represent the collection of the best data available for direct fired kilns.

[2]GHG emissions in kg/hr and metric tons/yr.

[3]GHG emissions in lb/hr and short tons per year.

Emission Factor References:

1) Based on Georgia-Pacific developed emission factors using test data for Columbia, McCormick, and Bibler Brothers - Russellville and Rex Lumber. The selected factor is the median plus one standad deviation of available data. VOC is based on the WPP1 methodology where COX (as WPP1) equals VOX (as C_3H_8) plus MEOH and HCHO minus 0.458 times 0.65 times methanol emission rate.

2) Based on Georgia-Pacific developed emission factors using test data for Columbia, McCormick, and Bibler Brothers - Russellville and Rex Lumber. The maximum value of the average median plus 1 standard deviation was selected. PM includes on filterable particular matter. PM_{10} and $PM_{2.5}$ based on average % of filterable PM to filterable PM_{10} and $PM_{2.5}$ from Columbia and McCormick fractional analysis plus condensable PM.

3) NCASI Technical Bulletin 1020 (December 2013), Table 10.4, mean value.

4) NCASI Technical Bulletin 1013 (March 2013), Table 4.3, maximum of the mean and median values plus two standard

5) Average of acetaldehyde emission factors from NCASI Technical Bulletin 845, Table BB.1.

6) Emission factor for lumber kilns from NCASI February 2013 Wood Products Air Emission Factor Database.

7) Emission factor for direct-fired southern pine drying kilns based on NCASI data.

8) 40 CFR 98 - Mandatory Greenhouse Gas Reporting Rule Tables C-1 and C-2. CH4 and N2O emissions are multiplied by the global warming potentials found in Table A-1 in order to calculate total GHG emissions.

Table 3.7A Kilns AB-002 and AB-004 Potential Operational Information

Emission Unit	Kiln Annual Throughput[1] (MMBF/yr)	Burner Capacity (MMBtu/hr)
AB-002 (CDK)	120	35
AB-004 (CDK)	112	35
Total	232	70

[1]Based on drying capacity of kilns: 120,000 MBF/yr for AB-002, 112,000 MBF/yr for AB-004.

Table 3.7B Kilns AB-002 and AB-004 Potential Emissions with Natural Gas Burner

Pollutant	Emission Factor[1]		Reference	Potential Emissions (lb/hr)	Potential Emissions (tpy)
Natural Gas Combustion Emissions					
CO	0.082	lb/MMBtu	1	5.740	25.14
NO_x	0.10	lb/MMBtu	1	7.000	30.66
PM	0.0019	lb/MMBtu	1	0.1330	0.5825
PM_{10}	0.0074	lb/MMBtu	1	0.5180	2.269
$PM_{2.5}$	0.0074	lb/MMBtu	1	0.5180	2.269
SO_2	0.0006	lb/MMBtu	1	4.20E-02	0.1840
Lead	4.87E-07	lb/MMBtu	1	3.41E-05	1.49E-04
VOC	5.490	lb/MBF	2	145.4	636.8
Acetaldehyde	0.045	lb/MBF	3	1.192	5.220
Acrolein	6.00E-03	lb/MBF	4	0.1589	0.6960
Formaldehyde	0.0386	lb/MBF	5	1.022	4.478
Hexane	7.35E-05	lb/MMBtu	6	5.15E-03	2.25E-02
Methanol	0.1610	lb/MBF	5	4.264	18.68
Phenol	0.0103	lb/MBF	4	0.2728	1.195
Total HAPs				6.915	30.29
Natural Gas Combustion Greenhouse Gas Emissions[2]					
CO_2	53.06	kg/MMBtu	7	3,714	32,536
CH_4	1.0E-03	kg/MMBtu	7	7.00E-02	0.613
N_2O	1.0E-04	kg/MMBtu	7	7.00E-03	6.13E-02
Total GHG (CO_2e)				3,718	32,570
Total GHG (CO_2e)[3]				8,197	35,902

[1]Emission Factors are used for both continuous and batch fired kilns as they represent the collection of the best data available for direct fired kilns.

[2]GHG emissions in kg/hr and metric tons/yr.

[3]GHG emissions in lb/hr and short tons per year.

Emission Factor References:

1) Emission factors from AP-42, Chapter 1.4, converted from lb/MMscf to lb/MMBtu using the higher heating value given in 40 CFR 98, Table C-1.

2) Based on Georgia-Pacific developed emission factors using test data for Columbia, McCormick, and Bibler Brothers - Russellville and Rex Lumber. The selected factor is the median plus one standad deviation of available data. VOC is based on the WPP1 methodology where COX (as WPP1) equals VOX (as C_3H_8) plus MEOH and HCHO minus 0.458 times 0.65 times methanol emission rate.

3) Average of acetaldehyde emission factors from NCASI Technical Bulletin 845, Table BB.1.

4) Emission factor for lumber kilns from NCASI February 2013 Wood Products Air Emission Factor Database.

5) Emission factor for direct-fired southern pine drying kilns based on NCASI data.

6) AP 42, Chapter 1.4 Natural Gas Combustion, Table 1.4-3.

7) 40 CFR 98 - Mandatory Greenhouse Gas Reporting Rule Tables C-1 and C-2. CH4 and N2O are multiplied by the global warming potentials found in Table A-1 in order to calculate total GHG emissions

Table 3.8 Kilns AB-002 and AB-004 Fuel Comparison

Pollutant	Potential Emissions (tpy)		Worst-Case Emissions (tpy)	Worst-Case Fuel
	Sawdust	Natural Gas		
CO	159.4	25.14	159.4	Sawdust
NO_X	19.62	30.66	30.66	Natural Gas
PM	10.56	0.5825	10.56	Sawdust
PM_{10}	17.05	2.269	17.05	Sawdust
$PM_{2.5}$	12.64	2.269	12.64	Sawdust
SO_2	3.373	0.1840	3.373	Sawdust
Lead	2.79E-02	1.49E-04	0.028	Sawdust
VOC	636.8	636.8	636.8	Same
Acetaldehyde	5.220	5.220	5.220	Same
Acrolein	0.6960	0.6960	0.696	Same
Formaldehyde	4.478	4.478	4.478	Same
Hexane	0	2.25E-02	2.25E-02	Natural Gas
Methanol	18.68	18.676	18.68	Same
Phenol	1.195	1.195	1.195	Same
Total HAPs	30.26	30.29	30.29	Natural Gas
Total GHG (CO_2e)[(2)]	58,286	32,570	58,286	Sawdust
Total GHG (CO_2e)[(3)]	64,250	35,902	64,250	Sawdust

[(1)]Worst-case total HAPs emissions is the highest total HAPs between the two fuels, and not the sum of worst-case individual HAPs.

[(2)]GHG emissions in kg/hr and metric tons/yr.

[(3)]GHG emissions in lb/hr and short tons/yr.

Table 3.9A Wood Processing Emission Factors

Source	Emission Factors				Control Efficiency (%)	Reference
	PM	PM_{10}	$PM_{2.5}$	Units		
AB-001 - Dimensional Lumber Sawmill (Indoor Saws)	1.00E+00	3.60E-01	1.90E-01	lb/ton sawdust	90%	1, 4
AB-001 - Dimensional Lumber Sawmill (Indoor Edger)	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	90%	2, 4
AB-006 - Plant Roads	1.40E-04	3.00E-05	3.30E-06	ton/MBF	0%	6
FS-001 - North and South Bucking Line and Crook Saws	1.00E+00	3.60E-01	1.90E-01	lb/ton sawdust	0%	1
FS-002 - North and South Ring Debarkers	2.00E-02	1.10E-02	3.80E-03	lb/ton logs processed	0%	2
FS-003 - Bark and Hog Screen	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	0%	2
FS-003 - Truck Bark Bin	4.23E-05	2.00E-05	3.03E-06	lb/ton throughput	0%	3
FS-004 - Lillypad and Block Chipper	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	0%	2
FS-005 - Green Chipper	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	0%	2
FS-006 - Shaker Screen	2.00E-02	1.10E-02	3.80E-03	lb/ton material processed	50%	2, 5
FS-007 - Green Chip Truck Bin and Railcar Loading	4.23E-05	2.00E-05	3.03E-06	lb/ton throughput	0%	3
FS-008 - Green Sawdust Truck Bin	4.23E-05	2.00E-05	3.03E-06	lb/ton throughput	0%	3
FS-009 - Dry Planer Shavings Truck Loadout	2.28E-04	1.08E-04	1.63E-05	lb/ton throughput	0%	3

Emission Factor References:

1) Emission factor based on the FIRE database for SCC 3-07-008-03 for sawdust storage pile handling. Emissions assumed similar since sawing is creating sawdust. PM CALC: SCC Code 3-07-008-02 (Log Sawing): $PM_{2.5}$ = 19% of PM

2) Emission factor per FIRE database, SSCC Code 3-07-008-01, Log Debarking, EPA PM CALC database for SCC Code 3-07-008-01 (Log Debarking) $PM_{2.5}$ = 19% of PM

3) Emission factors determined using the drop point equation from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles. The equation used to calculate the emission factors shown below.

4) Source is located indoors. Therefore, assumed control efficiency = 90%

5) Source is covered. Therefore, assumed control efficiency = 50%

6) Plant road emission factors from PSD Permit Application submitted to MDEQ in June 2017 for the Bay Springs, MS facility (previously Georgia-Pacific Wood Products LLC).

Table 3.9B Aggregate Handling and Storage Pile Emission Factor Equation

Emission Factor Equation			
E = k(0.0032) x [(U/5)^1.3] / [(M/2)^1.4]			
Equation Inputs			Source
PM Particle Size Multiplier (k) (sawdust)	0.74	dimensionless	1
PM_{10} Particle Size Multiplier (k) (sawdust)	0.35	dimensionless	1
$PM_{2.5}$ Particle Size Multiplier (k) (sawdust)	0.053	dimensionless	1
Mean Wind Speed (U)	7.24	miles/hour	2
Material Moisture Content (M) (Dry Shavings)	15	%	3
Material Moisture Content (M) (Green)	50	%	4

Source Notes:
1) AP 42, Chapter 13.2.4 Aggregate Handling and Storage Piles.
2) 30-year mean wind speed observed at Jackson Municipal Airport.
3) Estimate for dry shavings.
4) Estimate for green wood.

Table 3.9C Aggregate Handling and Storage Pile Emission Factors

Particulate Emission Factors (Material Handling)	Green Wood		Dry Wood	
PM Emission Factor	4.23E-05	lb/ton	2.28E-04	lb/ton
PM_{10} Emission Factor	2.00E-05	lb/ton	1.08E-04	lb/ton
$PM_{2.5}$ Emission Factor	3.03E-06	lb/ton	1.63E-05	lb/ton

Table 3.9D Wood Processing Potential Throughputs

Material	Potential Throughput	
Lumber Produced[(1)]	232,000,000	BF lumber
Lumber Produced (green basis)[(2)]	579,033	tons lumber
Lumber Produced (dry basis)[(3)]	365,400	tons lumber
Sawdust from AB-001	62,327	tons sawdust
Sideboards from AB-001	301,580	tons sideboards
Sawdust from FS-001	1,005	tons sawdust
Logs Processed	1,005,266	tons logs
Bark Produced	86,453	tons bark
Blocks from FS-004	10,053	tons blocks
Blocks from FS-005	18,095	tons blocks
Chips Produced	276,448	tons chips
Dry Planer Shavings	48,598	tons dry shavings

[(1)]Drying capacity of Kilns AB-002 and AB-004
[(2)]Weight of lumber calculated based on 12 BF/ft3 conversion factor and green pine density of 59.9 lb/ft3.
[(3)]Weight of lumber calculated based on 12 BF/ft3 conversion factor and dry pine density of 37.8 lb/ft3.

Table 3.9E Wood Processing Potential Emissions

Source	Potential Throughput		Potential Emissions (tpy)		
			PM	PM_{10}	$PM_{2.5}$
AB-001 - Dimensional Lumber Sawmill (Indoor Saws)	62,327	tons sawdust	3.116	1.122	0.5921
AB-001 - Dimensional Lumber Sawmill (Indoor Edger)	301,580	tons sideboards	0.3016	0.1659	5.73E-02
AB-006 - Plant Roads	232,000	MBF	32.48	6.960	0.7656
FS-001 - North and South Bucking Line and Crook Saws	1,005	tons sawdust	0.5026	0.1809	9.55E-02
FS-002 - North and South Ring Debarkers	1,005,266	tons logs	10.05	5.529	1.910
FS-003 - Bark and Hog Screen	86,453	tons bark	0.8645	0.4755	0.1643
FS-003 - Truck Bark Bin	86,453	tons bark	1.83E-03	8.65E-04	1.31E-04
FS-004 - Lillypad and Block Chipper	10,053	tons blocks	0.1005	5.53E-02	1.91E-02
FS-005 - Green Chipper	18,095	tons blocks	0.1809	9.95E-02	3.44E-02
FS-006 - Shaker Screen	276,448	tons green chips	1.382	0.7602	0.2626
FS-007 - Green Chip Truck Bin and Railcar Loading	276,448	tons green chips	5.85E-03	2.76E-03	4.19E-04
FS-008 - Green Sawdust Truck Bin	62,327	tons sawdust	1.32E-03	6.23E-04	9.44E-05
FS-009 - Dry Planer Shavings Truck Loadout	48,598	tons dry shavings	5.54E-03	2.62E-03	3.97E-04
		Totals	49.00	15.355	3.902

Table 3.10 Emission Increases from Project

Pollutant	New Units Emission Increases[1] (tpy)	Existing Units Emission Increases[2] (tpy)	Associated Units Emission Increases[3] (tpy)	Total Emission Increases (tpy)	PSD Significant Emission Rate Threshold (tpy)	PSD Review Required?
CO	0	0	0	0	100	No
NO_x	0	11.04	0	11.04	40	No
SO_2	0	0	0	0	40	No
PM	0	4.386	20.36	24.74	25	No
PM_{10}	0	7.085	6.380	13.46	15	No
$PM_{2.5}$	0	5.253	1.621	6.874	10	No
VOC	0	264.6	0	264.6	40	Yes
GHG (CO_2e)	0	0	0	0	75,000	No

[1]No new unit emissions.

[2]AB-002 is being upgraded to a CDK

[3]Associated units include wood processing equipment in the Sawmill and Planer Mill

Table 3.11 Facility-Wide Emissions Summary Post Modification

Pollutant	Uncontrolled Emissions (tpy)	Potential Emissions (tpy)
CO	159.4	159.4
NO_X	30.66	30.66
PM	110.3	78.12
PM_{10}	63.57	51.22
$PM_{2.5}$	33.24	27.13
SO_2	3.373	3.373
Lead	2.79E-02	2.79E-02
VOC	636.8	636.8
Acetaldehyde	5.220	5.220
Acrolein	0.6960	0.6960
Hexane	2.25E-02	2.25E-02
Formaldehyde	4.478	4.478
Methanol	18.68	18.68
Phenol	1.195	1.195
Total HAPs	30.29	30.29
Total GHG (CO_2e)[(1)]	58,286	58,286
Total GHG (CO_2e)	64,250	64,250

[(1)]GHG emissions in metric tons/yr.

SECTION 4

REGULATORY REVIEW

SECTION 4: REGULATORY REVIEW

This section provides a review of the federal and state air quality regulations applicable to the proposed project. The applicability of PSD regulations, New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), the Title V permit program, and the MDEQ Air Regulations are discussed. Since the only source being modified is Kiln 1 (AB-002), the regulatory review will be limited to only the kiln.

4.1 FEDERAL REGULATIONS

4.1.1 PSD REGULATIONS

The Interfor U.S. Inc. Bay Springs, MS facility is a major source under PSD regulations since it has the potential to emit over 250 tons per year of VOC. Any modification at a major source must be reviewed to determine if the modification will result in emission increases above the Significant Emission Rate (SER) threshold for any regulated pollutant. The net emissions increase analysis presented in Section 3 of this application determined that the proposed modification would result in a VOC emission increase greater than the 40 tons per year SER threshold. Therefore, the modification is subject to PSD review for VOC. See Sections 6 and 7 of this application for PSD BACT analysis and impact analysis.

4.1.2 NEW SOURCE PERFORMANCE STANDARDS

NSPS are pollution control standards which have been developed for specific industries or processes. A review of NSPS contained in 40 CFR, Part 60 determined that no NSPS are applicable to lumber drying kilns.

4.1.3 NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS

NESHAPs are air pollution control standards which have been developed to limit emissions of Hazardous Air Pollutants (HAPs). The standards establish emission limits which are typically based on the Maximum Achievable Control Technology (MACT) for the specific process.

The only standard applicable to the lumber drying kiln is 40 CFR, Part 63 Subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products. The standard is applicable because the facility is a producer of kiln-dried lumber and is a major source of HAPs. The only requirement of Subpart DDDD applicable to the facility is the initial notification requirement.

4.1.4 TITLE V PERMIT PROGRAM

The facility is a major source with respect to Title V as its potential emissions for several pollutants are above the Title V major source thresholds. The facility currently operates under Title V Permit No. 1300-00019. The proposed project will require a significant modification to the Title V Permit. All Title V Permit Application requirements will be satisfied by this application.

4.2 MDEQ AIR REGULATIONS

4.2.1 MDEQ AIR REGULATION CHAPTER 1, RULE 1.3 – SPECIFIC CRITERIA FOR SOURCES OF PARTICULATE MATTER

Rule 1.3.B regulates the opacity of ambient air contaminants. No person shall cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure the observer's view to a degree in excess of 40% opacity. Rule 1.3.B is applicable to Kiln 1 and the associated wood processing equipment.

Rule 1.3.F regulates PM emissions from manufacturing processes. PM emissions are limited to the rate given by:

$$E = 4.1p^{0.67}$$

Where E is the emission rate in pounds per hour and p is the process weight input rate in tons per hour. As demonstrated in Table 4.1, the emission sources affected by this project comply with the allowable emission rates established under Rule 1.3.F.

Table 4.1 Allowable PM Emissions

Source	Process Weight, P (tons/hr)	Allowable Emission Rate, E (lb/hr)	Potential PM Emissions (lb/hr)	In Compliance?
AB-002 (CDK)	34.19	43.70	1.247	Yes
AB-004 (CDK)	31.91	41.73	1.163	Yes
AB-001 - Dimensional Lumber Sawmill (Indoor Saws)	40.19	48.70	0.9028	Yes
AB-001 - Dimensional Lumber Sawmill (Indoor Edger)	43.68	51.50	8.74E-02	Yes
FS-001 - North and South Bucking Line and Crook Saws	145.6	115.4	0.1456	Yes
FS-002 - North and South Ring Debarkers	145.6	115.4	2.912	Yes
FS-003 – Bark Hog and Screen	12.52	22.30	0.2504	Yes
FS-003 - Truck Bark Bin	12.52	22.30	5.30E-04	Yes
FS-004 - Lillypad and Block Chipper	1.456	5.274	2.91E-02	Yes
FS-005 - Green Chipper	2.621	7.819	5.24E-02	Yes
FS-006 - Shaker Screen	40.04	48.58	0.4004	Yes
FS-007 - Green Chip Truck Bin and Railcar Loading	40.04	48.58	1.69E-03	Yes
FS-008 - Green Sawdust Truck Bin	9.028	17.91	3.82E-04	Yes
FS-009 - Dry Planer Shavings Truck Loadout	6.480	14.34	1.48E-03	Yes

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SECTION 5

AIR QUALITY MODELING ANALYSIS

SECTION 5: AIR QUALITY MODELING ANALYSIS

This section provides a discussion of the air quality analysis requirements and applicability of the Mississippi Department of Environmental Quality (MDEQ) Air Regulations.

5.1 REGULATORY APPLICABILITY

The U.S. Environmental Protection Agency (EPA) maintains a Guideline on Air Quality Models, which is published as Appendix W to 40 CFR Part 51 (as revised). The Guideline provides the agency's guidance on regulatory applicability of air quality dispersion models. In general, regulatory modeling applications should be carried out in accordance with a modeling protocol that is reviewed and approved by the appropriate agency prior to conducting the modeling. The modeling protocol should identify the specific model, modeling options, and input data to be used for a particular application.

In accordance with the MDEQ Air Regulations, modeling for an air quality analysis is only required for projects that trigger PSD review. The proposed project triggers PSD review for VOCs, because there will be a significant increase in VOC emissions. Since VOC is a precursor to ozone, an impact analysis must be conducted to determine the effect of the increased VOC emissions on the ambient ozone concentration in the surrounding area of the facility. The ozone ambient impact analysis is discussed in Section 7.1 of this application. All other pollutants are below the PSD Significant Emission Rate Thresholds, and therefore do not require an air quality analysis.

SECTION 6

BACT ANALYSIS

SECTION 6: BACT ANALYSIS

Under federal and state PSD regulations, any major modification subject to PSD review requires a Best Available Control Technology (BACT) analysis. The BACT analysis is to be conducted for each emission unit or process affected by the project that emits the pollutant for which the SER threshold is exceeded. VOC emissions from the proposed modification of Kiln 1 (AB-002) exceed the SER threshold, therefore, a BACT analysis for VOC emitted from the lumber drying kiln is required.

6.1 BACT ANALYSIS METHODOLOGY

The BACT analysis is performed using the top-down approach presented in EPA's Draft New Source Review Workshop Manual (October 1990). A top-down BACT analysis consists of the following five steps:

- Step 1: Identify All Control Technologies
- Step 2: Eliminate Technically Infeasible Options
- Step 3: Rank Remaining Control Technologies by Control Effectiveness
- Step 4: Evaluate Most Effective Controls
- Step 5: Select BACT

The selected BACT cannot be less stringent than any applicable NSPS or NESHAP. As discussed in Section 4 of this application, no NSPS are applicable to the facility's lumber drying kilns. The kilns are subject to 40 CFR, Part 63 Subpart DDDD; however, there are no emission limitations for lumber kilns currently contained in this standard.

6.2 STEP 1: IDENTIFY ALL CONTROL TECHNOLOGIES

Potential control technologies for VOC from lumber drying kilns were identified after a review of the EPA RACT/BACT/LAER Clearinghouse (RBLC) for lumber drying kilns (RBLC Process Code 30.800) permitted in the past ten years. The RBLC for lumber kilns indicates that no add-on controls have been proposed to control VOC from kilns. The only controls that have been proposed for VOC from lumber kilns are proper operation and maintenance procedures. A summary of the results of the RBLC search can be found at the end of this section. Additional control technologies were identified by reviewing technical literature as well as preliminary determinations for recently issued PSD permits for similar sources.

After a review of all available information, the following potential control technologies were identified:

- Carbon Adsorption
- Condensation
- Biofiltration
- Thermal Oxidation
- Wet Scrubbing
- Proper Kiln Operation and Maintenance Practices

6.3 STEP 2: ELIMINATE TECHNICALLY INFEASIBLE OPTIONS

The technical feasibility of each potential control technologies identified in Step 1 will be evaluated. The sections below will include a brief description of each control technology, followed by an evaluation of the technical feasibility of that option.

6.3.1 CARBON ADSORPTION

Carbon adsorption systems use an activated carbon bed to trap VOC. As the exhaust gas stream passes through the activated carbon bed, VOC molecules are attracted to the surface of the activated carbon. The cleaned exhaust gas is then discharged to the atmosphere. When the activated carbon is spent and can no longer effectively adsorb VOC, the carbon is reactivated either by heating with steam, vacuuming to remove VOC from the surface, or chemical treatment. Reactivation can occur on-site, or the spent carbon may be returned to the supplier for reactivation.

Carbon adsorption beds are most effective on streams with low relative humidity and temperatures. The kiln exhaust gas stream has a high relative humidity and temperature, typically around 215 °F. Water present in the high humidity exhaust gas would compete with VOC for adsorption onto the activated carbon. In some cases, it has been found that the high temperatures of the exhaust gases can cause desorption of previously adsorbed VOC. Both high relative humidity and temperature greatly reduce the ability of VOCs to be adsorbed. For these reasons, carbon adsorption is deemed to be technically infeasible for this process.

6.3.2 CONDENSATION

Condensation is achieved using heat exchangers or condensers that convert VOCs in the exhaust gas from the vapor phase to the liquid phase. The phase change is usually accomplished by decreasing the temperature of the gas stream to below the dew point of the VOCs to cause it to liquefy. The condensed VOCs can then be collected and disposed of or recovered for sale.

The primary compounds in VOCs from lumber drying kilns are terpenes. In order to cause condensation of the terpenes, the gas stream would have to be cooled to below 32 °F. As previously mentioned, the exhaust gas stream from kilns has a high moisture content. Cooling the gas stream to below the freezing point of water would cause ice to form on the condenser, which would render the unit ineffective. For this reason, condensation is deemed to be technically infeasible for this process.

6.3.3 BIOFILTRATION

Biofiltration involves the use of microbes which remove organics from the exhaust gas stream by feeding on the organic material and converting to water and carbon dioxide. The exhaust gas stream is directed through the bed media in which the microbes live. Organics are absorbed by moisture in the bed media and come into contact with the microbes. The microbes reduce the concentration of organics by

consuming the organic material. The cleaned air is then discharged to the atmosphere.

Most microbes need a temperature range between 60 to 105 °F to survive. The exhaust from lumber drying kilns is typically around 215 °F. Introducing gas streams of this temperature into a biofilter would likely kill the microbes inhabiting the bed media. As previously mentioned, the primary compounds in VOC from lumber drying kilns are terpenes, and most terpenes are not highly soluble in water. Compounds that are not easily soluble in water are not suitable for removal by biofiltration since the compound must be absorbed by moisture in the bed media to come into contact with the microbes. For these reasons, biofiltration is deemed to be technically infeasible for this process.

6.3.4 THERMAL OXIDATION

Thermal oxidation is a process by which combustion converts the VOCs in an exhaust gas stream to water and carbon dioxide. Regenerative thermal oxidizers (RTOs) are the most widely used design. RTOs have a ceramic material in a packed bed which is used to preheat the incoming gas. The preheated gas enters the combustion chamber where it is further heated by natural gas combustion. The combustion chamber is maintained at a temperature of around 1,400 to 1,500 °F for oxidation of VOCs.

A regenerative catalytic oxidizer (RCO) operates in the same manner as an RTO, except that it uses a catalyst material in the packed bed instead of a ceramic material. The use of a catalyst allows for oxidation of VOCs at a lower temperature of around 800 °F.

As previously mentioned, the exhaust gas stream from a lumber kiln has a temperature of around 215 °F and has a high moisture content. The high moisture content and relatively low exit temperature of the exhaust gas makes an RTO unsuitable. Particulates present in the exhaust gas could also cause fouling of the ceramic material. The fouled ceramic would not provide the necessary preheating needed for the RTO be effective. An RCO would be an ineffective option for the same reasons as an RTO. Particulates in the exhaust gas are an even bigger problem for an RCO. The catalytic material becomes coated with PM, and the coated sections are unable act as a catalyst in the oxidation of VOCs entering the unit. For these reasons, thermal oxidation by an RTO or an RCO is deemed to be technically infeasible for this process.

6.3.5 WET SCRUBBING

Wet scrubbing systems are used to absorb pollutants in the exhaust gas stream into a liquid by passing the stream through a countercurrent flow of a scrubbing liquid. For a wet scrubbing system to work, the pollutant being removed must be soluble in the scrubbing liquid. Terpenes, the primary constituent in VOC from lumber kilns, are not very soluble in water. For this reason, wet scrubbing is deemed to be technically feasible for this process.

6.3.6 PROPER KILN OPERATION AND MAINTENANCE PRACTICES

VOC emissions from lumber drying are generated when naturally occurring VOCs in the wood are heated. The heat causes the VOCs to be drawn out of the wood and emitted into the atmosphere. VOC emissions are largely proportional to the amount of moisture removed from the lumber. While drying lumber to a target moisture content ensures lumber quality, over-drying the lumber generates more VOCs. Over-drying can be prevented through proper operating practices. Utilizing proper operation practices and routine kiln maintenance to reduce VOCs is a technically feasible option.

6.4 STEP 3: RANK REMAINING CONTROL TECHNOLOGIES BY CONTROL EFFECTIVENESS

The only control option that was found to be technically feasible in Step 2 was proper kiln operation and maintenance practices. Since only one control option was found to be technically feasible, ranking of remaining control technologies is not necessary.

6.5 STEP 4: EVALUATE MOST EFFECTIVE CONTROLS

Since the only feasible control option is proper kiln operation and maintenance practices, further evaluation of controls is not necessary.

6.6 STEP 5: SELECT BACT

Results of the top-down BACT analysis indicate that there are no feasible add-on control technologies for control of VOC emissions from lumber drying kilns. The selected BACT is proper kiln operation and maintenance practices. This determination is consistent with data obtained from the RBLC. Interfor U.S. Inc. proposes that the BACT limit take the form of a Work Practice and Preventative Maintenance Program for Kiln 1. This is consistent with the BACT limits that have been established in recent permits issued by multiple states to similar sources. A list of RBLC determinations for VOCs from lumber drying kilns over the past 10 years is provided in Table 6.1 at the end of this section.

6.7 PROPOSED WORK PRACTICE AND PREVENTATIVE MAINTENANCE PROGRAM

The following Work Practice and Preventative Maintenance Program is based on similar CDKs permitted at existing Interfor U.S. Inc. facilities.

a. General Work Practice Standards for Wood-Drying Kiln Operation
    i. The lumber drying target moisture will be 12% or greater.
    ii. Routines for periodic preventative maintenance are detailed in following sections b, c, d, e, and f and are based on manufacturer's recommendations.
b. Routine Before or During each Kiln Charge
    i. Make certain all fans are running. If a fan frequently trips out, investigate the cause, and document the solution.

ii. Ensure that the kiln computer controller is functioning properly.
iii. Verify that the heating system is operating properly.

c. Weekly Routine
   i. Drain oil or water from transducer air supplies.
   ii. Ensure all amp-meters are operational.

d. Monthly Routine
   i. Grease lumber truck wheels.
   ii. Check bearing bolts on fans.
   iii. Check motor/fan drive belts. Grease fan motors and bearings and inspect fans for damage. Check fan clearance and rotation. Adjust tension and replace belts if required.
   iv. Inspect kiln walls and doors for deterioration; schedule repairs if necessary.
   v. Inspect temperature sensor mounts for damage.
   vi. Ensure control room's air conditioner/heater is working properly for maintaining correct temperature for electrical components.
   vii. Inspect air-venting motors for proper attachment to the mounting bases; ensure that arms are functioning properly.

e. Semiannually
   i. Clean tracks through kilns to remove accumulated dust.

f. Annually
   i. Check tracks for damage.
   ii. Inspect area at base of kiln entry/exit for damage.

RACT/BACT/LAER CLEARINGHOUSE DATA

Table 6.1 RACT/BACT/LAER Clearinghouse Database Report

FACILITY NAME	COMPANY NAME	COUNY	STATE	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	THROUGHPUT UNIT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVGERAGE TIME CONDITION
THE WESTERVELT COMPANY	THE WESTERVELT COMPANY	HALE	AL	1/4/2011	Two (2) 125 MMBtu/Hr. Wood-fired Boilers	Wood Residuals	125	MMBTU/H each	VOC		0.5	LB/MMBTU		0.5	LB/MMBTU	
TEMPLE INLAND PINELAND MANUFACTURING COMPLEX	TIN INC	SABINE	TX	8/12/2011	Dry studmill kilns 1 and 2	wood	156,000	boardfeet per charge	VOC	good operating practice and maintenance	2.49	LB VOC/1000 BOARDFEE		0		
JOYCE MILL	WEST FRASER TIMBER COMPANY, LTD	WINN	LA	8/16/2011	Lumber kilns		300	million board feet/yr	VOC	properly design and operation	930	T/YR		0		
LUMBER MILL	WEST FRASER, INC.	BOWIE	TX	12/15/2011	Continuous lumber kilns (2)	wood	275	MMBF/YR	VOC	proper temperature and process management; drying to appropriate moisture content	3.5	LB/MBF		0		
SIMPSON LUMBER CO, LLC MELDRIM OPERATIONS	SIMPSON LUMBER CO.	EFFINGHAM	GA	4/25/2012	KILN 4	WASTE WOOD	73,000,000	BF/YR	VOC	PROPER MAINTENANCE AND OPERATION	3.93	LB/MBF	DAILY	0		
SIMPSON LUMBER CO, LLC MELDRIM OPERATIONS	SIMPSON LUMBER CO.	EFFINGHAM	GA	4/25/2012	KILN 3	WASTE WOOD	65,000,000	BF/YR	VOC	PROPER MAINTENANCE AND OPERATION	3.83	LB/MBF	DAILY	0		
SIMPSON LUMBER COMPANY, LLC	SIMPSON LUMBER COMPANY, LLC	GEORGETOWN	SC	8/29/2012	DIRECT-FIRED LUMBER DRYING KILN NO. 4	DRY WOOD WASTE	34	MMBTU/H	VOC	WORK PRACTICE STANDARDS	104	T/YR		3.8	LB/MBF	
NEW SOUTH COMPANIES, INC. - CONWAY PLANT	NEW SOUTH COMPANIES, INC.	HORRY	SC	9/24/2012	LUMBER KILNS		381	MMBD-FT/YR	VOC	PROPER MAINTENANCE AND OPERATION	799.18	T/YR		4.2	LB/MBF	AS TOTAL VOC
KLAUSNER HOLDING USA, INC	KLAUSNER HOLDING USA, INC	ORANGEBURG	SC	1/3/2013	LUMBER DRYING KILNS EU007		700	MILLION BOARD FOOT PER YEAR	VOC		3.5	LB/MBF		0		
WEST FRASER, INC. - MAPLESVILE MILL	WEST FRASER, INC.	CHILTON	AL	4/15/2013	Two(2) 100 MMBF/Y Continuous direct fired kiln	Wood Residuals	200	MMBF/YR	VOC		3.76	LB/MBF		0		
WEST FRASER - NEWBERRY LUMBER MILL	WEST FRASER TIMBER CO. LTD	NEWBERRY	SC	4/30/2013	TWO - 35 MMBTU/H DUAL PATH, DIRECT FIRED, CONTINUOUS LUMBER KILNS, 15 THOUSAND BF/H,	SAWDUST	0		VOC	PROPER OPERATION AND GOOD OPERATING PRACTICES	3.76	LB/MBF		376	T/YR	
NEW SOUTH LUMBER COMPANY, INC. DARLINGTON PLANT	NEW SOUTH LUMBER COMPANY, INC.	DARLINGTON	SC	6/18/2013	DKN1	STEAM HEATED	60	MMBF/YR	VOC	PROPER OPERATION AND MAINTENANCE	343.98	T/YR		0		
NEW SOUTH LUMBER COMPANY, INC. DARLINGTON PLANT	NEW SOUTH LUMBER COMPANY, INC.	DARLINGTON	SC	6/18/2013	DKN4	STEAM HEATED	60	MMBF/YR	VOC	MAINTENACE AND OPERATING PRACTICES	343.98	T/YR		0		
NEW SOUTH LUMBER COMPANY, INC. DARLINGTON PLANT	NEW SOUTH LUMBER COMPANY, INC.	DARLINGTON	SC	6/18/2013	DKN5	WOOD WASTE	75	MMBF/YR	VOC	PROPER MAINTENANCE AND OPERATION	141	T/YR		0		
WEST FRASER, INC. (LEOLA LUMBER MILL)	WEST FRASER, INC.	GRANT	AR	8/5/2013	LUMBER KILN, CONTINUOUS, INDIRECT		275	MMBF/YR	VOC		3.5	LB/MBF		481.3	T/YR	
THE WESTERVELT COMPANY	THE WESTERVELT COMPANY	HALE	AL	8/21/2013	Three (3) 93 MMBF/Y Continous, Dual path, indirect fired kilns	Steam (Indirect heat)	0		VOC		4.57	LB/MMBF		0		
DELTIC TIMBER CORPORATION WALDO	DELTIC TIMBER CORPORATION	COLUMBIA	AR	10/18/2013	KILN NO. 3		0		VOC	PROPER KILN OPERATION	27	LB/H		0		
DELTIC TIMBER CORPORATION WALDO	DELTIC TIMBER CORPORATION	COLUMBIA	AR	10/18/2013	KILN NO. 4		0		VOC		46.2	LB/H		0		
DELTIC TIMBER CORPORATION WALDO	DELTIC TIMBER CORPORATION	COLUMBIA	AR	10/18/2013	KILN NO. 5		0		VOC		27	LB/H		0		
WEST FRASER-OPELIKA LUMBER MILL	WEST FRASER, INC.	LEE	AL	11/1/2013	Two(2) 87.5 MMBF/YR Continuous kilns with a 35 MMBtu/hr direct-fired wood burner	Wood Shavings	175	MMBF/YR	VOC		3.76	LB/MBF		175	K/12 MONTHS	
DODSON DIVISION	WEYERHAEUSER NR COMPANY	WINN	LA	12/30/2013	Dry Kiln 1 (033, EQT 15)		14	M BD-FT/H	VOC	Good operating practices, including proper design, operation, and maintenance	79.4	LB/H	HOURLY MAXIMUM	481.37	T/YR	ANNUAL MAXIMUM*
DODSON DIVISION	WEYERHAEUSER NR COMPANY	WINN	LA	12/30/2013	Dry Kiln 2 (034, EQT 16)		14	M BD-FT/H	VOC	Good operating practices, including proper design, operation, and maintenance	79.4	LB/H	HOURLY MAXIMUM	481.37	T/YR	ANNUAL MAXIMUM*
DODSON DIVISION	WEYERHAEUSER NR COMPANY	WINN	LA	12/30/2013	Dry Kiln 3 (035, EQT 17)		16	M BD-FT/H	VOC	Good operating practices, including proper design, operation, and maintenance	90.74	LB/H	HOURLY MAXIMUM	481.37	T/YR	ANNUAL MAXIMUM*
DODSON DIVISION	WEYERHAEUSER NR COMPANY	WINN	LA	12/30/2013	Dry Kiln 4 (051, EQT 32)		16	M BD-FT/H	VOC	Good operating practices, including proper design, operation, and maintenance	90.74	LB/H	HOURLY MAX (SEE NOTE KILN NOT BUILT)	481.37	T/YR	ANNUAL MAX*(SEE NOTE KILN NOT BUILT)
SOUTHWEST LOUISIANA LUMBER OPERATIONS	TIN INC. DBA TEMPLE-INLAND	BEAUREGARD	LA	1/31/2014	EP-3K -Wood-Fired Dry Kiln No. 1	Wood	60,000	MBF/YR	VOC	Proper kiln design & operation; annual production limit	29.27	LB/H	HOURLY MAXIMUM	2.96	LB/M BF	WHEN DRYING LUMBER
SOUTHWEST LOUISIANA LUMBER OPERATIONS	TIN INC. DBA TEMPLE-INLAND	BEAUREGARD	LA	1/31/2014	EP-4K â€" Wood-Fired Dry Kiln No. 2	Wood	60,000	MBF/YR	VOC	Proper kiln design & operation; annual production limit	29.27	LB/H	HOURLY MAXIMUM	2.96	LB/M BF	WHEN DRYING LUMBER
SOUTHWEST LOUISIANA LUMBER OPERATIONS	TIN INC. DBA TEMPLE-INLAND	BEAUREGARD	LA	1/31/2014	EP-5K â€" Wood-Fired Dry Kiln No. 3	Wood	60,000	MBF/YR	VOC	Proper kiln design & operation; annual production limit	29.27	LB/H	HOURLY MAXIMUM	2.96	LB/M BF	WHEN DRYING LUMBER
SOUTHWEST LOUISIANA LUMBER OPERATIONS	TIN INC. DBA TEMPLE-INLAND	BEAUREGARD	LA	1/31/2014	EP-6K â€" Wood-Fired Dry Kiln No. 4	Wood	60,000	MBF/YR	VOC	Proper kiln design & operation; annual production limit	29.27	LB/H	HOURLY MAXIMUM	2.96	LB/M BF	WHEN DRYING LUMBER
CHOPIN MILL	MARTCO LIMITED PARTNERSHIP	NATCHITOCHES	LA	3/18/2014	Lumber Dry Kilns Nos. 1 & 2 (EQT 37 & 38)		25,000	M BD-FT/YR	VOC	Good operating practices to limit VOC emissions to 4.29 lb/M bd-ft (12-month rolling average).	24.51	LB/H	HOURLY MAXIMUM	53.68	T/YR	ANNUAL MAXIMUM*
PERRY MILL	GILMAN BUILDING PRODUCTS	TAYLOR	FL	4/1/2014	Direct-fired lumber drying kiln	Waste wood	90	million board ft/yr	VOC	At a minimum, the permittee shall operate the kiln in accordance with the following best operating practices (BMP). a.Minimize over-drying the lumber; b.Maintain consistent moisture content for the processing lumber charge; and c.Dry at the minimum temperature. The permittee shall develop and operate in accordance with a written plan to implement the above BMP and any others required by the kiln manufacturer. Ninety days before the initial startup of the kiln, the permitted shall submit to the Compliance Authority the BMP plan. The Title V air operation permit shall include the submitted BMP plan.	3.5	LB/THOUSAND BOARD FT		0		
ELLIOTT SAWMILLING COMPANY, INC.	ELLIOTT SAWMILLING COMPANY, INC.	HAMPTON	SC	6/10/2014	Batch Drying Lumber Kiln No. 5	wood	53	MM BF/YR	VOC		3.76	LB/M BF	TERPENE + METHANOL + FORMALDEHYDE	99.64	T/YR	
CAMDEN PLANT	NEW SOUTH LUMBER COMPANY, INC.	KERSHAW	SC	6/18/2014	DKN6 - DIRECT FIRED CONTINUOUS LUMBER DRYING KILN	WOOD	80	MMBD-FT/YR	VOC		150.4	T/YR		0		
SIMPSON LUMBER COMPANY, LLC	SIMPSON LUMBER COMPANY, LLC	GEORGETOWN	SC	6/20/2014	LUMBER KILNS		166	MMBF/YR	VOC	PROPER OPERATION AND MAINTENANCE	156	T/YR		3.76	LB/MBF	
WHITEHOUSE LUMBER MILL	WEST FRASER, INC	DUVAL	FL	9/9/2014	Direct-Fired Continuous Kilns	Wood waste	40	MMBTU/H	VOC	Proper Maintenance and Operating Procedures: â€¢Minimize over-drying the lumber. â€¢Maintain consistent moisture content for the processing lumber charge. â€¢Dry the lumber at the minimum temperature. â€¢Develop a written Operation and Maintenance (O&M) plan identifying the above practices and the operation and maintenance requirements from the kiln manufacturer. â€¢Record and monitor the total monthly amount and 12-month annual total of wood dried in each kiln (board-feet). â€¢Record the calculated monthly and 12-month annual total emissions of VOC to demonstrate compliance with the process and emissions limits.	3.76	LB/THOUSAND BOARD FT		0		
NEW SOUTH COMPANIES, INC. - CONWAY PLANT	NEW SOUTH COMPANIES, INC.	HORRY	SC	10/15/2014	LUMBER KILNS		296	MMBF/YR	VOC	PROPER MAINTENANCE AND OPERATION	602	T/YR	(442 T/YR KILNS 1-5, 160 T/YR KILN 6)	4.2	LB/MBF	
MILLPORT WOOD PRODUCTS FACILITY	WEYER HAEUSER NR COMPANY	LAMAR	AL	12/30/2014	Continuous direct-lumber dry kiln	Green sawdust	140,000	mbf/yr	VOC	Proper maintenance & operating practice requirements. Test method information: Method 18/25.	4.7	LB	MBF AS WPP 1*	0		
KAPSTONE CHARLESTON KRAFT LLC- SUMMERVILLE	KAPSTONE CHARLESTON KRAFT LLC	DORCHESTER	SC	1/20/2015	LUMBER KILNS		195	MMBF/YR	VOC	PROPER MAINTENANCE AND OPERATION	225.6	T/YR		3.76	LB/MBF	
GEORGIA-PACIFIC WOOD PRODUCTS SOUTH LLC (GURDON PLYWOOD AND	GEORGIA-PACIFIC WOOD PRODUCTS SOUTH LLC (GURDON PL	CLARK	AR	2/6/2015	SN-09 #4 LUMBER KILN	NATURAL GAS	130	MILLION BOARD FEET	VOC		3.8	LB/ 1000 BOARD FEET		373.7	T/YR	
OLA	DELTIC TIMBER CORPORATION	YELL	AR	2/11/2015	Dry Kiln No. 3 (SN-06)	None	105	MMBF/yr	VOC		33.3	LB/H	AVERAGE OF THREE 1-HR TEST RUNS	0		
OLA	DELTIC TIMBER CORPORATION	YELL	AR	2/11/2015	Drying Kiln No. 4 (SN-12)	None	105	MMBF/yr	VOC		33.2	LB/H	AVERAGE OF THREE 1-HR TEST RUNS	0		
OLA	DELTIC TIMBER CORPORATION	YELL	AR	2/11/2015	Drying Kiln No. 5 (SN-21)	wood residue	60	MMBF/yr	VOC		23.5	LB/H	AVERAGE OF THREE 1-HR TEST RUNS	0		

RESOLUTE FOREST PRODUCTS - ALABAMA SAWMILL	RESOLUTE FP U.S., INC.	TALLADEGA	AL	6/24/2015	Continuous Direct-Fired Lumber Dry Kilns with 35 mmbtu/hr Wood Fired Burner	Wood	108	mmbf/yr - each	VOC		3.76	LB/MBF	ROLLING 12 MONTHS	0		
EL DORADO SAWMILL	UNION COUNTY LUMBER COMPANY	UNION	AR	8/3/2015	LUMBER DRYING KILN SN-01	NATURAL GAS	45	MMBTU/H	VOC	PROPER MAINTENANCE AND OPERATION	3.8	LB/MBF		0		
EL DORADO SAWMILL	UNION COUNTY LUMBER COMPANY	UNION	AR	8/3/2015	LUMBER DRYING KILN SN-02	NATURAL GAS	45	MMBTU/H	VOC		3.8	LB/MBF		0		
EL DORADO SAWMILL	UNION COUNTY LUMBER COMPANY	UNION	AR	8/3/2015	LUMBER DRYING KILN SN-03	NATURAL GAS	45	MMBTU/H	VOC		3.8	LB/MBF		0		
COTTONTON SAWMILL	WESTROCK COATED BOARD, LLC	RUSSELL	AL	8/5/2015	Continuous Direct-fired Lumber Dry Kiln with 34 MMBtu/hr Wood fired burner	Biomass	16	MBF/hr	VOC	Good combustion practices and proper maintenance	4.21	LB/MBF	VOC AS TERPENES, M25A	0		
DELTIC TIMBER CORPORATION - OLA	DELTIC TIMBER CORPORATION	YELL	AR	10/13/2015	STEAM HEATED CONTINUOUS KILN NO. 3		79,000	MBF/YR	VOC	PROPER DRYING SCHEDULE AND A TEMPERATURE BASED ON MOISTURE CONTENT OF THE LUMBER TO BE DRIED AND THE MANUFACTURER'S SPECIFICATIONS	33.3	LB/H	AVERAGED OVER DRYING CYCLE TIME	0		
DELTIC TIMBER CORPORATION - OLA	DELTIC TIMBER CORPORATION	YELL	AR	10/13/2015	STEAM HEATED CONTINUOUS KILN NO. 4		79,000	MBF/YR	VOC	PROPER DRYING SCHEDULE AND A TEMPERATURE BASED ON MOISTURE CONTENT OF THE LUMBER TO BE DRIED AND THE MANUFACTURER'S SPECIFICATIONS	33.3	LB/H	AVERAGED OVER DRYING CYCLE TIME	0		
DELTIC TIMBER CORPORATION - OLA	DELTIC TIMBER CORPORATION	YELL	AR	10/13/2015	DIRECT-FIRED CONTINUOUS KILN NO. 5		79,000	MBF/YR	VOC	PROPER DRYING SCHEDULE AND A TEMPERATURE BASED ON MOISTURE CONTENT OF THE LUMBER TO BE DRIED AND THE MANUFACTURER'S SPECIFICATIONS	38.2	LB/H	AVERAGED OVER DRYING CYCLE TIME	0		
NEW SOUTH LUMBER COMPANY - DARLINGTON INC.	NEW SOUTH LUMBER COMPANY - DARLINGTON INC.	DARLINGTON	SC	1/26/2016	TWO KILNS - KLN5 AND KLN6	GREEN SAWDUST	85	MILLION BD-FT/YR	VOC	PROPER OPERATION AND MAINTENANCE	0			0		
BELK CHIP-N-SAW FACILITY	GEORGIA-PACIFIC WOOD PRODUCTS LLC	FAYETTE	AL	5/26/2016	115,000 MBF/YR CDK D (ES-006) WITH 35 MMBTU/HR WOOD-FIRED AND 7 MMBTU/HR NG-FIRED BURNERS	WOOD-SAWDUST	115	MMBF/YR	VOC	OPERATING AND MAINTANCE PRACTICES MEASURE LUMBER MOISTURE CONTENT	5.49	LB/MBF AS WPP! VOC		0		
BELK CHIP-N-SAW FACILITY	GEORGIA-PACIFIC WOOD PRODUCTS LLC	FAYETTE	AL	5/26/2016	115,000 MBF/YR CDK E (ES-009) WITH 35 MMBTU/HR WOOD-FIRED AND 7 MMBTU/HR NG-FIRED BURNERS	WOOD-SAWDUST	115	MMBF/YR	VOC	OPERATING AND MAINTENANCE PRACTICES LUMBER MOISTURE CONTENT MEASUREMENT	5.49	LB/MBF AS WPP1 VOC		0		
GRACEVILLE LUMBER MILL	REX LUMBER, LLC	JACKSON	FL	7/14/2016	Direct-fired continuous lumber drying Kiln No. 5	Sawdust	110,000	Thousand bf/yr	VOC	Lumber moisture used as proxy for VOC emissions -- product that is over dried likely means more VOC driven off and emitted	3.5	LB/THOUSAND BF		0		
MILLPORT WOOD PRODUCTS FACILITY	WEYERHAEUSER NR COMPANY	LAMAR	AL	8/30/2016	THREE CONTINUOUS DIRECT FIRED LUMBER DRY KILNS, CDK-4/X023A, CDK-5/X023B, CDK-6/X023C	WOOD-SAWDUST	385	MMBF/YR	VOC	OPERATING AND MAINTENANCE PRACTICES	4.7	LB/MBF AS WPP1		0		
GEORGIA PACIFIC - MCCORMICK SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS LLC	MCCORMICK	SC	10/27/2016	Direct fired continuous lumber kiln	Wood Fired	28	MMBTU/HR	VOC		0			0		
TWO RIVERS LUMBER CO., LLC	TWO RIVERS LUMBER CO., LLC	MARENGO	AL	1/3/2017	15.4 MBF/HR CDK (DPK-1) W/ 38.8 MMBTU/HR NATURAL GAS BURNER	NATURAL GAS	15	MBF/H	VOC		3.8	LB/MBF	MEASURED AS CARBON	0		
TWO RIVERS LUMBER CO., LLC	TWO RIVERS LUMBER CO., LLC	MARENGO	AL	1/3/2017	15.4 MBF/HR CDK (DPK-2) W/ 38.8 MMBTU/HR NATURAL GAS BURNER	NATURAL GAS	15	MBF/H	VOC		3.8	LB/MBF	MEASURED AS CARBON	0		
CADDO RIVER LLC	CADDO RIVER LLC	PIKE	AR	2/8/2017	CONTINUOUS LUMBER DRYING KILNS	WOOD	116,000,000	BOARD FEET	VOC		53.2	LB/H		220.4	T/YR	12 MONTH ROLLING TOTAL
PERRY MILL	GILMAN BUILDING PRODUCTS, LLC	TAYLOR	FL	4/11/2017	Direct-Fired Batch Lumber Drying Kiln No. 5	Waste wood	50,000	MMBF per year	VOC	Minimization of over-drying	3.5	LB/MBF		0		
FULTON SAWMILL	SCOTCH GULF LUMBER, LLC	CLARKE	AL	6/8/2017	11.4 MBF/HR CONTINUOUS DIRECT-FIRED LUMBER DRY KILN, 40 MMBTU/HR NATURAL GAS BURNER, & 4 MMBTU/HR NATURAL GAS CONDENSATE EVAPORATOR	NATURAL GAS	11	MBF/H	VOC	BACT DETERMINED AS PROPER KILN OPERATION AND MAINTENANCE PRACTICES	4	LB/MBF	MBF	0		
WEST FRASER, INC.	WEST FRASER, INC.	POPE	AR	9/14/2017	SN-22gx START UP ABORT STACK	WOOD	30	MMBTU/HR	VOC	Good Combustion Practice	0.017	LB/MMBTU		0.2	LB/HR	
WEST FRASER, INC.	WEST FRASER, INC.	POPE	AR	9/14/2017	22	wood	0		VOC		3.8	LB/MMBOARD FEET		63.6	LB/HR	
ANTHONY FOREST PRODUCTS COMPANY, LLC	ANTHONY FOREST PRODUCTS COMPANY, LLC	UNION COUNTY	AR	10/2/2017	Dual Path Kiln #3	sawdust	32	MMBtu/hr	VOC		3.8	LB/MBF		0		
RESOLUTE FP US INC. - CATAWBA LUMBER MILL	RESOLUTE FP US INC.	YORK	SC	11/3/2017	3 Continuous Direct-Fired Lumber Kilns, CDK1, CDK2, CDK3	green sawdust	104	MM BF/YR	VOC		5.82	LB/M BF	VOC AS TERPENE+METHANOL+FORMALDEHYDE	0		
TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	TALLADEGA COUNTY	AL	12/18/2017	Dry Kiln 1	natural gas	343,530	MCF/hr	VOC		5.49	LB/MBF AS WPP1 VOC		0		
TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	TALLADEGA COUNTY	AL	12/18/2017	Dry Kiln 2	Natural Gas	343,530	MCF/hr	VOC		5.49	LB/MBF AS WPP1 VOC		0		
TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	TALLADEGA COUNTY	AL	12/18/2017	Dry Kiln 3	Natural Gas	257,648	MCF/hr	VOC		5.49	LB/MBF AS WPP1 VOC		0		
CADDO RIVER LLC	CADDO RIVER LLC	PIKE	AR	1/29/2018	Dual Path Kiln # 3	Wood	185,000	MBF	VOC		3.8	LB/MBF		53.2	LB/HR	
CADDO RIVER LLC	CADDO RIVER LLC	PIKE	AR	1/29/2018	DPK # 3 Abort Stack	Wood	2,000	lb	VOC		0.017	LB/MMBTU		0.2	LB/HR	
NSLC - DARLINGTON	NEW SOUTH LUMBER COMPANY	DARLINGTON	SC	2/6/2018	Lumber Drying Kiln 7	Natural Gas	80	MMbd-ft/yr	VOC	Volatile Organic Compounds (VOC) best available control technology for the continuous lumber drying kiln, KLN7, is work practice standards. VOC emissions are based on an emissions factor of 4.2 lb VOC/1000 bd-ft (as terpene +methanol + formaldehyde).	4.2	LB VOC/1000 BD-FT	VOC AS TERPENE + METHANOL + FORMALDEHYDE	0		
URANIA SAWMILL	HUNT FOREST PRODUCTS, LLC	LASALLE	LA	5/8/2018	Lumber Drying Kilns (K-1, K-2, K3)	Steam	45	MMBTU/hr	VOC	proper maintenance and operation	0			0		
LUMBER MILL	WEST FRASER WOOD PRODUCTS	RUSK	TX	6/15/2018	Kilns (EPNs CK01 and CK02)		25	MBF/KILN	VOC	Proper design and operation	3.38	LB / DBF		0		
INTERFOR U.S. INC	INTERFOR U.S. INC	DREW COUNTY	AR	6/29/2018	Convert Kiln #2 to continuous operation	sawdust	209,014	MBF/yr	VOC		3.8	LB/MBF		0		
ANTHONY TIMBERLANDS, INC	ANTHONY TIMBERLANDS, INC	OUACHITA	AR	8/2/2018	Continuos Drying Kiln		200	MMBF	VOC		36.8	LB/HR VOC		350	TPY VOC	
CANFOR SOUTHERN PINE - CAMDEN PLANT	CANFOR SOUTHERN PINE	KERSHAW	SC	9/6/2018	Lumber Drying Kiln 7	Sawdust	110	MMbd-ft/yr	VOC	Volatile Organic Compounds (VOC) Best Available Control Technology (BACT) for the continuous lumber drying kiln, KLN7, is work practice standards. VOC emissions are based on an emission factor of 5.82 lb VOC/1000 bdâ€ft (as terpene + methanol + formaldehyde)	5.82	LB/1000 BD-FT	VOC AS TERPENE + METHANOL + FORMALDEHYDE	0		
JOYCE MILL	WEST FRASER TIMBER COMPANY	WINN	LA	10/4/2018	GRP0003 Lumber kilns (AK1)		300	million board feet/yr	VOC	properly design and operation	4.2	LB/MBF		300	MMBF/YR	
POTLATCHDELTIC MANUFACTURING L.L.C. -WALDO MILL	POTLATCHDELTIC MANUFACTURING L.L.C.	COLUMBIA	AR	11/29/2018	Continuous Drying Kilns		300	MMBF	VOC		3.5	LB/MBF		543.2	T/YR	
POTLATCHDELTIC LAND AND LUMBER, LLC - WARREN LUMBER MILL	POTLATCHDELTIC LAND & LUMBER, LLC	BRADLEY	AR	1/3/2019	Continuous Drying Kilns		360	MMBF	VOC		3.5	LB/MBF		630	T/YR	
GEORGIA-PACIFIC WOOD PRODUCTS, LLC - PROSPERITY CHIP-N-SAW	GEORGIA-PACIFIC WOOD PRODUCTS, LLC	NEWBERRY	SC	2/21/2019	Lumber Drying Kiln 4	Steam	88,000	1000 bf/yr	VOC	S.C. Regulation 61-62.5, Standard No. 7) Volatile Organic Compounds (VOC) Best Available Control Technology (BACT) for the continuous lumber drying kiln, KLN7, is work practice standards. VOC emissions are based on an emission factor of 5.72 lb VOC/103 bdâ€ft (as WPP1 VOC).	5.72	LB VOC/1000 BD-FT	VOC MEASURES AS WPP1	0		
LUMBER MILL	WEST FRASER WOOD PRODUCTS	BOWIE	TX	3/20/2019	Direct-Fired Wood Drying Kiln No. 3	wood	15	MBF	VOC	proper operation and maintenance of the kiln	4.24	LB/MBF		0		
BOGALUSA SAWMILL	HOOD INDUSTRIES, INC	WASHINGTON	LA	4/25/2019	lumber kilns (2)		52	mm BF/yr (each)	VOC	Proper operation and maintenance (operate as manufacturer's recommendations, inspect weekly, repair timely, place kiln sticker uniformly, minimize short circuiting, set target moisture content as high as possible, minimize redrying)	0			0		
CANFOR SOUTHERN PINE - CONWAY MILL	CANFOR SOUTHERN PINE	HORRY	SC	5/21/2019	Batch Lumber Kilns		0		VOC	Work practice standards	4.2	MBD-FT		0		

ST. MARIES COMPLEX	POTLATCHDELTIC LAND AND LUMBER, LLC	BENEWAH	ID	6/21/2019	Dual track steam-heated batch-type lumber dry kiln	N/A	68,133	mbf/yr	VOC	PSD BACT work practice requirements: 1. The 60-minute block average dry bulb temperature of air exiting the lumber shall not exceed 245F. Compliance is determined separately at 20 locations (two loads, ten monitoring locations each) at any one time. After each periodic fan reversal, compliance is similarly determined at 20 new locations on the opposite side of each load (two loads, ten monitoring locations each). 2. The moisture content of the lumber shall not be less than 13%, dry basis. Compliance is determined at the end of the drying cycle, and prior to equalizing and conditioning (if any) by averaging the instantaneous moisture content measured at eight separate locations (four per load). For partial loads, the number of monitoring locations shall be proportional to the loadâ€™s length (e.g. two monitoring locations for a load spanning half the length of the kiln). Emission limit informing the BACT analysis: The permittee requested, and EPA Region 10 established, a 50 tpy VOC limit applicable to the kiln. The threshold value roughly reflects the kilnâ€™s maximum annual emissions considering the three species of wood the permittee is authorized to dry in the kiln. A batch's emissions are determined by multiplying the temperature-dependent emission factor (lb/mbf) by the volume of lumber in the batch (mbf).	0			0		
IDABEL SAWMILL	WEYERHAEUSER NR CO IDABEL	MCCURTAIN	OK	7/24/2019	LUMBER KILN	WOOD WASTE	108	MILLION BOARD FT/YR	VOC		3.88	LB/MBF		0		
HOLDEN WOOD PRODUCTS MILL	WEYERHAEUSER NR COMPANY	LIVINGSTON	LA	10/2/2019	Continuous Lumber Drying Kilns A and B (01-19 and 02-19)	Wood residuals	16	M board ft/hr	VOC	Proper Kiln Design and Good Operating Practices	4.33	LB/M BF		0		
HOLDEN WOOD PRODUCTS MILL	WEYERHAEUSER NR COMPANY	LIVINGSTON	LA	10/2/2019	Electric QA Kiln (15-19)		0	M board ft/hr	VOC	Proper Kiln Design and Good Operating Practices	0.04	M BF/H		0		
GP WOOD PRODUCTS SOUTH LLC GURDON PLYWOOD & LUMBER COMPLEX	GEORGIA-PACIFIC LLC	CLARK	AR	11/22/2019	#1 Lumber Kiln and #3 Lumber Kiln	Lumber	172,000,000	board feet of lumber per consecutive 12 month period	VOC		113.5	LB/HR		494.2	TPY	
GP WOOD PRODUCTS SOUTH LLC GURDON PLYWOOD & LUMBER COMPLEX	GEORGIA-PACIFIC LLC	CLARK	AR	11/22/2019	#4 Lumber Kiln	Lumber	130,000,000	board feet of lumber per consecutive 12 month period	VOC		92	LB/HR		373.7	TPY	
LUMBER MANUFACTURING PLANT	GEORGIA-PACIFIC WOOD PRODUCTS LLC	ANGELINA	TX	11/26/2019	Lumber Kilns		188,000	NBF/Kiln	VOC	Proper design and operating practices	5.49	LB/MBF		0		
VICKSBURG FOREST PRODUCTS, LLC â€“ WALTERSVILLE LUMBER MILL		WARREN	MS	10/14/2020	Lumber Drying	Steam	164,114	thousand board-feet per year	VOC		4.43	LB/1000 BOARD-FEET		363.5	TONS/YEAR	
WEST FRASER, INC.	WEST FRASER, INC.	POPE	AR	7/30/2021	Steam-heated kiln	natural gas	70,000,000	board-feet	VOC		3.8	LB/MBF		0		
WEYERHAEUSER NR COMPANY, BRUCE FACILITY		CALHOUN	MS	8/17/2021	Lumber Drying Kiln	wood	325,000	MBF/year	VOC		4.52	LB VOC/MBF		325000	MBF/YEAR	

SECTION 7

ADDITIONAL IMPACTS ANALYSIS

SECTION 7: ADDITIONAL IMPACTS ANALYSIS

7.1 OZONE AMBIENT IMPACT ANALYSIS

Ozone is formed by the interaction of VOCs, NO_X, and sunlight. Because the proposed modification will result in a significant increase of VOCs, an ozone impact analysis must be conducted to determine the effect of the increased VOC emissions on the ambient ozone concentration in the area surrounding the facility. Since the increase in VOC emissions exceeds 100 tons per year, an evaluation is required to determine if existing ozone monitoring data can be used in the place of pre-construction monitoring data.

As recommended in 40 CFR Part 51 Appendix W – Guideline on Air Quality Models, the Tier 1 approach can be utilized to evaluate the effects of the precursors VOC and NO_X on secondary formation of ozone. The Tier 1 approach consists of using existing technically credible and appropriate relationships between emissions and previous modeling results to evaluate a source's impacts. In April 2019, the EPA released the *Guidance on the Development of Modeled Emission Rates for Precursors (MERPS) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program (April 30, 2019)* (MERP Guidance). The MERP Guidance allows the use of properly supported MERPs to relate modeled downwind impacts with an air quality threshold that is used to determine if such an impact causes or contributes to a violation of the appropriate National Ambient Air Quality Standards (NAAQS). Table 4-1 of the MERP Guidance provides MERP values derived from EPA modeling results for different climate zones in the United States. EPA recommends that the combined VOC and NO_X precursor impacts on 8-hr daily maximum ozone be considered to determine if the project source's air quality impact would exceed the ozone Significant Impact Level (SIL).

For this demonstration, the lowest VOC and NO_X MERP values (2,307 tpy and 190 tpy, respectively) for the South climate zone was chosen for the Interfor U.S. Inc. facility located in Bay Springs, MS. As shown in Table 3.13 of this application, the increases of VOC and NO_X emissions from this project is 264.6 tpy and 1.402 tpy, respectively. The additive precursor impacts on 8-hr daily maximum ozone is given by:

$$\left(\frac{264.6 \text{ tpy VOC}}{2{,}307 \text{ tpy VOC MERP}} + \frac{1.402 \text{ tpy } NO_X}{190 \text{ tpy } NO_X \text{ MERP}}\right) \times 100 = 12.21\%$$

A value less than 100% indicates that the ozone SIL would not be exceeded when considering the combined impacts of the VOC and NO_X. Thus, the impacts associated with both VOC and NO_X from this project would be expected to be below the EPA recommended 8-hr ozone SIL.

7.2 CLASS I AREA IMPACT ANALYSIS

Certain national park and wilderness areas are designated as Class I areas and are given special protection under PSD regulations. As shown in Figure 7.1 at the end of Section 7, there is one Class I area located within 300 km of the facility:

- Breton Wilderness Area 246 km

The proposed modification triggers PSD review for VOCs only. A PSD application must demonstrate that PSD increments are not exceeded in nearby Class I areas. The application must also demonstrate that there are no adverse effects on visibility or Air Quality Related Values (AQRVs) in Class I areas. No PSD increments have been established for VOC. There are also no adverse impacts on visibility or AQRVs associated with VOCs. Therefore, a Class I area analysis is not required, and notification to Federal Land Managers is not needed.

7.3 SOILS AND VEGETATION IMPACT ANALYSIS

The pollutants of concern for adverse impacts on soils and vegetation are SO_2, NO_2, CO, and ozone. The analysis is only conducted for the specific pollutants that are undergoing PSD review. This project is subject to PSD review for VOCs only. VOCs are a precursor to ozone formation. As discussed in Section 7.1, the increases in VOCs are not expected to lead to an increase in ambient ozone concentrations. Therefore, no adverse effects on soils and vegetation are anticipated as a result of this project.

7.4 CLASS II AREA VISIBILITY ANALYSIS

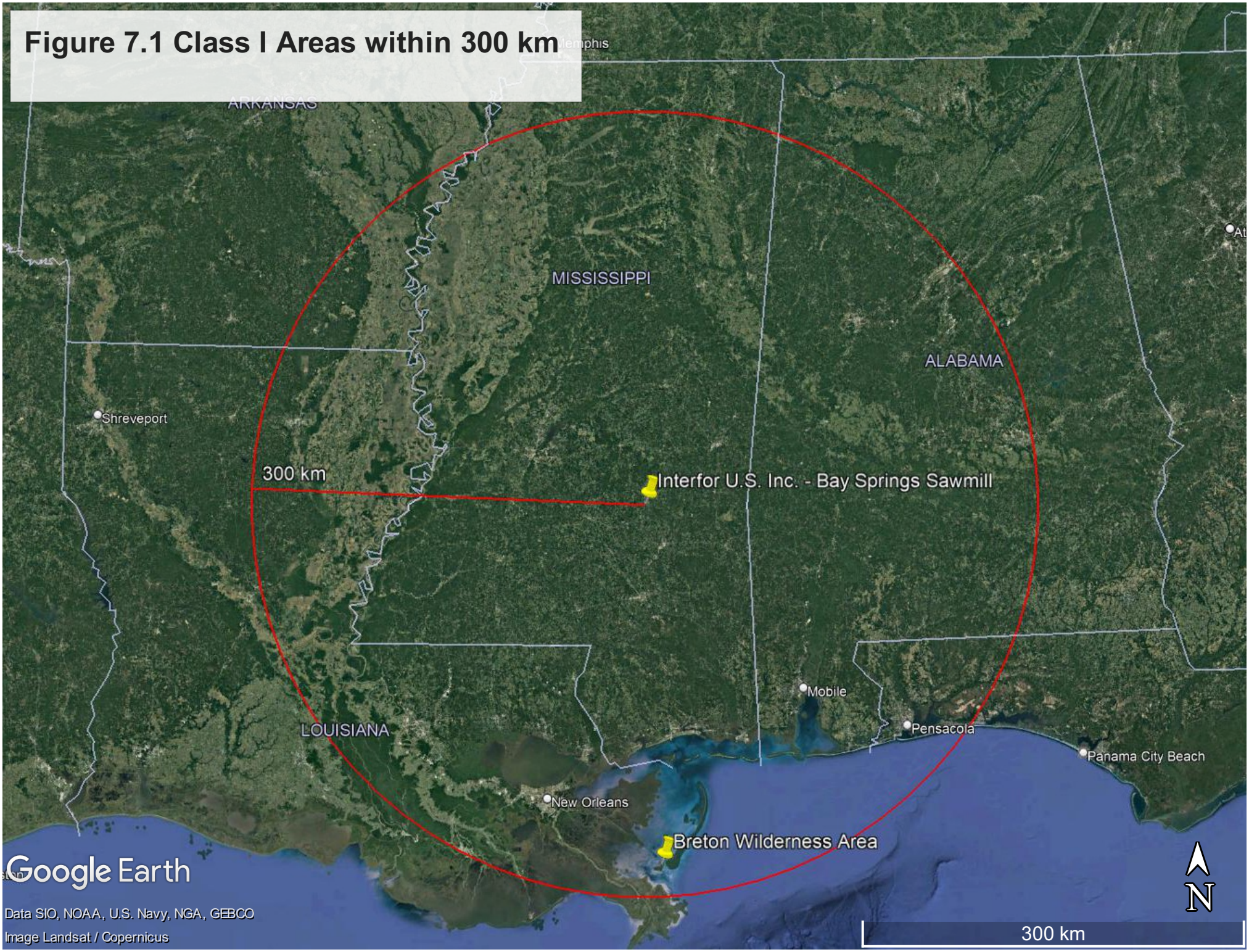
The pollutants of concern for impairment of visibility are PM, NO_X, and SO_2. Since VOCs are the only pollutant with a significant increase, impairment of visibility is not anticipated as a result of this project.

7.5 GROWTH ANALYSIS

The growth analysis is conducted to estimate increased emissions due to residential, commercial, and industrial growth that will occur as a result of the project. Additional employees may be hired in the future in order to achieve increases in production, but it is believed that any new employees are already part of the existing labor force in the surrounding area. Therefore, no significant residential, commercial, or industrial growth is anticipated as a result of the project.

CLASS I AREA MAP

Figure 7.1 Class I Areas within 300 km



Michael Watson
SECRETARY OF STATE

Jasper Co.
A/# 838
1300-00019

This is not an official certificate of good standing.

Name History

Name	Name Type
Interfor U.S. Inc.	Legal

Business Information

Business Type:	Profit Corporation
Business ID:	1289701
Status:	Good Standing
Effective Date:	07/09/2021
State of Incorporation:	WA
Principal Office Address:	700 Westpark Drive, Suite 100 Peachtree, GA 30269

Registered Agent

Name

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Officers & Directors

Name	Title
Xenia Kritsos 700 Westpark Drive, Suite 100 Peachtree City, GA 30269	Secretary