February 3, 2005

Mr. John Yntema
Combustion Unit Permitting Manager
Georgia Environmental Protection Division
4244 International Parkway, Suite 120
Atlanta, GA 30354

RE: Norbord Georgia, Inc. – Cordele OSB Mill (Crisp County)
AIRS Facility 13-081-0054
Response to Georgia EPD Information Request
Title V Modification/Prevention of Significant Deterioration Application No. 15812

Dear Mr. Yntema:

Norbord Georgia, Inc. (Norbord) operates an oriented strandboard (OSB) manufacturing facility located near Cordele, Georgia, in Crisp County. Trinity Consultants (Trinity) and Norbord prepared and submitted a construction permit and Title V modification application on November 8, 2004, for a proposed expansion of the Cordele OSB Mill. Because they exceed PSD thresholds for some pollutants, air emissions increases associated with this expansion project are subject to New Source Review for air quality impacts under the Prevention of Significant Deterioration (PSD) program, which specifically requires Best Available Control Technology (BACT) and air quality analyses as administered by the Georgia Environmental Protection Division (EPD) and Georgia's *Rules for Air Quality Control* (GRAQC) (Revised, January 2005).

Trinity and Norbord appreciate Georgia EPD's prompt review of the initial application and willingness to discuss comments and requests for additional information. Following the initial application submittal, representatives from Norbord, Trinity, and Georgia EPD met on December 20, 2004, to discuss questions pertaining to the application. Georgia EPD's initial review of the permit application raised questions about the following aspects of the application:

- Plant Design
- Rule Applicability
- Best Available Control Technology (BACT)
- Air Quality Analysis

In the course of discussions during the December 20, 2004, meeting, subsequent communications, and a letter from Ms. Susan Jenkins (Georgia EPD) to Mr. Philip Towles (Norbord) dated January 6, 2005, Norbord and Georgia EPD agreed that the initial application required additional, more specific information about the scope of the project to adequately assess air quality impacts, applicable regulations, and permit requirements. Norbord has reviewed its proposed construction plans to determine the specific equipment that will be installed and/or modified as part of the proposed project, and the design specifications thereof. The primary purpose of this letter is to advise Georgia EPD of these specifications, review the applicable regulatory and permitting requirements specifically as to any differences than described in the initial permit application, and restate the BACT analysis with greater clarity, as necessary, and focus on the specified equipment.

The information in this letter is presented as follows. First, an updated description of the proposed project is provided to indicate the specific design of the proposed expansion including process equipment, control devices, and ancillary insignificant activities. Attachment A to this letter contains updated construction permit application forms that indicate the specific equipment associated with the project. An updated, comprehensive Title V permit application database is also enclosed with this letter, and has been prepared to make a clear distinction between existing process units and insignificant activities that are not affected by the proposed project and those that are affected. Following the project description, a review of applicable regulatory requirements is provided to address specific questions posed by Georgia EPD in reviewing the initial application regarding emissions standards for previously unspecified units.

Following the supplemental regulatory review, the BACT analysis is presented for the proposed expansion project. After completing a cursory initial review, Georgia EPD indicated confusion in the presentation of the BACT analysis in the initial permit application. Trinity and Norbord believe the initial BACT analysis was prepared in a manner that is generally consistent with procedural requirements and guidelines, but recognizes that a lack of specificity in project design and references to alternative control technologies hindered an affirmative determination of BACT. This letter presents a BACT analysis that has been updated to include specific process and control equipment and associated costs, critically evaluates comparable data maintained in U.S. EPA's RACT/BACT/LAER Clearinghouse (RBLC), and evaluates the feasibility of control technologies applied to insignificant emissions units. In addition to supplemental information presented in Attachment C to this letter, a CD-ROM is enclosed that contains details of Norbord's BACT analysis so that Georgia EPD may review the extensive comparative data in a user-friendly format.

Georgia EPD also informally requested additional information about the air quality modeling analysis. The additional information concerns a screening analysis for complex terrain impacts, a review of cumulative effects of certain regional sources, and a modeling analysis of additional potentially toxic air pollutants. The additional modeling analyses, which are submitted under separate cover, confirm the determination presented in the initial permit application, that the proposed expansion project to Norbord's Cordele OSB Mill would neither cause nor contribute to adverse air quality impacts in the surrounding area. The remainder of this letter focuses on Georgia EPD's specific questions about the proposed project design and BACT determination.

PLANT DESIGN

To facilitate Georgia EPD's prompt review of the Title V modification and PSD permit application, Norbord completed the initial application based on preliminary engineering design plans. As with typical designs of projects of this magnitude, certain unit specifications were subject to change. Norbord attempted to complete the application in a manner that represented the overall modifications (e.g., total dryer capacity, press throughput, control efficiency), acknowledging that some details were not yet finalized. Following Georgia EPD's initial review of the application, the agency has requested additional information related to the dryers and associated emissions control system, energy system, and thermal oil heater. In addition to the information presented in this letter, Norbord has also updated the construction permit and Title V application forms and database. Where applicable, Norbord has distinguished emission sources in the Title V database as existing or new equipment. The revised applications are provided in Attachment A.

DRYERS AND EMISSIONS CONTROL

Initially, Norbord indicated plans to install either two or three dryers with a combined capacity of approximately 52 oven dried tons per hour (ODT/hr). Following the initial application, Norbord conducted a review of engineering plans and has decided to complete the proposed expansion with two dryers. Each dryer will have a capacity of approximately 26 ODT/hr, such that the overall dryer capacity remains at 52 ODT/hr as presented in the initial application. Consequently, there is no change to the calculation of air emissions from the dryers as presented in the initial application, which was based on total dryer capacity. Revised construction permit application forms, as well as an updated Section D of the Title V application database are provided in Attachment A.

Norbord initially proposed to control the new dryer system using either a wet or dry electrostatic precipitator (ESP), along with either a regenerative thermal or catalytic oxidizer. Both emissions abatement designs exhibit a commensurate level of control of emissions from the dryers. Georgia EPD requested that Norbord review the preliminary plans and determine if more specific controls could be defined.

Although both systems are equivalent from the BACT perspective and the "top-down" approach, Norbord has determined that a wet ESP (WESP) and regenerative thermal oxidizer (RTO) are more appropriate considering operational and reliability concerns, for the operation and wood furnish at the Cordele OSB Mill. Norbord will install one WESP and two RTOs. The exhaust from each RTO will combine and exit to the atmosphere through a single stack. Updated application forms are provided in Attachment A to reflect this configuration and provide specific operating characteristics of these units. The updated BACT analysis presented in this letter also reflects this equipment specification. With regard to emissions quantification, there is no change from the potential emissions reported in the initial application.

ENERGY SYSTEM

Preliminary engineering plans for the energy system included the option of combusting dryer exhaust emissions in the combustion chamber. After further review, Norbord does not plan to exercise that option and will instead construct an energy system similar to the unit currently in operations at the mill. Georgia EPD requested a schematic of the proposed unit, showing energy inputs and outputs. An energy flow diagram of the current energy system, which will be similar to the proposed system, is provided in Attachment B to this letter. The construction permit and Title V modification application forms as presented in Attachment A appropriately reflect this configuration. Because uncontrolled emissions from the energy system are determined on the basis of the heat input capacity from fuel combustion, which remains specified at 285 MMBtu/hr as in the initial permit application, the quantification of emissions from this source has not changed.

THERMAL OIL HEATER

Norbord will use heated thermal oil for the proposed new OSB press. This practice is common to OSB mills, and many similar facilities operate a thermal oil heater. However, the process of supplying heat to the thermal oil heater can be accomplished by utilizing either waste heat from the energy system or an independent burner fired on natural gas, propane, or wood residues. As shown on the energy flow diagram provided as Attachment B, Norbord now specifies that heat for the proposed thermal oil heater will be supplied solely by the new energy system such that a separate burner for the new heater will not be installed.

ANCILLARY AND INSIGNIFICANT EMISSIONS ACTIVITIES

The initial permit application conservatively estimated the number of auxiliary support equipment that would be installed and/or modified as part of the project. At the request of Georgia EPD to specify and distinguish new and existing auxiliary units, Norbord reviewed the design plan and determined that much of the existing support equipment can serve the proposed expansion without modification and only the following new ancillary units will be installed:

- One diesel-fired, 750 horsepower (hp) reciprocating internal combustion engine driving an electrical generator for emergency use up to 250 hours per year
- One edge coating line, essentially an enclosed spray booth, for water-based paint and ink application)
- One grinding operation enclosed in an air conditioned room
- Two enclosed resin storage tanks

As indicated, the diesel-fired generator engine will be utilized only in emergency service when electric power from the commercial grid is unavailable and otherwise for preventative maintenance. Norbord estimates operation of the engine, for generating and preventative maintenance purposes, not to exceed 250 hours per year. Emissions of criteria pollutants typical of diesel combustion result, with NO_X potentially emitted in the amount of approximately 2.3 tpy, and all other pollutants less than 0.5 tpy each.

The edge coating line is operated to apply a water-based paint seal product on the edges of finished OSB products. A low-volatility paint is used in the process, though VOC emissions do result. VOC emissions directly from this process potentially total approximately 4.5 tpy (using conservative assumptions); however, the air stream from the enclosed coating area is treated by a standard air condition system and Norbord believes fewer emissions are actually introduced to the atmosphere.

The enclosed grinding operation reduces the volume of waste products from trimmed OSB. Particulate dust is generated by the process, but emissions do not reach the atmosphere since the process is enclosed and the indoor environment is treated by a standard air conditioning system.

The two OSB resin tanks will all be located indoors and vent into to the room. Each tank has a conservation vent and is filled by submerged fill lines. Lack of exposure to direct sunlight, conservation vents, and filling by submerged fill all reduce the potential VOC emissions from the tanks. Emissions rates are estimated to be less than 1 ton per year.

EMISSIONS SUMMARY

Norbord's review and refinement of the engineering specifications for the proposed project do not change the nominal production design capacities, BACT requirements, and regulatory emissions standards upon which emissions calculations presented in the initial application were based. Therefore, the potential emissions of criteria pollutants (and subsequent determination of PSD applicability) presented in the initial permit application remains valid. For ease of reference, Table 1 summarizes the emissions increases and source designations associated with proposed expansion project.

TABLE 1. SUMMARY OF CRITERIA POLLUTANT EMISSIONS INCREASES

				Future Potential Emissions				
	Stack ID	Source ID	APC ID	PM (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
Proposed Sources	S201	Dryer Exhaust (WESP/RTOs)	C201	153	343	343	262	2.63
	S202	Press Exhaust (TO)	C202	17.4	89.4	107	50.1	12.0
	S203	Resinated Fines Baghouse	C203	4.38	--	--	52.0	--
	S204	Unresinated Fines Baghouse	C204	4.38	--	--	39.0	--
	S205	Finishing Line Baghouse	C205	4.38	--	--	4.88	--
	S206	Wet Strand Fines Baghouse	C206	4.38	--	--	39.0	--
	S207	Dry Fuel Bin Baghouse	C207	7.01	--	--	19.5	--
	S208	Blowline Baghouse	C208	2.19	--	--	--	--
	Total (Proposed Sources)			197	433	451	466	14.7

REGULATORY APPLICABILITY

Georgia EPD requested that Norbord provide additional information for specific emissions sources so that the agency can make certain regulatory applicability determinations. The following information addresses Georgia EPD's request for specific additional information, and the enclosed Title V application database has been updated to clearly indicate these determinations for affected sources. Hard copies of sections that have been updated are provided in Attachment A.

RECIPROCATING INTERNAL COMBUSTION ENGINES MACT

National Emissions Standards for Hazardous Air Pollutants (NESHAP) Part 63 Subpart ZZZZ for reciprocating internal combustion engines (RICE) potentially applies to the emergency diesel generator engines operated at the Cordele OSB Mill since the facility is a major source of HAP. Subpart ZZZZ specifically applies to affected sources defined as any new or reconstructed compression ignition (diesel-fired) stationary RICE with a site-rating of more than 500 hp located at a major HAP source. Existing compression ignition RICE, including Norbord's existing emergency generator, are among a category of RICE that does not have to meet the requirements of Subparts A and ZZZZ and does not have an applicable notification requirement.

As for the new RICE that will provide electrical power for the proposed expansion under emergency conditions, Part 63.6590(b)(i) provides that new emergency RICE does not have to meet the requirements of Subparts A and ZZZZ except for the initial notification requirements of Part 63.6645(d). Part 63.6675 defines emergency stationary RICE as follows:

> *Any stationary RICE that operates in an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Emergency stationary RICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary RICE in emergency situations and for routine testing and maintenance. Emergency stationary RICE may also operate an additional 50 hours per year in nonemergency situations.*

Since the definition of emergency engine does not include any restriction on size or operating hours, Norbord's proposed 750 hp emergency generator engine will not be subject to any requirements but for initial notification. Norbord will comply with this requirement found in Part 63.6645(d).

GENERIC FUEL BURNING EQUIPMENT

Georgia EPD requested additional information related to any new generic fuel burning equipment to determine the potential rule applicability of NESHAP Subpart DDDDD. Norbord listed two generic fuel burning units rated less than 10 MMBtu/hr in Section D3 of the Title V application. Note that these units are existing sources, currently identified in Attachment B of the facility's Title V permit. No additional insignificant fuel burning equipment will be installed as part of this project. As section D3 of the application database does not provide a comment field, an updated form is not provided in Attachment A. The initial determination that Subpart DDDDD does not apply to the facility remains valid.

GEORGIA RULE (E), PROCESS WEIGHT RULE

Georgia EPD requested a description of Rule (e) process groups for the new production line. Table 2 below presents both the existing and proposed process groups. Note that the potential emissions from these sources are limited below the Rule (e) allowable emission levels by Norbord's proposed BACT limits.

TABLE 2. RULE (E) PROCESS GROUPS

	Equipment ID	Description	Allowable Emissions[5] (lb/hr)	Maximum Anticipated Actual Emissions[6] (lb/hr)
Current Sources	GB01, RD01, WELL, RS01, DB01[1]	Green Bin #1 through Dry Bin #1	~18.95	~17.03
	GB02, RD02, WELL, RS02, DB02[1]	Green Bin #2 through Dry Bin #2	~18.95	~17.03
	GB03, RD03, WELL, RS03, DB03[1]	Green Bin #3 through Dry Bin #3	~18.95	~17.03
	GB04, RD04, WELL, RS04, DB04[1]	Green Bin #4 through Dry Bin #4	~18.95	~17.03
	FB01-FB04, FLPP, PRES, GLSS, TGSS, TGSL, HPWS, DFSS	Blenders, Board Press, Trimming/Finishing Operations, to Dry Fuel System	~46.7	6.63
Proposed Sources	GB05, RD05, ES02, RS05, DB05[2,3]	Green Bin #5 through Dry Bin #5	35.43	10.29
	GB06, RD06, ES02, RS06, DB06[2,3]	Green Bin #6 through Dry Bin #6	35.43	10.29
	FB05-FB06, FLP2, PRS2, L2SS, L2SD, TGSL, HPW2, DFS2[4]	Blenders, Board Press, Trimming/Finishing Operations, to Dry Fuel System	45.72	7.73

1. The Wellons (Source Code WELL) supplies 25% of its exhaust to this process.
2. The proposed Energy System (Source Code ES02) supplies 33% of its exhaust to this process.
3. The dry process weight through this process is approximately 50,000 lb/hr.
4. The dry process weight through this process is approximately 113,000 lb/hr.
5. Allowable emissions calculated using Georgia Rule (e) process weight rule limits:
   For processes less than 30 ton/hr - E = 4.1*P^0.67
   For processes greater than 30 ton/hr - E = 55*P^0.11 - 40
   where E equals allowable emission rate in lb/hr; P equals the maximum process input rate in ton/hr.
6. Maximum actual emissions based on vendor guarantees and exit grain loading calculations.

BEST AVAILABLE CONTROL TECHNOLOGY

Norbord is planning to expand the Cordele OSB Mill to include an additional press, dryers with a wood-fired energy system, and six baghouses associated with handling, blending, forming and finishing processes. As part of the initial application, Norbord completed a thorough BACT analysis

based on the initial design plans. Similar to the discussion above on plant design, Georgia EPD requested additional information on the BACT analysis to clarify certain aspects of the report. Based on further review of engineering design plans, Norbord has updated the initial BACT analysis to further specify the proposed process units and emissions control technologies that will be used to minimize emissions from new operations.

To avoid confusion with the initial permit application, the entire BACT analysis is replicated in this letter with appropriate updates to address the specific questions and requests for additional information posed by Georgia EPD in its letter to Norbord dated January 6, 2005. The BACT analysis is presented as follows. First, a summary of the BACT determination presents the affected sources, pollutants, and control technologies evaluated and ultimately selected as BACT by Norbord. Second, a description of the procedural guidance for BACT is provided to demonstrate that Norbord has considered all the relevant factors in determining the control technology and emission rate that represents BACT for each process. Next, an analysis of all potentially applicable control technologies is presented followed by a discussion of those technologies that are technically infeasible for Norbord's proposed operations. The remaining options are subsequently ranked by control effectiveness and the BACT determination is made after evaluation of economic factors and collateral energy and environmental considerations. The BACT determination concludes with a summary table of control technologies and proposed emissions levels, and associated monitoring methods for assurance of compliance. Please note that supplemental information for this BACT analysis is presented in Attachment C to this letter, which contains a narrative review of the U.S. EPA's RBLC entries for similar sources, the detailed data for which are also provided on CD-ROM enclosed with this letter to facilitate Georgia EPD's review.

SUMMARY OF BACT DETERMINATION

Table 3 provides a summary of emission sources subject to BACT as part of this project. The table also provides a summary of control technologies considered, with the control technology alternative selected as BACT identified. The remainder of this BACT analysis provides additional details to support the determinations presented in Table 3.

Note that insignificant activities such as an emergency generator and an edge coating line will be installed as part of this expansion project. These sources have been included in Table 3 for completeness, since each of these insignificant sources emits at least one criteria pollutant for which the proposed project will cause a significant increase (i.e., NO_X, CO, PM_{10}, and VOC). However, an extensive review of control technologies for these sources was not conducted. As projected emissions from these sources are anticipated to be so low, only an unreasonably small capital investment could be cost effective for control devices for these units. Therefore, BACT was determined to be Good Design and Operation

Emissions of NO_X, PM/PM_{10}, CO, and VOC from the proposed expansion project exceed the PSD Significant Emission Rate thresholds. Therefore, PSD review (including BACT) is necessary for these pollutants. Emission controls on the new sources for these pollutants were evaluated in this BACT analysis.

TABLE 3. SUMMARY OF EMISSION SOURCES SUBJECT TO BACT

Stack #	Source Description	Pollutants subject to BACT				Control Technologies Investigated	Selected BACT
		PM/PM_{10}	VOC	NO_x	CO		
S1	Dryers in Combination with Energy System	X	X		X	Wet Electrostatic Precipitator/RTO Combination[2]	WESP/RTO System Combination[2]
				X		Selective Catalytic Reduction – Not Feasible	
				X		Selective Non-Catalytic Reduction – Not Feasible	
				X		Water/Steam Injection – Not Feasible	
		X				Baghouse – Not Feasible	
			X		X	RCO – Not Feasible[3]	
				X		Staged Combustion – Not Selected	
				X		Low NO_x Burner	Low NO_x Burner (for RTO natural gas burners)
				X		Flue Gas Recirculation – Not Selected	
				X		Reduced Air Preheat – Not Selected	
				X		Low Excess Air/Oxygen Trim	Low Excess Air/Oxygen Trim (for wood-residue fired burner)
		X	X	X	X	Good Design/Operation	Good Design/Operation (Dryer burners)
S2	Press	X	X		X	TO[1,2]	TO[1,2]
		X				Baghouse – Not Selected	
		X				Multiclones/EFB – Not Selected	
				X		Selective Catalytic Reduction – Not Feasible	
				X		Selective Non-Catalytic Reduction – Not Feasible	
				X		Water/Steam Injection – Not Feasible	
				X		Staged Combustion – Not Selected	
			X			Biofilter – Not Selected[2]	
				X		Flue Gas Recirculation – Not Selected	
				X		Reduced Air Preheat – Not Selected	
				X		Low Excess Air – Not Selected	

Stack #	Source Description	Pollutants subject to BACT				Control Technologies Investigated	Selected BACT
		$PM/_{PM10}$	VOC	NO_x	CO		
S2	Press			X		Low NOx Burner	Low NOx Burner (TO Burner)
S3	Resinated Fines	X				Baghouses	Baghouse/Good Design
		X	X			TO – Not Selected	
S4	Un-Resinated Fines	X				Baghouses	Baghouse/Good Design
		X	X			TO – Not Selected	
S5	Finishing Line	X				Baghouse	Baghouse/Good Design
		X	X			TO – Not Selected	
S6	Wet Strand Fines	X				Baghouse	Baghouse/Good Design
		X	X			TO – Not Selected	
S7	Dry Fuel Bin	X				Baghouse	Baghouse/Good Design
		X	X			TO – Not Selected	
S8	Blowline	X				Baghouse	Baghouse/Good Design
M1	Emergency Generator	X	X	X	X	Good Design/Operation	Good Design/Operation
M2	Edge Coating		X			Good Design/Operation	Good Design/Operation

Notes:
1. TO represents thermal oxidizer control technologies, which may be operated in either thermal or catalytic mode.
2. The PCWP MACT will require HAP control of the proposed dryers and press. Norbord anticipates that thermal oxidizers and biofilters are control technologies that potentially meet MACT requirements.
3. Norbord has determined that RCO technology is currently not proven as feasible for the dryers, although the technology would be preferable due to lower fuel costs. Engineering tests are currently underway at other facilities, which may impact this determination at a future time. Although both control technologies exhibit an equivalent level of control, Norbord may install an oxidizer unit, which could operate in either thermal or catalytic mode, similar to the control device planned for the new press. Norbord would provide EPD with appropriate documentation to show that the RCO would be capable of achieving emissions reductions equivalent to an RTO unit, as well as operational parameters consistent with good pollution control practice, if the facility does not install an RTO.

BACT DEFINITION AND APPLICABILITY

The definition of BACT is found in Section 165(a)(4) of the Clean Air Act or in the PSD regulations under 40 CFR §52.21(j). BACT is defined as:

> *[A]n emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted... [from a] proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of the measurement methodology to a particular emissions limit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by the implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.*

This BACT analysis follows U.S. EPA's "top-down" approach for determining BACT.[1] In the top-down approach, progressively less stringent control technologies are analyzed until a level of control considered BACT is reached on the basis of environmental, energy, and economic impacts. Notably, U.S. EPA guidance provides specifically that "an applicant proposing the top control alternative need not provide cost and other detailed information in regard to other control options. In such cases the applicant should document that the control option chosen is, indeed, the top, and review for collateral environmental impacts."[2] This guidance is particularly relevant to this BACT analysis since Norbord is proposing to utilize the most effective, technically feasible, emissions control option for each significant process unit. Therefore, Norbord provides only the estimated costs for the selected option so that the cost per ton emissions reduction can be

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[1] U.S. EPA, Office of Air Quality Planning and Standards, "Transmittal of Background Statement on 'Top-Down' Best Available Control Technology (BACT)," June 13, 1989.

[2] U.S. EPA, Office of Air Quality Planning and Standards. New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting, Draft. Research Triangle Park, NC. October 1990.

quantified and confirms that collateral impacts do not outweigh the benefits of the proposed emissions control.

The key steps in the top-down process are to:

- Identify viable options
- Eliminate technically infeasible options
- Rank remaining alternatives by control effectiveness
- Evaluate most effective controls; and
- Select BACT.

The sources of information on control alternatives vary for the emission sources being analyzed. The following information resources may generally be consulted in searching for the alternatives:

- On-line U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) system;
- U.S. EPA/State/Local air quality permits;
- Federal/State/Local permit engineers;
- Control technology vendors; and
- Inspection/performance test reports.

Once the technically feasible control alternatives have been identified, they should be ranked in order of control effectiveness, with the most effective control alternative at the top. The ranked alternatives are reviewed with respect to environmental, energy, and economic considerations specific to the proposed sources. However, an applicant proposing the top-rated control alternative need not provide costs and other economic information relative to the other control options. If the analysis determines that the examined alternative is not appropriate as BACT due to any of these considerations, then the next most stringent alternative is subjected to the same review. This process is repeated until a control alternative is justified to represent BACT. The proposed BACT must provide emission limitations, which are at least as stringent as the applicable federally approved State Implementation Plan (SIP) or the federal NSPS and National Emission Standards for Hazardous Air Pollutants (NESHAP) emission standards.

The impact analysis of the BACT review focuses on environmental, energy, and economic impacts. The net environmental impact associated with the control alternative should be reviewed. This criterion is generally satisfied with the dispersion modeling that is performed as a part of PSD review. The dispersion modeling normally considers a “worst-case” scenario, thus constituting a conservative assessment of the environmental impacts. The energy impact analysis estimates the direct energy impacts of the control alternatives in units of energy consumption. If possible, the energy requirements of the control option are assessed in terms of total and incremental (units of energy per ton of reduction) energy costs. The economic impact of a control option is typically assessed in terms of cost-effectiveness and ultimately whether the option is economically reasonable. Normally, the economic impacts are reviewed on the basis of the annualized cost per ton of pollutant removed.

The BACT evaluation for emissions of NO_X, CO, PM/PM_{10}, and VOC as they relate to the sources being added at the Cordele OSB Mill are provided in the following sections of this letter. Norbord's evaluation adheres to the following five basic steps of a "top-down" BACT analysis procedure, as identified by the U.S. EPA in the October 1990 Draft *New Source Review Workshop Manual*.[3]

BACT Step 1 - Identify Viable Options

Available control technologies are identified for each emission unit in question. The following methods can be used to identify potential technologies: 1) researching the Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Reduction (LAER) Clearinghouse (RBLC) database, 2) surveying regulatory agencies, 3) drawing from previous engineering experience, 4) surveying air pollution control equipment vendors, and 5) surveying available literature.

BACT Step 2 - Eliminate Technically Infeasible Options

After the identification of control options, an analysis is conducted to eliminate options not technically feasible. A control option is eliminated from consideration if technical difficulties, documented by physical, chemical, or operational principles, preclude the successful use of a control option. This would include process-specific conditions that prohibit the implementation of the control or if the highest control efficiency of the option would result in an emission level that is higher than any applicable regulatory limits.

BACT Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Once technically infeasible options are removed from consideration, the remaining options are ranked based on their control effectiveness. If there is only one remaining option or all of the remaining technologies could achieve equivalent control efficiencies, ranking based on control efficiency is not required.

BACT Step 4 - Evaluate Most Effective Controls and Document Results

Beginning with the most efficient control option in the ranking, detailed economic, energy, and environmental impact evaluations are performed. If a control option is determined to be economically feasible without adverse energy or environmental impacts, it is not necessary to evaluate the remaining options with lower control efficiencies.

The economic evaluation focuses on the cost effectiveness of the control option. Costs of installing and operating control technologies are estimated and annualized following the methodologies outlined in the U.S. EPA's OAQPS *Control Cost Manual* (CCM) and other industry resources. Cost effectiveness is expressed as dollars per ton of pollutant

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[3] U.S. EPA, Office of Air Quality Planning and Standards. *New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting*, *Draft*. Research Triangle Park, NC. October 1990.

controlled.[4] Objective analyses of energy and environmental impacts associated with each option are also conducted. Both beneficial and adverse impacts are discussed and quantified.

BACT Step 5 - Select BACT

In the final step, one pollutant specific control option is proposed as BACT for each emission unit under review based on evaluations from the previous step.

The BACT requirements of the PSD program only apply to the emission units that are newly installed or physically modified for those pollutants that are subject to PSD review, including insignificant emissions activities. As stated earlier, this analysis considers only new sources at the facility since no existing sources will undergo physical modifications. Please note, however, that the PCWP MACT may require Norbord to add TO(s) or similar device(s) for HAP control, depending on the exact compliance option chosen. This future project is considered a separate issue from the BACT analysis for the proposed expansion project.

COST EVALUATION METHODOLOGY

Cost evaluations for the BACT analysis are performed following general procedures outlined in the OAQPS CCM. The equipment costs are estimated based on vendors' quotes or CCM calculation algorithms. An electricity cost of $0.042 per kilowatt hour (kW-hr) and a natural gas cost of $8.19 per MMBtu are used to estimate utility costs.[5] Dollar amounts are represented in 2004 year-to-date terms unless otherwise indicated. Total capital costs are annualized over a 15-year period using a 7% annual rate of return.

To calculate the cost effectiveness of a particular control option, the capital investment and operating costs are annualized and then divided by the annual emissions reduction of the control option. The emissions reduction is the difference between the pre-BACT emission rate and the emission rate that corresponds with the control option.

The U.S. EPA has stated that economic thresholds are continually changing due to the case-by-case nature of the analysis. They are, however, dictated by the economic evaluations in the most recent BACT determinations.[6] According to the New *Source Review Workshop Manual*, a proposed technology can be eliminated from consideration if the applicant has provided adequate

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[4] U.S. EPA, Office of Air Quality Planning and Standards. *OAQPS Control Cost Manual*, 6th edition. EPA 452/B-02-001. Research Triangle Park, NC. June 2003.

[5] Norbord Georgia facility year to date figures as of September 2004.

[6] Personal communication. Telephone conversation between Stanley Spruell (EPA Region 6) and Jenni Salathiel (Trinity), April 7, 2000.

proof that the selection of such a technology results in cost/economic impacts beyond the range normally incurred for control of that pollutant in similar applications.[7]

BACT DETERMINATION FOR PROPOSED NORBORD GEORGIA OPERATIONS

This BACT analysis has been prepared based on conservative emission estimates of PM/PM_{10}, VOC, NO_X, and CO resulting from continuous operation of the equipment identified in Table 3.

Control technologies considered in the BACT analysis must meet applicable New Source Performance Standards (NSPS) to be considered viable.[8] Thus, the applicable NSPS emission limits must be determined. The thermal oil heater is considered a steam generating unit as defined by 40 CFR Part 60 Subpart Db or Dc and thus will be subject to one of these standards. At the time of preparing this analysis, it is EPD's judgment that the new energy system and not just the thermal oil heater will be subject to Subpart Db. Additionally, EPD has stated that, as a wood-fired unit the energy system, the unit would only be subject to the particulate standard of 0.1 lb/MMBTU and subsequent opacity standard of 20%. No other NSPS apply at this time to any of the emission units under consideration in this BACT analysis.

As mentioned previously in this analysis, Norbord will also meet the requirements of the PCWP MACT standard, upon startup for new sources and by the compliance date for existing sources. Generally, the benchmark control technology for HAP reduction will be thermal oxidizers, and this technology has been chosen as BACT in this analysis for VOC and CO emissions and in conjunction with a WESP for control of PM/PM_{10} emissions. Since Norbord intends to comply with the MACT standard, only currently accepted MACT VOC control technologies were reviewed. Note that one method of achieving compliance with the MACT performance standard for controlling HAP from PCWP dryers and presses is demonstrating 90% or greater total hydrocarbons (THC) removal.

Identify All Control Technologies

The first of the five steps in a top-down BACT analysis procedure is to evaluate control technologies for each pollutant. Table 4 presents the control technologies evaluated in the BACT analysis for Norbord Georgia. As discussed later in this analysis, combinations of technologies are necessary to assure proper operation of a particular technology.

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[7] U.S. EPA, Office of Air Quality Planning and Standards. *New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting*, *Draft*. Research Triangle Park, NC. October 1990.

[8] *Ibid*., "When developing a list of possible BACT alternatives, the only reason for comparing control options to an NSPS is to determine whether the control option would result in an emissions level less stringent than the NSPS. If so, the option is unacceptable."

TABLE 4. CONTROL TECHNOLOGY ALTERNATIVES IDENTIFIED FOR THE BACT ANALYSIS

Pollutant	Control Technology
PM/PM_{10}	Baghouse Electrostatic Precipitator (ESP) Wet Electrostatic Precipitator (WESP) Good Design/Operation Multiclones Electrified Filterbed (EFB) Cyclone
VOC*	Thermal Oxidizers – Thermal Catalytic Oxidation (TCO)/Regenerative Thermal Oxidation (RTO) Biofilter Good Design/Operation
NO_X	Selective Non-catalytic Reduction (SNCR) Selective Catalytic Reduction (SCR) Low NO_X Burners Water/Steam Injection Flue Gas Re-circulation Reduced Air Preheat Staged Combustion/Overfire Air Low Excess Air/Oxygen Trim Good Design/Operation
CO	Thermal Oxidizers – Thermal Catalytic Oxidation (TCO)/Regenerative Thermal Oxidation (RTO) Good Design/Operation

* The proposed dryer will be equipped with a WESP and RTO. The combustion environment within the RTO will in itself cause further particulate reduction.

Eliminate Options Not Technically Feasible

The second of the five steps in a top-down BACT analysis procedure is to eliminate control technologies not technically feasible. A control option is eliminated from consideration if technical difficulties, documented by physical, chemical, or operational principles, preclude the successful use of a control option. The following control technologies were determined to be technically infeasible considering processes at Norbord Georgia. Note that control options which are feasible are not included in this section.

PM/PM_{10} Control

Baghouse – Rotary Dryers with wood fired energy system

A baghouse, also referred to as a fabric filter, consists of a number of fabric bags placed in parallel. The gas stream is filtered when it passes through the bags, and PM/PM_{10} is collected on the surface of the fabric. The collected

PM/PM_{10} is periodically removed from the bags to hoppers located beneath the bags by reversing airflow or shaking the filters in an isolated compartment of the baghouse, or by short blasts of high-pressure air (or pulsejet).

A baghouse can be designed to remove up to approximately 99 percent of PM/PM_{10} downstream of a primary dust collector, provided that the gas stream is within acceptable parameters. The exhaust from the rotary dryers has an exit temperature around 230 °F and a moisture content of 30% by volume. The moisture content of this stream is high enough that it may cause "blinding" (i.e., plugging) of the fabric filter. This will in turn result in lower airflow rates, greater pressure drop, increased bag wear, and finally reduced PM/PM_{10} control efficiency. In addition, there are no entries found in a general RBLC wood fired combustion search showing a baghouse as BACT for PM/PM_{10} from a combination wood-fired burner/dryer operation like the rotary dryers and Energy System (see Tables C-1 and C-2 in Attachment C). Therefore, a baghouse is considered not technically feasible for this application.

VOC Control

Regenerative Catalytic Oxidation – Rotary Dryers with Wood Fired Energy System

RCO technology is widely used in the reduction of VOC emissions. Catalytic oxidation systems employ a catalyst bed to reduce VOC oxidation temperatures to about 600 °F – 900 °F (from 1,300 °F – 1,800 °F seen in typical thermal oxidizers). RCOs utilize a ceramic bed in order to recapture the heat of the gas stream exiting the combustion zone. RCOs can achieve up to 95% recovery of the thermal energy input to the system. It should be noted that the recently promulgated PCWP MACT requires destruction efficiency that equates to at least 90% THC or HAP removal. However, there are no requirements for a specific type and configuration of air pollution control (APC) device.

RCO technology is generally not considered technically feasible for dryer applications due to the level of PM/PM_{10} loading. Even with highly efficient upstream PM/PM_{10} control, catalyst blinding, poisoning, plugging, or masking can occur in this type of application and will significantly reduce the efficiency of the control device. At this time, industry experience has shown that RCO technology is usually not appropriate for VOC control of rotary-type wood chip dryers. In addition, RCO technology was not identified in a recent RBLC search as a BACT technology selection for rotary dryers (see Table C-2)..

However, it should be noted that Norbord is currently experimenting with RCOs on dryers at other facilities. Norbord would prefer that BACT be

identified as an RTO for this source with the option of operating in catalytic mode if testing of the unit can show compliance with BACT requirements, such as removal efficiency. Norbord would provide EPD with appropriate documentation to show that the RCO would be capable of achieving emissions reductions equivalent to an RTO unit, as well as operational parameters consistent with good pollution control practice, if the facility does not install an RTO.

NO_X Control

Selective Catalytic Reduction – Rotary Dryers with Wood-fired Energy System

Selective Catalytic Reduction (SCR) processes are based on the reaction of NO_X with ammonia (NH_3) in the presence of a catalyst to form nitrogen (N_2) and water (H_2O). The function of the catalyst is to lower the activation energy of the NO_X decomposition reaction which, in turn, lowers the temperature necessary to carry out the reaction. The desired chemical reaction is:

$$NH_3 + NO + \tfrac{1}{4} O_2 \rightarrow N_2 + \tfrac{3}{2} H_2O \qquad \text{(Equation 5-1)}$$

SCR has a nominal NO_X removal efficiency of approximately 70% to 90%.[9] SCR technology is not considered feasible for the rotary dryers with the Energy System for two key reasons. To avoid the possibility of the alkalinity of wood ash poisoning the catalyst, the SCR system would be installed downstream of a particulate control device. However, the operating flue gas temperature downstream of the rotary dryers is expected to be below the required temperature range of 550 to 750 °F for SCR.[10] At this lower temperature for either combustion device at Norbord Georgia, NH_3 will not react with NO_X, and both NH_3 and NO_X would be emitted into the atmosphere. Alternatively, the gas stream can be reheated to the proper SCR operating temperature, but this would require a significant amount of heat input (e.g., duct burner), at additional cost and generating additional emissions.

Additionally, the high moisture content of a flue gas stream will adversely affect the efficiency or reheat, further making SCR infeasible.[11] Therefore,

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[9] Chemical Engineering Progress. *Select the Right NOx Control Technology.* New York, NY: American Institute of Chemical Engineers, January 1994. P.32.

[10] Air & Waste Management Association, *Air pollution Engineering Manual* (New York, NY: Van Nostrand Reinhold, 1992), p.243.

[11] Chemical Engineering Progress. *Properly Apply Selective Catalytic Reduction for NO_X Removal.* New York, NY: American Institute of Chemical Engineers, January 1994. P.41

SCR is not considered technically feasible for the rotary dryers in conjunction with the Energy System. Finally, it should be noted that the RBLC does not indicate that SCR technology has been successfully demonstrated on wood-fired combustion units.

Selective Non –Catalytic Reduction – Rotary Dryers with Wood fired Energy System

SNCR processes are based on the reaction of NO_X with NH_3 or urea to form N_2 and H_2O. The desired chemical reaction is:

$$NH_3 + NO + \tfrac{1}{4} O_2 \rightarrow N_2 + \tfrac{3}{2} H_2O \qquad \text{(Equation 5-2)}$$

The SNCR process chemistry is identical to that of SCR, but process conditions are radically different. Since a catalyst bed is not part of this control technology, a narrow temperature window of 1,600 to 2,200 °F and a residence time ranging from approximately 0.1 to 1.0 seconds, depending on the temperature, are required. At a higher temperature, the rate of a competing reaction for the direct oxidation of NH_3 becomes significant. At a lower temperature, the rates of NO_X reduction reactions become too slow, resulting in the release of NO_X and NH_3 to the atmosphere. In addition, where SCR is an "add-on" control scheme, SNCR introduces the NH_3 in the combustion unit.

After reviewing information obtained from vendors[12] familiar with the existing and proposed wood fired energy system, data from permit reviews, and other research, Norbord determined that the SNCR technology is not technically feasible for this application. Simply, cells within the proposed wood fired energy system are not capable of maintaining temperatures within the aforementioned range required for NO_X removal. While vendors suggest that under ideal conditions (all cells between 1,600 to 2,200 °F) NO_X removal as high as 50% could be achieved, it is unusual to have the cells maintain consistent temperatures above 1,600 °F. The causes of temperature fluctuations in the cells vary with heat and moisture content of the wood fuel to shifting feed rates for the dryers, among other factors. Because of these fluctuations, vendors have stated that ammonia slip will occur to varying degrees, regardless of the temperature in the wood fired energy system. The only way to guarantee low levels of ammonia slip would be to add reheat to the system, which would increase NO_X formation. Additionally, temperatures above set point from the added heat to the dryers is not a desired consequence due to several factors including potential fire hazards.

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[12] Norbord contacted The Teaford Company, Inc. and reviewed information from Environex, Inc.

Another concern regarding the SNCR technology is the impact of ammonia slip on the product. One vendor familiar with the existing energy system suggested that regardless of the temperature within the wood fired energy system, ammonia slip would occur though potentially at low levels. Since adding NH_3 to the wood fired energy system and, therefore, into the stream of gas that contacts the wood products in the rotary dryers, would have an unknown effect on the quality and stability of the final product, Norbord is wary of further pursuing this technology. As indicated to Norbord, the only way to minimize ammonia slip is to increase heat to the wood fired energy system and dryers, an option already discounted from consideration in the previous paragraph.

With regard to ammonia slip, Norbord reviewed several documents to ascertain potential adverse effects for wood-fired burners and boilers. One "White Paper" document[13] explained that ammonia slip would cause the formation of salts that corrode and plug downstream components. These salts also collect in the ash and other materials removed by the control device making disposal of ash and other collected materials very difficult. It is assumed, therefore, that additional costs and significant downtime would be required for disposal of waste material and maintenance of the entire system. As Norbord will be relying on a WESP and RTO for VOC, CO, and PM_{10} removal, it is also assumed that ammonia slip would have adverse affects on components of these air pollution control technologies (APCs) and thus reduce the removal efficiency of a WESP and RTO. Reduced efficiency and operational capability of the APCs would, of course, be unacceptable.

There can be no guaranteed removal and the possible adverse effects on production activities and equipment is unacceptable. Therefore, for the purposes of this BACT, Norbord considers SNCR to be infeasible.

Water/Steam Injection– Rotary Dryers with Wood Fired Energy System

For the reasons described in the following paragraphs, WSI technology was eliminated from this analysis for rotary dryers in conjunction with the wood fired energy system.

Water/steam injection (WSI) is not an add-on control technology. WSI is the process of injecting water or steam into the combustion chamber so as to act as a thermal ballast to the combustion process. This thermal ballast effectively

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[13] Institute of Clean Air Companies (ICAC, May 2000). Information Taken From *Technical Support Document for Prevention of Significant Deterioration Darrington Cogeneration Facility.* Darrington, Washington (July 2004).

lowers the combustion temperature by allowing the water to absorb part of the thermal energy released by the combustion, thereby inhibiting the formation of thermal NO_X. The introduction of moisture into the wood fired energy system, whose purpose is to generate a hot, dry gas stream that is used to dry wood wafers in the rotary dryers, is counterintuitive to the purpose of the wood fired energy system, which is to dry wood strands in the rotary dryers. In addition, wood fuel introduced into the energy system already contains sufficient water to cool flame temperature. Thus, WSI is not considered to be a technologically feasible option for the rotary dryers with the wood fired energy system.

In addition, this technology is not identified on the RBLC as a control alternative for rotary dryers and wood-fired combustion units similar to those found at Norbord Georgia. Tables C-2 and C-3 in Attachment C present summaries of a recent RBLC search for NO_X control of rotary dryers and wood–fired combustion units.

Various NO_X Control Technologies – Press

For the purposes of clarification, Norbord will briefly review potential NO_X control technologies for the press. The press itself emits very little, if any, NO_X emissions. However, the TO (RTO/RCO) will produce thermal NO_X based on the nature of its operation utilizing high temperatures for VOC destruction.

A review of the RBLC, information provided by control technology vendors, and various permits for similar operations indicates that many technologies such as SCR, SNCR, Water/Steam Injection, Staged Combustion, FGR, and Reduced Air Preheat are not viable options for TOs. As will be briefly mentioned later, the most prevalent technologies used in RTOs are low-NO_X burners and good design.

Rank Remaining Control Technologies by Control Effectiveness

The third of the five steps in a top-down BACT analysis procedure is to rank remaining control technologies by control effectiveness as in Table 5. Please note *these are provided for informational and ranking purposes only* that should not be construed as emission limits or enforceable restrictions. Note that eliminated control technologies identified as technically infeasible are excluded from this table. The control efficiencies are vendor quotes, when available, or accepted industry literature values.[14]

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[14] For example, representative NO_X control efficiencies were taken from Chemical Engineering Progress. *Select the Right NO_x Control Technology.* New York, NY: American Institute of Chemical Engineers, January 1994. P.34, Table 2.

TABLE 5. REMAINING CONTROL TECHNOLOGIES RANKED BY EFFECTIVENESS.

Process Equipment	Pollutant	Control Technology	Control Efficiency
Rotary Dryers/Wood Fired Energy System	PM/PM_{10}	Wet Electrostatic Precipitator/RTO	90%-95%
		Mutliclone/EFB	85%-95%
		EFB	80%-90%
		Wet Electrostatic Precipitator	70%-90%
		Electrostatic Precipitator	70%-90%
		Good Design/Operation	Base Case
	VOC	Wet Electrostatic Precipitator/RTO	85%-90%
		Good Design/Operation	Base Case
	NO_X	Low-NO_X Burners (RTO and Wood Fired System)	5%-40%
		Flue Gas Recirculation	5%-40%
		Reduced Air Preheat	5%-25%
		Low Excess Air/Oxygen Trim	10%
		Good Design/Operation	Base Case
	CO	Wet Electrostatic Precipitator/RTO	50%-75%
		Good Design/Operation	Base Case
Product Handling, Finishing, Blending/Forming	PM/PM_{10}	Baghouse	95%-99%
		ESP	75%-98%
		Wet Electrostatic Precipitator	90%-95%
		Multiclones/EFB	85%-95%
		EFB	80%-90%

TABLE 5. REMAINING CONTROL TECHNOLOGIES RANKED BY EFFECTIVENESS (CONTINUED).

Process Equipment	Pollutant	Control Technology	Control Efficiency
Product Handling, Finishing, Blending/Forming	VOC	TO - RCO/RTO Due to very low inlet VOC concentration from a baghouse, a TO would not be able to achieve high removal efficiency] Good Design/Operation	50%-90% Base Case
Press Exhaust	PM/PM_{10}	Baghouse ESP Wet Electrostatic Precipitator Multiclones/EFB EFB TO - RCO/RTO Good Design/Operation	95%-99% 75%-98% 90%-95% 85%-95% 80%-90% 75%-85% Base Case
	VOC	TO - RCO/RTO Biofilter	90%-95% 50%
	CO	TO - RCO/RTO Good Design/Operation	50%-75% Base Case
	NO_X	Low NO_X Burner Good Design/Operation	5%-40% Base Case

Evaluate Most Effective Controls and Document Results

The fourth of the five steps in a top-down BACT analysis procedure is to evaluate the most effective control and document the results. This step has been performed for each remaining control technologies on the basis of economic, energy, and environmental considerations, and is described below.

Rotary Dryers with Wood fired energy system Unit- PM/PM_{10}, CO, and VOC Control

Wet Electrostatic Precipitator with Thermal Oxidizer

Wet electrostatic precipitators (WESP) are used to control particulate matter emissions at high efficiencies. The quench chamber ahead of the WESP can be considered to be a high-energy wet scrubber as well. A WESP followed by a thermal oxidizer, as will be discussed further regarding VOC reductions, is the control option that will result in the lowest particulate matter emissions. A thermal oxidizer, although mainly a device for controlling VOC emissions, can

combust the wood particles in the gas stream and thus reduces particulate matter emissions somewhat further.

A WESP is currently used to control particulate matter emissions from the existing dryers and was previously determined to be BACT, though it should be noted that facility does not currently have a TO on the existing dryers following the WESP. It should also be noted that exhaust gases pass through product cyclones on the dryers prior to reaching the WESP.

WESP technology is considered to be necessary to prevent fouling and plugging of the TO given the nature of the emissions from the rotary drying operation. Table D-1 in Attachment D presents a cost analysis for a WESP/TO system for the rotary dryers. The analysis shows an initial capital investment of approximately $11,702,500, a total annual cost of $2,804,018, and a cost per ton removed value of $1,738 for VOC.

Generally, TO(s) are considered the benchmark to comply with the Plywood and Composite Wood Products MACT, and the WESP is essential for particulate removal prior to the TO(s) ensuring optimum VOC/HAP removal. The two technologies combined are therefore the top control technologies and BACT for PM/PM_{10}, CO, and VOC control.

Multiclone/EFB, EFB, Wet Electrostatic Precipitator, Electrostatic Precipitator, Good Design/Operation

Given that the WESP/TO technology represents the highest control efficiency of the technically feasible options for CO, PM/PM_{10} and VOC for the rotary dryers, no further analysis is required for any remaining PM/PM_{10}, CO and VOC control options.

Rotary Dryers with Wood fired energy system and TO(s) – NO_X Control

Low-NO_X Burners

Low-NO_X burners are designed to achieve the internal combustion staging effect internally. The air and fuel flow fields are partitioned and controlled to achieve the desired air/fuel ratio, which reduces NO_X formation and results in complete burnout within the combustion device. Low-NO_X burners are applicable to combustion devices with circular burner designs. Significant impacts to consider for low-NO_X burners are forced-draft fan capacity, flame length, design compatibility, and turndown flame stability.

Low-NO_X burners, by their design, work by carefully controlling the air to fuel ratio in different areas of the flame. As such, it is not possible to design a low-NO_X burner for solid fuel fired units, such as the wood fired energy system. However, low-NO_X burners can be used in the TOs, and Norbord proposes the use of low-NO_X burners in the TO as part of the NO_X BACT for the rotary dryers/wood fire energy system. The use of Low-NO_X burners is now commonplace and adds little cost. An estimate of the cost effectiveness of Low NO_X burners is presented in Attachment D to this letter in the itemized BACT costs.

Flue Gas Recirculation

Flue gas recirculation (FGR) is a combustion design technique used to reduce the temperature of combustion, thereby reducing thermal NO_x formation. The recirculated flue gas is usually on the order of 10-20% of the combustion air in order to make an effective reduction in NO_x emissions.

Based on the wood fuel combusted, thermal NO_x is expected to be only a minor constituent of total NO_x formation. Furthermore, by recirculating this required level of flue gas, the heat capacity of the energy system will be significantly reduced. These burners would be unable to maintain required operational levels, resulting in reduced production from the entire process. This is an unacceptable economic consequence of FGR, and is therefore eliminated as an economically feasible option.

FGR is not identified in the RBLC as a selected NO_x control technology for OSB mills and for this type of energy system (see Tables C-1, C-2 and C-3).

Reduced Air Preheat

Reduced air preheat reduces NO_x emissions from a burner unit by lowering the flame temperature in the burner. However, this technology only has merit in combustion units utilizing natural gas or low-nitrogen-content fuel oils.[15] This technology is therefore eliminated as an option.

Reduced air preheat is not identified in the RBLC as a selected NO_x control technology for OSB mills and for this type of energy system (see Tables C-1, C-2, and C-3).

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[15] Chemical Engineering Progress. *Select the Right NOx Control Technology.* New York, NY: American Institute of Chemical Engineers, January 1994. P.35

Low Excess Air/Oxygen Trim

Another combustion technology involves low excess air operation, or reducing the excess air level to the point of some constraint, such as CO formation, flame length, or flame stability. An inconsistent wood fuel moisture content or nitrogen composition, like that burned in the furnace, may result in significant fluctuations in heating value, thereby reducing the NO_X emissions reduction effectiveness Nonetheless, since it is technically feasible as a control option, the energy system will be designed with a low excess air/oxygen trim system.

Norbord believes that the BACT limit proposed for the wood fired energy system and TO burners using Low Excess Air/Oxygen Trim for wood-residue combustion and low NO_X burner(s) in the TO as control techniques represent a NO_X limitation consistent with other RBLC determinations, including those utilizing low-NO_X burner technology.

Product Handling, Finishing, Blending/Forming – PM/PM_{10} Control

Baghouse

There are several proposed sources, some contained within building enclosures, that emit particulate from the handling, finishing, blending and forming operations at the facility. Though most of these sources could potentially be eliminated as permitted sources based on their location, baghouses are necessary for proper operation of the mill and insurance of safe working conditions. For clarification, all of these baghouses are proposed to vent outside facility building enclosures.

As baghouses are the most effective control technology for PM/PM_{10} removal with regard to the aforementioned applications, no other technologies were considered. It should be noted that baghouses are currently used for similar existing sources at the site and have adequately performed their function through the life of the facility. Accordingly, care will be taken to adequately specify the size and design the baghouses for proper particulate removal. A cost analysis is not included as the cost and operation of a baghouse are within acceptable levels.

Product Handling, Finishing, Blending/Forming – VOC Control

Thermal Oxidizer

While TO technology is a proven technology to control VOCs from the wood processing industry, this technology has only been applied to those

units with high VOC emissions potential. The economic costs associated with TO technology, as well as the less favorable impacts considering the entire lifecycle of this control technology, deem TO technology economically not feasible for these minor sources of VOC emissions (see Table D-2).

Good Design/Operation

Small amounts of VOC emissions may occur during product handling, finishing, blending and forming, and be likewise emitted from five of the six baghouses. The quantities are expected to be small based on information obtained from testing at similar Norbord facilities. Thus, good design/operation is deemed BACT for these sources.

Press – VOC Control

Thermal Oxidizer System(s)

TO technology is the highest rated VOC control option available to the press. The existing press at Norbord Georgia successfully controls VOC and HAP emissions with the use of a TO. As the benchmark air pollution control equipment to comply with the recently promulgated PCWP MACT, Norbord intends to install a TO on the proposed press. As a TO is deemed the highest rated VOC control option, no further analysis of this technology is warranted. A TO is therefore proposed as BACT for VOC control.

The best-performing VOC control is a TO, which represents RTOs and RCOs in general. Norbord is currently evaluating whether an RTO or RCO would be more appropriate for the proposed press operations. As both control systems perform at the same level of VOC removal, Norbord assumes that EPD will accept either device as BACT. Based on previous discussions with EPD, Norbord intends to represent the press control device as an RCO capable of operating in thermal mode. As such, testing would be required to establish operating temperatures for either mode. At this time, Norbord intends to operate the press TO in catalytic mode and would test only in the catalytic mode. Before Norbord could operate in thermal mode, a request or notification would have to be made to EPD and the facility would establish parameters for operating in thermal mode.

Biofilter

For the purposes of comparison, though not officially considered for this BACT analysis, a biofilter is the next available technology suitable for this application. Biofiltration is a process in which living organisms are used to

"consume" the VOC present in a waste stream. Biofiltration is still a relatively new control technology and its success in this type of application is still being evaluated for acceptable long-term operation. Biofilters appear to be technically feasible only for an exhaust stream with temperatures below approximately 120 °F. Though a biofilter has some potential benefits such as lower NOx emissions, this technology is considered to be less effective for VOC removal as compared to thermal oxidizers and would likely be less effective for particulate removal as well. This technology has been included, however, because it is an accepted PCWP MACT control device.

Press – PM/PM_{10} Control

Baghouse, ESP, WESP, Multiclones, EFB

While fabric filters (baghouses) are very common, highly effective, and modestly expensive means of preventing PM/PM_{10} emissions, the RBLC records show that practically no reconstituted wood processing operation employs a baghouse, ESP, WESP, Multiclone or EFB for PM/PM_{10} control on a wood press (see Table C-3). This is likely influenced by the opportunity for these technologies to be blinded easily by the waxes and resins used prior to the wood process operations. Also possibly influencing the decision by industry to not consider these technologies for wood press PM/PM_{10} control is the likely scenario that a significant fraction of the PM/PM_{10} emissions occur as the condensable fraction. This result appears to be supported by recent U.S. EPA emission factor guidance.[16]

Table D-3 in Attachment D presents an economic evaluation of a fabric filter installation for the wood press. These values were originally estimated in 1984 dollars and scaled to first quarter 2000 dollars using the Marshall & Swift Equipment Cost Index as found in Chemical Engineering magazine.[17] This analysis estimates an initial capital investment of approximately $3,113,000, a total annual cost of $700,609 and a cost per ton removal of $26,060.

Due to the high cost per ton PM/PM_{10} removal from a baghouse installation, and the potential technical difficulties associated with possible blinding, a baghouse is not selected as the BACT control for the wood press at Norbord. Furthermore, it is understood that other available similar mechanical control technologies (ESP, WESP, Multiclones, EFB) are technically more involved as

[16] U.S. EPA Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 10.6.1, Table 10.6.1-5, March 2002.

[17] Chemical Engineering "Marshall & Swift Equipment Cost Index" July 2000.

well as more costly. Thus, these alternatives are also removed from further consideration as BACT for PM/PM_{10}.

Thermal Oxidizer System(s)

Typically, press TOs will be equipped with a prefilter, cyclone, drop box or other device to remove larger particles that could blind the TO. As a TO is already proposed as BACT for VOCs and other more efficient particulate control devices have been eliminated, no further control options are reviewed and a TO is proposed as BACT for PM. Please also note that a pretreatment device will be installed with the TO, but at this time and for the purposes of this BACT analysis no specific prefilter is mentioned as it is considered part of the TO.

Press – CO Control

Thermal Oxidizer System(s)

Given that the TO control technology option has been proposed as BACT for control of VOC and PM emissions, it is assumed that an economic evaluation of the removal costs of CO emissions from the wood press will not be necessary.

In addition, given the minor nature of CO emissions from the wood press, Norbord proposes that good design/operation be established as the control technique representing BACT from the wood press/TO for CO emissions.

Press – NO_X Control

Low NO_x Burner - Thermal Oxidizer System(s)

As briefly mentioned earlier, NO_X control for TOs typically has been observed in reviews of the RBLC database and permits for similar operations to be low NO_X burners along with good design and operation. As this technology is commonly accepted no further technologies or analyses were reviewed.

BACT for Insignificant Activities

With regard to the three insignificant activities associated with the proposed project (i.e., emergency generator, edge painting operation, and grinding), control technologies must be considered since these activities have the potential to emit pollutants for which the proposed project is significant. Due to the small amount of emissions associated with these operations, Norbord believes the following qualitative analysis is sufficient to demonstrate

that no additional emissions control devices are warranted and that good design and responsible operations will minimize emissions to the greatest extent practical.

Diesel-fired Emergency Generator

Norbord's operation of a 750 hp diesel-fired engine to generate electrical power in emergency situations (up to 250 hours per year) will result in potential emissions of NO_X totaling 2.3 tons per year, and other subject criteria pollutants in amount of less than 0.5 tpy each. Although emissions control technologies are available for diesel-powered engines, the total annualized cost of the controls and subsequent operation and maintenance would need to be on the order of $18,000 to cause a cost-effective emissions reduction (e.g., $5,000 per ton). Since no technology can be implemented practically at this expense to achieve a minimal emissions reduction, Norbord will utilize good operation and preventative maintenance practices per the manufacturer's recommendations to minimize emissions from the diesel combustion source.

Edge Coating Line

Norbord's proposed edge seal painting and inking operation will result in minimal emissions of VOC, estimated to be approximately 4.5 tpy from this insignificant activity. The operation will occur in an enclosed area of a size that is not conducive to implementation of a vapor recovery system or other emissions control. Typical edge seal paints contain volatile components on the order of 0.1 lb VOC per gallon, well below typical standards for volatile solvents and surface coatings. Norbord will utilize this low-volatility material as part of good operating practices to minimize VOC emissions from the operation to the greatest possible extent.

Grinding Operation

Norbord's proposed grinding operation will result in negligible emissions to the atmosphere since the operation will take place in an enclosed area serviced by a standard air conditioning system. The proper operation of the grinding equipment with inherent machine filters within the enclosed areas of the plant building will minimize emissions to the atmosphere.

Select BACT

The fifth and final step in a top-down BACT analysis procedure is the selection of the BACT level of control for each pollutant. Per U.S. EPA guidance, BACT is considered to be the most effective control technology not eliminated by the previous four steps of the analysis protocol. The BACT selections are summarized in Table 6.

TABLE 6. BACT SELECTION AND RESULTING EMISSION RATES

Process Equipment	Pollutant	BACT Determination	Proposed BACT Emissions Limits	Annual Emission Rate (ton/year)
Source S1 - Rotary Dryers/ Wood Fired Energy System	PM/PM_{10}	WESP/RTO**	28.5 lb/hr, 0.02 gr/dscf	125
	VOC	WESP/RTO**	59.8 lb/hr, or 90% control	262
	NO_X	RTO with Low NO_X Burner	78.4 lb/hr, 0.25lb/MMBtu	343
	CO	WESP/RTO**	78.4 lb/hr, 0.25lb/MMBtu	343
Source S2 – Press Exhaust	PM/PM_{10}	TO - RCO/RTO	4.0 lb/hr, 0.07 gr/dscf	17.4
	VOC	TO - RCO/RTO	11.4 lb/hr, or 90% control	50
	NO_X	TO with Low NO_X Burner	20.4 lb/hr, 0.25lb/Msf	89
	CO	TO - RCO/RTO	24.5 lb/hr, 0.3lb/Msf	107
Source S3 – Resinated Fines Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 11.9 lb/hr	4.4 52
Source S4 – Un-Resinated Fines Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 8.9 lb/hr	4.4 39
Source S5 – Finishing Line Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 1.1 lb/hr	4.4 5.0
Source S6 – Wet Strand Fines Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 8.9 lb/hr	4.4 39
Source S7 – Dry Fuel Bin Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 4.5 lb/hr	7.0 19.5
Source S8 – Blowline Baghouse	PM/PM_{10} VOC*	Baghouse *	0.005 gr/dscf *	2.2 *
Source M1 – Emergency Generator	PM/PM_{10}, NO_X, CO & VOC*	*	*	*
Source M2 – Edge Coating	VOC*	*	*	*
Source M3 - Grinding Operations	PM/PM_{10}	*	*	*

* No formal limit proposed due to inherently small emission rate.
** Norbord is proposing to install WESP/RTO to comply with MACT requirements.

Norbord proposes a 30-day production based rolling average for verification of short-term emission limits. This is consistent with other short-term limits at various Norbord facilities. Also, it should be noted that though emission estimates are based on more than just production output, the other two criteria used for emission estimates, dryer output and energy input levels, are directly correlated with production output. Therefore, a production based limit should suffice.

VOC emission limits are presented as carbon (Method 25A) with formaldehyde added (NCASI Method). Norbord is aware that there are various ways of measuring VOC from state to state. Norbord is willing to discuss various methods of measuring VOC at EPD's discretion. In addition to VOC emissions, a list of reference test methods, which Norbord intends to use to demonstrate compliance, is also provided for completeness.

Reference Test Methods:

1. Method 1 or 1A to be used for selection of sampling site and number of traverse points.
2. Method 2 in addition to Method 2A, 2C, 2D, 2F or 2G to be used for stack gas flow rate
3. Method 3, 3A or 3B to be used for gas molecular weight
4. Method 4 or Method 320; or ASTM D6348-03 to be used for moisture determination
5. Method 5 to be used for the determination of the Particulate Matter concentration for sources other than dryers and press
6. Method 5T to be used for the determination of the Particulate Matter concentration for the dryers and press
7. Method 7 or 7E to be used for Nitrogen Oxides concentration
8. Method 9 to be used for determination of Opacity
9. Method 10 to be used for the determination of Carbon Monoxide
10. Method 25 or 25A to be used for the determination of Volatile Organic Compounds, as carbon.
11. Method 308 or Method 320 for methanol (as necessary for MACT compliance determination); or Method 0011; or NCASI Method CI/WP-98.01; or NCASI Method IM/CAN/WP-99.02
12. Method 316 for formaldehyde or Method 320 or Method 0011 (as necessary for MACT compliance determination); or NCASI Method CI/WP-98.01 or NCASI Method IM/CAN/WP-99.02

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One remaining item that needs to be clarified involves the status of backup natural gas burners for the rotary dryers. Norbord intends to install backup burners, similar to the existing system, with a heat input capacity of 80 MMBtu per hour. These burners would of course only be used for emergency situations when the energy system was not operational, and as emissions from such burners would be much less than from normal operating conditions no emission calculations or further analysis is warranted.

As you review this supplemental information, please do not hesitate to contact me at (864) 697-5438 to discuss any questions or comments about the information presented in this letter or if additional information is required. Norbord and Trinity appreciate Georgia EPD's and your commitment to promptly reviewing the permit application for the Cordele OSB Mill expansion project.

Sincerely,

NORBORD GEORGIA OSB

Phil Towles
Regional Environmental Coordinator

Enclosures

cc: Mr. Ryan Gesser, Trinity Consultants (Atlanta, Georgia)

ATTACHMENT A

Revised Construction and Title V Permit Modification Forms and Database

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 2A – PROCESS DESCRIPTION AND OPERATIONAL DATA

Normal Operating Schedule: 24 hours/day 7 days/week 52 weeks/yr

Additional Data Attached? ☐ - Yes ☐ - No

Seasonal and/or Peak Operating Periods: N/A

Dates of Annually Occurring Shutdowns: N/A

PRODUCTION INPUT FACTORS

Source Code	Process/ Operation e.g. Chemical mix tank, Grain dryer, Conveyor	Date of Equipment installation	Type of Raw Material	Annual Input Tons/year	Hourly Process Input Rate (Give units: e.g. lb/hr, ton/hr)		
					Design	Normal	Maximum
ES02	Energy System B	See Section 111	See Section 111	See Section 111	See Section 111	See Section 111	See Section 111
RD05	Rotary Dryer #5	2005	Wood Flakes	227,760		52,000	lb/hr
RD06	Rotary Dryer #6	2005	Wood Flakes	227,760		52,000	lb/hr
DB05	Dry Bin #5	2005	Wood Flakes	227,760		52,000	lb/hr
DB06	Dry Bin #6	2005	Wood Flakes	227,760		52,000	lb/hr
OFS2	Dry Fuel Storage Silo #2	2005	Dry Wood	113,000		25,600	lb/hr
FLP2	Forming Line & Prepress #2	2005	Wood Flakes	3,000		700	lb/hr
GB05	Green Bin #5	2005	Wood Flakes	455,520		104,000	lb/hr
GB06	Green Bin #6	2005	Wood Flakes	455,520		104,000	lb/hr
HPW2	High Pressure Waste System #2	2005	Wood Dust	81,000		18,500	lb/hr
L2SD	Line #2 Sander System	2005	Wood Dust/Chips	37,700		8,600	lb/hr
L2SS	Line #2 Saw System	2005	Wood Dust/Chips	37,700		8,600	lb/hr
PRS2	Press #2	2005	Treated Wood Flake	495,300		113,000	lb/hr
RS05	Rotary Screen #5	2005	Wood Flakes	227,760		52,000	lb/hr
RS06	Rotary Screen #6	2005	Wood Flakes	227,760		52,000	lb/hr
FB05	Flake Blender #5	2005	Resin/Wood/ Wax	240,024		54,800	lb/hr
FB06	Flake Blender #6	2005	Resin/Wood/ Wax	240,024		54,800	lb/hr

PRODUCTS OF PRODUCTION

Source Code	Description of Product	SIC* Code of Product	Production Schedule		Hourly Production Rate (Give units: e.g. lb/hr, ton/hr)			
			Ton/yr	Hr/yr	Design	Normal	Maximum	Units
Facility	**OSB**	**2493**	**650 mmsf (3/8")**	**8,760**	**74.2**	**72.5**	**74.2**	**msf/hr (3/8")**

* SIC: Standard Industrial Classification

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 9 – EMISSION DATA

Stack Source Code	Control Device Source Code	Emission Unit Source Code (Boiler or Other Process)	Pollutant Emitted[1]	Emission Rates				
				Average lb/hr	Maximum lb/hr	lb/million Btu Input[2]	Method of Determination[3] (e.g. Stack Test, AP-42, Material Balance)	Tons per Year Emitted
S201	C21A, C21B, WP02	RD05-RD06, ES02	NOx	78.4	--	0.25	Vender	343
			CO	78.4	--	0.25	Vender	343
			PM	28.5	--	NA	Vender	125
			VOC	59.8	--	NA	Other OSB Facility	262
S202	C202	PRS2	NOx	20.4	--	NA	Norbord Data	89
			CO	24.5	--	NA	NCASI	107
			PM	4.0	--	NA	Existing Source Data, Method 5T	17
			VOC	11.4	--	NA	Norbord Data	50
S203	C203	FLP2, FB05, FB06	PM	1.0	--	NA	Grain loading	4.4
S204	C204	RS05, RS06	PM	1.0	--	NA	Grain loading	4.4
S205	C205	L2SD, L2SS	PM	1.0	--	NA	Grain loading	4.4
S206	C206	GB05, GB06	PM	1.0	--	NA	Grain loading	4.4
S207	C207	DFS2	PM	1.6	--	NA	Grain loading	7.0
S208	C208	HPW2, DB05, DB06	PM	0.5	--	NA	Grain loading	2.2

[1] Use a separate line for each pollutant emitted from a stack.
[2] Complete this column only for boilers and other fuel burning equipment.
[3] If emission rates determined by source test, submit the test report indicating the method used.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 10A – STACK DATA

Stack Source Code	Emission Unit Source Code (boiler or other process)	Stack Dimensions		Dimensions of largest Structure Near Stack[1]		Exit Gas Conditions at Maximum Emission Rate			
		Height Above Grade, ft.	Inside Diameter, ft.	Height, ft.	Longest Side, ft.	Velocity ft/sec	Temperature °F	Flow Rate (acfm)	
								Average	Maximum
S201	RD05, RD06, ES02	50	8.0	-	-	82.94	275	250,000	250,000
S202	PRS2	50	6.0	-	-	80.63	245	136,710	136,710
S203	FLP2, FB05, FB06	50	3.5	-	-	77.99	Ambient	45,000	45,000
S204	RS05, RS06	50	3.5	-	-	77.99	Ambient	45,000	45,000
S205	L2SD, L2SS	50	3.5	-	-	77.99	Ambient	45,000	45,000
S206	GB05, GB06	50	3.5	-	-	77.99	Ambient	45,000	45,000
S207	DFS2	50	2.3	-	-	193.5	Ambient	50,000	50,000
S208	HPW2, DB05, DB06	50	1.3	-	-	81.66	93	6,500	6,500

[1] These two columns are required only if the height of a stack is greater than 90 feet. A structure is considered near a stack if the distance between the stack and the structure is less than 5 times the height or width of the structure. The structure that the stack is coming from is also considered "near" the stack.

NOTE: If emissions are not vented through a stack, describe point of discharge below and, if necessary, on a separate sheet of paper.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 10B – STACK MONITORING DATA

Stack Source Code	Stack Parameter Monitored (e.g. opacity, CO, flow rate)	Monitor Installation Date	Monitor Manufacturer	Name of Monitor and/or Model Number
S21A	Combustion Temperature	2005	TBD	TBD
S21B	Combustion Temperature	2005	TBD	TBD
S202	Combustion Temperature	2005	TBD	TBD
S203	Pressure Drop	2005	TBD	TBD
S204	Pressure Drop	2005	TBD	TBD
S205	Pressure Drop	2005	TBD	TBD
S206	Pressure Drop	2005	TBD	TBD
S207	Pressure Drop	2005	TBD	TBD
S208	Pressure Drop	2005	TBD	TBD

Comments:

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11A – AIR POLLUTION CONTROL DEVICES (APCD)

APCD Source Code	Process Equipment Source Code	APCD Type (Baghouse, ESP, Scrubber etc)	Date Installed	Make & Model Number (Attach Mfg. Specifications & Literature)	Unit Modified from Mfg Specifications?	Percent Control Efficiency		Inlet Gas Flow Rate (acfm)
						Design	Actual	
C21A	RD05-RD06, ES02	RTO/WESP	2005	TBD	No	90-95/85-90/50-75	PM/VOC/CO	TBD
C21B	RD05-RD06, ES02	RTO/WESP	2005	TBD	No	90-95/85-90/50-75	PM/VOC/CO	TBD
C202	PRS2	TO	2005	TBD	No	75-85/90-95/50-75	PM/VOC/CO	TBD
C203	FLP2, FB05, FB06	Baghouse	2005	TBD	No	99		TBD
C204	RS05, RS06	Baghouse	2005	TBD	No	99		TBD
C205	L2SD, L2SS	Baghouse	2005	TBD	No	99		TBD
C206	GB05, GB06	Baghouse	2005	TBD	No	99		TBD
C207	DFS2	Baghouse	2005	TBD	No	99		TBD
C208	HPW2, DB05, DB06	Baghouse	2005	TBD	No	99		TBD

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11B – AIR POLLUTION CONTROL DEVICES – EMISSION INFORMATION

APCD Source Code	Pollutants Controlled	Inlet Loading To Collector		Inlet gas Temp. °F	Exit Loading From Collector		Exit gas Temp. °F	Pressure Drop Across Unit (Inches of water)
		lb/hr	Method of Determination		lb/hr	Method of Determination		
C21A/ C21B	PM, VOC, CO	700;598;314	Vender	-	35;59.8; 78.4	Vender	275	--
C202	PM, VOC, CO	27;228;98	Vender	-	4.0;11.4; 24.5	Vender	245	--
C203	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-5
C204	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-5
C205	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-5
C206	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-5
C207	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-5
C208	PM	0.5 gr/dscf	Vender	93	0.005 gr/dscf	Vender	93	0.1-5

Note: Methods of determining inlet and exit loading include stack testing, material balance, emission factors or calculations based on manufacturer's specifications.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11E –ELECTROSTATIC PRECIPITATORS

APCD Source Code	Cell No.	Type of ESP Wet or Dry	Voltage (Volts)		Current (Amps)		Spark Rate sparks/ min	Inlet Gas Velocity e.g. ft/min, ft/sec	Water Flow Rate[1] e.g. Gal/min, Gal/hr
			Primary	Secondary	Primary	Secondary			
WP02	3 Fields	TBD	10-600	25 kV (minimum)	5-60	6-300 mA	TBD	220,000-250,000 acfm	140 gpm (minimum)

[1] Complete only for wet ESP's.

Attach a physical description, dimensions and drawings for each ESP and any additional information available such as: particle size, maintenance schedules, monitoring procedures and breakdown or by-pass procedures.

OTHER CONTROL DEVICES

For all other control equipment, such as hydrocarbon vapor control systems and multiclones, add extra sheets explaining details of construction and operation. Explain by-pass and break down procedures, maintenance procedures and monitoring procedures. Describe procedures for disposal of collected material.

A - Facility Information

Parent/Holding Company Name: Norbord Georgia, Inc.

Facility Location:

964 Highway 280 West

Cordele, GA 31015-

County: Crisp

Location of Center of Production Area:

Latitude: deg N min sec

Longitude: deg W min sec

UTM Zone: 17

UTM Horizontal Meters: 235272

UTM Vertical Meters: 3539804

Legal Owner (legal actions, etc.)

Primary Contact: Jim Black, Regional Environmental Coordinator

Phone: (864) 697-5438 EXT: Fax: (864) 697-4529

E-Mail:

Mailing Address: Norbord Georgia, Inc.

964 Highway 280 West

Cordele, GA 31015

Facility Contact

Primary Contact: Keith Blanton, Environmental and Safety Manager

Phone: (229) 276-2802 EXT: Fax: (229) 273-3972

E-Mail:

Mailing Address: Norbord Georgia, Inc.

964 Highway 280 West

Cordele, GA 31015

Permits (granted permits, permit amendments, etc.)

Primary Contact: Avery Smith,

Phone: (229) 276-2802 EXT: Fax: (229) 273-3972

E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Permit Applications (requests for additional information, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Surveys, Questionaires (emission inventories, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Enforcement Actions (non-compliance letters, notices of violation, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Fees (fee manuals, fee forms, audit notices, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972

A - Facility Information

E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Monitoring (CEM certification applications, requests for monitoring and testing information, etc.

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Reason for Application Submittal:

Modification of Existing Title V Permit

A Summary of all the modifications to this application:

Annual OSB production capacity will increase by 650 MMsf (3/8" basis) upon project completion. This project seeks agency approval to install two rotary dryers, a wood fired energy system, blending and forming machines, a press, and additional finishing capacity. Process flow diagrams and facility layouts reflecting future operations are provided in Appendix B. See application report text for additional details.

Application Submitted for:

All facilities under common control at a Part 70 site.

A6 - Current Permits And Amendments (And Deferred Modifications Under State Rule 391-3-1-.03(6)(i))

Permit or Amendment Number:	**2493-081-0054-V-02-0**
Original Issue Date and Amendment Date:	June 25, 2002
Permit or Amendment Description:	Norbord Georgia OSB Initial Title V Operating Permit

All significant Processes at this Facility:

Process Oriented Strand Board

A - Facility Information

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Description

Southern yellow pine and/or hard wood logs are fed through debarkers and flakers. The wood flakes are conveyed to storage bins, dryers, rotary screens, and dry storage bins. The flakes are mixed with wax and resin in rotary blenders, and then conveyed to a forming line where the layer mat is cut and loaded into the press to form the OSB. The OSB is then trimmed and sanded. The boards are then stacked, edge coated, and strapped for shipment.

Facility SIC Code 2493

Code Description RECONSTITUTED WOOD PRODUCTS

Other ID Numbers:

FEI Number:	300058644
Dun and Bradstreet Number:	24-784-7148

These corresponding attachments are submitted in electronic form (.doc, .pdf, .jpg, or similar format).

Corresponding Attachments	Number Submitted
Building layout (overhead view), indicating location of emission units and stacks. (Only stacks that are listed in this application need to be located on the	1
Plant site map detailing property lines, latitude/longitude or UTM location provided in this application, any outdoor storage piles (indicating material), roads (include paved and unpaved), and areas of company property to which the public has unrestricted access.	1
General area map showing specific location of plant in relation to surrounding areas.	1
Process flow diagram(s) for the plant, including emission flow. (These do not have to include material input/output flow rates.)	1
Compliance Assurance Monitoring plans as required by 40 CFR Part 64. This document MUST be submitted in electronic form.	1

Comments:

C - RULE APPLICABILITY

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

C1 - Regulatory Applicability

The following regulations have been identified as APPLICABLE:

FEDNEW	Enter into the comment field any newly promulgated Federal regulations that is applicable or potentially applicable to your facility that has not already been listed here.
	40 CFR 63, Subpart DDDD, NESHAPs for Plywood and Composite Wood Products
FEDERAL	40 CFR 60, subpart Db, NSPS for Industrial-Commercial-Institutional Steam Generating Units [391-3-1-.02(8)(b)4]
FEDERAL	40 CFR 63, Subpart A, (excluding 63.13, and 63.15(a)(2)) General Provisions[391-3-1-.02(9)(b)15]
FEDERAL	40 CFR 64, Compliance Assurance Monitoring
FEDERAL	40 CFR, Part 60, subpart A, General Provisions [391-3-1-.02(8)(b)1]
NONSIP	391-3-1-.02(2)(uu) Visibility Protection
SIP	391-3-1-.02(2)(b) Visible Emissions
SIP	391-3-1-.02(2)(d) Fuel-burning Equipment
SIP	391-3-1-.02(2)(e) Particulate Emission from Manufacturing Processes
SIP	391-3-1-.02(2)(ff) Solvent Metal Cleaning
SIP	391-3-1-.02(2)(g) Sulfur Dioxide
SIP	391-3-1-.02(2)(n) Fugitive Dust
SIP	391-3-1-.02(3) Sampling
SIP	391-3-1-.02(5) Open Burning
SIP	391-3-1-.02(6) Source Monitoring

C1 - Regulatory Applicability

The following regulations have been identified as NOT APPLICABLE:

Other	Other regulation - List additional regulations in the Comment blank.
	40 CFR 63, Subpart DDDDD, NESHAP for Institutional Boilers and Process Heaters
SIPNEW	Enter into the comment field any newly promulgated SIP regulations that is applicable or potentially applicable to your facility that has not already been listed here.
FEDERAL	40 CFR 60, subpart 0, NSPS for Sewage Treatment Plants [391-3-1-.02(8)(b)20]
FEDERAL	40 CFR 60, subpart AA, NSPS for Steel Plants: Electric Arc Furnaces[391-3-1-

	.02(8)(b)32]
FEDERAL	40 CFR 60, subpart AAA, NSPS for Steel Plants. Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983[391-3-1-.02(8)(b)33]
FEDERAL	40 CFR 60, subpart BB, NSPS for Kraft Pulp Mills [391-3-1-.02(8)(b)34]
FEDERAL	40 CFR 60, subpart BBB, NSPS for Rubber Tire Manufacturing Industry[391-3-1-.02(8)(b)53]
FEDERAL	40 CFR 60, subpart CC, NSPS for Glass Manufacturing Plants[391-3-1-.02(8)(b)35]
FEDERAL	40 CFR 60, subpart D, NSPS for Fossil-fuel Fired Steam Generators391-3-1-.02(8)(b)2]
FEDERAL	40 CFR 60, subpart Da, NSPS for Electric Utility Steam Generating Units [391-3-1-.02(8)(b)3]
FEDERAL	40 CFR 60, subpart Dc, NSPS for Small Industrial -Commercial-Institutional Steam Generating Units [391-3-1-.02(8)(b)5]
FEDERAL	40 CFR 60, subpart DD, NSPS for Grain Elevators [391-3-1-.02(8)(b)36]
FEDERAL	40 CFR 60, subpart DDD, NSPS for Volatile Organic Compound (VOC) Emission from Polymer Manufacturing Industry [391-3-1-.02(8)(b)54]
FEDERAL	40 CFR 60, subpart E, NSPS for Incinerators [391-3-1-.02(8)(b)6]
FEDERAL	40 CFR 60, subpart Ea, NSPS for Municipal Waste Combustors [391-3-1-.02(8)(b)7]
FEDERAL	40 CFR 60, subpart Eb, NSPS for Municipal Waste Combustors[391-3-1-.02(8)(b)71]
FEDERAL	40 CFR 60, subpart EE, NSPS for Surface Coating of Metal Furniture[391-3-1-.02(8)(b)37]
FEDERAL	40 CFR 60, subpart F, NSPS for Portland Cement Plants [391-3-1-.02(8)(b)8]
FEDERAL	40 CFR 60, subpart FFF, NSPS for Flexible Vinyl and Urethane Printing and Coating[391-3-1-.02(8)(b)55]
FEDERAL	40 CFR 60, subpart G, NSPS for Nitric Acid Plants [391-3-1-.02(8)(b)9]
FEDERAL	40 CFR 60, subpart GG, NSPS for Stationary Gas Turbines [391-3-1-.02(8)(b)38]
FEDERAL	40 CFR 60, subpart GGG, NSPS for Equipment Leaks of VOC in Petroleum Refineries [391-3-1-.02(8)(b)56]
FEDERAL	40 CFR 60, subpart H, NSPS for Sulfuric Acid Plants [391-3-1-.02(8)(b)10]
FEDERAL	40 CFR 60, subpart HH, NSPS for Lime Manufacturing Plants [391-3-1-.02(8)(b)39]
FEDERAL	40 CFR 60, subpart HHH, NSPS for Synthetic Fiber Production Facilities[391-3-1-.02(8)(b)57]
FEDERAL	40 CFR 60, subpart I, NSPS for Asphalt Concrete Plants [391-3-1-.02(8)(b)11]
FEDERAL	40 CFR 60, subpart III, NSPS for Volatile Organic Compounds (VOC) Emissions From

	the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes [391-3-1-.02(8)(b)58]
FEDERAL	40 CFR 60, subpart J, NSPS for Petroleum Refineries [391-3-1-.02(8)(b)12]
FEDERAL	40 CFR 60, subpart JJJ, NSPS for Petroleum Dry Cleaners [391-3-1-.02(8)(b)59]
FEDERAL	40 CFR 60, subpart K, NSPS for Storage Vessels for Petroleum Liquids[391-3-1-.02(8)(b)13]
FEDERAL	40 CFR 60, subpart Ka, NSPS for Storage Vessels for Petroleum Liquids[391-3-1-.02(8)(b)14]
FEDERAL	40 CFR 60, subpart Kb, NSPS for Volatile Organic Liquid Storage Vessels[391-3-1-.02(8)(b)15]
FEDERAL	40 CFR 60, subpart KK, NSPS for Lead-Acid Battery Manufacturing Plants[391-3-1-.02(8)(b)40]
FEDERAL	40 CFR 60, subpart KKK, NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants [391-3-1-.02(8)(b)60]
FEDERAL	40 CFR 60, subpart L, NSPS for Secondary Lead Smelters [391-3-1-.02(8)(b)16]
FEDERAL	40 CFR 60, subpart LL, NSPS for Metallic Mineral Processing Plants[391-3-1-.02(8)(b)41]
FEDERAL	40 CFR 60, subpart LLL, NSPS for Onshore Natural Gas Processing[391-3-1-.02(8)(b)61]
FEDERAL	40 CFR 60, subpart M, NSPS for Secondary Brass and Bronze Ingot Production Plants [391-3-1-.02(8)(b)17]
FEDERAL	40 CFR 60, subpart MM, NSPS for Automobile and Light-Duty Truck Coating Operations [391-3-1-.02(8)(b)42]
FEDERAL	40 CFR 60, subpart N, NSPS for Iron and Steel Plants [391-3-1-.02(8)(b)18]
FEDERAL	40 CFR 60, subpart Na, NSPS for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983[391-3-1-.02(8)(b)19]
FEDERAL	40 CFR 60, subpart NN, NSPS for Phosphate Rock Plants[391-3-1-.02(8)(b)43]
FEDERAL	40 CFR 60, subpart NNN, NSPS for Volatile Organic Compounds (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operation [391-3-1-.02(8)(b)62]
FEDERAL	40 CFR 60, subpart OOO, NSPS for Nonmetallic Mineral Processing Plants[391-3-1-.02(8)(b)63]
FEDERAL	40 CFR 60, subpart P, NSPS for Primary Copper Smelters [391-3-1-.02(8)(b)21]
FEDERAL	40 CFR 60, subpart PP, NSPS for Ammonium Sulfate Manufacture[391-3-1-.02(8)(b)44]
FEDERAL	40 CFR 60, subpart PPP, NSPS for Wool Fiberglass Insulation Manufacturing Plants [391-3-1-.02(8)(b)64]

FEDERAL	40 CFR 60, subpart Q, NSPS for Primary Zinc Smelters [391-3-1-.02(8)(b)22]
FEDERAL	40 CFR 60, subpart QQ, NSPS for Graphic Arts Industry: Publication Rotogravure Printing [391-3-1-.02(8)(b)45]
FEDERAL	40 CFR 60, subpart QQQ, NSPS for VOC Emissions from Petroleum Refinery Wastewater Systems [391-3-1-.02(8)(b)65]
FEDERAL	40 CFR 60, subpart R, NSPS for Primary Lead Smelters [391-3-1-.02(8)(b)23]
FEDERAL	40 CFR 60, subpart RR, NSPS for Pressure Sensitive Tape and Label Surface Coating Operations [391-3-1-.02(8)(b)46]
FEDERAL	40 CFR 60, subpart RRR, NSPS for VOC Emissions from Synthethic Organic Chemical Manufacturing Industry (SOCMI) Reactor Process [391-3-1-.02(b)66]
FEDERAL	40 CFR 60, subpart S, NSPS for Primary Aluminum Reduction [391-3-1-.02(8)(b)24]
FEDERAL	40 CFR 60, subpart SS, NSPS for Industrial Surface Coating: Large Appliances[391-3-1-.02(8)(b)47]
FEDERAL	40 CFR 60, subpart SSS, NSPS for Magnetic Tape Coating [391-3-1-.02(8)(b)67]
FEDERAL	40 CFR 60, subpart T, NSPS for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants [391-3-1-.02(8)(b)25]
FEDERAL	40 CFR 60, subpart TT, NSPS for Metal Coil Surface Coating [391-3-1-.02(8)(b)48]
FEDERAL	40 CFR 60, subpart TTT, NSPS for Plastic Parts for Business Machine Coatings [391-3-1-.02(8)(b)68]
FEDERAL	40 CFR 60, subpart U, NSPS for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants [391-3-1-.02(8)(b)26]
FEDERAL	40 CFR 60, subpart UU, NSPS for Asphalt Processing and Asphalt Roofing Manufacture [391-3-1-.02(8)(b)49]
FEDERAL	40 CFR 60, subpart UUU, NSPS for Calciners and Dryers in Mineral Industries [391-3-1-.02(8)(b)69]
FEDERAL	40 CFR 60, subpart V, NSPS for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants [391-3-1-.02(8)(b)27]
FEDERAL	40 CFR 60, subpart VV, NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [391-3-1-.02(8)(b)50]
FEDERAL	40 CFR 60, subpart VVV, NSPS for Polymeric Coating of Supporting Substrates Facilities [391-3-1-.02(8)(b)70]
FEDERAL	40 CFR 60, subpart W, NSPS for the Phosphate Fertilizer Industry: Triple Superphosphate Plants [391-3-1-.02(8)(b)28]
FEDERAL	40 CFR 60, subpart WW, NSPS for Beverage Can Surface Coating Industry[391-3-1-.02(8)(b)51]
FEDERAL	40 CFR 60, subpart WWW, NSPS for Municipal Solid Waste Landfills[391-3-1-.02(8)(b)72]

FEDERAL	40 CFR 60, subpart X, NSPS for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities [391-3-1-.02(8)(b)29]
FEDERAL	40 CFR 60, subpart XX, NSPS for Bulk Gasoline Terminals [391-3-1-.02(8)(b)52]
FEDERAL	40 CFR 60, subpart Y, NSPS for Coal Preparation Plants [391-3-1-.02(8)(b)30]
FEDERAL	40 CFR 60, subpart Z, NSPS for Ferroalloy Production Facilities[391-3-1-.02(8)(b)31]
FEDERAL	40 CFR 61, Subpart A – General Provisions
FEDERAL	40 CFR 61, subpart BB, NESHAP for Benzene Emissions from Benzene Transfer Operations [391-3-1-.02(9)(b)13]
FEDERAL	40 CFR 61, subpart C, NESHAP for Beryllium [391-3-1-.02(9)(b)1]
FEDERAL	40 CFR 61, subpart D, NESHAP for Beryllium Rocket Motor Firing[391-3-1-.02(9)(b)2]
FEDERAL	40 CFR 61, subpart E, NESHAP for Mercury [391-3-1-.02(9)(b)3]
FEDERAL	40 CFR 61, subpart F, NESHAP for Vinyl Chloride [391-3-1-.02(9)(b)4]
FEDERAL	40 CFR 61, subpart FF, NESHAP for Benzene Waste Operations[391-3-1-.02(9)(b)14]
FEDERAL	40 CFR 61, subpart J, NESHAP for Equipment Leaks (Fugitive Emission Sources) of Benzene [391-3-1-.02(9)(b)5]
FEDERAL	40 CFR 61, subpart L, NESHAP for Benzene Emissions from Coke Byproduct Recovery Plants [391-3-1-.02(9)(b)6]
FEDERAL	40 CFR 61, subpart M, NESHAP for Asbestos (inc. work practices)[391-3-1-.02(9)(b)7]
FEDERAL	40 CFR 61, subpart N, NESHAP for Inorganic Arsenic Emissions from Glass Manufacturing Plants [391-3-1-.02(9)(b)8]
FEDERAL	40 CFR 61, subpart O, NESHAP for Inorganic Arsenic Emissions from Primary Copper Smelters [391-3-1-.02(9)(b)9]
FEDERAL	40 CFR 61, subpart P, NESHAP for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities [391-3-1-.02(9)(b)10]
FEDERAL	40 CFR 61, subpart V, NESHAP for Equipment Leaks (Fugitive Emission Sources) [of VHAP] [391-3-1-.02(9)(b)11]
FEDERAL	40 CFR 61, subpart Y, NESHAP for Benzene Emissions from Benzene Storage Vessels [391-3-1-.02(9)(b)12]
FEDERAL	40 CFR 63, Subpart AA, NESHAPs for Phosphoric Acid Manufacturing Plants
FEDERAL	40 CFR 63, Subpart B, Sections 63.40 through 63.44, Requirements for Control Technology Determinations for Major Sources in Accordance with the Clean Air Act sections 112(g) [391-3-1-.02(9)(b)16]
FEDERAL	40 CFR 63, Subpart B, Sections 63.50 through 63.56, Requirements for Control Technology Determinations for Major Sources in Accordance with the Clean Air Act sections 112(j) [391-3-1-.02(9)(b)17]

FEDERAL	40 CFR 63, Subpart BB, NESHAPs for Phosphate Fertilizer Production Plants
FEDERAL	40 CFR 63, Subpart CC, NESHAPS for Emission Standards for Hazardous Air Pollutants from Petroleum Refineries,?63.642(k)procedures for ?63.642(g)[391-3-1-.02(9)(b)43]
FEDERAL	40 CFR 63, Subpart CCC, NESHAPs for Steel Pickling – HCl Process Facilities and HCl Regeneration Plants [391-3-1-.02(9)(b)65]
FEDERAL	40 CFR 63, Subpart CCCC, NESHAPs for Nutritional Yeast Manufacturing [391-3-1-.02(9)(b)91]
FEDERAL	40 CFR 63, Subpart D, Compliance Extensions for Early Reductions[391-3-1-.02(9)(b)19]
FEDERAL	40 CFR 63, Subpart DDD, NESHAPs for Mineral Wool Production [391-3-1-.02(9)(b)66]
FEDERAL	40 CFR 63, Subpart EE, NESHAPs for Magnetic Tape Manufacturing Operations[391-3-1-.02(9)(b)45]
FEDERAL	40 CFR 63, Subpart EEE, NESHAPs for Hazardous Waste Combustors [391-3-1-.02(9)(b)67]
FEDERAL	40 CFR 63, Subpart F, NESHAPs for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry [391-3-1-.02(9)(b)20]
FEDERAL	40 CFR 63, Subpart G, NESHAPs for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater. [391-3-1-.02(9)(b)21]
FEDERAL	40 CFR 63, Subpart GG, NESHAPS for Emission Standards for Aerospace Manufacturing and Rework Facilities[391-3-1-.02(9)(b)47]
FEDERAL	40 CFR 63, Subpart GGG, NESHAPs for Pharmaceuticals Production [391-3-1-.02(9)(b)69]
FEDERAL	40 CFR 63, Subpart GGGG, NESHAPs for Vegetable Oil Production [391-3-1-.02(9)(b)95]
FEDERAL	40 CFR 63, Subpart H, NESHAPs for Organic Hazardous Air Pollutants for Equipment Leaks [391-3-1-.02(9)(b)22]
FEDERAL	40 CFR 63, Subpart HH, NESHAPs for Oil and Natural Gas Production Facilities
FEDERAL	40 CFR 63, Subpart HHH, NESHAPs for Natural Gas Transmission and Storage Facilities [391-3-1-.02(9)(b)70]
FEDERAL	40 CFR 63, Subpart HHHH, NESHAPs for Wet Formed Fiberglass Mat Production
FEDERAL	40 CFR 63, Subpart I, NESHAPs for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks[391-3-1-.02(9)(b)23]
FEDERAL	40 CFR 63, Subpart II, NESHAPS for Emission Standards for Shipbuilding and Repair(Surface Coating[391-3-1-.02(9)(b)49]
FEDERAL	40 CFR 63, Subpart III, NESHAPs for Flexible Polyurethane Foam Production [391-3-1-

	.02(9)(b)71]
FEDERAL	40 CFR 63, Subpart J, NESHAPs for Polyvinyl Chloride and Copolymers Production
FEDERAL	40 CFR 63, Subpart JJ, NESHAPS for Emission Standards for Wood Furniture Manufacturing Operations[391-3-1-.02(9)(b)50]
FEDERAL	40 CFR 63, Subpart JJJ, NESHAPs for Group IV Polymers and Resins [391-3-1-.02(9)(b)72]
FEDERAL	40 CFR 63, Subpart KK, NESHAPs for Printing and Publishing Operations [391-3-1-.02(9)(b)51]
FEDERAL	40 CFR 63, Subpart L, NESHAPs for Coke Oven Batteries [391-3-1-.02(9)(b)26]
FEDERAL	40 CFR 63, Subpart LL, NESHAPs for Primary Aluminum Reduction Plants [391-3-1-.02(9)(b)52]
FEDERAL	40 CFR 63, Subpart LLL, NESHAPs for Portland Cement Manufacturing Industry [391-3-1-.02(9)(b)74]
FEDERAL	40 CFR 63, Subpart M, Perchloroethylene Air NESHAPs for Dry Cleaning Facilities[391-3-1-.02(9)(b)27]
FEDERAL	40 CFR 63, Subpart MM, NESHAPs for Combustion Sources at Kraft, Soda, and Sulfite Pulp and Paper Mills [391-3-1-.02(9)(b)53]
FEDERAL	40 CFR 63, Subpart MMM, NESHAPs for Pesticide Active Ingredient Production [391-3-1-.02(9)(b)75]
FEDERAL	40 CFR 63, Subpart N, NESHAPs for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks [391-3-1-.02(9)(b)28]
FEDERAL	40 CFR 63, Subpart NNN, NESHAPs for Wool Fiberglass Manufacturing [391-3-1-.02(9)(b)76]
FEDERAL	40 CFR 63, Subpart NNNN, NESHAPs for Large Appliance Surface Coating
FEDERAL	40 CFR 63, Subpart O, Ethylene Oxide NESHAPs for Sterilization Facilities[391-3-1-.02(9)(b)29]
FEDERAL	40 CFR 63, Subpart OO, NESHAPs for Tanks, Level 1 [391-3-1-.02(9)(b)55]
FEDERAL	40 CFR 63, Subpart OOO, NESHAPs for Amino/Phenolic Resins Production [391-3-1-.02(9)(b)77]
FEDERAL	40 CFR 63, Subpart PP, NESHAPs for Containers [391-3-1-.02(9)(b)56]
FEDERAL	40 CFR 63, Subpart PPP, NESHAPs for Polyether Polyols Production [391-3-1-.02(9)(b)78]
FEDERAL	40 CFR 63, Subpart Q, NESHAPs for Hazardous Air Pollutants for Industrial Process Cooling Towers [391-3-1-.02(9)(b)31]
FEDERAL	40 CFR 63, Subpart QQ, NESHAPs for Surface Impoundments [391-3-1-.02(9)(b)57]
FEDERAL	40 CFR 63, Subpart QQQ, NESHAPs for Primary Copper Production

FEDERAL	40 CFR 63, Subpart QQQQQ, NESHAPs for Friction Products Manufacturing
FEDERAL	40 CFR 63, Subpart R, NESHAPs for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations) [391-3-1-.02(9)(b)32]
FEDERAL	40 CFR 63, Subpart RR, NESHAPs for Individual Drain Systems [391-3-1-.02(9)(b)58]
FEDERAL	40 CFR 63, Subpart RRR, NESHAPs for Secondary Aluminum Production [391-3-1-.02(9)(b)80]
FEDERAL	40 CFR 63, Subpart S, NESHAPs for Pulp and Paper Industry
FEDERAL	40 CFR 63, Subpart SS, NESHAPs for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process [391-3-1-.02(9)(b)59]
FEDERAL	40 CFR 63, Subpart SSSS, NESHAPs for Metal Coil Surface Coating
FEDERAL	40 CFR 63, Subpart T, NESHAPs for Halogenated Solvent Cleaning[391-3-1-.02(9)(b)34]
FEDERAL	40 CFR 63, Subpart TT, NESHAPs for Equipment Leaks, Control Level 1 [391-3-1-.02(9)(b)60]
FEDERAL	40 CFR 63, Subpart TTT, NESHAPs for Primary Lead Smelting [391-3-1-.02(9)(b)82]
FEDERAL	40 CFR 63, Subpart TTTT, NESHAPs for Leather Finishings Operations
FEDERAL	40 CFR 63, Subpart U, NESHAPs for Group I Polymers and Resins
FEDERAL	40 CFR 63, Subpart UU, NESHAPs for Equipment Leaks, Control Level 2 [391-3-1-.02(9)(b)61]
FEDERAL	40 CFR 63, Subpart UUU, NESHAPs for Petroleum Refineries
FEDERAL	40 CFR 63, Subpart UUUU, NESHAPs for Cellulose Production Manufacturing
FEDERAL	40 CFR 63, Subpart VV, NESHAPs for Oil-Water Separators and Organic-Water Separators [391-3-1-.02(9)(b)62]
FEDERAL	40 CFR 63, Subpart VVV, NESHAPs for Publicly Owned Treatment Works [391-3-1-.02(9)(b)84]
FEDERAL	40 CFR 63, Subpart VVVV, NESHAPs for Boat Manufacturing [391-3-1-.02(9)(b)110]
FEDERAL	40 CFR 63, Subpart W, NESHAPs for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production [391-3-1-.02(9)(b)37]
FEDERAL	40 CFR 63, Subpart WW, NESHAPs for Storage Vessels (Tanks) Control Level 2 [391-3-1-.02(9)(b)63]
FEDERAL	40 CFR 63, Subpart X, NESHAPs for Hazardous Air Pollutants From Secondary Lead Smelting [391-3-1-.02(9)(b)38]
FEDERAL	40 CFR 63, Subpart XXX, NESHAPs for Ferroalloys Production: Ferromanganese and Silicomanganese [391-3-1-.02(9)(b)86]

FEDERAL	40 CFR 63, Subpart XXXX, NESHAPs for Tire Manufacturing
FEDERAL	40 CFR 63, Subpart Y, NESHAPS for Emission Standards for Marine Tank Vessel Loading Operations[391-3-1-.02(9)(b)39]
FEDERAL	40 CFR 63, Subpart YY, NESHAPs for Generic MACT Standards [391-3-1-.02(9)(b)64]
FEDERAL	40 CFR 68, Chemical Accident Prevention Provisions [391-3-1-.02(10)]
FEDERAL	40 CFR 72 - PERMITS REGULATIONS [391-3-1-.13]
FEDERAL	40 CFR 73 - ALLOWANCE SYSTEM
FEDERAL	40 CFR 75 - CONTINUOUS EMISSION MONITORING
FEDERAL	40 CFR 76 - ACID RAIN NITROGEN OXIDES EMISSION REDUCTION PROGRAM
FEDERAL	40 CFR 77 - EXCESS EMISSIONS
FEDERAL	40 CFR 82 Subpart F – Refrigerant Recycling Rule
FEDERAL	40 CFR 82 Subpart G – Significant New Alternative Program
FEDERAL	40 CFR 82, Subpart A - Production and Consumption Controls
FEDERAL	40 CFR 82, Subpart B - Servicing of Motor Vehicle Air Conditioners
FEDERAL	40 CFR 82, Subpart C - Ban on Nonessential Products Containing Class I Substances and Ban on Nonessential Products Containing or Manufactured with Class II Substances
FEDERAL	40 CFR 82, Subpart D - Federal Procurement
FEDERAL	40 CFR 82, Subpart E - The Labeling of Products Using Ozone Depleting Substances
FEDERAL	40 CFR 82, Subpart G - Significant New Alternatives Policy Program
FEDERAL	40 CFR, Part 60, subpart AAAA, NSPS for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 [391-3-1-.02(8)(b)74]
FEDERAL	40 CFR, Part 60, subpart CCCC, NSPS for Commercial and Industrial Solid Waste Incineration Units for Which Construction is Commenced After November 30, 1999 [391-3-1-.02(8)(b)75]
FEDERAL	40 CFR, Part 60, subpart Ec, NSPS for Hospital/Medical/Infectious Waste Incinerators for which construction is commenced after June 20, 1996 [391-3-1-.02(8)(b)73]
NONSIP	391-3-1-.02(2)(f) Normal Superphosphate Facilities
NONSIP	391-3-1-.02(2)(tt) VOC Emissions From Major Sources
NONSIP	391-3-1-.02(2)(yy) Nitrogen Oxide Emissions From Major Sources
PBR	391-3-1-.03(11)(b)1. Fuel-burning Equipment Burning Natural Gas/LPG and/or Distillate Oil
PBR	391-3-1-.03(11)(b)10. Fiberglas Molding and Forming Operations

PBR	391-3-1-.03(11)(b)11. Nut Shelling (Proposed)
PBR	391-3-1-.03(11)(b)2. Fuel-burning Equipment Burning Natural Gas/LPG and/or Residual Oil
PBR	391-3-1-.03(11)(b)3. On-Site Power Generation
PBR	391-3-1-.03(11)(b)4. Concrete and Concrete Products
PBR	391-3-1-.03(11)(b)5. Hot Mix Asphalt Plants
PBR	391-3-1-.03(11)(b)6. Cotton Ginning Operations
PBR	391-3-1-.03(11)(b)7. Coating and/or Gluing Operations (Proposed)
PBR	391-3-1-.03(11)(b)9. Non-reactive Mixing Operations
PBR	391-3-1-.03(110(b)8. Printing Operations
SIP	391-3-1-.02(2)(aa) VOC Emissions from Wire Coating
SIP	391-3-1-.02(2)(aaa) Consumer and Commercial Products
SIP	391-3-1-.02(2)(bb) Petroleum Liquid Storage
SIP	391-3-1-.02(2)(bbb) Gasoline Marketing
SIP	391-3-1-.02(2)(c) Incinerators
SIP	391-3-1-.02(2)(cc) Bulk Gasoline Terminals
SIP	391-3-1-.02(2)(ccc) VOC Emissions from Bulk Mixing Tanks
SIP	391-3-1-.02(2)(dd) Cutback Asphalt
SIP	391-3-1-.02(2)(ddd) VOC Emissions from Offset Lithography
SIP	391-3-1-.02(2)(ee) Petroleum Refinery
SIP	391-3-1-.02(2)(eee)VOC Emissions from Expanded Polystyrene Products Manufacturing
SIP	391-3-1-.02(2)(fff) Particulate Emissions from Yarn Spinning Operations
SIP	391-3-1-.02(2)(gg) Kraft Pulp Mills
SIP	391-3-1-.02(2)(ggg) Existing Municipal Solid Waste Landfills
SIP	391-3-1-.02(2)(h) Portland Cement Plants
SIP	391-3-1-.02(2)(hh) Petroleum Refinery Equipment Leaks
SIP	391-3-1-.02(2)(hhh) Wood Furniture Finishing and Cleaning Operations
SIP	391-3-1-.02(2)(i) Nitric Acid Plants

SIP	391-3-1-.02(2)(ii) VOC Emissions from Surface Coating of Miscellaneous Metal Parts and Products
SIP	391-3-1-.02(2)(iii) Hospital/Medical/Infectious Waste Incinerators Constructed on or Before June 20, 1996
SIP	391-3-1-.02(2)(j) Sulfuric Acid Plants
SIP	391-3-1-.02(2)(jj) VOC Emissions from Surface Coating of Flat Wood Paneling
SIP	391-3-1-.02(2)(jjj) NOx Emissions from Electric Utility Steam Generating Units
SIP	391-3-1-.02(2)(k) Asphaltic Concrete Hot Mix Plants
SIP	391-3-1-.02(2)(kk) VOC Emissions from Synthesized Pharmaceutical Manufacturing
SIP	391-3-1-.02(2)(kkk) VOC Emissions from Aerospace Manufacturing and Rework Facilities
SIP	391-3-1-.02(2)(l) Conical Burners
SIP	391-3-1-.02(2)(ll) VOC Emissions from the Manufacture of Pneumatic Rubber Tires
SIP	391-3-1-.02(2)(lll) NOx Emissions from Fuel-burning Equipment
SIP	391-3-1-.02(2)(mm) VOC Emissions from Graphic Arts Systems
SIP	391-3-1-.02(2)(mmm) NOx Emissions from Stationary Gas Turbines and Stationary Engines used to Generate Electricity
SIP	391-3-1-.02(2)(nn) VOC Emissions from External Floating Roof Tanks
SIP	391-3-1-.02(2)(nnn) NOx Emissions from Large Stationary Gas Turbines
SIP	391-3-1-.02(2)(o) Cupola Furnaces
SIP	391-3-1-.02(2)(oo) Fiberglass Insulation Manufacturing Plants
SIP	391-3-1-.02(2)(ooo) Heavy-Duty Diesel Engine Requirements
SIP	391-3-1-.02(2)(p) Kaolin and Fuller's Earth Processes
SIP	391-3-1-.02(2)(pp) Bulk Gasoline Plants
SIP	391-3-1-.02(2)(ppp) Commercial/Industrial/Solid Waste Incinerators Constructed On or Before November 30, 1999
SIP	391-3-1-.02(2)(q) Cotton Gins
SIP	391-3-1-.02(2)(qq) VOC Emissions from Large Petroleum Dry Cleaners
SIP	391-3-1-.02(2)(r) Granular and Mixed Fertilizer
SIP	391-3-1-.02(2)(rr) Gasoline Dispensing Facility - Stage I
SIP	391-3-1-.02(2)(ss) Gasoline Transport Vehicles and Vapor Collection Systems

SIP	391-3-1-.02(2)(t) VOC Emissions from Automobile and Light-Duty Truck Manufacturing
SIP	391-3-1-.02(2)(u) VOC Emissions from Can Coating
SIP	391-3-1-.02(2)(v) VOC Emissions from Coil Coating
SIP	391-3-1-.02(2)(vv) Volatile Organic Liquid Handling and Storage
SIP	391-3-1-.02(2)(w) VOC Emissions from Paper Coating
SIP	391-3-1-.02(2)(x) VOC Emissions from Fabric and Vinyl Coating
SIP	391-3-1-.02(2)(y) VOC Emissions from Metal Furniture Coating
SIP	391-3-1-.02(2)(z) VOC Emissions from Large Appliance Surface Coating
SIP	391-3-1-.02(2)(zz) Gasoline Dispensing Facilities--Stage II

C1 - Regulatory Applicability

The following regulations have been identified as POTENTIALLY APPLICABLE:

FEDERAL 40 CFR 82, Subpart F - Recycling and Emissions Reduction

Potentially applies if the facility maintains, repairs, services, or disposes of appliances that utilize Class I or Class II ozone depleting substances. Subpart F generally requires persons completing the repairs, service, or disposal to be properly certified. An appropriately certified technician completes all repairs, service, and disposal of ozone depleting substances from the air conditioners at the facility.

C2 - Title VI Applicability

Does your facility have any air conditioners or refrigeration equipment that uses CFC's, HFC's or other stratospheric ozone-depleting substances listed in 40 CFR Part 82, Subpart A, Appendices A and B?

Yes

Does any air conditioner or any piece of refrigeration equipment contain a refrigerant charge of greater than 50 lbs?

Yes

Does your facility maintain, service, repair, or dispose of any motor vehicle air conditioners (MVAC's) or appliances?

No

Comments:

D1 - Insignificant Activities

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Category:	Combustion Equipment
Insignificant Activity:	Stationary engines burning: natural gas, gasoline, diesel fuel, or dual fuels which are used exclusively for emergency power generation.
Quantity:	2
Comment:	1 Existing Unit, 1 New Unit
Category:	Combustion Equipment
Insignificant Activity:	Open burning in compliance with Georgia Rule 391-3-1-.02 (5).
Quantity:	1
Comment:	Not quantifiable
Category:	Industrial Operations
Insignificant Activity:	Equipment used exclusively for mixing and blending water-based adhesives and coating at ambient temperatures.
Quantity:	2
Comment:	
Category:	Industrial Operations
Insignificant Activity:	Carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, shot blasting, shot peening, or polishing; ceramics, glass, leather, metals, plastics, rubber, concrete, paper stock or wood, also including roll grinding and ground wood pulping stone sharpening, provided that: Activity is performed indoors; and No significant fugitive particulate emissions enter the outdoor atmosphere; and No visible emissions enter the outdoor atmosphere.
Quantity:	2
Comment:	Existing Operations
Category:	Laboratories and Testing
Insignificant Activity:	Research and development facilities, quality control testing facilities and/or small pilot projects, where combined daily emissions from all operations are not individually major or are support facilities not making significant contributions to the product of a collocated major manufacturing facility.
Quantity:	3
Comment:	Existing facilities
Category:	Maintenance, Cleaning, and Housekeeping
Insignificant Activity:	Non-routine clean out of tanks and equipment for the purposes of worker entry or in preparation for maintenance or decommissioning.
Quantity:	1
Comment:	Not quantifiable

D1 - Insignificant Activities

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Category:	Maintenance, Cleaning, and Housekeeping
Insignificant Activity:	Cold cleaners having an air/vapor interface of not more than 10 square feet and that do not use a halogenated solvent.
Quantity:	3
Comment:	Existing Equipment
Category:	Mobile Sources
Insignificant Activity:	Cleaning and sweeping of streets and paved surfaces
Quantity:	1
Comment:	Not quantifiable
Category:	Storage Tanks and Equipment
Insignificant Activity:	All chemical storage tanks used to store a chemical with a true vapor pressure of less than or equal to 10 millimeters of mercury (0.19 psia).
Quantity:	4
Comment:	2 Existing Tanks, 2 New Tanks
Category:	Storage Tanks and Equipment
Insignificant Activity:	Portable drums, barrels and totes provided that the volume of each container does not exceed 550 gallons.
Quantity:	157
Comment:	Existing Containers
Category:	Storage Tanks and Equipment
Insignificant Activity:	Gasoline storage and handling equipment at loading facilities handling less than 20,000 gallons per day or at vehicle dispensing facilities.
Quantity:	1
Comment:	Existing Tank
Category:	Storage Tanks and Equipment
Insignificant Activity:	Pressurized vessels designed to operate in excess of 30 psig storing a petroleum fuel.
Quantity:	4
Comment:	Existing Tanks

D1 - Insignificant Activities

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Category:	Storage Tanks and Equipment
Insignificant Activity:	All petroleum liquid storage tanks with a capacity of less than 10,000 gallons storing a petroleum liquid.
Quantity:	2
Comment:	Existing Tanks

Category:	Trade Operations
Insignificant Activity:	Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities whose emissions of hazardous air pollutants (HAPs) fall below 1,000 pounds per year.
Quantity:	1
Comment:	Not quantifiable

D7 - Significant Emission Units
Boilers, Furnaces, Other Indirect Contact Heat Generating Equipment

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: WELL Wellons Wet Cell Burner

Emission Unit

Unit ID:	WELL
Unit Name:	Wellons Wet Cell Burner

Model Information

Manufacturer:	Wellons, Inc.
Model Number:	Contract No. F-0903
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Heat Input Capacity:	210 MMBtu

Description

Wood-fired (natural gas backup) combustion unit used to dry wood flakes and heat thermal oil

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	58824 cubic feet
Maximum Annual Consumption:	515 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	60 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Fuel: Wood

Maximum Hourly Consumption:	28571 lbs
Maximum Annual Consumption:	125141 tons
Maximum Fuel Heating Value:	7350 Btu/lb
Maximum Heat Input:	210 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Comments

EXISTING EQUIPMENT

Boilers, Furnaces, Other Indirect Contact Heat Generating Equipment

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: ES02 Energy System B

Emission Unit

Unit ID:	ES02
Unit Name:	Energy System B

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Heat Input Capacity:	285 MMBtu

Description

Wood-fired (natural gas backup) combustion unit used to dry wood flakes and heat thermal oil

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	279412 cubic feet
Maximum Annual Consumption:	2448 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	285 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Fuel: Wood

Maximum Hourly Consumption:	38800 lbs
Maximum Annual Consumption:	170000 tons
Maximum Fuel Heating Value:	7350 Btu/lb
Maximum Heat Input:	285 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Comments

Natural gas will normally be used primarily for startup only. Natural gas consumption figures assume worst-case, or 100% natural gas-firing using backup burners.

D7 - Significant Emission Units
Dryers, Calciners, Kilns and Ovens

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: RD01 Rotary Dryer #1

Emission Unit

Unit ID:	RD01
Unit Name:	Rotary Dryer #1

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

Emission Unit: RD01 Rotary Dryer #1

EXISTING EQUIPMENT

Emission Unit: RD02 Rotary Dryer #2

Emission Unit

Unit ID:	RD02
Unit Name:	Rotary Dryer #2

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

EXISTING EQUIPMENT

Emission Unit: RD03 Rotary Dryer #3

Emission Unit

Unit ID:	RD03
Unit Name:	Rotary Dryer #3

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

EXISTING EQUIPMENT

Emission Unit: RD04 Rotary Dryer #4

Emission Unit

Unit ID:	RD04
Unit Name:	Rotary Dryer #4

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

EXISTING EQUIPMENT

Emission Unit: RD05 Rotary Dryer #5

Emission Unit

Unit ID:	RD05
Unit Name:	Rotary Dryer #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	98040 cubic feet
Maximum Annual Consumption:	858 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	100 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	52000 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from Energy System B (Emission Unit ID No. ES02). Natural gas is only used when the Energy System is not capable of providing necessary heat to the dryers.

Note that the maximum hourly input rate provided is based on oven dried tons per hour (ODT/hr).

Dryers, Calciners, Kilns and Ovens

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: RD05 Rotary Dryer #5

Each new dryer will have a maximum capacity of 26 ODT/hr.

Emission Unit: RD06 Rotary Dryer #6

Emission Unit

Unit ID:	RD06
Unit Name:	Rotary Dryer #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	98040 cubic feet
Maximum Annual Consumption:	858 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	100 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	52000 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from Energy System B (Emission Unit ID No. ES02). Natural gas is only used when the Energy System is not capable of providing necessary heat to the dryers.

Note that the maximum hourly input rate provided is based on oven dried tons per hour (ODT/hr).

Dryers, Calciners, Kilns and Ovens

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: RD06 Rotary Dryer #6

Each new dryer will have a maximum capacity of 26 ODT/hr.

D7 - Significant Emission Units
Miscellaneous

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: DB01 Dry Bin #1

Emission Unit

Unit ID:	DB01
Unit Name:	Dry Bin #1

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: DB02 Dry Bin #2

Emission Unit

Unit ID:	DB02
Unit Name:	Dry Bin #2

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: DB03 Dry Bin #3

Emission Unit

Unit ID:	DB03
Unit Name:	Dry Bin #3

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: DB04 Dry Bin #4

Emission Unit

Unit ID:	DB04
Unit Name:	Dry Bin #4

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: DB05 Dry Bin #5

Emission Unit

Unit ID:	DB05
Unit Name:	Dry Bin #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr
Maximum Annual Input:	227760 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: DB06 Dry Bin #6

Emission Unit

Unit ID:	DB06
Unit Name:	Dry Bin #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr
Maximum Annual Input:	227760 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: DFS2 Dry Fuel Storage Silo #2

Emission Unit

Unit ID:	DFS2
Unit Name:	Dry Fuel Storage Silo #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Silo for the storage of dry wood waste prior to being sent to Wellons wet cell burner (WELL) and Energy System (ES02).

Materials Input:

Material: Dry Wood

Maximum Hourly Rate:	25600 pounds/hr
Maximum Annual Input:	113000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: FLP2 Forming Line & Prepress #2

Emission Unit

Unit ID:	FLP2
Unit Name:	Forming Line & Prepress #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Process line that forms and aligns treated wood flake mat prior to the OSB press.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	700 pounds/hr
Maximum Annual Input:	3000 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

Emission Unit: FLPP Forming Line & Prepress #1

Emission Unit

Unit ID:	FLPP
Unit Name:	Forming Line & Prepress #1

Model Information

Manufacturer:	Siempelkamp
Model Number:	A314,ID No. 07216371
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Process line that forms and aligns treated wood flake mat prior to the OSB press.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	400 pounds/hr
Maximum Annual Input:	1752 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

EXISTING EQUIPMENT

Emission Unit: GB01 Green Bin #1

Emission Unit

Unit ID:	GB01
Unit Name:	Green Bin #1

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

EXISTING EQUIPMENT

Emission Unit: GB02 Green Bin #2

Emission Unit

Unit ID:	GB02
Unit Name:	Green Bin #2

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

EXISTING EQUIPMENT

Emission Unit: GB03 Green Bin #3

Emission Unit

Unit ID:	GB03
Unit Name:	Green Bin #3

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

EXISTING EQUIPMENT

Emission Unit: GB04 Green Bin #4

Emission Unit

Unit ID:	GB04
Unit Name:	Green Bin #4

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

EXISTING EQUIPMENT

Emission Unit: GB05 Green Bin #5

Emission Unit

Unit ID:	GB05
Unit Name:	Green Bin #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	104000 pounds/hr
Maximum Annual Input:	455520 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Emission Unit: GB06 Green Bin #6

Emission Unit

Unit ID:	GB06
Unit Name:	Green Bin #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	104000 pounds/hr
Maximum Annual Input:	455520 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Emission Unit: GLSS Globe Line Saw System

Emission Unit

Unit ID:	GLSS
Unit Name:	Globe Line Saw System

Model Information

Manufacturer:	Globe Machine Mfc Company
Model Number:	Ref No. 9001-022
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

OSB board saws used in finishing of OSB boards.

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	5273 pounds/hr
Maximum Annual Input:	23096 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: HPW2 High Pressure Waste System #2

Emission Unit

Unit ID:	HPW2
Unit Name:	High Pressure Waste System #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

High pressure wood waste collection system for various systems throughout the mill. Also supplies dry fuel storage silo #2.

Materials Input:

Material: Wood Dust

Maximum Hourly Rate:	18500 pounds/hr
Maximum Annual Input:	81000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: HPWS High Pressure Waste System #1

Emission Unit

Unit ID:	HPWS
Unit Name:	High Pressure Waste System #1

Model Information

Manufacturer:	Western Pneumatics South
Model Number:	Model WPS-42-FLT-PR
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

Description

High pressure wood waste collection system for various systems throughout the mill. Also supplies dry fuel storage silo.

Materials Input:

Material: Wood Dust

Maximum Hourly Rate:	11360 pounds/hr
Maximum Annual Input:	49757 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: L2SD Line #2 Sander System

Emission Unit

Unit ID:	L2SD
Unit Name:	Line #2 Sander System

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

OSB board sander used in finishing of OSB boards.

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	8600 pounds/hr
Maximum Annual Input:	37700 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: L2SS Line #2 Saw System

Emission Unit

Unit ID:	L2SS
Unit Name:	Line #2 Saw System

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

OSB board saws used in finishing of OSB boards.

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	8600 pounds/hr
Maximum Annual Input:	37700 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: PRES Press #1

Emission Unit

Unit ID:	PRES
Unit Name:	Press #1

Model Information

Manufacturer:	Siempelkamp
Model Number:	A314,ID No. 07216371
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Hydraulic heating press for the production of OSB.

Materials Input:

Material: Resinated Wood Flakes

Maximum Hourly Rate:	69500 pounds/hr
Maximum Annual Input:	304410 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

EXISTING EQUIPMENT

Emission Unit: PRS2 Press #2

Emission Unit

Unit ID:	PRS2
Unit Name:	Press #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Hydraulic heating press for the production of OSB.

Materials Input:

Material: Resinated Wood Flakes

Maximum Hourly Rate:	113000 pounds/hr
Maximum Annual Input:	495300 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

Emission Unit: RS01 Rotary Screen #1

Emission Unit

Unit ID:	RS01
Unit Name:	Rotary Screen #1

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: RS02 Rotary Screen #2

Emission Unit

Unit ID:	RS02
Unit Name:	Rotary Screen #2

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: RS03 Rotary Screen #3

Emission Unit

Unit ID:	RS03
Unit Name:	Rotary Screen #3

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: RS04 Rotary Screen #4

Emission Unit

Unit ID:	RS04
Unit Name:	Rotary Screen #4

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: RS05 Rotary Screen #5

Emission Unit

Unit ID:	RS05
Unit Name:	Rotary Screen #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr
Maximum Annual Input:	227760 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: RS06 Rotary Screen #6

Emission Unit

Unit ID:	RS06
Unit Name:	Rotary Screen #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr
Maximum Annual Input:	227760 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: TGSL Tongue and Groove Saw Line

Emission Unit

Unit ID:	TGSL
Unit Name:	Tongue and Groove Saw Line

Model Information

Manufacturer:	Convey-Keystone, PSS
Model Number:	#4040 Double Edger
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

Description

OSB board saws used in finishing of OSB boards; Progressive Saw Systems #4040 Double Edger and Progressive Systems Saw, Model SB/DD-80 Rip

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	1762 pounds/hr
Maximum Annual Input:	7718 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

Emission Unit: TGSS Tongue and Groove Sander System

Emission Unit

Unit ID:	TGSS
Unit Name:	Tongue and Groove Sander System

Model Information

Manufacturer:	IMEAS Bottom Sander
Model Number:	Model 2-2/265
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

Description

OSB board sander used in finishing of OSB boards.

Materials Input:

Material: Wood Dust

Maximum Hourly Rate:	4324 pounds/hr
Maximum Annual Input:	18939 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

EXISTING EQUIPMENT

D7 - Significant Emission Units
Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB01 Flake Blender #1

Emission Unit

Unit ID:	FB01
Unit Name:	Flake Blender #1

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1922 pounds/hr.
Maximum Annual Input:	8418 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB01 Flake Blender #1

Comments

EXISTING EQUIPMENT

Non-Reactive Bulk Mixing

Emission Unit: FB02 Flake Blender #2

Emission Unit

Unit ID:	FB02
Unit Name:	Flake Blender #2

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1922 pounds/hr.
Maximum Annual Input:	8418 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB02 Flake Blender #2

EXISTING EQUIPMENT

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB03 Flake Blender #3

Emission Unit

Unit ID:	FB03
Unit Name:	Flake Blender #3

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1112 pounds/hr.
Maximum Annual Input:	4871 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB03 Flake Blender #3

EXISTING EQUIPMENT

Non-Reactive Bulk Mixing

Emission Unit: FB04 Flake Blender #4

Emission Unit

Unit ID:	FB04
Unit Name:	Flake Blender #4

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1112 pounds/hr.
Maximum Annual Input:	4871 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB04 Flake Blender #4

EXISTING EQUIPMENT

Non-Reactive Bulk Mixing

Emission Unit: FB05 Flake Blender #5

Emission Unit

Unit ID:	FB05
Unit Name:	Flake Blender #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1800 pounds/hr.
Maximum Annual Input:	8000 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	1000 pounds/hr.
Maximum Annual Input:	4500 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr.
Maximum Annual Input:	227760 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB05 Flake Blender #5

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB06 Flake Blender #6

Emission Unit

Unit ID:	FB06
Unit Name:	Flake Blender #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1800 pounds/hr.
Maximum Annual Input:	8000 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	1000 pounds/hr.
Maximum Annual Input:	4500 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr.
Maximum Annual Input:	227760 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: FB06 Flake Blender #6

D10 - Control Devices

Electrostatic Precipitator

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: WP01 Wet Electrostatic Precipitator #1

Emission Unit

Unit ID:	WP01
Unit Name:	Wet Electrostatic Precipitator #1

Model Information

Manufacturer:	United McGill
Model Number:	Model 3-900
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

General Information

Control Reason:	To comply with state or federal rule
Parameters Currently Monitored:	Secondary Amperage/Voltage Water Flow Rate

Primary Voltage:	300 volts
Primary Amperage:	30 amps
Secondary Voltage:	25 kiloVolts
Secondary Amperage:	150 milliamps
Spark Rate:	sparks per minute
Number Fields:	3 Fields
Inlet Gas Velocity:	235000
Water Flowrate:	140 gallons/min.
Type Of ESP:	WET

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	90 %

This Control Device controls Emissions from the following Equipment:

Electrostatic Precipitator

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: WP01 Wet Electrostatic Precipitator #1

Emission Unit	WELL, Wellons Wet Cell Burner
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Emission Unit	RD01, Rotary Dryer #1
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD02, Rotary Dryer #2
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD03, Rotary Dryer #3
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD04, Rotary Dryer #4
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	GB01, Green Bin #1
Equipment Type	Miscellaneous

Emission Unit	GB02, Green Bin #2
Equipment Type	Miscellaneous

Emission Unit	GB03, Green Bin #3
Equipment Type	Miscellaneous

Emission Unit	GB04, Green Bin #4
Equipment Type	Miscellaneous

Description

Wet Electrostatic Precipitator

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Primary amperage typically ranges from 5-60 amps, Primary voltage typically ranges from 10-600 volts. Secondary amperage ranges from 6-300 milliamps. Secondary voltage provided is the

expected minimum.

Inlet gas velocity provided is actually an average value for inlet gas flowrate in ACFM. Flowrate typically ranges from 222,000-250,000 ACFM.

The WESP has two (2) abort stacks

EXISTING EQUIPMENT

Electrostatic Precipitator

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: WP02 Wet Electrostatic Precipitator #2

Emission Unit

Unit ID:	WP02
Unit Name:	Wet Electrostatic Precipitator #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Other To prolong the life of Dryer RTO System #2 (C201)
Parameters Currently Monitored:	Secondary Amperage/Voltage Water Flow Rate

Primary Voltage:	300 volts
Primary Amperage:	30 amps
Secondary Voltage:	25 kiloVolts
Secondary Amperage:	150 milliamps
Spark Rate:	sparks per minute
Number Fields:	3 Fields
Inlet Gas Velocity:	235000
Water Flowrate:	140 gallons/min.
Type Of ESP:	WET

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	95 %

This Control Device controls Emissions from the following Equipment:

Electrostatic Precipitator

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: WP02 Wet Electrostatic Precipitator #2

Emission Unit	ES02, Energy System B
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Emission Unit	RD05, Rotary Dryer #5
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD06, Rotary Dryer #6
Equipment Type	Dryers, Calciners, Kilns & Ovens

Description

(Wet) Electrostatic Precipitator to prolong the life of the dryer TO(s) System (C201)

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Primary amperage typically ranges from 5-60 amps, Primary voltage typically ranges from 10-600 volts. Secondary amperage ranges from 6-300 milliamps. Secondary voltage provided is the expected minimum.

Inlet gas velocity provided is actually an average value for inlet gas flowrate in ACFM. Flowrate typically ranges from 222,000-250,000 ACFM.

A wet electrostatic precipitator WESP will be installed to reduce PM loading to the Dryer RTO System and prolong the life of the RTO.

D10 - Control Devices

Filter Media

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: BH03 System #1 (Forming Line/Prepress) Baghouse

Emission Unit

Unit ID:	BH03
Unit Name:	System #1 (Forming Line/Prepress) Baghouse

Model Information

Manufacturer:	Mac
Model Number:	Model 144MCF494
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	7500 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Filter Media

Emission Unit: BH03 System #1 (Forming Line/Prepress) Baghouse

Pollutant	Overall Control Efficiency
Particulate Matter	99 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	FLPP, Forming Line & Prepress #1
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

EXISTING EQUIPMENT

Filter Media

Emission Unit: BH04 System #2 (PG02) Baghouse

Emission Unit

Unit ID:	BH04
Unit Name:	System #2 (PG02) Baghouse

Model Information

Manufacturer:	Mac
Model Number:	Model 144MCF494
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	7500 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	DB01, Dry Bin #1
Equipment Type	Miscellaneous

Emission Unit	DB02, Dry Bin #2
Equipment Type	Miscellaneous

Emission Unit	DB03, Dry Bin #3
Equipment Type	Miscellaneous

Emission Unit	DB04, Dry Bin #4
Equipment Type	Miscellaneous

Emission Unit	RS01, Rotary Screen #1
Equipment Type	Miscellaneous

Emission Unit	RS02, Rotary Screen #2
Equipment Type	Miscellaneous

Emission Unit	RS03, Rotary Screen #3
Equipment Type	Miscellaneous

Emission Unit	RS04, Rotary Screen #4
Equipment Type	Miscellaneous

Emission Unit	FB01, Flake Blender #1
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB02, Flake Blender #2
Equipment Type	Non-Reactive Bulk Mixing

Filter Media

Emission Unit: BH04 System #2 (PG02) Baghouse

Emission Unit	FB03, Flake Blender #3
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB04, Flake Blender #4
Equipment Type	Non-Reactive Bulk Mixing

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

EXISTING EQUIPMENT

Filter Media

Emission Unit: BH10 High Pressure Waste System Baghouse

Emission Unit

Unit ID:	BH10
Unit Name:	High Pressure Waste System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 42
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	900 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	HPWS, High Pressure Waste System #1
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

EXISTING EQUIPMENT

Filter Media

Emission Unit: BH11 Sander System Baghouse

Emission Unit

Unit ID:	BH11
Unit Name:	Sander System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 460
Date Manufactured or Reconstructed:	1993
Installation Date:	1993

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	3750 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	TGSS, Tongue and Groove Sander System
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

EXISTING EQUIPMENT

Filter Media

Emission Unit: BH12 Tongue and Groove Line System Baghouse

Emission Unit

Unit ID:	BH12
Unit Name:	Tongue and Groove Line System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 200
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	3750 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	TGSL, Tongue and Groove Saw Line
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

EXISTING EQUIPMENT

Filter Media

Emission Unit: BH13 Globe Saw System Baghouse

Emission Unit

Unit ID:	BH13
Unit Name:	Globe Saw System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 386
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	3750 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	GLSS, Globe Line Saw System
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

EXISTING EQUIPMENT

Filter Media

Emission Unit: C203 Resinated Fines Baghouse

Emission Unit

Unit ID:	C203
Unit Name:	Resinated Fines Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	FLP2, Forming Line & Prepress #2
Equipment Type	Miscellaneous

Emission Unit	FB05, Flake Blender #5
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB06, Flake Blender #6
Equipment Type	Non-Reactive Bulk Mixing

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Emission Unit: C204 Un-Resinated Fines Baghouse

Emission Unit

Unit ID:	C204
Unit Name:	Un-Resinated Fines Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Filter Media

Emission Unit: C204 Un-Resinated Fines Baghouse

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	RS05, Rotary Screen #5
Equipment Type	Miscellaneous

Emission Unit	RS06, Rotary Screen #6
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Emission Unit: C205 Finishing Line Baghouse

Emission Unit

Unit ID:	C205
Unit Name:	Finishing Line Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Filter Media

Emission Unit: C205 Finishing Line Baghouse

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	L2SD, Line #2 Sander System
Equipment Type	Miscellaneous

Emission Unit	L2SS, Line #2 Saw System
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Emission Unit: C206 Wet Strand Fines Baghouse

Emission Unit

Unit ID:	C206
Unit Name:	Wet Strand Fines Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	GB05, Green Bin #5
Equipment Type	Miscellaneous

Emission Unit	GB06, Green Bin #6
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Emission Unit: C207 Dry Fuel Storage Silo #2 Baghouse

Emission Unit

Unit ID:	C207
Unit Name:	Dry Fuel Storage Silo #2 Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	7000 sq. ft.
Number Of Bags:	580 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Filter Media

Emission Unit: C207 Dry Fuel Storage Silo #2 Baghouse

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	DFS2, Dry Fuel Storage Silo #2
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: C208 Blowline Baghouse

Emission Unit

Unit ID:	C208
Unit Name:	Blowline Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop

Inlet Dew Temperature:	93 deg F
Inlet Gas Temperature:	93 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	1400 sq. ft.
Number Of Bags:	112 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	DB05, Dry Bin #5
Equipment Type	Miscellaneous

Emission Unit	DB06, Dry Bin #6
Equipment Type	Miscellaneous

Emission Unit	HPW2, High Pressure Waste System #2
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

D10 - Control Devices

Oxidizer

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: RT63 Regenerative Thermal Oxidizer (RTO) #1

Emission Unit

Unit ID:	RT63
Unit Name:	Regenerative Thermal Oxidizer (RTO) #1

Model Information

Manufacturer:	Salem Engelhard
Model Number:	Model RTO-135-5V
Date Manufactured or Reconstructed:	1994
Installation Date:	1994

General Information

Control Reason:	To comply with state or federal rule
Parameters Currently Monitored:	Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	1500 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Thermal / Non-Catalytic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Volatile Organic Compounds	95 %
Formaldehyde	95 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	PRES, Press #1
Equipment Type	Miscellaneous

Description

Oxidizer

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: RT63 Regenerative Thermal Oxidizer (RTO) #1

Press #1 RTO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

EXISTING EQUIPMENT

Oxidizer

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: C21A Regenerative Thermal Oxidizer System (TO) #2

Emission Unit

Unit ID:	C21A
Unit Name:	Regenerative Thermal Oxidizer System (TO) #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	To comply with state or federal rule
Parameters Currently Monitored:	Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	1300 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Thermal / Non-Catalytic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Volatile Organic Compounds	90 %
Carbon Monoxide	75 %
Particulate Matter	95 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	ES02, Energy System B
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Oxidizer

Emission Unit: C21A Regenerative Thermal Oxidizer System (TO) #2

Emission Unit	RD05, Rotary Dryer #5
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD06, Rotary Dryer #6
Equipment Type	Dryers, Calciners, Kilns & Ovens

Description

Dryer System #2 TO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Pressure drops across the oxidizer typically ranges from 10-15 in. w.c.

This control device is used in conjunction with a WESP. The WESP removes particulate prior to the RTOs in order to prolong the life of the RTOs.

Oxidizer

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: C202 Thermal Oxidizer System (TO) #4

Emission Unit

Unit ID:	C202
Unit Name:	Thermal Oxidizer System (TO) #4

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: To comply with state or federal rule

Parameters Currently Monitored: Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	600 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Catalytic

Inlet Bed Temperature: 160 deg F

Outlet Bed Temperature: 200 deg F

Catalyst Life Expectancy:

Catalyst Regeneration Cycle:

Description Of Catalyst: Ceramic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Volatile Organic Compounds	90 %
Carbon Monoxide	75 %

Particulate Matter	85 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	PRS2, Press #2
Equipment Type	Miscellaneous

Description

Press #2 TO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Current designs call for the installation of a thermal catalytic oxidizer which can be operated in either catalytic or thermal modes. Data provided is for catalytic mode.

Pressure drops across the oxidizer typically ranges from 10-15 in. w.c.

Oxidizer

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: C21B Regenerative Thermal Oxidizer System (TO) #3

Emission Unit

Unit ID:	C21B
Unit Name:	Regenerative Thermal Oxidizer System (TO) #3

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	To comply with state or federal rule
Parameters Currently Monitored:	Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	1300 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Thermal / Non-Catalytic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Carbon Monoxide	75 %
Particulate Matter	95 %
Volatile Organic Compounds	90 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	ES02, Energy System B
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Oxidizer

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Emission Unit: C21B Regenerative Thermal Oxidizer System (TO) #3

Emission Unit	RD05, Rotary Dryer #5
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD06, Rotary Dryer #6
Equipment Type	Dryers, Calciners, Kilns & Ovens

Description

Dryer System #2 TO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Pressure drops across the oxidizer typically ranges from 10-15 in. w.c.

This control device is used in conjunction with a WESP. The WESP removes particulate prior to the RTOs in order to prolong the life of the RTOs.

D11 - Emission Unit - Control Device Association

Emission Unit:	FLPP, Forming Line & Prepress #1
Emission Type:	Miscellaneous
Control Device:	BH03, System #1 (Forming Line/Prepress) Baghouse
Control Type:	Filter Media

Emission Unit:	RS02, Rotary Screen #2
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB03, Dry Bin #3
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB02, Dry Bin #2
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB01, Dry Bin #1
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	RS04, Rotary Screen #4
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	RS03, Rotary Screen #3
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	RS01, Rotary Screen #1
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB04, Dry Bin #4
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB04, Flake Blender #4
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB03, Flake Blender #3
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB01, Flake Blender #1
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	FB02, Flake Blender #2
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	HPWS, High Pressure Waste System #1
Emission Type:	Miscellaneous
Control Device:	BH10, High Pressure Waste System Baghouse
Control Type:	Filter Media

Emission Unit:	TGSS, Tongue and Groove Sander System
Emission Type:	Miscellaneous
Control Device:	BH11, Sander System Baghouse
Control Type:	Filter Media

Emission Unit:	TGSL, Tongue and Groove Saw Line
Emission Type:	Miscellaneous
Control Device:	BH12, Tongue and Groove Line System Baghouse
Control Type:	Filter Media

Emission Unit:	GLSS, Globe Line Saw System
Emission Type:	Miscellaneous
Control Device:	BH13, Globe Saw System Baghouse
Control Type:	Filter Media

Emission Unit:	PRS2, Press #2
Emission Type:	Miscellaneous
Control Device:	C202, Thermal Oxidizer System (TO) #4
Control Type:	Oxidizer

D11 - Emission Unit - Control Device Association

Emission Unit:	FB06, Flake Blender #6
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	FLP2, Forming Line & Prepress #2
Emission Type:	Miscellaneous
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	FB05, Flake Blender #5
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	RS06, Rotary Screen #6
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	RS05, Rotary Screen #5
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	L2SD, Line #2 Sander System
Emission Type:	Miscellaneous
Control Device:	C205, Finishing Line Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	L2SS, Line #2 Saw System
Emission Type:	Miscellaneous
Control Device:	C205, Finishing Line Baghouse
Control Type:	Filter Media

Emission Unit:	GB06, Green Bin #6
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media

Emission Unit:	GB05, Green Bin #5
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media

Emission Unit:	DFS2, Dry Fuel Storage Silo #2
Emission Type:	Miscellaneous
Control Device:	C207, Dry Fuel Storage Silo #2 Baghouse
Control Type:	Filter Media

Emission Unit:	DB05, Dry Bin #5
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

Emission Unit:	HPW2, High Pressure Waste System #2
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	DB06, Dry Bin #6
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C21A, Regenerative Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	C21A, Regenerative Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C21A, Regenerative Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	C21B, Regenerative Thermal Oxidizer System (TO) #3
Control Type:	Oxidizer

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C21B, Regenerative Thermal Oxidizer System (TO) #3
Control Type:	Oxidizer

D11 - Emission Unit - Control Device Association

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C21B, Regenerative Thermal Oxidizer System (TO) #3
Control Type:	Oxidizer

Emission Unit:	PRES, Press #1
Emission Type:	Miscellaneous
Control Device:	RT63, Regenerative Thermal Oxidizer (RTO) #1
Control Type:	Oxidizer

Emission Unit:	GB03, Green Bin #3
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	GB04, Green Bin #4
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	GB01, Green Bin #1
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	WELL, Wellons Wet Cell Burner
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

D11 - Emission Unit - Control Device Association

Emission Unit:	GB02, Green Bin #2
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD02, Rotary Dryer #2
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD01, Rotary Dryer #1
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD04, Rotary Dryer #4
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD03, Rotary Dryer #3
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, Wet Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

D11 - Emission Unit - Control Device Association

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, Wet Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	WP02, Wet Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

D12 - Stack and Process Vent Summary

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification v02

Stack ID	**S001**
Stack Name	WESP #1 Stack
Stack Height	121 feet
All Emission Units Exhausting throught this Stack	WELL, RD01, RD02, RD03, RD04, GB01, GB02, GB03, GB04
All Pollution Control Devices Exhuasting through this Stack	WP01

Stack ID	**S003**
Stack Name	System #1 Baghouse Stack
Stack Height	20 feet
All Emission Units Exhausting throught this Stack	FLPP
All Pollution Control Devices Exhuasting through this Stack	BH03

Stack ID	**S004**
Stack Name	System #2 Baghouse Stack
Stack Height	20 feet
All Emission Units Exhausting throught this Stack	RS01, RS02, RS03, RS04, DB01, DB02, DB03, DB04, FB01, FB02, FB03, FB04
All Pollution Control Devices Exhuasting through this Stack	BH04

Stack ID	**S010**
Stack Name	HP Waste System Baghouse Stack
Stack Height	17 feet
All Emission Units Exhausting throught this Stack	HPWS
All Pollution Control Devices Exhuasting through this Stack	BH10

D12 - Stack and Process Vent Summary

Stack ID	**S011**
Stack Name	Sander System Baghouse Stack
Stack Height	21 feet
All Emission Units Exhausting throught this Stack	TGSS
All Pollution Control Devices Exhuasting through this Stack	BH11

Stack ID	**S012**
Stack Name	T&G Line System Baghouse Stack
Stack Height	19 feet
All Emission Units Exhausting throught this Stack	TGSL
All Pollution Control Devices Exhuasting through this Stack	BH12

Stack ID	**S013**
Stack Name	Globe Saw System Baghouse Stack
Stack Height	21 feet
All Emission Units Exhausting throught this Stack	GLSS
All Pollution Control Devices Exhuasting through this Stack	BH13

Stack ID	**S063**
Stack Name	RTO #1 Stack
Stack Height	90 feet
All Emission Units Exhausting throught this Stack	PRES
All Pollution Control Devices Exhuasting through this Stack	RT63

D12 - Stack and Process Vent Summary

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification v02

Stack ID	**S201**
Stack Name	Dryer System #2 Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	RD05, RD06, ES02
All Pollution Control Devices Exhuasting through this Stack	C21A, C21B

Stack ID	**S202**
Stack Name	Press #2 Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	PRS2
All Pollution Control Devices Exhuasting through this Stack	C202

Stack ID	**S203**
Stack Name	Resinated Fines Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	FLP2, FB05, FB06
All Pollution Control Devices Exhuasting through this Stack	C203

Stack ID	**S204**
Stack Name	Un-Resinated Fines Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	RS05, RS06
All Pollution Control Devices Exhuasting through this Stack	C204

D12 - Stack and Process Vent Summary

Stack ID	**S205**
Stack Name	Finishing Line Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	L2SD, L2SS
All Pollution Control Devices Exhuasting through this Stack	C205

Stack ID	**S206**
Stack Name	Wet Strand Line Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	GB05, GB06
All Pollution Control Devices Exhuasting through this Stack	C206

Stack ID	**S207**
Stack Name	Dry Fuel Storage Silo #2 Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	DFS2
All Pollution Control Devices Exhuasting through this Stack	C207

Stack ID	**S208**
Stack Name	Blowline Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	HPW2, DB05, DB06
All Pollution Control Devices Exhuasting through this Stack	C208

Compliance Determination Procedures: Monitoring

Emission Unit: DFS2Dry Fuel Storage S	Pollutant: Particulate Matter
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C207 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: DFS2Dry Fuel Storage S	Pollutant: Particulate Matter
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C207, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: FLPPForming Line & Pr	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH03 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: FLPPForming Line & Pr	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH03, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: GLSSGlobe Line Saw Sy	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH13, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: GLSSGlobe Line Saw Sy	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH13 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: HPWSHigh Pressure Wa	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH10 exhuast, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: HPWSHigh Pressure Wa	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH10, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	WP01, temperature of the gas stream at the outlet
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.d, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	WP01, secondary voltage for each field of the WES
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.c, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	WP01, water flow rate at the mist flow pump of the
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.c, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	**Pollutant: Other**
Monitoring Code:	M24
Monitoring Code Description:	Recordkeeping of production, raw material, or process input related information.
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	RD01-RD04, daily average hourly wet process inpu
Averaging Time:	1 Hours
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	6.2.1, V-02-0
Comments or Other Information:	

Emission Unit: PG02Wood Flake Preper	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH04, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: PG02Wood Flake Preper	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH04 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: PG03Wood Flake Dryers	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	S201 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG03Wood Flake Dryers	**Pollutant: Volatile Organic Compounds**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C21A & C21B, combustion zone temperature
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	Combustion zone temperature also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: PG04Resinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C203 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG04Resinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C203, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG05Unresinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C204 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG05Unresinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C204, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG06Finishing Line #2	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C205 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG06Finishing Line #2	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C205, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG07Wet Strand Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C206 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG07Wet Strand Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C206, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG08Blowline	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C208, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG08Blowline	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C208 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PRESPress #1	**Pollutant: Volatile Organic Compounds**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	RT63, inlet of, or pressure drop across RTO
Averaging Time:	12 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.b, V-02-0
Comments or Other Information:	Pressure drop also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: PRESPress #1	**Pollutant: Volatile Organic Compounds**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	RT63, combustion zone temperature
Averaging Time:	8 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.a, V-02-0
Comments or Other Information:	Combustion zone temperature also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: PRS2Press #2	**Pollutant: Volatile Organic Compounds**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C202, combustion zone temperature
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	Combustion zone temperature also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: TGSLTongue and Groov	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH12 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: TGSLTongue and Groov	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH12, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: TGSSTongue and Groov	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH11 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: TGSSTongue and Groov	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH11, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Compliance Determination Procedures: Reference Test Methods

Compliance Plan for a non-Compliant Emission Unit or Group

State of Georgia
Department of Natural Resources
Environmental Protection Division
Air Protection Branch
Major Source Operating Permit Application

4244 International Parkway
Suite 120
Atlanta, Georgia 30354-3906
404-363-7000

Certifications and Signatures

Facility Name: **Norbord Georgia OSB**

Project Name: **2004 Title V Permit Modification v02**

AIRS Number: **130810054**

Submittal File Name: **130810054_20050202.mdb**

COMPUTER DISK VIRUS EXAMINATION CERTIFICATION:
I certify that, to the best of my knowledge, the completed electronic application disk has been inspected and found free of any known viruses.

Signature:_____ Date:_____

Name (print):_____

Offical Title:_____

SOFTWARE USAGE CERTIFICATION:
I certify that the software used to complete the Georgia Title V application was used as provided by the Georgia Environmental Protection Division, Air Protection Branch and was unaltered in any way. I understand that the submission of a Title V (Part 70) application completed using any altered version of the provided software constitutes the submission of an incomplete application and that such action may be subject to enforcement by the Georgia Air Protection Branch and/or the US EPA.

CERTIFICATION OF COMPLIANCE:
Except as stated on the Compliance Plan For a Non-Compliant Emission Unit or Group form of this application, I hereby certify that this facility is in compliance with all applicable requirements effective as of the date of this certification and will continue to comply with such requirements. For applicable requirements promulgated as of the date of this certification, that will become effective during the permit term, I further certify that, except as stated on the Compliance Plan For a Non-Compliant Emission Unit or Group form of this application, this facility will comply with such requirements and will continue to comply with such requirements.

I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this application and all of its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Unless otherwise required by the Director, compliance certifications will be submitted to the Director at least annually.

SIGNATURE OF RESPONSIBLE OFFICIAL:

Signature:_____ Date:_____

Name (print):_____

Offical Title:_____

Address:_____

_____

Notary Public Certification of Responsible Official's Signature:

Signature of Notary Public:_____

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
AIR PROTECTION BRANCH
4244 INTERNATIONAL PARKWAY, SUITE 120
ATLANTA, GEORGIA 30354

FOR APPLICANT'S USE

Revision #: 1
Date: 02 / 02 / 2005
Page 1 of 5
Source Designation: C21A/C21B/C202

COMPLIANCE ASSURANCE MONITORING (CAM) PLAN

FOR AGENCY USE ONLY
AIRS NUMBER:
PERMIT #:
APPLICATION NUMBER:

FOR INFORMATION ABOUT THE CAM RULE AND THIS FORM, PLEASE REFER TO 40 CFR PART 64. ADDITIONAL INFORMATION (INCLUDING GUIDANCE DOCUMENTS) MAY ALSO BE FOUND AT http://www.epa.gov/ttn/emc/cam.html

SOURCE INFORMATION

1) SOURCE NAME:
Norbord Georgia - Cordele Oriented Strandboard Mill

2) DATE FORM PREPARED:	3) AIRS NUMBER:
02 / 02 / 2005	04-13-08100054

BASIS OF CAM SUBMITTAL

4) MARK THE APPROPRIATE BOX BELOW AS TO WHY THIS CAM PLAN IS BEING SUBMITTED AS PART OF AN APPLICATION FOR A TITLE V PERMIT:

☐ RENEWAL APPLICATION. **ALL** PSEUs (POLLUTANT-SPECIFIC EMISSIONS UNITS CONSIDERED SEPARATELY WITH RESPECT TO EACH REGULATED AIR POLLUTANT) FOR WHICH A CAM PLAN HAS NOT YET BEEN APPROVED NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL.

☒ INITIAL APPLICATION (SUBMITTED AFTER 4/20/98). **ONLY** LARGE PSEUs (PSEUs WITH POTENTIAL POST-CONTROL DEVICE EMISSIONS OF AN APPLICABLE REGULATED AIR POLLUTANT THAT ARE EQUAL TO OR GREATER THAN MAJOR SOURCE THRESHOLD LEVELS) NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** LARGE PSEUs BEING MODIFIED AFTER 4/20/98 NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. FOR LARGE PSEUs WITH AN APPROVED CAM PLAN, ONLY ADDRESS THE APPROPRIATE MONITORING REQUIREMENTS AFFECTED BY THE SIGNIFICANT MODIFICATION.

CAM APPLICABILITY DETERMINATION

5) DOES THE SOURCE HAVE A PSEU THAT IS SUBJECT TO CAM, 40 CFR PART 64, WHICH MUST BE ADDRESSED IN THIS CAM PLAN SUBMITTAL? TO DETERMINE APPLICABILITY, A PSEU MUST MEET **ALL** OF THE FOLLOWING CRITERIA (IF NO, THEN THE REMAINDER OF THIS FORM NEED NOT BE COMPLETED): ☒ YES ☐ NO

a. THE PSEU IS LOCATED AT A MAJOR SOURCE THAT IS REQUIRED TO OBTAIN A TITLE V PERMIT;

b. THE PSEU IS SUBJECT TO AN EMISSION LIMITATION OR STANDARD FOR THE APPLICABLE REGULATED AIR POLLUTANT THAT IS NOT EXEMPT;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR PART 60) OR NESHAP (40 CFR PARTS 61 AND 63) PROPOSED AFTER 11/15/1990.
- STRATOSPHERIC OZONE PROTECTION REQUIREMENTS.
- ACID RAIN PROGRAM REQUIREMENTS.
- EMISSION LIMITATIONS OR STANDARDS FOR WHICH A GEORGIA AIR QUALITY PERMIT SPECIFIES A CONTINUOUS COMPLIANCE DETERMINATION METHOD, AS DEFINED IN 40 CFR 64.1.
- AN EMISSION CAP THAT MEETS THE REQUIREMENTS SPECIFIED IN 40 CFR 70.4(b)(12).

c. THE PSEU USES AN ADD-ON CONTROL DEVICE (AS DEFINED IN 40 CFR 64.1) TO ACHIEVE COMPLIANCE WITH AN EMISSION LIMITATION OR STANDARD;

d. THE PSEU HAS POTENTIAL PRE-CONTROL DEVICE EMISSIONS OF THE APPLICABLE REGULATED AIR POLLUTANT THAT ARE EQUAL TO OR GREATER THAN THE PART 70 MAJOR SOURCE THRESHOLD LEVELS; AND

e. THE PSEU IS NOT AN EXEMPT BACKUP UTILITY POWER EMISSIONS UNIT THAT IS MUNICIPALLY-OWNED.

6) [a] BACKGROUND DATA AND INFORMATION

COMPLETE THE FOLLOWING TABLE FOR **ALL** PSEUs THAT NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. THIS SECTION IS TO BE USED TO PROVIDE BACKGROUND DATA AND INFORMATION FOR EACH PSEU IN ORDER TO SUPPLEMENT THE SUBMITTAL REQUIREMENTS SPECIFIED IN 40 CFR 64.4. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY.

PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION OR STANDARD	[c] MONITORING REQUIREMENT
ES02, RD05, RD06	Energy System B, Rotary Dryers No. 5 & No. 6	CO, PM, VOC, HAP	C21A, C21B	Proposed BACT limit: 78.4 lb CO/hr, 28.5 lb PM/hr, 59.8 lb VOC/hr (all limits combined for units controlled by C21A & C21B)	3- Hour Block Average (continuous) monitoring of the combustion zone temperature, Daily visible emissions determination
PRS2	Press No. 2[+]	CO, HAP	C2O2	Proposed BACT limit: 24.5 lb CO/hr, 4.0 lb PM/hr, 11.4 lb VOC/hr	3- Hour Block Average (continuous) monitoring of the combustion zone temperature
EXAMPLE BOILER NO. 1	WOOD-FIRED BOILER	PM	MULTICLONE	391-3-1-.02(2)(d)2.(ii); $0.5(10/R)^{0.5}$ lb/mmBtu	MONITOR PRESSURE DROP ACROSS MULTICLONE WEEKLY INSPECTION OF MULTICLONE

[+] Post-control potential emissions of PM and VOC from the new press are less than the major source threshold. Therefore, CAM requirements only apply to CO and HAP emissions. CAM requirements for PM and VOC emissions will be submitted along with either the next significant modification to the new press, or at the Title V renewal. The only NO_X control equipment at this facility are low NO_X burners, which are passive control systems. Therefore, Norbord does not operate any control devices for NO_X at the Cordele facility to which CAM would potentially apply.

[a] IF A CONTROL DEVICE IS COMMON TO MORE THAN ONE PSEU, ONE MONITORING PLAN MAY BE SUBMITTED FOR THE CONTROL DEVICE WITH THE AFFECTED PSEUS IDENTIFIED AND ANY CONDITIONS THAT MUST BE MAINTAINED OR MONITORED IN ACCORDANCE WITH 64.3(a). IF A SINGE PSEU IS CONTROLLED BY MORE THAN ONE CONTROL DEVICE SIMILAR IN DESIGN AND OPERATION, ONE MONITORING PLAN FOR THE APPLICABLE CONTROL DEVICES MAY BE SUBMITTED WITH THE APPLICABLE CONTROL DEVICES IDENTIFIED AND ANY CONDITIONS THAT MUST BE MAINTAINED OR MONITORED IN ACCORDANCE WITH 64.3(a).

[b] INDICATE THE EMISSION LIMITATION OR STANDARD FOR ANY APPLICABLE REQUIREMENT THAT CONSTITUTES AN EMISSION LIMITATION, EMISSION STANDARD, OR STANDARD OF PERFORMANCE (AS DEFINED IN 40 CFR 64.1).

[c] INDICATE THE MONITORING REQUIREMENTS FOR THE PSEU THAT ARE REQUIRED BY AN APPLICABLE REGULATION OR PERMIT CONDITION.

CAM MONITORING APPROACH CRITERIA

COMPLETE THIS SECTION FOR **EACH** PSEU THAT NEEDS TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. THIS SECTION MAY BE COPIED AS NEEDED FOR EACH PSEU. THIS SECTION IS TO BE USED TO PROVIDE MONITORING DATA AND INFORMATION FOR EACH INDICATOR SELECTED FOR EACH PSEU IN ORDER TO MEET THE MONITORING DESIGN CRITERIA SPECIFIED IN 40 CFR 64.3 AND 64.4. IF MORE THAN TWO INDICATORS ARE BEING SELECTED FOR A PSEU OR IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY WITH THE APPROPRIATE PSEU DESIGNATION, POLLUTANT, AND INDICATOR NOs.

7a) PSEU DESIGNATION: C21A, C21B, C202	**7b) POLLUTANT:** CO, PM, VOC, HAP (PM, VOC for C21A & C21B only)	**7c) [a]INDICATOR NO. 1:** TO combustion zone temperature	**7d) [a]INDICATOR NO. 2:** Visible Emissions
8a) GENERAL CRITERIA DESCRIBE THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:		Combustion zone temperature is measured by combustion chamber thermocouples	Visible emissions inspection by facility personnel
[b]ESTABLISH THE APPROPRIATE INDICATOR RANGE OR THE PROCEDURES FOR ESTABLISHING THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:		Acceptable minimum combustion temperature ranges are greater than 1300°F (dryers), or 600°F (press) or minimum established during the most recent performance testing	Visible emissions should be maintained below the opacity limit of 20%
8b) PERFORMANCE CRITERIA PROVIDE THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, SUCH AS DETECTOR LOCATION, INSTALLATION SPECIFICATIONS, AND MINIMUM ACCEPTABLE ACCURACY:		Appropriate thermocouples installed in the combustion chamber per the manufacturer's design, the thermocouples are designed to be accurate to 4 degrees F or +/- 0.75%	Visible emissions inspection by trained facility personnel
[c]FOR NEW OR MODIFIED MONITORING EQUIPMENT, PROVIDE VERIFICATION PROCEDURES, INCLUDING MANUFACTURER'S RECOMMENDATIONS, TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:		Calibrations performed in accordance with the manufacturer's recommendations	Visual observation method as per our State permit condition 5.2.7 a.
PROVIDE QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ARE ADEQUATE TO ENSURE THE CONTINUING VALIDITY OF THE DATA, (i.e., DAILY CALIBRATIONS, VISUAL INSPECTIONS, ROUTINE MAINTENANCE, CGA, RATA, ETC.):		Operators check the data for completeness, legibility, reasonableness, and accuracy on a daily basis	Operators check the data for completeness, legibility, reasonableness, and accuracy on a daily basis
[d]PROVIDE THE MONITORING FREQUENCY:		Inlet temperature is recorded at least every 15 minutes and archived in one hour averages that are then used to compute a 3-hour average	Visible emissions inspections conducted daily
PROVIDE THE DATA COLLECTION PROCEDURES THAT WILL BE USED:		Records of parametric monitoring, required maintenance, and corrective actions will be maintained at the mill site, either in organized paper files or electronically. The data will be retained for the period of time specified in the state permit, or for two (2) years, whichever is greater	Records of visible inspections, required maintenance, and corrective actions will be maintained at the mill site, either in organized paper files or electronically. The data will be retained for the period of time specified in the state permit, or for two (2) years, whichever is greater
PROVIDE THE DATA AVERAGING PERIOD FOR THE PURPOSE OF DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:		Two (2) 3-hr block averages during which average combustion temperature is more than 50 degrees F less than 1300°F (dryers), 600°F (press) or the average temperature established during the most recent performance test	Two (2) consecutive daily determination of visible emissions (excluding steam) from the exhaust stack

[a]DESCRIBE ALL INDICATORS TO BE MONITORED WHICH SATISFIES 40 CFR 64.3(a). INDICATORS OF EMISSION CONTROL PERFORMANCE FOR THE CONTROL DEVICE AND ASSOCIATED CAPTURE SYSTEM MAY INCLUDE MEASURED OR PREDICTED EMISSIONS (INCLUDING VISIBLE EMISSIONS OR OPACITY), PROCESS AND CONTROL DEVICE OPERATING PARAMETERS THAT AFFECT CONTROL DEVICE (AND CAPTURE SYSTEM) EFFICIENCY OR EMISSION RATES, OR RECORDED FINDINGS OF INSPECTION AND MAINTENANCE ACTIVITIES.

[b]INDICATOR RANGES MAY BE BASED ON A SINGLE MAXIMUM OR MINIMUM VALUE OR AT MULTIPLE LEVELS THAT ARE RELEVANT TO DISTINCTLY DIFFERENT OPERATING CONDITIONS, EXPRESSED AS A FUNCTION OF PROCESS VARIABLES, EXPRESSED AS MAINTAINING THE APPLICABLE INDICATOR IN A PARTICULAR OPERATIONAL STATUS OR DESIGNATED CONDITION, OR ESTABLISHED AS INTERDEPENDENT BETWEEN MORE THAN ONE INDICATOR. FOR CEMS, COMS, OR PEMS, INCLUDE THE MOST RECENT CERTIFICATION TEST FOR THE MONTIOR.

[c]THE VERIFICATION FOR OPERATIONAL STATUS SHOULD INCLUDE PROCEDURES FOR INSTALLATION, CALIBRATION, AND OPERATION OF THE MONITORING EQUIPMENT, CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, NECESSARY TO CONFIRM THE MONITORING EQUIPMENT IS OPERATIONAL PRIOR TO THE COMMENCEMENT OF THE REQUIRED MONITORING.

[d]EMISSION UNITS WITH POSTCONTROL PTE ≥ 100 PERCENT OF THE AMOUNT CLASSIFYING THE SOURCE AS A MAJOR SOURCE MUST COLLECT FOUR OR MORE VALUES PER HOUR TO BE AVERAGED. A REDUCED DATA COLLECTION FREQUENCY MAY BE APPROVED IN LIMITED CIRCUMSTANCES. OTHER EMISSION UNITS MUST COLLECT DATA AT LEAST ONCE PER 24 HOUR PERIOD.

RATIONALE AND JUSTIFICATION

COMPLETE THIS SECTION FOR **EACH** PSEU THAT NEEDS TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. THIS SECTION MAY BE COPIED AS NEEDED FOR EACH PSEU. THIS SECTION IS TO BE USED TO PROVIDE RATIONALE AND JUSTIFICATION FOR THE SELECTION OF EACH INDICATOR AND MONITORING APPROACH AND EACH INDICATOR RANGE IN ORDER TO MEET THE SUBMITTAL REQUIREMENTS SPECIFIED IN 40 CFR 64.4.

9a) PSEU DESIGNATION:	9b) REGULATED AIR POLLUTANT:
C21A, C21B, C202	CO, PM, VOC, HAP (PM, VOC for C21A & C21B only)

10) INDICATORS AND THE MONITORING APPROACH: PROVIDE THE RATIONALE AND JUSTIFICATION FOR THE SELECTION OF THE INDICATORS AND THE MONITORING APPROACH USED TO MEASURE THE INDICATORS. ALSO PROVIDE ANY DATA SUPPORTING THE RATIONALE AND JUSTIFICATION. EXPLAIN THE REASONS FOR ANY DIFFERENCES BETWEEN THE VERIFICATION OF OPERATIONAL STATUS OR THE QUALITY ASSURANCE AND CONTROL PRACTICES PROPOSED AND THE MANUFACTURER'S RECOMMENDATIONS. (IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY WITH THE APPROPRIATE PSEU DESIGNATION AND POLLUTANT):

TO combustion temperature is the parameter most closely related to emissions from the TOs connected to the dryers and press. Increasing TO combustion chamber temperature results in decreased VOC and CO emissions, but may increase NOx emissions. TO temperature will be monitored as a compliance parameter.

Visible emissions are the parameter most closely related to PM emissions from the TOs connected to the dryers. No visible emissions indicate that the control device is operating properly. Visible emissions from the dryer TOs stack will be monitored as a compliance parameter.

11) INDICATOR RANGES: PROVIDE THE RATIONALE AND JUSTIFICATION FOR THE SELECTION OF THE INDICATOR RANGES. THE RATIONALE AND JUSTIFICATION SHALL INDICATE HOW **EACH** INDICATOR RANGE WAS SELECTED BY EITHER A COMPLIANCE OR PERFORMANCE TEST, A TEST PLAN AND SCHEDULE, OR BY ENGINEERING ASSESSMENTS. DEPENDING ON WHICH METHOD IS BEING USED FOR EACH INDICATOR RANGE, INCLUDE THE SPECIFIC INFORMATION REQUIRED BELOW FOR THAT SPECIFIC INDICATOR RANGE. (IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY WITH THE APPROPRIATE PSEU DESIGNATION AND POLLUTANT):

- COMPLIANCE OR PERFORMANCE TEST (INDICATOR RANGES DETERMINED FROM CONTROL DEVICE OPERATING PARAMETER DATA OBTAINED DURING A COMPLIANCE OR PERFORMANCE TEST CONDUCTED UNDER REGULATORY SPECIFIED CONDITIONS OR UNDER CONDITIONS REPRESENTATIVE OF MAXIMUM POTENTIAL EMISSIONS UNDER ANTICIPATED OPERATING CONDITIONS. SUCH DATA MAY BE SUPPLEMENTED BY ENGINEERING ASSESSMENTS AND MANUFACTURER'S RECOMMENDATIONS). THE RATIONALE AND JUSTIFICATION SHALL INCLUDE A SUMMARY OF THE COMPLIANCE OR PERFORMANCE TEST RESULTS THAT WAS USED TO DETERMINE THE INDICATOR RANGE AND DOCUMENTATION INDICATING THAT NO CHANGES HAVE TAKEN PLACE THAT COULD RESULT IN A SIGNIFICANT CHANGE IN THE CONTROL SYSTEM PERFORMANCE OR THE SELECTED INDICATOR RANGES SINCE THE COMPLIANCE OR PERFORMANCE TEST WAS CONDUCTED.

- TEST PLAN AND SCHEDULE (INDICATOR RANGES WILL BE DETERMINED FROM A PROPOSED IMPLEMENTATION PLAN AND SCHEDULE FOR INSTALLING, TESTING, AND PERFORMING ANY OTHER APPROPRIATE ACTIVITIES PRIOR TO USE OF THE MONITORING). THE RATIONALE AND JUSTIFICATION SHALL INCLUDE THE PROPOSED IMPLEMENTATION PLAN AND SCHEDULE THAT WILL PROVIDE FOR USE OF THE MONITORING AS EXPEDITIOUSLY AS PRACTICABLE AFTER APPROVAL OF THIS CAM PLAN, BUT IN NO CASE SHALL THE SCHEDULE FOR COMPLETING INSTALLATION AND BEGINNING OPERATION OF THE MONITORING EXCEED 180 DAYS AFTER APPROVAL.

- ENGINEERING ASSESSMENTS (INDICATOR RANGES OR THE PROCEDURES FOR ESTABLISHING INDICATOR RANGES ARE DETERMINED FROM ENGINEERING ASSESSMENTS AND OTHER DATA, SUCH AS MANUFACTURERS' DESIGN CRITERIA AND HISTORICAL MONITORING DATA, BECAUSE FACTORS SPECIFIC TO THE TYPE OF MONITORING, CONTROL DEVICE, OR PSEU MAKE COMPLIANCE OR PERFORMANCE TESTING UNNECESSARY). THE RATIONALE AND JUSTIFICATION SHALL INCLUDE DOCUMENTATION DEMONSTRATING THAT COMPLIANCE TESTING IS NOT REQUIRED TO ESTABLISH THE INDICATOR RANGE.

RATIONALE AND JUSTIFICATION:

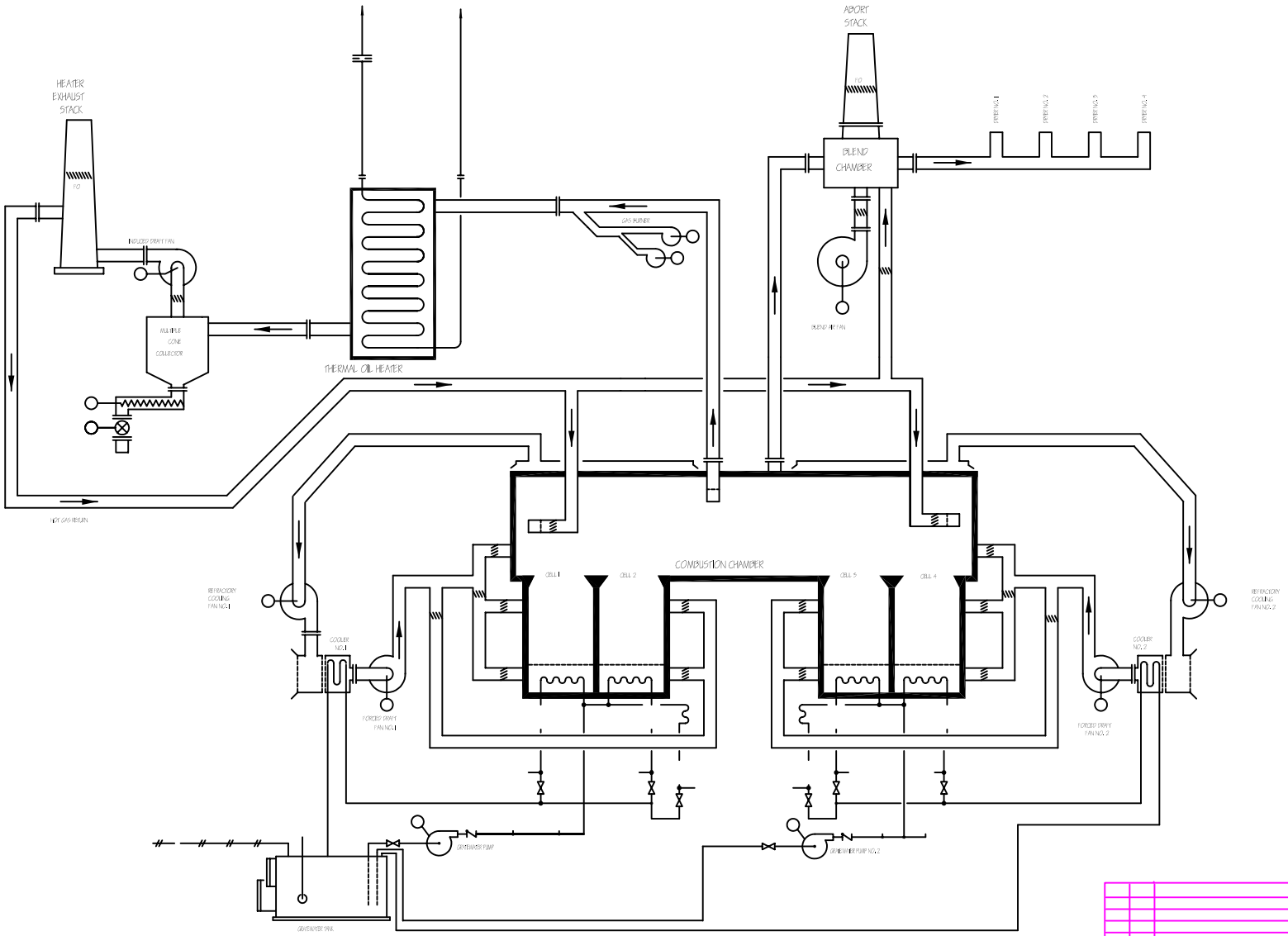
Norbord Georgia is in the process of making significant modifications to the facility. This CAM plan is being submitted as part of a significant Title V permit modification with construction. After the new production line is complete, the facility will be required to conduct source testing upon achieving the maximum production rate at which the plant will operate. Parameter data will be recorded for the TO combustion chamber temperature (C21A, C21B & C202) and visible emissions (C21A & C21B only for visible emissions).

During testing the following steps will be performed:

For each TO, the following operating parameters will be recorded every 15 minutes or less: combustion chamber temperature for each TO. The operating mode of the TO, either burner mode or gas injection mode, will be recorded for every test run. Parameters will be recorded on TO Data Sheets. At the same time, process parameters including wood species (% hardwood and % softwood), production rate and number of operating dryers will also be recorded.

ATTACHMENT B

Energy System Drawing



ENGINEERING — MANUFACTURING

SHERWOOD — OREGON

ATTACHMENT C

BACT RBLC Search Tables and Analysis

TABLE C-1 Supplement: RBLC SEARCH RESULTS FOR WOOD-FIRED EXTERNAL COMBUSTION SOURCES - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	NOTES
ND-0018	ARCHER DANIELS MIDLAND CO.	RANSOM, ND	2/10/2003	BOILERS, 2, WELLONS	200	MMBtu/hr	PM	48	68.4	LB/HR	Wellons but does not include dryer emissions
							NOX	40	57	LB/HR	Vegetable oil Plant. Operating conditions likely quite
							CO	126	179.6	LB/HR	different
AR-0072	DEL-TIN FIBER LLC, MDF	UNION, AR	10/28/2003	CALLIDUS CLOSED LOOP GASIFICATION SYSTEM (CLGS)	291	MMBtu/hr	VOC	21.2	20.8	LB/HR	Energy system is different than that of Wellons. The
							NOX	87.2	85.4	LB/HR	CLGS also controls VOCs.
							CO	228.3	223.6	LB/HR	MDF Facility
LA-0041	GEORGIA-PACIFIC CORP.	LA	11/1/1983	BOILER, WOOD FIRED	272	MMBTU/HR	PM/PM10	24.7	25.9	LB/HR	Does not include dryers
							CO	25	26.2	LB/HR	
MS-0023	GEORGIA PACIFIC CORP. - GLOSTEE FACILITY	GLOSTEE, MS	9/1/1995	BOILER, WOODWASTE	244	MMBtu/hr	NOX	73.2	85.2	LB/HR	Does not include dryers
							VOC	4.88	5.7	LB/HR	
							PM/PM10	24.4	28.4	LB/HR	
							CO	168.36	195.8	LB/HR	
GA-0010	GOLD KIST INC., GOLD KIST SOY PLANT	VALDOSTA, GA	11/1/1983	BOILER, WELLON TYPE A	95	MMBTU/HR	PM/PM10	9.5	28.5	LB/MMBTU	Does not include dryers and is not a wood products facility. Kept because Wellons system mentioned.
AR-0010	INTERNATIONAL PAPER CO.	GURDON, AR	11/1/1983	BOILER, WOOD WASTE, #1 & #2	999999	MMBTU/HR	PM/PM10	25	Not Enough Data	LB/HR, EA	
							CO	200	Not Enough Data	LB/HR, EA	
PA-0145	INTERNATIONAL PAPER COMPANY	ERIE, PA	12/18/2001	BOILER, BARK AND WOODWASTE	326	MMBtu/hr	NOX	176.0	153.9	LB/HR	Does not include dryers.
ME-0003	J.M. HUBER CORP.	EASTON, ME	11/1/1983	DRYER, 2	240	T/D	PM/PM10	2.48	Not Applicable	LB/T WAFER BD	
ME-0003	J.M. HUBER CORP.	EASTON, ME	11/1/1983	BOILER, WOOD	84	MMBTU/H	PM/PM10	10.08	34.2	LB/HR	

TABLE C-1 Supplement: RBLC SEARCH RESULTS FOR WOOD-FIRED EXTERNAL COMBUSTION SOURCES - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	NOTES
CA-0261	LOUISIANA PACIFIC CORP.	CA	6/2/1988	GENERATOR, STEAM, WOOD FIRED	127	MMBTU/HR	PM/PM10	2.8	6.3	LB/HR	Does not include dryers
							VOC	16	35.9	LB/HR	
							NOX	23	51.6	LB/HR	
							CO	22	49.4	LB/HR	
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	11/1/1983	BOILER, WOOD, #1	24.6	MMBTU/HR	PM/PM10	3.69	42.75	LB/HR	Does not include dryers
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	11/1/1983	BOILER, WOOD, #2	24.6	MMBTU/HR	PM/PM10	3.69	42.75	LB/HR	Does not include dryers
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	11/1/1983	DRYER, WOOD FIRED, #1	36.4	MMBTU/HR	PM/PM10	1.84	Not Enough Data	LB/T WAFER BD	
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	11/1/1983	DRYER, WOOD FIRED, #2	36.4	MMBTU/HR	PM/PM10	1.84	Not Enough Data	LB/T WAFER BD	
AR-0073	POTLATCH CORPORATION	NEVADA, AR	11/18/2003	WOOD-FIRED BOILER	159.29	MMBTU/HR	PM/PM10	15.9	28.4	LB/HR	Does not include dryers
							CO	215.1	384.9	LB/HR	Lumber Mill
							NOX	39.9	71.4	LB/HR	
MN-0033	POTLATCH CORPORATION	COOK, MN	11/11/1999	HEATER PROCESS, THERMAL OIL	140	MMBtu/hr	NOX	42	85.5	LB/HR	Does not include dryers. OSB Mill
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	5/19/1998	BOILER, WOOD-FIRED	91	MMBTU/HR	PM/PM10	13.65	42.75	LB/HR	Does not include dryers
							CO	127.4	399	LB/HR	Plywood
					91	MMBtu/hr	NOX	20.93	65.55	LB/HR	
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	5/19/1998	JET VENEER DRYERS (2), GAS-FIRED & STEAM-HEATED	0		PM/PM10	9.4	Not Enough Data	TPY	
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	5/19/1998	LUMBER DRY KILNS (2), HIGH TEMP.	110000	BOARD FOOT/KILN	PM/PM10	0.9	Not Applicable	LB/HR	
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	5/19/1998	DRYER, RADIO FREQUENCY	0		PM/PM10	0.2	Not Applicable	TPY	
MI-0311	WEYERHAEUSER COMPANY - OSB	CRAWFORD, MI	6/3/2003	WOOD BURNER, HOGGED FUEL/COEN DUST BURNER	260	MMBtu/hr	PM	0.1	Not Applicable	LB/MMBtu	
MS-0026	WEYERHAEUSER COMPANY	BRUCE, MS	11/27/1995	BOILER, WOODWASTE	90	MMBtu/hr	NOX	20.7	65.55	LB/HR	Does not include dryers
							CO	36	114	LB/HR	

Notes: Cogeneration facilities not included due to gross differences in operation.

TABLE C-2 Supplement: RBLC SEARCH RESULTS FOR ROTARY DRYER - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	NOTES
VA-0170	LOUISIANA-PACIFIC CORP.	VA	4/30/1990	DRYER, WAFER	19.4	T/H, WET	PM	9.0	96.0	LB/HR	Facility has been shut down for some time. Permit has been terminated and no further information can be obtained. Not a good match.
							PM10	3.7	39.8	LB/HR	
							VOC	19.6	209.4	LB/HR	
							SO2	0.30	3.2	LB/HR	
							NOX	5.4	57.4	LB/HR	
							CO	7.7	82.1	LB/HR	
AL-0067	LOUISIANA PACIFIC CORP.	HANCEVILLE, AL	3/24/1995	DRYER, ROTARY DRUM, WOOD WAFER, #1 & 2	31000	LB DRY WAFERS/HR	PM	8.8	29.6	LB/HR	Throughput of 31000 lb/hr is for both dryers combined.
							NOX	14.7	64.4	LB/HR	Adjustment only for throughput and thermal oil heater
							CO	14.0	61.8	LB/HR	Thermal Oil Heater Separate in this process
							VOC	69.4	233.0	LB/HR	
AL-0067	LOUISIANA PACIFIC CORP.	HANCEVILLE, AL	3/24/1995	DRYER, ROTARY DRUM, WOOD WAFER, #3, 4, & 5	46500	LB DRY WAFERS/HR	PM	11.6	31.00	LB/HR	Throughput of 46500 lb/hr is for three dryers combined.
							NOX	19.1	57.64	LB/HR	Adjustment only for throughput and thermal oil heater
							CO	30.9	84.16	LB/HR	Thermal Oil Heater Separate in this process
							VOC	113.5	253.76	LB/HR	
WI-0079	LOUISIANA PACIFIC CORP.	HAYWARD, WI	8/9/1994	DRYER, WOOD	21.58	MMBTU/HR	PM	8.42	111.2	LB/HR	Use Hardwoods so not a good comparison
							CO	15.1	199.4	LB/HR	
							VOC	3.67	48.5	LB/HR	
							NOX	18.38	242.7	LB/HR	
MN-0027	POTLATCH CORPORATION - WOOD PRODUCTS, MN DIV.	COOK, MN	12/30/1996	WOOD-FIRED ROTARY WOOD FLAKE DRYERS	30	TONS FLAKES/HR	NOX	45.8	79.2	LB/HR	
MI-0240	LOUISIANA PACIFIC CORP.	MI	5/31/1996	WAFER DRYERS	0		CO	285	Not Enough Data	PPH	
							NO2	45.8	Not Enough Data	PPH	
							VOC	31.6	Not Enough Data	PPH	
							PM10	0.015	Not Enough Data	GR/DSCF	
CA-0809	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	4/1/1999	REGENERATIVE THERMAL OXIDIZER	24	MMBTU/HR	PM10	0.0015	Not Enough Data	GR/DSCF	
CA-0865	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	6/17/1999	OXIDIZER, THERMAL, REGENERATIVE	24	MMBTU/HR	PM10	0.0015	Not Enough Data	GR/DSCF	
AR-0023	GEORGIA-PACIFIC ORIENTED STRANDBOARD FACILITY	FORDYCE, AR	8/24/2000	DRYER, 5, EACH	475	MMSF/YR	PM10	14.89	101.9	LB/HR	
							CO	6.72	46.0	LB/HR	
							VOC	25.25	172.8	LB/HR	
							NOX	14.66	100.3	LB/HR	
NC-0007.A	GEORGIA-PACIFIC CORP.	DUDLEY, NC	11/1/1983	DRYER, SANDERDUST FUEL	10000	LB/HR	PM	30	Not Applicable	LB/HR SEE NOTE	
NC-0007.A	GEORGIA-PACIFIC CORP.	DUDLEY, NC	11/1/1983	DRYER, ROTARY WOODFLAKE, GREEN	80000	LB/HR	PM	30	78	LB/HR	

TABLE C-2 Supplement: RBLC SEARCH RESULTS FOR ROTARY DRYER - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	NOTES
CA-0052.A	LOUISIANA PACIFIC CORP.	CA	1/2/2001	DRYER, WOOD FIBER	611248	LB/H WOOD FIBER	PM	0.032	Not Applicable	GR/SCF	
VA-0057	LOUISIANA-PACIFIC CORP.	DUNGANNON, VA	5/5/1987	DRYER, WAFER	40	MMBTU/HR	PM	9	64.1	LB/HR	Waferboard Mill. Not OSB Mill and Not Good Match
							SO2	0.4	2.9	LB/HR	
							VOC	13	92.6	LB/HR	
							NOX	4.5	32.1	LB/HR	
							CO	12	85.5	LB/HR	
MN-0012	POTLATCH CORP.	BEMIDJI, MN	9/29/1989	DRYER, WOOD GASIFIER	156250	T/YR FINISHED PRODUC	PM	19.3	Not Enough Data	LB/HR, TOTAL	
							PM10	17.4	Not Enough Data	LB/HR, TOTAL	
							NOX	2.58	Not Enough Data	LB/T FUEL	
							VOC	0.5	Not Enough Data	LB/TON FINISHED PRODUCT	
							CO	2	Not Enough Data	LB/TON FINISHED PRODUCT	
AR-0029	TEMPLE INLAND FOREST PRODUCTS CORP.	HOPE, AR	8/30/2000	DRYER, PROCESS, 3	58	MMBTU/H EACH	PM	55.4	544.4	LB/HR	Good Match
							VOC	88.8	872.7	LB/HR	
							NOX	55.9	549.4	LB/HR	
							CO	56.5	555.3	LB/HR	
AR-0029	TEMPLE INLAND FOREST PRODUCTS CORP.	HOPE, AR	8/30/2000	DRYER, PRE	39	MMBTU/HR	PM	2.3	Not Applicable	LB/HR	
							VOC	7.9	Not Applicable	LB/HR	
							NOX	44.5	Not Applicable	LB/HR	
							CO	38.2	Not Applicable	LB/HR	
MT-0016	PLUM CREEK MANUFACTURING, L.P.	COLUMBIA FALLS, MT	3/5/2001	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD DRYER	46500	TPY	NOX	43.4	Not Applicable	LB/HR	Not OSB
							VOC	76.1	Not Applicable	LB/HR	
							PM10	18	Not Applicable	LB/HR	
							CO	722	Not Applicable	LB/HR	
FL-0211	GEORGIA PACIFIC - HOSFORD OSB PLANT	HOSFORD, FL	1/9/2001	FIVE FLAKES DRYERS WITH TWO RTOS.	550216	TONS	PM10	33.8	139.8	LB/HR	Emissions limits in RBLC database are for each dryer. Have been
							NOX	60	248.1	LB/HR	adjusted to one unit (5 dryers) and throughput. Throughput is for
							CO	33.6	138.9	LB/HR	entire unit.
							VOC	63.1	260.9	LB/HR	Good Match
MN-0042	POTLATCH CORPORATION	GRAND RAPIDS, MN	2/19/2001	WOOD WAFER DRYER, TRIPLE PASS ROTARY DRUM	33000	LB/HR	PM	6	37.8	LB/HR	Not a Good Match. Also, This Facility uses Hardwoods which
						LB/HR	PM10	6	37.8	LB/HR	will have lower CO and VOC emissions.
						LB/HR	CO	5.88	37.1	LB/HR	
						LB/HR	VOC	8	50.4	LB/HR	
						LB/HR	NOX	8.25	52.0	LB/HR	

TABLE C-2 Supplement: RBLC SEARCH RESULTS FOR ROTARY DRYER - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	NOTES
AR-0059	GEORGIA-PACIFIC CALHOUN OSB PLANT	CALHOUN, AR	6/20/2003	ROTARY DRUM DRYERS (5) W/2 RTOS	600	MMSF/YR	PM10	18.82	101.9	LB/HR	Emissions are for direct-fired dryers. Also, emission limits in
							CO	52	281.7	LB/HR	database are per dryer. Calculations are therefore adjusted to a
							VOC	31.9	172.8	LB/HR	one unit basis (5dryers) along with production.
							NOX	14.66	79.4	LB/HR	
MI-0353	WEYERHAEUSER	CRAWFORD, MI	12/12/2002	FOUR DRYERS (AND BURNERS)	108000	LB/HR	PM10	29.8	123.8	LB/HR	Emissions are for direct-fired dryers. Also, emission limits in
							CO	147.3	611.9	LB/HR	database are per dryer. Calculations are therefore adjusted to a
							VOC	18.6	77.3	LB/HR	one unit basis (4 dryers) along with production.
							NOX	23.15	96.2	LB/HR	
SC-0074	KRONOTEX	BARNWELL, SC	1/13/2003	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD DRYER	578861	ODT/YR	PM10	1.4	Not Applicable	LB/HR	
							CO	NO LIMIT	Not Applicable	LB/HR	
							VOC	18.16	Not Applicable	LB/HR	
							NOX	66.85	Not Applicable	LB/HR	
LA-0139	LOUISIANA-PACIFIC CORPORATION URANIA PLANT	LASALLE PARISH, LA	3/2/2004	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD FLASH TUBE DRYERS (2)	15000	LB/HR (EA)	PM10	14.5	Not Applicable	LB/HR	
							CO	9.84	Not Applicable	LB/HR	
							VOC	5.27	Not Applicable	LB/HR	
							NOX	32.33	Not Applicable	LB/HR	
NC-0081	HOMANIT USA, INC	MONTGOMERY, NC	3/12/2004	HIGH DENSITY FIBERBOARD FLASH TUBE DRYER (EMISSIONS COMBINATION OF PRESS AND COOLERS)	302000	SCFM	PM	12.8	Not Applicable	LB/HR	
							PM10	11	Not Applicable	LB/HR	
							CO	52	Not Applicable	LB/HR	
							VOC	12.6	Not Applicable	LB/HR	
							NOX	171.5	Not Applicable	LB/HR	
TX-0307 (draft)	LOUISIANA-PACIFIC CARTHAGE OSB MILL	PANOLA, TX	3/2/2004	DRYERS (2) EAST AND WEST	597.23	MSF/YR	PM10	13.54	29.5	LB/HR	Limits in RBLC database are for each dryer. Calculations are
							VOC	14.77	32.2	LB/HR	therefore adjusted to a two unit basis along with adjustment for
							NOX	30.19	65.7	LB/HR	production.
							CO	275.66	600.0	LB/HR	
GA-0076	TEMPLE-INLAND	MCDUFFIE, GA	4/21/2003	PARTICLE BOARD DRYERS (4)			PM	3.45	Not Applicable	LB/HR	
							VOC	1.71	Not Applicable	LB/HR	

TABLE C-3: RBLC SEARCH RESULTS FOR PRESS - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
VA-0057	LOUISIANA-PACIFIC CORP. - OSB	DUNGANNON, VA	5/5/1987	PRESS, 2 VENTS	9.29	T/H	VOC	11.9	Not Enough Data	LB/HR	LIMIT INCLUDES FORMALDEHYDE & PHENOL EMISSIONS RESIN USAGE LIMIT
MN-0012	POTLATCH CORP.	BEMIDJI, MN	9/29/1989	PRESS	156250	T/YR FINISHED PRODUCT	VOC	0.61	Not Enough Data	LB/TON FINISHED PRODUCT	
VA-0170	LOUISIANA-PACIFIC CORP.	VA	4/30/1990	PRESS, 2	0		VOC	70.3	Not Enough Data	TON/YR	Uncontrolled
WI-0079	LOUISIANA PACIFIC CORP.	HAYWARD, WI	8/9/1994	PRESS	21.58	MMBTU/HR	VOC	1.73	Not Enough Data	LB/HR	RTO
					74201		PM	0.65	Not Enough Data	LB/HR	RTO
							CO	8.2	Not Enough Data	LB/HR	RTO
VA-0219	GEORGIA-PACIFIC CORPORATION	BROOKNEAL, VA	10/20/1995	PRESS	50000	SQ FT/HR	VOC	4.8	7.19	LB/HR	NO RTO - NOT GOOD FIT
							CO	6.8	10.07	LB/HR	NO RTO - NOT GOOD FIT
							TSP (PM)	14.5	21.57	LB/HR	NO RTO - NOT GOOD FIT
							PM10	14.5	21.57	LB/HR	NO RTO - NOT GOOD FIT
							NOX	0.3	0.43	LB/HR	NO RTO - NOT GOOD FIT
MI-0240	LOUISIANA PACIFIC CORP.	MI	5/31/1996	BOARD PRESS	0		VOC	9.1	Not Enough Data	PPH	REGENERATIVE THERMAL OXIDIZER (RTO)
MI-0240	LOUISIANA PACIFIC CORP.	MI	5/31/1996	BOARD PRESS	0		PM10	12.1	Not Enough Data	PPH	REGENERATIVE THERMAL OXIDIZER (RTO)
AL-0111	TEMPLE-INLAND FOREST PRODUCTS CORPORATION	MONROEVILLE, AL	4/24/1998	BOARD PRESS SYSTEM W/ RTO AND LOW NOX BURNERS	150	MMSF/YR 3/4 IN BASIS	CO	11.17	24.2	LB/HR	RTO AND LOW-NOX BURNERS
							VOC	6.13	13.3	LB/HR	RTO AND LOW-NOX BURNERS
							PM	3.23	7.0	LB/HR	RTO AND LOW-NOX BURNERS
							NOX	7.34	15.9	LB/HR	RTO AND LOW-NOX BURNERS
AR-0023	GEORGIA-PACIFIC ORIENTED STRANDBOARD FACILITY	FORDYCE, AR	8/24/2000	PRESS, ORIENTED STRAND BOARD	475	MMSF/Y	VOC	20.05	27.4	LB/HR	REGERATIVE THERMAL OXIDIZER
							NOX	10.73	14.7	LB/HR	LOW NOX BURNERS, FUEL ENHANCEMENT
							PM10	2.83	3.9	LB/HR	RTO
							CO	7.25	9.9	LB/HR	RTO
AR-0029	TEMPLE INLAND FOREST PRODUCTS CORP.	HOPE, AR	8/30/2000	PRESS	NO DATA	NO DATA	VOC	3.5	Not Enough Data	LB/HR	RTO
							PM	2.5	Not Enough Data	LB/HR	RTO
							NOX	6.0	Not Enough Data	LB/HR	LOW NOX BURNER ON RTO
							CO	12.4	Not Enough Data	LB/HR	GOOD COMBUSTION
FL-0211	GEORGIA PACIFIC - HOSFORD OSB PLANT	HOSFORD, FL	1/9/2001	PANEL PRESS W/ ONE RTO OR TCO	475000	SQFT	VOC	10	13.7	LB/HR	REGENERATIVE THERMAL OXIDIZER (RTO) OT THERMAL CATALYTIC OXIDIZER (TCO)
							PM10	2.8	3.8	LB/HR	RTO OR TCO
							CO	7.3	24.0	LB/HR	RTO OR TCO
							NOX	10.7	20.5	LB/HR	LOW NOX BURNER IN RTO OR TCO
AR-059	GEORGIA-PACIFIC CORPORATION	CALHOUN, AR	6/30/2003	PRESS, OSB	600	MMSF/YR	PM10	3.5	3.8	LB/HR	MULTICLONES, TCO

TABLE C-3: RBLC SEARCH RESULTS FOR PRESS - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	RBLC LAST UPDATE	PROCESS	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	ADJUSTED TO NORBORD'S OPERATION	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
							VOC	25.3	27.4	LB/HR	TCO
							CO	9.2	23.9	LB/HR	TCO
							NOX	13.5	20.5	LB/HR	LOW NOX BURNERS FOR TCO
MI-0353	WEYERHAEUSER	CRAWFORD, MI	12/12/2002	PRESSES, OSB LINE	108000	LB/HR	PM10	8.4	Not Enough Data	LB/HR	BIOLOGICAL AIR FILTER
						They also run mostly hardwoods	VOC	19.5	Not Enough Data	LB/HR	BIOLOGICAL AIR FILTER (90% REMOVAL)
							CO	11.4	Not Enough Data	LB/HR	BIOLOGICAL AIR FILTER (30% REMOVAL)
SC-0074	KRONOTEX, USA - BARNWELL	BARNWELL, SC	1/13/2003	PRESS, CONTINUOUS, MDF	273312	MSF/YR	PM10	0.2673	Not Applicable	LB/HR	RTO/TCO
							VOC	2.64	Not Applicable	LB/HR	RTO/TCO
							CO	16.694	Not Applicable	LB/HR	NONE
							NOX	13.71	Not Applicable	LB/HR	LOW NOX BURNERS AND HEAT RECOVERY
AR-0039	DEL TIN FIBER LLC	UNION, AR	12/20/2002	PRESS VENTED THROUGH HEAT ENERGY SYSTEM, CALLIDUS	291	MMBTU/HR	PM10	28.19	Not Applicable	LB/HR	ESP/BAGHOUSE
							VOC	10	Not Applicable	LB/HR	CALLIDUS UNIT (THERMAL INCINERATION)
							CO	228.3	Not Applicable	LB/HR	GOOD COMBUSTION PRACTICES
LA-0139	LOUISIANA-PACIFIC CORPORATION	LASALLE PARISH, LA	3/2/2004	MDF PRESS	32	MMBTU/HR	PM10	6.79	Not Applicable	LB/HR	RTO
							NOX	5.67	Not Applicable	LB/HR	NONE
							VOC	2.17	Not Applicable	LB/HR	RTO
							CO	17.27	Not Applicable	LB/HR	NONE
TX-0307 (draft)	LOUISIANA-PACIFIC CARTHAGE OSB MILL	PANOLA, TX	3/2/2004	PRESS	597.23	MMSF/YR	PM10	9.58	10.4	LB/HR	FABRIC FILTER
							VOC	5.23	5.7	LB/HR	RTO
							NOX	12.02	13.1	LB/HR	NONE
							CO	36.59	39.8	LB/HR	RTO
AL-0156	LOUISIANA-PACIFIC CORP.	CULLMAN, AL	7/2/2002	BOARD PRESS SYSTEM, OSB	NO DATA	NO DATA	VOC	4.74	Not Enough Data	LB/HR	RTO
							CO	20.84	Not Enough Data	LB/HR	RTO
							NOX	12.84	Not Enough Data	LB/HR	LOW NOX BURNERS
							PM	9.86	Not Enough Data	LB/HR	RTO

Norbord identified available control technologies for each emission unit in question. One substantial task of control technology identification was a search of the RBLC. Tables C-1, C-2, and C-3 present the results of the RBLC search. Norbord added a column to the search results tables titled *Adjusted to Norbord's Operations*. As the majority of the permitted emission limits are presented in pounds per hour, Norbord calculated an adjusted limit scaled to Norbord's proposed production rate (when appropriate data were available). The following information is presented as Norbord's analysis of the RBLC search results. The goal of the analysis was to identify which facilities have the lowest short-term emission rate permitted for an identical or similar operation.

Search results in Table C-1, *Wood-Fired External Combustion Sources*, were not applicable to the proposed operations, as the results do not include emissions from dryers. The results were limited to the energy system alone. Table C-2, *Rotary Dryers*, was found to adequately contain information on OSB facilities and in many cases included both energy system and dryer emissions. Table C-3 was used to review emissions from presses.

DRYERS

The attached tables include short-term limits corrected to the size and capacity of the proposed Cordele operation. In regards to dryers, the following facilities, which have the most stringent emission limits, were found to be potentially similar, in varying degrees, to the proposed Cordele facility:

LOUISIANA PACIFIC (HANCEVILLE, ALABAMA)

- PM Limit 31.0 lb/hr
- NOx Limit 57.6 lb/hr
- CO Limit 81.7 lb/hr
- VOC Limit 254 lb/hr

The Louisiana Pacific (Hanceville, Alabama) facility has direct-fired dryers and no energy system as compared to the proposed facility. Also, the thermal oil heater is fired separately. It is difficult to compare the proposed Cordele facility and this one, but Norbord has attempted to do so above. Because of the lack of an energy system, we feel that this facility should not be considered in regards to NO_X and CO emissions.

GEORGIA PACIFIC ORIENTED STRANDBOARD FACILITY (FORDYCE, ARKANSAS)

- PM Limit 102 lb/hr
- NOx Limit 100 lb/hr
- CO Limit 46.0 lb/hr
- VOC Limit 173 lb/hr

Based on information available, it has become apparent that this facility has chosen to operate its energy system and RTO at higher temperatures than would the proposed Norbord facility based

on appropriate operating conditions. As such, this facility has a higher NO_X limit and lower CO limit. As NO_X and CO emission increases and decreases are related to temperature increases and decreases in the energy system and RTO, Norbord believes that if the Georgia Pacific facility operated at the proposed facility's temperature ranges, the NO_X and CO limits would be similar to Norbord's proposed limits.

LOUISIANA PACIFIC CARTHAGE OSB MILL (PANOLA, TEXAS) DRAFT

- PM Limit 29.5 lb/hr
- NOx Limit 65.7 lb/hr
- CO Limit 600 lb/hr
- VOC Limit 32.2 lb/hr

From the information gathered on this facility, it has come to our attention that the limits for this facility have not been finalized. As such we feel it would be inappropriate to use this facility in the determination. However, again we would like to point out that there is a high CO limit and low NO_X limit. If these limits were balanced to Norbord's likely operating conditions the limits would be higher than the proposed Norbord limits.

Two other Georgia Pacific facilities, listed in the table, were found to be the closest matches in terms of operations and equipment. The proposed Norbord limits were well below those listed for these facilities.

It is Norbord's belief that the proposed limits in the November 2004 submittal are BACT for the proposed operations. As reviewed in the paragraphs above, the only two facilities that closely match the Cordele operations have limits well above the proposed limits. Additionally, taking into consideration items listed above, such as higher and lower NO_X limits (compared to CO), lack of an energy system for one facility, and so forth, it appears the proposed Norbord limits surpass any of the facilities listed in the RBLC database search.

PRESS

In regards to press the following facilities, which have the most stringent emission limits, were found to be potentially similar to the proposed Cordele facility:

Georgia Pacific – Hosford OSB Plant (Hosford, Florida)

- PM Limit 3.8 lb/hr
- NOx Limit 20.5 lb/hr
- CO Limit 24.0 lb/hr
- VOC Limit 13.7 lb/hr

Georgia Pacific (Calhoun, Arkansas)

- PM Limit 3.8 lb/hr
- NOx Limit 20.5 lb/hr
- CO Limit 24.0 lb/hr

- VOC Limit 27.4 lb/hr

Both of these mills have nearly identical limits, and Norbord has become aware that emissions from one mill were used in establishing limits for the other mill. These are two facilities Norbord believes closely match that of the proposed operations. The PM limit proposed by Norbord is based on the limits for these facilities with a 5% safety factor (also based on Cordele testing results on existing press TO exhaust). Emission limits for NO_X and CO along with vendor guarantees were used in establishing the proposed limits. Vendor guarantees for VOCs were below those limits established for the Georgia Pacific facilities.

LOUISIANA PACIFIC CARTHAGE OSB MILL (PANOLA, TEXAS) DRAFT

- PM Limit 10.4 lb/hr
- NOx Limit 13.1 lb/hr
- CO Limit 39.8 lb/hr
- VOC Limit 5.7 lb/hr

As indicated under dryers, it appears the emission limits listed in the RBLC database for this facility are not achieved in practice (still in the permitting process). Therefore, this facility has been eliminated for consideration.

As the two Georgia Pacific facilities closely match that of the proposed facility and are the most stringent of the facilities reviewed, Norbord believes the limits established in the 2004 submittal are BACT.

BAGHOUSES

In regards to baghouses, the most stringent PM limit for multiple facilities was 0.005 gr/dscf. This is the same limit Norbord has requested. There are no listed controls for VOC on baghouses.

ATTACHMENT D

BACT Cost Calculations

Table D-1: Cost Analysis for WESP/RTO for VOC Control of the Rotary Dryers/Wellons

CAPITAL COSTS	
Direct Capital Costs	
RTOs[A]	4,400,000
WESP	3,700,000
Contingency (10% of total capital)	810,000
Miscellaneous capital items (buildings and structures, site improvements, equipment, electric substation)[B]	2,525,000
Engineering[B]	350,000
Total Capital Costs	**11,785,000**
Total Annualized Capital Costs (15 years at 7.0%)	**1,293,930**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr @ 2 devices - RTO and WESP)	21,035
Supervisor (15% of maintenance labor)	3,155
Maintenance Materials[C]	150,000
Utilities	
Natural Gas ($8.19/MMBtu@ 23.5 MMBtu/hr @ 8760 hr/yr)[D]	1,685,993
Electricity (1000kWh @ $0.042/kwh @ 8760 hr/yr)[C]	367,920
Total Annual Direct Operating Costs	2,228,104
Indirect Operating Costs[E]	
Overhead (60% of labor and maintenance)	104,514
PropertyTax (1% total capital costs)	117,850
Insurance (1% total capital costs)	117,850
Administration (2% total capital costs)	235,700
Total Annual Indirect Operating Costs	575,914
Total Annual Operating Cost	**2,804,018**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**4,097,947**
Uncontrolled VOC Emission Rate (lb/hr)	598.00
Uncontrolled VOC Emission Rate (tpy)	2,619
Minimum VOC Control Efficiency	90%
Pollutant Removed (tpy)	2,357.3
Cost per Ton of VOC Removed	**1,738**

[A] Megtec quote to Norbord - 2004.

[B] Based on costs for similar project at another Norbord facility.

[C] Electricity usage includes larger motors following RTO, and additional motors following WESP, per Norbord observations at similar RTO facilities. Maintenance material costs based on experience.

[D] Natural gas cost per Norbord Georgia Inc., September 2004. Gas usage requirements esimated as per experience and information obtained from Megtec.

[E] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112

Table D-2: Cost Analysis for RTO for VOC Control of Press

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A]	1,853,400
Contingency (10% of total capital)	185,340
Additional prefilter for PM/PM_{10} control[C]	200,000
Miscellaneous capital items (electric substation)[D]	238,821
Contingency on miscellaneous items (10% of total capital)	23,882
Total Capital Costs	**2,501,443**
Total Annualized Capital Costs (15 years at 7.0%)	**274,645**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	10,517
Supervisor (15% of maintenance labor)	1,578
Maintenance Materials(100% of maintenance labor)	10,517
Utilities	
Natural Gas ($8.19/MMBtu@ 6.0 MMBtu/hr @ 8760 hr/yr)[A]	430,466
Electricity (325 kWh @ $0.042/kWh @ 8760 hr/yr)[A]	119,574
Annual Catalyst Cost (Lifetime 8 years) figured as Total Cost/8 Years	57,863
Annual Media Cost (Lifetime 10 years) figured as Total Cost/10 Years	15,000
Total Annual Direct Operating Costs	645,515
Indirect Operating Costs[B]	
Overhead (60% of labor and maintenance)	13,568
Property tax (1% total capital costs)	25,014
Insurance (1% total capital costs)	25,014
Administration (2% total capital costs)	50,029
Total Annual Indirect Operating Costs	113,625
Total Annual Operating Cost	**759,141**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**1,033,786**
Uncontrolled VOC Emission Rate (lb/hr)	88.00
Uncontrolled VOC Emission Rate (tpy)	385
Minimum VOC Control Efficiency	90%
Pollutant Removed (tpy)	346.9
Cost per Ton of VOC Removed	**2,980**

[A] Megtec, RTO Equipment Quote, February 2004.

[B] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112

[C] Additional PM/PM10 control equipment is necessary upstream of the RTO to prevent fouling of RTO.

Table D-3: Cost Analysis for Baghouses - PM/PM_{10} Control of Press

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A,B]	2,800,000
Total Additional Equipment and Installation [A]	30,000
Contingency (10% of total capital)	283,000
Total Capital Costs	**3,113,000**
Total Annualized Capital Costs (15 years at 7%)	**341,791**
OPERATING COSTS	
Direct Operating Costs	
Operating Labor (2 hr/shift @ 3 shifts/day @ 365 days/yr @ 19.21/hr)	42,070
Maintenance Labor (1 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	21,035
Supervisor (15% of maintenance labor)	3,155
Maintenance Materials(100% of maintenance labor)	21,035
Utilities	
Electricity (325.8 kWh @ $0.042/kWh @ 8760 hr/yr)[A]	119,868
Total Annual Direct Operating Costs	207,163
Indirect Operating Costs[C]	
Overhead (60% of labor and maintenance)	27,135
Property Tax (1% total capital costs)	31,130
Insurance (1% total capital costs)	31,130
Administration (2% total capital costs)	62,260
Total Annual Indirect Operating Costs	151,655
Total Annual Operating Cost	**358,818**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**700,609**
Uncontrolled PM Emission Rate (lb/hr)	6.2
Uncontrolled PM Emission Rate (tpy)	27.2
PM Control Efficiency	99%
Pollutant Removed (tpy)	26.9
Cost per Ton of PM Removed	**26,060**

[A] KTC Panelboard Engineering, July 2004

[B] Costs were originally estimated in third quarter 1986 dollars and were scaled to first quarter 2000 dollars using the Marshall & Swift Equipment Index found in Chemical Engineering. July 2000.

[C] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112

Table D-4: Cost Analysis for TO(s) for VOC Control of a Baghouse

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A]	1,000,000
Contingency (10% of total capital)	100,000
Additional Prefilter for PM/PM_{10} control[D]	0
Miscellaneous capital items (electric substation)[D]	200,000
Contingency on miscellaneous items (10% of total capital)	20,000
Total Capital Costs	**1,320,000**
Total Annualized Capital Costs (15 years at 7.0%)	**144,929**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	10,517
Supervisor (15% of maintenance labor)	1,578
Maintenance Materials(100% of Maintenance Labor)	10,517
Annual catalyst ($250,000/ 4 years) [B]	62,500
Utilities	
Natural gas ($8.19/MMBtu@ 3.5 MMBtu/hr @ 8760 hr/yr)[A]	251,105
Electricity (200 kWh @ $0.042/kwh @ 8760 hr/yr)[A]	73,584
Total Annual Direct Operating Costs	409,802
Indirect Operating Costs[C]	
Overhead (60% of labor and maintenance)	13,568
Property Tax (1% total capital costs)	13,200
Insurance (1% total capital costs)	13,200
Administration (2% total capital costs)	26,400
Total Annual Indirect Operating Costs	66,368
Total Annual Operating Cost	**476,170**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**621,098**
Uncontrolled VOC Emission Rate (lb/hr)	8.00
Uncontrolled VOC Emission Rate (tpy)	35.0
VOC Control Efficiency	90%
Pollutant Removed (tpy)	31.5
Cost per Ton of VOC Removed	**19,695**

A Estimate, D. Lalonde. Verbally confirmed by Megtec on February 11, 2004.
B Estimate for catalyst cost and life based on typical industry catalyst performance
C William M. Vatavuk, Estimating Costs of Air Pollution Control (Chelsea, MI: Lewis Publishers, 1990), Pg 112
D Estimate. D. Lalonde

Table D-5: Cost Analysis for Low-NOx Burners on Dryers RTO(s)

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A]	100,000
Contingency (10% of total capital)	10,000
Additional Prefilter for PM/PM_{10} control	0
Miscellaneous capital items (electric substation)	0
Contingency on miscellaneous items (10% of total capital)	0
Total Capital Costs	**110,000**
Total Annualized Capital Costs (15 years at 7.0%)	**12,077**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	10,517
Supervisor (15% of maintenance labor)	1,578
Maintenance Materials(100% of Maintenance Labor)	10,517
Burner Replacements ($100,000/ 4 years) [B]	25,000
Utilities	
Natural gas ($8.19/MMBtu@ 3.5 MMBtu/hr @ 8760 hr/yr) [A]	0
Electricity (0 kWh @ $0.042/kwh @ 8760 hr/yr) [A]	0
Total Annual Direct Operating Costs	47,613
Indirect Operating Costs [C]	
Overhead (60% of labor and maintenance)	13,568
Property Tax (1% total capital costs)	1,100
Insurance (1% total capital costs)	1,100
Administration (2% total capital costs)	2,200
Total Annual Indirect Operating Costs	17,968
Total Annual Operating Cost	**65,580**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**77,658**
Uncontrolled NOx Emission Rate (lb/hr) [D]	62.8
Uncontrolled NOx Emission Rate (tpy) [D]	275.2
NOx Control Efficiency	40%
Pollutant Removed (tpy)	110.1
Cost per Ton of NOx Removed	**705**

A Estimate, P. Towles. Information from previous projects.
B Estimate for burner cost and life
C William M. Vatavuk, Estimating Costs of Air Pollution Control (Chelsea, MI: Lewis Publishers, 1990), Pg 112
D Emission Estimates are for RTO(s) only as Low-NOx technology will only be utilized on these devices

Table D-6: Cost Analysis for Low-NOx Burners on Press RCO

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A]	50,000
Contingency (10% of total capital)	5,000
Additional Prefilter for PM/PM_{10} control	0
Miscellaneous capital items (electric substation)	0
Contingency on miscellaneous items (10% of total capital)	0
Total Capital Costs	**55,000**
Total Annualized Capital Costs (15 years at 7.0%)	**6,039**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	10,517
Supervisor (15% of maintenance labor)	1,578
Maintenance Materials(100% of Maintenance Labor)	10,517
Burner Replacements ($50,000/ 4 years) [B]	12,500
Utilities	
Natural gas ($8.19/MMBtu@ 3.5 MMBtu/hr @ 8760 hr/yr) [A]	0
Electricity (0 kWh @ $0.042/kwh @ 8760 hr/yr) [A]	0
Total Annual Direct Operating Costs	35,113
Indirect Operating Costs [C]	
Overhead (60% of labor and maintenance)	13,568
Property Tax (1% total capital costs)	550
Insurance (1% total capital costs)	550
Administration (2% total capital costs)	1,100
Total Annual Indirect Operating Costs	15,768
Total Annual Operating Cost	**50,880**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**56,919**
Uncontrolled NOx Emission Rate (lb/hr)	34.0
Uncontrolled NOx Emission Rate (tpy)	148.9
NOx Control Efficiency	40%
Pollutant Removed (tpy)	59.6
Cost per Ton of NOx Removed	**956**

A Estimate, P. Towles. Information from previous projects.
B Estimate for burner cost and life
C William M. Vatavuk, Estimating Costs of Air Pollution Control (Chelsea, MI: Lewis Publishers, 1990), Pg 112

Table D-7: Cost Analysis for Baghouses - PM/PM_{10} Control of Product Handling, Finishing, Blending/Forming
Total 6 - Baghouses

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A,B]	2,300,000
Total Additional Equipment and Installation [A]	500,000
Contingency (10% of total capital)	280,000
Total Capital Costs	**3,080,000**
Total Annualized Capital Costs (15 years at 7%)	**338,167**
OPERATING COSTS	
Direct Operating Costs	
Operating Labor (2 hr/shift @ 3 shifts/day @ 365 days/yr @ 19.21/hr)	42,070
Maintenance Labor (1 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	21,035
Supervisor (15% of maintenance labor)	3,155
Maintenance Materials(100% of maintenance labor)	21,035
Utilities	
Electricity (488.7 kWh @ $0.042/kWh @ 8760 hr/yr)[A]	179,803
Total Annual Direct Operating Costs	267,098
Indirect Operating Costs[C]	
Overhead (60% of labor and maintenance)	27,135
Property Tax (1% total capital costs)	30,800
Insurance (1% total capital costs)	30,800
Administration (2% total capital costs)	61,600
Total Annual Indirect Operating Costs	150,335
Total Annual Operating Cost	**417,433**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**755,600**
Uncontrolled PM Emission Rate (lb/hr)	610
Uncontrolled PM Emission Rate (tpy)	2,671.8
PM Control Efficiency	99%
Pollutant Removed (tpy)	2,645.1
Cost per Ton of PM Removed	**286**

[A] KTC Panelboard Engineering, July 2004

[B] Costs were originally estimated in third quarter 1986 dollars and were scaled to first quarter 2000 dollars using the Marshall & Swift Equipment Index found in Chemical Engineering. July 2000.

[C] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112