

Facility Name: **Langdale Forest Products Company**

City: Valdosta

County: Lowndes

AIRS #: 04-13-185-00009

Application #: 16108

Date SIP Application Received: March 21, 2005

Date Title V Application Received: n/a

Permit No: 2421-185-0009-V-01-2

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Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public comment period and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments. Comments are listed in Table 2 below.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
2421-185-0009-V-01-0	February 8, 2000	X	
2421-185-0009-V-01-1	November 12, 2003	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
2421-185-0009-V-01-0	Initial Title V permit.
2421-185-0009-V-01-1	Significant modification without construction to revise the excursion limits for the operating parameters of Electrostatic Precipitator ESP1.

B. Regulatory Status

1. PSD/NSR/RACT

This facility is a major source with regards to the Prevention of Significant Deterioration of Air Quality (PSD) regulations. Potential emissions of PM, CO, and Volatile Organic Compounds (VOCs) are greater than 250 tons per year. [Note: Sawmills are not one of the 28 named source categories whose PSD major source threshold is 100 tons per year.]

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓	✓		
PM ₁₀	✓	✓		
SO ₂	✓			✓
VOC	✓	✓		
NO _x	✓			✓
CO	✓	✓		

TRS	✓			✓
H ₂ S	✓			✓
Individual HAP	✓	✓		
Total HAPs	✓	✓		

3. MACT Standards

The facility is a major source for HAPs. The facility is subject to 40 CFR 63, Subpart DDDD - “National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products” and Subpart DDDDD - “National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters”.

The facility is not required to comply with the requirements of 40 CFR 63, Subpart DDDD until October 1, 2007 because the facility existed before the applicability date of January 9, 2003.

The facility is not required to comply with the requirements of 40 CFR 63, Subpart DDDDD until September 13, 2007 because Boiler BLR1 existed before the applicability date of January 13, 2003.

II. Proposed Modification

A. Description of Modification

Langdale Forest Products Company currently operates six indirect-heated drying kilns and a woodwaste-fired boiler at their facility. They are proposing to install a seventh wood drying kiln (DK07), which would be direct fired. The additional kiln will increase the lumber drying capacity, reduce the steam load on the boiler, and allow lumber drying to occur during boiler maintenance. Production limits are being established for an existing drying kiln (DK03) and the new drying kiln (DK07) for PSD avoidance.

B. Emissions Change

Potential Emissions from the operation of the new drying kiln (DK07) were calculated for the criteria pollutants. Langdale Forest Products Company estimated its VOC emission rate by using an emission factor of 3.8 pounds VOC emitted per thousand board feet of lumber processed. [Note: There is no AP-42 VOC emission factor for kilns. The Air Protection Branch requires the use of a factor of at least 3.5 pounds per thousand board feet. Therefore, 3.8 pounds per thousand board feet is reasonable.] The potential VOC emission rate is 106 tpy, including emissions from combustion of wood by the direct fired burner. Calculations are shown below.

VOC Emissions from Combustion:

AP-42 Emission factor: 0.017 lb/MMBtu

Operating hours: 8,760 hours per year

$$\text{VOC Emissions} = (30 \text{ MMBtu/hr}) (0.017 \text{ lb/MMBtu}) (8760 \text{ hrs/year}) (1 \text{ ton}/2000 \text{ lb}) = 2.23 \text{ tpy}$$

Wood Evaporative VOC Emissions:
NCASI Emission factor: 3.8 lb VOC/Mbf

$$\text{VOC Emissions} = (54,660 \text{ Mbf/yr}) (3.8 \text{ lb/Mbf}) (1 \text{ ton}/2000 \text{ lb}) = 103.86 \text{ tpy}$$

$$\text{Total Potential VOC Emissions} = 2.23 + 103.86 = 106 \text{ tpy}$$

The potential emissions for methanol and formaldehyde have been calculated using the NCASI emission factors of 0.16 lb Methanol/Mbf and 0.103 lb Formaldehyde/Mbf. The calculation for methanol is shown below.

$$\text{Methanol Emissions} = (54,660 \text{ Mbf/yr}) (0.16 \text{ lb/Mbf}) (1 \text{ ton}/2000 \text{ lb}) = 4.37 \text{ tpy}$$

The potential PM emissions are based upon the emission factor of 0.2946 pounds per thousand board feet (lb/Mbf), from the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI) Technical Bulletin No. 845.

$$\text{PM Emissions} = (54,660 \text{ Mbf/yr}) (0.2946 \text{ lb/Mbf}) (1 \text{ ton}/2000 \text{ lb}) = 8.05 \text{ tpy}$$

The emissions of other the criteria air pollutants have been estimated by using AP-42 emission factors for "Wood Residue Combustion In Boilers" (1.6 issued 9/03). Emission factors of 0.22 lb/MMBtu for NO_x, 0.025 lb/MMBtu for SO₂, 0.60 lb/MMBtu for CO, and 0.039 lb/MMBtu for HAPs (Tables 1.6.1 to 1.6.3), were used to calculate potential emissions for the 30 MMBtu/hr direct fired drying kiln. A sample calculation is shown for NO_x emissions.

$$\text{NO}_x \text{ Emissions} = (30 \text{ MMBtu/hr}) (0.22 \text{ lb/MMBtu}) (8760 \text{ hr/yr}) (1 \text{ ton}/2000 \text{ lb}) = 28.91 \text{ tpy}$$

The 106 tpy increase in potential VOC emissions, from the new drying kiln (DK07), exceeds the 40 tpy major modification threshold. In order to remain below the 40 tpy threshold, the facility has accepted production limits on Drying Kilns No. 3 and No. 7 (DK03 and DK07). The facility has set production limits of 20 million board feet per year for Drying Kiln No. 3 (DK03) and 40 million board feet per year for Drying Kiln No. 7 (DK07).

In the application, the facility submitted actual VOC emissions from the previous two years, for Drying Kiln No. 3 (DK03). The annual average actual VOC emission rate from Drying Kiln No. 3 (DK03) is 77.0 tpy. With the production limit of 20 million board feet per year, potential VOC emissions are limited to 38.0 tpy. This represents a 39.0 tpy (77.0 – 38.0 = 39.0 tpy) offset that will be used to increase the potential operating rate of Drying Kiln No. 7 (DK07).

Total VOC emissions (combustion and evaporative) from Drying Kiln No. 7 (DK07) with the production limit of 40 million board feet per year is 77.95 tpy. Calculations are shown below.

VOC Emissions from Combustion:
AP-42 Emission factor: 0.017 lb/MMBtu
Operating hours: 7,665 hours per year

$$\text{VOC Emissions} = (30 \text{ MMBtu/hr}) (0.017 \text{ lb/MMBtu}) (7665 \text{ hrs/year}) (1 \text{ ton}/2000 \text{ lb}) = 1.95 \text{ tpy}$$

Wood Evaporative VOC Emissions:
 NCASI Emission factor: 3.8 lb VOC/Mbf

$$\text{VOC Emissions} = (40,000 \text{ Mbf/yr}) (3.8 \text{ lb/Mbf}) (1 \text{ ton}/2000 \text{ lb}) = 76 \text{ tpy}$$

$$\text{Total VOC Emissions} = 1.95 + 76 = 77.95 \text{ tpy}$$

Thus, the net potential VOC increase for this modification is 38.95 tpy, which is below the 40 tpy threshold.

$$\text{Net VOC Emissions} = 78.23 - 39.0 = 38.95 \text{ tpy}$$

Table 4: Emissions Change Due to Modification

Pollutant	Is the Pollutant Emitted?	Net Actual Emissions Increase (Decrease) (tpy)	Net Potential Emissions Increase (Decrease) (tpy)
PM	y	8.05	8.05
PM ₁₀	y	8.05	8.05
SO ₂	y	3.29	3.29
VOC	y	38.95	106
NO _x	y	28.91	28.91
CO	y	78.84	78.84
TRS	y	n/a	n/a
H ₂ S	y	n/a	n/a
Individual HAP (Methanol)	y	3.2	4.37
Individual HAP (Formaldehyde)	y	2.06	2.81
Total HAPs	y	5.12	5.12

C. PSD/NSR Applicability

A facility is a major source if it at least one pollutant has potential emissions exceeding the 250 ton per year (tpy) major source threshold. The facility is presently a major source with regard to the New Source Review (NSR) Prevention of Significant Deterioration of Air Quality (PSD) regulations. A change is a major modification if: (a) it is already a major source and the increase of at least one pollutant exceeds the significance level or (b) if a minor source, the increase exceeds the major source threshold. As shown in Section B, this modification (the addition of the new drying kiln) is not a major modification, according to the PSD rules, so PSD is not triggered.

III. Facility Wide Requirements

A. Emission and Operating Caps:

No changes.

B. Applicable Rules and Regulations

No changes.

C. Compliance Status

According to the application received, there are no non-compliance issues at the facility. However, the facility is subject to 40 CFR 63, Subpart DDDD-NESHAP for Plywood and Composite Wood Products, and 40 CFR 63, Subpart DDDDD-NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters. The facility did not submit the Initial Notification Reports as required by the deadlines, so they are not in full compliance.

D. Operational Flexibility

No operational flexibility requested.

E. Permit Conditions

No new Conditions.

IV. Regulated Equipment Requirements**A. Brief Process Description**

The major product of this facility is dried lumber. Logs are received by truck and moved to the processing line. Logs prepared for lumber manufacture are first debarked in one of two debarkers and then cut into smaller logs and then into lumber. The lumber is then dried in one of the drying kilns. The dried lumber is planed in the planer mill, and trimmed. A portion of this dried lumber is pressure treated with chromate copper arsenate before being transported by truck or rail for delivery to the customer.

B. Equipment List for the Process

Table 3.1.1 in the permit has been updated to reflect new permit condition numbers.

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
BLR1	Wood waste-fired boiler	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDDD (Effective September 13, 2007) GA Rule 391-3-1-.02(2)(d)	3.3.1, 3.3.2, 3.4.4, 3.4.5, 5.2.1, 5.2.3, 5.2.4, 5.2.8, 6.2.3	MCY1 MCY2 ESP1	Multicyclone No. 1 Multicyclone No. 2 Electrostatic Precipitator
DK01	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.3.1, 3.3.3, 3.4.1, 3.4.2, 6.2.3	N/A	N/A
DK02	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.3.1, 3.3.3, 3.4.1, 3.4.2, 6.2.3	N/A	N/A
DK03	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.2.1, 3.3.1, 3.3.3, 3.4.1, 3.4.2, 5.2.8, 6.2.1, 6.2.2, 6.2.3	N/A	N/A
DK04	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.3.1, 3.3.3, 3.4.1, 3.4.2, 6.2.3	N/A	N/A
DK05	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.3.1, 3.3.3, 3.4.1, 3.4.2, 6.2.3	N/A	N/A

DK06	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.3.1, 3.3.3, 3.4.1, 3.4.2, 6.2.3	N/A	N/A
DK07	Lumber Drying Kiln	40 CFR 63, Subpart A 40 CFR 63, Subpart DDDD (Effective October 1, 2007) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.2.1, 3.3.1, 3.3.3, 3.4.1, 3.4.2, 5.2.8, 6.2.1, 6.2.2, 6.2.3	N/A	N/A
PMG1	Planer Mill Group	GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(b)	3.4.1, 3.4.3, 5.2.2, 5.2.5, 5.2.6, 5.2.7	CY06 BH01	Cyclone Baghouse

* Generally applicable requirements contained in this permit may also apply to emission units listed above.

C. Equipment & Rule Applicability

Emission and Operating Caps –

The following production limits have been established for Drying Kilns No. 3 and No. 7 (DK03 and DK07):

- a. Drying Kiln No. 3 (DK03) – 20 million board feet per 12 consecutive month period,
- b. Drying Kiln No. 7 (DK07) – 40 million board feet per 12 consecutive month period.

By accepting these lumber throughput limits on the two drying kilns, the potential VOC emission increase will remain below the 40 ton per year major modification threshold for PSD.

Applicable Rules and Regulations -

New Drying Kiln No. 7 (DK07) is subject to Georgia Rule 391-3-1-.02(2)(e) "Particulate Emissions from Manufacturing Processes" based on the following equation:

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

Where:

- E = the allowable PM emission rate in pounds per hour
- P = the total dry process weight input rate in ton per hour

Drying Kiln No. 7 (DK07) is also subject to Georgia Rule for Air Quality Control 391-3-1-.02(2)(b). Georgia Rule (b) applies to all sources that are subject to at least one other state emission limitation and are not subject to any other more stringent opacity standard. Georgia Rule (b) limits visible emissions to forty (40) percent opacity.

The boiler (BLR1) is subject to 40 CFR 63, Subpart DDDDD “National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters.” This standard classifies the boiler as a large solid fuel boiler because it burns wood waste and has a heat input capacity greater than 10 MM Btu/hr and an annual capacity factor greater than 10 percent. The boiler (BLR1) is an existing boiler that was in existence prior to January 13, 2003 so the effective compliance date is September 13, 2007.

The facility is also subject to 40 CFR 63, Subpart DDDD “National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products.” The facility is not expected to be in compliance until October 1, 2007 because it existed before the applicability date of January 9, 2003.

D. Compliance Status

See Section III.C above.

E. Operational Flexibility

No operational flexibility requested.

F. Permit Conditions

New Condition 3.2.1 limits the throughput of lumber in Drying Kilns No. 3 and No. 7 to limit VOC emissions. The limits are 20 million board feet per year for Drying Kiln No. 3 (DK03), and 40 million board feet per year for Drying Kiln No. 7 (DK07).

Conditions 3.3.1 through 3.3.3 indicate that the facility is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Plywood and Composite Wood Products and Industrial, Commercial, and Institutional Boilers and Process Heaters.

Condition No. 3.4.2 limits the PM emissions from the drying kilns. The conditions have been modified to specify each individual drying kiln (DK01 through DK07).

V. Testing Requirements (with Associated Record Keeping and Reporting)

No changes were made to the Testing Section.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

Condition 5.2.8(b) was modified to include the reporting of exceedances for any 12 consecutive month period when Drying Kiln No. 3 and/or Drying Kiln No. 7 (DK03 and DK07) exceed the limits established in Condition 3.2.1

VII. Other Record Keeping and Reporting Requirements

Condition 3.2.1 limits Drying Kiln No. 3 (DK03) to 20 million board feet of lumber per year and Drying Kiln No. 7 (DK07) to 40 million board feet per year. These limits are proposed in this application to help assure that the VOC emissions increase does not exceed the VOC PSD significance level for a modification. New Condition 6.2.1 and Condition 6.2.2 require monitoring of production to confirm compliance with Condition No. 3.2.1. These conditions require the facility to maintain monthly records of the lumber processed in Drying Kilns No. 3 and No. 7, and to submit semiannual reports of that production. New Condition 6.2.3 requires the facility to submit Initial Notification Reports for these rules within one month of the issuance of this permit amendment. The notifications are required to comply with 40 CFR 63, Subparts DDDD and DDDDD.

Addendum to Narrative

The 30-day public review started on September 23, 2005 and ended on October 23, 2005. Langdale Forest Products Co. (LFPC) submitted written comments to the Division on September 9, 2005. No comments were received from the public or EPA.

The comments are reproduced below with the Division's response.

Comment:

LFPC intends to install a seventh drying kiln at the facility and requests production limitations on an existing kiln (DK03) and the new kiln (DK07) to avoid exceeding the Prevention of Significant Deterioration major modification threshold for VOC emissions.

For various reasons, construction on DK07 is not expected to begin until 2006. Since production limitations on DK03 are not necessary without installation of DK07, we request that qualifiers be added to several of the new conditions to defer the production limitations on DK03 until the installation of DK07 is complete. In particular:

- We suggest that the phrase "Upon installation of DK07" be added to the start of Permit Conditions 3.2.1, 6.2.1 and 6.2.2.
- We suggest that the phrase "after installation of DK07" be added to Permit Condition 5.2.8b.i after "Any twelve month period."

Division Response:

The Division agrees with the addition of the qualifiers to these permit conditions. The permit will be changed accordingly.

Condition 3.2.1 has been revised. It read:

The Permittee shall not dry more than 20 million board feet of lumber per any twelve consecutive months in Drying Kiln No. 3 (DK03), and 40 million board feet of lumber per any twelve consecutive months in Drying Kiln No. 7 (DK07).

[40 CFR 52.21 - PSD Avoidance]

It now reads:

Upon installation of Drying Kiln No. 7 (DK07), the Permittee shall not dry more than 20 million board feet of lumber per any twelve consecutive months in Drying Kiln No. 3 (DK03), and 40 million board feet of lumber per any twelve consecutive months in Drying Kiln No. 7 (DK07).

[40 CFR 52.21 - PSD Avoidance]

Condition 6.2.1 has been revised. It read:

The Permittee shall maintain monthly records of the amount of lumber processed through Drying Kilns No. 3 and No. 7 (DK03 and DK07), to confirm compliance with the production limits in Condition 3.2.1. The records shall be retained in a permanent form suitable and available for inspection or

submittal to the Division upon request. These records shall be retained for at least five years following the last date of record.

[391-3-1-.02(6)(b)1(i) and 40 CFR 70.6(a)(3)(ii)(B)]

It now reads:

Upon installation of Drying Kiln No. 7 (DK07), the Permittee shall maintain monthly records of the amount of lumber processed through Drying Kilns No. 3 and No. 7 (DK03 and DK07), to confirm compliance with the production limits in Condition 3.2.1. The records shall be retained in a permanent form suitable and available for inspection or submittal to the Division upon request. These records shall be retained for at least five years following the last date of record.

[391-3-1-.02(6)(b)1(i) and 40 CFR 70.6(a)(3)(ii)(B)]

Condition 6.2.2 has been revised. It read:

The Permittee shall submit a written report containing the 12-consecutive month totals of lumber processed through Drying Kilns No. 3 and No. 7 (DK03 and DK07), to confirm compliance with the production limits in Condition 3.2.1 for each semiannual period ending June 30 and December 31 of each year. The semiannual reports shall be postmarked by the 30th day following the end of the semiannual period (July 30 and January 30, respectively). The report shall consist of six 12-consecutive month totals (one 12-consecutive month total for each month in the reporting period). A 12-consecutive month total shall be the total for a month in the reporting period plus the totals for the previous eleven consecutive months.

[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

It now reads:

Upon installation of Drying Kiln No. 7 (DK07), the Permittee shall submit a written report containing the 12-consecutive month totals of lumber processed through Drying Kilns No. 3 and No. 7 (DK03 and DK07), to confirm compliance with the production limits in Condition 3.2.1 for each semiannual period ending June 30 and December 31 of each year. The semiannual reports shall be postmarked by the 30th day following the end of the semiannual period (July 30 and January 30, respectively). The report shall consist of six 12-consecutive month totals (one 12-consecutive month total for each month in the reporting period). A 12-consecutive month total shall be the total for a month in the reporting period plus the totals for the previous eleven consecutive months.

[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

Condition 5.2.8b.i has been revised. It read:

- i. Any twelve consecutive month period during which more than 20 million board feet of lumber is dried in Drying Kiln No. 3 (DK03), and/or more than 40 million board feet of lumber is dried in Drying Kiln No. 7 (DK07).

It now reads:

- i. Any twelve consecutive month period, after installation of Drying Kiln No. 7 (DK07), during which more than 20 million board feet of lumber is dried in Drying Kiln No. 3 (DK03), and/or more than 40 million board feet of lumber is dried in Drying Kiln No. 7 (DK07).