State of Idaho
Department of Environmental Quality
Air Quality Division

AIR QUALITY PERMIT
STATEMENT OF BASIS

Permit to Construct No. P-2007.0189

Final

JD Lumber, Inc.

Priest River, Idaho

Facility ID No. 017-00030

September 28, 2007

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The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

Table of Contents

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE 3

1. FACILITY DESCRIPTION 4

2. APPLICATION SCOPE 4

3. TECHNICAL ANALYSIS 4

4. REGULATORY REVIEW 4

5. PERMIT FEES 8

6. PUBLIC COMMENT 8

APPENDIX – AIRS INFORMATION 9

Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
CAM	Compliance Assurance Monitoring (40 CFR 64)
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
HAP	Hazardous Air Pollutant
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
JDL	JD Lumber, Inc.
lb	pound
MACT	Maximum Achievable Control Technology
MMBF	million board feet
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NSPS	New Source Performance Standards
OSU	Oregon State University
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho
SIP	State Implementation Plan
SM	Synthetic Minor
SM80	synthetic minor facility with emissions of a regulated pollutant above 80% of the major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per year
VOC	volatile organic compound

1. FACILITY DESCRIPTION

JD Lumber (JDL) is a dimensional lumber sawmill. Logs are debarked, sawn to rough dimensions, dried in kilns, and planed to final dimensions. The kilns are steam heated by a waste wood boiler which utilizes bark, sawdust, hogged wood, and planer shavings as fuel.

2. APPLICATION SCOPE

JDL requested to take enforceable limits for hazardous air pollutant (HAP) below the respective major source thresholds in order to become an area source to avoid being subject to Maximum Available Control Technology (MACT) standards for "Plywood and Composite Wood Products", and "Industrial, Commercial, and Institutional Boilers and Process Heaters".

2.1 Application Chronology

September 6, 2007	DEQ received the application
September 21, 2007	DEQ determined the application complete

3. TECHNICAL ANALYSIS

This permitting action doesn't change the emission units and the respective control devices at the facility.

3.2 Emissions Inventory

This permitting action doesn't change the existing emissions inventory. This permitting action, in addition, establishes enforceable limits for total facility-wide HAP emissions not to exceed 24 tons per year (T/yr) and any facility-wide individual HAP emissions not to exceed 9 T/yr.

3.3 Ambient Air Quality Impact Analysis

This permitting action doesn't require ambient air quality impact analysis because there is no emission increase.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Bonner County which is designated as attainment or unclassifiable for PM_{10}, $PM_{2.5}$, CO, NO_2, SO_X, and Ozone.

4.2 Revisions of Permit to Construct (IDAPA 58.01.01.209.04)

JDL requested a permit revision to the PTC No. P-040123 issued August 12, 2005.

4.3 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

JDL is a synthetic minor (SM) source. It is not subject to Title V program.

4.4 PSD Classification (40 CFR 52.21)

JDL is classified as natural minor for PSD applicability.

4.5 NSPS Applicability (40 CFR 60)

The boiler at JDL is not subject to New Source Performance Standard (NSPS) per the information in the statement of basis for PTC No. P-040123 issued August 12, 2005.

4.6 NESHAP Applicability (40 CFR 61)

JDL requested to take enforceable limits for hazardous air pollutant (HAP) emissions below the respective major source thresholds in order to become an area source to avoid being subject to MACT standards. JDL is not subject to any NESHAP.

4.7 MACT Applicability (40 CFR 63)

JDL requested to take enforceable limits for hazardous air pollutant (HAP) emissions below the respective major source thresholds in order to become an area source to avoid being subject to MACT standards. JDL is not subject to any MACT.

4.8 CAM Applicability (40 CFR 64)

JDL is not a major source for Title V program. Therefore, JDL is not subject CAM requirements.

4.9 Permit Conditions Review

This section describes only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action. All other permit conditions remain unchanged.

<u>New Permit Condition 2.3</u>

Permit Condition 2.3 limits total facility-wide HAP emissions and any facility-wide individual HAP emissions to below the respective major source thresholds. By taking these limits, the facility becomes area source and is not subject to the "plywood" MACT and the "boiler" MACT.

<u>New Permit Condition 2.4</u>

Permit Condition 2.4 establishes the monitoring and recordkeeping requirements to ensure that the facility complies with Permit Condition 2.3. The emissions can be calculated using the following method.

1) For HAP_j from the kilns

$$\text{Monthly HAPj from the kilns} = \sum_{i=1}^{n} (X_i \times Y_i)(ton/2000lbs)$$

Where:

Monthly HAP_j from the kilns = emissions from the kilns for type j HAP

j	=	an individual HAP
n	=	Number of types of wood dried
X_i	=	Throughput, in MMBF, of lumber of type i dried in all kilns of the month(MMBF/month)
Y_i	=	emission factor of the HAP for lumber of type i

2) For total HAPs from the kilns

$$\text{Monthly total HAPs from the kilns} = \sum_{i=1}^{n} (X_i \times Y_i)(ton/2000lbs)$$

Where:

n	=	Number of types of wood dried
X_i	=	Throughput, in MMBF, of lumber of type i dried in all kilns of the month (MMBF/month)
Y_i	=	emission factor of total HAP for lumber of type i

3) For facility-wide individual HAP_j emissions:

- Monthly facility-wide individual HAP_j emissions (T/yr) = monthly HAP_j from the kilns + monthly HAP_j from the boilers + monthly HAP_j from other emissions units in the facility

  Where:

  j = an individual HAP of type j

- Annual facility-wide individual HAP_j emissions (T/yr) = $\sum$ previous 11 months, monthly facility-wide individual HAP_j emissions in T/yr + this month individual facility-wide HAP_j emissions in T/yr

4) For total facility-wide HAP emissions:

- Monthly total facility-wide HAP emissions (T/yr) = monthly total HAPs from the kilns + monthly total HAPs from the boilers + monthly total HAPs from other emissions units in the facility

- Annual total facility-wide HAP emissions (T/yr) = $\sum$ previous 11 months, monthly total facility-wide HAP emissions in T/yr + this month total facility-wide HAP emissions in T/yr

Table 6.1 Kiln Emissions Factors Based on OSU's Data

Species	Max. Kiln Temp. °F	Total HAP (Yi) lb/MMBF	Methanol (Yi) lb/MMBF	Formaldehyde (Yi) lb/MMBF	Acetaldehyde (Yi) lb/MMBF	Propionaldehyde (Yi) lb/MMBF	Acrolein (Yi) lb/MMBF
Hemlock	< 200 ° F	199	82	1.24	113	1	1.6
Hemlock	> 200 ° F	305	186	3.8	113 (1)	1 (1)	1.6 (1)
Douglas Fir	< 200 ° F	97	38	1	57	0.55	0.65
Douglas Fir	> 200 ° F	116	57	1 (1)	57 (1)	0.55 (1)	0.65 (1)
White Fir	< 200 ° F	240	122	2.8	113 (2)	1 (1)(2)	1.6 (1)(2)
White Fir	> 200 ° F	301	183	2.8 (1)	113 (1)(2)	1 (1)(2)	1.6 (1)(2)
Ponderosa Pine (3)	< 200 ° F	184	65	2.9	113 (1)(2)	1 (1)(2)	1.6 (1)(2)
Lodgepole Pine (3)	< 200 ° F	73.6	55	4	12	1 (1)(2)	1.6 (1)(2)
Lodgepole Pine (3)	> 200 ° F	78.6	60	4 (6)	12 (6)	1 (1)(2)	1.6 (1)(2)
Slash Pine (4)	> 200 ° F	215	164	4 (5)	44.7	1 (1)(2)	1.6 (1)(2)

(1) Assumes emissions of this HAP not temperature dependent. There is insufficient data to know for sure.
(2) Assumes emissions are the same as hemlock
(3) Pine is not normally dried at temperatures > 200° F
(4) No data for Slash Pine dried < 200° F
(5) Assume to be the same as for Lodgepole Pine
(6) Assumes emissions the same as for Lodgepole Pine dried at < 200 ° F

New Permit Condition 2.4

Permit Condition 2.4 also allows for DEQ-approved alternative emission factors. DEQ may approve source specific emission factors obtained from source test conducted for the lumber drying kilns at the facility.

Existing Permit Condition 3.3.2

"Carbon Monoxide (CO) and PM_{10} emissions from the boiler stack shall not exceed any corresponding emissions rate limits listed in Table 3.2."

Revised Permit Condition 3.3.2

To address the comment received during peer review process, Permit Condition 3.3.2 is revised to read: "The emissions of Carbon Monoxide (CO) and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}) from the boiler stack shall not exceed any corresponding emissions rate limits listed in Table 3.2".

Existing Permit Condition 4.4

Permit Condition 4.4, Throughput Limits (for lumber drying kilns), is the operating requirement to ensure that the facility stays as an SM source for criteria pollutants. Per the information in the statement of basis for PTC No. P-040123, issued August 12, 2005, the kilns were the limiting process (or bottleneck) for the facility; and the emissions estimation of the timber handling processes (non-kiln and non-boiler activities) was based on kilns' throughput rather than 8,760 hr/yr. Permit Condition 4.4 is a stay alone monitoring requirement. It is not associated with HAP monitoring and compliance requirements specified in Permit Condition 2.4.

Existing Permit Condition 4.5

"The permittee shall raise the existing kiln vent exhaust stacks 15 feet from their existing height."

Revised Permit Condition 4.5

To address the comment received during peer review process, Permit Condition 4.5 is clarified and revised based on the information in the statement of basis for PTC No. P-040123 issued August 12, 2005. The revised Permit Condition 4.5 reads: "The permittee shall raise the existing kiln vent exhaust stacks 15 feet from their existing height by August 12, 2005. The lower stack shall be raised to 39 feet and the taller one shall be raised to 47 feet".

General Provision

The existing General Provision is replaced with the one in the current PTC template.

5. PERMIT FEES

JDL submitted a $1,000 PTC application fee on September 19, 2007 in accordance with IDAPA 58.01.01.224. In accordance with IDAPA 58.01.01.225, the PTC processing fee is $500 for using general permit conditions that limit HAP emissions from a facility with lumber drying kilns. DEQ received the $500 on September 19, 2007.

6. PUBLIC COMMENT

In accordance with IDAPA 58.01.01.209.04, the public comment is not required because this permit revision doesn't result in an emission increase.

APPENDIX – AIRS INFORMATION

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: JD Lumber, Inc.
Facility Location: Priest River
AIRS Number: 017-00030

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	B						B	U
NO_x	B						B	U
CO	B						B	U
PM_{10}	SM					Y	SM	U
PT (Particulate)	SM					---	--	
VOC	B						B	U
THAP (Total HAPs), or each individual HAP	SM					Y	SM	
			APPLICABLE SUBPART					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).