



DEPARTMENT ORDER

**Maibec Lumber Inc.  
Aroostook County  
Masardis, Maine  
A-165-77-3-A**

**Departmental  
Findings of Fact and Order  
New Source Review  
NSR #3**

**FINDINGS OF FACT**

After review of the air emission license application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (the Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

FACILITY	Maibec Lumber Inc.
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	321113
NATURE OF BUSINESS	Lumber Manufacturer
FACILITY LOCATION	Rt 11, Masardis, Maine

**B. NSR License Description**

Maibec Lumber Inc. (Maibec) has requested a New Source Review (NSR) license in order to construct and operate a new lumber kiln (Kiln #7) and to address the operation of a fire pump that was previously considered an insignificant activity.

**C. Emission Equipment**

The following equipment is addressed in this NSR license:

**Boilers**

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (ton/hr)	Fuel Type	Manf. Date	Install. Date	Stack #
Boiler #1	27.0	3.0	wood	1979	1979	1
Boiler #3	12.2	1.4	wood	1980	1993	2

Traditionally, Boiler #1 has been used to provide all heat to the kilns, and Boiler #3 has been used only in the winter to provide building heat and to heat the hot pond. With the

addition of Kiln #7, Boiler #3 may be utilized more to heat the kilns. Therefore, both boilers have been conservatively considered units affected by this modification.

#### Generators/Engines

Equipment	Max. Heat Input Capacity	Output	Fuel Type, % sulfur	Manf. Date	Install. Date
Fire Pump #1	1.8 MMBtu/hr	255 Hp	distillate fuel, 0.0015%	1974	1975

#### Process Equipment

Equipment	Maximum Production Rate	Pollution Control Equipment
Kiln #7	16.9 MMBF/year	none

#### D. Definitions

*Distillate Fuel.* For the purposes of this license, *distillate fuel* means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

#### E. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application for Maibec does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The modification of a major source is considered a major or minor modification based on whether or not expected emissions increases exceed the "Significant Emission Increase" levels as given in *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. For a major stationary source, the expected emissions increase from each modified or affected unit may be calculated as equal to the difference between the post-modification projected actual emissions and the baseline actual emissions for each NSR regulated pollutant.

1. Baseline Actual Emissions

Baseline actual emissions are equal to the average annual emissions from any consecutive 24-month period within the ten years prior to submittal of a complete license application. The selected 24-month baseline period can differ on a pollutant-by-pollutant basis. Maibec has proposed using calendar years 2015/2016 as the 24-month baseline period from which to determine baseline actual emissions for all pollutants for emission units affected as part of this project. The results of this baseline analysis are presented in the table below.

**Baseline Actual Emissions (2015-2016 Average)**

Equipment	PM (ton/yr)	PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)	SO <sub>2</sub> (ton/yr)	NO <sub>x</sub> (ton/yr)	CO (ton/yr)	VOC (ton/yr)
Boiler #1	26.82	26.82	26.82	0.74	14.90	53.63	1.52
Boiler #3	3.45	3.45	3.45	0.10	1.92	6.90	0.20
<b>Total</b>	<b>30.27</b>	<b>30.27</b>	<b>30.27</b>	<b>0.84</b>	<b>16.82</b>	<b>60.54</b>	<b>1.72</b>

2. Projected Actual Emissions

Projected actual emissions are the maximum actual annual emissions anticipated to occur in the ten-year period following completion of the proposed project.

New emission units must use potential-to-emit emissions for projected actual emissions.

Affected equipment includes upstream activities such as the boilers. Emissions increases from the boilers have been conservatively estimated by assuming there will be an increased steam load to the boilers equivalent to Kiln #7 being operated at maximum capacity for 8,760 hr/year.

The results of this projected actual emissions analysis is presented in the table below.

**Projected Actual Emissions**

Equipment	PM (ton/yr)	PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)	SO <sub>2</sub> (ton/yr)	NO <sub>x</sub> (ton/yr)	CO (ton/yr)	VOC (ton/yr)
Boilers #1 & #3 (combined)	35.23	35.23	35.23	0.97	19.58	85.51	2.11
Kiln #7	—	—	—	—	—	—	10.84
Fire Pump #1	0.03	0.03	0.03	—	0.39	0.08	0.03
<b>Total</b>	<b>35.26</b>	<b>35.26</b>	<b>35.26</b>	<b>0.97</b>	<b>19.97</b>	<b>85.59</b>	<b>12.98</b>

### 3. Emissions Increases

The differences between the baseline actual emissions and projected actual emissions are compared to the significant emissions increase levels.

<b>Pollutant</b>	<b>Baseline Actual Emissions 2015/2016 (ton/year)</b>	<b>Projected Actual Emissions (ton/year)</b>	<b>Emissions Increase (ton/year)</b>	<b>Significant Emissions Increase Levels (ton/year)</b>
PM	30.27	35.26	4.99	25
PM <sub>10</sub>	30.27	35.26	4.99	15
PM <sub>2.5</sub>	30.27	35.26	4.99	10
SO <sub>2</sub>	0.84	0.97	0.13	40
NO <sub>x</sub>	16.82	19.97	3.15	40
CO	60.54	85.59	25.05	100
VOC	1.72	12.98	11.27	40

### 4. Classification

Since emissions increases do not exceed significant emissions increase levels, this NSR license is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115.

An application to incorporate the requirements of this NSR license into the Part 70 air emission license shall be submitted no later than 12 months from commencement of operation of Kiln #7.

## II. BEST PRACTICAL TREATMENT (BPT)

### A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Kiln #7

Maibec currently utilizes six kilns for the drying of lumber. They have proposed the installation of a new kiln (Kiln #7). Kiln #7 will have a maximum throughput capacity of 16.9 MMBF/year and will dry predominantly red spruce.

The only criteria pollutant emitted from Kiln #7 will be VOCs which are driven out of the wood during the drying process. Emissions from Kiln #7 were calculated based on an emission factor developed by the University of Maine of 1.283 pounds of VOC for every 1,000 board feet (MBF) dried. Add-on controls for emissions of VOC from Kiln #7 are not economically feasible because of the small pollutant concentration, the high moisture content, and the high volume of the vent exhaust gases.

Therefore, BACT VOC emissions from Kiln #7 shall be a throughput limit of 16.9 MMBF/year based on a 12-monthly rolling total. Compliance shall be demonstrated by monthly records of the board feet of lumber dried in Kiln #7.

C. Facility-Wide Kiln Throughput

Maibec is subject to a kiln throughput limit of 152 MMBF/year. There will be no increase in this limit due to the installation of Kiln #7. The facility-wide kiln throughput limit is necessary to demonstrate that Maibec maintains its classification as an area source of HAP. (See air emission license A-165-70-C-A issued January 10, 2007.)

D. Fire Pump #1

Maibec operates one emergency fire pump (Fire Pump #1) with an engine rated at approximately 1.8 MMBtu/hr firing distillate fuel. Fire Pump #1 was manufactured in 1974 and installed in 1975. This equipment was previously considered an insignificant activity. This classification has changed due to changes in Department rules. Therefore, Maibec has requested Fire Pump #1 be added to their air emission license.

1. BACT Findings

The BACT emission limits for Fire Pump #1 are based on the following:

PM/PM <sub>10</sub>	- 0.31 lb/MMBtu from AP-42 dated 10/96
SO <sub>2</sub>	- combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO <sub>x</sub>	- 4.41 lb/MMBtu from AP-42 dated 10/96
CO	- 0.95 lb/MMBtu from AP-42 dated 10/96
VOC	- 0.35 lb/MMBtu from AP-42 dated 10/96
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Fire Pump #1 are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Fire Pump #1	0.55	0.55	–	7.76	1.67	0.62

Visible emissions from Fire Pump #1 shall not exceed 20% opacity on a six-minute block average basis.

2. National Emission Standards for Hazardous Air Pollutants (NESHAP):  
40 C.F.R. Part 63, Subpart ZZZZ

*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ is applicable to Fire Pump #1. The unit is considered an existing, emergency stationary reciprocating internal combustion engine at an area HAP source and is not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt these units from the federal requirements. [40 C.F.R. § 63.6585]

A summary of the currently applicable federal 40 C.F.R. Part 63, Subpart ZZZZ requirements is listed below. At this time, the Department has not taken delegation of this federal rule promulgated by EPA; however, Maibec is still subject to the requirements.

- a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 63, Subpart ZZZZ, a stationary reciprocating internal combustion engine (RICE) is considered an **emergency** stationary RICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 63, Subpart ZZZZ, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

- (1) Emergency Situation Operation (On-Site)

**There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation.** Examples of use of an emergency engine during emergency situations include the use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

- (i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE more than 100 hours per calendar year.
- (ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

Fire Pump #1 shall be limited to the usage outlined in 40 C.F.R. § 63.6640(f) and therefore may be classified as an existing emergency stationary RICE as defined in 40 C.F.R. Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in 40 C.F.R. § 63.6640(f) may cause this engine to not be considered an emergency engine and therefore subject to all applicable requirements for non-emergency engines.

b. 40 C.F.R. Part 63, Subpart ZZZZ Requirements

(1) Operation and Maintenance Requirements  
[40 C.F.R. § 63.6603(a) and Table 2(d)]

Operating Limitations	
Compression ignition (distillate fuel) units:	<ul style="list-style-type: none"><li>- Change oil and filter every 500 hours of operation or annually, whichever comes first;</li><li>- Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and</li><li>- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.</li></ul>

The engine shall be operated and maintained according to the manufacturer's emission-related written instructions, or Maibec shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

[40 C.F.R. § 63.6625(e)]

(2) Optional Oil Analysis Program

Maibec has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, Maibec must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 C.F.R. § 63.6625(i)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on the engine.

[40 C.F.R. § 63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements

During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

[40 C.F.R. § 63.6625(h) and 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

(5) Annual Time Limit for Maintenance and Testing

As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations.

[40 C.F.R. § 63.6640(f)]

(6) Recordkeeping

Maibec shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 63.6655(f)]

E. Incorporation Into the Part 70 Air Emission License

The requirements in this 06-096 C.M.R. ch. 115 New Source Review license shall apply to the facility upon issuance. Per *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a modification at the facility that has undergone NSR



requirements or been processed through 06-096 C.M.R. ch. 115, the source must apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5.

F. Annual Emissions

1. Emission Totals

Maibec shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on the following:

- Operation of Boilers #1 and #3 at 100% for 8760 hr/yr firing 50% moisture wood;
- Operation of Fire Pump #1 for 100 hr/yr;
- Maximum throughput in the kilns of 152 MMBF/yr.

**Total Licensed Annual Emissions for the Facility**  
**Tons/year**  
 (used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Boiler #1	35.5	35.5	1.0	19.7	178.7	2.9
Boiler #3	16.0	16.0	0.5	8.9	80.8	1.3
Fire Pump #1	–	–	–	0.4	0.1	–
Kilns	–	–	–	–	–	97.5
<b>Total TPY</b>	<b>51.5</b>	<b>51.5</b>	<b>1.5</b>	<b>29.0</b>	<b>259.6</b>	<b>101.7</b>

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through ‘Tailoring’ revisions made to EPA’s *Approval and Promulgation of Implementation Plans*, 40 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100 are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO<sub>2</sub>e).

The quantity of CO<sub>2</sub>e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting*, 40 C.F.R. Part 98,; and
- global warming potentials contained in 40 C.F.R. Part 98.

No additional licensing actions to address GHG emissions are required at this time.

### III. AMBIENT AIR QUALITY ANALYSIS

Maibec previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-165-70-A-I issued 3/15/01). An additional ambient air quality analysis is not required for this NSR license.

### ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants New Source Review License A-165-77-3-A pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific conditions below.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

**SPECIFIC CONDITIONS**

(1) **Kiln #7**

Maibec is licensed to install and operate Kiln #7. Kiln #7 shall not exceed a throughput of 16.9 MMBF of lumber per year on a 12-month rolling total basis. Compliance shall be demonstrated by monthly records of the board feet of lumber dried in Kiln #7. Lumber processed in Kiln #7 shall be included in Maibec's facility-wide throughput limit of 152 MMBF per year. [06-096 C.M.R. ch. 115, BACT]

(2) **Fire Pump #1**

A. Fire Pump #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BACT]

B. The fuel sulfur content for Fire Pump #1 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT/BACT]:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Fire Pump #1	0.55	0.55	–	7.76	1.67	0.62

D. Visible emissions from Fire Pump #1 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. Fire Pump #1 shall meet the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, including the following:

1. Maibec shall meet the following operational limitations for Fire Pump #1:

- a. Change the oil and filter annually,
- b. Inspect the air cleaner annually and replace as necessary, and
- c. Inspect the hoses and belts annually and replace as necessary.

Records shall be maintained documenting compliance with the operational limitations.

[40 C.F.R. § 63.6603(a) and Table 2(d)]

2. Oil Analysis Program Option

Maibec has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, Maibec must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. [40 C.F.R. § 63.6625(i)]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

a. As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations. These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written logs) of all engine operating hours. [40 C.F.R. § 63.6640(f)]

b. Maibec shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. §§ 63.6655(e) and (f)]

5. Operation and Maintenance

The engine shall be operated and maintained according to the manufacturer's emission-related written instructions, or Maibec shall develop a maintenance plan which provides to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup, the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 C.F.R. § 63.6625(h) & 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

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NSR #3

- (3) Maibec shall submit an application to incorporate this NSR license into the facility's Part 70 air emission license no later than 12 months from commencement of operation of Kiln #7. [06-096 C.M.R. ch. 140 § 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 10 DAY OF July, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Mark Allen Robert Cone for  
PAUL MERCER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 6/12/17

Date of application acceptance: 6/13/17

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

