STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

L. L. Bean, Inc. **Desert Road Campus** **Cumberland County** **Freeport, Maine** **A-764-71-J-A**	**Departmental** **Findings of Fact and Order** **Air Emission License** **Amendment #2**

FINDINGS OF FACT

After review of the air emission license amendment 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 (Department) finds the following facts:

I. REGISTRATION

A. Introduction

L. L. Bean, Inc. (LLB) was issued Air Emission License A-764-71-H-R/A on March 23, 2017, for the operation of emission sources associated with their Desert Road Campus facility. The license was subsequently amended on February 8, 2019 (A-764-71-I-M).

LLB has requested an amendment to their license in order to replace one boiler and one generator.

The equipment addressed in this license amendment is located at Desert Road in Freeport, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Boilers

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Date of Manuf.	Date of Install.	Stack #
OFC/ARU #13	2.4	2,400 scf/hr	natural gas, neg	2014	2014	OFC/ARU #13
*OFC/S-ARU #1**	*2.4*	*2,400 scf/hr*	*natural gas, neg*	*1993*	*1993*	*OFC/S-ARU #1*

* Equipment is removed from the facility.

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.
OFC-CAT #1	2.0	200	distillate fuel, 0.0015%	14.9	2021	2021
*OFC-CAT **	*4.2*	*400*	*distillate fuel, 0.0015%*	*30.0*	*2001*	*2001*

* Equipment is removed from the facility.

C. Definitions

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.

Records or *Logs* mean either hardcopy or electronic records.

D. Application Classification

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

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission" levels as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Current License (tpy)	Future License (tpy)	Net Change (tpy)	Significant Emission Levels
PM	5.7	5.7	0.0	100
PM_{10}	5.7	5.7	0.0	100
SO_2	0.1	0.6	0.5	100
NO_x	21.0	20.6	-0.4	100
CO	11.1	11.4	0.3	100
VOC	1.4	1.6	0.2	50 *

*LLB is located in an area of the state included in the Ozone Transport Region. Therefore, the significant emission level for VOC is 50 tpy.

This modification is determined to be a minor modification and has been processed as such.

E. Facility Classification

With the annual fuel limit and the operating hours restriction on the emergency generators, the facility is licensed as follows:

- As a synthetic minor source of air emissions for NO_x, because LLB is subject to license restrictions that keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

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.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 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. Boiler OFC/ARU #13

LLB operates boiler OFC/ARU #13 for heat, and it replaces the previously licensed boiler OFC/S-ARU #1. The new boiler is rated at 2.4 MMBtu/hr and fires natural gas. The boiler was installed in 2014 and exhausts through its own stack.

1. BACT Findings

Following is a BACT analysis for control of emissions from boiler OFC/ARU #13.

a. Particulate Matter (PM, PM_{10})
LLB has proposed to burn only low-ash content fuel (natural gas) in the boiler and to ensure proper combustion by following maintenance practices recommended by

the manufacturer. Additional add-on pollution controls are not economically feasible.

BACT for PM/PM_{10} emissions from OFC/ARU #13 is the use of natural gas, proper operation and maintenance, and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)
LLB has proposed to fire only natural gas. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible.

BACT for SO_2 emissions from OFC/ARU #13 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)
LLB considered several strategies for the control of NO_x emissions including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, and flue gas recirculation (FGR).

Both SCR and SNCR are technically feasible control technologies for minimizing NO_x emissions. However, they have a negative environmental impact of emissions of unreacted ammonia. In addition, due to the initial capital costs and the annual operating costs, these systems are typically only considered cost effective for units larger than OFC/ARU #13.

Water/steam injection and FGR have similar NO_x reduction efficiencies. However, water/steam injection results in reduced boiler efficiency of approximately 5%.

BACT for NO_x emissions from OFC/ARU #13 is firing natural gas, proper operation and maintenance, and the emission limits listed in the tables below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)
LLB considered several control strategies for the control of CO and VOC including oxidation catalysts and thermal oxidizers.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the boiler in question. These controls were determined to be economically infeasible.

BACT for CO and VOC emissions from OFC/ARU #13 is firing natural gas, proper operation and maintenance, and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for boiler OFC/ARU #13 were based on the following:

Natural Gas

PM/PM_{10}	–	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Boiler OFC/ARU #13 are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
OFC/ARU #13	0.12	0.12	0.01	0.24	0.21	0.02

2. Visible Emissions

Visible emissions from the boiler shall not exceed 10% opacity on a six-minute block average basis.

3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to its size, boiler OFC/ARU #13 is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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

OFC/ARU #13 is not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ because the unit is considered a gas-fired boiler. [40 C.F.R. § 63.11237]

C. Generator OFC-CAT #1

LLB has replaced the OFC-CAT emergency generator with a new unit designated OFC-CAT #1 which has an engine rated at 2.0 MMBtu/hr. OFC-CAT #1 fires distillate fuel and was manufactured in 2021.

1. BACT Findings

The BACT emission limits for the OFC-CAT #1 are based on the following:

PM/PM_{10}	- 0.12 lb/MMBtu from 06-096 C.M.R. ch. 115, BACT
SO_2	- combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO_x	- 4.41 lb/MMBtu from AP-42 Table 3.3-1, dated 10/96
CO	- 0.95 lb/MMBtu from AP-42 Table 3.3-1, dated 10/96
VOC	- 0.35 lb/MMBtu from AP-42 Table 3.3-1, dated 10/96
Opacity	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for OFC-CAT #1 are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
OFC-CAT #1	0.24	0.24	0.01	8.82	1.90	0.70

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

BACT for OFC-CAT #1 includes recordkeeping of all maintenance conducted on each engine.

2. Chapter 169

OFC-CAT #1 was installed prior to the effective date of *Stationary Generators*, 06-096 C.M.R. ch. 169 and is therefore not subject from this rule pursuant to Section (1).

However, because the engine is in compliance with requirements of 40 C.F.R. Part 60, Subpart IIII, it is also in compliance with the requirements of Ch. 169

3. New Source Performance Standards

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to the emergency engine listed above since the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart IIII, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (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 60, Subpart IIII, 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 following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(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 ICE 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.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. §§ 60.4211(f) and 60.4219]

b. 40 C.F.R. Part 60, Subpart IIII Requirements

(1) Manufacturer Certification Requirement
The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4205(b)]

(2) Ultra-Low Sulfur Fuel Requirement
The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

(3) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

(4) Operation and Maintenance Requirements
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. LLB may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(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 (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 60.4211(f)]

(6) Initial Notification Requirement
No initial notification is required under 40 C.F.R. Part 60, Subpart IIII for emergency engines. [40 C.F.R. § 60.4214(b)]

(7) Recordkeeping

LLB shall keep records that include 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. § 60.4214(b)]

D. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- Operating all emergency engines for 100 hrs/yr each; and
- Operating the boilers for 8,760 hr/yr.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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

	PM	PM_{10}	SO_2	NO_x	CO	VOC
Boilers	5.35	5.35	0.49	10.65	9.25	0.75
Natural Gas Generators	0.01	0.01	0.01	0.21	0.03	0.01
Distillate Generators	0.03	0.03	0.01	0.64	0.14	0.06
Seasonal Generators	0.25	0.25	0.01	9.05	1.95	0.72
Total TPY	**5.7**	**5.7**	**0.6**	**20.6**	**11.4**	**1.6**

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM_{10}	25
SO_2	50
NO_x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license amendment.

This determination is based on information provided by the applicant regarding the expected construction and operation of the proposed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require LLB to submit additional information and may require an ambient air quality impact analysis at that time.

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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-764-71-J-A subject to the conditions found in Air Emission License A-764-71-H-R/A, in amendment A-764-71-I-M, and the following conditions.

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

SPECIFIC CONDITIONS

The following shall replace Specific Condition 16(C) of Air Emission License Amendment A-764-71-I-M.

(16) **Boilers**

C. Emissions shall not exceed the following
[06-096 C.M.R. ch. 115, BACT for OCF-ARU #13 and BPT for all others]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
OCF-ARU #2	0.06	0.06	0.01	0.12	0.11	0.01
OCF-ARU #5	0.09	0.09	0.01	0.18	0.16	0.01
OCF-ARU #9	0.09	0.09	0.01	0.18	0.16	0.01
OCF-ARU #10	0.09	0.09	0.01	0.18	0.16	0.01
OCF-ARU #11	0.09	0.09	0.01	0.18	0.16	0.01
OCF-ARU #12	0.09	0.09	0.01	0.18	0.16	0.01
OCF-ARU #13	0.12	0.12	0.01	0.24	0.21	0.02
OFC/S-ARU #1	0.12	0.12	0.01	0.24	0.21	0.02
OFC/S-ARU #2	0.19	0.19	0.01	0.38	0.32	0.03
DRS-BLR #1	0.13	0.13	0.01	0.25	0.21	0.02
DRS-BLR #2	0.15	0.15	0.01	0.3	0.25	0.02

The following shall replace Specific Conditions (17)(C), (E), (F), and (G) of Air Emission License A-764-71-H-R/A. Specific Condition 17(E) shall be removed from Air Emission License A-764-71-H-R/A.

(17) **Generators and Emergency Engines – Pre-2006**
DDR-CUM-FP and OFC-ONAN

C. The fuel sulfur content for DDR-CUM-FP shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [06-096 C.M.R. ch. 115, BPT]

E. *<removed>*

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
DDR-CUM-FP	0.26	0.26	0.01	3.70	0.80	0.29
OFC-ONAN	0.01	0.01	0.01	2.04	0.28	0.06

G. Visible Emissions

1. Visible emissions from DDR-CUM-FP shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

2. Visible emissions from OFC-ONAN shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

The following shall replace Specific Conditions (18)(A) and (D) of Air Emission License A-764-71-H-R/A.

(18) **Generators – Emergency Engines - Post-2006**
OFC-GEN-EXP07-06, OFC-CAT #1, and Seasonal Units #1, #2, and #3

A. Generators OFC-GEN-EXP07-06 and OFC-CAT #1 shall each be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BPT]

D. Emissions shall not exceed the following
[06-096 C.M.R. ch. 115, BACT for OFC-CAT #1 and BPT for all others]:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
OFC-GEN-EXP07-06	0.01	0.01	0.01	2.04	0.28	0.06
OFC-CAT #1	0.24	0.24	0.01	8.82	1.90	0.70
Seasonal Unit #1	2.03	2.03	0.03	74.53	16.06	5.92
Seasonal Unit #2	2.03	2.03	0.03	74.53	16.06	5.92
Seasonal Unit #3	0.86	0.86	0.01	31.75	6.84	2.52

The following is a new condition of Air Emission License A-764-71-H-R/A.

(20) If the Department determines that any parameter value pertaining to construction and operation of the proposed emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, LLB may be required to submit additional information. Upon written request from the Department, LLB shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.
[06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 22nd DAY OF MARCH, 2023.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for _____
MELANIE LOYZIM, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-764-71-H-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 7/5/22
Date of application acceptance: 7/21/22

Date filed with the Board of Environmental Protection:
This Order prepared by Chris Ham, Bureau of Air Quality.

FILED

MAR 22, 2023

State of Maine
Board of Environmental Protection