



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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GOVERNOR

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**Maine Life Care Retirement  
Community, Inc. dba Piper Shores  
Cumberland County  
Westbrook, Maine  
A-738-71-G-N (SM)**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Renewal - After the Fact**

**FINDINGS OF FACT**

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

**I. REGISTRATION**

**A. Introduction**

1. The Air Emission License for Maine Life Care Retirement Community, Inc. dba Piper Shores (Piper Shores) expired on October 17, 2013. Piper Shores has applied to renew their expired license permitting the operation of emission sources associated with their retirement community.
2. The equipment addressed in this license is located at 15 Piper Road, Scarborough, ME.
3. Piper Shores has also applied to amend its license to replace its existing 400 kW emergency generator with a 600 kW unit, and to add 13 more emergency generators to serve the 40 cottages which are the residents' homes.

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17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
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106 HOGAN ROAD, SUITE 6  
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PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
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B. Emission Equipment

The following equipment is addressed in this air emission license:

**Boilers**

<u>Equipment</u>	<u>Maximum Capacity</u> (MMBtu/hr)	<u>Maximum Firing Rate</u> (gal/hr)	<u>Fuel Type,</u> % sulfur	<u>Date of Manuf.</u>	<u>Stack #</u>
Boiler #1	2.50	30.43	Propane, neg. S	2011	1
Boiler #2	2.50	30.43	Propane, neg. S	2011	1
Boiler #3	2.50	30.43	Propane, neg. S	2011	1
Boiler #4	2.50	30.43	Propane, neg. S	2011	1
Hot Water Heater	1.6	17.68	Propane, neg. S	2011	1

**Generators**

<u>Equipment</u>	<u>Power kW</u>	<u>Firing Rate</u> (gal/hr)	<u>Fuel Type,</u> % sulfur	<u>Date of Manuf.</u>	<u>Stack #</u>
Generator #1	600	42.7	Distillate fuel 0.0015% S	2013	G1
Generator #2*+	30	3.34	Distillate fuel, 0.0015% S	2001	G2
Generator #3	38	6.3	Liquid Propane, neg. S	2014	G3
Generator #4	38	6.3	Liquid Propane, neg. S	2014	G4
Generator #5	38	6.3	Liquid Propane, neg. S	2014	G5
Generator #6	38	6.3	Liquid Propane, neg. S	2014	G6
Generator #7	38	6.3	Liquid Propane, neg. S	2014	G7
Generator #8	38	6.3	Liquid Propane, neg. S	2014	G8
Generator #9	38	6.3	Liquid Propane, neg. S	2014	G9
Generator #10	38	6.3	Liquid Propane, neg. S	2014	G10
Generator #11	38	6.3	Liquid Propane, neg. S	2014	G11
Generator #12+	20	3.9	Liquid Propane, neg. S	2014	G12
Generator #13+	20	3.9	Liquid Propane, neg. S	2014	G13
Generator #14+	20	3.9	Liquid Propane, neg. S	2014	G14
Generator #15+	20	3.9	Liquid Propane, neg. S	2014	G15

\* Generator #2 is an existing generator; Generator 1 and Generators 3-11, inclusive, are new in this license.

+ Generators #2, and #12 - #15, inclusive, are insignificant activities pursuant to 06-096 CMR 115 (as amended), and are listed for inventory purposes only.

### C. Application Classification

The previous air emission license for Piper Shores expired on October 17, 2013. A complete application was not submitted prior to the expiration date, therefore Piper Shores is considered to be an existing source applying for an after-the-fact renewal. The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended).

Because of the annual facility fuel limit, and the relatively small size of the new generators and the replacement of one existing generator, the amendment adding the new equipment will not increase emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

With the annual facility fuel limit, and the operating hours restriction on the emergency generators, the facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor. With the annual facility fuel limit, and the operating hours restriction on the emergency generators, the facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of 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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

BPT for an after-the-fact renewal requires an analysis similar to a Best Available Control Technology analysis per 06-096 CMR 115 (as amended).

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 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boilers #1, #2, #3 and #4, and Hot Water Boiler

Piper Shores operates Boilers #1, #2, #3 and #4 for heat. The boilers are each Cleaver Brooks units, and are rated at 2.5 MMBtu/hr and fire propane. The boilers were installed in 2011 and exhaust through common stack #1.

The Hot Water Boiler is a Camus unit, rated at 1.6 MMBtu/hr, firing propane and also exhausts through common stack #1. The hot water boiler was installed in 2011.

Due to their size, Boilers #1 - #4, inclusive, and the Hot Water Boiler are not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

1. BPT Findings

The BPT emission limits for Boilers #1 - #4 inclusive and the Hot Water Boiler were based on the following:

PM/PM <sub>10</sub>	– 0.05 lb/MMBtu based on 06-096 CMR 115, BPT
SO <sub>2</sub>	– 0.09 lb/1000 gallons based on AP-42, Table 1.4-2, dated 7/98
NO <sub>x</sub>	– 14 lb/1000 gallons based on AP-42, Table 1.4-1, dated 7/98
CO	– 1.9 lb/1000 gallons based on AP-42, Table 1.4-1, dated 7/98
VOC	– 0.5 lb/1000 gallons based on AP-42, Table 1.4-2, dated 7/98
Opacity	– 06-096 CMR 101 or previous BACT

The BPT emission limits for the Boilers and Hot Water Boiler are the following:

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM<sub>10</sub></u> (lb/hr)	<u>SO<sub>2</sub></u> (lb/hr)	<u>NO<sub>x</sub></u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
Boiler #1	0.13	0.13	0.01	0.39	0.05	0.01
Boiler #2	0.13	0.13	0.01	0.39	0.05	0.01
Boiler #3	0.13	0.13	0.01	0.39	0.05	0.01
Boiler #4	0.13	0.13	0.01	0.39	0.05	0.01
Hot Water Boiler	0.08	0.08	0.01	0.25	0.03	0.01

Visible emissions from the Boilers shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a three (3) hour period.

Piper Shores shall be subject to a facility fuel limit of 2,000,000 gallons per year of liquid propane fired in the boilers and generators.

2. Periodic Monitoring

Periodic monitoring for the Boiler shall include recordkeeping to document fuel use both on a calendar year basis. Documentation shall include the type of fuel used.

3. 40 CFR Part 63 Subpart JJJJJ

Because Boilers #1 - #4 inclusive and the Hot Water Boiler fire liquid propane, none of these units are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ)

C. Emergency Generators #1 and #3 - #11 inclusive

Piper Shores operates a total of 15 emergency generators, of which five, Generators #2, #12, #13, #14 and #15 are classified as insignificant activities because of their size.

Of the remaining 10 emergency generators, Generator #1 is rated at 5.85 MMBtu/hr was installed in 2013; Generators #3-#11, inclusive, were installed in 2014 and are each rated at 0.56 MMBtu/hr.

1. BACT Findings

The BACT emission limits for the generators are based on the following:

Generator #1 – Distillate Fuel Fired:

- PM/PM<sub>10</sub> - 0.12 lb/MMBtu from 06-096 CMR 103
- SO<sub>2</sub> - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight), 0.0015 lb/MMBtu, mass balance
- NO<sub>x</sub> - 3.2 lb/MMBtu from AP-42 dated 10/96
- CO - 0.85 lb/MMBtu from AP-42 dated 10/96
- VOC - 0.09 lb/MMBtu from AP-42 dated 10/96
- Opacity - 06-096 CMR 101

Generators #3 - #11 – Propane Fired:

- PM/PM<sub>10</sub> - 0.05 lb/MMBtu from BPT
- SO<sub>2</sub> - 0.0005878 lb/MMBtu from AP-42, dated 7/00
- NO<sub>x</sub> - 2.27 lb/MMBtu from AP-42, dated 7/00
- CO - 3.510 lb/MMBtu from AP-42, dated 7/00
- VOC - 0.030 lb/MMBtu from AP-42, dated 7/00
- Opacity - 06-096 CMR 101

The BACT emission limits for the generators are the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>
Generator #1 – Distillate fired	PM	0.12

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM<sub>10</sub></u> (lb/hr)	<u>SO<sub>2</sub></u> (lb/hr)	<u>NO<sub>x</sub></u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
Generator #1	0.70	0.70	0.01	18.72	4.97	0.53
Generator #3	0.03	0.03	0.01	1.27	1.97	0.02
Generator #4	0.03	0.03	0.01	1.27	1.97	0.02
Generator #5	0.03	0.03	0.01	1.27	1.97	0.02
Generator #6	0.03	0.03	0.01	1.27	1.97	0.02
Generator #7	0.03	0.03	0.01	1.27	1.97	0.02
Generator #8	0.03	0.03	0.01	1.27	1.97	0.02
Generator #9	0.03	0.03	0.01	1.27	1.97	0.02
Generator #10	0.03	0.03	0.01	1.27	1.97	0.02
Generator #11	0.03	0.03	0.01	1.27	1.97	0.02

Visible emissions from distillate fuel-fired Generator #1 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a three (3) hour period.

Visible emissions from each of the propane-fired Generators #3 - #11 inclusive shall not exceed 10% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a three (3) hour period.

2. 40 CFR Part 60, Subpart IIII

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to **Generator #1** listed above since the unit was ordered after July 11, 2005 and manufactured after April 1, 2006. By meeting the requirements of Subpart IIII, the units also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

a. Emergency Definition:

Emergency stationary ICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary ICE in emergency situations.
- (2) Paragraph (1) above notwithstanding, the emergency stationary ICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:

- (i) 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 beyond 100 hours per calendar year.
  - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
  - (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency 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, except if the following conditions are met:

- (i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
- (ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.



- (iv) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (v) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[40 CFR §60.4211(f) and §60.4219]

b. 40 CFR Part 60, Subpart III Requirements:

(1) Manufacturer Certification Requirement

Generator #1 shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 CFR §60.4202. [40 CFR §60.4205(b)]

(2) Ultra-Low Sulfur Fuel Requirement

The fuel fired in the generator shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 CFR §60.4207(b)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on Generator #1. [40 CFR §60.4209(a)]

(4) Operation and Maintenance Requirements

Generator #1 shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by facility that are approved by the engine manufacturer. Piper Shores may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

(5) Annual Time Limit for Maintenance and Testing

The generator shall be limited to 100 hours per year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours per year of the 100 hours per year may be used in non-emergency situations (this does not include peak shaving, non-emergency 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 unless the conditions in §60.4211(f)(3)(i) are met). [40 CFR §60.4211(f)]

(6) Initial Notification Requirement

No initial notification is required for emergency engines. [40 CFR §60.4214(b)]

(7) Recordkeeping

Piper Shores shall keep records that include maintenance conducted on the engine and the hours of operation of Generator #1 recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generator is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), Piper Shores shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §60.4214(b)]

(8) Annual Reporting Requirements for Demand Response Availability Over 15 Hours Per Year (for generators greater than 100 brake hp)

If Piper Shores operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), the facility shall submit an annual report containing the information in §60.4214(d)(1)(i) through (vii). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection  
U.S. Environmental Protection Agency  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

[40 CFR §60.4214(d)]

3. 40 CFR Part 60, Subpart JJJJ

The federal regulation 40 CFR Part 60, Subpart JJJJ, *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE)* is applicable to propane-fired **Generators #3 - #11** inclusive listed above since the units were ordered after June 12, 2006 and manufactured after January 1, 2009. By meeting the requirements of Subpart JJJJ, the unit(s) also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

Propane-fired Generators #2, and #12 - #15 inclusive, although defined as insignificant activities in 06-096 CMR 115, are subject to 40 CFR Part 60, Subpart JJJJ.

a. Emergency Definition:

Emergency stationary ICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary ICE in emergency situations
- (2) Paragraph (1) above notwithstanding, the emergency stationary ICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:
  - (i) 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 beyond 100 hours per calendar year.
  - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
  - (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency 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, except if the following conditions are met:

- (i) The engines are dispatched by the local balancing authority or local transmission and distribution system operator.
- (ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
- (iv) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (v) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[40 CFR §60.4243(d) and §60.4248]

b. 40 CFR Part 60, Subpart JJJJ Requirements:

(1) Manufacturer Certification Requirement

Generators #3 - #11 inclusive shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

(2) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §60.4237]

(3) Operation and Maintenance Requirement

Generators #3 - #11 inclusive shall be operated and maintained according to the manufacturer's written instructions or procedures developed by facility that are approved by the engine manufacturer. Piper Shores may only change those settings that are permitted by the manufacturer. [40 CFR §60.4243]

(4) Annual Time Limit for Maintenance and Testing

Generators #3 - #11 shall each be limited to 100 hours per year for maintenance and testing. The emergency engines may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR §60.4243(d)]

(5) Recordkeeping

Piper Shores shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4243(d)(3)(i), Piper Shores shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §60.4245(b)]

D. Annual Emissions

1. Total Annual Emissions

Piper Shores shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits were calculated based on a facility fuel limit of 2,000,000 gallons per year of propane fired in the Boilers and Generators #2 - #15 inclusive, and operating the generators 100 hours per year for maintenance and testing.

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

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Facility Propane Limit – Boilers and Generators	4.5	4.5	0.1	14.0	1.9	0.5
Generator #1 – Distillate fuel	0.1	0.1	0.1	0.9	0.3	0.1
<b>Total TPY</b>	<b>4.6</b>	<b>4.6</b>	<b>0.2</b>	<b>14.9</b>	<b>2.2</b>	<b>0.6</b>

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 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), 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).

Based on the facility’s fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, Piper Shores is below the major source threshold of 100,000 tons of CO<sub>2</sub>e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

### III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 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:

<u>Pollutant</u>	<u>Tons/Year</u>
PM <sub>10</sub>	25
SO <sub>2</sub>	50
NO <sub>x</sub>	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.

### 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 A-738-71-G-N subject to the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License 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.



## STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]

- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
    - 2. pursuant to any other requirement of this license to perform stack testing.
  - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
  - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [06-096 CMR 115]

- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
  - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
  - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [06-096 CMR 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

**SPECIFIC CONDITIONS**

**(16) Boilers #1, #2, #3, #4 and Hot Water Boiler**

**A. Fuel**

1. Total fuel use for Boilers #1, #2, #3, #4, the Hot Water Boiler and Generators #2 - #15 inclusive shall not exceed 2,000,000 gallons per year of propane, based on a calendar year. [06-096 CMR 115, BPT]
2. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of fuel delivered. Records of annual fuel use shall be kept on a calendar year basis. [06-096 CMR 115, BPT]

**B. Emissions shall not exceed the following [06-096 CMR 115, BPT]:**

<u>Emission Unit</u>	<u>PM</u> (lb/hr)	<u>PM<sub>10</sub></u> (lb/hr)	<u>SO<sub>2</sub></u> (lb/hr)	<u>NO<sub>x</sub></u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
Boiler #1	0.13	0.13	0.01	0.39	0.05	0.01
Boiler #2	0.13	0.13	0.01	0.39	0.05	0.01
Boiler #3	0.13	0.13	0.01	0.39	0.05	0.01
Boiler #4	0.13	0.13	0.01	0.39	0.05	0.01
Hot Water Boiler	0.08	0.08	0.01	0.25	0.03	0.01

- C. Visible emissions from Boilers #1, #2, #3, #4 and the Hot Water Boiler shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous three (3)-hour period. [06-096 CMR 101]**

**(17) Emergency Generators #1 and #3 - #11**

- A. Each of the emergency generators shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]**

**B. Emissions from distillate fuel-fired Generator #1 shall not exceed the following:**

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Generator #1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

- C. Emissions from the Generators shall not exceed the following [06-096 CMR 115, BPT]:

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM<sub>10</sub></u> (lb/hr)	<u>SO<sub>2</sub></u> (lb/hr)	<u>NO<sub>x</sub></u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
Generator #1	0.70	0.70	0.01	18.72	4.97	0.53
Generator #3	0.03	0.03	0.01	1.27	1.97	0.02
Generator #4	0.03	0.03	0.01	1.27	1.97	0.02
Generator #5	0.03	0.03	0.01	1.27	1.97	0.02
Generator #6	0.03	0.03	0.01	1.27	1.97	0.02
Generator #7	0.03	0.03	0.01	1.27	1.97	0.02
Generator #8	0.03	0.03	0.01	1.27	1.97	0.02
Generator #9	0.03	0.03	0.01	1.27	1.97	0.02
Generator #10	0.03	0.03	0.01	1.27	1.97	0.02
Generator #11	0.03	0.03	0.01	1.27	1.97	0.02

D. Visible Emissions

1. Visible emissions from Generator #1 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous three (3)-hour period. [06-096 CMR 101, BACT]
2. Visible emissions from each of the propane-fired Generators #3 - #11 shall not exceed 10% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous three (3)-hour period. [06-096 CMR 115, BACT]

- E. Generator #1 shall meet the applicable requirements of 40 CFR Part 60, Subpart III, including the following:

1. Manufacturer Certification

Generator #1 shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]

2. Ultra-Low Sulfur Fuel

The fuel fired in Generator #1 shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 CFR §60.4207(b) and 06-096 CMR 115]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on Generator #1. [40 CFR §60.4209(a)]

4. Annual Time Limit for Maintenance and Testing

- a. Generator #1 shall be limited to 100 hours per year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours per year of the 100 hours per year may be used in non-emergency situations (this does not include peak shaving, non-emergency 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 unless the conditions in §60.4211(f)(3)(i) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115]
- b. Piper Shores shall keep records that include maintenance conducted on the generator and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generator is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), Piper Shores shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes.

5. Operation and Maintenance

The generator shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by Piper Shores that are approved by the engine manufacturer. Piper Shores may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

6. Annual Reporting For Demand Response Availability Over 15 Hours Per Year

If Piper Shores operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), the facility shall submit an annual report containing the information in §60.4214(d)(1)(i) through (vii). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection  
U.S. Environmental Protection Agency  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

[40 CFR §60.4214(d)]

F. Generators #3 - #11 inclusive shall meet the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following:

1. Manufacturer Certification

Generators #3 - #11 inclusive shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

2. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §60.4237 and 06-096 CMR 115, BPT]

3. Annual Time Limit for Maintenance and Testing

- a. Generators #3 - #11 inclusive shall each be limited to 100 hours per year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours per year of the 100 hours per year may be used in non-emergency situations (this does not include peak shaving, non-emergency 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 unless the conditions in §60.4243(d)(3)(i) are met). The limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §60.4243(d) and 06-096 CMR 115]
- b. Piper Shores shall keep records that include maintenance conducted on the generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4243(d)(3)(i), the Piper Shores shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes.



Maine Life Care Retirement  
Community, Inc. dba Piper Shores  
Cumberland County  
Westbrook, Maine  
A-738-71-G-N (SM)

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Departmental  
Findings of Fact and Order  
Air Emission License  
Renewal – After the Fact

4. Operation and Maintenance

Generators #3 - #11 inclusive shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Piper Shores that are approved by the engine manufacturer. Piper Shores may only change those settings that are permitted by the manufacturer. [40 CFR §60.4243]

- (18) Piper Shores shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 12 DAY OF August, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Marie Allen Robert Corne for*  
PATRICIA W. AHO, COMMISSIONER

**The term of this license shall be ten (10) years from the signature date above.**

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 07/21/2014

Date of application acceptance: 07/21/2014

Date filed with the Board of Environmental Protection:

This Order prepared by N. Lynn Cornfield, Bureau of Air Quality.

