



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID P. LITTELL  
COMMISSIONER

**Merrill Blueberry Farms, Inc.  
Hancock County  
Ellsworth, Maine  
A-836-71-E-A(SM)**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #3**

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Department finds the following facts:

**I. REGISTRATION**

**A. Introduction**

1. Merrill Blueberry Farms, Inc. (Merrill) was issued Air Emission License Renewal A-836-71-D-R(SM) on November 1, 2007, permitting the operation of emission sources associated with their blueberry processing and freezing facility.
2. The equipment addressed in this license is located at 63 Thorsen Road, Hancock, Maine 04605.
3. Merrill has requested an amendment to their license to replace failed Generator #2, a 455 kW Caterpillar diesel generator, with a new 545 kW, EPA Tier 2 Certified, Caterpillar Model C18 unit (Generator #2 – New). Merrill has also requested to remove Generators #3 and #4 (both 725 kW) from the license as both generators are no longer on site.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

**Electrical Generation Equipment**

<u>Equipment</u>	<u>Horse Power (HP)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Generator #1	545	42.7	Diesel, 0.05% S	1
Generator #2 - New	545	42.7	Diesel, 0.05% S	2

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C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the “Significant Emission Levels” as defined in the Department’s regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Sig. Level</u>
PM	1.3	0.8	-0.5	100
PM <sub>10</sub>	1.3	0.8	-0.5	100
SO <sub>2</sub>	0.5	0.4	-0.1	100
NO <sub>x</sub>	20.0	20.0	0.0	100
CO	9.9	2.5	-7.4	100
VOC	3.7	0.04	-3.01	50

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

With the fuel limit the generators, the facility is licensed below the major source thresholds and is considered a synthetic minor.

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 (last amended December 24, 2005). 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 *Definitions Regulation*, 06-096 CMR 100 (last amended December 24, 2005). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

Based upon review of the BACT analysis in the original license application and the new technology being utilized in the replacement engine, it has been determined BACT for NO<sub>x</sub> is the following:

- EPA Tier 2 Certified diesel engine powering Generator #2
- Use of automatic switchgear system to allow the facility to operate in the most fuel-efficient mode possible; and
- Limit total facility NO<sub>x</sub> emission to no more than 20.0 tons per year.

B. NSPS Generator

Generator #2 was ordered after July 11, 2005 and manufactured after April 1, 2006. Therefore, Generator #2 is subject to New Source Performance Standards 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. The initial performance test was conducted on Generator #2 on 15 December 2009.

A summary of the BPT (or BACT) analysis for Generator #2 (545 kW) is the following:

1. Generator #2 shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm.
2. Beginning October 1, 2010, Generator #2 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.
3. Generator #2 shall be equipped with a non-resettable hour meter.
4. 06-096 CMR 103 regulates PM emission limits. The PM<sub>10</sub> limits are derived from the PM limits. However, the manufacturer's "Not to exceed" emission data are more stringent and therefore 0.10 pounds per million BTU (lb/MMBtu) is considered BACT.
5. NO<sub>x</sub>, CO, and VOC emission limits are based on "Not to exceed" emission data provided by the engine manufacturer: NO<sub>x</sub> – 2.38 lbs/MMBtu; CO – 0.30 lbs/MMBtu; and VOC – 0.005 lbs/MMBtu.
6. The use of an automatic switchgear system to operate the facility in the most fuel efficient mode possible.
7. Generator #2 is an EPA Tier 2 Certified diesel engine.
8. Merrill shall operate and maintain Generator #2 in accordance with the manufacturer's written instructions. Merrill shall not change settings that are not approved in writing by the manufacturer.
9. Visible emissions from the generator 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 3-hour period.

C. Annual Emissions

Annual emissions are based on the new Generator #2 triggering the 20 tons per year NO<sub>x</sub> limit with no other engine(s) running, which yielded the highest amount of criteria pollutants being emitted. Replacing failed Generator #2 will not increase the worst case scenario tons-per-year emissions for the facility.

Merrill shall be restricted to the following annual emissions, based on a 12 month rolling total and based on operating records:

**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
Generator #1	0.4	0.4	0.2	10.0	1.3	0.02
Generator #2	0.4	0.4	0.2	10.0	1.3	0.02
<b>Total TPY</b>	<b>0.8</b>	<b>0.8</b>	<b>0.4</b>	<b>20.0</b>	<b>2.6</b>	<b>0.04</b>

**III. AMBIENT AIR QUALITY ANALYSIS**

According to 06-096 CMR 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

**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 Air Emission License A-836-71-E-M(SM) subject to the conditions found in Air Emission License A-836-71-D-R(SM), and 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.

**The following shall replace Conditions 16 through 26 of Air Emission License A-836-71-D-R:**

(16) **NSPS Non-Emergency Generator**

- A. Generator #2 shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm. [40 CFR 60.4207(a)]
- B. Beginning October 1, 2010, Generator #2 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm. [40 CFR 60.4207(b)]
- C. Generator #2 shall be equipped with a non-resettable hour meter. [06-096 CMR 115, BACT]
- D. Emissions shall not exceed the following:

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

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

Emission 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)
Generator #2	0.59	0.59	0.30	14.04	1.77	0.03

- F. Generator #2 is subject to PM, CO, and NO<sub>x</sub> + VOC emission requirements set forth in 40 CFR 60, Subpart IIII. Compliance with these emission requirements shall be demonstrated by certification from the manufacturer that this engine class meets the appropriate Tier standards. [40 CFR 60, Subpart IIII]
- G. Merrill shall operate and maintain Generator #2 in accordance with the manufacturer's written instructions. Merrill shall not change settings that are not approved in writing by the manufacturer. [40 CFR 60.4211(a)]

- H. Visible emissions from the generator 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 3-hour period. [06-096 CMR 101]
- (17) Generators #1 and #2 shall each utilize electronic ignition. [06-096 CMR 115, BPT]
- (18) Generators #1 and #2 shall each have an automatic switchgear system to operate the facility in the most fuel-efficient mode possible. [06-096 CMR 115, BPT]
- (19) The combined actual NO<sub>x</sub> emissions from Merrill's electrical generation equipment shall not exceed 20 tons per year on a 12 month rolling total basis. [06-096 CMR 115, BPT]
- (20) Merrill is authorized to operate Generators #1 and #2 as well as any rental generator(s) that may be necessary on a temporary basis to meet the facility's electric power needs.
- The rental generator(s), if manufactured after 1 April 2006, shall comply with New Source Performance Standards 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.
- (21) A license amendment shall not be required for Merrill to retrofit a generator with NO<sub>x</sub> emission control equipment if such equipment is necessary to comply with the 20 tons-per-year limit.
- (22) Actual NO<sub>x</sub> emissions from Generators #1 and #2 shall be determined on a monthly basis by multiplying each generator's actual fuel consumption (expressed in gallons) during a given month by a NO<sub>x</sub> emission factor (expressed in pounds of NO<sub>x</sub> per gallon of fuel burned) derived from the most recent emissions test performed on the generator. The NO<sub>x</sub> emission factor to be used for Generators #1 and #2 prior to the completion of an emission test is 0.065 pounds NO<sub>x</sub> per gallon of fuel burned (#NO<sub>x</sub>/gal fuel). NO<sub>x</sub> emissions from any rental generator(s) shall be included in the determination of compliance with the 20 ton-per-year limit, and shall be calculated using the appropriate AP-42 emission factor.
- (23) Merrill shall maintain and operate a fuel flow meter on Generators #1 and #2. Each meter shall be equipped with a totalizer capable of displaying the total number of gallons of fuel burned. The totalizer reading from each generator shall be recorded at the beginning of each calendar month, and the previous month's reading shall be subtracted from the current reading to determine the actual fuel consumption during the prior calendar month. [06-096 CMR 115, BPT]

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- (24) A fuel flow meter for Generator #2 shall be installed and operational prior to initial startup. [06-096 CMR 115, BPT]
- (25) For determining fuel consumption in a rental generator, if the rental generator is supplied fuel from its own dedicated storage tank, Merrill shall use records of fuel deliveries along with tank inventory at the beginning and end of its operating period. If the fuel supply for the rental generator is obtained from a storage tank that services one or more permanent generators, the fuel consumption in the rental generator shall be determined by calculating the combined usage in all generators using fuel deliveries and tank inventory levels during the rental generator's period of operation, and then subtracting out the actual fuel consumption in the permanent generators as determined by totalizer readings. [06-096 CMR 115, BPT]
- (26) A NO<sub>x</sub> emission test on Generator #2 shall be performed by May 15, 2009. Generator #2 NO<sub>x</sub> emissions shall be tested again within twelve months of this test. [06-096 CMR 115, BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 6th DAY OF January, 2010.  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brooks for  
DAVID P. LITTELL, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-836-71-D-R.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 10/29/08

Date of application acceptance: 11/07/08

Date filed with the Board of Environmental Protection: \_\_\_\_\_

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

