Long Creek Youth Development Center	**|**	**Departmental**
Cumberland County	**|**	**Findings of Fact and Order**
South Portland, Maine	**|**	**Air Emissions License**
A-321-71-L-R (SM)	**|**	

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 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Long Creek Youth Development Center of South Portland, Maine has applied to renew their Air Emission License, permitting the operation of emission sources associated with their juvenile treatment and rehabilitation facility. The facility had previously been licensed as the Maine Youth Center and the Southern Maine Juvenile Facility.

B. Emission Equipment

The table below includes the licensed units at the facility. The previous license and amendments contained a number of units that are no longer in operation. The equipment numbering scheme has been updated for this renewal.

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Date of Manufacture	Stack #
Boiler 1 Purinton Hall	1.4	1373 scf/hr	Natural Gas	1999	2
Boiler 2 LCY Development Ctr	2.6	2510 scf/hr	Natural Gas	2001	5
Boiler 3 LCY Development Ctr	4.3	4185 scf/hr	Natural Gas	2001	5

The boilers no longer in operation include the two 14 MMBtu/hr #2 oil fired boilers and the 1.4 MMBtu NSB Building boiler.

Generation Equipment

Equipment	Input Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Fuel Type, % sulfur	Date of Manufacture	Stack #
Generator 1 Purinton Hall	1.12	8	Diesel, 0.05% S	1979	1
Generator 2 LCY Development Ctr	8.03	58.8	Diesel, 0.05% S	2000	3
Generator 3 LCY Development Ctr	8.03	58.8	Diesel, 0.05% S	2000	4

The generators no longer in operation include two diesel generators with the capacities of 2.24 MMBtu/hr and 4.2 MMBtu/hr.

C. Application Classification

The application for Long Creek Youth Development Center does not include the licensing of increased emissions or the installation of new or modified equipment, therefore, the license is considered to be a renewal and has been processed through Chapter 115 of the Department's regulations. This license does remove previously licensed units that are no longer in operation. With the operating hours restriction on the emergency 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 Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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. Boiler 1

Boiler 1 is a 1.4 MMBtu/hr package boiler located in Purinton Hall. The boiler was manufactured in 1999 and fires natural gas (1373 scf/hr). The boiler is used for building heat and hot water, and exhausts out stack 2.

The emission limits for boiler 1 were based on the following BPT findings and a heat content of 1020 Btu/scf for natural gas:

PM/PM_{10} – 7.6 $lb/10^6$ scf: AP-42, Table 1.4-2 (dated 7-98)
SO_2 – 0.6 $lb/10^6$ scf: AP-42, Table 1.4-2 (dated 7/98)
NO_X – 100 $lb/10^6$ scf: AP-42, Table 1.4-1 (dated 7/98)
CO – 84 $lb/10^6$ scf: AP-42, Table 1.4-1 (dated 9/98)
VOC – 5.5 $lb/10^6$ scf: AP-42, Table 1.4-2 (dated 7/98)
Opacity – Visible emissions from boiler 1 shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

C. Boiler 2

Boiler 2 is a 2.6 MMBtu/hr package boiler. The boiler was manufactured in 2001 and fires natural gas (2510 scf/hr). The boiler is used for building heat and hot water. The boiler shares stack 5 with boiler 3.

The emission limits for boiler 2 were based on the following BPT findings and 1020 Btu/scf heat content for natural gas:

PM/PM_{10} – 7.6 $lb/10^6$ scf: AP-42, Table 1.4-2 (dated 7-98)
SO_2 – 0.6 $lb/10^6$ scf: AP-42, Table 1.4-2 (dated 7/98)
NO_X – 100 $lb/10^6$ scf: AP-42, Table 1.4-1 (dated 7/98)
CO – 84 $lb/10^6$ scf: AP-42, Table 1.4-1 (dated 9/98)
VOC – 5.5 $lb/10^6$ scf: AP-42, Table 1.4-2 (dated 7/98)
Opacity – Visible emissions from stack 5 shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period (whether one or both boilers are operating).

D. Boiler 3

Boiler 3 is a 4.3 MMBtu/hr package boiler. The boiler was manufactured in 2001 and fires natural gas (4185 scf/hr). The boiler is used for building heat and hot water. The boiler shares stack 5 with boiler 2.

The emission limits for boiler 3 were based on the following BPT findings and 1020 Btu/scf heat content for natural gas:

PM/PM_{10} – 0.12 lb/MMBtu: Chapter 103 of the Department's regulations
SO_2 – 0.6 lb/10^6 scf: AP-42, Table 1.4-2 (dated 7/98)
NO_X – 100 lb/10^6 scf: AP-42, Table 1.4-1 (dated 7/98)
CO – 84 lb/10^6 scf: AP-42, Table 1.4-1 (dated 9/98)
VOC – 5.5 lb/10^6 scf: AP-42, Table 1.4-2 (dated 7/98)
Opacity – Visible emissions from stack 5 shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period (whether one or both boilers are operating).

E. Boiler Fuel Use

The previous license had a fuel limit of 70.6 million scf/yr. However, if the three boilers were to operate continuously 8760 hours/year, the fuel used would be 70.675 million scf/yr. This license removes the annual fuel limit since it is approximately all boilers firing continuously at maximum capacity. Long Creek Youth Development Center shall continue to keep records of fuel use for inventory purposes.

F. Back-up Generator 1

Long Creek Youth Development Center operates three back-up diesel generators. Generator 1 in Purinton Hall is a 1.12 MMBtu/hr back-up generator, fires diesel fuel (8 gal/hr), and was manufactured in 1979. The generator has its own stack (stack 1).

The emission limits for the generator were based on the following BPT findings, a fuel sulfur content of 0.05%, and a 500 hour/year operating limit:

PM/PM_{10} – 0.31 lb/MMBtu: Table 3.3-1 (dated 10/96)
SO_2 – 0.05% sulfur diesel fuel
NO_X – 4.41 lb/MMBtu: AP-42, Table 3.3-1 (dated 10/96)
CO – 0.95 lb/MMBtu: AP-42, Table 3.3-1- (dated 10/96)
VOC – 0.36 lb/MMBtu: AP-42, Table 3.3-1 (dated 10/96)
Opacity – Visible emissions from the generator shall not exceed an opacity of 30% on a six (6) minute block average basis, except for no more than two (2) six (6) minute block average in a 3-hour period.

The back-up generator is only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The back-up generator is not to be used for prime power when reliable offsite power is available.

G. Back-up Generators 2 and 3

Back-up generators 2 and 3 are each rated at 8.03 lb/MMBtu, each fire 58.6 gal/hr of diesel fuel, and were both manufactured in 2000. Generators 2 and 3 exhaust through separate stacks (stacks 3 and 4).

The emission limits for the generators were based on the following BPT findings, a fuel sulfur content of 0.05%, and a 500 hour/year operating limit for each unit:

PM/PM_{10} – 0.12 lb/MMBtu: Chapter 103 of the Department's regulations
SO_2 – 0.05% sulfur diesel fuel
NO_X – 4.41 lb/MMBtu: AP-42, Table 3.4-1 (dated 10/96)
CO – 0.95 lb/MMBtu: AP-42, Table 3.4-1- (dated 10/96)
VOC – 0.36 lb/MMBtu: AP-42, Table 3.4-1 (dated 10/96)
Opacity – Visible emissions from each of the generators shall not exceed an opacity of 30% on a six (6) minute block average basis, except for no more than two (2) six (6) minute block average in a 3-hour period.

The back-up generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The back-up generators are not to be used for prime power when reliable offsite power is available.

H. Annual Emissions

Long Creek Youth Development Center shall be restricted to the following annual emissions on a 12 month rolling total basis, calculated with the boilers operating 8760 hours/year and each generator operating 500 hours/yr:

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

	PM	**PM_{10}**	**SO_2**	**NO_x**	**CO**	**VOC**
Boilers 1, 2, and 3	2.4	2.4	0.02	3.5	3.0	0.2
Generator 1	0.09	0.09	0.01	1.2	0.3	0.1
Generator 2	0.2	0.2	0.1	6.4	1.7	0.2
Generator 3	0.2	0.2	0.1	6.4	1.7	0.2
Total TPY	**2.9**	**2.9**	**0.2**	**17.5**	**6.7**	**0.7**

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

Pollutant	Tons/Year
PM	25
PM_{10}	25
SO_2	50
NO_x	100
CO	250

Based on the above total facility emissions, Long Creek Youth Development Center is below the emissions level required for modeling and monitoring.

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.

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 Department hereby grants Air Emission License A-321-71-L-R subject to the following conditions:

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 MRSA §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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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.

[MEDEP Chapter 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.

[MEDEP Chapter 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. [MEDEP Chapter 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 emission 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. [MEDEP Chapter 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. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) **Boiler 1**

A. Natural gas fired Boiler 1 (1.4 MMBtu/hr) shall not exceed the following emission limits: [MEDEP Chapter 115]

Unit	**PM**	**PM_{10}**	**SO_2**	**NO_X**	**CO**	**VOC**
Boiler 1	0.01 lb/hr	0.01 lb/hr	0.0008 lb/hr	0.14 lb/hr	0.12 lb/hr	0.008 lb/hr

B. Visible emissions from Boiler 1 in Purinton Hall shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(17) **Boiler 2**

A. Natural gas fired Boiler 2 (2.6 MMBtu/hr) shall not exceed the following emission limits: [MEDEP Chapter 115]

Unit	**PM**	**PM_{10}**	**SO_2**	**NO_X**	**CO**	**VOC**
Boiler 2	0.02 lb/hr	0.02 lb/hr	0.002 lb/hr	0.25 lb/hr	0.21 lb/hr	0.01 lb/hr

B. Visible emissions from the shared stack with boiler 3 shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more

than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(18) **Boiler 3**

A. Natural gas fired Boiler 3 (4.3 MMBtu/hr) shall not exceed the following emission limits: [MEDEP Chapter 115]

Unit	PM	PM_{10}	SO_2	NO_X	CO	VOC
Boiler 3	0.12 lb/MMBtu 0.52 lb/hr	0.52 lb/hr	0.003 lb/hr	0.42 lb/hr	0.35 lb/hr	0.02 lb/hr

B. Visible emissions from the shared stack with boiler 2 shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(19) **Facility Natural Gas Fuel Records**

Natural gas fuel use records shall be maintained on a monthly and 12 month rolling total basis. [MEDEP Chapter 115, BPT]

(20) **Back-Up Generators**

A. The diesel-fired back-up generators shall each be limited to 500 hours per year, based on a 12 month rolling total. An hour meter shall be operated and maintained on each unit. Records shall be kept to document compliance with the hours of operation limit. [MEDEP Chapter 115, BPT]

B. The back-up generators shall fire diesel fuel with a maximum sulfur content of 0.05%. Long Creek Youth Development Corporation shall maintain fuel records documenting compliance with the diesel sulfur content limit (i.e. records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel). [MEDEP Chapter 115, BPT]

C. The back-up generators shall be operated only for situations arising from sudden and reasonably unforeseeable events beyond the control of the source or for short periods to exercise the unit and to keep it in operating order. The back-up generators are not to be used for prime power when reliable offsite power is available. A log documenting the dates, times, and reason of operation for the back-up generators shall be maintained. [MEDEP Chapter 115, BPT]

D. Emissions from the generators shall not exceed the following: [MEDEP Chapter 115, BPT]

Unit	PM	PM_{10}	SO_2	NO_x	CO	VOC
Generator 1 (1.12 MMBtu/hr)	0.3 lb/hr	0.3 lb/hr	0.06 lb/hr	4.9 lb/hr	1.1 lb/hr	0.4 lb/hr
Generator 2 (8.03 MMBtu/hr)	0.12 MMBtu/hr 1.0 lb/hr	1.0 lb/hr	0.4 lb/hr	25.7 lb/hr	6.8 lb/hr	0.7 lb/hr
Generator 3 (8.03 MMBtu/hr)	0.12 MMBtu/hr 1.0 lb/hr	1.0 lb/hr	0.4 lb/hr	25.7 lb/hr	6.8 lb/hr	0.7 lb/hr

E. Visible emissions from each back-up generator shall not exceed 30% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period. [MEDEP Chapter 101]

(21) Long Creek Youth Development Center 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 (Title 38 MRSA §605).

(22) **Payment of Annual License Fee**
Long Creek Youth Development Center shall pay the annual air emission license fee within 30 days of October 30 of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAWN R. GALLAGHER, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: July 30, 2004
Date of application acceptance: July 30, 2004

Date filed with the Board of Environmental Protection: _____

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.