



DEPARTMENT ORDER

**Waste Management Disposal  
Services of Maine, Inc.  
d/b/a Crossroads Landfill  
Somerset County  
Norridgewock, Maine  
A-816-77-6-M**

**Departmental  
Findings of Fact and Order  
New Source Review  
NSR #6**

**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 (the Department) finds the following facts:

**I. REGISTRATION**

A. Introduction

FACILITY	Waste Management Disposal Services of Maine, Inc. (WMDSM) d/b/a Crossroads Landfill
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Revision
NAICS CODES	562212
NATURE OF BUSINESS	Solid Waste Landfill
FACILITY LOCATION	357 Mercer Rd, Norridgewock, Maine

B. NSR License Description

Waste Management Disposal Services of Maine, Inc. (WMDSM) d/b/a Crossroads Landfill has requested a New Source Review (NSR) license amendment to:

1. Correct the emission limits for volatile organic compounds (VOC) from the facility's flares; and
2. Correct the emission limits for particulate matter (PM and PM<sub>10</sub>) and sulfur dioxide (SO<sub>2</sub>) from the landfill gas-to-energy (LFGTE) Engines #1 and #2.

C. Emission Equipment

The following equipment is addressed in this NSR license amendment:

**Landfill Gas-to-Energy Engines**

<b>Equipment</b>	<b>Maximum Heat Input Capacity (MMBtu/hr)</b>	<b>Output (kW)</b>	<b>Fuel Type, % sulfur</b>	<b>Stack #</b>
Engine #1	17.9	1,600	landfill gas, < 1,500 ppmv	4
Engine #2	17.9	1,600	landfill gas, < 1,500 ppmv	5

**Flares**

<b>Equipment</b>	<b>Maximum Heat Input Capacity (MMBtu/hr)</b>	<b>Maximum Flow Rate (scfm)</b>
Flare #1	60.0	2,000
Flare #3	75.0	2,500

D. Application Classification

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

The application submitted by WMDSM does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The proposed revision will not result in an emission increase of greater than 4 tons/year of a single pollutant or 8 tons/year total pollutants. Therefore, the NSR license is determined to be a minor revision under *Minor and Major Source Air Emission License Regulations* 06-096 Code of Maine Rules (C.M.R.) ch. 115. An application to incorporate the requirements of this NSR license into the Part 70 air emission license has been submitted to the Department.

## II. BEST PRACTICAL TREATMENT (BPT)

### A. Introduction

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

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

### B. Flare Emissions

The short-term VOC emission limits (lb/hr) for Flares #1 and #3 are based on the actual measured non-methane organic compound (NMOC) concentrations in the landfill gas (LFG) at WMDSM. However, WMDSM is required by *Standards of Performance for Municipal Solid Waste Landfills*, 40 C.F.R. Part 60, Subpart WWW to conduct NMOC sampling every five years, resulting in the potential need for adjustments to the limit based on actual concentration results.

To reduce repeated license revisions, WMDSM has proposed basing the flare VOC emission limit for Flares #1 and #3 on the average NMOC concentration in LFG at 50% methane as found in EPA's *Compilation of Air Pollutant Emission Factors (AP-42)*, Table 2.4-2. The AP-42 concentration of 595 parts per million by volume (ppmv) is conservatively high compared to the most recent measured NMOC concentration of 236 ppmv. WMDSM has not requested any increase in the facility-wide annual emission limit of 39.9 ton per year (tpy) for VOC.

The Department agrees with WMDSM's proposal and finds that the corresponding emission limits of 0.31 lb/hr for Flare #1 and 0.39 lb/hr for Flare #3 to represent BACT for VOC emissions from the flares. This change reflects a change in calculation methodology and not any change in actual emissions.

C. Engine Emissions

In NSR air emission license A-816-77-4-A (issued December 14, 2015), the sizes of LFGTE Engines #1 and #2 were each corrected from 17.6 MMBtu/hr to 17.9 MMBtu/hr to more accurately reflect the heat input of the engines. However, this license neglected to make adjustments to the emission limits for PM, PM<sub>10</sub>, and SO<sub>2</sub> accordingly. (Adjustments were made to other pollutants.) Emissions of these pollutants are directly related to the amount of fuel fired and therefore, an increase in the engine size should result in a proportional increase in emissions.

WMDSM has requested that the short-term and annual emission limits associated with Engines #1 and #2 be corrected to take into account the revised engine size.

The Department agrees with WMDSM's proposal and finds that the following emission limits represent BACT for PM, PM<sub>10</sub>, and SO<sub>2</sub> emissions from Engines #1 and #3. This change reflects a correction of engine size only and not any change in actual emissions.

	PM (lb/hr)		PM <sub>10</sub> (lb/hr)		SO <sub>2</sub> (lb/hr)	
	Previous	New	Previous	New	Previous	New
Engine #1	0.85	0.86	0.85	0.86	8.65	8.76
Engine #2	0.85	0.86	0.85	0.86	8.65	8.76

	PM (tpy)		PM <sub>10</sub> (tpy)		SO <sub>2</sub> (tpy)	
	Previous	New	Previous	New	Previous	New
Engines #1 & #2 (combined)	7.4	7.5	7.4	7.5	75.8	76.7

D. Incorporation Into the Part 70 Air Emission License

Per *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a modification at the facility that has undergone NSR requirements or been processed through 06-096 C.M.R. ch. 115, the source must apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5. An application to incorporate the requirements of this NSR license into the Part 70 air emission license has been submitted to the Department.

E. Annual Emissions

WMDSM is licensed for the following annual emissions, based on a 12-month rolling total.

The totals listed do not reflect operation of all equipment at full capacity. Instead they reflect maximum anticipated emissions associated with full operation of the engines with excess gas burned at the flares. WMDSM is restricted to the total emissions listed below based on a Federally-enforceable license condition.

**Total Licensed Annual Emissions for the Facility**

**Tons/year**

(used to calculate the annual license fee)

	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>	<b>Total HAP</b>
Flare #1	1.3	1.3	37.4	5.2	28.2	—	—
Flare #3	3.9	3.9	112.3	15.6	84.8	—	—
LFGTE Engines #1 & #2	7.5	7.5	76.7	25.9	181.1	—	—
Emerg. Gen. #1	—	—	—	0.2	—	—	—
Emerg. Gen #2	—	—	—	0.2	—	—	—
Emerg. Gen #3	—	—	—	0.2	0.1	—	—
Facility-Wide	—	—	—	—	—	39.9	9.9
<b>Total TPY</b>	<b>12.7</b>	<b>12.7</b>	<b>226.4</b>	<b>47.3</b>	<b>294.2</b>	<b>39.9</b>	<b>9.9</b>

**III. AMBIENT AIR QUALITY ANALYSIS**

WMDSM previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-816-77-1-A issued on 7/11/08). An additional ambient air quality analysis is not required for this NSR license.

**ORDER**

The Department hereby grants New Source Review Minor Revision A-816-77-6-M pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific conditions below.

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

**SPECIFIC CONDITIONS**

**The following shall replace Conditions (1)(D) and (E) of NSR Air Emission License A-816-77-5-A:**

(1) Landfill Gas-Fired Engines

D. Emissions from Engines #1 and #2 (and any subsequent replacement unit subject to 40 C.F.R. Part 63, Subpart ZZZZ) shall each not exceed the following limits:

<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>Origin and Authority</b>	<b>Enforceability</b>
PM	0.05	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>

<b>Pollutant</b>	<b>g/bhp-hr</b>	<b>Origin and Authority</b>	<b>Enforceability</b>
NO <sub>x</sub>	0.6	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>
CO	4.2	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>
VOC	1.0	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>

<b>Pollutant</b>	<b>lb/hr</b>	<b>Origin and Authority</b>	<b>Enforceability</b>
PM	0.86	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>
PM <sub>10</sub>	0.86	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>
SO <sub>2</sub>	8.76	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>
NO <sub>x</sub>	2.95	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>
CO	20.70	06-096 C.M.R. ch. 115, BACT	<b>Federally Enforceable</b>

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E. Emissions from any replacement unit for Engines #1 and #2 manufactured after July 1, 2007 shall each not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.05	06-096 C.M.R. ch. 115, BACT	Federally Enforceable

Pollutant	g/bhp-hr	Origin and Authority	Enforceability
NO <sub>x</sub>	0.6	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
CO	4.2	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
VOC	1.0	40 CFR §60.4233(e) & Table 1 06-096 C.M.R. ch. 115, BACT	Federally Enforceable

Pollutant	lb/hr	Origin and Authority	Enforceability
PM	0.86	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
PM <sub>10</sub>	0.86	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
SO <sub>2</sub>	8.76	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
NO <sub>x</sub>	2.95	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
CO	20.70	06-096 C.M.R. ch. 115, BACT	Federally Enforceable

The following shall replace Condition (6) of Air Emission License A-816-77-5-A:

(6) Facility Wide Emission Limits

WMDSM shall not exceed the following emission limits on a 12-month rolling total basis [06-096 C.M.R. ch. 115, BACT]:

Pollutant	Ton/year
PM	12.7
PM <sub>10</sub>	12.7
SO <sub>2</sub>	226.4
NO <sub>x</sub>	47.3
CO	294.2
VOC	39.9

The following are New Conditions:

(2) Flare #1

Emissions from Flare #1 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.085	06-096 C.M.R. ch. 115, BACT	Federally Enforceable

Pollutant	lb/hr	Origin and Authority	Enforceability
PM	5.10	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
PM <sub>10</sub>	5.10	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
SO <sub>2</sub>	29.41	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
NO <sub>x</sub>	4.08	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
CO	22.20	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
VOC	0.31	06-096 C.M.R. ch. 115, BACT	Federally Enforceable



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(3) Flare #3

Emissions from Flare #3 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.085	06-096 C.M.R. ch. 115, BACT	Federally Enforceable

Pollutant	lb/hr	Origin and Authority	Enforceability
PM	6.38	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
PM <sub>10</sub>	6.38	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
SO <sub>2</sub>	36.77	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
NO <sub>x</sub>	5.10	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
CO	27.75	06-096 C.M.R. ch. 115, BACT	Federally Enforceable
VOC	0.39	06-096 C.M.R. ch. 115, BACT	Federally Enforceable

DONE AND DATED IN AUGUSTA, MAINE THIS 19 DAY OF February, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for  
GERALD D. REID, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/7/19

Date of application acceptance: 1/7/19

Date filed with the Board of Environmental Protection:

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

