

Waste Management Disposal)
Services of Maine)
Somerset County)
Norridgewock, Maine)
A-816-71-A-N)

Departmental
Findings of Fact and Order
Air Emission License

After review of the air emission license new source 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

Waste Management Disposal Services of Maine (WMDSM) of Norridgewock, Maine has applied for a new Air Emission License, permitting the operation of emission sources associated with Phase 11 of their landfill facility in Norridgewock, Maine (the “Crossroads Landfill”). A flare will be utilized as part of the Landfill Gas Collection and Control System (LGCCS) associated with Phase 11.

B. Emission Equipment

WMDSM is authorized to operate the following air emission units:

Process Equipment

<u>Equipment</u>	<u>Design Capacity</u>	<u>Process Flow Rate</u>	<u>Destruction Efficiency</u>	<u>Stack #</u>
Landfill Gas Oxidation Unit	24.6 MMBtu/hr	820 SCFM	98%	#1

SCFM = Standard Cubic Feet per Minute

C. Application Classification

The Phase 11 LGCCS is determined to be a minor new source and has been processed as such.

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II. BEST PRACTICAL TREATMENT

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 Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas. Descriptions of the applicable requirements are provided below under the appropriate headings.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT) as defined in Chapter 100 of the Air Regulations. BACT is a top down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Process Description

WMDSM plans to install a Landfill Gas Collection Control System at the Crossroads facility in Norridgewock as part of Phase 11 of the landfill. The landfill, which has accepted municipal solid waste (MSW), emits landfill gas. Landfill gases including volatile organic compounds (VOCs) and non-methane organic compounds (NMOC), increase for a number of years as waste is added, level off, and begin to decrease as the organic constituents in the waste degrade. WMDSM intends to construct and operate a landfill gas management and blower/process flare system to combust the landfill gas generated. The landfill gas extraction system will consist of wells installed in the waste, header and lateral pipelines, and a blower/process flare system. The landfill gas will be collected and will be combusted in an oxidation unit to destroy volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and odors.

The Phase 11 proposed landfill gas oxidation unit (flare system) has a capacity of 24.6 MMBtu/hr and is fed by a blower with a design capacity of 820 scfm that will draw gas from extraction wells in the landfill. The proposed flare unit will only utilize propane in the startup sequence to ignite the pilot which will ignite the landfill gas. The flare unit is equipped with a thermocouple, in order to prevent the release of uncombusted landfill gas, at the main flame to monitor the continuous presence of flame. If the flare unit stops operating due to loss of flame at the burner tip, the controller will automatically shut the blower down, and close a pneumatic "fail safe" valve at the main header. After an operator specified cool-down time, the flare unit will initiate an auto relight sequence to bring the process flare unit back on-line.

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The flow rate of the landfill gas from Phase 11 will be monitored by a thermal mass flow meter with a scfm digital totalizer and a continuous paper chart recorder. The flare oxidation unit will be equipped with an hour meter which will display the cumulative number of hours the flare system has been in operation.

The flare oxidation unit is designed to meet BACT criteria with at least 98 percent hydrocarbon destruction efficiency. The 98 percent combustion efficiency can be achieved with an open flame flare provided that the flare is operated with no visible emissions, with a flame present, and with correct landfill gas flow rates and heat content in accordance with the parameters established in 40 CFR 60.18. The gas flow rate and flame presence will be monitored on site by the metering and charting instrumentation of the process flare equipment.

The Crossroads Landfill has a capacity less than 2.5 million Mg (2.75 million tons) and is therefore not subject to the collection and control provisions in EPA New Source Performance Standards (NSPS) subpart WWW, for Municipal Solid Waste (MSW) Landfills, requiring the control of collected MSW landfill emissions through the use of control devices. However, the Phase 11 landfill gas flare has been designed in accordance with the EPA criteria for flares as specified by 40 CFR 60.18 and therefore satisfies BACT requirements.

C. BACT for the Landfill Gas Flare System

The regulated pollutants emitted from the landfill gas flare oxidation unit are particulate matter (PM), particulate matter with a diameter smaller than ten microns (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC) and hazardous air pollutants (HAP) as specified in Departmental Regulation's Chapter 115, Appendix B.

BACT for VOC and HAP emissions from the WMDSM landfill shall be the use of a landfill gas oxidation unit which operates at 98% combustion efficiency.

BACT for CO and SO₂ emissions from the oxidation unit shall be operating the unit in accordance with manufacturer's specifications.

BACT for particulate matter (PM) and visible emissions from the oxidation unit shall be good combustion practices and operating the unit in accordance with manufacturer's specifications. Visible emissions from the oxidation unit shall not exceed 5% opacity except for 5 minutes in any 2 hour period.

BACT for the oxidation unit shall also include operating the oxidation unit in accordance with manufacturer's specifications and shall include monitoring the continuous presence of a flame with a thermocouple at the main flame. In addition, BACT shall include monitoring landfill gas flow rate with a thermal mass flow meter equipped with a scfm digital totalizer and a continuous paper chart recorder and electronic storage capabilities. Also, the flare oxidation unit will be equipped with an hour meter which will display the cumulative number of hours the flare system has been in operation.

Therefore, the Department finds that BACT for the landfill gas emissions shall be the use of a landfill gas oxidation unit operated under manufacturer's specifications.

D. Fugitive PM Emission Sources and Roadways

BACT for all potential sources of fugitive PM emissions, including unpaved roadways, shall be controlled by wetting with water, with calcium chloride, or other methods as approved by the Bureau of Air Quality to prevent visible emissions in excess of 10% opacity.

E. Facility Emissions

Total Allowable Annual Emissions for the Phase 11 Landfill

(based on a 12 month rolling total)
(used to calculate the annual license fee)

Pollutant	Tons/year
PM	3.7
PM ₁₀	3.7
SO ₂	5.8
NO _x	7.3
CO	40.9
VOC	0.08
HAP	0.06

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 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.

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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-816-71-A-N, subject to the following 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;
- (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;
- (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;
- (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;
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 MRSA §353.

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- (6) The license does not convey any property rights of any sort, or any exclusive privilege;
- (7) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions;
- (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;
- (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 the renewal of a license or amendment shall not stay any condition of the license.
- (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;
- (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

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- (c) submit a written report to the Department within thirty (30) days from date of test completion.
- (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.
- (13) Notwithstanding any other provision 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.
- (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; and
- (15) Upon written request of 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 manner as the Department shall

prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.

- (16) Landfill Gas Flare (Oxidation Unit)
A. The oxidation unit has a maximum design capacity of 24.9 MMBtu/hr. WMDSM shall not exceed the following emissions.

Oxidation Unit Emission Limits

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.84
PM ₁₀	0.84
SO ₂	1.32
NO _x	1.7
CO	9.3
VOC	0.02
HAP*	0.02

* HAP emissions are as specified in source application A-816-71-A-N, Attachment 2 and in Departmental Regulation Chapter 115, Appendix B. (See attached HAP list.)

- B. Visible emissions from the oxidation unit shall not exceed 5% opacity except for 5 minutes in any 2-hour period.
- C. The landfill gas flare shall be operated with a flame present at all times.
- (17) In lieu of the standard conditions 11 and 12 above regarding stack testing, which are not applicable to this emission source, WMDSM shall make a determination within 180 days of start up of the Phase 11 flare system (oxidation unit) that the actual exit velocity of the gas from system is less than the maximum velocity allowed under 40 CFR 60.18. WMDSM shall submit a written report to the Department within thirty (30) days from completion of this determination. The report shall include all visible emission readings, heat content determination, flow rate measurements, and exit velocity determinations made during the determination as specified in 40 CFR Part 60.18.

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- (18) Fugitive PM Emission Sources and Roadways
Potential sources of fugitive PM emissions, including material stockpiles and unpaved roadways, shall be controlled by wetting with water, with calcium chloride, or other methods as approved by the Bureau of Air Quality to prevent visible emissions in excess of 10% opacity, based on a 3 minute block average basis.
- (19) For Compliance Assurance, WMDSM shall comply with the following:
- A. WMDSM shall monitor for the continuous presence of a flame at the oxidizer unit's main flame with a thermocouple. WMDSM shall maintain records of all periods of operation during which the pilot flame of the flare was absent.
 - B. WMDSM shall monitor landfill gas flow rate to the oxidizer unit with a thermal mass flow meter and shall record gas flow with a scfm digital totalizer and a continuous paper strip chart recorder. The gas flow rate to the oxidizer shall be measured and recorded at least every 15 minutes.
 - C. WMDSM shall use an hour meter to display the cumulative number of hours of flare system operation and shall maintain a log recording hours of operation.
 - D. WMDSM shall operate the oxidation unit within the equipment parameter boundaries established during the most recent performance test.
 - E. WMDSM shall maintain records indicating all routine and non-routine maintenance on the oxidizer unit.
 - F. WMDSM shall maintain purchase records for the auxiliary propane fuel indicating the quantity of fuel purchased and the heat content of the fuel.
 - G. WMDSM shall maintain monthly records of HAP emissions as listed in source application A-816-71-A-N, Attachment 2 and as specified in Departmental Regulation Chapter 115, Appendix B (See attached HAP list). HAP emissions shall be calculated based on EPA's AP-42, "Compilation of Air Pollutant Emission Factors," for landfill gas emissions, the monthly totalized volume of landfill gas extracted, and the destruction efficiency of the oxidizer unit.

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H. Record-Keeping

For all of the equipment parameter monitoring and recording, required by this license, WMDSM shall maintain records of the most current six year period and the records shall include:

1. Documentation which shows monitor operational status during all source operating time, including specifics for calibration and audits; and
2. A complete set of all monitored parameters as specified in this license. All parameter records shall be made available to the Bureau of Air Quality upon request.
3. Records of the control device vendor specifications shall be maintained until the removal of the oxidizer unit.

(20) WMDSM shall track waste density on a monthly basis. If at any time the design capacity of the Crossroads Landfill exceeds 2.5 million Mg (2.75 million tons), WMDSM shall comply with the provisions of 40 CFR 60.752(b).

(21) The term of this order shall be for five (5) years from the signature date below.

DONE AND DATED IN AUGUSTA, MAINE THIS _____ DAY OF _____ 2001.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
MARTHA G. KIRKPATRICK

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application May 25, 2001

Date of application acceptance May 30, 2001

Date filed with the Board of Environmental Protection _____

This Order prepared by Mark E. Roberts, Bureau of Air Quality