



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

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Commissioner

March 29, 2012

Mr. Christopher DeSantis, Area Vice President
Waste Management of Massachusetts, Inc.
26 Patriot Place, Suite 300
Foxboro, MA 02035

RE: **CONDITIONAL APPROVAL**
Application for: BWP AQ 02
Non-Major Comprehensive Plan Application
Transmittal No: X241111
Application No: SE-11-044
Facility ID No: 39792

AT: Taunton Sanitary Landfill
330 East Britannia Street
Taunton, Massachusetts 02780

Dear Mr. DeSantis:

The Department of Environmental Protection (MassDEP), Bureau of Waste Prevention, has reviewed Non-Major Comprehensive Plan Application (NMCPA) No. SE-11-044, received December 22, 2011, with supporting information received January 17, and February 1, 2012. NMCPA No. SE-11-044 addresses the air contaminant emissions from the proposed modification of the operational limits for the Cell 5 Vertical Expansion at the existing municipal solid waste disposal Facility at Taunton Sanitary Landfill, (hereinafter referred to as "Facility" or "landfill") located at 330 East Britannia Street, Taunton, Massachusetts.

The application was submitted in accordance with section 7.02 Plan Approval and Emissions Limitations as contained in 310 CMR 7.00 "Air Pollution Control Regulations," adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-E and Chapter 21C, Sections 4 and 6. MassDEP's review has been limited to air pollution regulation compliance and does not relieve you of the obligation to comply with all other permitting requirements.

The application was prepared by Mr. Michael Niemann of Environmental Information Logistics, LLC, and was submitted over the seal and signature of Mr. Querio, Massachusetts Registered Professional Civil Engineer No. 46685.

PROCESS DESCRIPTION

Aerobic bacteria present within the waste at the time of disposal initiates the decomposition of solid waste. The primary gas produced during this phase of decomposition is carbon dioxide. As the oxygen supply is depleted within the waste, facultative bacteria continue the decomposition process. Eventually, anaerobic bacteria become the predominant means of waste decomposition. In this stage of the process, methane and carbon dioxide are produced at roughly a 50-50 ratio. Other components present in the landfill gas generated from the decomposition process include non-methane organic compounds (NMOCs), Volatile Organic Compounds (VOCs), and smaller quantities of various Hazardous Air Pollutants (HAPs) and Halogenated Organic Compounds (HOCs). HAPs are as listed in the 1990 Clean Air Act (CAA) Amendments, Section 112(b). VOCs and HOCs are subsets of NMOCs. VOCs and HOCs are defined in 310 CMR 7.00.

SUMMARY OF PERMIT ACTIVITY

The Taunton Sanitary Landfill is located on approximately an 84 acre parcel of property owned by the City of Taunton and consists of landfill sections and cells, a residential recycling/solid waste collection drop-off area, and ancillary activities. The Facility is operated for the disposal of municipal solid waste (MSW), non-municipal solid waste, municipal sewage sludge, and grit and screenings from the City of Taunton's municipal wastewater treatment plant.

The Facility became subject to the provisions of 40 CFR Part 60 – *Standards of Performance for New Stationary Sources*, Subpart WWW – *Standards of Performance for Municipal Solid Waste Landfills* when the design capacity of the Facility was increased after May 30, 1991.

The Taunton Sanitary Landfill had been a minor source of NMOC that previously was exempted from the provisions of 40 CFR 60, Subpart WWW Standards of Performance for Municipal Solid Waste Landfills because the maximum design capacity of the Facility was less than 2.5 million megagrams and 2.5 million cubic meters. A vertical expansion of the landfill to a maximum fill elevation of 220 ft –mean sea level (exclusive of final cover system), which began construction on March 3, 2006 with the approval of the cell liner supply and installation contract, resulted in an increase in design capacity that triggered the applicability of 40 CFR 60.752(a)(2), rendering the Facility subject to 40 CFR 60, Subpart WWW.

As required by Subpart WWW, the Facility's Tier 1 NMOC Emission Rate Analysis was performed on May 23, 2006. The total mass emission rate of NMOC from the Facility was calculated as 269 Megagrams per year for the year 2006. The Facility elected to conduct a Tier 2 site-specific NMOC concentration determination, and presented its findings to MassDEP on September 7, 2006. The resultant NMOC concentrations were $C_{\text{NMOC}} = 297.7$ ppmv-hexane. As

a part of the Tier 2 procedure, the landfill NMOC emissions were estimated using the current version of the EPA Landfill Air Emissions Estimation Model (LandGem Excel Version 3.02). The calculation was performed using the site-specific emission result from the 2006 Tier 2 field test, EPA default values of $L_0 = 170$ Megagram CH_4 /Megagram waste and $k = 0.05 \text{ year}^{-1}$, as provided in 40 CFR 60.754(a)(1). The NMOC emission rate was determined to be 20 Megagram for the year 2006. Based on the results of the EPA emission model, which was less than 50 Megagrams per year, the Facility determined it is not subject to the requirement to install a landfill gas collection and control system.

Based on the September 2006, Tier 2 site testing results, the Facility has demonstrated the NMOC emissions from this Facility would not exceed 50 Megagrams per year in each of the next five consecutive years (2006-2011), and has elected to submit this estimate (of the NMOC emission rate for the next 5-year period) in lieu of an annual report.

Presently, the Taunton Sanitary Landfill is an area source of HAPs and has uncontrolled NMOC emissions less than 50 megagrams per year, as per Tier 2 testing procedures and reports filed covering the five (5) year period of time from 2006 to 2011. As such, the Taunton Sanitary Landfill is not subject to 40 CFR 63 Subpart AAAA or 40 CFR 60 Subpart WWW 60.752(b)(2)(ii) collection and control requirements unless a change occurs that makes the Facility applicable to those requirements.

On March 29, 2007, MassDEP issued the Taunton Sanitary Landfill an Air Quality Conditional Approval, No. 4P06042. This Approval contains pollutant and operational limitations and other requirements pertaining to the landfill operation. On January 27, 2012, MassDEP issued the Taunton Sanitary Landfill a Final Air Quality Operating Permit, No. 4V07016. This Approval contains pollutant and operational limitations and other requirements pertaining to the landfill operation.

At the Taunton Sanitary Landfill, a landfill gas (LFG) collection system is operating. The system is comprised of vertical gas extraction wells and horizontal gas collectors with lateral piping, connected to a main header system. Once collected, the LFG is supplied as fuel to an electric generating Facility consisting of Reciprocating Internal Combustion Engine (RICE) electrical generating sets and/or an open utility flare located adjacent to the Taunton Sanitary Landfill. During periods when the LFG gas is not used for electric generation, it is directed to the open flare where the LFG is combusted. The RICE electrical generating sets and open flare constitute a separate entity from the ownership and operation of the Taunton Sanitary Landfill. MM Taunton Energy LLC owns and operates the RICE electrical generating sets and open flare in accordance with a March 11, 2011 Revised Conditional Approval No. 4B05026 issued by MassDEP.

DETERMINATIONS

MassDEP's review of this application (NMCPA No. SE-11-044) is specific to the generation of landfill gas, produced by microorganisms within the landfill under anaerobic conditions.

MassDEP acknowledges the Facility has made the determination that the construction and operation of the Cell 5 Vertical Expansion at the Facility are a continuation of the current operating practice for the Facility, and will not increase fugitive Particulate Matter emissions from the Facility.

MassDEP recognizes an existing landfill gas collection system is currently operating at the Facility. The existing system is comprised of vertical gas extraction wells and horizontal gas collector laterals, connected to a main header system, as described in the following:

- MassDEP Approval dated June 14, 2006 for Cell 5D,
- MassDEP Approval dated October 11, 2006 for Cell 5B,
- MassDEP Approval dated November 13, 2008 for Cell 5C,
- MassDEP Approval dated November 30, 2010 for Cell 5A, and
- MassDEP Approval dated April 26, 2011 for Major Modifications.

The Facility has indicated that fluctuations in the amount of waste material landfilled in a calendar year are potentially limited by MassDEP Approval No. 4P06042, which limits waste material landfilled in a 12-month rolling period. In this Application, the Facility proposes a change in operational limits that allows for waste material to be landfilled at the maximum rate allowed by MassDEP's Solid Waste Approvals. When this proposed landfill rate scenario was entered into the LandGem model, there was no increase in potential emissions.

MassDEP notes the proposed change in operational limits will provide consistency across MassDEP's Air Quality and Solid Waste Approvals.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner / operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

MassDEP is of the opinion that the submitted application is in conformance with current air pollution control engineering practices and hereby grants Conditional Approval of NMCPA No. SE-11-044, subject to the provisos below:

A. PRODUCTION LIMIT:

1. None.

B. OPERATIONAL LIMITS:

1. Waste materials landfilled shall not exceed 240,240 tons per any 12-month consecutive period.
2. Waste materials landfilled shall not exceed 120,120 tons per any calendar year.

C. EMISSION LIMITS:

1. The Facility emission rates for NMOCs, VOCs, single maximum HAP, total HAPs, and HOCs shall be calculated using the equations for calculating uncontrolled emissions in Section 2.4 of the U.S. EPA’s Compilation of Air Pollution Emission Factors, Volume 1: Stationary Point and Area Sources, AP-42, Fifth Edition, Office of Air Quality Planning and Standards, Research Triangle Park, NC, November 1998 (<http://www.epa.gov/ttn/chief/ap42>). The latest edition (6th, 7th, etc.) of the above referenced document shall be used when available for calculations. The values for variables L_0 , k , and C_{NMOC} , as provided in Table 1 below, shall be used in calculating the uncontrolled emissions. The values for the average concentrations of the LFG constituents shall be based on Solid Waste Association of North America’s *Waste Industry Air Coalition (WIAC) Comparison of Recent Landfill Gas Analyses with Historic AP-42 Values, January 2001*, and shall be used for calculating single maximum HAP, total HAPs, and HOCs.

**TABLE 1
EMISSION FACTORS**

Variable	Value (units)
L_0 (emission generation potential)	170 (cubic meters gas per Megagram refuse) ¹
k (generation rate constant)	0.05 (yr ⁻¹) ¹
C_{NMOC} (NMOC Concentration)	297.7 (parts per million by volume as hexane) ²

- Notes 1. L_0 and k were not determined by sampling or testing, but represent default values contained in 40 CFR 60 Subpart WWW that when used with site-specific actual concentration and flow rate measurements, better predict site LFG generation. AP-42 default values were not used because they do not correlate well with observed conditions.
2. Actual Tier 2 data, collected on August 8, 2006, at a measured flow rate of 1241 scfm.

2. The Facility shall limit emissions from landfill operations as follows in Table 2 below:

**TABLE 2
MAXIMUM ALLOWABLE EMISSIONS**

Pollutant	Tons per Consecutive 12-month Period	
	Cell 5 Vertical Expansion	Total Landfill Facility
Non-Methane Organic Compounds ¹ (NMOCs)	15	38
Volatile Organic Compounds (VOCs)	15	38

Hazardous Air Pollutants (HAPs) (Single & Total)	3.6	9.0
Halogenated Organic Compounds (HOCs)	0.5	1.3

Note 1: NMOCs contains VOCs, HAPs, and HOCs fractions, whose individual compounds and pollutants are not categorically unique.

D. NOTIFICATIONS AND REPORTING:

1. All notifications and reporting required by this Conditional Approval shall be made to the attention of:

Department of Environmental Protection
Bureau of Waste Prevention
20 Riverside Drive
Lakeville, Massachusetts 02347
Attn: Section Chief,
Compliance and Enforcement Section

Telephone: (508) 946-2878
Fax: (508) 947-6557
(508) 946-2865

E. RECORD KEEPING REQUIREMENTS:

1. The Facility shall maintain detailed NMOC, VOC, HAP, and HOC records on a consecutive 12-month period basis (the total from the latest month plus the sum for the eleven months preceding the latest month) for the Cell 5 Vertical Expansion. These records, including any other "credible evidence," shall document the compliance status of the Facility regarding the conditions, provisions, requirements, and limits contained in this Conditional Approval. Supporting documentation, including waste acceptance records, shall be maintained.
2. A copy of these records shall be kept readily available on site for a period of sixty (60) consecutive months and shall be made available to MassDEP and/or US EPA personnel upon request.

F. SPECIAL CONDITIONS:

1. The following Approval, previously issued to the Facility, is superseded herein:
 - 4P06042, Transmittal No. W104113, dated March 29, 2007.

The above listed Approval shall be deemed null and void. The underlying application for NMCPA No. 4P06042 shall remain valid.

2. Fugitive dust emissions from the storage piles, landfill operations (such as operation of mobile equipment upon the daily cover soils), and haul roads shall not cause a nuisance off-site and shall not cause visible fugitive dust emissions to extend beyond the property boundary. The Facility shall use water sprays or other techniques as necessary to control fugitive emissions such that no visible fugitive emissions leave the Facility site.
3. Taunton Sanitary Landfill remains subject to the terms and conditions contained in MassDEP Final Air Quality Operating Permit 4V07016, dated January 26, 2012. Within 90 days from the date of this Conditional Approval issuance, Taunton Sanitary Landfill shall submit an Operating Permit Minor Modification application that reflects this Conditional Approval and any other requirements that apply to the Facility. Mr. Mark Poudrier (508-946-2783) of this office may be contacted for additional guidance on this matter.
4. The Facility shall continue to install a temporary landfill gas collection system and a permanent landfill gas collection system that may include portions of the temporary system as required to minimize fugitive emissions and to prevent offsite nuisance odor conditions. The LFG collection systems shall be constructed and operated in accordance with MassDEP Approvals issued pursuant to 310 CMR 19.00, Solid Waste Management Regulations, and future Approvals issued pursuant to 310 CMR 19.00.

G. GENERAL CONDITIONS:

The Permittee is subject to, and shall comply with, the following general conditions:

1. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
2. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with Regulation 310 CMR 7.15 in its entirety and 310 CMR 4.00.

3. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
4. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
5. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
6. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
7. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
8. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
9. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
10. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.
11. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe

Provisions” that allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.

The enforceable conditions contained herein establish the federally enforceable status of this **CONDITIONAL APPROVAL**. MassDEP reserves the right to require changes in the standard operating and/or maintenance procedure, record keeping system, and to require additional process monitoring if it is determined necessary by MassDEP to ensure continuous compliance with the Air Quality Control Regulations contained in 310 CMR 7.00.

This Approval is an action of MassDEP; you have a limited right to appeal. Please refer to the enclosed “APPEAL” information, Attachment 1.

Enclosed is one stamped, approved copy of the application submittal.

Should you have any questions pertaining to this **CONDITIONAL APPROVAL**, contact Dan Kamieniecki at the Regional Office at (508) 946-2717.

Very truly yours,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John K. Winkler, Chief
Permit Section
Bureau of Waste Prevention

W/DK/

Enclosure: “Appeal of Approval”

cc: J. Winkler DEP/SERO
ecc: L. Carlson, DEP-SERO
J. Winkler, DEP/SERO
D. Ellis, DEP/SERO
M. Poudrier, DEP/SERO
L. Black, DEP/SERO
Y. Tian, DEP/Boston
P. Richer, Waste Management MMA (Applicant)
M. Niemann, Environmental Information Logistics, LLC (Application Preparer)
Health Department, Taunton, MA
Fire Department, Taunton, MA

ATTACHMENT 1

APPEAL OF APPROVAL

This Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts that are the grounds for the request, and the relief sought. Additionally, the request must state why the Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.