Appendix VII

Landfill Odours Detected by MOE Provincial Officers



Non-Landfill Odours Detected by MOE Provincial Officers



Appendix IX

Landfill Odour Complaints from Public



APPENDIX X

AIR CERTIFICATE OF APPROVAL 0741-6S9NPE



Ministère de l'Environnement AMENDED CERTIFICATE OF APPROVAL AIR NUMBER 0741-6S9NPE Issue Date: November 28, 2006

Waste Management of Canada Corporation 2301 Carp Road Ottawa, Ontario K0A 1L0

Site Location:

Ottawa Landfill Site 2301 Carp Road Ottawa City, Ontario

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- one (1) enclosed flare system, used to incinerate the landfill gases from a landfill gas collection system at a maximum volumetric gas flow rate of 0.57 standard cubic metre per second. The landfill flare has a maximum heat input of 41.7 gigajoules per hour, exhausting into the atmosphere through a stack, having an exit diameter of 2.1 metres, extending 12.2 metres above grade;

- one (1) enclosed flare system, used to incinerate the landfill gases from an expanded landfill gas collection system at a maximum volumetric gas flow rate of 1.04 standard cubic metres per second based on a methane content of 50 percent by volume. The landfill flare has a maximum heat output of 70.7 gigajoules per hour, exhausting into the atmosphere through a stack, having an exit diameter of 2.7 metres, extending 12.2 metres above grade;

- one (1) landfill gas-to-energy facility, consisting of initially five (5) and up to a maximum of eight (8) reciprocating engine-generator sets, all located inside a Building in the southeast side of the site, firing on landfill gas collected from the site, determined by actual landfill gas collection rate achievable at the site. Each engine-generator set has a power rating of 800 kilowatts and a maximum landfill gas firing rate of 0.19 cubic metre per second, so that when eight (8) engine-generator sets are operating simultaneously, the maximum landfill gas consumption rate is 1.52 standard cubic metres per second. Each engine-generator set exhausts into the atmosphere at a maximum volumetric flow rate of 2.85 actual cubic metres per second at an approximate temperature of 427 degrees Celsius, with its own stack, having an exit diameter of 0.41 metre, extending 5.5 metres above the roof and 13.4 metres above grade. As landfill gas generation and collection decreases, the engine-generator sets will be removed from the site as required;

- one (1) soil bioremediation Biopile process, to treat petroleum hydrocarbon impacted soil received at the site, consisting of:

- two (2) asphalt pads, on each of which petroleum hydrocarbon impacted soil is mixed with Biostimulation Compound and stockpiled, complete with pipes for aeration purpose and water irrigation system, and covered with a semi-permeable membrane,

- one (1) blower to draw air through perforated pipes through the impacted soil piles in order to maintain aerobic bacterial activity inside the biopiles, exhausting to the activated carbon filter described below,

- one (1) activated carbon filter, consisting of one (1) activated carbon vessel, containing 900 kilograms of granular activated carbon, discharging into the atmosphere at a volumetric flow rate of 0.6 cubic metre per second, through a stack, having an exit diameter of 0.3 metre, extending 1.5 metres above grade;

- one (1) exhaust, to serve the gas stripper in the Blower Building used to remove methane and non-methane organic compounds from the wastewater before its discharge to sanitary sewer, discharging into the atmosphere at a volumetric flow rate of 0.42 cubic metre per second, through a stack, having an exit diameter of 0.1 metre, extending 1.2 metres above grade;

all in accordance with the Application for Approval (Air & Noise) dated March 16, 2006 and signed by Remi Godin2Waste

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Management of Canada Corporation and the revised Application for Approval (Air & Noise) dated July 10, 2006 and signed by Michael Pullen, Waste Management of Canada Corporation, and all supporting information associated with the applications including additional information provided by Waste Management of Canada Corporation, dated July 18, 2006 and signed by Michael Walters, by Henderson Paddon & Associates Limited on behalf of Waste Management of Canada Corporation, dated September 6, 2006, October 6, 2006, October 23, 2006, October 25, 2006, October 31, 2006, November 6, 2006 and signed by Jeff Armstrong, P.Eng.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

(1) "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a Facility;

(2) "Acoustic Audit" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Facility, assessed to determine compliance with the performance limits for the Facility regarding noise emissions, completed in accordance with the procedures set in Publication NPC-103 and reported in accordance with Publication NPC-233;

(3) "Acoustic Audit Report" means a report presenting the results of an Acoustic Audit, prepared in accordance with Publication NPC-233;

(4) "Act" means the Environmental Protection Act;

(5) "Biostimulation Compound" means any chemical amendment, nutrient amendment or pH adjustment chemical used in the Process to enhance bioremediation. In this Certificate, it means the soil amendment as described in the Company's application, this Certificate and in the supporting documentation submitted with the application, to the extent approved by this Certificate;

(6) "CEM System" means the continuous monitoring and recording system, one for each of the flare system, used to optimize the operation of the flare systems, as described in this Certificate, including Schedule "A", to the extent approved by this Certificate;

(7) "Certificate" means this Certificate of Approval, including Schedule "A", issued in accordance with Section 9 of the Act;

(8) "Company" means Waste Management of Canada Corporation;

(9) "Director" means any Ministry employee appointed by the Minister pursuant to Section 5 of the Act;

(10) "District Manager" means the District Manager, Ottawa District Office, Eastern Region of the Ministry;

(11) "Equipment" means the two (2) enclosed flare systems and the one (1) landfill gas-to-energy facility described in the Company's application, this Certificate and in the supporting documentation submitted with the application, to the extent approved by this Certificate;

(12) "Exhausted" means the capacity of the activated carbon in the Process is exhausted and the activated carbon is no longer able to absorb emissions;

(13) "Facility" means the entire operation located on the property where the Equipment and the Process are located;

(14) "Independent Acoustical Consultant" means an Acoustical Consultant not representing the Company, and not involved in the noise impact assessment or the design/implementation of noise control measures for the Facility. The Independent Acoustical Consultant shall not be retained by the consultant involved in the noise/vibration impact assessment or the design/implementation of noise/vibration control measures for the Facility;

(15) "Manual" means a document or a set of documents that provide written instructions to staff of the Company: 213

(16) "Ministry" means the Ontario Ministry of the Environment;

(17) "Process" means the soil bioremediation process described in the Company's application, this Certificate and in the supporting documentation submitted with the application, to the extent approved by this Certificate;

(18) "Publication NPC-103" means Publication NPC-103 of the Model Municipal Noise Control By-Law, Final Report, August, 1978, as amended;

(18) "Publication NPC-205" means Publication NPC-205, Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban), October, 1995;

(19) "Publication NPC-233" means Publication NPC-233, Information to be Submitted for Approval of Stationary Sources of Sound, October 1995.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

PERFORMANCE

1. The Company shall, at all times, ensure that the noise emissions from the Facility comply with the limits determined in accordance with Ministry Publication NPC-205.

2. The Company shall operate the two (2) enclosed flare systems in such a manner that a minimum temperature, as recorded by the CEM System, shall be 900 degrees Celsius at a point representing a minimum retention time of 0.75 second, at all times when the landfill gas incineration is in progress.

OPERATION AND MAINTENANCE

3. The Company shall ensure that the Equipment, including the CEM System, and the Process are properly operated and maintained at all times. The Company shall:

(1) prepare, not later than three (3) months after the date of this Certificate, a Manual outlining the operating procedures and a maintenance program for the two (2) enclosed flare systems. These operating procedures and the maintenance program in the Manual shall be updated as necessary. The Manual shall also be updated within three (3) months after the Process or the landfill gas-to-energy facility commences operation to outline the operating procedures and maintenance programs for the Process or the landfill gas-to-energy facility. The Manual shall include, as a minimum, the following:

(a) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment and the CEM System suppliers;

(b) the calibration procedures of the CEM System;

(c) frequency of inspections and scheduled preventative maintenance of the Process, including the procedures to monitor the performance of the activated carbon filter to determine the frequency of replacement of the activated carbon;

(d) procedures to determine, monitor and record the operation of the landfill gas-to-energy facility, for example the volumetric flow rate of landfill gas to the engine-generator sets when they are in operation, the electricity produced by the engine-generator sets, and the temperature and volumetric flow rate of the exhaust from the engine-generator sets;

(e) emergency procedures and procedures to prevent upset conditions;

(f) procedures to record the amount of Biostimulation Compound used each time in the Process;

(g) procedures to monitor the progress of bioremediation and the effectiveness of the Process; 214

(h) the operator training which is to be provided by an individual experienced with the Equipment and the Process;

(i) procedures for any record keeping activities relating to operation and maintenance of the Equipment and the Process;

(j) all appropriate measures to minimize noise, dust and odorous emissions from all potential sources;

(k) the procedures for recording and responding to complaints regarding the operation of the Equipment and the Process;

(2) implement the procedures of the Manual.

4. The Company shall not permit the activated carbon filter to be Exhausted at any time during the operation of the Process.

RECORD RETENTION

5. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Certificate, and make these records available for review by staff of the Ministry upon request. The Company shall retain:

(1) all records on the maintenance, repair and inspection of the Equipment and the CEM System;

(2) all records on the inspection, maintenance and monitoring activities of the Process;

(3) all records produced by the CEM System;

(4) all records on operator training;

(5) all records on the operation of the landfill gas-to-energy facility, including the volumetric flow rate of landfill gas to the engine-generator sets when they are in operation, the schedule on start-up and shut-down of each engine-generator set, the electricity produced by the engine-generator sets, and the temperature and volumetric flow rate of the exhaust from the engine-generator sets;

(6) all records of any environmental complaints; including:

(a) a description, time and date of each incident to which the complaint relates,

(b) wind direction at the time of the incident to which the complaint relates, and

(c) a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

NOTIFICATION OF COMPLAINTS

6. The Company shall notify the District Manager, in writing, of each environmental complaint, received by the Company through the Company's published phone number or email address established for the Facility, within two (2) business days of the complaint. The notification shall include:

(1) this Certificate number;

(2) a description of the nature of the complaint;

(3) the time and date of the incident to which the complaint relates;

(4) a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a

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similar occurrence in the future.

REPORTING

7. The Company shall prepare and submit to the District Manager a report, either quarterly or at a frequency directed by the District Manager, within thirty (30) working days after the end of that reporting period, on the operation of the Facility and the environmental complaints received by the Company in that reporting period. The report shall include, as a minimum, the following:

(a) an executive summary,

(b) a summary of the environmental complaints received by the Company or referred to the Company by the Ministry within the period and details of each of these complaints, and

(c) copy of the records retained under Condition 5 above.

ACOUSTIC AUDIT

8. The Company shall carry out acoustic audit measurements on the actual noise emissions due to the operation of the Facility. The Company shall:

(1) carry out acoustic audit measurements in accordance with the procedures in Publication NPC-103;

(2) submit an Acoustic Audit Report on the results of the Acoustic Audit, prepared by an Independent Acoustical Consultant, in accordance with the requirements of Publication NPC-233, to the District Manager and the Director not later than three (3) months after the date of this Certificate or commencement of operation of the Facility.

9. The Director:

(1) may not accept the results of the Acoustic Audit if the requirements of Publication NPC-233 were not followed;

(2) may require the Company to repeat the Acoustic Audit if the results of the Acoustic Audit are found unacceptable to the Director.

Schedule "A"

PARAMETER: Temperature

LOCATION:

The sample point for the Continuous Temperature Monitor shall be located in the combustion chamber where the minimum retention time of the combustion gases at a minimum temperature of 900 degrees Celsius for at least 0.75 second is achieved.

PERFORMANCE:

The Continuous Temperature Monitor shall meet the following minimum performance specifications for the following parameters.

PARAMETER SPECIFICATION

- 1. Type: shielded "K" type thermocouple or equivalent
- 2. Accuracy: \pm 1.5 percent of the minimum gas temperature

RECORDER:

The recorder must be capable of registering continuously the measurement of the monitor without a significant loss of

accuracy and with a time resolution of 5 minutes or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time, on a monthly basis, when the enclosed flare systems are in operation.

The reasons for the imposition of these terms and conditions are as follows:

1. Conditions No. 1 and 2 are included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.

2. Conditions No. 3 and 4 are included to emphasize that the Equipment and the Process must be maintained and operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

3. Condition No. 5 is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the Act, the regulations and this Certificate can be verified.

4. Condition No. 6 is included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the site's compliance.

5. Condition No. 7 is included to require the Company to prepare and submit records to provide information to the Ministry so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.

6. Condition No. 8 is included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.

7. Condition No. 9 is included to ensure that the Acoustic Audit is carried out in accordance with procedures set in the Ministry's Noise Guidelines and verifies compliance with Condition No. 1.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 8-4076-99-006 issued on December 17, 1999.

In accordance with Section 139 of the <u>Environmental Protection Act</u>, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the <u>Environmental Bill of Rights</u>, S.O. 1993, Chapter 28, the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the <u>Environmental Protection Act</u>, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;

2. The grounds on which you intend to rely at the hearing in relation to <u>each</u> portion appealed.

The Notice should also include:

- 3. The name of the appellant;
- 4. The address of the appellant;
- 5. The Certificate of Approval number;
- 6. The date of the Certificate of Approval;
- 7. The name of the Director;
- 8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

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This Notice must be served upon:

The Secretary* <u>A</u> Environmental Review Tribunal 2300 Yonge St., Suite 1700 P.O. Box 2382 Toronto, Ontario M4P 1E4

AND

The Environmental Commissioner 1075 Bay Street, 6th Floor Suite 605 Toronto, Ontario M5S 2B1 The Director Section 9, *Environmental Protection Act* Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca

This instrument is subject to Section 38 of the <u>Environmental Bill of Rights</u>, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 28th day of November, 2006

AND

Victor Low, P.Eng. Director Section 9, *Environmental Protection Act*

RW/

c: District Manager, MOE Ottawa District Office

Jeff Armstrong, P.Eng., Henderson Paddon & Associates Limited