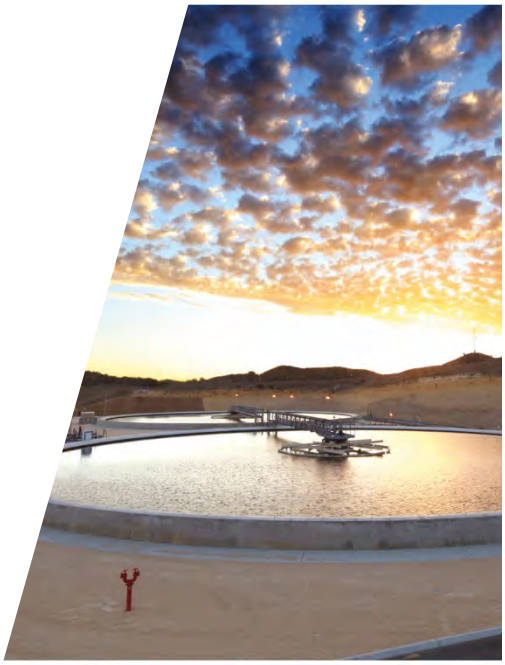
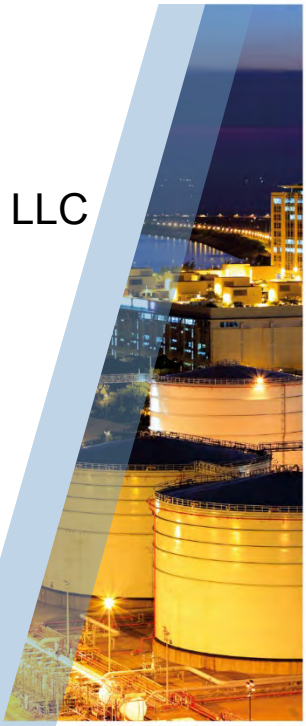


Title V Renewal Application

NYSDEC Permit ID# 9-1462-00001/00013
Chaffee Landfill
Chaffee, New York



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1. Introduction

GHD has been retained by Waste Management of New York LLC (WMNY) to provide a Title V Permit Renewal Application (Application) for the Chaffee Landfill located in Sardinia, New York (Facility or Site). The existing Title V Permit for the Chaffee Landfill expires on January 12, 2020, and a renewal application is required to be submitted to the New York State Department of Environmental Conservation (NYSDEC) no later than 180 days prior to expiration of the current permit (no later than July 16, 2019). The purpose of this Application is to update the emissions information to reflect current conditions at the Facility and to request certain changes to the existing Title V Permit. The attached application forms and supporting documentation have been updated and supersede the previous application documents, where appropriate.

1.1 Facility Information

WMNY owns and operates the solid waste management facility located at 10860 Olean Road in Chaffee, New York under NYSDEC Part 360, Permit #9-1462-00001/00013 (Facility or Site). The Facility accepts municipal solid waste (MSW) and other non-hazardous wastes, mainly from Erie County. The landfill operations at the facility include tipping, covering, compacting, landfill cell construction, hauling, leachate collection and storage, and equipment maintenance operations. The landfill has an active landfill gas (LFG) collection system that conveys collected LFG to on-site flares and the Renewable Energy Facility, consisting of eight internal combustion engines. The engines are operated by Waste Management Renewable Energy LLC (WMRE) and are used to generate electricity for off-site use. The Standard Industrial Classification (SIC) for the Chaffee Landfill facility is 4953.

2. Title V Permit Renewal Supporting Information

The following Section outlines the supporting information for the Title V Permit Renewal Application.

2.1 Emission Unit Descriptions

2.1.1 Facility Emission Sources

The following is a list of emission sources and controls from the Facility:

Emission Unit	Process	Source/Control	Description
L-00001	LGF	0LGF1	Existing 3,300-cfm Enclosed Flare (C)
		FLAR3	Existing 910-cfm Open Flare (C)
		LNDFL	Collected LFG – Original Landfill (S)
		LNDF2	Collected LFG – Western Expansion Landfill (S)
		LNDF3	Collected LFG – Valley Fill Expansion (S)
	LEA	TANKS	Leachate Storage Emissions (S)
	301	LNDFL	Fugitive LFG - Original Landfill (S)
		LNDF2	Fugitive LFG – Western Expansion Landfill (S)
		LNDF3	Fugitive LFG – Valley Fill Expansion (S)
	183	LNDFL	Fugitive Dust – Original Landfill (S)
		LNDF2	Fugitive Dust – Western Expansion Landfill (S)
		LNDF3	Fugitive Dust – Valley Fill Expansion (S)
M-00001	PSB	0PSB1	Paint Booth – Spray Gun (S)
		0PSB2	Paint Booth – Fabric Filters (C)
P-00001	601	ENG01	LFG Combustion – Engine #1 (C)
		ENG02	LFG Combustion – Engine #2 (C)
		ENG03	LFG Combustion – Engine #3 (C)
		ENG04	LFG Combustion – Engine #4 (C)
		ENG05	LFG Combustion – Engine #5 (C)
		ENG06	LFG Combustion – Engine #6 (C)
	602	ENG01	Insignificant Activities – Engine #1 (S)
		ENG02	Insignificant Activities – Engine #2 (S)
		ENG03	Insignificant Activities – Engine #3 (S)
		ENG04	Insignificant Activities – Engine #4 (S)
		ENG05	Insignificant Activities – Engine #5 (S)
		ENG06	Insignificant Activities – Engine #6 (S)
		ENG07	Insignificant Activities – Engine #7 (S)
		ENG08	Insignificant Activities – Engine #8 (S)
	603	ENG07	LFG Combustion – Engine #7 (C)
		ENG08	LFG Combustion – Engine #8 (C)

S = Emission Source
C = Control Device

2.1.2 Summary of Emissions and Sources

The following sections present discussions of the emissions estimated for the sources identified in Section 2.1.1. Supporting calculations are provided as referenced (calculations were taken from the Title V Permit Modification that was submitted on November 1, 2012). Table 1 presents a summary of facility-wide potential emissions.

2.1.2.1 Landfill Gas Generation

Based on information provided by WMNY, GHD calculated LFG generation estimates for the landfill areas. These estimates were based on historical actual and projected waste acceptance values utilizing the United States Environmental Protection Agency (USEPA) LandGEM Model Version 3.02.

A generation potential (L_o) value of 139.6 m^3/Mg and generation rate (k) of 0.04 yr^{-1} were utilized for the landfill areas. The concentration of non-methane organic compounds (NMOC) in the LFG is assumed to be 595 ppm, per AP-42, and a methane content of 50 percent by volume is assumed. These modeling parameters were referenced from Section IV of the Preconstruction Permit Application for the WMNY Chaffee Landfill Western Expansion (prepared by Earth Tech, June 2004).

It is assumed that all incoming municipal solid waste (MSW) may potentially be putrescible. The waste acceptance rate is assumed (worst case) to be 720,000 tons per year (600,000 TPY waste and 120,000 TPY cover materials). An 85 percent collection efficiency was used to determine the amount of gas collected and the resulting fugitive emissions. Figure 1 presents the LFG model for the Chaffee Landfill, which shows the estimated amount of LFG generated for the Facility. Based on these calculations, the peak year of LFG generation for the landfill will be approximately 2021, with a total of 6,233 cfm generated from all landfill areas (approximately 5,298 cfm of collected LFG in 2021).

2.1.2.2 Fugitive Landfill Gas

Some of the LFG that is not captured by a properly maintained collection system potentially permeates through the landfill soil covers and is released to the atmosphere as fugitive emissions, although some of the gas is retained within the landfill and still more is degraded biologically. The primary constituents of concern for LFG are methane, NMOC, volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). HAPs and VOCs are a portion of the NMOCs. The estimate of fugitive LFG was based on the expected LFG generation multiplied by one minus the assumed collection efficiency of the gas collection system. NMOC emissions were calculated based on an AP-42 value of 595 ppm, and VOCs were calculated as 39 percent of NMOC emissions, per AP-42. Calculated fugitive NMOC and VOC emissions for the peak years of gas generation (year 2021) are presented in Table 2. Emissions of speciated HAP compounds in the fugitive LFG were calculated using values compiled by the Waste Industry Air Coalition (WIAC). Speciated HAP emissions for the landfill areas were calculated for the peak year of fugitive emissions (year 2021) and are provided in Table 2A.

Fugitive greenhouse gas (GHG) emissions were calculated by assuming that LFG is approximately 50 percent methane and 50 percent carbon dioxide by volume. Total GHG emissions in terms of

carbon dioxide equivalents were calculated using global warming potential values referenced from 40 CFR Part 98, Subpart A. Table 2 presents the calculated fugitive GHG emissions for the landfill areas (year 2021).

2.1.2.3 Landfill Gas Combustion

Collected LFG is routed from the landfill areas through a gas header and directed to the Chaffee Landfill Renewable Energy Facility (REF) which consists of eight (8) Caterpillar 3516 engines. Any remaining excess LFG is combusted in one (1) 99 MMBtu/hr (~ 3,300 cfm) enclosed flare, and one (1) 27.3 MMBtu/hr (~ 910 cfm) open flare. Emission estimates were based on the use of all three of these control devices for the combustion of landfill gas. The following summarizes the capacity of these control devices:

Control Device	***Capacity (cfm)***
3516 Engines (8 total)	2,400
3,300 cfm enclosed flare	3,300
910 cfm open flare	910
Total	**6,610**

Combustion of LFG in either the engines or flares results in emissions of NMOC, VOCs, carbon monoxide (CO), oxides of nitrogen (NOx), sulfur dioxide (SO_2), particulate matter (PM), and HAPs, including hydrogen chloride (HCl).

Combustion emissions for the 99 MMBtu/hr (~ 3,300 cfm) enclosed flare and 27.3 MMBtu/hr (~ 910 cfm) open flare are presented in Table 3. It is assumed that the LFG is combusted primarily in the engines, with the enclosed and open flares combusting the remaining LFG. This combustion scenario is outlined below:

Control Device	**Permitted Peak Combustion (cfm)**
3516 Engines (8 total)	2,400
3,300 cfm enclosed flare	2,398
910 cfm open flare	500
Total	**5,298**

The following information was used to estimate combustion emissions from the 99 MMBtu/hr (~ 3,300 cfm) enclosed flare and the 27.3 MMBtu/hr (~ 910 cfm) open flare:

- CO and NOx emissions for the enclosed flare are based on manufacturer guarantee information (Emission rate for CO = 0.20 lb/MMBtu; Emission rate for NOx = 0.06 lb/MMBtu). CO and NOx emissions for the open flare were referenced from the *Title V Permit Minor Modification Application*, dated December 2005 (Emission rate for CO = 0.22 lb/MMBtu; Emission rate for NOx = 0.052 lb/MMBtu);

- SO_2 emissions are based on a total reduced sulfur (TRS) concentration of 252 ppm and a 0 percent destruction efficiency (DE) [TRS concentration based on conservative estimate];
- NMOC emissions are based on a concentration of 595 ppm and a DE of 98 percent [referenced from USEPA AP-42, Section 2.4 (11/98)];
- VOC emissions are calculated assuming that VOCs are 39 percent of total NMOC [referenced from USEPA AP-42, Section 2.4 (11/98)]; and
- PM emissions are based on an emission rate of 17 pounds per million cubic feet of methane combusted [referenced from USEPA AP-42, Section 2.4 (11/98)].

Emissions of speciated HAP compounds in the combusted LFG were calculated based on values compiled by WIAC. The concentration of HCl was referenced from "Measurement of Toxic Emissions from Landfill: History and Current Developments (Sullivan, Patrick S. and Bins, John, November 2002)." A destruction efficiency of 98 percent was assumed in the calculations (except for mercury and HCl). Speciated HAP emissions for the enclosed flares under the existing scenario were calculated for the peak year of gas generation (year 2021) and are provided in Table 3A.

GHG emissions from the flares were calculated by assuming that LFG is approximately 50 percent methane and 50 percent carbon dioxide by volume. Total GHG emissions in terms of carbon dioxide equivalents were calculated using global warming potential values referenced from 40 CFR Part 98, Subpart A. Table 3B presents the calculated GHG emissions from combustion of LFG in the flares.

Potential combustion emissions for the eight existing Caterpillar 3516 engines are presented in Table 4. The following information was used to estimate combustion emissions from the internal combustion engines (all emission factors referenced from the *Chaffee Landfill PPP State Facility Permit Application*, dated February 2006):

- CO and NOx emissions for the existing Caterpillar 3516 engines are based on performance test results from similar engines (conservative estimate)
- SO_2 emissions are based on a total reduced sulfur (TRS) concentration of 252 ppm and a 0 percent destruction efficiency (DE) [TRS concentration based on conservative estimate]
- NMOC emissions are based on a concentration of 595 ppm and a DE of 98 percent [referenced from USEPA AP-42, Section 2.4 (11/98)]
- VOC emissions are calculated assuming that VOCs are 39 percent of total NMOC [referenced from USEPA AP-42, Section 2.4 (11/98)]
- PM emissions are based on an emission factor of 0.01 grains per cubic foot of LFG (based on engineering estimate)

Emissions of speciated HAP compounds in the combusted LFG were calculated based on values compiled by WIAC. The concentration of HCl was referenced from "Measurement of Toxic Emissions from Landfill: History and Current Developments (Sullivan, Patrick S. and Bins, John, November 2002)." A destruction efficiency of 98 percent was assumed in the calculations (except for mercury and HCl). Speciated HAP emissions for the existing internal combustion engines are provided in Table 4A.

GHG emissions for the existing internal combustion engines were calculated by assuming that LFG is approximately 50 percent methane and 50 percent carbon dioxide by volume. Total GHG emissions in terms of carbon dioxide equivalents were calculated using global warming potential values referenced from 40 CFR Part 98, Subpart A. GHG emissions for the existing internal combustion engines are provided in Table 4B.

2.1.2.4 Engine Plant Tanks/Vents

The following emission sources are located in the Renewable Energy Facility:

Existing Caterpillar 3516 Engine Plant:

- 8 Crankcase Breather Vents With Mist Eliminators
- 1 Coolant Tank
- 8 Oil Tanks
- 1 Condensate Tank
- 1 Gas Chromatograph Vent

Each IC engine has a crankcase breather vent. The breather vent in each engine removes the vapors generated within the crankcase. The breather vent for each engine is piped to individual mist eliminators. The mist eliminator units trap oil and water suspended in the breather vent exhaust and return the captured oil/water to the used oil tank. Emissions were estimated by assuming each engine consumes 16 gallons of engine oil per month, with 50 percent of the oil combusted by the engines and 50 percent released through the crankcase breather vent. The mist eliminator units remove 95 percent of this oil and return it to the used oil tank. Table 5 contains the calculations for the emissions of particulates from the crankcase breather vent.

Emissions from the engine oil tanks and the coolant tank are generated from the volatilization of liquids and from the working and breathing losses from the filling and unloading of the tanks. Emissions from these tanks are assumed to be insignificant (negligible).

Condensate knockouts are located within the energy plant to remove condensate from the LFG prior to combustion. Emissions from the condensate tank are assumed to be insignificant (negligible).

Emissions from the gas chromatograph vent are also assumed to be insignificant (negligible).

2.1.2.5 Leachate Storage

The leachate storage system consists of two above ground storage tanks within a secondary containment system; each tank has a capacity of approximately 405,000 gallons for a total storage volume of 810,000 gallons. There are also two small underground leachate storage tanks located on the east side of the Closed Landfill (one 12,000 gallon tank and one 25,000 gallon tank); however, these two horizontal tanks are considered exempt under 6 NYCRR 201-3.2(c)(26).

Emissions from the vertical storage tanks were estimated using the methodology from AP 42, Section 7.1 (Organic Liquid Storage Tanks, 11/06). The following information was used in the calculations:

- The leachate analytical data for the period of June 2014 through June 2017 was evaluated and the maximum detection value was used
- A throughput of 15 million gallons per year was utilized in the calculations

These calculations demonstrate that emissions from the leachate storage tanks are considered insignificant.

2.1.2.6 Paint Booth

The Facility operates a paint spray booth to coat miscellaneous equipment, primarily facility vehicles and waste receptacles (Facility is already subject to 6 NYCRR Part 228-1). The booth is approximately 25 feet wide and 60 feet long. A high volume low pressure (HVLP) spray gun is used with a rated capacity of 0.117 gallons per minute. Emissions are vented through particulate filters, rated at 90 percent efficiency and exhausted through two identical stacks.

Table 6 presents the calculated emissions for the paint booth (calculated based on information provided in the SDS sheet for Sheboygan Paint Co. Premium WM Green Aqua Enamel). Based on a review of paint usage at the Facility over the last 10 years, it is not expected to exceed 1,000 gallons of paint in a given year.

2.1.2.7 Exempt Sources

The following sections give a description of emission sources that are considered exempt under 6NYCRR 201-3.2(c). A summary of exempt sources at the Facility is presented in Table 7.

2.1.2.7.1 Propane Furnace [6NYCRR 201-3.2(C)(1)(i)]

Heat at the maintenance shop area is provided by a propane - gas fired furnace. The furnace is rated less than 10 million Btu/hour. A conservative propane throughput for the Facility was estimated based on an evaluation of previous emission statements. Emission factors for propane combustion were referenced from USEPA AP-42, Section 1.5 (7/08). Table 7A presents a summary of emissions from the propane furnace.

2.1.2.7.2 Natural Gas Furnace [6NYCRR 201-3.2(C)(1)(i)]

A natural gas furnace (< 10 million Btu/hour) is used to heat the office space area. A conservative natural gas throughput for the Facility was estimated based on evaluation of previous emission statements. Emission factors for natural gas combustion were referenced from USEPA AP-42, Section 1.4 (7/98). Table 7B presents a summary of emissions from natural gas combustion at the Facility.

2.1.2.7.3 Potable Gasoline Generators [6NYCRR 201-3.2(C)(3)(iii)]

The Site operates small portable gasoline generators that are all rated less than 20 horsepower. These small generators are operated by Site personnel on an as-needed basis. Emissions were calculated by assuming an operating time of 500 hours per year for 1 small gasoline generator, rated at 20 horsepower (extremely conservative estimate), utilizing emission factors from USEPA AP-42, Section 3.3 (10/96). Table 7C presents a summary of emissions for the portable gasoline generators.

2.1.2.7.4 Dewatering Pump [6NYCRR 201-3.2(C)(3)(ii)]

A dewatering pump powered by diesel fuel is used to remove water from gas extraction wells at the Facility. The dewatering pump is less than 80 horsepower and operates less than 500 hours per year. Emission factors for the dewatering pump were referenced from USEPA AP-42, Section 3.3 (10/96). Table 7D presents a summary of emissions for the dewatering pump.

2.1.2.7.5 Odor Neutralizers [6NYCRR 201-3.2(C)(45)]

The Facility utilizes neutralizing agent sprayers as a means of controlling odor that occurs from fugitive emissions. VOC emissions were calculated assuming an estimated annual usage of 1,000 gallons per year and a volatilization factor of 97 percent (referenced from the MSDS sheet). Table 7E presents the emissions due to application of odor neutralizers.

2.1.2.7.6 Parts Washers [6NYCRR 201-3.2(C)(39)(i)]

The Facility utilizes two Model 250 parts washers (manufactured by Safety Kleen) for cleaning miscellaneous parts and tools. The tanks are remote reservoirs and are considered exempt under 6 NYCRR Part 201-3.2(c)(39)(i). Emissions were estimated assuming a maximum annual usage rate of 1,000 gallons per year of Safety Kleen Premium Solvent. Table 7F presents the emissions for the parts washers at the Facility.

2.1.2.7.7 Storage of Petroleum Products [6NYCRR 201-3.2(C)(25)]

Unleaded gasoline is stored in a 300-gallon above-ground storage tank (AST) and diesel fuel is stored in a 12,000-gallon under-ground storage tank (UST) for use by vehicles at the Facility. Emissions are generated from the volatilization of these liquids and from the working and breathing losses from the filling and unloading of the tanks. Emissions calculations for the storage tanks at the Facility were estimated utilizing TANKS 3.1 software and actual throughputs recorded by the Facility. In order to obtain a conservative estimate, the calculated emissions from the TANKS model output were doubled for the diesel and gasoline storage tanks.

Working and breathing losses from the filling and unloading of the following ASTs at the Facility are assumed to be negligible:

- 2,000 gallon off-road diesel
- 300 gallon transmission fluid
- 1,400 gallons used oil
- 500 gallon used oil
- (2) 500 gallon hydraulic oil
- 500 gallon lube oil
- 500 gallon motor oil
- 1,500 gallon lube oil
- 1,500 gallon used oil
- 1,000 gallon off-rod diesel (Contractor Tank-Temp)

2.2 Requested Changes to Title V Permit

Appendix A presents a markup of the existing Title V Permit for the Facility. The following is a summary of the changes that WMNY is proposing for the renewed Title V Permit:

- In DEC Permit Conditions, Identification Information (page 1), under Contact, replace "Thomas Lewis" with "Michael Mahar" (line 1)
- Condition 5, Item 5.2 (on page 11), the end of bullet (1) request change to: " ….. the report must be made within 24 hours of the ***discovery***."
- Condition 5, Item 5.2 (on page 11), the end of bullet (2) request change to: " ….. the report must be made within 48 hours ***of discovery***."
- Condition 22, Item 22.2 (on pages 21 and 22), the waste totals should be modified due to August 9, 2017 operating permit renewal that added a 10 percent BUD allowance in addition to the 20 percent RGC:

	Old Limit	**New Limit**
Waste	600,000	600,000
RGC & BUD	120,000	180,000
Total	720,000	780,000

- Condition 57 (on page 60): Request removal of this condition as Condition 56 already details procedures for conducting daily visible emissions for paint booth with an additional Method 9 evaluation required after two consecutive days of detecting visible emissions.
- Condition 65 (on pages 69, 70 and 71): Update target concentrations for CO and NOx based on most recent performance test results (report dated March 27, 2019). Also, frequency of performance testing should be modified from "every 5 years" to "once per permit term."
- Condition 67 (on pages 72 and 73): Update serial number information for engines listed (due to engine swaps).
- Condition 75 (on pages 78 and 79): Update serial number information for engines listed (due to engine swaps).
- Condition 76 (on pages 79 and 80): Update serial number information for engines listed (due to engine swaps).
- Condition 77 (on pages 80 and 81): Update serial number information for engines listed (due to engine swaps).

2.2.1 Permit Renewal Forms

Appendix B to this report includes the required NYSDEC Air Permit Application renewal forms that have been provided by the NYSDEC Region 9 office. Requested changes to the Title V Permit are provided on these forms in markup format. The following is a summary of the proposed updates that WMNY is proposing for the renewed Title V Permit:

- Page 2 – Update Contact Name as indicated

- Page 22 – The waste totals should be modified due to the August 9, 2017 operating permit renewal that added a 10 percent BUD allowance in addition to the 20 percent RGC.
- Pages 22 and 23 – See updated totals to 'Facility Emissions Summary' section
- Page 28 – Change design capacity of Emission Source 'TANKS' to 878,000 gallons
- Page 37 – Update serial number information for engines listed (due to engine swaps)
- Page 41 - Update serial number information for engines listed (due to engine swaps)
- Page 42 - Update serial number information for engines listed (due to engine swaps)
- Page 43 - Update serial number information for engines listed (due to engine swaps)
- Page 44 - Update target concentrations for CO and NOx based on most recent performance test results (report dated March 27, 2019). Also, frequency of performance testing should be modified from "every 5 years" to "once per permit term."

2.2.2 Operational Flexibility Notifications

This Section discusses the operational flexibility notifications that were submitted by WMNY during the term of the current permit. WMNY is requesting that these changes be rolled into the renewed Title V Permit.

2.2.2.1 Engine Swaps

Periodically, through normal operation of the engine plant, it is necessary to replace an engine so that it can be sent off-site for service. This allows the engine to be sent to a specialty maintenance shop with the necessary equipment and expertise required to service the engine. WMNY requested replacement of an engine under an approved Operational Flexibility protocol (in accordance with Condition 24 of the Title V Permit) on numerous occasions throughout the permit term. The notifications along with the agency approvals are provided in Appendix D.

2.2.3 Permit Modifications

There were no permit modifications requested during the current permit term to date.

2.3 6 NYCRR Part 212 Evaluation

New York's air toxics program was updated and promulgated on June 14, 2015, prior to the effective date of the current permit. Therefore, a Part 212 evaluation has been completed for the process emission sources at the Chaffee Landfill. The Part 212 evaluation was completed in accordance with the policy document, DAR-1.

The Facility submitted an air modeling protocol to the New York State Department of Environmental Conservation (NYSDEC) on April 25, 2019. On June 13, 2019, NYSDEC submitted a letter to GHD that confirmed that the modeling procedures outlined in the April 25, 2019 modeling protocol satisfied requirements. The June 13, 2019 letter also provided comments and requested additional information. GHD submitted an additional letter and revised modeling protocol to NYSDEC on June 28, 2019 that provided responses to the comments contained in NYSDEC's June 13, 2019 letter. To date, there has been no additional correspondence between GHD and NYSDEC.

Therefore, modeling has been conducted according to the latest modeling protocol (dated June 28, 2019) and the final report has been enclosed in Appendix C.

An analysis of the modeled results demonstrates that the maximum modeled ground level concentrations are lower than the limits for all compounds shown in Tables 7 and 8 of Appendix C. Therefore, no further analysis is required under 6 NYCRR Part 212.

Figure 1
Chaffee Landfill
LandGEM - Modeled LFG Production

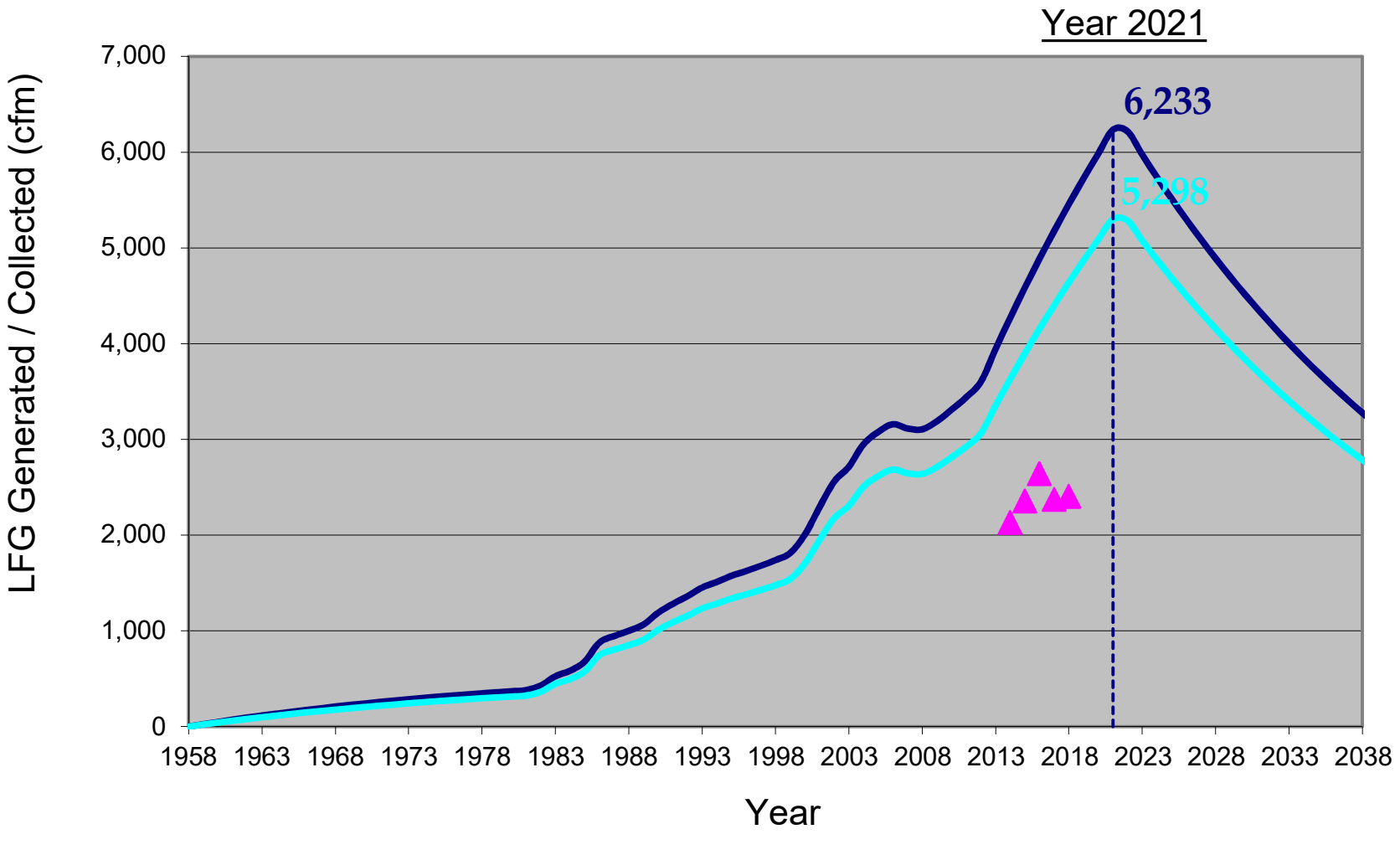

Table 1

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Facility Potential Emissions

Emission Unit ID	Process ID	Emission Source	Potential Emissions (tons/year)									
			NMOC	VOCs	HAPs	Hi-HAP[1]	NO_X	CO	SO_2	PM_{10}	Anthropogenic GHG[2]	Biogenic CO_2 [2]
L-00001	183 / 301	Landfill Fugitive Emissions [3]	32.1	12.5	3.0	1.1	---	---	---	14.9	97,437	17,814
L-00001	LGF	3,300 CFM Enclosed Flare Combustion Emissions	1.6	0.6	0.8	0.1	18.9	63.0	26.0	5.4	3,518	72,724
L-00001	LGF	910 CFM Open Flare Combustion Emissions	0.3	0.1	0.2	0.02	3.9	13.1	5.4	1.1	734	15,163
P-00001	601 / 603	Caterpillar 3516 Engine Combustion Emissions	1.7	0.6	0.8	0.1	119.7	240.3	26.0	0.9	5,722	72,783
P-00001	602	Crankcase Ventilator Emissions	---	---	---	---	---	---	---	0.1	---	---
M-00001	PSB	Paint Booth Emissions	---	1.6	---	---	---	---	---	0.2	---	---
L-00001	LEA	Leachate Tanks	---	0.1	0.1	---	---	---	---	---	---	---
---	---	Exempt Source Emissions	---	7.6	0.01	---	0.9	0.4	0.0	0.1	293	---
Totals			**35.8**	**23.2**	**4.8**	**1.3**	**143.5**	**316.8**	**57.4**	**22.7**	**107,705**	**178,484**

Notes:

1 High HAP is Toluene

2 Total greenhouse gas emissions are expressed as tons of carbon dioxide equivalents (tons CO_2 eq)

3 Fugitive landfill dust emissions referenced from State Facility Permit Application (June 2004) for the Western Expansion Landfill

Table 2

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Landfill Gas Fugitive Emissions

Existing Landfill and Valley Fill Expansion

Year	Total LFG Generated (cfm)	Collection Efficiency (%)	LFG to Collection System (cfm)	Fugitive LFG (cfm)	Fugitive LFG (ft^3/yr)	Fugitive LFG (m^3/yr)	Fugitive NMOC Emissions (TPY)	Fugitive VOC Emissions (TPY)	Fugitive HAP Emissions (TPY)	Fugitive CH_4 Emissions (TPY)	Oxidized CO_2 Emissions (TPY)	Fugitive Biogenic CO_2 Emissions (TPY)	Total Anthropogenic GHG Emissions (TPY)
2021	6,233	85%	5,298	935	491,409,720	13,915,174	32.1	12.5	3.0	3,897.5	3,562.7	17,813.6	97,437

Notes:

Total landfill gas (LFG) Generated in average cubic feet per minute (cfm) from USEPA LandGEM Model run (version 3.02)
Utilized LandGEM Model using the following parameters (k = 0.04 yr^{-1}, Lo = 139.6 m^3/Mg)
Collection efficiency of 85% assumed for gas collection system
LFG to Collection System = (Total LFG Generated) * (Collection Efficiency (%))
Fugitive LFG = (Total LFG Generated) * (100% - Collection Efficiency (%))
Fugitive LFG (ft^3/yr) = (Fugitive LFG (cfm)) * (60 minutes per hour) * (8,760 hours per year)
Fugitive LFG (m^3/yr) = (Fugitive LFG (ft^3/yr)) / (35.3147 cubic feet per cubic meter)
NMOC concentration of 595 ppm referenced from USEPA AP-42, Chapter 2.4 (11/98)

Conversion from NMOC in ppm to mg/m^3 = $\frac{595 \text{ ppm} \times 86.18}{24.47}$ molecular wt = 2,095.9 mg/m^3

Fugitive NMOC Emissions (lb/yr) = [Fugitive LFG (m^3/yr)] * [2,095.9 mg of NMOC per m^3 of LFG] * [2.2046 $x10^{-6}$ pounds per mg]
Fugitive NMOC Emissions (TPY) = (Fugitive NMOC Emissions (lb/yr)) / (2000 pounds per ton)
Fugitive VOC Emissions = Fugitive NMOC Emissions (tons/yr) * 39% (VOCs are 39% of total NMOC according to USEPA AP-42, Chapter 2.4 (11/98)
Total Fugitive HAP Emissions determined from sum of individual speciated HAPs (see Table 2A)
Fugitive CH_4 emissions (TPY) = [Fugitive LFG (ft^3/yr)] * [50% CH_4] * [0.0423 lb CH4 / ft^3 CH_4] * [75% oxidation factor] / [2,000 lb/ton]
Oxidized CO_2 emissions (TPY) = [Fugitive LFG (ft^3/yr)] * [50% CH_4] * [0.116 lb CO_2 / ft^3 CH_4] * [25% oxidized] / [2,000 lb/ton]
Fugitive Biogenic emissions (TPY) = { [Fugitive LFG (ft^3/yr)] * [50% CO_2] * [0.116 lb CO_2 / ft^3 CO_2] / [2,000 lb/ton] } + Oxidized CO_2 Emissions
Anthropogenic GHG Emissions (tons CO_2 equivalents / year) = [Fugitive CH4 Emissions (TPY)] * 25

Equations:

$$(mg/m^3) = \frac{(ppm) \times (\text{Molecular weight (g / mol)}) \times (1 \text{ atm})}{(298.15 \text{ K}) \times (0.08206 \text{ L*atm/K*mol})}$$ (assuming standard conditions of 1 atmosphere and 25° Celsius)

(lb/yr) = (Fugitive LFG Emission rate [m^3/year]) x (mg/m^3) x (2.205 x 10^{-6} [lb/mg])

$$(TPY) = \frac{(lb/yr)}{(2{,}000 \text{ lb/ton})}$$

Table 2A

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Fugitive HAP Emissions

Total LFG Generated =	6,233	cfm
LFG Collection Efficiency =	85%	
Average LFG Collected =	5,298	cfm
Fugitive Emission Estimates =	935	cfm
Hours of Operation =	8,760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median [1] ppmv	Fugitive Emissions [6] lb/hr	lb/yr	TPY	mg/m^3	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane		X	133.41	0.168	0.002	21.08	0.01	0.92		0.011
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.070	0.001	11.05	0.01	0.48	0.006	0.006
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.008	68.97	0.03	3.00	0.034	0.034
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.001	8.39	0.00	0.36	0.004	0.004
107-06-2	1,2-Dichloroethane	X	X	98.96	0.120	0.001	11.17	0.01	0.49	0.006	0.006
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.000	2.44	0.00	0.11	0.001	0.001
67-63-0	2-Propanol	X		60.11	7.908	0.051	447.03	0.22	19.43	0.224	
67-64-1	Acetone			58.08	6.126	0.038	334.60	0.17	14.54		
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.000	1.80	0.00	0.08	0.001	0.001
71-43-2	Benzene [3]	X	X	78.11	0.972	0.008	71.40	0.04	3.10	0.036	0.036
75-27-4	Bromodichloromethane	X		163.83	0.311	0.005	47.92	0.02	2.08	0.024	
106-97-8	Butane [4]	X		58.12	5.030	0.031	274.93	0.14	11.95	0.137	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.003	22.91	0.01	1.00	0.011	0.011
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	1.01	0.00	0.04	0.001	0.001
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.001	10.34	0.01	0.45	0.005	0.005
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.003	24.03	0.01	1.04	0.012	0.012
75-45-6	Chlorodifluoromethane			86.47	0.355	0.003	28.87	0.01	1.25		
75-00-3	Chloroethane	X	X	64.52	0.239	0.002	14.50	0.01	0.63	0.007	0.007
67-66-3	Chloroform	X	X	119.39	0.021	0.000	2.36	0.00	0.10	0.001	0.001
74-87-3	Chloromethane [2]	X	X	50.49	0.249	0.001	11.82	0.01	0.51	0.006	0.006
106-46-7	Dichlorobenzene	X	X	147.00	1.607	0.025	222.16	0.11	9.66	0.111	0.111
75-71-8	Dichlorodifluoromethane			120.91	1.751	0.023	199.10	0.10	8.65		
75-43-4	Dichlorofluoromethane [4]	X		102.92	2.620	0.029	253.59	0.13	11.02	0.127	
75-09-2	Dichloromethane		X	84.94	3.395	0.031	271.19	0.14	11.79		0.136
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.045	397.84	0.20	17.29	0.199	
64-17-5	Ethanol	X		46.08	118.618	0.587	5,140.32	2.57	223.41	2.570	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.009	79.23	0.04	3.44	0.040	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.077	677.79	0.34	29.46	0.339	0.339
106-93-4	Ethylene dibromide [2]	X	X	187.88	0.046	0.001	8.13	0.00	0.35	0.004	0.004
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.005	42.25	0.02	1.84	0.021	
110-54-3	Hexane	X	X	86.18	2.324	0.022	188.35	0.09	8.19	0.094	0.094
7783-06-4	Hydrogen Sulfide			34.08	252.000	0.922	8,076.57	4.04	351.03		
7439-97-6	Mercury [4]		X	200.61	0.000292	0.000	0.06	0.00	0.00		0.000
78-93-3	Methyl ethyl ketone [5]	X		72.11	10.557	0.082	715.92	0.36	31.12	0.358	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.750	0.008	70.65	0.04	3.07	0.035	0.035
74-93-1	Methyl mercaptan	X		48.11	1.292	0.007	58.46	0.03	2.54	0.029	
109-66-0	Pentane [4]	X		72.15	3.290	0.025	223.23	0.11	9.70	0.112	
127-18-4	Perchloroethylene		X	165.83	1.193	0.021	186.05	0.09	8.09		0.093
74-98-6	Propane	X		44.09	14.757	0.070	611.88	0.31	26.59	0.306	
108-88-3	Toluene [3]	X	X	92.13	25.405	0.251	2,201.14	1.10	95.67	1.101	1.101
79-01-6	Trichloroethene	X	X	131.40	0.681	0.010	84.15	0.04	3.66	0.042	0.042
75-01-4	Vinyl chloride	X	X	62.50	1.077	0.007	63.30	0.03	2.75	0.032	0.032
1330-20-7	Xylene	X	X	106.16	16.582	0.189	1,655.48	0.83	71.95	0.828	0.828
								Total VOCs / HAPs		6.86	2.96

Notes:

[1] Concentration of individual HAPs were taken from Waste Industry Air Coalition (WIAC)
[2] Not designated as a HAP in Chapter 2.4 of AP-42 (11/98), but is listed in the USEPA National Emission Inventory (NEI) database
[3] Used 'No or unknown co-disposal' concentration
[4] No WIAC value given for compound; used USEPA AP-42 value
[5] Delisted as a HAP by USEPA
[6] Cover oxidation of 25% applied (based on 40 CFR 98, Subpart HH)

Equations:

$$(mg/m^3) = \frac{\text{(Molecular weight)} \times \text{(1 atm)} \times \text{(Median ppmv)}}{\text{(298.15 K)} \times \text{(0.08206 L*atm/K*mol)}}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times \text{(Fugitive LFG Emission rate } [ft^3/min]) \times \text{(60 min/hr)}}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = (lb/hr) \times (8{,}760\ hours/yr)$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

Table 3

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of LFG Flare Emissions

Total LFG Generated [B] =	6,233	cfm
Collection Efficiency =	85%	
Total LFG Combusted =	5,298	cfm
LFG to Flares =	2,898	cfm

Flare Type	Operating Conditions			Estimated Potential Flare Emissions (TPY)					
	CFM	MMSCF	Hours	PM_{10}	NMOC	CO	NO_X	SO_2	VOC[A]
Enclosed 3,300 CFM	2,398	1,260.4	8,760	5.4	1.6	63.0	18.9	26.0	0.6
Open 910 CFM	500	262.8	8,760	1.1	0.3	13.1	3.9	5.4	0.1
Total Emissions (TPY)				6.5	2.0	76.2	22.8	31.4	0.8
Total Emissions (lb/yr)				12,947.3	3,985.9	152,321.5	45,696.5	62,741.8	1,554.5

Flare Emission Factors

	Pounds per Million Standard Cubic Feet				
	PM	NMOC	CO	NO_X	SO_2
Enclosed Flare 3,300 CFM	8.50	2.62	100.00	30.00	41.19
Open Flare 910 CFM	8.50	2.62	110.00	26.00	41.19

Emission Factor Development

3,300 CFM Enclosed Flare

CO:	0.20	lb/MMBtu
NOx:	0.06	lb/MMBtu

910 CFM Open Flare

CO:	0.22	lb/MMBtu
NOx:	0.052	lb/MMBtu

LFG Data:

NMOC:	595	ppm
TRS:	252	ppm
CH_4:	50.0%	of total LFG
VOC:	39.0%	of NMOC

Notes:

PM	[A] Per AP-42, VOC emissions are calculated as 39% of NMOC emissions.	
NMOC	[B] Based on amount of LFG generated in peak year of LFG production in existing and future landfill areas	
CO	17 lb/10^6 dscf methane per AP-42, section 2.4 (11/98)	
NO_X	Based on 595 ppm per AP-42, section 2.4 (11/98), and 98% destruction efficiency	
SO_2	Emission rates (in units fo lb/MMBtu) referenced from previous permit applications	
VOC	Emission rates (in units fo lb/MMBtu) referenced from previous permit applications	
Heating value	Based on conservative TRS concentration of 252 ppm	Btu/scf
DE (of NMOC)	39% of NMOC per AP-42, section 2.4 (11/98)	%
	500	
	98.0	

Table 3A

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Flare HAP Emissions

Landfill Gas Flares - HAP Emission Estimates

Total LFG Generated =	6,233	cfm
LFG Collection Efficiency =	85%	
Total LFG Collected =	5,298	cfm
Total LFG Collected to Flares =	2,898	cfm
Hours of Operation =	8,760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	Uncontrolled Emissions lb/hr	lb/yr	TPY	mg/m3	Avg. Control [6]	Controlled Emissions lb/hr	lb/yr	TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane		X	133.41	0.168	0.010	87.11	0.04	0.92	98.0%	0.000	1.74	0.00		0.001
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.070	0.005	45.67	0.02	0.48	98.0%	0.000	0.91	0.00	0.000	0.000
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.033	285.04	0.14	3.00	98.0%	0.001	5.70	0.00	0.003	0.003
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.004	34.66	0.02	0.36	98.0%	0.000	0.69	0.00	0.000	0.000
107-06-2	1,2-Dichloroethane	X	X	98.96	0.120	0.005	46.16	0.02	0.49	98.0%	0.000	0.92	0.00	0.000	0.000
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.001	10.10	0.01	0.11	98.0%	0.000	0.20	0.00	0.000	0.000
67-63-0	2-Propanol	X		60.11	7.908	0.211	1,847.55	0.92	19.43	98.0%	0.004	36.95	0.02	0.018	
67-64-1	Acetone			58.08	6.126	0.158	1,382.89	0.69	14.54	98.0%	0.003	27.66	0.01		
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.001	7.42	0.00	0.08	98.0%	0.000	0.15	0.00	0.000	0.000
71-43-2	Benzene [4]	X	X	78.11	0.972	0.034	295.09	0.15	3.10	98.0%	0.001	5.90	0.00	0.003	0.003
75-27-4	Bromodichloromethane	X		163.83	0.311	0.023	198.03	0.10	2.08	98.0%	0.000	3.96	0.00	0.002	
106-97-8	Butane [3]	X		58.12	5.030	0.130	1,136.26	0.57	11.95	98.0%	0.003	22.73	0.01	0.011	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.011	94.69	0.05	1.00	98.0%	0.000	1.89	0.00	0.001	0.001
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	4.19	0.00	0.04	98.0%	0.000	0.08	0.00	0.000	0.000
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.005	42.73	0.02	0.45	98.0%	0.000	0.85	0.00	0.000	0.000
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.011	99.31	0.05	1.04	98.0%	0.000	1.99	0.00	0.001	0.001
75-45-6	Chlorodifluoromethane			86.47	0.355	0.014	119.31	0.06	1.25	98.0%	0.000	2.39	0.00		
75-00-3	Chloroethane	X	X	64.52	0.239	0.007	59.93	0.03	0.63	98.0%	0.000	1.20	0.00	0.001	0.001
67-66-3	Chloroform	X	X	119.39	0.021	0.001	9.74	0.00	0.10	98.0%	0.000	0.19	0.00	0.000	0.000
74-87-3	Chloromethane [2]	X	X	50.49	0.249	0.006	48.86	0.02	0.51	98.0%	0.000	0.98	0.00	0.000	0.000
106-46-7	Dichlorobenzene	X	X	147.00	1.607	0.105	918.16	0.46	9.66	98.0%	0.002	18.36	0.01	0.009	0.009
75-71-8	Dichlorodifluoromethane			120.91	1.751	0.094	822.87	0.41	8.65	98.0%	0.002	16.46	0.01		
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.620	0.120	1,048.06	0.52	11.02	98.0%	0.002	20.96	0.01	0.010	
75-09-2	Dichloromethane		X	84.94	3.395	0.128	1,120.82	0.56	11.79	98.0%	0.003	22.42	0.01		0.011
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.188	1,644.25	0.82	17.29	98.0%	0.004	32.88	0.02	0.016	
64-17-5	Ethanol	X		46.08	118.618	2.425	21,244.48	10.62	223.41	98.0%	0.049	424.89	0.21	0.212	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.037	327.45	0.16	3.44	98.0%	0.001	6.55	0.00	0.003	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.320	2,801.24	1.40	29.46	98.0%	0.006	56.02	0.03	0.028	0.028
106-93-4	Ethylene dibromide [2]	X	X	187.88	0.046	0.004	33.59	0.02	0.35	98.0%	0.000	0.67	0.00	0.000	0.000
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.020	174.60	0.09	1.84	98.0%	0.000	3.49	0.00	0.002	
7647-01-0	Hydrogen Chloride [5]		X	36.46	9.430	0.153	1,336.32	0.67	14.05	0.0%	0.153	1,336.32	0.67		0.668
110-54-3	Hexane	X	X	86.18	2.324	0.089	778.44	0.39	8.19	98.0%	0.002	15.57	0.01	0.008	0.008
7783-06-4	Hydrogen Sulfide			34.08	252.000	3.810	33,379.76	16.69	351.03	98.0%	0.076	667.60	0.33		
7439-97-6	Mercury [3]		X	200.61	0.000292	0.000	0.23	0.00	0.00	0.0%	0.000	0.23	0.00		0.000
78-93-3	Methyl ethyl ketone [7]	X		72.11	10.557	0.338	2,958.82	1.48	31.12	98.0%	0.007	59.18	0.03	0.030	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.750	0.033	291.97	0.15	3.07	98.0%	0.001	5.84	0.00	0.003	0.003
74-93-1	Methyl mercaptan	X		48.11	1.292	0.028	241.59	0.12	2.54	98.0%	0.001	4.83	0.00	0.002	
109-66-0	Pentane [3]	X		72.15	3.290	0.105	922.60	0.46	9.70	98.0%	0.002	18.45	0.01	0.009	
127-18-4	Perchloroethylene		X	165.83	1.193	0.088	768.93	0.38	8.09	98.0%	0.002	15.38	0.01		0.008
74-98-6	Propane	X		44.09	14.757	0.289	2,528.84	1.26	26.59	98.0%	0.006	50.58	0.03	0.025	
108-88-3	Toluene [4]	X	X	92.13	25.405	1.038	9,097.11	4.55	95.67	98.0%	0.021	181.94	0.09	0.091	0.091
79-01-6	Trichloroethene	X	X	131.40	0.681	0.040	347.80	0.17	3.66	98.0%	0.001	6.96	0.00	0.003	0.003
75-01-4	Vinyl chloride	X	X	62.50	1.077	0.030	261.62	0.13	2.75	98.0%	0.001	5.23	0.00	0.003	0.003
1330-20-7	Xylene	X	X	106.16	16.582	0.781	6,841.97	3.42	71.95	98.0%	0.016	136.84	0.07	0.068	0.068
													Total VOCs / HAPs	0.567	0.913

Notes:

1 Concentration of individual HAPs were taken from Waste Industry Air Coalition (WIAC)
2 Not designated as a HAP in Chapter 2.4 of AP-42 (11/98), but is listed in the USEPA National Emission Inventory (NEI) database
3 No WIAC concentration specified; used AP-42 value
4 Used 'No or unknown co-disposal' concentration
5 HCl Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".
6 Control efficiency of 98% assumed for all speciated HAPs (except mercury and HCl)
7 Delisted as a HAP by USEPA

Equations:

$$(mg/m^3) = \frac{(\text{Molecular weight}) \times (1\ atm) \times (\text{Median ppmv})}{(298.15\ K) \times (0.08206\ L*atm/K*mol)}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times (\text{LFG Combustion rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

(lb/yr) = (lb/hr) x (8,760 hours/yr)

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

(Controlled Emissions) = (Uncontrolled Emissions) x (100% - Average Control [%])

Table 3B

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Flare Greenhouse Gas Emissions

LFG to 3,300 CFM Enclosed Flare = 2,398 cfm
LFG to 910 CFM Open Flare = 500 cfm

	Operating Hours	Estimated Potential Flare Emissions (TPY)						
		Combustion CO_2	Combustion CH_4	Combustion N_2O	Escape CH_4	Collected CO_2	Biogenic CO_2	Anthropogenic GHG
Enclosed 3,300 CFM	8,760	36,171.9	2.2	0.4	133.3	36,552.0	72,723.9	3,518.2
Open 910 CFM	8,760	7,541.9	0.5	0.1	27.8	7,621.2	15,163.1	733.6
Total Emissions (TPY)		43,713.8	2.7	0.5	161.1	44,173.2	87,887.0	4,251.8
Total Emissions (lb/yr)		8.74E+07	5.37E+03	1.06E+03	322,160.0	8.83E+07	1.76E+08	8.50E+06

Flare Combustion Factors

	Pounds per Hour of Operation		
	CO_2	CH_4	N_2O
Enclosed 3,300 CFM	8,258.4	0.5	0.10
Open 910 CFM	1,721.9	0.1	0.02

Notes:

Combustion CO_2	Combustion emission factor referenced from Table C-1 of 40 CFR Part 98, Subpart C
Combustion CH_4	Combustion emission factor referenced from Table C-2 of 40 CFR Part 98, Subpart C
Combustion N_2O	Combustion emission factor referenced from Table C-2 of 40 CFR Part 98, Subpart C
Escape CH_4	Collected methane that escapes destruction in engines (1% of methane processed)
Collected CO_2	Portion of collected LFG that already contains CO_2 (50% of collected LFG)
Biogenic CO_2	Sum of Combustion CO_2 and Collected CO_2
Anthropogenic GHG	Sum of Combustion CH_4, Combustion N_2O and Escape CH_4 expressed as tons of CO_2 equivalents

Emission Factor Development

Enclosed Flares

	EF (kg/MMBtu)	GWP (100 year)
CO_2	52.07	1
CH_4	3.20E-03	25
N_2O	6.30E-04	298

Heating value	500	Btu/scf
LFG CH_4 Concentration	50	%
CH_4 Destruction Efficiency	99	% (manufacturer guarantee DE for LFG Enclosed Flares)
CH_4 Density	0.0423	pounds per cubic foot (referenced from 40 CFR Part 98, Subpart HH)
CO_2 concentration	50	%
CO_2 density	0.116	pounds per cubic foot

LFG Data:

Heat Input (3,300 CFM Flare):	71.9	MMBtu/hr
LFG combusted (3,300 CFM Flare):	2,398	cfm
Heat Input (910 CFM Flare):	15.0	MMBtu/hr
LFG combusted (910 CFM Flare):	500	cfm

Table 4

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Caterpillar 3516 Engine Emissions

Total Number of 3516 Engines = 8
LFG to Renewable Energy Facility = 2,400 cfm

	Operating Hours	Estimated Potential 3516 Engine Emissions (TPY)					
		PM_{10}	NMOC	CO	NO_X	SO_2	VOC[A]
Engine #1	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #2	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #3	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #4	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #5	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #6	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #7	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Engine #8	8,760	0.1	0.2	30.0	15.0	3.2	0.1
Total Emissions (TPY)		0.9	1.7	240.3	119.7	26.0	0.6
Total Emissions (lb/yr)		1,802.1	3,300.9	480,656.8	239,441.6	51,959.2	1,287.3

3516 Engine Emission Factors

	Pounds per Hour of Operation				
	PM	NMOC	CO	NO_X	SO_2
3516 Engines	0.03	0.05	6.86	3.42	0.74

Notes:

[A] Per AP-42, VOC emissions are calculated as 39% of NMOC emissions.

PM Based on 0.01 grains/dscf LFG (1 grain = 1.43 x 10^{-4} lbs)
NMOC Based on 595 ppm per AP-42, section 2.4 (11/98), and 98% destruction efficiency
CO Based on February 2006 State Facility Application, prepared by McMahon & Mann
NO_X Based on February 2006 State Facility Application, prepared by McMahon & Mann
SO_2 Based on conservative TRS concentration of 252 ppm
VOC 39% of NMOC per AP-42, section 2.4 (11/98)

Heating value	500	Btu/scf
DE (of NMOC)	98.0	%
Engine Power	1,148	Bhp

Emission Factor Development

Caterpillar 3516 Engines

- referenced from *Chaffee Landfill PPP State Facility Permit Application* , prepared February 2006:

CO:	2.71	g/bhp-hr
NOx:	1.35	g/bhp-hr

LFG Data:

LFG combusted /engine:	300	cfm
NMOC:	595	ppm
TRS:	252	ppm
CH_4:	50.0%	of total LFG
VOC:	39.0%	of NMOC

Table 4A

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Caterpillar 3516 Engine HAPS Emissions

Landfill Gas Engines - HAP Emission Estimates

Total LFG Collected to Existing 3516 Engines = 2,400 cfm
Hours of Operation = 8,760

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	Uncontrolled Emissions lb/hr	lb/yr	TPY	mg/m3	Avg. Control[6]	Controlled Emissions lb/hr	lb/yr	TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane		X	133.41	0.168	0.008	72.14	0.04	0.92	98.0%	0.000	1.44	0.00		0.001
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.070	0.004	37.82	0.02	0.48	98.0%	0.000	0.76	0.00	0.000	0.000
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.027	236.05	0.12	3.00	98.0%	0.001	4.72	0.00	0.002	0.002
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.003	28.71	0.01	0.36	98.0%	0.000	0.57	0.00	0.000	0.000
107-06-2	1,2-Dichloroethane	X	X	98.96	0.120	0.004	38.22	0.02	0.49	98.0%	0.000	0.76	0.00	0.000	0.000
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.001	8.36	0.00	0.11	98.0%	0.000	0.17	0.00	0.000	0.000
67-63-0	2-Propanol	X		60.11	7.908	0.175	1,530.04	0.77	19.43	98.0%	0.003	30.60	0.02	0.015	
67-64-1	Acetone			58.08	6.126	0.131	1,145.23	0.57	14.54	98.0%	0.003	22.90	0.01		
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.001	6.15	0.00	0.08	98.0%	0.000	0.12	0.00	0.000	0.000
71-43-2	Benzene[4]	X	X	78.11	0.972	0.028	244.38	0.12	3.10	98.0%	0.001	4.89	0.00	0.002	0.002
75-27-4	Bromodichloromethane	X		163.83	0.311	0.019	164.00	0.08	2.08	98.0%	0.000	3.28	0.00	0.002	
106-97-8	Butane[3]	X		58.12	5.030	0.107	940.98	0.47	11.95	98.0%	0.002	18.82	0.01	0.009	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.009	78.41	0.04	1.00	98.0%	0.000	1.57	0.00	0.001	0.001
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	3.47	0.00	0.04	98.0%	0.000	0.07	0.00	0.000	0.000
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.004	35.38	0.02	0.45	98.0%	0.000	0.71	0.00	0.000	0.000
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.009	82.24	0.04	1.04	98.0%	0.000	1.64	0.00	0.001	0.001
75-45-6	Chlorodifluoromethane			86.47	0.355	0.011	98.81	0.05	1.25	98.0%	0.000	1.98	0.00		
75-00-3	Chloroethane	X	X	64.52	0.239	0.006	49.63	0.02	0.63	98.0%	0.000	0.99	0.00	0.000	0.000
67-66-3	Chloroform	X	X	119.39	0.021	0.001	8.07	0.00	0.10	98.0%	0.000	0.16	0.00	0.000	0.000
74-87-3	Chloromethane[2]	X	X	50.49	0.249	0.005	40.47	0.02	0.51	98.0%	0.000	0.81	0.00	0.000	0.000
106-46-7	Dichlorobenzene	X	X	147.00	1.607	0.087	760.36	0.38	9.66	98.0%	0.002	15.21	0.01	0.008	0.008
75-71-8	Dichlorodifluoromethane			120.91	1.751	0.078	681.45	0.34	8.65	98.0%	0.002	13.63	0.01		
75-43-4	Dichlorofluoromethane[3]	X		102.92	2.620	0.099	867.94	0.43	11.02	98.0%	0.002	17.36	0.01	0.009	
75-09-2	Dichloromethane		X	84.94	3.395	0.106	928.20	0.46	11.79	98.0%	0.002	18.56	0.01		0.009
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.155	1,361.67	0.68	17.29	98.0%	0.003	27.23	0.01	0.014	
64-17-5	Ethanol	X		46.08	118.618	2.008	17,593.47	8.80	223.41	98.0%	0.040	351.87	0.18	0.176	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.031	271.17	0.14	3.44	98.0%	0.001	5.42	0.00	0.003	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.265	2,319.82	1.16	29.46	98.0%	0.005	46.40	0.02	0.023	0.023
106-93-4	Ethylene dibromide[2]	X	X	187.88	0.046	0.003	27.82	0.01	0.35	98.0%	0.000	0.56	0.00	0.000	0.000
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.017	144.60	0.07	1.84	98.0%	0.000	2.89	0.00	0.001	
7647-01-0	Hydrogen Chloride[5]		X	36.46	9.430	0.126	1,106.67	0.55	14.05	0.0%	0.126	1,106.67	0.55		0.553
110-54-3	Hexane	X	X	86.18	2.324	0.074	644.66	0.32	8.19	98.0%	0.001	12.89	0.01	0.006	0.006
7783-06-4	Hydrogen Sulfide			34.08	252.000	3.156	27,643.21	13.82	351.03	98.0%	0.063	552.86	0.28		
7439-97-6	Mercury[3]		X	200.61	0.000292	0.000	0.19	0.00	0.00	0.0%	0.000	0.19	0.00		0.000
78-93-3	Methyl ethyl ketone[7]	X		72.11	10.557	0.280	2,450.33	1.23	31.12	98.0%	0.006	49.01	0.02	0.025	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.750	0.028	241.79	0.12	3.07	98.0%	0.001	4.84	0.00	0.002	0.002
74-93-1	Methyl mercaptan	X		48.11	1.292	0.023	200.07	0.10	2.54	98.0%	0.000	4.00	0.00	0.002	
109-66-0	Pentane[3]	X		72.15	3.290	0.087	764.05	0.38	9.70	98.0%	0.002	15.28	0.01	0.008	
127-18-4	Perchloroethylene		X	165.83	1.193	0.073	636.78	0.32	8.09	98.0%	0.001	12.74	0.01		0.006
74-98-6	Propane	X		44.09	14.757	0.239	2,094.24	1.05	26.59	98.0%	0.005	41.88	0.02	0.021	
108-88-3	Toluene[4]	X	X	92.13	25.405	0.860	7,533.71	3.77	95.67	98.0%	0.017	150.67	0.08	0.075	0.075
79-01-6	Trichloroethene	X	X	131.40	0.681	0.033	288.03	0.14	3.66	98.0%	0.001	5.76	0.00	0.003	0.003
75-01-4	Vinyl chloride	X	X	62.50	1.077	0.025	216.66	0.11	2.75	98.0%	0.000	4.33	0.00	0.002	0.002
1330-20-7	Xylene	X	X	106.16	16.582	0.647	5,666.13	2.83	71.95	98.0%	0.013	113.32	0.06	0.057	0.057
												Total VOCs / HAPs		0.470	0.756

Notes:

[1] Concentration of individual HAPs were taken from Waste Industry Air Coalition (WIAC)
[2] Not designated as a HAP in Chapter 2.4 of AP-42 (11/98), but is listed in the USEPA National Emission Inventory (NEI) database
[3] No WIAC concentration specified; used AP-42 value
[4] Used 'No or unknown co-disposal' concentration
[5] HCl Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".
[6] Control efficiency of 98% assumed for all speciated HAPs (except mercury and HCl)
[7] Delisted as a HAP by USEPA

Equations:

$$(mg/m^3) = \frac{(\text{Molecular weight}) \times (1\ atm) \times (\text{Median ppmv})}{(298.15\ K) \times (0.08206\ L*atm/K*mol)}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times (\text{LFG Combustion rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = (lb/hr) \times (8{,}760\ hours/yr)$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

(Controlled Emissions) = (Uncontrolled Emissions) x (100% - Average Control [%])

Table 4B

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Caterpillar 3516 Engine Greenhouse Gas Emissions

Total Number of 3516 Engines = 8
LFG to Existing Caterpillar 3516 Engines = 2,400 cfm

	Operating Hours	Estimated Potential 3516 Engine Emissions (TPY)						
		Combustion CO_2	Combustion CH_4	Combustion N_2O	Escape CH_4	Collected CO_2	Biogenic CO_2	Anthropogenic GHG
Engine #1	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #2	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #3	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #4	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #5	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #6	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #7	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Engine #8	8,760	4,525.2	0.3	0.1	27.7	4,572.7	9,097.9	715.3
Total Emissions (TPY)		36,201.3	2.2	0.4	221.4	36,581.8	72,783.0	5,722.1
Total Emissions (lb/yr)		7.24E+07	4.45E+03	8.76E+02	442,879.0	7.32E+07	1.46E+08	1.14E+07

3516 Engine Combustion Factors

	Pounds per Hour of Operation		
	CO_2	*CH_4*	*N_2O*
3516 Engines	1,033.1	0.1	0.01

Notes:

Combustion CO_2	Combustion emission factor referenced from Table C-1 of 40 CFR Part 98, Subpart C
Combustion CH_4	Combustion emission factor referenced from Table C-2 of 40 CFR Part 98, Subpart C
Combustion N_2O	Combustion emission factor referenced from Table C-2 of 40 CFR Part 98, Subpart C
Escape CH_4	Collected methane that escapes destruction in engines (1.66% of methane processed)
Collected CO_2	Portion of collected LFG that already contains CO_2 (50% of collected LFG)
Biogenic CO_2	Sum of Combustion CO_2 and Collected CO_2
Anthropogenic GHG	Sum of Combustion CH_4, Combustion N_2O and Escape CH_4 expressed as tons of CO_2 equivalents

Emission Factor Development

Existing Caterpillar 3516 Engines

	EF (kg/MMBtu)	GWP (100 year)
CO_2	52.07	1
CH_4	3.20E-03	25
N_2O	6.30E-04	298

Engine Power	1,148	Bhp
Heating value	500	Btu/scf
LFG CH_4 Concentration	50	%
CH_4 Destruction Efficiency	98.34	% (based on results of engine source tests; information gathered by the Solid Waste Industry for Climate Solutions (SWICS))
CH_4 Density	0.0423	pounds per cubic foot (referenced from 40 CFR Part 98, Subpart HH)
CO_2 concentration	50	%
CO_2 density	0.116	pounds per cubic foot

LFG Data:

Heat Input:	9.0	MMBtu/hr
LFG combusted /engine:	300	cfm

Table 5

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Crankcase Ventilator Emissions

Crankcase Ventilator (CCV) emissions (as particulate matter) can be estimated using the following equations:

$$E_{PM} = U * \rho_{oil} * f_{emitted} \qquad E_{controlled} = E_{PM} * \frac{(100 - \psi)}{100}$$

where,

E_{PM} = Uncontrolled particulate matter emissions (in tons per year (TPY))
U = Oil consumption rate in 1 engine (in gallons per year (GPY))
ρ_{oil} = Density of Oil (in pounds per gallon (lb/gal)) = 8.33 lb/gal * SG_{oil} = 7.41 lb/gal
$f_{emitted}$ = Fraction of oil that is emitted through crankcase ventilator

$E_{controlled}$ = Controlled PM emissions [with Smog-Hog mist eliminator] (TPY)
ψ = Efficiency of Smog-Hog oil mist eliminator

Assumptions:

U_{3516} =	16 gal/month =	192	GPY
Specific gravity (oil) =		0.89	
$f_{emitted}$ =		0.5	
$f_{combusted}$ =		0.5	
ψ =		95	%

Estimated Crankcase Ventilator Emissions

CCV #1 (Engines 1 - 8 [3516 engines]):

	Uncontrolled PM Emissions				Controlled PM Emissions			
E_{PM} =	(192 GPY) * (7.4 lb/gal) * (0.5) * 8 engines =	5,694	lb/year =	2.8	TPY	$E_{controlled}$ =	(1.4 TPY) * (0.05) =	0.14	TPY

Table 6

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Paint Booth Emissions

Manufacture/Paint Description CAS Number	Paint Number	Max Quantity (gal/yr)	Paint Density (Lb/gal)	VOC Weight (Lb/gal)	% Ammonia 7644-41-7	% Glycol Ether Compound 111-76-2	% Secondary Butyl Alcohol 78-92-2	Particulates (controlled)	Unspeciated VOC 0NY998-10-0
Sheboygan Paint Co. Premium WM Green Aqua Enamel	73-5184F	1,000	9.41	2.70	0.33%	7.26%	4.60%	35%	Contains VOC value from VOC weight and % Secondary Butyl Alcohol
Totals Lbs/yr				2,700	31.1	683.2	432.9	329.4	3,132.9
Totals Tons/yr				1.35	0.0155	0.34	0.22	0.16	1.57

Table 7

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Exempt Emission Sources

Trivial / Exempt Source	VOC (TPY)	CO (TPY)	NOx (TPY)	SO_2 (TPY)	PM_{10} (TPY)	NMOC (TPY)	HAPs (TPY)	CO_2 (TPY)
Heating Equipment (Propane)	0.002	0.02	0.03	0.0002	0.001	---	---	25.0
Heating Equipment (Natural Gas)	0.01	0.168	0.20	0.00	0.015	---	---	240.0
Portable Gasoline Generators	0.08	0.035	0.06	0.003	0.004	---	---	5.4
Dewatering Pump	0.05	0.134	0.62	0.04	0.044	---	---	23.0
Odor Neutralizers	4.04	---	---	---	---	---	---	---
Parts Washers	3.35	---	---	---	---	---	0.01	---
UST (Diesel Fuel)	0.004	---	---	---	---	---	---	---
AST (Gasoline)	0.02	---	---	---	---	---	---	---
New Oil Tanks	*	---	---	---	---	---	---	---
Used Oil Tanks	*	---	---	---	---	---	---	---
Coolant Tanks	*	---	---	---	---	---	---	---
Totals	**7.55**	**0.35**	**0.90**	**0.05**	**0.06**	**0.00**	**0.01**	**293.40**

Notes:

* Source emits a negligible amount of emissions

Table 7A

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Propane Heating Emissions

Maximum propane combusted per year **4.000** 10^3 gallons

Emission Calculations:					
				Lbs/yr	Tons/yr
PM=	0.70 lb. X / 10^3 gal	4.000000 10^3 gal propane	=	**2.800**	**0.00140**
SO_X =	0.1 lb. X / 10^3 gal	4.000000 10^3 gal propane	=	**0.400**	**0.00020**
NO_X =	13 lb. X / 10^3 gal	4.000000 10^3 gal propane	=	**52.000**	**0.02600**
VOC =	1 lb. X / 10^3 gal	4.000000 10^3 gal propane	=	**4.000**	**0.00200**
CO =	7.5 lb. X / 10^3 gal	4.000000 10^3 gal propane	=	**30.000**	**0.01500**
CO_2 =	12,500 lb. X / 10^3 gal	4.000000 10^3 gal propane	=	**50,000**	**25.00000**

* Emissions factors from AP-42 7/2008, section 1.5 (Assume a sulfur content of 1%)

Table 7B

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Summary of Natural Gas Heating Emissions

Maximum Usage **4.00** MMScf per year

Emission Calculations:						
					Lbs/yr	TPY
PM_{10}=	7.6 Lb PM / MMscf	X	4.0 MMscf / Year	=	**30.4**	**0.015**
SO_X =	0.6 Lb SO_X / MMscf	X	4.0 MMscf / Year	=	**2.4**	**0.001**
NO_X =	100 Lb NO_X / MMscf	X	4.0 MMscf / Year	=	**400**	**0.200**
VOC =	5.5 Lb VOC / MMscf	X	4.0 MMscf / Year	=	**22**	**0.011**
CO =	84 Lb CO / MMscf	X	4.0 MMscf / Year	=	**336**	**0.168**
CO_2 =	120,000 Lb CO_2 / MMscf	X	4.0 MMscf / Year	=	**480,000**	**240.0**

* Emissions factors from AP-42 7/98 Section 1.4.

Table 7C

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Portable Gasoline Generators

Max. Hours of Operation	**500**	hours per year
Engine Power	**20**	HP

Emission Calculations:

							Lbs/yr	TPY
PM_{10}=	0.000721 Lb PM / hp-hr	X	20 HP	X	500 Hours / Year	=	**7.21**	**0.004**
SO_X =	0.000591 Lb SO_X / hp-hr	X	20 HP	X	500 Hours / Year	=	**5.91**	**0.003**
NO_X =	0.011 Lb NO_X / hp-hr	X	20 HP	X	500 Hours / Year	=	**110**	**0.055**
VOC =	0.015 Lb VOC / hp-hr	X	20 HP	X	500 Hours / Year	=	**150**	**0.075**
CO =	0.00696 Lb CO / hp-hr	X	20 HP	X	500 Hours / Year	=	**69.6**	**0.035**
CO_2 =	1.08 Lb CO_2 / hp-hr	X	20 HP	X	500 Hours / Year	=	**10,800.0**	**5.4**

* Emissions factors from AP-42 10/96, section 3.3

Table 7D

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Diesel Dewatering Pump

Max. Hours of Operation	**500**	hours per year
Engine Power	**80**	HP

Emission Calculations:									
								Lbs/yr	TPY
PM_{10}=	0.00220 Lb PM / hp-hr	X	80 HP	X	500 Hours / Year	=		**88**	**0.044**
SO_X =	0.00205 Lb SO_X / hp-hr	X	80 HP	X	500 Hours / Year	=		**82**	**0.041**
NO_X =	0.031 Lb NO_X / hp-hr	X	80 HP	X	500 Hours / Year	=		**1240**	**0.620**
VOC =	0.00247 Lb VOC / hp-hr	X	80 HP	X	500 Hours / Year	=		**98.8**	**0.049**
CO =	0.00668 Lb CO / hp-hr	X	80 HP	X	500 Hours / Year	=		**267.2**	**0.134**
CO_2 =	1.15 Lb CO_2 / hp-hr	X	80 HP	X	500 Hours / Year	=		**46,000.0**	**23.0**

* Emissions factors from AP-42 10/96, section 3.3

Table 7E

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Odor Neutralizers

Estimated Annual Usage	**1,000**	gallons per year	
Percent Volatilzation	**97**	%	(based on MSDS sheet)

Emission Calculations:												
											Lbs/yr	TPY
VOC =	1,850 gallons / year	X	97	% volatilized	X	8.34	lbs / gallon				**8,089.8**	**4.045**

Table 7F

Emissions Inventory
Chaffee Landfill
Waste Management of New York, LLC

Parts Washing Solvent Emissions

Manufacture/Solvent Description CAS Number	Max Quantity (gal/yr)	Density (Lb/gal)	VOC Weight (Lb/gal)	% Distillates 64742-47-8	% Perchloroethylene 127-18-4
Safety-Kleen 105 Solvent Recycled	1,000	6.70	6.70	99.8%	0.2%
Totals Lbs/yr			6,700.0	6,686.6	13.4
Totals Tons/yr			3.35	3.34	0.0067

Appendices

Appendix A
Markup of Existing Title V Permit

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air Title V Facility
Permit ID: 9-1462-00001/00013
Effective Date: 01/13/2015 Expiration Date: 01/12/2020

Permit Issued To: WASTE MANAGEMENT OF NEW YORK LLC
1001 FANNIN STE 4000
HOUSTON, TX 77002

Contact: THOMAS LEWIS
WASTE MANAGMENT OF NY LLC - CHAFFEE
10860 OLEAN RD
CHAFFEE, NY 14030-9799
(716) 496-5192

Facility: CHAFFEE LANDFILL
10860 OLEAN RD
CHAFFEE, NY 14030-9799

Contact: ~~THOMAS LEWIS~~ MICHAEL MAHAR
WASTE MANAGMENT OF NY LLC - CHAFFEE
10860 OLEAN RD
CHAFFEE, NY 14030-9799
(716) 496-5192

Description:
(1)Waste Management of New York, LLC (WMNY) operates a municipal solid waste (MSW) landfill located in Chaffee, New York. This permit action includes the second Title V Renewal Permit for the facility.

(2)The total design capacity of the landfill is equal to 19,496,520 cubic yards (cy). The total capacity includes the Existing Landfill (LNDFL) of 9,144,000 cy, the Western Expansion (LNDF2) of 8,312,922 cy and the Valley Fill Expansion (LNDF3) of 2,039,598 cy.

(3)Landfill air emissions are controlled by internal combustion engines, an enclosed flare and an open flare. The Renewable Energy Facility (REF) consisting of eight (8) Caterpillar 3516 internal combustion reciprocating engines each rated at 1,148 horsepower. The landfill gas is treated using filtration, dewatering, and compression prior to combustion in the REF. Exhaust gases from the engines vent to the atmosphere.

(4)The permit maintains two federally enforceable emission limits of nitrogen oxide (NOx). Engines 1 through 6 are limited to 95 tons per year (tpy) NOx and Engines 7 & 8 are limited to 35 tpy NOx.

Submit reports of any required monitoring at a minimum frequency of every 6 months, based on a calendar year reporting schedule. These reports shall be submitted to the Department within 30 days after the end of a reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by the responsible official for this facility.

Notify the Department and report permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations shall be submitted to the permitting authority based on the following schedule:

(1) For emissions of a hazardous air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the ~~occurrence.~~ discovery

(2) For emissions of any regulated air pollutant, excluding those listed in paragraph (1) of this section, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours of discovery.

(3) For all other deviations from permit requirements, the report shall be contained in the 6 month monitoring report required above.

(4) This permit may contain a more stringent reporting requirement than required by paragraphs (1), (2) or (3) above. If more stringent reporting requirements have been placed in this permit or exist in applicable requirements that apply to this facility, the more stringent reporting requirement shall apply.

If above paragraphs (1) or (2) are met, the source must notify the permitting authority by telephone during normal business hours at the Regional Office of jurisdiction for this permit, attention Regional Air Pollution Control Engineer (RAPCE) according to the timetable listed in paragraphs (1) and (2) of this section. For deviations and incidences that must be reported outside of normal business hours, on weekends, or holidays, the DEC Spill

Building(s): GASPLANT

Condition 22: **Compliance Certification**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 22.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY

Item 22.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

(1) WMNY shall maintain records to document the combined total actual annual waste and alternate daily cover (ADC) material received. The actual total waste acceptance and ADC rates shall be determined by January 30 of each calendar year.

(2) If the combined total of the actual waste and ADC acceptance rate exceeds ~~720,000~~ tpy (i.e., 600,000 tpy waste and ~~120,000~~ ADC), the facility shall input the actual rate into the Landfill Gas Emissions Computer Model (LandGEM) and re-evaluate the emissions from the landfill. A report of the LandGEM results and re-evaluation of the applicability to New Source Review (6NYCRR Part 231-6) and Prevention of Significant Deterioration (6NYCRR Part 231-8) shall be provided to the Department within 30 days of the recorded waste increase.

(3) The site-specific and default parameters used in the analysis for Chaffee Landfill included:

(a) Permitted waste design capacity = 14,326,573 Mg;

(b) Maximum waste acceptance rate = ~~720,000~~ tons per year.

(c) NMOC concentration = 595 ppmv as hexane

(d) Default values of Lo = 140 m3/Mg, k = 0.04, methane concentration = 50%.

(4) For the purposes of determining waste acceptance rates, waste shall include: municipal solid waste, industrial waste, construction and demolition debris, contaminated soil, sludge, tire waste, and any other solid

waste material. Inert materials such as ash, asbestos and other materials may be excluded from the annual waste acceptance rate calculation.

Parameter Monitored: MUNICIPAL SOLID WASTE
Upper Permit Limit: ~~720000 tons per year~~ 780,000 tons per year
Monitoring Frequency: ANNUALLY
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 23: Progress Reports Due Semiannually
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (d) (4)

Item 23.1:
Progress reports consistent with an applicable schedule of compliance are to be submitted at least semiannually, or at a more frequent period if specified in the applicable requirement or by the department. Such progress reports shall contain the following:

(i) dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

(ii) an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

Condition 24: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (f)

Item 24.1:
The Compliance Certification activity will be performed for the Facility.

Item 24.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Operational Flexibility Plan

I. Protocol Objective

The objective of this condition is to maximize operational flexibility at the facility by building into the Title V permit the capability to make certain changes using a protocol. As provided under 6 NYCRR Part 201-6.4(f)(2),

The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 57: **Compliance Certification**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 228-1.3 (a)

Item 57.1:
The Compliance Certification activity will be performed for:

Emission Unit: M-00001

Item 57.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
No person shall cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source, except only the emission of uncombined water. Compliance will be determined by conducting a Method 9 opacity evaluation at a minimum frequency of once per year, while the source is in normal operating mode.

In addition to the above opacity evaluation, the permittee will conduct daily observations of visible emissions from the emission unit, process, etc. to which this condition applies. The observation(s) must be conducted during daylight hours except during adverse weather conditions (fog, rain, or snow).

The results of each observation must be recorded in a bound logbook or other format acceptable to the Department. The following data must be recorded for each stack:

- date and time of day
- observer's name
- identity of emission point
- weather condition
- was a plume observed?

Inclement weather conditions shall be recorded for those days when observations are prohibited. This logbook must be retained at the facility for five (5) years after the date of the last entry. If the operator observes any visible emissions (other than steam - see below) the permittee will immediately investigate any such occurrence and take corrective action, as necessary, to reduce or eliminate the emissions. If visible emissions above those

that are normal and in compliance continue to be present after corrections are made, the permittee will immediately notify the department and conduct a Method 9 assessment within 24 hours to determine the degree of opacity.

Records of these observations, investigations and corrective actions will be kept on-site in a format acceptable to the department and the semiannual progress report and annual compliance certifications required of all permittees subject to Title V must include a summary of theses instances.

** NOTE ** Steam plumes generally form after leaving the top of the stack (this is known as a detached plume). The distance between the stack and the beginning of the detached plume may vary, however, there is (normally) a distinctive distance between the plume and stack. Steam plumes are white in color and have a billowy consistency. Steam plumes dissipate within a short distance of the stack (the colder the air the longer the steam plume will last) and leave no dispersion trail downwind of the stack.

Parameter Monitored: OPACITY
Upper Permit Limit: 20 percent
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: 6-MINUTE AVERAGE (METHOD 9)
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 58: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 228-1.3 (b) (1)

Item 58.1:
The Compliance Certification activity will be performed for:

Emission Unit: M-00001

Item 58.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The owner or operator of an emission source subject to 6 NYCRR Part 228-1 must maintain the following records in a format acceptable to the department for a period of at least five years:

1. A certification from the coating supplier or

factor. NOx emissions are calculated as kwh multiplied by the lb/kwh emissions factor equals lb/month (then converted to tons/month).

Parameter Monitored: OXIDES OF NITROGEN
Upper Permit Limit: 95 tons per year
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 65: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 202-1

Item 65.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 000630-08-0 CARBON MONOXIDE
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 65.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The design emission rates of the internal combustion engines for nitrogen oxides (NOx) and carbon monoxide (CO) are 1.40 grams per brake horsepower-hour (g/bhp-hr) and 2.71 g/bhp-hr, respectively. The Department requires routine performance testing and periodic monitoring of the internal combustion engines to confirm the engines consistently operate within the design criteria.

PERIODIC MONITORING

(1) Each month the facility is required to analyze NOx and CO stack emissions on each engine with a portable analyzer.

(2) Based on the most recent performance test completed on ~~September 26, 2011,~~ February 14, 2019 the target NOx and CO concentrations are as follows:

Engines 1 through 6

NOx = ~~217.2 ppm~~ 238.2 ppm
CO = ~~715.1 ppm~~ 784.1 ppm

Engines 7 and 8
NOx = ~~201.6 ppm~~ 226.5 ppm
CO = ~~663.7 ppm~~ 745.6 ppm

(3) If the target concentrations are exceeded, the engines shall be tuned and monitoring repeated within 10 business days. If the target concentrations are exceeded upon remonitoring, performance testing shall be conducted. If corrective actions are taken as specified, the monitored exceedance is not a violation of the operational requirements, however the permittee shall report these episodes as deviations.

(4) Records shall be maintained to include: (a) date and time of the measurement, (b) a log of the NOx and CO measurements in ppm, (c) calculations used for determining the target concentration, and (d) description of adjustments made to the engine (if any). The records shall be kept on-site and be made available to the Department upon request.

(5) A summary of all monthly monitoring results shall be reported to the Department semiannually.

ROUTINE PERFORMANCE TESTING

(1) The facility completed initial performance tests on engines #1, #4, #7 and #8 between August, 2008 and September, 2011. The test results indicate the NOx emission rate ranges between 1.1 grams per brake horsepower-hour (g/bhp-hr) and 1.3 g/bhp-hr. This is below the limit of 2.0 grams per brake horsepower-hour contained in 6 NYCRR Part 227-2 and 1.4 grams per brake horsepower-hour used to allow the engines to limit emissions below the applicability level of 6 NYCRR Part 231.

(2) Additional performance testing shall be completed, at a minimum, ~~every five years~~ one per permit term on one engine from each similar engine type at the facility. For purposes of this testing, engines 1 through 6 will be considered one engine type and engines 7 and 8 will be considered another engine type. More frequent performance testing may be required as determined necessary by the Department.

(3) Performance tests must demonstrate compliance with the design emission rates of 1.40 g/bhp-hr NOx and 2.71 g/bhp-hr CO.

(4) The specific engine to be tested will be selected by the Department. The test must be completed at the maximum normal operating load.

(5) The methods used to measure NOx and CO shall include EPA Methods 7 or 7E and EPA Method 10 from 40CFR60, Appendix A or another reference method approved by the Department.

(6) A performance test protocol shall be submitted to the Department for approval at least 60 days prior to completion of the test. The Department must be notified 10 days prior to the scheduled test date so a Department representative may be present during the test.

(7) A performance test report of the results shall be submitted to this office within 45 days of completion of the test.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 66: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 227-2.4 (f) (2)

Item 66.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 66.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
WMNY submitted an updated NOx RACT Plan, dated December 16, 2011. The plan outlines five (5) compliance test results for five of the eight engines. The test results indicate the NOx emission rate ranges between 1.1 grams per brake horsepower-hour (g/bhp-hr) and 1.6 g/bhp-hr.

To demonstrate continued compliance with the NOx RACT

standard of 2.0 g/bhp-hr, the facility is required to conduct emission monitoring and testing contained in the 6NYCRR Part 202-1 condition elsewhere in this permit.

Upper Permit Limit: 2.0 grams per brake horsepower-hour
Reference Test Method: EPA method 7, 7E or 19
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: 1-HOUR AVERAGE
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 67: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60, NSPS Subpart JJJJ

Item 67.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 67.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

The following ~~SIX~~ FIVE engines are considered "new" stationary RICE under §63.6590(a)(2)(iii) because the order date of the engines was after June 12, 2006. In accordance with §63.6590(c)(1), new RICE at an area source must comply with 40CFR60 Subpart JJJJ. However, as per §60.4230(a)(4)(ii), the engine's are not subject to Subpart JJJJ because they were manufactured prior to January 1, 2008. As such, these engines currently do not have to meet any NSPS or NESHAP engine rules. The EPA may address requirements for these engines through future rulemaking.

Regardless of the NSPS and NESHAP rules, the engines do have to meet nitrogen oxides and carbon monoxide emission limits to demonstrate compliance with 6NYCRR Part 231 and 6NYCRR Part 227-2 as indicated elsewhere in this permit.

This requirement is applicable to the following ~~SIX~~ FIVE engines:

Engine#, Serial#, Max Power, ~~Const.Date~~, Manf.Date
~~1, ZBA00471, 820 kW, 9/22/2006, 9/5/2006~~

~~2, ZBA00440, 820 kW, 7/24/2006, 7/10/2006~~ 1. ZBA00844, 820 kW, 11/20/2007
~~5, ZBA00435, 820 kW, 7/25/2006, 7/7/2006~~ 3. ZBA00439, 820 kW, 7/11/2006
~~6, ZBA00439, 820 kW, 7/26/2006, 7/11/2006~~ 4. ZBA00538, 820 kW, 10/31/2006
7, ZBA00841, 820 kW, 12/6/2006, 11/20/2007 6. ZBA00471, 820 kW, 9/5/2006
~~8, ZBA00843, 820 kW, 12/5/2006, 11/20/2007~~ 8. ZBA00840, 820 kW, 11/19/2007

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 68: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4233(e), NSPS Subpart JJJJ

Item 68.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 68.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION STANDARDS

Any new engine must comply with the emission standards in Table 1 to Subpart JJJJ of Part 60 as follows:

Landfill/Digester Gas Engines (non-certified)*

Emission Standards (g/HP-hr)

Size	Date	NOx	CO	VOC
HP<500	7/1/2008	3.0	5.0	1.0
HP<500	1/1/2011	2.0	5.0	1.0
HP>=500	7/1/2007	3.0	5.0	1.0
HP>=500	7/1/2010	2.0	5.0	1.0

Emission Standards (ppmvd at 15% O2)

Size	Date	NOx	CO	VOC
HP<500	7/1/2008	220	610	80
HP<500	1/1/2011	150	610	80

as necessary;

(4) This requirement is applicable to One-90 HP generator.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 75: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 63.6603(a), Subpart ZZZZ

Item 75.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 75.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION RELATED OPERATING LIMITATIONS

No later than October 19, 2013, compliance with the following maintenance procedures must be completed:

(1) Change oil and filter every 1,440 hours of operation or annually, whichever comes first;
(2) Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first;
(3) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;

This requirement is applicable to the following ~~TWO~~ THREE engines:

Engine#, Serial#, Max Power, ~~Const.Date~~, Manf.Date
~~3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~ 2. ZBA00388, 820 kW, 5/3/2006
~~4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~ 5. CTL00407, 820 kW, 6/14/2002
7. ZBA00389, 820 kW, 5/4/2006

(a) Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new;
(b) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or
(c) Percent water content (by volume) is greater than 0.5.

(4) If all of the condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(5) This requirement is applicable to the following ~~THREE~~ FOUR engines:

Engine#, Serial#, Max Power, ~~Const.Date,~~ Manf.Date
~~3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~
~~4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~
~~One 90 HP generator~~
2. ZBA00388, 820 kW, 5/3/2006
5. CTL00407 820 kW, 6/14/2002
7. ZBA00389, 820 kW, 5/4/2006
One 90-HP generator

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 77: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 63.6655, Subpart ZZZZ

Item 77.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 77.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

RECORDKEEPING KEEPING AND REPORTING

The following records shall be maintained:

(1) Records of the maintenance conducted on each RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or your own maintenance plan;

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(3) Maintain records in readily accessible hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report or record.

(4) This requirement is applicable to the following ~~THREE~~ FOUR engines:

Engine#, Serial#, Max Power, ~~Const.Date~~, Manf.Date
3, ~~ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~
4, ~~ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~
~~One 90 HP generator~~

2. ZBA00388, 820 kW, 5/3/2006
5. CTL00407, 820 kW, 6/14/2002
7. ZBA00389, 820 kW, 5/4/2006
One 90-HP generator

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Appendix B
Markup of Title V Permit Renewal Forms

DEC ID: 9146200001 Application ID: 914620000100013

Facility: CHAFFEE LANDFILL Dec 06, 2018 1:16 pm

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. submitted. Based on my inquiry of the person or persons directly responsible for gathering the information I believe the information is true, accurate and complete. I am aware that there are significant penalties forsubmitting false information, including the possibility of fines and imprisonment for knowing violations.	
Responsible Official Steven Poggi	Title Director of Disposal Operations
Signature Steven Poggi	Date 7-15-19

I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments as they pertain to the practice of engineering. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.	
Professional Engineer Richard J. Snyder	NYS License No. 066242
Signature	Date 07/15/2019

STATE OF NEW YORK RICHARD J. SNYDER No. 66242 LICENSED PROFESSIONAL ENGINEER

DEC ID: 9146200001 **Application ID:** 914620000100013 **Renewal Number: 3**

Facility: CHAFFEE LANDFILL Dec 06, 2018 1:16 pm

Section II - Identification Information

Permit Type: Air Title V Facility (ATV)
RENEWAL

General Permit Title:

☐ **Application involves construction of new facility** ☐ **Application involves construction of new emission unit(s)**

Owner / Firm

Name WASTE MANAGEMENT OF NEW YORK LLC
Street 1001 FANNIN STE 4000
City HOUSTON **State** TX **Country** USA **Zip** 77002
Owner Classification Corporation/Partnership **Taxpayer Id** 364206797

Facility

Name CHAFFEE LANDFILL
Address 10860 OLEAN RD
City CHAFFEE **Zip** 14030 9799

Owner / Firm Contact Information

Name ~~THOMAS LEWIS~~ Michael Mahar **Phone No.** 7164965192
Affiliation **Fax No.** 7164965500
Title
Street WASTE MANAGMENT OF NY LLC - CHAFFEE
10860 OLEAN RD
City CHAFFEE **State** NY **Country** USA **Zip** 14030 9799
E-mail

Facility Contact Information

Name ~~THOMAS LEWIS~~ Michael Mahar **Phone No.** 7164965192
Affiliation **Fax No.** 7164965500
Title
Street WASTE MANAGMENT OF NY LLC - CHAFFEE
10860 OLEAN RD
City CHAFFEE **State** NY **Country** USA **Zip** 14030 9799
E-mail

Project Description

Application for renewal of Air Title V Facility.

Section III - Facility Information

Classification

[X] **INDUSTRIAL**

Affected States

PENNSYLVANIA

Affected Tribal Lands

SENECA NATION OF INDIANS	TUSCARORA NATION

SIC Codes

4953

NAICS Codes

5622

Facility Description

The Chaffee Landfill is a municipal solid waste landfill located on 700 acres of property owned by WMNY. Chaffee Landfill is primarily engaged in the land disposal of municipal solid waste (MSW) generated by residential, commercial and light industrial sources. A mining operation provides materials for construction and operation of the landfill. Maintenance activities, including a paint spray booth and two exempt parts cleaning tanks, provide support for upkeep of the vehicles and equipment at the facility.

Chaffee Landfill presently operates eight (8) Caterpillar 3516 Internal Combustion (IC) engines at its Renewable Energy Facility (REF).

Chaffee Landfill also has on-site a 3,300 cfm enclosed flare and a 910 cfm open flare which are capable of combusting any excess landfill gas that is not being used by the engines. The enclosed flare comes with a manufacturer's maximum guarantee of 0.2 lb/MMBtu of Carbon Monoxide (CO).

Therefore, emission sources at the facility include fugitive emissions from the landfill; LFG combustion emissions from a 910-cfm flare, a 3,300 cfm enclosed flare, and eight IC engines; combustion emissions from heating equipment; emissions from surface coating operations; and evaporative emissions from fuel and oil storage tanks, leachate tanks, and parts washers.

Compliance Statements (Title V Only)

I certify that as of the date of this application the facility is in compliance with all applicable requirements [X] **YES** [ ] **NO**

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block of section IV of this form along with the compliance plan information required. For all emission units at this facility that are operating in compliance with all applicable requirements complete the following:

[X] **This facility will continue to be operated and maintained in such manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application.**

[X] **For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.**

[X] **Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine status.**

Facility Applicable Federal Requirements

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	A	4						
40	CFR	60	WWW	757	d					
40	CFR	60	WWW	757	e					

Section III - Facility Information
Facility Applicable Federal Requirements

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	757	g					
40	CFR	60	WWW	758	d					
40	CFR	60	WWW	758	e					
40	CFR	60	WWW	759	a					
40	CFR	60	WWW	759	b					
40	CFR	60	WWW	759	c					
40	CFR	61	M	154						
40	CFR	63	AAAA	1955	b					
40	CFR	60	A							
40	CFR	68								
40	CFR	82	F							
6	NYCRR	200		6						
6	NYCRR	200		7						
6	NYCRR	201	1	7						
6	NYCRR	201	1	8						
6	NYCRR	201	3	2	a					
6	NYCRR	201	3	3	a					
6	NYCRR	201	6	4	a	4				
6	NYCRR	201	6	4	a	7				
6	NYCRR	201	6	4	a	8				
6	NYCRR	201	6	4	c					
6	NYCRR	201	6	4	c	2				
6	NYCRR	201	6	4	c	3	ii			
6	NYCRR	201	6	4	d	4				
6	NYCRR	201	6	4	e					
6	NYCRR	201	6	4	f					
6	NYCRR	201	6	4	f	6				
6	NYCRR	202	1	1						
6	NYCRR	202	2	1						
6	NYCRR	202	2	5						
6	NYCRR	211		1						
6	NYCRR	215		2						
6	NYCRR	201	6							

Facility State Only Requirements

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	201	1	4						
6	NYCRR	211		2						
	ECL	19	0301							

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	752	b	2				

[X] **Applicable Federal Requirement**

Description

ACTIVE LANDFILL GAS COLLECTION SYSTEM

The active landfill gas collection system shall:
(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
(a) For the purposes of calculating the maximum expected gas generation flow rate from the landfill, the following equation shall be used. The k and Lo kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

QM = SUMi [2*k*Lo*Mi*(e^(-kti)]

where,
QM =maximum expected gas generation flow rate, cubic meters per year
k=methane generation rate constant, year−1
Lo =methane generation potential, cubic meters per megagram solid waste
Mi =mass of solid waste in the ith section, megagrams
ti =age of the ith section, years
i=1 to n

(b) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equation in paragraph (a) above. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equation in paragraph (a) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) Collect gas from each area, cell, or group of cells in the landfill. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:
(a) 5 years or more if active; or
(b) 2 years or more if closed or at final grade.

For the purposes of determining sufficient density of gas collectors, the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) Collect gas at a sufficient extraction rate;

(4) Be designed to minimize off-site migration of subsurface gas.

(5) In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour;

(6) Keep 5 years up-to-date, readily accessible records of the following information. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable:
(a) The design capacity report which triggered § 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate;

(b) The maximum expected gas generation flow rate as calculated in paragraph (1) above. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator; and

(c) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 60.759(a)(1).

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY998-20-0	NMOC - LANDFILL USE ONLY

Section III - Facility Information
Facility Compliance Certification

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice	Process Material		Ref Test Method
Type	**Code**	**Description**	

Parameter		Manufacturer Name/Model No.
Code	**Description**	

Limit		Limit Units	
Upper	**Lower**	**Code**	**Description**

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	752	b	2	iii	A		

[X] **Applicable Federal Requirement**

Description

OPEN FLARE

(1) The open flare shall be designed and operated in accordance with § 60.18 except:
"the net heating value of the combusted landfill gas as determined in § 60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under § 60.18(f)(4)."

(2) The following equipment shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications:
(a) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(b) A device that records flow to or bypass of the flare. The owner or operator shall either:
(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(3) Operate the control system at all times when the collected gas is routed to the system.

(4) Keep 5 years up-to-date, readily accessible records of:
(a) flare type (i.e., steam-assisted, air-assisted, or nonassisted);
(b) all visible emission readings;
(c) heat content determination;
(d) flow rate or bypass flow rate measurements;
(e) exit velocity determinations made during the performance test as specified in § 60.18;
(f) continuous records of the flare pilot flame or flare flame monitoring; and
(g) records of all periods of operations during which the flare flame or flare pilot flame is absent.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	752	b	2	iii	B		

[X] **Applicable Federal Requirement**

Description

ENCLOSED COMBUSTION DEVICE

(1) The enclosed combustion device must be operated such that the average combustion temperature for all 3-hour periods of operation does not go below 28 degrees Celsius (or 82.4 degrees Fahrenheit) below the average combustion temperature established during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) was determined.

(2) The most recent performance test was completed on September 2, 2005. The average combustion temperature of all test runs was 1,482 degrees Fahrenheit. Therefore, the 3-hour average combustion temperature of the flare shall not go below 1,400 degrees Fahrenheit. If a more recent test is performed, this value will be updated accordingly.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.
03	TEMPERATURE	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
	28	435	degrees C below the approved performance test combustion temperature

Averaging Method	**Code**	47	**Desc**	3-HOUR BLOCK AVERAGE
Monitoring Freq	**Code**	16	**Desc**	FOUR TIMES PER HOUR
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

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Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	752	b	2	iii	B		

[X] **Applicable Federal Requirement**

Description

ENCLOSED COMBUSTION DEVICE

(1) The control system shall be designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in paragraph (2) below.
(a) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.
(b) The control device shall be operated within the parameter ranges established during the most recent performance test. The operating parameters to be monitored are specified in paragraph (3) below.

(2) For the performance test requirement, Method 25, 25C, or Method 18 of appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

Control Efficiency = (NMOCin − NMOCout)/(NMOCin)
where,
NMOCin = mass of NMOC entering control device
NMOCout = mass of NMOC exiting control device

(3)The following equipment shall be calibrated, maintained, and operated according to the manufacturer's specifications:
(a) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.
(b) A device that records flow to or bypass of the control device. The owner or operator shall either:
(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(4) Operate the control system at all times when the collected gas is routed to the system.

(5) Keep 5 years up-to-date, readily accessible records of:
(a) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.
(b) The percent reduction of NMOC as specified in paragraph (2) above; and
(c) All 3-hour periods of operation during which the average combustion temperature was more than 28 degrees Celsius below the average combustion temperature.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY998-20-0	NMOC - LANDFILL USE ONLY

Section III - Facility Information
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Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice	Process Material		Ref Test Method
Type	**Code**	**Description**	

Parameter		Manufacturer Name/Model No.
Code	**Description**	

Limit		Limit Units	
Upper	**Lower**	**Code**	**Description**

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
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Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	752	b	2	iii	C		

[X] **Applicable Federal Requirement**

Description

GAS TREATMENT SYSTEM

(1) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of § 60.752(b)(2)(iii) (A) or (B).

(2) The landfill gas treatment system for the stationary internal combustion engines shall be designed and operated as follows:

Filtration: At a minimum, the system will filter landfill gas using a dry filter or similar device (e.g., impaction, interception or diffusion device). The filter shall reduce particulate matter in the gas stream to a size of at least 10 microns.

Dewatering: Landfill gas is de-watered by cooling the superheated gas from the blower in the cooler. Landfill gas is cooled in the cooler, lowering the gas temperature to below the dew point and causing the water in the gas to condense. The condensed water is then trapped in the filters after the cooler. The cooled gas is then reheated prior to entering the gas plant. The system will de-water landfill gas using chillers, air-to-air coolers, dehumidification devices or other dehydration equipment as approved by the Department.

Compression: Landfill gas is extracted from the landfill under vacuum and compressed in a rotary blower. The gas is compressed in the blower such that it is approximately 5 to 7 psi coming out of the blower. The system will compress landfill gas using gas blowers or similar devices approved by the Department.

(3) WMNY submitted an acceptable monitoring plan to the Department for the treatment system. The plan describes the monitoring for the filtering, dewatering and compression of the landfill gas to assure that the treatment system operates as designed. This monitoring plan shall be followed at all times during operation of the treatment system.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
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Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	752	d					

[X] **Applicable Federal Requirement**

Description

LANDFILL CLOSURE

(1) The collection and control system may be capped or removed provided that all the conditions of paragraphs (a), (b), and (c) are met:
(a) The landfill shall be a closed landfill as defined in § 60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in § 60.757(d);
(b) The collection and control system shall have been in operation a minimum of 15 years; and
(c) Following the procedures specified in paragraph (2) below, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

(2) After the installation of a collection and control system, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed using the following equation:

MNMOC = (1.89 × 10−3)* QLFG* CNMOC

where,
MNMOC = mass emission rate of NMOC, megagrams per year
QLFG = flow rate of landfill gas, cubic meters per minute
CNMOC = NMOC concentration, parts per million by volume as hexane

(a) The flow rate of landfill gas, QLFG , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.

(b) The average NMOC concentration, CNMOC , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from CNMOC as carbon to CNMOC as hexane.

(c) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(3) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:
(a) The landfill was never subject to the requirement for a control system; or
(b) The owner or operator meets the conditions for control system removal.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY998-20-0	NMOC - LANDFILL USE ONLY

Section III - Facility Information
Facility Compliance Certification

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice	Process Material		Ref Test Method
Type	**Code**	**Description**	

Parameter		Manufacturer Name/Model No.
Code	**Description**	

Limit		Limit Units	
Upper	**Lower**	**Code**	**Description**

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	753	b					

[X] **Applicable Federal Requirement**

Description

NEGATIVE PRESSURE AT WELLHEAD

(1) Operate the collection system with negative pressure at each wellhead except under the following conditions:
(a) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports;
(b) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;
(c) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;

(2) Measure gauge pressure in the gas collection header at each individual well on a monthly basis. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed above. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **WORK PRACTICE INVOLVING SPECIFIC OPERATIONS**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method
04	301	LANDFILL GAS	As per 40CFR60 Subpart WWW

Parameter Code	Parameter Description	Manufacturer Name/Model No.
09	PRESSURE	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
0		292	pounds per square inch gauge

Averaging Method	**Code**	60	**Desc**	MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DES
Monitoring Freq	**Code**	05	**Desc**	MONTHLY
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	753	c					

[X] **Applicable Federal Requirement**

Description

OXYGEN OR NITROGEN CONTENT AT WELLHEAD

(1) Operate each interior wellhead in the collection system with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
(a) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established.
(b) Unless an alternative test method is established, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:
(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;
(ii) A data recorder is not required;
(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;
(iv) A calibration error check is not required;
(v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(2) Monitor nitrogen or oxygen concentration at each well on a monthly basis. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **WORK PRACTICE INVOLVING SPECIFIC OPERATIONS**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method
04	301	LANDFILL GAS	EPA Method 3A

Parameter Code	Parameter Description	Manufacturer Name/Model No.
56	OXYGEN CONTENT	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
5		136	percent

Averaging Method	**Code**	60	**Desc**	MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DES
Monitoring Freq	**Code**	05	**Desc**	MONTHLY
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	753	c					

[X] **Applicable Federal Requirement**

Description

GAS TEMPERATURE AT WELLHEAD

(1) Install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead;

(2) Operate each interior wellhead in the collection system with a landfill gas temperature less than 131 degrees Fahrenheit. The owner or operator may establish a higher operating temperature at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.;

(3) Monitor temperature at each well on a monthly basis. If a well exceeds this operating parameter, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **WORK PRACTICE INVOLVING SPECIFIC OPERATIONS**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method
04	301	LANDFILL GAS	As per 40CFR60 Subpart WWW

Parameter Code	Parameter Description	Manufacturer Name/Model No.
03	TEMPERATURE	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
130		44	degrees Fahrenheit

Averaging Method	**Code**	60	**Desc**	MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DES
Monitoring Freq	**Code**	05	**Desc**	MONTHLY
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	753	d					

[X] **Applicable Federal Requirement**

Description

SURFACE SCANS

(1) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site specific deviations from the 30 meter intervals.

(2) Areas with steep slopes or other dangerous areas may be excluded from the surface testing. For safety purposes, if a section of the landfill is covered with snow and/or ice or excessive precipitation (wet conditions) for an entire quarter, that section of the landfill does not need to be included in the surface scan required for that quarter under 40 CFR 60 Subpart WWW. The facility must return to quarterly surface monitoring in the event that conditions improve (i.e., if the snow and ice melt and the ground surface is dry enough to be accessible by personnel and suitable for the monitoring instrument) during the quarterly monitoring period.

Contaminants

Capping	CAS No.	Contaminant Name
☐	000074-82-8	METHANE

Monitoring Information

[X] **AMBIENT AIR MONITORING**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method
			Method 21

Parameter Code	Parameter Description	Manufacturer Name/Model No.
000074828	METHANE	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
500		273	parts per million (by volume)

Averaging Method	**Code**	20	**Desc**	AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATE
Monitoring Freq	**Code**	07	**Desc**	QUARTERLY
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	755	c					

[X] **Applicable Federal Requirement**

Description

SURFACE SCAN PROCEDURES

The following procedures shall be used for compliance with the surface methane operational standard:
(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications in §60.755(d).

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 8.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the following actions specified in paragraphs (i) through (vi) shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements.
(i) The location of each monitored exceedance shall be marked and the location recorded.
(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (v) has been taken.
(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring shall be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in paragraph (iii) or (v) shall be taken.
(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.
(vi) Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	000074-82-8	METHANE

Section III - Facility Information
Facility Compliance Certification

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	755	d					

[X] **Applicable Federal Requirement**

Description

SURFACE SCAN
INSTRUMENTATION SPECIFICATIONS

The following instrumentation specifications and procedures for surface emission monitoring devices shall be followed:
(1) The portable analyzer shall meet the instrument specifications provided in section 6 of Method 21 of 40 CFR Part 60 Appendix A, except that "methane" shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the sample, collection, preservation, storage and transport requirements in Section 8.0 of Method 21 of 40 CFR Part 60 Appendix A, the instrument evaluation procedures of section 8.1 of Method 21 shall be used.

(4) The calibration procedures provided in section 10 of Method 21 of 40 CFR Part 60 Appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	000074-82-8	METHANE

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	WWW	757	f					

[X] **Applicable Federal Requirement**

Description

REPORTING REQUIREMENT

(1) Each owner or operator of a landfill using an active collection system shall submit to the Administrator semi-annual reports of the following information:

(a) Value and length of time for exceedance of applicable parameters monitored for the gas wells and combustion devices;

(b) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow;

(c) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating;

(d) All periods when the collection system was not operating in excess of 5 days;

(e) The location of each exceedance of the 500 parts per million methane concentration and the concentration recorded at each location for which an exceedance was recorded in the previous month; and

(f) The date of installation and the location of each well or collection system expansion.

Note: This reporting condition is also required by § 63.1980(a). To avoid duplication, a condition for § 63.1980(a) has not been included in this permit.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section III - Facility Information
Facility Compliance Certification

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	201	6							

[X] **Applicable Federal Requirement**

Description

(1) WMNY shall maintain records to document the combined total actual annual waste and alternate daily cover ~~(ADC)~~ ADC/BUD material received. The actual total waste acceptance and ~~ADC rates~~ ADC/BUD shall be determined by January 30 of each calendar year.

(2) If the combined total of the actual waste and ~~ADC~~ ADC/BUD acceptance rate exceeds ~~720,000~~ 780,000 tpy (i.e., ~~600,000~~ 600,000 tpy waste and ~~120,000~~ 180,000 ~~ADC~~ ADC/BUD), the facility shall input the actual rate into the Landfill Gas Emissions Computer Model (LandGEM) and re-evaluate the emissions from the landfill. A report of the LandGEM results and re-evaluation of the applicability to New Source Review (6NYCRR Part 231-6) and Prevention of Significant Deterioration (6NYCRR Part 231-8) shall be provided to the Department within 30 days of the recorded waste increase.

(3) The site-specific and default parameters used in the analysis for Chaffee Landfill included:

(a) Permitted waste design capacity = 14,326,573 Mg;
(b) Maximum waste acceptance rate = ~~720,000 tons per year.~~ 780,000 tons per year
(c) NMOC concentration = 595 ppmv as hexane
(d) Default values of Lo = 140 m3/Mg, k = 0.04, methane concentration = 50%.

(4) For the purposes of determining waste acceptance rates, waste shall include: municipal solid waste, industrial waste, construction and demolition debris, contaminated soil, sludge, tire waste, and any other solid waste material. Inert materials such as ash, asbestos and other materials may be excluded from the annual waste acceptance rate calculation.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY998-20-0	NMOC - LANDFILL USE ONLY

Monitoring Information

[X] **MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.
329	MUNICIPAL SOLID WASTE	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
720000		38	tons per year

Averaging Method	**Code**	60	**Desc**	MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DES
Monitoring Freq	**Code**	09	**Desc**	ANNUALLY
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Facility Emissions Summary

Cas No.	Contaminant Name	PTE (lbs/yr)	PTE (tons/yr)	Actual (lbs/yr)	Actual (tons/yr)
000079-34-5	1,1,2,2-TETRACHLOROETHANE	24.3	0.01		
000107-06-2	1,2-DICHLOROETHANE	12.9	0.01		
000108-10-1	2-PENTANONE, 4-METHYL	81.3	0.04		

Section III - Facility Information

Facility Emissions Summary

Cas No.	Contaminant Name	PTE		Actual	
		(lbs/yr)	(tons/yr)	(lbs/yr)	(tons/yr)
000071-43-2	BENZENE	82.2	0.04		
0NY750-00-0	CARBON DIOXIDE EQUIVALENTS	572,376,657	286,188		
000075-15-0	CARBON DISULFIDE	26.4	0.01		
000630-08-0	CARBON MONOXIDE	633,681	316.8		
000056-23-5	CARBON TETRACHLORIDE	1.2	0.001		
000463-58-1	CARBONYL SULFIDE	11.9	0.01		
000108-90-7	CHLOROBENZENE	27.7	0.01		
000067-66-3	CHLOROFORM	2.7	0.001		
000075-09-2	DICHLOROMETHANE	312.2	0.16		
000071-55-6	ETHANE, 1,1,1-TRICHLORO	24.3	0.01		
000075-34-3	ETHANE, 1,1-DICHLORO-	79.4	0.04		
000075-00-3	ETHANE, CHLORO	16.7	0.01		
000075-35-4	ETHENE,1,1-DICHLORO	9.7	0.005		
000100-41-4	ETHYLBENZENE	780.2	0.39		
000110-54-3	HEXANE	216.8	0.11		
007647-01-0	HYDROGEN CHLORIDE	2,443.0	1.22		
007439-97-6	MERCURY	0.5	0.0002		
000074-82-8	METHANE	8,569,848	4,284.9		
0NY998-20-0	NMOC - LANDFILL USE ONLY	71,583	35.8		
0NY210-00-0	OXIDES OF NITROGEN	286,940	143.5		
0NY075-00-0	PARTICULATES	45,332	22.7		
000127-18-4	PERCHLOROETHYLENE	214.2	0.11		
0NY075-00-5	PM-10	45,332	22.7		
000078-87-5	PROPANE, 1,2-DICHLORO	2.8	0.001		
000107-13-1	PROPENENITRILE	2.1	0.001		
007446-09-5	SULFUR DIOXIDE	114,792	57.4		
000108-88-3	TOLUENE	2,533.8	1.27		
0NY100-00-0	TOTAL HAP	9,529	4.8		
000079-01-6	TRICHLOROETHYLENE	96.9	0.05		
000075-01-4	VINYL CHLORIDE	72.9	0.05		
0NY998-00-0	VOC	46,426	23.2		
001330-20-7	XYLENE, M, O & P MIXT.	1,905.6	0.5		

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	L00001

WMNY operates a municipal solid waste (MSW) landfill with a total design capacity equal to 19,496,520 cubic yards (cy). This includes the Existing Landfill (LNDFL) of 9,144,000 cy, the Western Expansion (LNDF2) of 8,312,922 cy and the Valley Fill Expansion (LNDF3) of 2,039,598 cy.

Collected landfill gas emissions are controlled by a treatment system prior to input into the internal combustion engines. Collected landfill gas is also controlled by an enclosed flare and an open flare. Air emissions from the landfill include primarily combustion components and fugitive emissions from the uncontrolled landfill gas.

Emission Point

Emission Unit	L00001	Emission Pt.	L0001			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	40	40	132	1400		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
5	30080	213.266	4720.185		1200	

Emission Unit	L00001	Emission Pt.	L0002			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	23	23	8	2350		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
	71249	213.266	4720.185			

Emission Source / Control

Emission Unit	L00001	Emission Source	0LGF1	
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.
K	04/01/1995	04/01/1995		JOHN ZINK/A010969
Design Capacity	3300	Units Code	118	Desc: cubic feet per minute (standard conditions)
Control Type	Code	023	Desc	FLARING
Waste Feed	Code		Desc	
Waste Type	Code		Desc	

Emission Unit	L00001	Emission Source	FLR03	
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.
K				Open flare 27.3 mmBtu/hr
Design Capacity	910	Units Code	39	Desc: cubic feet per minute
Control Type	Code	023	Desc	FLARING
Waste Feed	Code		Desc	
Waste Type	Code		Desc	

Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	L00001	Emission Source	LNDF2	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I				Western Landfill Expansion
Design Capacity	8312922	**Units Code**	93	**Desc** cubic yards
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	L00001	Emission Source	LNDF3	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I				Valley Fill Expansion Landfill
Design Capacity	2039598	**Units Code**	93	**Desc** cubic yards
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	L00001	Emission Source	LNDFL	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I				Existing Landfill
Design Capacity	9144000	**Units Code**	93	**Desc** cubic yards
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	L00001	Emission Source	TANKS	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	868,000			Leachate Tanks ~~1 - 6~~
Design Capacity	~~68000~~	**Units Code**	15	**Desc** gallons
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Section IV - Emission Unit Information

Process Information

Emission Unit	L00001	Process	183		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
50100402					
☐ Confidential	Operating Schedule		Building	Floor / Location	
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr			

Description

Fugitive dust is generated through the process of landfilling refuse as a result of vehicle traffic. Dust is controlled by periodic wetting of the facility access roads to ensure visible emissions do not exceed regulatory limitations at the property boundary. No wetting of the roads is conducted when precipitation occurs.

Emission Point Identifier(s)		
Emission Source / Control Identifier(s)		
LNDF2	LNDF3	LNDFL

Emission Unit	L00001	Process	301		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
50100406					
☐ Confidential	Operating Schedule		Building	Floor / Location	
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr			

Description

The landfill generates gases as a byproduct of decomposition of the waste placed at the facility. This gas is collected by a landfill gas collection and control system designed and operated in accordance with 40CFR60 Subpart WWW and 40CFR63 Subpart AAAA. Landfill gas not otherwise collected is fugitive.

Emission Point Identifier(s)		
Emission Source / Control Identifier(s)		
LNDF2	LNDF3	LNDFL

Section IV - Emission Unit Information

Process Information

Emission Unit	L00001	Process	LEA		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
50300602					
☐ Confidential	Operating Schedule		Building	Floor / Location	
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr			

Description

Landfill operations produce leachate which is collected in leachate tanks and condensate tanks. As the tanks near their capacity, the leachate is pumped into trucks and shipped off-site.

Emission Point Identifier(s)

Emission Source / Control Identifier(s)

TANKS

Emission Unit	L00001	Process	LGF		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
50200601					
☐ Confidential	Operating Schedule		Building	Floor / Location	
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr			

Description

Process LGF includes operation of a 3,300 cfm John Zink enclosed flare ground system (0LGF1) and a 910 cfm open flare (FLR03) for control of excess landfill gas not being used by the Renewable Energy Facility. The flares combust any excess landfill gas collected from the landfill areas (LNDFL, LNDF2 and LNDF3).

The enclosed flare has a design heat input rating of 90 million British Thermal Units per hour (MMBtu/hr) and is capable of combusting up to 198,000 cubic feet per hour of landfill gas. The enclosed flare is operated in accordance with the combustion temperature requirements specified in §63.758(c)(1)(i).

The open flare is rated at approximately 27 MMBtu/hr and is operated in compliance with §60.18.

Emission Point Identifier(s)

L0002	L0001

Emission Source / Control Identifier(s)

0LGF1	FLR03	LNDF2	LNDF3	LNDFL

Emission Unit Applicable Federal Requirements

Emission Unit	L-00001	Emission Point		Process		Emission Source				
Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	227	1	3	a					

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	L-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	227	2	4	g					

[X] **Applicable Federal Requirement**

Description

WMNY submitted an updated NOx RACT Plan, dated December 16, 2011. The plan indicates the NOx emission rate for the enclosed flare is 0.06 lb/mmBtu and the open flare is 0.068 lb/mmBtu.

The enclosed flare operates in compliance with §60.752(b)(2)(iii) and the open flare operates in compliance with §60.18.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY210-00-0	OXIDES OF NITROGEN

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice	Process Material		Ref Test Method
Type	**Code**	**Description**	

Parameter		Manufacturer Name/Model No.
Code	**Description**	

Limit		Limit Units	
Upper	**Lower**	**Code**	**Description**

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	M00001

Miscellaneous maintenance activities are performed at the facility for the equipment and vehicles owned by Chaffee Landfill. These activities include a paint booth and two exempt parts cleaning tank.

Building

Building	Building Name	Length	Width	Orient.
MB	Maintenance Building	220	80	135

Emission Point

Emission Unit	M00001	Emission Pt.	M0001			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1480	34	11	42	63		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
	17	213.313	4720.202	MB	340	

Emission Unit	M00001	Emission Pt.	M0002			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1480	34	11	42	63		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
	17	213.319	4720.196	MB	340	

Emission Source / Control

Emission Unit	M00001	Emission Source	0PSB1	
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.
I	02/01/1990	02/01/1990		DEVILBIS JGAV-501
Design Capacity	0.117	Units Code	115	Desc: gallons per minute
Control Type	Code		Desc	
Waste Feed	Code		Desc	
Waste Type	Code		Desc	

Emission Unit	M00001	Emission Source	0PSB2	
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.
K	02/01/1990	02/01/1990		BINKS MANUFACTURINGCO.
Design Capacity	16.9	Units Code	39	Desc: cubic feet per minute
Control Type	Code	016	Desc	FABRIC FILTER
Waste Feed	Code		Desc	
Waste Type	Code		Desc	

Section IV - Emission Unit Information

Process Information

Emission Unit	M00001	Process	PSB		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
40200110					
☐ Confidential	Operating Schedule		Building	Floor / Location	
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr			
			MB		

Description

Chaffee Landfill operates a paint spray booth to coat miscellaneous metal parts and mobile equipment. The booth is approximately 25 feet wide and 60 feet long. A high volume low pressure (HVLP) spray gun is used with a rated capacity of 0.117 gal/min. Emissions are vented through particulate filters, rated at 90% efficiency and then exhausted through two identical stacks.

Emission Point Identifier(s)	
Emission Source / Control Identifier(s)	
0PSB1	0PSB2

Emission Unit Applicable Federal Requirements

Emission Unit	M-00001	Emission Point		Process		Emission Source				
Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	228	1	3	a					
6	NYCRR	228	1	3	b	1				
6	NYCRR	228	1	3	d					
6	NYCRR	228	1	3	e					

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	M-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	228	1	4	b	4	ii			

[X] **Applicable Federal Requirement**

Description

A facility operating a Miscellaneous Metal Parts Coatings coating line may not use coatings with VOC contents, as applied, which exceed the appropriate limits specified in Table B4 of 6 NYCRR Subpart 228-1.4(b)(4). The units in Table B4 are in terms of pounds of VOC per gallon of coating (minus water and excluded compounds) at application. Sampling and testing of any coating to confirm VOC content compliance must be performed in a manor directed by and at the request of the Department.

As an example, the VOC coating limit when using a General One-Component Coating, Air-Dried is 2.8 pounds of VOC per gallon of coating (minus water and excluded compounds) at application. Refer to Table B4 to determine the appropriate coating limit for each coating category.

For miscellaneous metal parts coating the following types of coatings and coating operations are exempt from the VOC content limits of table B4:

(a) stencil coating;

(b) safety-indicating coatings;

(c) solid-film lubricants;

(d) electric-insulating and thermal-conducting coatings;

(e) magnetic data storage disk coatings; and

(f) plastic extruded into metal parts to form a coating.

Contaminants

Capping	CAS No.	Contaminant Name
☐	0NY998-00-0	VOC

Monitoring Information

[X] **INTERMITTENT EMISSION TESTING**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method
			EPA Method 24

Parameter Code	Parameter Description	Manufacturer Name/Model No.
54	VOC CONTENT	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
2.8		5	pounds per gallon

Averaging Method	**Code**	01	**Desc**	MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/D
Monitoring Freq	**Code**	13	**Desc**	SINGLE OCCURRENCE
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	P00001

Emission unit P-00001 is a Renewable Energy Facility (REF) consisting of eight (8) Caterpillar 3516 internal combustion reciprocating engines rated at 1148 Bhp per engine. The landfill gas is treated using filtration, dewatering, and compression prior to combustion in the REF. Exhaust gases from the engines vent to the atmosphere.

Building

Building	Building Name	Length	Width	Orient.
GASPLANT	Power Production Plant	208	58	235

Emission Point

Emission Unit	P00001	Emission Pt.	00001			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.264	4720.158	GASPLANT	900	

Emission Unit	P00001	Emission Pt.	00002			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.269	4720.162	GASPLANT	900	

Emission Unit	P00001	Emission Pt.	00003			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.273	4720.164	GASPLANT	900	

Emission Unit	P00001	Emission Pt.	00004			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.279	4720.169	GASPLANT	900	

Section IV - Emission Unit Information

Emission Point

Emission Unit	P00001	Emission Pt.	00005			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.297	4720.182	GASPLANT	900	

Emission Unit	P00001	Emission Pt.	00006			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.302	4720.186	GASPLANT	900	

Emission Unit	P00001	Emission Pt.	00007			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.308	4720.189	GASPLANT	900	

Emission Unit	P00001	Emission Pt.	00008			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
1489	29	10	10	847		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
184	6035	213.312	4720.193	GASPLANT	900	

Emission Source / Control

Emission Unit	P00001	Emission Source	ENG01		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
C	05/01/2005	12/01/2005		Caterpillar 3516 engine	
Design Capacity	340	Units Code	39	Desc	cubic feet per minute
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	P00001	Emission Source	ENG02	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C	05/01/2005	12/01/2005		Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	P00001	Emission Source	ENG03	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C	08/01/2005	12/01/2005		Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	P00001	Emission Source	ENG04	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C	08/01/2005	12/01/2005		Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	P00001	Emission Source	ENG05	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C	08/01/2005	12/01/2005		Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	P00001	Emission Source	ENG06	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C	08/01/2005	12/01/2005		Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	P00001	Emission Source	ENG07	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C				Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	P00001	Emission Source	ENG08	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
C				Caterpillar 3516 engine
Design Capacity	340	**Units Code**	39	**Desc** cubic feet per minute
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Process Information

Emission Unit	P00001	Process	601		
Source Classification Code (SCC)	**Total Thruput**		**Thruput Quantity Units**		
	Quantity / Hr	**Quantity / Yr**	**Code**	**Description**	
20100802					
☐ **Confidential**	**Operating Schedule**		**Building**	**Floor / Location**	
☐ **Operating At Maximum Capacity**	**Hrs / Day**	**Days / Yr**			
			GASPLANT		

Description

The Chaffee Landfill Renewable Energy Facility (REF) contains eight (8) Caterpillar 3516 internal combustion (IC) reciprocating engines rated at 1148 Bhp per engine. Process 601 is for the original six (6) engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06). The landfill gas enters the REF compressor room for treatment using filtration, dewatering, and compression prior to being combusted in the engines. Condensate formed during the treatment of the landfill gas drains to an underground tank where it is later transferred to a tanker truck to be hauled to a waste water treatment plant for disposal.

Emission Point Identifier(s)					
Emission Source / Control Identifier(s)					
ENG01	ENG02	ENG03	ENG04	ENG05	ENG06

Section IV - Emission Unit Information

Process Information

Emission Unit	P00001	Process	602	
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity / Hr	Quantity / Yr	Code	Description
20100805				

☐ Confidential	Operating Schedule		Building	Floor / Location
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr		
			GASPLANT	

Description

The Chaffee Landfill Renewable Energy Facility (P-00001) has an emission point called a "crankcase breather vent." The function of the crankcase breather vent is to allow moisture in each of the engines crankcase to be vented so water does not collect in the engines oil pan. The water vapor might contain some motor oil in the form of a mist. Other insignificant emissions might come from the virgin motor oil storage tank, the used oil storage tank, the landfill gas condensate tank and the gas chromatograph vent.

Emission Point Identifier(s)
Emission Source / Control Identifier(s)

ENG01	ENG02	ENG03	ENG04	ENG05	ENG06	ENG07	ENG08

Emission Unit	P00001	Process	603	
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity / Hr	Quantity / Yr	Code	Description
20100802				

☐ Confidential	Operating Schedule		Building	Floor / Location
☐ Operating At Maximum Capacity	Hrs / Day	Days / Yr		
			GASPLANT	

Description

The Chaffee Landfill Renewable Energy Facility (REF) contains eight (8) Caterpillar 3516 internal combustion (IC) reciprocating engines rated at 1148 Bhp per engine. Process 603 is for the two (2) additional engines (ENG07 & ENG08). The landfill gas enters the REF compressor room for treatment using filtration, dewatering, and compression prior to being combusted in the engines. Condensate formed during the treatment of the landfill gas drains to an underground tank where it is later transferred to a tanker truck to be hauled to a waste water treatment plant for disposal.

Emission Point Identifier(s)
Emission Source / Control Identifier(s)

ENG07	ENG08

Emission Unit Applicable Federal Requirements

Emission Unit	P-00001	Emission Point		Process		Emission Source			
Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	JJJJ	4243	b	2	ii			
40	CFR	60	JJJJ	4244						
40	CFR	60	JJJJ	4245	a					
40	CFR	60	JJJJ	4245	c					
40	CFR	60	JJJJ	4245	d					
6	NYCRR	201	7	1						
6	NYCRR	201	7	1						

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	JJJJ							

[X] **Applicable Federal Requirement**

Description

FIVE

The following ~~SIX~~ engines are considered "new" stationary RICE under §63.6590(a)(2)(iii) because the order date of the engines was after June 12, 2006. In accordance with §63.6590(c)(1), new RICE at an area source must comply with 40CFR60 Subpart JJJJ. However, as per §60.4230(a)(4)(ii), the engine's are not subject to Subpart JJJJ because they were manufactured prior to January 1, 2008. As such, these engines currently do not have to meet any NSPS or NESHAP engine rules. The EPA may address requirements for these engines through future rulemaking.

Regardless of the NSPS and NESHAP rules, the engines do have to meet nitrogen oxides and carbon monoxide emission limits to demonstrate compliance with 6NYCRR Part 231 and 6NYCRR Part 227-2 as indicated elsewhere in this permit.

FIVE

This requirement is applicable to the following ~~SIX~~ engines:

Engine#, Serial#, Max Power, ~~Const.Date,~~ Manf.Date

~~1, ZBA00471, 820 kW, 9/22/2006, 9/5/2006~~
~~2, ZBA00440, 820 kW, 7/24/2006, 7/10/2006~~
~~5, ZBA00435, 820 kW, 7/25/2006, 7/7/2006~~
~~6, ZBA00439, 820 kW, 7/26/2006, 7/11/2006~~
~~7, ZBA00841, 820 kW, 12/6/2006, 11/20/2007~~
~~8, ZBA00843, 820 kW, 12/5/2006, 11/20/2007~~

1, ZBA00844, 820 kW, 11/20/2007
3, ZBA00439, 820 kW, 7/11/2006
4, ZBA00538, 820 kW, 10/31/2006
6, ZBA00471, 820 kW, 9/5/2006
8, ZBA00840, 820 kW, 11/19/2007

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	60	JJJJ	4233	e					

[X] **Applicable Federal Requirement**

Description

EMISSION STANDARDS

Any new engine must comply with the emission standards in Table 1 to Subpart JJJJ of Part 60 as follows:

Landfill/Digester Gas Engines (non-certified)*

Emission Standards (g/HP-hr)

Size	Date	NOx	CO	VOC
HP<500	7/1/2008	3.0	5.0	1.0
HP<500	1/1/2011	2.0	5.0	1.0
HP>=500	7/1/2007	3.0	5.0	1.0
HP>=500	7/1/2010	2.0	5.0	1.0

Emission Standards (ppmvd at 15% O2)

Size	Date	NOx	CO	VOC
HP<500	7/1/2008	220	610	80
HP<500	1/1/2011	150	610	80
HP>=500	7/1/2007	220	610	80
HP>=500	7/1/2010	150	610	80

*Note: Most SI engines are certified for using gasoline or LPG only. A stationary SI engine manufacturer may certify an engine family solely to the standards applicable to landfill/digester gas engines under the voluntary manufacturer certification program, but the engine must have a permanent label stating that the engine is for use only in landfill/digester gas applications. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).
The department has not observed any SI engines certified for landfill/digester gas. As such, most landfill/digester engines are non-certified engines.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY210-00-0	OXIDES OF NITROGEN

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Monitoring Information				
[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**				
Work Practice	**Process Material**			**Ref Test Method**
Type	**Code**	**Description**		
Parameter				**Manufacturer Name/Model No.**
Code	**Description**			
Limit			**Limit Units**	
Upper	**Lower**		**Code**	**Description**
Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	63	ZZZZ	6603	a					

[X] **Applicable Federal Requirement**

Description

EMISSION RELATED OPERATING LIMITATIONS

No later than May 3, 2013, compliance with the following maintenance procedures must be completed as follows:

(1) Change oil and filter every 1,000 hours of operation or annually, whichever comes first;
(2) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first;
(3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary;

(4) This requirement is applicable to One-90 HP generator.

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	63	ZZZZ	6603	a					

[X] **Applicable Federal Requirement**

Description

EMISSION RELATED OPERATING LIMITATIONS

No later than October 19, 2013, compliance with the following maintenance procedures must be completed:

(1) Change oil and filter every 1,440 hours of operation or annually, whichever comes first;
(2) Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first;
(3) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;

THREE

This requirement is applicable to the following ~~TWO~~ engines:

Engine#, Serial#, Max Power, ~~Const.Date,~~ Manf.Date
~~3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~ 2, ZBA00388, 820 kW, 5/3/2006
~~4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~ 5, CTL00407, 820 kW, 6/14/2002
7, ZBA00389, 820 kW, 5/4/2006

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	63	ZZZZ	6625						

[X] **Applicable Federal Requirement**

Description

OPERATION AND MAINTENANCE REQUIREMENTS

The following monitoring, installation, collection, operation, and maintenance requirements are required:

(1) Operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

(2) Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

(3) Utilize an oil analysis program in order to extend the specified oil change requirement in 40 CFR 63.6602, if desired. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must, at a minimum, analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:

(a) Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new;
(b) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or
(c) Percent water content (by volume) is greater than 0.5.

(4) If all of the condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

FOUR

(5) This requirement is applicable to the following ~~THREE~~ engines:

Engine#, Serial#, Max Power, ~~Const.Date,~~ Manf.Date
~~3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~
~~4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~
~~One-90 HP generator~~
2, ZBA00388, 820 kW, 5/3/2006
5, CTL00407, 820 kW, 6/14/2002
7, ZBA00389, 820 kW, 5/4/2006
One-90 HP generator

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	Code		Desc	
Monitoring Freq	Code	14	Desc	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	Code	14	Desc	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
40	CFR	63	ZZZZ	6655						

[X] **Applicable Federal Requirement**

Description

RECORDKEEPING KEEPING AND REPORTING

The following records shall be maintained:

(1) Records of the maintenance conducted on each RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or your own maintenance plan;

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(3) Maintain records in readily accessible hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report or record.

FOUR

(4) This requirement is applicable to the following ~~THREE~~ engines:

Engine#, Serial#, Max Power, ~~Const.Date,~~ Manf.Date
~~3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~
~~4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~
~~One-90 HP generator~~

2, ZBA00388, 820 kW, 5/3/2006
5, CTL00407, 820 kW, 6/14/2002
7, ZBA00389, 820 kW, 5/4/2006
One-90 HP generator

Monitoring Information

[X] **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice	Process Material		Ref Test Method
Type	Code	Description	

Parameter		Manufacturer Name/Model No.
Code	Description	

Limit		Limit Units	
Upper	Lower	Code	Description

Averaging Method	Code		Desc	
Monitoring Freq	Code	14	Desc	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	Code	14	Desc	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	202	1							

[X] **Applicable Federal Requirement**

Description

The design emission rates of the internal combustion engines for nitrogen oxides (NOx) and carbon monoxide (CO) are 1.40 grams per brake horsepower-hour (g/bhp-hr) and 2.71 g/bhp-hr, respectively. The Department requires routine performance testing and periodic monitoring of the internal combustion engines to confirm the engines consistently operate within the design criteria.

PERIODIC MONITORING

(1) Each month the facility is required to analyze NOx and CO stack emissions on each engine with a portable analyzer.

February 14, 2019

(2) Based on the most recent performance test completed on ~~September 26, 2011,~~ the target NOx and CO concentrations are as follows:

Engines 1 through 6
NOx = ~~217.2 ppm~~ 238.2 ppm
CO = ~~715.1 ppm~~ 784.1 ppm

Engines 7 and 8
NOx = ~~201.6 ppm~~ 226.5 ppm
CO = ~~663.7 ppm~~ 745.6 ppm

(3) If the target concentrations are exceeded, the engines shall be tuned and monitoring repeated within 10 business days. If the target concentrations are exceeded upon remonitoring, performance testing shall be conducted. If corrective actions are taken as specified, the monitored exceedance is not a violation of the operational requirements, however the permittee shall report these episodes as deviations.

(4) Records shall be maintained to include: (a) date and time of the measurement, (b) a log of the NOx and CO measurements in ppm, (c) calculations used for determining the target concentration, and (d) description of adjustments made to the engine (if any). The records shall be kept on-site and be made available to the Department upon request.

(5) A summary of all monthly monitoring results shall be reported to the Department semiannually.

ROUTINE PERFORMANCE TESTING

(1) The facility completed initial performance tests on engines #1, #4, #7 and #8 between August, 2008 and September, 2011. The test results indicate the NOx emission rate ranges between 1.1 grams per brake horsepower-hour (g/bhp-hr) and 1.3 g/bhp-hr. This is below the limit of 2.0 grams per brake horsepower-hour contained in 6 NYCRR Part 227-2 and 1.4 grams per brake horsepower-hour used to allow the engines to limit emissions below the applicability level of 6 NYCRR Part 231.

once during the permit term

(2) Additional performance testing shall be completed, at a minimum, ~~every five years~~ on one engine from each similar engine type at the facility. For purposes of this testing, engines 1 through 6 will be considered one engine type and engines 7 and 8 will be considered another engine type. More frequent performance testing may be required as determined necessary by the Department.

(3) Performance tests must demonstrate compliance with the design emission rates of 1.40 g/bhp-hr NOx and 2.71 g/bhp-hr CO.

(4) The specific engine to be tested will be selected by the Department. The test must be completed at the maximum normal operating load.

(5) The methods used to measure NOx and CO shall include EPA Methods 7 or 7E and EPA Method 10 from 40CFR60, Appendix A or another reference method approved by the Department.

30

(6) A performance test protocol shall be submitted to the Department for approval at least ~~60~~ days prior to completion of the test. The Department must be notified ~~10~~ days prior to the scheduled test date so a Department representative may be present during the test.

7

60

(7) A performance test report of the results shall be submitted to this office within ~~45~~ days of completion of the test.

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Contaminants

Capping	CAS No.	Contaminant Name
☐	000630-08-0	CARBON MONOXIDE
☐	0NY210-00-0	OXIDES OF NITROGEN

Monitoring Information

☒ **RECORD KEEPING/MAINTENANCE PROCEDURES**

Work Practice Type	Process Material Code	Process Material Description	Ref Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method	**Code**		**Desc**	
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Section IV - Emission Unit Information

Emission Unit Compliance Certification

Emission Unit	P-00001	Emission Point		Process		Emission Source	

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	227	2	4	f	2				

[X] **Applicable Federal Requirement**

Description

WMNY submitted an updated NOx RACT Plan, dated December 16, 2011. The plan outlines five (5) compliance test results for five of the eight engines. The test results indicate the NOx emission rate ranges between 1.1 grams per brake horsepower-hour (g/bhp-hr) and 1.6 g/bhp-hr.

To demonstrate continued compliance with the NOx RACT standard of 2.0 g/bhp-hr, the facility is required to conduct emission monitoring and testing contained in the 6NYCRR Part 202-1 condition elsewhere in this permit.

Contaminants

Capping	CAS No.	Contaminant Name
[ ]	0NY210-00-0	OXIDES OF NITROGEN

Monitoring Information

[X] **INTERMITTENT EMISSION TESTING**

Work Practice Type	Work Practice Code	Process Material Description	Ref Test Method
			EPA method 7, 7E or 19

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
2.0		319	grams per brake horsepower-hour

Averaging Method	**Code**	08	**Desc**	1-HOUR AVERAGE
Monitoring Freq	**Code**	14	**Desc**	AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Reqs	**Code**	14	**Desc**	SEMI-ANNUALLY (CALENDAR)

Process Emissions Summary

Emission Unit	P-00001	Process	601					
CAS No.	**Contaminant Name**			**% of Thruput**	**% of Capture**	**% of Control**	**ERP (lb/hr)**	**ERP How Determined**
0NY210-00-0	OXIDES OF NITROGEN						21.7	01

PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lb/hr)	Actual (lb/yr)
21.7	190000	95	38	01		

Section IV - Emission Unit Information

Process Emissions Summary

Emission Unit	P-00001	Process	603					
CAS No.	Contaminant Name			% of Thruput	% of Capture	% of Control	ERP (lb/hr)	ERP How Determined
0NY210-00-0	OXIDES OF NITROGEN						8	01

PTE			Standard Units	PTE How Determined	Actual	
(lb/hr)	(lb/yr)	(standard units)			(lb/hr)	(lb/yr)
8	70000	35	38	01		

DEC ID: 9146200001 **Application ID:** 9146200000100013 **Renewal Number: 3**

Facility: CHAFFEE LANDFILL

Dec 06, 2018 1:16 pm

Supporting Documentation

- [ ] Aerial Photo (___ / ___ / _____)
- [ ] Air Quality Model (___ / ___ / _____)
- [ ] Air State Facility Permit (___ / ___ / _____)
- [ ] Air Title V Facility Permit (___ / ___ / _____)
- [ ] Alternative Fuel Monitoring Schedule (___ / ___ / _____)
- [ ] Ambient Air Monitoring Plan (___ / ___ / _____)
- [ ] Analysis of Contemporaneous Emission Increase/Decrease (___ / ___ / _____)
- [ ] Article 11, Title 5 Permit for Interference with Fish & Wildlife (___ / ___ / _____)
- [ ] Authorized Agent Letter (___ / ___ / _____)
- [ ] BACT Demonstration (___ / ___ / _____)
- [ ] Baseline Period Demonstration (___ / ___ / _____)
- [ ] Beneficial Use Determination (BUD) (___ / ___ / _____)
- [ ] Blasting Chart - Ground Vibration Limits (___ / ___ / _____)
- [ ] Building Identification Table (___ / ___ / _____)
- [ ] Calculations (___ / ___ / _____)
- [ ] Capping Letter/Package (___ / ___ / _____)
- [ ] Certificate of Capacity (Resource Recovery Facility) (___ / ___ / _____)
- [ ] Compliance Assurance Monitoring Plan (CAM) (___ / ___ / _____)
- [ ] Confidentiality Justification (___ / ___ / _____)
- [ ] Construction and Demolition Debris Tracking Document (___ / ___ / _____)
- [ ] Construction Detail Drawings (___ / ___ / _____)
- [ ] Continuous Emissions Monitoring Plans/QA/QC (___ / ___ / _____)
- [ ] Control Equipment Layout (___ / ___ / _____)
- [ ] Custom Schedule for Fuel Nitrogen and Sulfur Monitoring (___ / ___ / _____)
- [ ] Drawings/Blueprints (___ / ___ / _____)
- [ ] Elevations/Sections (___ / ___ / _____)
- [ ] Emission Inventory Report (___ / ___ / _____)
- [ ] Emission Survey (___ / ___ / _____)
- [ ] Emission Unit Summary (___ / ___ / _____)
- [ ] EPA Memo Re: Technical Infeasibility of Monitoring Nitrogen in Fuel (___ / ___ / _____)
- [ ] Episode Action Plan (___ / ___ / _____)
- [ ] Equipment Manufacturers Information (___ / ___ / _____)
- [ ] ERC Quantification (___ / ___ / _____)
- [ ] Exemption Related Document (___ / ___ / _____)
- [ ] Existing Certificates to Operate and/or Permits to Construct (___ / ___ / _____)
- [ ] Existing Consent Order (___ / ___ / _____)
- [ ] Existing Methane Migration & Recovery Well Plan (___ / ___ / _____)
- [ ] Existing Permit Figures (___ / ___ / _____)
- [ ] Facility Location Map (___ / ___ / _____)
- [ ] Facility-Wide Operating Permit Submittal Schedule (___ / ___ / _____)
- [ ] Fugitive Dust Control Plan (___ / ___ / _____)
- [ ] General Flow Diagram (___ / ___ / _____)
- [ ] Generating Plant Site & Section Sheet (___ / ___ / _____)
- [ ] LAER Demonstration (___ / ___ / _____)
- [ ] Letter of Intent to Commence Work (___ / ___ / _____)

Supporting Documentation

- [X] List of Exempt Activities (form attached) (___ / ___ / _____)
- [ ] MACT Demonstration (___ / ___ / _____)
- [X] Methods Used To Determine Compliance (form attached) (___ / ___ / _____)
- [ ] Miscellaneous Attachments - Not Otherwise Specified (___ / ___ / _____)
- [ ] Miscellaneous Correspondence (___ / ___ / _____)
- [ ] Mitigation Planting Plan (___ / ___ / _____)
- [ ] MSDS Information Sheets (___ / ___ / _____)
- [ ] Non-CEM: Custom Monitoring, Recordkeeping and/or Reporting Plan (___ / ___ / _____)
- [ ] Notice Covenant (___ / ___ / _____)
- [ ] Notice of Intent to Commence Work (___ / ___ / _____)
- [ ] NOx RACT Compliance Plan (___ / ___ / _____)
- [ ] NOx RACT Operating Plan (___ / ___ / _____)
- [ ] Opacity Compliance Plan (___ / ___ / _____)
- [ ] Operational Flexibility:Desc of Alternative Operating Scenarios and Protocols (___ / ___ / _____)
- [ ] P.E. Certification (form attached) (___ / ___ / _____)
- [ ] Permit Sign (___ / ___ / _____)
- [ ] Pesticide Treatment Area Map (___ / ___ / _____)
- [ ] Photograph(s) (___ / ___ / _____)
- [ ] Plot Plan (___ / ___ / _____)
- [ ] Process Flow Diagram(s) (___ / ___ / _____)
- [ ] Process Material Specification Data (___ / ___ / _____)
- [ ] Process Operation Log Sheet(s) (___ / ___ / _____)
- [ ] Project Location Map (___ / ___ / _____)
- [ ] PSD Permit Correlation Tables (___ / ___ / _____)
- [ ] RACT Demonstration (___ / ___ / _____)
- [ ] Regulatory Analysis Summary (___ / ___ / _____)
- [ ] Results of SEQR Review (___ / ___ / _____)
- [ ] Seed Mixture Recommendations (___ / ___ / _____)
- [X] Short Environmental Assessment Form (___ / ___ / _____)
- [ ] Site Plan (___ / ___ / _____)
- [ ] Solid Waste Annual Report Form (___ / ___ / _____)
- [ ] SPDES Permit (___ / ___ / _____)
- [ ] Stack Test Protocols/Reports (___ / ___ / _____)
- [ ] Title IV Acid Rain Permit Application (___ / ___ / _____)
- [ ] Transfer Form (___ / ___ / _____)
- [ ] VOC RACT Compliance Plan (___ / ___ / _____)
- [ ] Wood Waste Specifications (___ / ___ / _____)

New York State Department of Environmental Conservation
Air Permit Application

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List of Exempt Activities

Instructions

Applicants for Title V facility permits must provide a listing of each exempt activity, as described in 6 NYCRR Part 201-3.2(c), that is currently operated at the facility. This form provides a means to fulfill this requirement.

In order to complete this form, enter the number and building location of each exempt activity. Building IDs used on this form should match those used in the Title V permit application. If a listed activity is not operated at the facility, leave the corresponding information blank.

Combustion

Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(1)	Stationary or portable combustion installations where the furnace has a maximum heat input capacity less than 10 mmBtu/hr burning fuels other than coal or wood; or a maximum heat input capacity of less than 1 mmBtu/hr burning coal or wood. This activity does not include combustion installations burning any material classified as solid waste, as defined in 6 NYCRR Part 360, or waste oil, as defined in 6 NYCRR Subpart 225-2.	2	Shop / Office
(2)	Space heaters burning waste oil at automotive service facilities, as defined in 6 NYCRR Subpart 225-2, generated on-site or at a facility under common control, alone or in conjunction with used oil generated by a do-it-yourself oil changer as defined in 6 NYCRR Subpart 374-2.		
(3)(i)	Stationary or portable internal combustion engines that are liquid or gaseous fuel powered and located within the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury, and have a maximum mechanical power rating of less than 200 brake horsepower.		
(3)(ii)	Stationary or portable internal combustion engines that are liquid or gaseous fuel powered and located outside of the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury, and have a maximum mechanical power rating of less than 400 brake horsepower.	2	NA
(3)(iii)	Stationary or portable internal combustion engines that are gasoline powered and have a maximum mechanical power rating of less than 50 brake horsepower.	2	NA
(4)	Reserved.		
(5)	Gas turbines with a heat input at peak load less then 10 mmBtu/hour		

Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(6)	Emergency power generating stationary internal combustion engines, as defined in 6 NYCRR Part 200.1(cq), and engine test cells at engine manufacturing facilities that are utilized for research and development, reliability performance testing, or quality assurance performance testing. Stationary internal combustion engines used for peak shaving and/or demand response programs are not exempt.		
Combustion Related			
(7)	Non-contact water cooling towers and water treatment systems for process cooling water and other water containers designed to cool, store or otherwise handle water that has not been in direct contact with gaseous or liquid process streams.		
Agricultural			
(8)	Feed and grain milling, cleaning, conveying, drying and storage operations including grain storage silos, where such silos exhaust to an appropriate emissions control device, excluding grain terminal elevators with permanent storage capacities over 2.5 million U.S. bushels, and grain storage elevators with capacities above one million bushels.		
(9)	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.		
Commercial - Food Service Industries			
(10)	Flour silos at bakeries, provided all such silos are exhausted through an appropriate emission control device.		
(11)	Emissions from flavorings added to a food product where such flavors are manually added to the product.		
Commercial - Graphic Arts			
(12)	Screen printing inks/coatings or adhesives which are applied by a hand-held squeegee. A hand-held squeegee is one that is not propelled though the use of mechanical conveyance and is not an integral part of the screen printing process.		
(13)	Graphic arts processes at facilities located outside the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury whose facility-wide total emissions of volatile organic compounds from inks, coatings, adhesives, fountain solutions and cleaning solutions are less than three tons during any 12-month period.		

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(14)	Graphic label and/or box labeling operations where the inks are applied by stamping or rolling.		
(15)	Graphic arts processes which are specifically exempted from regulation under 6 NYCRR Part 234, with respect to emissions of volatile organic compounds which are not given an A rating as described in 6 NYCRR Part 212.		
Commercial - Other			
(16)	Gasoline dispensing sites registered with the department pursuant to 6 NYCRR Part 612.		
(17)	Surface coating and related activities at facilities which use less than 25 gallons per month of total coating materials, or with actual volatile organic compound emissions of 1,000 pounds or less from coating materials in any 12-month period. Coating materials include all paints and paint components, other materials mixed with paints prior to application, and cleaning solvents, combined. This exemption is subject to the following: (i) The facility is located outside of the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury; and (ii) All abrasive cleaning and surface coating operations are performed in an enclosed building where such operations are exhausted into appropriate emission control devices.		
(18)	Abrasive cleaning operations which exhaust to an appropriate emission control device.		
(19)	Ultraviolet curing operations.		
Municipal/Public Health Related			
(20)	Landfill gas ventilating systems at landfills with design capacities less than 2.5 million megagrams (3.3 million tons) and 2.5 million cubic meters (2.75 million cubic yards), where the systems are vented directly to the atmosphere, and the ventilating system has been required by, and is operating under, the conditions of a valid 6 NYCRR Part 360 permit, or order on consent.		
Storage Vessels			
(21)	Distillate fuel oil, residual fuel oil, and liquid asphalt storage tanks with storage capacities below 300,000 barrels.		

Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(22)	Pressurized fixed roof tanks which are capable of maintaining a working pressure at all times to prevent emissions of volatile organic compounds to the outdoor atmosphere.		
(23)	External floating roof tanks which are of welded construction and are equipped with a metallic-type shoe primary seal and a secondary seal from the top of the shoe seal to the tank wall.		
(24)	External floating roof tanks which are used for the storage of a petroleum or volatile organic liquid with a true vapor pressure less than 4.0 psi (27.6 kPa), are of welded construction and are equipped with one of the following: (i) a metallic-type shoe seal; (ii) a liquid-mounted foam seal; (iii) a liquid-mounted liquid-filled type seal; or (iv) equivalent control equipment or device.		
(25)	Storage tanks, including petroleum liquid storage tanks as defined in 6 NYCRR Part 229, with capacities less than 10,000 gallons, except those subject to 6 NYCRR Part 229 or Part 233.	20	Various
(26)	Horizontal petroleum or volatile organic liquid storage tanks.	1	Diesel UST
(27)	Storage silos storing solid materials, provided all such silos are exhausted through an appropriate emission control device. This exemption does not include raw material, clinker, or finished product storage silos at Portland cement plants.		
Industrial			
(28)	Processing equipment at existing sand and gravel and stone crushing plants which were installed or constructed before August 31, 1983, where water is used for operations such as wet conveying, separating, and washing. This exemption does not include processing equipment at existing sand and gravel and stone crushing plants where water is used for dust suppression.		
(29)(i)	Sand and gravel processing or crushed stone processing lines at a non-metallic mineral processing facility that are a permanent or fixed installation with a maximum rated processing capacity of 25 tons of minerals per hour or less.		

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(29)(ii)	Sand and gravel processing or crushed stone processing lines at a non-metallic mineral processing facility that are a portable emission source with a maximum rated processing capacity of 150 tons of minerals per hour or less.		
(29)(iii)	Sand and gravel processing or crushed stone processing lines at a non-metallic mineral processing facility that are used exclusively to screen minerals at a facility where no crushing or grinding takes place.		
(30)	Reserved.		
(31)	Surface coating operations which are specifically exempted from regulation under 6 NYCRR Part 228, with respect to emissions of volatile organic compounds which are not given an A rating pursuant to 6 NYCRR Part 212.		
(32)	Pharmaceutical tablet branding operations.		
(33)	Thermal packaging operations, including, but not limited to, therimage labeling, blister packing, shrink wrapping, shrink banding, and carton gluing.		
(34)	Powder coating operations.		
(35)	All tumblers used for the cleaning and/or deburring of metal products without abrasive blasting.		
(36)	Presses used exclusively for molding or extruding plastics except where halogenated carbon compounds or hydrocarbon solvents are used as foaming agents.		
(37)	Concrete batch plants where the cement weigh hopper and all bulk storage silos are exhausted through fabric filters, and the batch drop point is controlled by a shroud or other emission control device.		
(38)	Cement storage operations not located at Portland cement plants where materials are transported by screw or bucket conveyors.		
(39)(i)	Cold cleaning degreasers with an open surface area of 11 square feet or less and an internal volume of 93 gallons or less or, having an organic solvent loss of 3 gallons per day or less.	2	PPP
39(ii)	Cold cleaning degreasers that use a solvent with a VOC content or five percent or less by weight, unless subject to the requirements of 40 CFR 63 Subpart T.		

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(39)(iii)	Conveyorized degreasers with an air/vapor interface smaller than 22 square feet (2 square meters), unless subject to the requirements of 40 CFR 63 Subpart T.		
(39)(iv)	Open-top vapor degreasers with an open-top area smaller than 11 square feet (1 square meter), unless subject to the requirements of 40 CFR 63 Subpart T.		
Miscellaneous			
(40)	Ventilating and exhaust systems for laboratory operations. Laboratory operations do not include processes having a primary purpose to produce commercial quantities of materials.		
(41)	Exhaust or ventilating systems for the melting of gold, silver, platinum and other precious metals.		
(42)	Exhaust systems for paint mixing, transfer, filling or sampling and/or paint storage rooms or cabinets, provided the paints stored within these locations are stored in closed containers when not in use.		
(43)	Exhaust systems for solvent transfer, filling or sampling, and/or solvent storage rooms provided the solvent stored within these locations are stored in containers when not in use.		
(44)	Research and development activities, including both stand-alone and activities within a major facility, until such time as the administrator completes a rule making to determine how the permitting program should be structured for these activities.		
(45)	The application of odor counteractants and/or neutralizers.	1	Landfill
(46)	Hydrogen fuel cells.		
(47)	Dry cleaning equipment that uses only water-based cleaning processes or those using liquid carbon dioxide.		
(48)	Manure spreading, handling and storage at farms and agricultural facilities.		

New York State Department of Environmental Conservation
Air Permit Application

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
L-00001, M-00001, P-00001	6 NYCRR 201-6.4(c)	Submit a Semiannual Report for any required monitoring	January 30 & July 30 each year
L-00001, M-00001, P-00001	6 NYCRR 201-6.4(e)	Annual Compliance Certification	January 30 each year
L-00001, M-00001, P-00001	6 NYCRR 202-2.1	Annual Emissions Statement	April 15 each year
L-00001	40 CFR 60, Subpart WWW	Monthly wellfield monitoring for vacuum, oxygen and temperature	Each month
L-00001	40 CFR 60, Subpart WWW	Quarterly Surface Monitoring for Methane	Each quarter
L-00001, M-00001, P-00001	6 NYCRR 202-1	Stack testing when required	When required
L-00001, M-00001, P-00001	6 NYCRR 227-1.3(a)	Perform a visual observation for opacity on a daily basis and report results semi-annually.	Daily

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Waste Maangement of New York LLC - Chaffee Landfill

Name of Action or Project:

Title V Renewal Application

Project Location (describe, and attach a location map):

10860 Olean Road, Chaffee, NY 14030

Brief Description of Proposed Action:

Renewal of Title V Permit - No physical changes proposed

Name of Applicant or Sponsor:	Telephone: 716-496-5192
Waste Management of New York LLC	E-Mail: mmahar@wm.com

Address:

10860 Olean Road

City/PO:	State:	Zip Code:
Chaffee	NY	14030

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: USEPA 45-day comment period	☐	☑

3. a. Total acreage of the site of the proposed action? 0 acres
   b. Total acreage to be physically disturbed? 0 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☐ Urban ☑ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☐ Residential (suburban)
   ☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		
If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements?		
If the proposed action will exceed requirements, describe design features and technologies: _____ _____	☑	☐

	NO	YES
10. Will the proposed action connect to an existing public/private water supply?		
If No, describe method for providing potable water: _____ _____	☐	☑

	NO	YES
11. Will the proposed action connect to existing wastewater utilities?		
If No, describe method for providing wastewater treatment: _____ _____	☐	☑

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☑	☐

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☑ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☐ Urban ☐ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☑	☐
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☐	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☐
If Yes, briefly describe:		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)?	NO	YES
If Yes, explain the purpose and size of the impoundment:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	NO	YES
If Yes, describe: Facility is an MSW Landfill	☐	☑
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?	NO	YES
If Yes, describe:	☑	☐

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Waste Management of New York LLC Date: 7/15/19

Signature: Steven Leggi Title: Area Director of Disposal

PRINT FORM

Agency Use Only [If applicable]

Project:	
Date:	

Short Environmental Assessment Form
Part 2 - Impact Assessment

Part 2 is to be completed by the Lead Agency.
Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	**Moderate to large impact may occur**
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☐	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☐	☐
3. Will the proposed action impair the character or quality of the existing community?	☐	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☐	☐
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	☐	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☐	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☐	☐
b. public / private wastewater treatment utilities?	☐	☐
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☐	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☐	☐
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☐	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☐	☐

PRINT FORM

Agency Use Only [If applicable]

Project:

Date:

Short Environmental Assessment Form
Part 3 Determination of Significance

For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

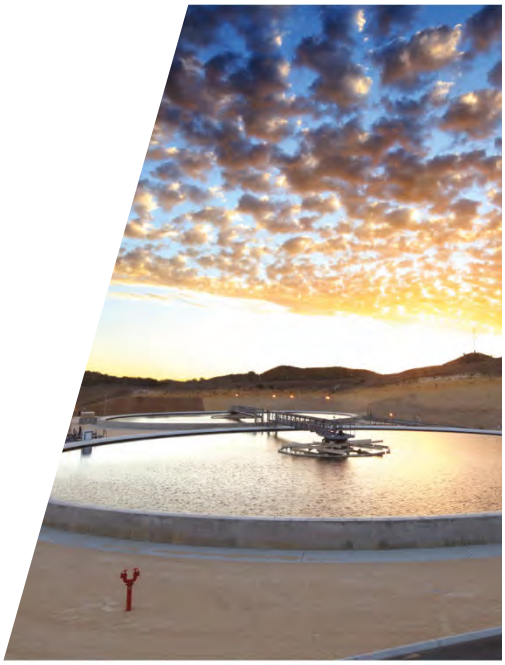
☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

_____	_____
Name of Lead Agency	Date
_____	_____
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
_____	_____
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

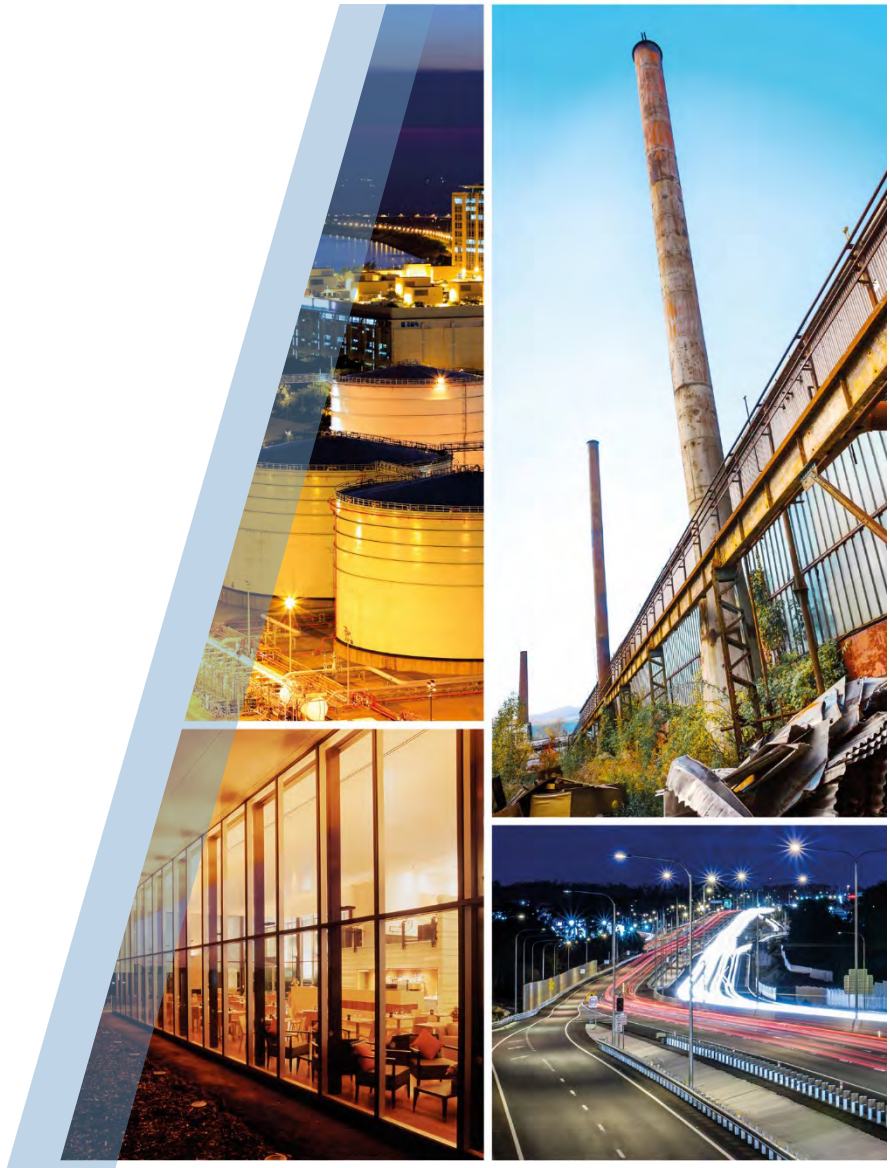
PRINT FORM

Appendix C
Air Quality Modeling Report



Air Quality Modeling Report

Chaffee Landfill
Chaffee, New York



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1. Introduction

This document details the air dispersion modeling conducted to demonstrate that the Chaffee Landfill Facility (Facility or Site) is in compliance with the provisions of 6NYCRR Part 212. The New York State Department of Environmental Conservation (NYSDEC) has requested that Waste Management of New York, LLC (WMNY) demonstrate compliance with 6NYCRR Part 212 for the existing Facility due to the upcoming submittal of the Title V Renewal Application for the current permit which expires on January 12, 2020.

The modeling report has been developed based on the following documentation:

- Policy DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212 (June 29, 2016)
- DAR-10/NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis (May 9, 2006)
- Appendix W of 40 CFR Part 51, United States Environmental Protection Agency (USEPA) (November 2005)
- Ambient Monitoring Guidelines for PSD, USEPA (May 1997)
- New Source Review Workshop Manual, USEPA (Draft, October 1990)

2. Facility Overview

2.1 Facility Description

WMNY owns and operates the solid waste management facility located at 10860 Olean Road in Chaffee, New York under NYSDEC Part 360, Permit #9-1462-00001/00013 (Facility or Site). The Facility accepts municipal solid waste (MSW) and other nonhazardous wastes. The landfill operations at the Facility include tipping, covering, compacting, solidification, landfill cell construction, hauling, leachate collection and storage, and equipment maintenance operations. The landfill has an active landfill gas (LFG) collection system that conveys collected LFG to on-Site flares and the Renewable Energy Facility, consisting of eight internal combustion engines. The engines are operated by Waste Management Renewable Energy (WMRE) and are used to generate electricity for off-Site use. The Standard Industrial Classification (SIC) for the Chaffee Landfill Facility is 4953.

2.2 Land Use Classifications

The Facility is located in a predominantly rural area in the Town of Sardinia, New York.

The three nearest population centers are the Town of Sardinia (population 2,775; 2010 census), approximately 2.8 miles to the south; the Town of Yorkshire (population 3,913; 2010 census), approximately 3.8 miles to the south of southeast; and the Town of Holland (population 3,401; 2010 census), approximately 4.4 miles to the north of northwest. Land use in the vicinity of the Chaffee Landfill Facility primarily residential, agricultural, and commercial.

2.3 Topography

The topography around the proposed Site is relatively flat. The base elevation of the Site is approximately 1,490 feet above mean sea level (AMSL). However, the topography of the surrounding land ranges from approximately 1,430 feet AMSL to 1,525 feet AMSL.

3. Modeling Methodology

The modeling was performed using the most recent executable versions of the USEPA AERMOD modeling system:

- AERMET, version 18081
- AERSURFACE, version 13016
- AERMAP, version 18081
- AERMOD, version 18081R
- BPIP-PRIME, version 04274

Modeling was facilitated using the Lakes Environmental graphical user interface AERMOD View (version 9.3.0).

3.1 Modeled Compounds

WMNY modeled the high toxicity air contaminant (HTAC) compound emissions from the landfill that exceeded the thresholds listed in Table 2 of 6NYCRR Part 212-2.2.

Total emission rates for the HTAC compounds that were modeled are provided in Table 5. The following HTAC compounds were included in the modeling analysis:

- Ethylene dibromide

In addition, WMNY modeled all non-HTAC compounds that exceeded an annual emission rate of 100 pounds per year. The following non-HTAC compounds were included in the modeling analysis (see Table 5 for emission rates):

- 2-Propanol
- Acetone
- Butane
- Dichlorobenzene
- Dichlorodifluoromethane
- Dichlorofluoromethane
- Dichloromethane
- Dimethyl Sulfide
- Ethanol

- Ethylbenzene
- Ethylene dibromide
- Hydrogen Chloride
- Hexane
- Hydrogen Sulfide
- Methyl ethyl ketone
- Pentane
- Propane
- Toluene
- Xylene

WMNY also modeled the following criteria pollutants from the flares to comply with 6NYCRR Part 212:

- Carbon monoxide (CO)
- Oxides of Nitrogen (NOx)
- Sulfur Dioxide (SO_2)
- Particulate matter (PM)

At the request of NYSDEC, WMNY also modeled the following criteria pollutants from the engines to comply with 6NYCRR Part 200.6:

- NOx

3.2 Facility Source Inventory

The section provides a summary of sources that were included in the modeling evaluation. A summary of the source inventory parameters is provided in Table 6. A plan site view of all emission sources is provided as Figure 1.

3.2.1 Landfill Areas

The following landfill areas were included in the modeling analysis:

- Original Landfill
- Western Expansion Landfill
- Valley Fill Expansion

Emissions were calculated using a maximum estimated LFG generation rate of 6,233 cubic feet per minute (cfm), which will occur when the entire landfill reaches final grade. A collection efficiency of 85 percent and a cover oxidation factor of 25 percent (referenced from 40CFR 98, Subpart HH) were utilized in the calculations.

Concentrations for each compound in the landfill gas were based on values compiled by the Waste Industry Air Coalition (WIAC). Table 1 presents a summary of fugitive emissions from the landfill areas.

3.2.2 Landfill Gas Flares

The Facility's Site is the location for one enclosed flare and one open flare, used for controlling LFG. The two flares are owned and operated by WMNY at the Chaffee Landfill (one 3,300 scfm enclosed flare and one 910 scfm open flare).

3.2.2.1 3,300 SCFM Enclosed Flare

The existing 3,300 cfm enclosed flare has a physical release height of 40 feet with a 132-inch diameter flare tip. Per the USEPA document "Workbook of Screening Techniques for Assessing Impacts of Toxic Air Pollutants", an effective flare release height and effect flare stack diameter were calculated, given the design heat release rate for the flare, as described below. Further, as described in the USEPA document, an assumed stack gas exit velocity of 20 meters per second (m/s) and gas exit temperature of 1,273 K were used.

The effective flare release height was calculated using the following equation:

$H_{eff} = H_s + [0.00456 \times (Q_T)^{0.478}]$

Where,

H_{eff} = effective flare release height (m)

H_s = physical flare stack height (m)

Q_T = total heat released (calories per second) assuming 55 percent radiative heat loss for methane

The effective flare stack diameter was calculated using the following equation:

$D_{eff} = (9.88 \times 10^{-4}) \times (Q_H)^{0.5}$

Where,

D_{eff} = effective flare stack diameter (m)

Q_H = net heat available (calories per second) assuming 55 percent of total heat is lost to radiation

The design heat release used in the equations above for the effective release height and stack diameter of the 3,300 cfm flare is 71.94 MMBTU/hr, which is equivalent to 9.5 million Joules per second (9,487,555 Joules per second) and 2.3 million calories per second (2,266,020 calories per second).

Table 2 presents a summary of volatile organic compound (VOC) emissions from the 3,300-cfm enclosed flare. Table 4 presents a summary of criteria pollutant emissions from the 3,300-cfm enclosed flare. Criteria pollutant emissions for the enclosed flare were referenced from the Title V Modification for the Valley Fill Expansion (November 2012).

3.2.2.2 910 SCFM Open Flare

The existing 910-cfm open flare has an actual release height of 23 feet with an 8-inch diameter flare tip. As with the enclosed flare, an assumed stack gas exit velocity of 20 m/s and gas exit temperature of 1,273 Kelvin (K) were used.

The design heat release used in the equations above for the effective release height and stack diameter of the 910 cfm open flares is 15 MMBTU/hr, which is equivalent to 2.0 million Joules per second (1,978,223 Joules per second) and 0.4 million calories per second (472,481 calories per second).

Table 3 presents a summary of VOC emissions from the 910 scfm open flare. Table 4 presents a summary of criteria pollutant emissions from the 910-cfm open flare.

3.2.3 Landfill Gas Engines

The Landfill Gas-to-Energy (LFGTE) Facility consists of eight CAT© Model G3516 gas fired reciprocating IC engines.

The CAT© G3516 IC engine has a power generation rating of 1,148 brake horsepower. Each engine is connected to a 0.825 MW generator, with a total electrical generation capacity of 6.6 MW for the G3516 IC engines. Engine #1 at the LFGTE Facility was source tested on September 26, 2011. The source tests indicated that, at operational capacity, the G3516 engine operates at 6,331 actual cubic feet per minute (acfm) at an exhaust temperature of 837°F. Therefore, for the purposes of this report, all CAT© G3516 IC engines were assumed to operate at these conditions.

3.2.4 Leachate Storage Tank

The leachate storage system consists of two aboveground storage tanks within a secondary containment tank; each tank has a capacity of approximately 405,000 gallons for a total storage volume of 810,000 gallons. There are also two small underground leachate storage tanks located on the east side of the Closed Landfill (one 12,000-gallon tank and one 25,000-gallon tank); however, these two horizontal tanks are considered exempt under 6NYCRR 201-3.2(c)(26).

Emissions from the vertical storage tanks were estimated using the methodology from AP 42, Section 7.1 (Organic Liquid Storage Tanks, 11/06). The following information was used in the calculations:

- The leachate analytical data for the period of June 2014 through June 2017 was evaluated, and the maximum detection value was used.
- A throughput of 15 million gallons per year was utilized in the calculations.

Attachment 1 presents the calculations for the vertical leachate storage tanks.

3.2.5 Sources Not Modeled

The following emissions sources were not included in the modeling analysis:

- Combustion sources, which include engines (these sources are not considered process operations as stated in 6NYCRR 212-1.2(b)(18)). However, NOx emissions from the engines were modeled only at the request of NYSDEC.
- Mobile sources (these sources are not considered process operations as stated in 6NYCRR 212-1.2(b)(18)).
- Temporary emission sources (as stated in 6NYCRR 212-1.4(a)).
- Exempt and trivial emission sources (as stated in 6NYCRR 212-1.4(a)).
- Paint Booth, which is subject to 6NYCRR Part 228-1 (as stated in 6NYCRR 212-1.4(l) - there are no A-listed contaminants in Paint Booth).

In addition, WMNY believes that criteria pollutants from the flares are exempt from modeling due to the following:

- 6NYCRR Part 212-1.4 (i): process emission sources with emissions of oxides of sulfur, only with respect to oxides of sulfur emissions attributable solely to sulfur in fuel
- 6NYCRR Part 212-1.4 (m): process emission sources with emissions of carbon monoxide or VOCs produced attributable solely to incomplete combustion of any fuel, except where material is heated, burned, combusted or otherwise chemically changed under oxygen deficient conditions by design
- 6NYCRR Part 212-1.4 (r): process emission sources with respect to emissions of NOx produced by catalytic or thermal oxidizers used as air pollution control equipment
- The particulate matter emission rate from the exhaust of each of the flares is significantly less than 0.05 grains/dry standard cubic feet (dscf) limit in 6NYCRR Part 212-2.4 (b)(1)

However, WMNY has agreed to model CO, SO_2, NOx, and PM from the enclosed flare and open flare.

3.3 Modeling Input Parameters

The model was run using the "regulatory default" mode, which specified the use of the following options:

- Stack-tip downwash-reduces effective stack height when plume exit velocity is less than 1.5 times the wind speed
- Plume buoyancy induces dispersion-increases the dispersion coefficient to account for the vertical movement of the plume
- Calms processing
- Allow missing meteorological data
- Elevated terrain

Source specific input parameters were entered into the Source Pathway of the model.

3.4 Building Downwash Analysis

Any Site structures that may impact the emission sources, with respect to influencing building downwash, were included and considered. Direction specific building dimensions were calculated utilizing BPIP-PRIME.

3.5 Meteorological Data

The 2014-2018 Buffalo, New York surface and profile meteorological data, as provided by the NYSDEC, was used in the analysis. Meteorological data from Buffalo, New York was utilized as representative meteorological data for the Facility as Buffalo, New York and the Facility have similar weather patterns.

The surface and profile meteorological data were processed using the ADJ_U* option in USEPA AERMET version 18081.

3.6 Modeled Receptors

For each pollutant, a multi-tier, uniform Cartesian grid centered on the Chaffee Landfill Facility was established.

Distance from Facility	Receptor Node Spacing
Up to 1 kilometers (km)	70 meters (m)
1 km to 2 km	200 m
2 km to 10 km	500 m

A property boundary receptor grid was established along the property boundary of the Chaffee Landfill Facility with a spacing of 20 m to capture the maximum property boundary concentration.

All receptors located within the Chaffee Landfill Facility property boundary were removed, as the Site is fenced and public access is prohibited.

The need to evaluate elevated receptors within 2 km of the Chaffee Landfill Facility, such as rooftops, balconies, and similar areas with public access, was not required.

3.7 Terrain Considerations

Although the topography of the region is relatively flat, the effects of terrain were considered as part of the modeling analyses. Elevations AMSL corresponding to the base elevation of the Chaffee Landfill Facility were assigned to all structures and sources modeled.

The digital terrain data was extracted from Multi-Resolution Land Characteristics (MRLC) Consortium viewer (https://www.mrlc.gov/viewerjs/). The data is available in the World Geodetic System (WGS84) at 1/9th arc second resolution in a geoTIFF format. The geoTIFF format was converted to the USGS DEM format (30 m resolution) before processing using the AERMAP executable.

4. Conclusion

Two copies of this modeling report will be sent to the NYSDEC Region 9 Division of Environmental Permits for distribution to the appropriate NYSDEC personnel for technical review.

An analysis of the modeled results demonstrates that the maximum modeled ground level concentrations are lower than the limits for all compounds shown in Tables 7 and 8 of Appendix C. Therefore, no further analysis is required under 6 NYCRR Part 212.

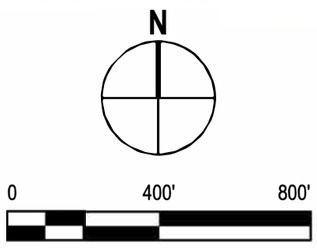

figure 1

FACILITY SOURCE LOCATIONS
CHAFFEE LANDFILL WASTE MANAGEMENT
Chaffee, New York

11192627-00(0001)GN-NI001 APR 15/2019

Table 1

Landfill Fugitive VOC Emissions
Chaffee Landfill

Fugitive Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Average LFG Collected =	5,298	cfm
Fugitive Emission Estimates =	935	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median [1] ppmv	Fugitive Emissions lb/hr	Fugitive Emissions lb/yr	Fugitive Emissions TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane	X	X	133.41	0.168	0.002	21.09	0.01	0.01	0.01
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.07	0.001	11.06	0.01	0.01	0.01
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.008	69.02	0.03	0.03	0.03
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.001	8.39	0.00	0.00	0.00
107-06-2	1,2-Dichloroethane	X	X	98.96	0.12	0.001	11.18	0.01	0.01	0.01
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.000	2.45	0.00	0.00	0.00
67-63-0	2-Propanol	X		60.11	7.908	0.051	447.40	0.22	0.22	
67-64-1	Acetone	X		58.08	6.126	0.038	334.88	0.17	0.17	
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.000	1.80	0.00	0.00	0.00
71-43-2	Benzene	X	X	78.11	0.972	0.008	71.46	0.04	0.04	0.04
75-27-4	Bromodichloromethane	X		163.83	0.311	0.005	47.95	0.02	0.02	
106-97-8	Butane [3]	X		58.12	5.03	0.031	275.15	0.14	0.14	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.003	22.93	0.01	0.01	0.01
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	1.01	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.001	10.35	0.01	0.01	0.01
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.003	24.05	0.01	0.01	0.01
75-45-6	Chlorodifluoromethane	X		86.47	0.355	0.003	28.89	0.01	0.01	
75-00-3	Chloroethane	X	X	64.52	0.239	0.002	14.51	0.01	0.01	0.01
67-66-3	Chloroform	X	X	119.39	0.021	0.000	2.36	0.00	0.00	0.00
74-87-3	Chloromethane	X	X	50.49	0.249	0.001	11.83	0.01	0.01	0.01
106-46-7	Dichlorobenzene	X	X	147	1.607	0.025	222.34	0.11	0.11	0.11
75-71-8	Dichlorodifluoromethane	X		120.91	1.751	0.023	199.26	0.10	0.10	
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.62	0.029	253.79	0.13	0.13	
75-09-2	Dichloromethane		X	84.94	3.395	0.031	271.41	0.14		0.14
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.045	398.17	0.20	0.20	
64-17-5	Ethanol	X		46.08	118.618	0.587	5144.49	2.57	2.57	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.009	79.29	0.04	0.04	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.077	678.34	0.34	0.34	0.34
106-93-4	Ethylene dibromide	X	X	187.88	0.046	0.001	8.13	0.00	0.00	0.00
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.005	42.28	0.02	0.02	
7647-01-0	HCl [2]		X	35.45	9.43					
110-54-3	Hexane	X	X	86.18	2.324	0.022	188.50	0.09	0.09	0.09
7783-06-4	Hydrogen Sulfide			34.076	252	0.923	8082.18	4.04		
7439-97-6	Mercury [3]		X	200.61	2.92E-04	0.000	0.06	0.00		0.00
78-93-3	Methyl ethyl ketone	X		72.11	10.557	0.082	716.50	0.36	0.36	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.75	0.008	70.70	0.04	0.04	0.04
74-93-1	Methyl mercaptan	X		48.11	1.292	0.007	58.50	0.03	0.03	
109-66-0	Pentane [3]	X		72.15	3.29	0.026	223.41	0.11	0.11	

Table 1

Landfill Fugitive VOC Emissions
Chaffee Landfill

Fugitive Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Average LFG Collected =	5,298	cfm
Fugitive Emission Estimates =	935	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median [1] ppmv	Fugitive Emissions lb/hr	Fugitive Emissions lb/yr	Fugitive Emissions TPY	VOC (TPY)	HAP (TPY)
127-18-4	Perchloroethylene	X	X	165.83	1.193	0.021	186.20	0.09	0.09	0.09
74-98-6	Propane	X		44.09	14.757	0.070	612.37	0.31	0.31	
108-88-3	Toluene	X	X	92.13	25.405	0.251	2202.92	1.10	1.10	1.10
79-01-6	Trichloroethene	X	X	131.4	0.681	0.010	84.22	0.04	0.04	0.04
75-01-4	Vinyl chloride	X	X	62.5	1.077	0.007	63.35	0.03	0.03	0.03
1330-20-7	Xylene	X	X	106.16	16.582	0.189	1656.83	0.83	0.83	0.83

Notes:

[1] Concentration of individual HAPs were referenced from Waste Industry Air Coalition (WIAC)

[2] HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".

[3] No WIAC concentration specified for compound; referenced AP-42 concentration

[4] Maximum LFG Generated and collection efficiency referenced from updated LFG model

Equations:

$$(mg/m^3) = \frac{(\text{Molecular weight}) \times (1\ \text{atm}) \times (\text{Median ppmv})}{(298.15\ \text{K}) \times (0.08206\ \text{L*atm/K*mol})}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times (\text{Fugitive LFG Emission rate } [ft^3/min]) \times (60\ \text{min/hr})}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = (lb/hr) \times (8{,}760\ \text{hours/yr})$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

Table 2

Enclosed Flare VOC Emissions
Chaffee Landfill

Landfill Gas Flares - HAP Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Total LFG Collected =	5,298	cfm
LFG Collected (Enclosed Flare) =	2,398	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	Uncontrolled Emissions lb/hr	Uncontrolled Emissions lb/yr	Uncontrolled Emissions TPY	Avg. Control [5]	Controlled Emissions lb/hr	Controlled Emissions lb/yr	Controlled Emissions TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane	X	X	133.41	0.168	0.008	72.14	0.04	98.0%	0.0002	1.44	0.00	0.00	0.00
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.07	0.004	37.82	0.02	98.0%	0.0001	0.76	0.00	0.00	0.00
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.027	236.05	0.12	98.0%	0.0005	4.72	0.00	0.00	0.00
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.003	28.71	0.01	98.0%	0.0001	0.57	0.00	0.00	0.00
107-06-2	1,2-Dichloroethane	X	X	98.96	0.12	0.004	38.22	0.02	98.0%	0.0001	0.76	0.00	0.00	0.00
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.001	8.36	0.00	98.0%	0.0000	0.17	0.00	0.00	0.00
67-63-0	2-Propanol	X		60.11	7.908	0.175	1530.00	0.77	98.0%	0.0035	30.60	0.02	0.02	
67-64-1	Acetone	X		58.08	6.126	0.131	1145.20	0.57	98.0%	0.0026	22.90	0.01	0.01	
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.001	6.15	0.00	98.0%	0.0000	0.12	0.00	0.00	0.00
71-43-2	Benzene	X	X	78.11	0.972	0.028	244.37	0.12	98.0%	0.0006	4.89	0.00	0.00	0.00
75-27-4	Bromodichloromethane	X		163.83	0.311	0.019	164.00	0.08	98.0%	0.0004	3.28	0.00	0.00	
106-97-8	Butane [3]	X		58.12	5.03	0.107	940.96	0.47	98.0%	0.0021	18.82	0.01	0.01	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.009	78.41	0.04	98.0%	0.0002	1.57	0.00	0.00	0.00
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	3.47	0.00	98.0%	0.0000	0.07	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.004	35.38	0.02	98.0%	0.0001	0.71	0.00	0.00	0.00
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.009	82.24	0.04	98.0%	0.0002	1.64	0.00	0.00	0.00
75-45-6	Chlorodifluoromethane	X		86.47	0.355	0.011	98.80	0.05	98.0%	0.0002	1.98	0.00	0.00	
75-00-3	Chloroethane	X	X	64.52	0.239	0.006	49.63	0.02	98.0%	0.0001	0.99	0.00	0.00	0.00
67-66-3	Chloroform	X	X	119.39	0.021	0.001	8.07	0.00	98.0%	0.0000	0.16	0.00	0.00	0.00
74-87-3	Chloromethane	X	X	50.49	0.249	0.005	40.47	0.02	98.0%	0.0001	0.81	0.00	0.00	0.00
106-46-7	Dichlorobenzene	X	X	147	1.607	0.087	760.35	0.38	98.0%	0.0017	15.21	0.01	0.01	0.01
75-71-8	Dichlorodifluoromethane	X		120.91	1.751	0.078	681.44	0.34	98.0%	0.0016	13.63	0.01	0.01	
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.62	0.099	867.92	0.43	98.0%	0.0020	17.36	0.01	0.01	
75-09-2	Dichloromethane		X	84.94	3.395	0.106	928.18	0.46	98.0%	0.0021	18.56	0.01		0.01
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.155	1361.64	0.68	98.0%	0.0031	27.23	0.01	0.01	
64-17-5	Ethanol	X		46.08	118.618	2.008	17593.08	8.80	98.0%	0.0402	351.86	0.18	0.18	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.031	271.17	0.14	98.0%	0.0006	5.42	0.00	0.00	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.265	2319.77	1.16	98.0%	0.0053	46.40	0.02	0.02	0.02
106-93-4	Ethylene dibromide	X	X	187.88	0.046	0.003	27.82	0.01	98.0%	0.0001	0.56	0.00	0.00	0.00
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.017	144.59	0.07	98.0%	0.0003	2.89	0.00	0.00	
7647-01-0	HCl [2]		X	35.45	9.43	0.123	1075.99	0.54	0.0%	0.1228	1075.99	0.54		0.54
110-54-3	Hexane	X	X	86.18	2.324	0.074	644.65	0.32	98.0%	0.0015	12.89	0.01	0.01	0.01
7783-06-4	Hydrogen Sulfide			34.076	252	3.155	27639.35	13.82	98.0%	0.0631	552.79	0.28		
7439-97-6	Mercury [3]		X	200.61	2.92E-04	0.000	0.19	0.00	0.0%	0.0000	0.19	0.00		0.00

Table 2

Enclosed Flare VOC Emissions
Chaffee Landfill

Landfill Gas Flares - HAP Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Total LFG Collected =	5,298	cfm
LFG Collected (Enclosed Flare) =	2,398	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	Uncontrolled Emissions lb/hr	Uncontrolled Emissions lb/yr	Uncontrolled Emissions TPY	Avg. Control [5]	Controlled Emissions lb/hr	Controlled Emissions lb/yr	Controlled Emissions TPY	VOC (TPY)	HAP (TPY)
78-93-3	Methyl ethyl ketone	X		72.11	10.557	0.280	2450.27	1.23	98.0%	0.0056	49.01	0.02	0.02	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.75	0.028	241.79	0.12	98.0%	0.0006	4.84	0.00	0.00	0.00
74-93-1	Methyl mercaptan	X		48.11	1.292	0.023	200.07	0.10	98.0%	0.0005	4.00	0.00	0.00	
109-66-0	Pentane [3]	X		72.15	3.29	0.087	764.03	0.38	98.0%	0.0017	15.28	0.01	0.01	
127-18-4	Perchloroethylene	X	X	165.83	1.193	0.073	636.77	0.32	98.0%	0.0015	12.74	0.01	0.01	0.01
74-98-6	Propane	X		44.09	14.757	0.239	2094.19	1.05	98.0%	0.0048	41.88	0.02	0.02	
108-88-3	Toluene	X	X	92.13	25.405	0.860	7533.54	3.77	98.0%	0.0172	150.67	0.08	0.08	0.08
79-01-6	Trichloroethene	X	X	131.4	0.681	0.033	288.02	0.14	98.0%	0.0007	5.76	0.00	0.00	0.00
75-01-4	Vinyl chloride	X	X	62.5	1.077	0.025	216.66	0.11	98.0%	0.0005	4.33	0.00	0.00	0.00
1330-20-7	Xylene	X	X	106.16	16.582	0.647	5666.00	2.83	98.0%	0.0129	113.32	0.06	0.06	0.06

Notes:

[1] Concentration of individual HAPs were referenced from Waste Industry Air Coalition (WIAC)

[2] HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".

[3] No WIAC concentration specified for compound; referenced AP-42 concentration

[4] Maximum LFG Generated and collection efficiency referenced from updated LFG model

[5] Control efficiency of 98% applied for enclosed flare

Equations:

$$(mg/m^3) = \frac{(\text{Molecular weight}) \times (1\ \text{atm}) \times (\text{Median ppmv})}{(298.15\ \text{K}) \times (0.08206\ \text{L*atm/K*mol})}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times (\text{Fugitive LFG Emission rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = (lb/hr) \times (8{,}760\ \text{hours/yr})$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

(Controlled Emissions) = (Uncontrolled Emissions) x (100% - Average Control [%])

Table 3

Open Flare VOC Emissions
Chaffee Landfill

Landfill Gas Flares - HAP Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Total LFG Collected =	5,298	cfm
LFG Collected (Open Flare) =	500	cfm
Hours of Operation =	8760	

						Uncontrolled Emissions				Controlled Emissions				
CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	lb/hr	lb/yr	TPY	Avg. Control [5]	lb/hr	lb/yr	TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane	X	X	133.41	0.168	0.002	15.04	0.01	98.0%	0.0000	0.30	0.00	0.00	0.00
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.07	0.001	7.89	0.00	98.0%	0.0000	0.16	0.00	0.00	0.00
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.006	49.22	0.02	98.0%	0.0001	0.98	0.00	0.00	0.00
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.001	5.99	0.00	98.0%	0.0000	0.12	0.00	0.00	0.00
107-06-2	1,2-Dichloroethane	X	X	98.96	0.12	0.001	7.97	0.00	98.0%	0.0000	0.16	0.00	0.00	0.00
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.000	1.74	0.00	98.0%	0.0000	0.03	0.00	0.00	0.00
67-63-0	2-Propanol	X		60.11	7.908	0.036	319.02	0.16	98.0%	0.0007	6.38	0.00	0.00	
67-64-1	Acetone	X		58.08	6.126	0.027	238.78	0.12	98.0%	0.0005	4.78	0.00	0.00	
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.000	1.28	0.00	98.0%	0.0000	0.03	0.00	0.00	0.00
71-43-2	Benzene	X	X	78.11	0.972	0.006	50.95	0.03	98.0%	0.0001	1.02	0.00	0.00	0.00
75-27-4	Bromodichloromethane	X		163.83	0.311	0.004	34.19	0.02	98.0%	0.0001	0.68	0.00	0.00	
106-97-8	Butane [3]	X		58.12	5.03	0.022	196.20	0.10	98.0%	0.0004	3.92	0.00	0.00	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.002	16.35	0.01	98.0%	0.0000	0.33	0.00	0.00	0.00
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	0.72	0.00	98.0%	0.0000	0.01	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.001	7.38	0.00	98.0%	0.0000	0.15	0.00	0.00	0.00
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.002	17.15	0.01	98.0%	0.0000	0.34	0.00	0.00	0.00
75-45-6	Chlorodifluoromethane	X		86.47	0.355	0.002	20.60	0.01	98.0%	0.0000	0.41	0.00	0.00	
75-00-3	Chloroethane	X	X	64.52	0.239	0.001	10.35	0.01	98.0%	0.0000	0.21	0.00	0.00	0.00
67-66-3	Chloroform	X	X	119.39	0.021	0.000	1.68	0.00	98.0%	0.0000	0.03	0.00	0.00	0.00
74-87-3	Chloromethane	X	X	50.49	0.249	0.001	8.44	0.00	98.0%	0.0000	0.17	0.00	0.00	0.00
106-46-7	Dichlorobenzene	X	X	147	1.607	0.018	158.54	0.08	98.0%	0.0004	3.17	0.00	0.00	0.00
75-71-8	Dichlorodifluoromethane	X		120.91	1.751	0.016	142.08	0.07	98.0%	0.0003	2.84	0.00	0.00	
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.62	0.021	180.97	0.09	98.0%	0.0004	3.62	0.00	0.00	
75-09-2	Dichloromethane		X	84.94	3.395	0.022	193.53	0.10	98.0%	0.0004	3.87	0.00		0.00
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.032	283.91	0.14	98.0%	0.0006	5.68	0.00	0.00	
64-17-5	Ethanol	X		46.08	118.618	0.419	3668.28	1.83	98.0%	0.0084	73.37	0.04	0.04	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.006	56.54	0.03	98.0%	0.0001	1.13	0.00	0.00	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.055	483.69	0.24	98.0%	0.0011	9.67	0.00	0.00	0.00
106-93-4	Ethylene dibromide	X	X	187.88	0.046	0.001	5.80	0.00	98.0%	0.0000	0.12	0.00	0.00	0.00
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.003	30.15	0.02	98.0%	0.0001	0.60	0.00	0.00	
7647-01-0	HCl [2]		X	35.45	9.43	0.026	224.35	0.11	0.0%	0.0256	224.35	0.11		0.11
110-54-3	Hexane	X	X	86.18	2.324	0.015	134.41	0.07	98.0%	0.0003	2.69	0.00	0.00	0.00
7783-06-4	Hydrogen Sulfide			34.076	252	0.658	5763.00	2.88	98.0%	0.0132	115.26	0.06		
7439-97-6	Mercury [3]		X	200.61	2.92E-04	0.000	0.04	0.00	0.0%	0.0000	0.04	0.00		0.00
78-93-3	Methyl ethyl ketone	X		72.11	10.557	0.058	510.90	0.26	98.0%	0.0012	10.22	0.01	0.01	

Table 3

Open Flare VOC Emissions
Chaffee Landfill

Landfill Gas Flares - HAP Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Total LFG Collected =	5,298	cfm
LFG Collected (Open Flare) =	500	cfm
Hours of Operation =	8760	

						Uncontrolled Emissions				Controlled Emissions				
CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	lb/hr	lb/yr	TPY	Avg. Control [5]	lb/hr	lb/yr	TPY	VOC (TPY)	HAP (TPY)
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.75	0.006	50.41	0.03	98.0%	0.0001	1.01	0.00	0.00	0.00
74-93-1	Methyl mercaptan	X		48.11	1.292	0.005	41.72	0.02	98.0%	0.0001	0.83	0.00	0.00	
109-66-0	Pentane [3]	X		72.15	3.29	0.018	159.31	0.08	98.0%	0.0004	3.19	0.00	0.00	
127-18-4	Perchloroethylene	X	X	165.83	1.193	0.015	132.77	0.07	98.0%	0.0003	2.66	0.00	0.00	0.00
74-98-6	Propane	X		44.09	14.757	0.050	436.65	0.22	98.0%	0.0010	8.73	0.00	0.00	
108-88-3	Toluene	X	X	92.13	25.405	0.179	1570.80	0.79	98.0%	0.0036	31.42	0.02	0.02	0.02
79-01-6	Trichloroethene	X	X	131.4	0.681	0.007	60.05	0.03	98.0%	0.0001	1.20	0.00	0.00	0.00
75-01-4	Vinyl chloride	X	X	62.5	1.077	0.005	45.17	0.02	98.0%	0.0001	0.90	0.00	0.00	0.00
1330-20-7	Xylene	X	X	106.16	16.582	0.135	1181.40	0.59	98.0%	0.0027	23.63	0.01	0.01	0.01

Notes:

1 Concentration of individual HAPs were referenced from Waste Industry Air Coalition (WIAC)

2 HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".

3 No WIAC concentration specified for compound; referenced AP-42 concentration

4 Maximum LFG Generated and collection efficiency referenced from updated LFG model

5 Control efficiency of 98% applied for open flare

Equations:

$$(mg/m^3) = \frac{(\text{Molecular weight}) \times (1\ \text{atm}) \times (\text{Median ppmv})}{(298.15\ \text{K}) \times (0.08206\ \text{L*atm/K*mol})}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times (\text{Fugitive LFG Emission rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = (lb/hr) \times (8{,}760\ hours/yr)$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

(Controlled Emissions) = (Uncontrolled Emissions) x (100% - Average Control [%])

Table 4

Summary of Criteria Pollutant Emission Rates
Chaffee Landfill
Chaffee, New York

CAS #	Compound	Enclosed Flare [1] TPY	Open Flare [1] TPY	Engines [1] TPY	Totals TPY	Totals lb/year	Totals lb/hr	1-hour standard (ug/m^3)	8-hour standard (ug/m^3)	24-hour standard (µg/m3)	Annual Standard (ug/m^3)
630-08-0	Carbon Monoxide	63.02	13.14	---	76.16	152,322	17.39	40,000	10,000	---	---
---	Oxides of Nitrogen	18.91	3.94	119.72	142.57	285,138	32.55	---	---	---	---
10102-44-0	Nitrogen Dioxide (annual) [2]	14.18	2.96	89.79	106.93	213,854	24.41	---	---	---	100
10102-44-0	Nitrogen Dioxide (1-hour) [2]	15.12	3.15	95.78	114.06	228,110	26.04	188	---	---	---
	Sulfur Dioxide	25.96	5.41	---	31.37	62,742	7.16	196	---	---	80
	PM-10	5.36	1.12	---	6.47	12,947	1.48	---	---	150	---
	PM-2.5	5.36	1.12	---	6.47	12,947	1.48	---	---	35	12

Notes:

[1] Emissions referenced from November 2012 Title V Modification - Valley Fill Landifll Expansion

[2] Tier II for NOx, per USEPA guidance

TABLE 4A

MODELING PROTOCOL
CHAFFEE LANDFILL
CHAFFEE, NY

SUMMARY OF LFG FLARE EMISSIONS

Total LFG Generated [A] =	6,233	cfm
Collection Efficiency =	85%	
Total LFG Combusted =	5,298	cfm
LFG to Flares =	2,898	cfm

Flare Type	*Operating Conditions*			*Estimated Flare Emissions (TPY)*				
	CFM	*MMSCF*	*Hours*	*PM_{10}*	*NMOC*	*CO*	*NO_X*	*SO_2*
Enclosed 3,300 CFM	2,398	1,260.4	8,760	5.4	1.6	63.0	18.9	26.0
Open 910 CFM	500	262.8	8,760	1.1	0.3	13.1	3.9	5.4
Total Emissions (TPY)				6.5	2.0	76.2	22.8	31.4
Total Emissions (lb/yr)				12,947.3	3,985.9	152,321.5	45,696.5	62,741.8

Flare Emission Factors

	Pounds per Million Standard Cubic Feet				
	PM	*NMOC*	*CO*	*NO_X*	*SO_2*
Enclosed Flare 3,300 CFM	8.50	2.62	100.00	30.00	41.19
Open Flare 910 CFM	8.50	2.62	110.00	26.00	41.19

Notes: [A] Based on amount of LFG generated in peak year of LFG production in existing and future landfill areas

PM 17 lb/10^6 dscf methane per AP-42, section 2.4 (11/98)
NMOC Based on 595 ppm per AP-42, section 2.4 (11/98), and 98% destruction efficiency
CO Emission rates (in units fo lb/MMBtu) referenced from previous permit applications
NO_X Emission rates (in units fo lb/MMBtu) referenced from previous permit applications
SO_2 252 ppm TRS concentration and 0% destruction efficiency, per AP-42, section 2.4 (11/98)

Heating value	500	Btu/scf
DE (of NMOC)	98.0	%

Emission Factor Development

3,300 CFM Enclosed Flare

CO:	0.20	lb/MMBtu
NOx:	0.06	lb/MMBtu

910 CFM Open Flare

CO:	0.22	lb/MMBtu
NOx:	0.052	lb/MMBtu

LFG Data:

NMOC:	595	ppm
TRS:	252	ppm
CH_4:	50.0%	of total LFG
VOC:	39.0%	of NMOC

TABLE 4B

MODELING PROTOCOL
CHAFFEE LANDFILL
CHAFFEE, NY

SUMMARY OF CATERPILLAR 3516 ENGINE EMISSIONS

Total Number of 3516 Engines = 8
LFG to Renewable Energy Facility = 2,400 cfm

	Operating Hours	Estimated Potential 3516 Engine Emissions (TPY)				
		PM_{10}	NMOC	CO	NO_X	SO_2
Engine #1	8,760	0.1	0.2	30.0	15.0	3.2
Engine #2	8,760	0.1	0.2	30.0	15.0	3.2
Engine #3	8,760	0.1	0.2	30.0	15.0	3.2
Engine #4	8,760	0.1	0.2	30.0	15.0	3.2
Engine #5	8,760	0.1	0.2	30.0	15.0	3.2
Engine #6	8,760	0.1	0.2	30.0	15.0	3.2
Engine #7	8,760	0.1	0.2	30.0	15.0	3.2
Engine #8	8,760	0.1	0.2	30.0	15.0	3.2
Total Emissions (TPY)		0.9	1.7	240.3	119.7	26.0
Total Emissions (lb/yr)		1,802.1	3,300.9	480,656.8	239,441.6	51,959.2

3516 Engine Emission Factors

	Pounds per Hour of Operation				
	PM	NMOC	CO	NO_X	SO_2
3516 Engines	0.03	0.05	6.86	3.42	0.74

Notes:
PM Based on 0.01 grains/dscf LFG (1 grain = 1.43 x 10^{-4} lbs)
NMOC Based on 595 ppm per AP-42, section 2.4 (11/98), and 98% destruction efficiency
CO Based on February 2006 State Facility Application, prepared by McMahon & Mann
NO_X Based on February 2006 State Facility Application, prepared by McMahon & Mann
SO_2 Based on conservative TRS concentration of 252 ppm

Heating value	500	Btu/scf
DE (of NMOC)	98.0	%
Engine Power	1,148	Bhp

Emission Factor Development

Caterpillar 3516 Engines

- referenced from *Chaffee Landfill PPP State Facility Permit Application* , prepared February 2006:

CO:	2.71	g/bhp-hr
NOx:	1.35	g/bhp-hr

LFG Data:

LFG combusted /engine:	300	cfm
NMOC:	595	ppm
TRS:	252	ppm
CH_4:	50.0%	of total LFG
VOC:	39.0%	of NMOC

Table 5

Summary of Landfill Source VOC Emission Rates
Chaffee Landfill
Chaffee, New York

CAS #	Compound	Landfill Emissions lb/yr	Enclosed Flare lb/yr	Open Flare lb/yr	AG Leachate Tank 1 lb/yr	AG Leachate Tank 2 lb/yr	Totals lb/hr	Totals lb/yr	Part 212 MEL (lb/year)	Totals TPY	SGC (ug/m^3)	AGC (ug/m^3)	Compound Modeled? (Y/N)	Reason
71-55-6	1,1,1-Trichloroethane	21.09	1.44	0.30	---	---	0.0026	22.8	---	0.01	9000.0	5000.0	No	Not an HTAC & less than 100 lb/year
79-34-5	1,1,2,2-Tetrachloroethane [2]	11.06	0.76	0.16	---	---	0.0014	12.0	1000	0.01	---	16.0	No	HTAC, but emissions are less than Part 212 limit
75-34-3	1,1-Dichloroethane	69.02	4.72	0.98	---	---	0.0085	74.7	---	0.04	---	0.63	No	Not an HTAC & less than 100 lb/year
75-35-4	1,1-Dichloroethene	8.39	0.57	0.12	---	---	0.0010	9.1	---	0.00	---	200.0	No	Not an HTAC & less than 100 lb/year
107-06-2	1,2-Dichloroethane	11.18	0.76	0.16	---	---	0.0014	12.1	100	0.01	---	0.038	No	HTAC, but emissions are less than Part 212 limit
78-87-5	1,2-Dichloropropane	2.45	0.17	0.03	---	---	0.0003	2.6	1000	0.00	---	4.0	No	HTAC, but emissions are less than Part 212 limit
67-63-0	2-Propanol	447.40	30.60	6.38	---	---	0.0553	484.4	---	0.24	98000.0	7000.0	Yes	Not an HTAC but greater than 100 lb/year
67-64-1	Acetone	334.88	22.90	4.78	0.06	0.06	0.0414	362.7	---	0.18	180000.0	30000.0	Yes	Not an HTAC but greater than 100 lb/year
107-13-1	Acrylonitrile [2]	1.80	0.12	0.03	---	---	0.0002	1.9	25	0.00	---	0.015	No	HTAC, but emissions are less than Part 212 limit
71-43-2	Benzene	71.46	4.89	1.02	---	---	0.0088	77.4	100	0.04	1300.0	0.13	No	HTAC, but emissions are less than Part 212 limit
75-27-4	Bromodichloromethane [2]	47.95	3.28	0.68	---	---	0.0059	51.9	---	0.03	---	70.0	No	Not an HTAC & less than 100 lb/year
106-97-8	Butane	275.15	18.82	3.92	---	---	0.0340	297.9	---	0.15	238000.0	---	Yes	Not an HTAC but greater than 100 lb/year
75-15-0	Carbon disulfide	22.93	1.57	0.33	---	---	0.0028	24.8	---	0.01	6200.0	700.0	No	Not an HTAC & less than 100 lb/year
56-23-5	Carbon tetrachloride [2]	1.01	0.07	0.01	---	---	0.0001	1.1	100	0.00	1900.0	0.17	No	HTAC, but emissions are less than Part 212 limit
463-58-1	Carbonyl sulfide	10.35	0.71	0.15	---	---	0.0013	11.2	---	0.01	250.0	28.0	No	Not an HTAC & less than 100 lb/year
108-90-7	Chlorobenzene	24.05	1.64	0.34	---	---	0.0030	26.0	---	0.01	---	60.0	No	Not an HTAC & less than 100 lb/year
75-45-6	Chlorodifluoromethane	28.89	1.98	0.41	---	---	0.0036	31.3	---	0.02	---	50000.0	No	Not an HTAC & less than 100 lb/year
75-00-3	Chloroethane	14.51	0.99	0.21	---	---	0.0018	15.7	---	0.01	---	10000.0	No	Not an HTAC & less than 100 lb/year
67-66-3	Chloroform [2]	2.36	0.16	0.03	---	---	0.0003	2.6	100	0.00	150.0	14.7	No	HTAC, but emissions are less than Part 212 limit
74-87-3	Chloromethane	11.83	0.81	0.17	---	---	0.0015	12.8	---	0.01	22000.0	90.0	No	Not an HTAC & less than 100 lb/year
106-46-7	Dichlorobenzene	222.34	15.21	3.17	---	---	0.0275	240.7	---	0.12	---	0.09	Yes	Not an HTAC but greater than 100 lb/year
75-71-8	Dichlorodifluoromethane	199.26	13.63	2.84	---	---	0.0246	215.7	---	0.11	---	12000.0	Yes	Not an HTAC but greater than 100 lb/year
75-43-4	Dichlorofluoromethane [5]	253.79	17.36	3.62	---	---	0.0314	274.8	---	0.14	---	100.0	Yes	Not an HTAC but greater than 100 lb/year
75-09-2	Dichloromethane	271.41	18.56	3.87	---	---	0.0335	293.8	---	0.15	14000.0	60.0	Yes	Not an HTAC but greater than 100 lb/year
75-18-3	Dimethyl Sulfide	398.17	27.23	5.68	---	---	0.0492	431.1	---	0.22	14.0	4.8	Yes	Not an HTAC but greater than 100 lb/year
64-17-5	Ethanol	5,144.49	351.86	73.37	---	---	0.6358	5,569.7	---	2.78	---	45000.0	Yes	Not an HTAC but greater than 100 lb/year
75-08-1	Ethyl mercaptan	79.29	5.42	1.13	---	---	0.0098	85.8	---	0.04	---	3.1	No	Not an HTAC & less than 100 lb/year
100-41-4	Ethylbenzene	678.34	46.40	9.67	---	---	0.0838	734.4	---	0.37	---	1000.0	Yes	Not an HTAC but greater than 100 lb/year
106-93-4	Ethylene dibromide [2]	8.13	0.56	0.12	---	---	0.0010	8.8	5	0.00	---	0.0017	Yes	HTAC & Emissions are greater than Part 212 limit
75-69-4	Fluorotrichloromethane	42.28	2.89	0.60	---	---	0.0052	45.8	---	0.02	---	5000.0	No	Not an HTAC & less than 100 lb/year
7647-01-0	HCl	0.00	1075.99	224.35	---	---	0.1484	1,300.3	---	0.65	---	20.0	Yes	Not an HTAC but greater than 100 lb/year
110-54-3	Hexane	188.50	12.89	2.69	---	---	0.0233	204.1	---	0.10	---	700.0	Yes	Not an HTAC but greater than 100 lb/year
7783-06-4	Hydrogen Sulfide	8,082.18	552.79	115.26	---	---	0.9989	8,750.2	---	4.38	14.0	2.0	Yes	Not an HTAC but greater than 100 lb/year
7439-97-6	Mercury [3]	0.06	0.19	0.04	---	---	0.0000	0.3	5	0.00	0.6	0.3	No	HTAC, but emissions are less than Part 212 limit
78-93-3	Methyl ethyl ketone	716.50	49.01	10.22	0.02	0.02	0.0886	775.8	---	0.39	13000.0	5000.0	Yes	Not an HTAC but greater than 100 lb/year
108-10-1	Methyl isobutyl ketone	70.70	4.84	1.01	---	---	0.0087	76.5	---	0.04	31000.0	3000.0	No	Not an HTAC & less than 100 lb/year
74-93-1	Methyl mercaptan	58.50	4.00	0.83	---	---	0.0072	63.3	---	0.03	14.0	2.3	No	Not an HTAC & less than 100 lb/year
109-66-0	Pentane	223.41	15.28	3.19	---	---	0.0276	241.9	---	0.12	---	42000.0	Yes	Not an HTAC but greater than 100 lb/year
127-18-4	Perchloroethylene	186.20	12.74	2.66	---	---	0.0230	201.6	1000	0.10	300.0	4.0	No	HTAC, but emissions are less than Part 212 limit
74-98-6	Propane	612.37	41.88	8.73	---	---	0.0757	663.0	---	0.33	---	43000.0	Yes	Not an HTAC but greater than 100 lb/year
108-88-3	Toluene	2,202.92	150.67	31.42	---	---	0.2723	2,385.0	---	1.19	37000.0	5000.0	Yes	Not an HTAC but greater than 100 lb/year
79-01-6	Trichloroethene	84.22	5.76	1.20	---	---	0.0104	91.2	---	0.05	14000.0	0.2	No	HTAC, but emissions are less than Part 212 limit
75-01-4	Vinyl chloride	63.35	4.33	0.90	---	---	0.0078	68.6	100	0.03	180000.0	0.110	No	HTAC, but emissions are less than Part 212 limit
1330-20-7	Xylene	1,656.83	113.32	23.63	---	---	0.2048	1,793.8	---	0.90	22000.0	100.0	Yes	Not an HTAC but greater than 100 lb/year
	Tetrahydrofuran	---	---	---	0.01	0.01	3.1284E-06	0.03	---	0.00	30000.0	350.0	No	Not an HTAC & less than 100 lb/year
108-39-4	3-Methylphenol	---	---	---	0.00001	0.00001	2.0832E-09	0.00002	---	0.00	---	180.0	No	Not an HTAC & less than 100 lb/year
106-44-5	4-Methylphenol	---	---	---	0.000004	0.000004	8.4766E-10	0.00001	---	0.00	---	18.0	No	Not an HTAC & less than 100 lb/year
108-95-2	Phenol	---	---	---	0.00001	0.00001	1.9344E-09	0.00002	---	0.00	5800.0	20.0	No	Not an HTAC & less than 100 lb/year

Table 6

Summary of Modeling Input Parameters
Chaffee Landfill
Chaffee, New York

Source ID	Description	UTM Coordinates, NAD83		Release Height (m)	Gas Exit Temperature (K)	Gas Exit Velocity (m/s)	Inside Diameter (m)
		X (m)	Y (m)				
EFLARE01	Enclosed Flare [(1)]	705,725.77	4,717,314.93	17.17	1,273.00	20.00	1.49
OFLARE01	Open Flare [(1)]	705,737.80	4,717,334.36	9.36	1,273.00	20.00	0.68
ENG01-ENG08	Engines (8 total, per engine)	various	various	8.84	720.40	58.94	0.25
LF	Landfill	various	various	37.48	Ambient	---	---
LTANK01	Leachate Tank	704,773.02	4,717,028.24	7.01	Ambient	0.001	0.10
LTANK02	Leachate Tank	704,793.21	4,717,021.90	7.01	Ambient	0.001	0.10

Notes:

(1) Calculated effective flare parameters

Table 7

Summary of Criteria Pollutant Ground Level Concentrations
Chaffee Landfill
Chaffee, New York

CAS No.	Compound	Total Landfill Site Emission Rate (lb/hr)	Total Landfill Site Emission Rate (g/s)	AERMOD Version	Maximum Predicted GLC 1-Hour (µg/m3)	Maximum Predicted GLC 8-Hour (µg/m3)	Maximum Predicted GLC 24-Hour (µg/m3)	Maximum Predicted GLC 2014 (µg/m3)	Maximum Predicted GLC 2015 (µg/m3)	Maximum Predicted GLC 2016 (µg/m3)	Maximum Predicted GLC 2017 (µg/m3)	Maximum Predicted GLC 2018 (µg/m3)	Maximum Predicted GLC Annual (µg/m3)	Standards 1-Hour (µg/m3)	Standards 8-Hour (µg/m3)	Standards 24-Hour (µg/m3)	Standards Annual (µg/m3)	Percent of Standards 1-Hour (%)	Percent of Standards 8-Hour (%)	Percent of Standards 24-Hour (%)	Percent of Standards Annual (%)
630-08-0	Carbon Monoxide	1.74E+01	2.19E+00	v.18081	1.68E+01	1.38E+01	---	---	---	---	---	---	---	40,000	10,000	---	---	0.0%	0.1%	---	---
10102-44-0	Nitrogen Dioxide, Tier 1, annual	2.44E+01	3.08E+00	v.18081	---	---	---	5.42E+00	5.57E+00	4.39E+00	4.49E+00	4.66E+00	5.57E+00	---	---	---	100	---	---	---	5.6%
10102-44-0	Nitrogen Dioxide, Tier 1, 1-hour	2.60E+01	3.28E+00	v.18081	7.64E+01	---	---	---	---	---	---	---	---	188	---	---	---	40.6%	---	---	---
7446-09-5	Sulfur Dioxide	7.16E+00	9.02E-01	v.18081	6.20E+00	---	---	5.10E-01	4.85E-01	4.46E-01	4.48E-01	4.18E-01	5.10E-01	196	---	---	80	3.2%	---	---	0.6%
NA	PM-10	1.48E+00	1.86E-01	v.18081	---	---	8.55E-01	---	---	---	---	---	---	---	---	150	---	---	---	0.6%	---
NA	PM-2.5	1.48E+00	1.86E-01	v.18081	---	---	3.98E-01	1.05E-01	1.00E-01	9.20E-02	9.24E-02	8.63E-02	9.91E-02 (1)	---	---	35	12	---	---	1.1%	0.8%

Note:
(1) PM-2.5 annual GLC is based on a three year average over five years.

Table 8

Summary of VOC Ground Level Concentrations
Chaffee Landfill
Chaffee, New York

CAS No.	Compound	Total Landfill Site Emission Rate (lb/hr)	Total Landfill Site Emission Rate (g/s)	AERMOD Version	Maximum Predicted GLC 1-Hour (ug/m3)	2014 (ug/m3)	2015 (ug/m3)	2016 (ug/m3)	2017 (ug/m3)	2018 (ug/m3)	Max Annual (ug/m3)	SGC (ug/m3)	AGC (ug/m3)	Percent of SGC (%)	Percent of AGC (%)
67-63-0	2-Propanol		0.00E+00	v.18081	4.90E-01	4.89E-03	4.83E-03	4.32E-03	4.37E-03	4.30E-03	4.89E-03	98000	7000	0.0%	0.0%
67-64-1	Acetone		0.00E+00	v.18081	3.67E-01	3.67E-03	3.62E-03	3.24E-03	3.28E-03	3.23E-03	3.67E-03	180000	30000	0.0%	0.0%
106-97-8	Butane		0.00E+00	v.18081	3.02E-01	---	---	---	---	---	---	238000	---	0.0%	---
75-45-6	Dichlorobenzene		0.00E+00	v.18081	---	2.45E-03	2.42E-03	2.16E-03	2.19E-03	2.15E-03	2.45E-03	---	0.09	---	2.7%
106-46-7	Dichlorodifluoromethane		0.00E+00	v.18081	---	2.20E-03	2.17E-03	1.94E-03	1.79E-03	1.93E-03	2.20E-03	---	12000	---	0.0%
75-71-8	Dichlorofluoromethane		0.00E+00	v.18081	---	2.79E-03	2.76E-03	2.46E-03	2.49E-03	2.46E-03	2.79E-03	---	100	---	0.0%
75-09-2	Dichloromethane		0.00E+00	v.18081	2.98E-01	2.98E-03	2.94E-03	2.63E-03	2.67E-03	2.62E-03	2.98E-03	14000	60	0.0%	0.0%
75-18-3	Dimethyl Sulfide		0.00E+00	v.18081	4.37E-01	4.36E-03	4.30E-03	3.85E-03	3.90E-03	3.83E-03	4.36E-03	14	4.8	3.1%	0.1%
64-17-5	Ethanol		0.00E+00	v.18081	---	5.59E-02	5.54E-02	4.94E-02	5.00E-02	4.92E-02	5.59E-02	---	45000	---	0.0%
106-93-4	Ethylbenzene		0.00E+00	v.18081	---	7.40E-03	7.32E-03	6.54E-03	6.61E-03	6.51E-03	7.40E-03	---	1000	---	0.0%
75-69-4	Ethylene dibromide		0.00E+00	v.18081	---	1.30E-04	1.50E-04	1.50E-04	1.50E-04	1.60E-04	1.60E-04	---	0.0017	---	9.4%
7647-01-0	HCl		0.00E+00	v.18081	---	1.06E-02	1.01E-02	9.24E-03	9.28E-03	8.68E-03	1.06E-02	---	20	---	0.1%
110-54-3	Hexane		0.00E+00	v.18081	---	2.08E-03	2.06E-03	1.84E-03	1.86E-03	1.83E-03	2.08E-03	---	700	---	0.0%
7783-06-4	Hydrogen Sulfide		0.00E+00	v.18081	8.85E+00	8.78E-02	8.70E-02	7.75E-02	7.85E-02	7.72E-02	8.78E-02	14	2	63.2%	4.4%
78-93-3	Methyl ethyl ketone		0.00E+00	v.18081	7.85E-01	7.81E-03	7.73E-03	6.90E-03	6.98E-03	6.87E-03	7.81E-03	13000	5000	0.0%	0.0%
74-93-1	Pentane		0.00E+00	v.18081	---	2.46E-03	2.43E-03	2.17E-03	2.20E-03	2.17E-03	2.46E-03	---	42000	---	0.0%
109-66-0	Propane		0.00E+00	v.18081	---	6.68E-03	6.61E-03	5.90E-03	5.97E-03	5.88E-03	6.68E-03	---	43000	---	0.0%
74-98-6	Toluene		0.00E+00	v.18081	2.41369	2.40E-02	2.37E-02	2.12E-02	2.14E-02	2.11E-02	2.40E-02	37000	5000	0.0%	0.0%
79-01-6	Xylene		0.00E+00	v.18081	1.82E+00	1.80E-02	1.79E-02	1.59E-02	1.61E-02	1.59E-02	1.80E-02	22000	100	0.0%	0.0%

Attachments

Attachment 1
Vertical Leachate Storage Tank Calculations

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification	
User Identification	AG Leachate Tank
City	Chaffee
State	New York
Company	WMNY
Type of Tank	Vertical Fixed Roof Tank
Description	Leachate Storage

Tank Dimensions	
Shell Length (ft)	23.00
Diameter (ft)	56.00
Liquid Height (ft)	23.00
Avg. Liquid Height (ft)	11.50
Volume (gal)	405,366.00
Turnovers	18.50
Net Throughput (gal/yr)	7,500,000
Is tank heated (y/n)	N

Paint Characteristics	
Shell Color/Shade	White/White
Shell Condition	Good
Roof Color/Shade	White/White
Roof Condition	Good

Roof Characteristics	
Type	Cone
Height (ft)	0.00
Slope (ft/ft) Cone Roof)	0.00

Breather Vent Settings	
Vacuum Settings (psig)	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Buffalo, New York (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Vertical Fixed Roof Tank
Chaffee, New York

Annual Emission Calculations	FROM TANKS DETAILED PDF	AP-42 EQUATIONS	CALCULATIONS				
Standing Losses (lb)		$L_S = 365\ V_V\ W_V\ K_E\ K_S$	L_S =	359.7439	lbs		
V_V = Vapor Space Volume (cu ft)			V_V =	37785.1768	cu ft		
W_V = Vapor Density (lb/cu ft)			W_V =	0.0011	lb / cu ft		
K_E = Vapor Space Expansion Factor			K_E =	0.0298			
K_S = Vented Vapor Saturation Factor			K_S =	0.7848			
Tank Vapor Space Volume							
V_V = Vapor Space Volume		$V_V = [(Pi/4)\ D^2]\ H_{VO}$	V_V =	37785.1768	cu ft		
D = Tank Diameter							
H_{VO} = Vapor Space Outage		$H_{VO} = H_S - H_L + H_{RO}$	H_{VO} =	15.3411	ft	$H_{VO} = H_E/2$ for horizontal tank	
Hs = Tank Shell Length							
H_L = Average Liquid Height							
Roof Outage							
Roof Outage (Cone Roof)							
Roof Outage		$H_{RO} = 1/3\ H_R$	H_{RO} =	3.8411	ft		
Roof Height							
S_R = Roof Slope		$H_R = S_R * R_S$	H_R =	0.5000	ft		
R_S = Shell Radius							
Vapor Density							
W_V = Vapor Density		$W_V = M_v\ P_{VA} / R\ T_{LA}$	W_V =	0.0011	lb / cu ft		0 deg F = 459.67 R
M_V = Vapor Molecular Weight			M_V =	18.0008	lb/lb-mole		
Vapor Pressure at Daily Average Liquid Surface Temperature							
T_{LA} = Daily Avg. Liquid Surface Temp		$T_{LA} = 0.44\ T_{AA} + 0.56\ T_B + 0.0079 * alpha * I$	T_{LA} =	508.9255	R =	9.59 deg C	
T_{AA} = Daily Average Ambient Temp		$T_{AA} = T_{AX} + T_{AN} / 2$	T_{AA} =	47.6792	deg F =	507.35 R	
Ideal Gas Constant R				10.7310			
T_B = Liquid Bulk Temperature		$T_B = T_{AA} + 6\ alpha - 1$	T_B =	507.3692	R		
Tank Paint Solar Absorptance (Shell)				0.17			As per Table 7.1-6: White/Good = .17
Tank Paint Solar Absorptance (Roof)				0.17			
I = Daily Total Solar Insulation Factor				1,165.412	Btu/sqft d		I_{AVG} = 1,165 Btu/ft^2-d as per sources mentioned on page 6-5 of TANKS user manual

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RS = Shell Radius
0

Annual Emission Calculations	**FROM TANKS DETAILED PDF**	**AP-42 EQUATIONS**	**CALCULATIONS**				
Vapor Space Expansion Factor							As per sources listed on page 6-5 of TANKS user manual:
K_E = Vapor Space Expansion Factor		$K_E = [\text{delta } T_V/T_{LA}]+ [(\text{delta}P_V-\text{delta } P_B)/(P_A-P_{VA})]$	K_E =	0.0298		T_{AX} =	515.4867
delta T_V = Daily Vapor Temperature Range		delta $T_V = 0.72(T_{AX}-T_{AN})+0.028*\text{alpha}*I]$	delta T_V =	17.2654	R	T_{AN} =	499.2117
delta P_V = Daily Vapor Pressure Range			delta P_V =	0.0007	psia		
delta P_B = Breather Vent Press. Setting Range			delta P_B =	0.06	psia		
Vapor Pressure at Daily Average Liquid Surface Temperature							
Vapor Pressure at Daily Minimum Liquid Surface Temperature							
Vapor Pressure at Daily Maximum Liquid Surface Temperature							
Daily Avg. Liquid Surface Temp.				508.9255	R		
Daily Min. Liquid Surface Temp		$T_{LN} = T_{LA} - 0.25 \text{ delta } T_V$	T_{LN} =	504.6092	R		
Daily Max. Liquid Surface Temp		$T_{LX} = T_{LA} + 0.25 \text{ delta } T_V$	T_{LX} =	513.2419	R		
delta T_A = Daily Ambient Temp. Range			delta T_A =	16.2750	R		
Vented Vapor Saturation Factor							
Vented Vapor Saturation Factor		$K_S = 1/[1+ (.053*P_{VA}*H_{VO})]$	K_S =	0.7842			
Vapor Pressure at Daily Average Liquid Surface Temperature							
Vapor Space Outage							
Working Losses		$L_W = 0.0010 M_V P_{VA} Q K_N K_P$	L_W =	1087.7588	lbs		
M_V = Vapor Molecular Weight			M_V =	18.0008	lb/lb-mole		Q = annual net throughput = tank capacity [bbl] * annual turnover rate, bbl/yr
P_{VA} = Vapor Pressure at Daily Average Liquid Surface Temperature							K_N = working loss turnover (saturation) factor, dimensionless; see Figure 7.1-18
Q = Annual Net Throughput		1 bbl/yr = 42 US gal/yr	Q =	178,571.43	bbl/yr		for turnovers >36, $K_N = (180 + N)/6N$
Annual Turnovers			N =	18.5018			for turnovers <36, $K_N = 1$
K_N = Turnover Factor		$K_N = (180 + N)/6N$	K_N =	1.0000			K_P = working loss product factor, dimensionless
Maximum Liquid Volume							for crude oils $K_P = 0.75$
Maximum Liquid Height							
Tank Diameter							
K_P = Working Loss Product Factor			K_P =	1.00			
Total Losses			L_T =	1447.5028	lbs		

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Vertical Fixed Roof Tank
Chaffee, New York

CALCULATED VALUES

Losses (lbs)			
	Working Loss	*Breathing Loss*	*Total Emissions*
Total Leachate	1087.75883	359.74392	1447.50275
2-Butanone	0.01791	0.00592	0.02383
Acetone	0.04253	0.01406	0.05659
Tetrahydrofuran	0.01030	0.00341	0.01370
3-Methylphenol	0.00001	0.00000	0.00001
4-Methylphenol	0.00000	0.00000	0.00000
Phenol	0.00001	0.00000	0.00001
Water	1087.68808	359.72052	1447.40860

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Vertical Fixed Roof Tank

Chaffee, New York

CALCULATED VALUES

Mixture/Component	Month	Daily Liquid Surface Temperature (deg F) Avg.	Min	Max	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min	Max	Vapor Mol Weight g/mol	Liquid Mass Fraction	Vapor Mass Fraction	Mol Weight g/mol	Basis for Vapor Pressure Calculations	Table 7.1-3 A	B	C	CAS Number	Detected Compounds MW_i (g/mol)	Leachate Concentration [1] (ug/L)	C_i	C_i / MW_i	X_i	$M_V = M_i [(P X_i)/P_{VA}]$
Leachate	All	49.26	-	-	47.70	0.3384	-	-	18.0008	-	-	18.00	-	-	-	-			-	-	-	-	18.0008
2-Butanone						0.7848	-	-	72.1100	0.0000	0.0000	72.11		6.8645	1150.207	209.246		72.11	7100	0.0000071	0.000000	0.000002	0.0003
Acetone						2.2051	-	-	58.0800	0.0000	0.0000	58.08		7.117	1210.595	229.664		58.08	6000	0.000006	0.000000	0.000002	0.0007
Tetrahydrofuran						1.5255	-	-	72.1100	0.0000	0.0000	72.11		6.995	1202.29	226.25		72.11	2100	0.0000021	0.000000	0.000001	0.0002
3-Methylphenol						0.0008	-	-	108.1400	0.0000	0.0000	108.14		7.508	1856.36	199.07		108.14	2700	0.0000027	0.000000	0.000000	0.0000
4-Methylphenol						0.0003	-	-	108.1400	0.0000	0.0000	108.14		7.035	1511.08	161.85		108.14	2700	0.0000027	0.000000	0.000000	0.0000
Phenol						0.0016	-	-	94.1100	0.0000	0.0000	94.11		7.1330	1516.790	174.95		94.11	1250	1.25E-06	0.000000	0.000000	0.0000
Water						0.3384	-	-	18.0000	1.0000	0.9999	18.00	0.3384 psia at 68 deg F via engineeringtoolbox.com	-	-	-		18.00	999978150	0.9999782	0.055554	0.999995	17.9997
									check:	1.0000	1.0000										check:	1.00000	

Appendix D
Operational Flexibility Notifications and Approvals

WASTE MANAGEMENT OF NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

January 21, 2015

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of One Caterpillar 3516 Engine Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 601, Emission Source: ENG01

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) hereby presents this notification to the New York State Department of Environmental Conservation (NYSDEC) of the replacement of one Caterpillar 3516 engine at the Chaffee Landfill Renewable Energy Facility (REF). Replacement of the engine is considered routine maintenance and is being presented under Condition 24 of the facility's Title V permit, Operational Flexibility. As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility protocol are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

WMNY operates a gas-to-energy plant consisting of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603) that combust collected landfill gas from the Chaffee Landfill to generate electricity for sale. Periodically, through normal operation of the engine plant, it is necessary to replace an engine so that it can be sent off-site for service. This allows the engine to be sent to a specialty maintenance shop with the necessary equipment and expertise required to service the engine. WMNY plans to remove Engine #1 (Serial #ZBA00471) from operation and transport for service at an off-site specialty shop. Immediately upon removal, Engine #1 will be replaced by a like-kind Caterpillar 3516 engine (Serial #4EK02870). The replacement engine was originally manufactured on May 12, 2000 and operated at various Waste Management (WM) Sites between 2000 and 2015. The operational history of Engine #4EK02870 is as follows:

- Engine #4EK02870 was originally installed in 2000 at the WM Pheasant Run Landfill located in Bristol, Wisconsin.
- Engine #4EK02870 was sent off-site for service on July 2, 2004; the engine resumed operation at the WM Pheasant Run Landfill between January 13, 2005 and June 2, 2011.
- Engine #4EK02870 was refurbished on February 15, 2012 and relocated to the WM Venice Park Landfill located in Lennon, Michigan where the engine operated between March 1, 2012 and June 12, 2014.
- Engine #4EK02870 was refurbished on November 3, 2014 and relocated to the WM Denver Arapahoe Disposal Site (DADS) Landfill located in Aurora, Colorado where the engine operated as a temporary like-kind replacement engine between November 15, 2014 and January 20, 2015.

Since Engine #4EK02870 was manufactured prior to January 1, 2008 (build date of May 12, 2000) and is being relocated to the Chaffee Landfill Renewable Energy Facility, the unit is not subject to the emission standards specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that the refurbishing of unit #4EK02870 at a specialty shop did not result in a modification of the engine as defined under 40 CFR Part 60.14 or a reconstruction of the engine as defined under 40 CFR Part 60.15.

Since the replacement engine was manufactured prior to June 12, 2006, the engine will be considered an "existing engine" subject to the work practice standards of 40 CFR Part 63, Subpart ZZZZ. These requirements are already included in the Title V Permit for the Chaffee Landfill (issued on January 13, 2015) as Conditions 75, 76 and 77.

This Operational Flexibility change will be reported in the next semi-annual monitoring report, as well as the annual compliance certification.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

We appreciate your time and consideration in this matter. Please feel free to contact Ms. Rebecca Zayatz of WMNY or the undersigned if you have any questions or if you would like clarification or additional information. WMNY is prepared to replace this engine within the next few days if possible. We will quickly respond to any questions you have and we appreciate your timely review.

Sincerely,

Steve Poggi
Director of Disposal Operations, NE - UNY Market Area

cc:

	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	S. DiSalvo	WMNY, Bergen, NY
	T. Lewis	WMNY, Chaffee, NY
	S. Wilsey	CRA, Niagara Falls, NY

CERTIFICATE OF TRUTH, ACCURACY, AND COMPLETENESS

Report Type:	Operational Flexibility Notification
DECID:	9-1462-00001/00013
Facility Name:	WMNY Chaffee Landfill
Address:	10860 Olean Road Chaffee, NY 14030

FACILITY CONTACT:

Name:	Thomas Lewis
Title:	District Manager
Telephone:	716-496-5192

RESPONSIBLE OFFICIAL:

Name:	Steven Poggi
Title:	Director of Disposal Operations; NE – UNY Market Area
Address:	4 Liberty Lane West Hampton, NH 03842
Telephone:	603-929-5413

The Responsible Official must sign this statement after the applicable report form is completed.

I certify, under penalty of law, that based on the information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate, and complete.

Signature of Responsible Official: Steven Poggi

Date: 1/21/15

New York State Department of Environmental Conservation
Division of Air, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7130 • **FAX:** (716) 851-7009
Website: www.dec.ny.gov

Joseph Martens
Commissioner

February 10, 2015

Mr. Steve Poggi
Director of Disposal Operations, NE-UNY Market Area
Waste Management of New York, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, New York 14030

Dear Mr. Poggi:

Response to Operational Flexibility Notification
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on January 21, 2015 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management of New York, LLC's Chaffee Landfill maintains a Title V permit containing a "cap" of 95 tons per year for Oxides of Nitrogen (NOx) emissions on the existing six engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap limits emissions from the engines to below the applicability requirements of New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine ENG01 (Serial #ZBA00471) with one 3516 Caterpillar Engine (Serial #4EK02870) will not result in a significant air quality impact. Therefore, as of February 10, 2015, Chaffee Landfill is authorized to commence the changes described in the notification.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

If you have any questions, please contact me at this office at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer II

AZ:dcg
zylinski\poggi-feb1r.ltr

WASTE MANAGEMENT OF NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

October 15, 2015

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of Two Caterpillar 3516 Engines Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 601, Emission Source: ENG02 and ENG05

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) presents this correspondence to the New York State Department of Environmental Conservation (NYSDEC) as notification of replacement of two Caterpillar 3516 engines at the Chaffee Landfill Renewable Energy Facility (Chaffee REF). The Chaffee REF consists of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603), that combust landfill gas (LFG) collected from the Chaffee Landfill to generate electricity for sale. Periodically, following years of normal operation, replacement of an engine is necessary to allow for transport of the unit to an off-site maintenance facility with the expertise and equipment required to fully service the engine.

Replacement of these engines is considered routine maintenance. This notice has been prepared in accordance with the Operational Flexibility Plan specified in Condition 24 of the facility's Title V Permit (Effective 01/13/2015). As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility Plan are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

WMNY plans to replace Engines #2 and #5 with like-kind Caterpillar 3516 engines. Engine information for the existing and replacement engines is provided in the table below.

Engine #2 (ENG02)	**Existing Engine**	**Replacement Engine**
Serial Number	ZBA00440	ZBA00388
Original Manufacture Date	7/10/2006	5/3/2006
Make	Caterpillar	Caterpillar
Model	3516	3516
Size	16 Valve/Cylinder	16 Valve/Cylinder
Function	Electric Generation	Electric Generation
Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP
JJJJ Applicability	Exempt	Exempt
ZZZZ Applicability	Area / New	Area / Existing
Engine #5 (ENG05)	**Existing Engine**	**Replacement Engine**
Serial Number	ZBA00435	CTL00407
Original Manufacture Date	7/7/2006	6/14/2002
Make	Caterpillar	Caterpillar
Model	3516	3516
Size	16 Valve/Cylinder	16 Valve/Cylinder

Function	Electric Generation	Electric Generation
Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP
JJJJ Applicability	Exempt	Exempt
ZZZZ Applicability	Area / New	Area / Existing

Replacement engine ZBA0038 previously operated as EU04 at Chaffee REF. This engine was removed from the Chaffee REF on August 20, 2015, sent offsite for service and is ready for reinstallation.

Replacement engine CTL00407 last operated at the WMRE Ridgeview facility located near Whitelaw, Wisconsin. This engine was removed from the Ridgeview facility on July 28, 2015, sent offsite for service and is ready for reinstallation.

Since the replacement engines were manufactured prior to January 1, 2008, operated at other WMRE facilities, and are now being reinstalled at the Chaffee REF, the units are not subject to the emission standards or testing requirements specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that engine servicing did not result in a modification of the engines as defined under 40 CFR Part 60.14 or a reconstruction of the engines as defined under 40 CFR Part 60.15.

The replacement engines are considered "existing" engines under 40 CFR Part 63, Subpart ZZZZ based on the fact that they were originally manufactured and installed before June 12, 2006.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

This Operational Flexibility change will be reported in the next semi-annual monitoring report, and the annual compliance certification.

WMNY is prepared to proceed with this engine replacement as soon as possible. Please feel free to contact Ms. Rebecca Zayatz of WMNY (716-286-0279) or me (603-929-5413) if you have any questions or require additional information. We appreciate your consideration of this matter.

Sincerely,
Waste Management of New York, LLC

Steve Poggi
Director of Disposal Operations

cc:

	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	S. DiSalvo	WMNY, Bergen, NY
	T. Lewis	WMNY, Chaffee, NY
	S. Wilsey	CRA, Niagara Falls, NY
	V. Saufley	WMRE, Houston, TX

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Air Resources, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7130 | F: (716) 851-7009
www.dec.ny.gov

October 16, 2015

Mr. Steven Poggi
Director of Disposal Operations, NE-UNY Market Area
Waste Management of NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

Dear Mr. Poggi:

Response to Operational Flexibility Notification
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on October 16, 2015 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management of New York, LLC's Chaffee Landfill maintains a Title V permit containing a "cap" of 95 tons per year for Oxides of Nitrogen (NOx) emissions on the existing six engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap limits emissions from the engines to below the applicability requirements of New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine ENG02 (Serial #ZBA00440) with one 3516 Caterpillar Engine (Serial #ZBA00388) and also replace one 3516 Caterpillar Engine ENG05 (Serial #ZBA00435) with one 3516 Caterpillar Engine (Serial #CTL00407) will not result in a significant air quality impact. Therefore, as of October 16, 2015, Chaffee Landfill is authorized to commence the changes described in the notification.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

If you have any questions, please contact me at this office at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer II

AZ:dcg
zylinski\poggi-october1.ltr

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Air Resources, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7130 | F: (716) 851-7009
www.dec.ny.gov

July 8, 2015

Mr. Steven Poggi
Director of Disposal Operations, NE-UNY Market Area
Waste Management of NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

Dear Mr. Poggi:

Response to Operational Flexibility Notification
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on July 8, 2015 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management of New York, LLC's Chaffee Landfill maintains a Title V permit containing a "cap" of 95 tons per year for Oxides of Nitrogen (NOx) emissions on the existing six engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap limits emissions from the engines to below the applicability requirements of New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine ENG03 (Serial #ZBA00389) with one 3516 Caterpillar Engine (Serial #ZBA00439) will not result in a significant air quality impact. Therefore, as of July 8, 2015, Chaffee Landfill is authorized to commence the changes described in the notification.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

If you have any questions, please contact me at this office at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer II

AZ:dcg
zylinski\poggi-july8.ltr

WASTE MANAGEMENT OF NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

July 2, 2015

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of One Caterpillar 3516 Engine Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 601, Emission Source: ENG03

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) presents this correspondence to the New York State Department of Environmental Conservation (NYSDEC) as notification of replacement of one Caterpillar 3516 engine at the Chaffee Landfill Renewable Energy Facility (Chaffee REF). The Chaffee REF consists of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603), that combust landfill gas (LFG) collected from the Chaffee Landfill to generate electricity for sale. Periodically, following years of normal operation, replacement of an engine is necessary to allow for transport of the unit to an off-site maintenance facility with the expertise and equipment required to fully service the engine.

Replacement of the engine is considered routine maintenance. This notice has been prepared in accordance with the Operational Flexibility Plan specified in Condition 24 of the facility's Title V Permit (Effective 01/13/2015). As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility Plan are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

WMNY plans to replace Engine #3 with a like-kind Caterpillar 3516 engine. Engine information for the existing and replacement engines is provided in the table below.

	Existing Engine	**Replacement Engine**
Serial Number	ZBA00389	ZBA00439
Original Manufacture Date	5/4/2006	7/11/2006
Make	Caterpillar	Caterpillar
Model	3516	3516
Size	16 Valve/Cylinder	16 Valve/Cylinder
Function	Electric Generation	Electric Generation
Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP

The replacement engine originally operated as Engine #6 at Chaffee REF. Written notification submitted to NYSDEC on April 29, 2015 stated engine ZBA00439 was due to be removed for maintenance. After obtaining NYSDEC authorization, this engine was removed on May 28, 2015, sent offsite for service and is now ready for reinstallation.

Since the replacement engine was manufactured prior to January 1, 2008 and is being reinstalled at the Chaffee REF, the unit is not subject to the emission standards or testing requirements specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that engine servicing did not result in a modification of the engine as defined under 40 CFR Part 60.14 or a reconstruction of the engine as defined under 40 CFR Part 60.15.

The replacement engine is considered a "new" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed after June 12, 2006, and is therefore exempt from Conditions 75, 76 and 77 of the current Title V Permit.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

This Operational Flexibility change will be reported in the next semi-annual monitoring report, and the annual compliance certification.

Throughout the course of 2015, WMNY plans to replace additional engines at the Chaffee REF with like-kind Caterpillar 3516 engines as part of the ongoing maintenance program. WMNY will provide NYSDEC with Operational Flexibility notifications prior to additional engine replacements.

WMNY is prepared to proceed with this engine replacement as soon as possible. Please feel free to contact Ms. Rebecca Zayatz of WMNY at 716-286-0279 or the undersigned at 603-929-5413 if you have any questions or require additional information. We appreciate your consideration of this matter.

Sincerely,

Steve Poggi
Director of Disposal Operations, NE - UNY Market Area

cc:

	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	S. DiSalvo	WMNY, Bergen, NY
	T. Lewis	WMNY, Chaffee, NY
	S. Wilsey	CRA, Niagara Falls, NY
	V. Saufley	WMRE, Houston, TX

CERTIFICATE OF TRUTH, ACCURACY, AND COMPLETENESS

Report Type:	Operational Flexibility Notification
DECID:	9-1462-00001/00013
Facility Name:	WMNY Chaffee Landfill
Address:	10860 Olean Road Chaffee, NY 14030

FACILITY CONTACT:

Name:	Thomas Lewis
Title:	District Manager
Telephone:	716-496-5192

RESPONSIBLE OFFICIAL:

Name:	Steven Poggi
Title:	Director of Disposal Operations; NE – UNY Market Area
Address:	4 Liberty Lane West Hampton, NH 03842
Telephone:	603-929-5413

The Responsible Official must sign this statement after the applicable report form is completed.

I certify, under penalty of law, that based on the information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate, and complete.

Signature of Responsible Official: Steven Poggi

Date: 7/8/15

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Air Resources, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7130 | F: (716) 851-7009
www.dec.ny.gov

August 4, 2015

Mr. Steven Poggi
Director of Disposal Operations, NE-UNY Market Area
Waste Management of NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

Dear Mr. Poggi:

Response to Operational Flexibility Notification
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on August 4, 2015 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management of New York, LLC's Chaffee Landfill maintains a Title V permit containing a "cap" of 95 tons per year for Oxides of Nitrogen (NOx) emissions on the existing six engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap limits emissions from the engines to below the applicability requirements of New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine ENG04 (Serial #ZBA00388) with one 3516 Caterpillar Engine (Serial #ZBA00538) will not result in a significant air quality impact. Therefore, as of August 4, 2015, Chaffee Landfill is authorized to commence the changes described in the notification.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

If you have any questions, please contact me at this office at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer II

AZ:dcg
zylinski\poggi-august4.ltr

WASTE MANAGEMENT OF NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

July 20, 2015

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of One Caterpillar 3516 Engine Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 601, Emission Source: ENG04

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) presents this correspondence to the New York State Department of Environmental Conservation (NYSDEC) as notification of replacement of one Caterpillar 3516 engine at the Chaffee Landfill Renewable Energy Facility (Chaffee REF). The Chaffee REF consists of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603), that combust landfill gas (LFG) collected from the Chaffee Landfill to generate electricity for sale. Periodically, following years of normal operation, replacement of an engine is necessary to allow for transport of the unit to an off-site maintenance facility with the expertise and equipment required to fully service the engine.

Replacement of the engine is considered routine maintenance. This notice has been prepared in accordance with the Operational Flexibility Plan specified in Condition 24 of the facility's Title V Permit (Effective 01/13/2015). As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility Plan are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

WMNY plans to replace Engine #4 with a like-kind Caterpillar 3516 engine. Engine information for the existing and replacement engines is provided in the table below.

	Existing Engine	**Replacement Engine**
Serial Number	ZBA00388	ZBA00538
Original Manufacture Date	5/3/2006	10/31/2006
Make	Caterpillar	Caterpillar
Model	3516	3516
Size	16 Valve/Cylinder	16 Valve/Cylinder
Function	Electric Generation	Electric Generation
Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP

The replacement engine began initial operation on January 28, 2008 at the WMRE Five Oaks facility, located near Taylorville, Illinois. This engine was removed from the WMRE Five Oaks facility on May 13, 2014, sent offsite for service and is ready for reinstallation.

Since the replacement engine was manufactured prior to January 1, 2008, operated at another WMRE facility, and is now being reinstalled at the Chaffee REF, the unit is not subject to the emission standards or testing requirements specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that engine servicing did not result in a modification of the engine as defined under 40 CFR Part 60.14 or a reconstruction of the engine as defined under 40 CFR Part 60.15.

The replacement engine is considered a "new" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed after June 12, 2006, and is therefore exempt from Conditions 75, 76 and 77 of the current Title V Permit.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

This Operational Flexibility change will be reported in the next semi-annual monitoring report, and the annual compliance certification.

Throughout the course of 2015, WMNY plans to replace additional engines at the Chaffee REF with like-kind Caterpillar 3516 engines as part of the ongoing maintenance program. WMNY will provide NYSDEC with Operational Flexibility notifications prior to additional engine replacements.

WMNY is prepared to proceed with this engine replacement as soon as possible. Please feel free to contact Ms. Rebecca Zayatz of WMNY or the undersigned if you have any questions or require additional information. We appreciate your consideration of this matter.

Sincerely,

Steve Poggi
Director of Disposal Operations, NE - UNY Market Area

cc:	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	S. DiSalvo	WMNY, Bergen, NY
	T. Lewis	WMNY, Chaffee, NY
	S. Wilsey	CRA, Niagara Falls, NY
	V. Saufley	WMRE, Houston, TX

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Air Resources, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7130 | F: (716) 851-7009
www.dec.ny.gov

May 1, 2015

Mr. Paul Pabor
Vice President
WM Renewable Energy, LLC
1001 Fannin, Suite 4000
Houston, TX 77002

Dear Mr. Pabor:

Response to Operational Flexibility Notification
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on April 29, 2015 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management of New York, LLC's Chaffee Landfill maintains a Title V permit containing a "cap" of 95 tons per year for Oxides of Nitrogen (NOx) emissions on the existing six engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap limits emissions from the engines to below the applicability requirements of New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine ENG06 (Serial #ZBA00439) with one 3516 Caterpillar Engine (Serial #ZBA00471) will not result in a significant air quality impact. Therefore, as of May 1, 2015, Chaffee Landfill is authorized to commence the changes described in the notification.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

If you have any questions, please contact me at this office at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer II

AZ:dcg
zylinski\pabor-may1.ltr

Nesbit, Matt

From: Saufley, Vic
Sent: Wednesday, April 29, 2015 4:55 PM
To: alan.zylinski@dec.ny.gov
Cc: dar.web@dec.ny.gov; Zayatz, Rebecca; Lewis, Thomas (CHAFFEE LF); DiSalvo, Sandra; Poggi, Steve; Wilsey, Steven; Nesbit, Matt
Subject: Notification of Engine #6 Replacement - Chaffee Landfill Renewable Energy Facility
Attachments: Chaffee Op Flex Letter_Eng6_20150429.pdf

Importance: High

Mr. Zylinski,

On behalf of Waste Management of New York LLC, the attached Notification Letter and Certificate of Truth, Accuracy and Completeness documents are provided to notify NYSDEC of the planned replacement of Engine #6 at the Chaffee Landfill Renewable Energy Facility (Chafee Landfill REF) with a like-kind Caterpillar 3516 engine. The replacement engine operated as Engine #1 at Chaffee Landfill REF, prior to removal and transport offsite for maintenance in March 2015. This engine, now fully serviced, is ready to be installed as a replacement for Engine #6.

WMNY is prepared to replace Engine #6 upon receiving NYSDEC authorization. A paper copy of the notification documents are being sent to you as well. If you require further information, you may contact me at your convenience.

Best Regards,

Vic Saufley
Manager, Environmental, Safety and Health Programs
WM Renewable Energy
vsaufley@wm.com

Waste Management
1001 Fannin, Suite 4000
Houston, TX 77002
Tel 713 328 7348
Cell 832 457 5197

Waste Management renewable energy projects create enough energy to power more than one millions. Learn more at www.wm.com.

WM Renewable Energy, LLC
1001 Fannin, Suite 4000
Houston, TX 77002

April 29, 2015

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of One Caterpillar 3516 Engine Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 601, Emission Source: ENG06

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) presents this correspondence to the New York State Department of Environmental Conservation (NYSDEC) as notification of replacement of one Caterpillar 3516 engine at the Chaffee Landfill Renewable Energy Facility (Chaffee Landfill REF). Replacement of the engine, considered routine maintenance, is being presented in accordance with the Operational Flexibility Plan specified in Condition 24 of the facility's Title V Permit (Effective 01/13/2015). As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility Plan are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

WMNY operates a gas-to-energy plant consisting of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603), that combust landfill gas collected from the Chaffee Landfill to generate electricity for sale. Occasionally, following years of normal operation, replacement of an engine is necessary so that it can be sent off-site to a maintenance facility with the expertise and equipment to fully service the engine.

WMNY plans to remove Engine #6 (Serial# ZBA00439) from operation and replace it with a like-kind Caterpillar 3516 engine (Serial# ZBA00471). The replacement engine originally operated as Engine #1 at Chaffee Landfill REF. Written notification submitted to NYSDEC, dated January 21, 2015, states engine ZBA00471 was due to be removed for maintenance. After obtaining NYSDEC authorization, this engine was removed on March 30, 2015, sent offsite to be fully serviced and is now ready for reinstallation.

Since the replacement engine (Serial# ZBA00471) was manufactured prior to January 1, 2008 (build date of September 5, 2006) and is being reinstalled at the Chaffee Landfill REF, the unit is not subject to the emission standards specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that the refurbishing of engine ZBA00471 did not result in a modification of the engine as defined under 40 CFR Part 60.14 or a reconstruction of the engine as defined under 40 CFR Part 60.15.

Replacement engine (Serial# ZBA00471) is considered a "new" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed after June 12, 2006, and is therefore exempt from Conditions 75, 76 and 77 of the current Title V Permit.

This Operational Flexibility change will be reported in the next semi-annual monitoring report, as well as the annual compliance certification.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

Throughout the course of 2015, WMNY plans to remove additional engines from operation at the Chaffee Landfill REF and replace them with like-kind Caterpillar 3516 engines. NYSDEC will be provided with an Operational Flexibility notification prior to additional engine replacements.

WMNY is prepared to proceed with this engine replacement as soon as possible. Please feel free to contact Ms. Rebecca Zayatz of WMNY or the undersigned if you have any questions or if you would like clarification or additional information.

Sincerely,

Paul Pabor
Vice President, WM Renewable Energy, LLC

cc:	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	S. DiSalvo	WMNY, Bergen, NY
	T. Lewis	WMNY, Chaffee, NY
	S. Poggi	WM
	S. Wilsey	CRA, Niagara Falls, NY

CERTIFICATE OF TRUTH, ACCURACY, AND COMPLETENESS

Report Type:	Operational Flexibility Notification
DECID:	9-1462-00001/00013
Facility Name:	WMNY Chaffee Landfill
Address:	10860 Olean Road Chaffee, NY 14030

FACILITY CONTACT:

Name:	Thomas Lewis
Title:	District Manager
Telephone:	716-496-5192

RESPONSIBLE OFFICIAL:

Name:	Paul Pabor
Title:	Vice President, WM Renewable Energy, LLC
Address:	1001 Fannin, Suite 4000 Houston, TX 77002
Telephone:	713-328-7345

The Responsible Official must sign this statement after the applicable report form is completed.

I certify, under penalty of law, that based on the information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate, and complete.

Signature of Responsible Official: Paul Pabor

Date: 4/29/2015

Nesbit, Matt

From: Saufley, Vic
Sent: Monday, June 20, 2016 4:49 PM
To: Zylinski, Alan (DEC)
Cc: Mahar, Michael; Zayatz, Rebecca; Poggi, Steve; Nesbit, Matt; Stojek II, Richard
Subject: Chaffee Engine Replacement Request Engines 7 and 8
Attachments: Chaffee OP Flex Letter_Eng7_8_2016 Final.pdf

Importance: High

Mr. Zylinski,

This correspondence is provided to transmit a written request for authorization to replace Engines #7 and #8 the Chaffee Landfill Renewable Energy facility (Chaffee REF) with like-kind engines. Chaffee REF plans to replace these engines the week of July 5th.

The attached letter is essentially identical to previous written requests submitted to DEC when other Chaffee REF engines were scheduled to be replaced. Thanks in advance for your attention to this request. If additional information is needed, please contact me at your convenience.

Best Regards,

Vic Saufley
Manager, Environmental, Safety and Health Programs
WM Renewable Energy
vsaufley@wm.com

Waste Management
1001 Fannin, Suite 4000
Houston, TX 77002
Tel 713 328 7348
Cell 832 457 5197

WASTE MANAGEMENT OF NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

June 20, 2016

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of Two Caterpillar 3516 Engines Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 603, Emission Source: ENG07 and ENG08

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) presents this correspondence to the New York State Department of Environmental Conservation (NYSDEC) as notification of replacement of two Caterpillar 3516 engines at the Chaffee Landfill Renewable Energy Facility (Chaffee REF). The Chaffee REF consists of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603), that combust landfill gas (LFG) collected from the Chaffee Landfill to generate electricity. Periodically, following years of normal operation, replacement of an engine is necessary to allow for transport of the unit to an off-site maintenance facility with the expertise and equipment required to fully service the engine.

Replacement of these engines is considered routine maintenance. This notice has been prepared in accordance with the Operational Flexibility Plan specified in Condition 24 of the facility's Title V Permit (Effective 01/13/2015). As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility Plan are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

WMNY plans to replace Engines #7 and 8 with like-kind Caterpillar 3516 engines. Engine information for the existing and replacement engines is provided in the table below.

Engine #7 (ENG07)	**Existing Engine**	**Replacement Engine**
Serial Number	ZBA00841	ZBA00389
Original Manufacture Date	11/20/2007	5/4/2006
Make	Caterpillar	Caterpillar
Model	3516	3516
Size	16 Valve/Cylinder	16 Valve/Cylinder
Function	Electric Generation	Electric Generation
Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP
JJJJ Applicability	Exempt	Exempt
ZZZZ Applicability	Area / New	Area / Existing
Engine #8(ENG08)	**Existing Engine**	**Replacement Engine**
Serial Number	ZBA00843	ZBA00840
Original Manufacture Date	11/20/2007	11/19/2007
Make	Caterpillar	Caterpillar
Model	3516	3516
Size	16 Valve/Cylinder	16 Valve/Cylinder
Function	Electric Generation	Electric Generation

Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP
JJJJ Applicability	Exempt	Exempt
ZZZZ Applicability	Area / New	Area / New

Replacement engine ZBA00389 previously operated as ENG03 at Chaffee REF. This engine was removed from the Chaffee REF on October 22, 2015, sent offsite for service and is ready for reinstallation.

Replacement engine ZBA00840 last operated at the WMRE Rolling Meadows facility located near Topeka, Kansas. This engine was removed from the Rolling Meadows facility on December 14, 2015, sent offsite for service and is ready for reinstallation.

Since the replacement engines were manufactured prior to January 1, 2008, operated at other WMRE facilities, and are now being reinstalled at the Chaffee REF, the units are not subject to the emission standards or testing requirements specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that engine servicing did not result in a modification of the engines as defined under 40 CFR Part 60.14 or a reconstruction of the engines as defined under 40 CFR Part 60.15.

Replacement engine ZBA00389 is considered an "existing" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed before June 12, 2006. Replacement engine ZBA00840 is considered a "new" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed after June 12, 2006, and is therefore exempt from Conditions 75, 76 and 77 of the current Title V Permit.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

This Operational Flexibility change will be reported in the next semi-annual monitoring report, and the annual compliance certification.

WMNY is prepared to proceed with this engine replacement the week of July 5th. Please feel free to contact Ms. Rebecca Zayatz of WMNY (716-286-0279) or the undersigned (603-929-5413) if you have any questions or require additional information. We appreciate your consideration of this matter.

Sincerely,
Waste Management of New York, LLC

Steven Poggi
Director of Disposal Operations

cc:

	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	S. DiSalvo	WMNY, Bergen, NY
	M. Mahar	WMNY, Chaffee, NY
	S. Wilsey	CRA, Niagara Falls, NY
	V. Saufley	WMRE, Houston, TX

Nesbit, Matt

From: Zylinski, Alan (DEC) <alan.zylinski@dec.ny.gov>
Sent: Wednesday, June 22, 2016 5:20 PM
To: Saufley, Vic
Cc: Mahar, Michael; Zayatz, Rebecca; Poggi, Steve; Nesbit, Matt; Stojek II, Richard
Subject: RE: Chaffee Engine Replacement Request Engines 7 and 8
Attachments: Poggi acceptance letter for replacing for ENG 07 and ENG 08 at Chaffee Landfill.pdf

Hi Vic,

Please see the attached. It is the acceptance letter allowing the replacement of ENG 07 and ENG 08. If you need anything further, please do not hesitate to contact me at (716) 851 – 7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer 2
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203
(716) 851-7130

From: Saufley, Vic [mailto:VSaufley@wm.com]
Sent: Monday, June 20, 2016 4:49 PM
To: Zylinski, Alan (DEC) <alan.zylinski@dec.ny.gov>
Cc: Mahar, Michael <MMahar@wm.com>; Zayatz, Rebecca <rzayatz@wm.com>; Poggi, Steve <spoggi@wm.com>; Nesbit, Matt <mnesbit@wm.com>; Stojek II, Richard <RStojek@wm.com>
Subject: Chaffee Engine Replacement Request Engines 7 and 8
Importance: High

Mr. Zylinski,

This correspondence is provided to transmit a written request for authorization to replace Engines #7 and #8 the Chaffee Landfill Renewable Energy facility (Chaffee REF) with like-kind engines. Chaffee REF plans to replace these engines the week of July 5th.

The attached letter is essentially identical to previous written requests submitted to DEC when other Chaffee REF engines were scheduled to be replaced. Thanks in advance for your attention to this request. If additional information is needed, please contact me at your convenience.

Best Regards,

Vic Saufley
Manager, Environmental, Safety and Health Programs
WM Renewable Energy

vsaufley@wm.com

Waste Management
1001 Fannin, Suite 4000
Houston, TX 77002
Tel 713 328 7348
Cell 832 457 5197

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www.dec.ny.gov

June 23, 2016

Mr. Steven Poggi
Director of Disposal Operations, NE-UNY Market Area
Waste Management of NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

Dear Mr. Poggi:

Response to Operational Flexibility Notification
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on June 20, 2016 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management of New York, LLC's Chaffee Landfill has accepted a cap of 35 tons per year of Oxides of Nitrogen (NOx) on the additional two engines (ENG07 & ENG08) at the Renewable Energy Facility (REF). This cap will allow the engines to not be subject to the New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine ENG07 (Serial #ZBA00841) with one 3516 Caterpillar Engine (Serial #ZBA00389) and also replace one 3516 Caterpillar Engine ENG08 (Serial #ZBA00843) with one 3516 Caterpillar Engine (Serial #ZBA00840) will not result in a significant air quality impact. Therefore, as of June 23, 2016, Chaffee Landfill is authorized to commence the changes described in the notification.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

Should you have any questions, please do not hesitate to contact me at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Environmental Engineer II

AZ:dcg
zylinski\poggi-june1.ltr

WASTE MANAGEMENT OF NY, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, NY 14030

July 5, 2018

Mr. Alan Zylinski
NYSDEC Region 9
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Re: Replacement of One Caterpillar 3516 Engine Utilizing Operational Flexibility Plan
WMNY Chaffee Landfill, Permit # 9-1462-00001/00013
Emission Unit: P-00001, Process: 601, Emission Source: ENG01

Dear Mr. Zylinski:

Waste Management of New York LLC (WMNY) presents this correspondence to the New York State Department of Environmental Conservation (NYSDEC) as notification of replacement of one Caterpillar 3516 engine at the Chaffee Landfill Renewable Energy Facility (Chaffee REF). The Chaffee REF consists of eight (8) Caterpillar 3516 internal combustion engines (Processes 601 and 603), that combust landfill gas (LFG) collected from the Chaffee Landfill to generate electricity. On July 5th, Engine #1 shut down after experiencing a significant mechanical event involving main bearings. This type of repair requires transport of the unit to an off-site maintenance facility with the expertise and equipment required to fully service the engine. To minimize downtime, WMNY plans to remove the engine and replace it with an identical engine, selected from WM's inventory, that has already been serviced and is ready for use.

This notice has been prepared in accordance with the Operational Flexibility Plan specified in Condition 24 of the facility's Title V Permit (Effective 01/13/2015). As provided under 6 NYCRR Part 201-6.4(f)(2), changes made under an approved Operational Flexibility Plan are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

The replacement engine is of the same make, model, design capacity and emission profile as the engine being replaced, therefore there will be no change in emissions. Please refer to engine information provided in the table below.

Engine #1 (ENG01)	**Existing Engine**	**Replacement Engine**
Serial Number	4EK02870	ZBA00844
Original Manufacture Date	5/12/2000	11/20/2007
Make	Caterpillar	Caterpillar
Model	G3516 LE	G3516 LE
Size	16 Valve/Cylinder	16 Valve/Cylinder
Function	Electric Generation	Electric Generation
Rated Capacity (HP at 100% Load)	1,148 HP	1,148 HP
JJJJ Applicability	Exempt	Exempt
ZZZZ Applicability	Area / Existing	Area / New

Replacement engine ZBA00844 previously operated at another Waste Management location. The engine has been serviced and is ready for installation. Since the replacement engine was manufactured prior to January 1, 2008 and previously operated at another WM facility, the unit is not subject to the emission standards or testing requirements specified under 40 CFR Part 60, Subpart JJJJ as stated under 40 CFR 60.4236(e):

"The requirements of this section do not apply to owners and operators of stationary internal combustion engines that have been modified and reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location."

It should be noted that engine servicing did not result in a modification of the engine as defined under 40 CFR Part 60.14 or a reconstruction of the engine as defined under 40 CFR Part 60.15.

Replacement engine ZBA00844 is considered a "new" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed after June 12, 2006, and is therefore exempt from Conditions 75, 76 and 77 of the current Title V Permit.

In summary, the proposed change:

- Will not add any additional emission units or emission sources/controls to the Permit
- Will not trigger any new state or federal regulations
- Will not change the emission rate potential or maximum projected actual annual emission rates for any contaminants.
- Is not applicable to the major New Source Review (NSR) program
- Will not add any additional operating or record-keeping procedures to ensure compliance
- Will comply with all other existing conditions in the Permit

This Operational Flexibility change will be reported in the next semi-annual monitoring report, and the annual compliance certification.

WMNY is prepared to proceed with this engine replacement upon receiving authorization and requests expedited approval if possible.

Please feel free to contact Martin Miller of WMNY (585-303-9248) or the undersigned (603-929-5413) if you have any questions or require additional information. We appreciate your consideration of this matter.

Sincerely,
Waste Management of New York, LLC

Steve Poggi
Director of Disposal Operations

cc:

	D. Shaw	NYSDEC, Albany, NY
	R. Zayatz	WMNY, Model City, NY
	M. Miller	WMNY, High Acres, NY
	M. Mahar	WMNY, Chaffee, NY
	B. Szalda	GHD, Niagara Falls, NY
	V. Saufley	WMRE, Houston, TX

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Air Resources, Region 9
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July 20, 2018

Mr. Steve Poggi
Director of Disposal Operations
Waste Management of New York, LLC
Chaffee Landfill
10860 Olean Road
Chaffee, New York 14030

Dear Mr. Poggi:

Response to Operational Flexibility
DEC ID# 9-1462-00001/00013
WMNY Chaffee Landfill
Replacing ENG01

The New York State Department of Environmental Conservation (Department) has reviewed information submitted on July 5, 2018 for changes that are subject to notification per the operational flexibility provisions of the Title V permit as authorized under the 6 NYCRR Part 201-6.4(f).

Waste Management is requesting to replace one 3516 Caterpillar Engine (Serial #4EK02870) with one 3516 Caterpillar Engine (Serial #ZBA00844). Existing engine #4EK02870 is identified as ENG01 in the permit. Replacement engine #ZBA00844 is considered a "new" engine under 40 CFR Part 63, Subpart ZZZZ based on the fact that it was originally manufactured and installed after June 12, 2006, and therefore Condition 67 (relating to Subpart JJJJ) of the current Title V Permit is applicable, however, the engine is exempt from Subpart JJJJ requirements because it was manufactured prior to January 1, 2008. Due to the "new" status of the replacement engine, Conditions 75, 76 and 77 (relating to Subpart ZZZZ recordkeeping and maintenance requirement for "existing" engines) of the current Title V Permit do not apply. All other permit conditions that apply to the current engine will apply to the replacement engine.

Based on the permit limits and supporting information review, the Department has made the determination that the request to replace one 3516 Caterpillar Engine (Serial #4EK02870) with one 3516 Caterpillar Engine (Serial #ZBA00844) will not result in a significant air quality impact. Therefore, as of July 20, 2018, Chaffee Landfill is authorized to commence the changes described in the notification. The replacement engine (Serial #ZBA00844) will be considered ENG01 going forward.

Waste Management of New York, LLC's Chaffee Landfill maintains a Title V permit containing a "cap" of 95 tons per year for Oxides of Nitrogen (NOx) emissions on six of the engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap limits emissions from the engines to below the applicability requirements of New Source Review (NSR) regulations. The permit requires the facility to track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines.

The Department will not be requiring Chaffee Landfill to submit a request for permit modification.

If you have any questions, please contact me at this office at (716) 851-7130.

Sincerely,

Alan J. Zylinski, P.E.
Professional Engineer 1

cc: Mr. Michael Emery; Regional Air Pollution Control Engineer

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about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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June 28, 2019 Reference No. 11192627

Mr. Alan Zylinski
New York State
Department of Environmental Conservation
Division of Air Resources
270 Michigan Avenue
Buffalo, NY 14203

Dear Mr. Zylinski:

Re: Response to NYSDEC Comments on Air Quality Modeling Protocol, dated April 25, 2019
Chaffee Landfill
Permit ID 9-1462-00001/00013

On behalf of Waste Management of New York LLC (WMNY), GHD hereby submits the following responses to the recent comments provided by the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC presented comments on the Air Quality Modeling Protocol for the Chaffee Landfill located in Chaffee, New York (Facility or Site).

Comment 1:

The modeling procedures outlined by GHD satisfy the requirements for the modeling protocol.

GHD Response: **No response.**

Comment 2:

GHD stated they would model the high toxicity air contaminant (HTAC) compound emissions from the landfill that exceed the thresholds listed in Table 2 of 6 NYCRR Part 212-2.2. In addition, GHD will model non-HTAC compounds that exceeded an annual emission rate of 100 pounds per year. The calculated emission rates need to be reviewed by Region 9 staff. The default air toxic concentrations found in LandGEM were substituted with on-site data. Please submit the output of the LandGEM model to support the emissions information.

GHD Response: **GHD utilized the landfill gas (LFG) model that was provided in the last Title V Permit Application (December 2012) that incorporated the Valley Fill Expansion. The LandGEM output report for that model is provided in Attachment 1.**

Comment 3:

In Table 1, the fugitive emissions should be 935 cfm instead of 701 cfm. The document shows an average landfill gas generated of 6,233 cfm and a capture efficiency of 85% which correctly equates to 5,298 captured. However, the difference in the two numbers is 935 cfm Please correct the emissions appropriately.

GHD
2055 Niagara Falls Boulevard Niagara Falls New York 14304 USA
T 716 297 6150 **F** 716 297 2265 **W** www.ghd.com

GHD Response: **Table 1 has been updated to correct this typo. Emission calculations presented elsewhere in the table were not impacted.**

Comment 4:

Table 1 also shows the average landfill gas generated by the LandGEM model, but the Department is concerned with the off-site impacts generated by the maximum landfill gas that will be generated in the future. The emissions should be portrayed with the maximum emission rates before and after control.

GHD Response: **Emission calculations are based on the maximum year of LFG generation, which will occur when the landfill reaches final grade. A comparison of actual LFG collection rates at the Chaffee Landfill with the modeled rates over the previous 5-year period (2014 – 2018) shows the previously submitted LFG model to be conservative; therefore, we believe the supplied estimates are adequate.**

Comment 5:

Section 3.2, the Facility Source Inventory discussion should include the engines since they will be included in the modeling to demonstrate compliance with 6 NYCRR 200.6. Engine emissions should be part of the protocol.

GHD Response: An additional section has been added to Section 3.2 that summarizes the landfill gas engines at the Facility. Table 4B of the revised modeling protocol presents the emissions calculations for the landfill gas engines.

Comment 6:

In Section 3.2.1, Landfill Areas, a cover oxidation factor of 25% is used, referenced from 40 CFR 98, Subpart HH. Please justify the use of the 25% oxidation factor and explain how it effects the LFG calculations.

GHD Response: Oxidation of organic compounds and sulfur compounds by bacteria occurs as fugitive landfill gas passes through the soil cover. A cover oxidation factor of 25% was referenced from 40 CFR 98, Subpart HH (GHG Reporting Rule for MSW Landfills). The cover oxidation factor is based on the calculated surface flux rate for the landfill. At the maximum LFG generation rate, the fugitive methane emission rate for Chaffee Landfill is estimated to be approximately 5,196.7 tons per year. With a total area of 122 acres at full buildout, this corresponds to a surface flux rate of 26 grams per square meter per day (g/m^2-d). Since greater than 50% of the facility has final or intermediate /interim cover and the surface flux rate is between 10 g/m^2-d and 70 g/m^2-d, a 25% cover oxidation factor was used. This affects the calculations by reducing fugitive emissions by 25%.

In addition, we would like to note that the assumed fugitive emission rate of 15% is considered extremely conservative (based on 85% collection efficiency). The maximum LFG generation rate for the Chaffee Landfill is expected to occur when the landfill reaches final grade after the Valley Fill Expansion area is filled. A breakdown of the cover types at final grade is as follows:

Western Expansion / Valley Fill Daily Cover Area = 4 acres
Western Expansion / Valley Intermediate Cover Area = 4 acres
Western Expansion / Valley Interim Final Cover Area or Geosynthetic = 63 acres
Closed Landfill Area = 51 acres
Total Area = 122 acres

Based on the collection efficiency calculation methodology given in Table HH-3 of 40 CFR 98, Subpart HH, the cover types listed above correspond to a calculated collection efficiency of 93.2% (or a fugitive emission rate of 6.8%). Therefore, an 85% collection efficiency is considered extremely conservative for emissions of organic compounds and sulfur compounds from the landfill cover.

Comment 7:

Section 3.2.4 list sources that were not modeled, which is correct. However, GHD incorrectly assumes that the flare should not be modeled because of the following assumptions:

a. *6 NYCRR Part 212-1.4 (i): process emission sources with emissions of oxides of sulfur, only with respect to oxides of sulfur emissions attributable solely to sulfur in fuel. Landfill gas is considered a by-product of the waste disposal process and not a fuel. As a by-product of the process, the landfill gas is part of the process operation, as defined in 6 NYCRR 212-1.2(b)(18). Experience has shown that H2S when burned creates significant SO2 emissions and this should be evaluated. The Department acknowledges that SO2 from the flares will be modeled as stated in Section 3.1. Submit the SO2 emission calculations for the protocol.*

b. *6 NYCRR Part 212-1.4 (m): process emission sources with emissions of carbon monoxide or VOCs produced attributable solely to incomplete combustion of any fuel, except where material is heated, burned, combusted or otherwise chemically changed under oxygen deficient conditions by design. Landfill gas is considered a by-product of the waste disposal process and not a fuel. As a by-product of the process, the landfill gas is part of the process operation, as defined in 6 NYCRR 212-1.2(b)(18). The Department acknowledges that CO from the flares will be modeled as stated in Section 3.1. Submit the CO emission calculations for the protocol.*

c. *6 NYCRR Part 212-1.4 (r): process emission sources with respect to emissions of NOx produced by catalytic or thermal oxidizers used as air pollution control equipment. This is correct, NOx does not need to be modeled from the flares. However, the Department acknowledges that NOx from the flares will be modeled as stated in Section 3.1. Submit the NOx emission calculations for the protocol.*

d. *The particulate matter emission rate from the exhaust of each of the flares is significantly less than 0.05 grains/dscf limit in 6 NYCRR Part 212-2.4 (b)(1). Where this is believed to be true, it should be the discretion of the Department if modeling and testing should be applied to flares to test the efficiency. However, the Department acknowledges that PM from the flares will be modeled as stated in Section 3.1. Submit the PM emission calculations for the protocol.*

GHD Response: GHD will model the following criteria pollutants from the flares: CO, SO_2, NOx and PM. Emissions calculations for the flares are provided in Table 4A of the revised modeling protocol.

Comment 8:

Hydrogen sulfide is a New York State standard and should be evaluated and placed in the permit with the correct citation, 6NYCRR Part 257-10.

GHD Response: Hydrogen sulfide is included in the list of compounds to be evaluated.

Comment 9:

Emission of hydrogen chloride in Tables 1 through 4 all include footnote "HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments". Please provide this document.

GHD Response: The sections of the document related to HCl are provided in Attachment 2.

Comment 10:

Have the sulfur dioxide emissions created from hydrogen sulfide, carbon disulfide, carbonyl sulfide, dimethyl sulfide and ethyl mercaptan been incorporated into the sulfur dioxide estimate listed on Table 4. Submit the calculations for the 31.37 TPY of SO2 calculation.

GHD Response: An average total reduced sulfur (TRS) concentration of 252 parts per million (ppm) was used to estimate sulfur dioxide emissions. Based on historical stain tube test results, the H_2S concentration of the LFG at the engine plant inlet is approximately 100 parts per million. A conservative factor of 2.5 was applied to account for possible variations over time.

Comment 11:

Submit the analytical data used to determine the contamination in the leachate stored in the four storage tanks. Was hydrogen sulfide detected in the leachate?

GHD Response: Leachate storage tank emissions were estimate based on historical sampling data from 2014 through 2017. Sulfide in the leachate was non-detect in a number of samples for 2014 through 2017. NYSDEC Region 9 is already in receipt of the analytical data for leachate at the Chaffee Landfill (Environmental Monitoring Reports).

Comment 12:

Emission inputs to AERMOD are in lb/hr so the protocol should include the maximum lb/hr emission rates for all the emissions that will need to be modeled.

GHD Response: An additional column has been added to Tables 4 and 5 that provides total emission rates in pounds per hour for each compound.

If you have any questions, or would like additional information, please feel free to contact the undersigned at (716) 297-6150 at your convenience.

Sincerely,

GHD

Steven D. Wilsey

Bryan P. Szalda

SDW/eew/cs/mkd/1

Attachment 1
LandGEM Model

Summary Report

Landfill Name or Identifier: Chaffee Landfill

Date: Monday, June 10, 2019

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**1958**	
Landfill Closure Year (with 80-year limit)	**2021**	
Actual Closure Year (without limit)	***2021***	
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity		*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.040**	$year^{-1}$
Potential Methane Generation Capacity, L_o	**140**	m^3/Mg
NMOC Concentration	**595**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Total landfill gas**
Gas / Pollutant #2:	**Methane**
Gas / Pollutant #3:	**Carbon dioxide**
Gas / Pollutant #4:	**NMOC**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1958	33,596	36,956	0	0
1959	33,596	36,956	33,596	36,956
1960	33,596	36,956	67,193	73,912
1961	33,596	36,956	100,789	110,868
1962	33,596	36,956	134,385	147,824
1963	33,596	36,956	167,982	184,780
1964	33,596	36,956	201,578	221,736
1965	33,596	36,956	235,175	258,692
1966	33,596	36,956	268,771	295,648
1967	33,596	36,956	302,367	332,604
1968	33,596	36,956	335,964	369,560
1969	33,596	36,956	369,560	406,516
1970	33,596	36,956	403,156	443,472
1971	33,596	36,956	436,753	480,428
1972	33,596	36,956	470,349	517,384
1973	33,596	36,956	503,945	554,340
1974	33,596	36,956	537,542	591,296
1975	33,596	36,956	571,138	628,252
1976	33,596	36,956	604,735	665,208
1977	33,596	36,956	638,331	702,164
1978	33,596	36,956	671,927	739,120
1979	33,596	36,956	705,524	776,076
1980	33,596	36,956	739,120	813,032
1981	85,541	94,095	772,716	849,988
1982	155,030	170,533	858,257	944,083
1983	106,310	116,941	1,013,287	1,114,616
1984	161,945	178,139	1,119,597	1,231,557
1985	304,011	334,412	1,281,542	1,409,696
1986	139,596	153,556	1,585,553	1,744,108
1987	125,355	137,891	1,725,149	1,897,664
1988	141,415	155,557	1,850,505	2,035,555
1989	222,334	244,567	1,991,920	2,191,112
1990	190,163	209,179	2,214,254	2,435,679
1991	176,667	194,334	2,404,416	2,644,858
1992	195,212	214,733	2,581,084	2,839,192
1993	157,243	172,967	2,776,295	3,053,925
1994	165,945	182,539	2,933,538	3,226,892
1995	152,926	168,219	3,099,483	3,409,431
1996	160,825	176,907	3,252,409	3,577,650
1997	168,381	185,219	3,413,234	3,754,557

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1998	193,983	213,381	3,581,615	3,939,776
1999	356,054	391,659	3,775,597	4,153,157
2000	496,458	546,104	4,131,651	4,544,816
2001	486,015	534,616	4,628,109	5,090,920
2002	344,674	379,141	5,114,124	5,625,536
2003	463,599	509,959	5,458,797	6,004,677
2004	331,835	365,019	5,922,396	6,514,636
2005	273,014	300,315	6,254,232	6,879,655
2006	107,588	118,347	6,527,245	7,179,970
2007	154,217	169,639	6,634,834	7,298,317
2008	280,065	308,071	6,789,051	7,467,956
2009	332,249	365,474	7,069,115	7,776,027
2010	353,116	388,428	7,401,365	8,141,501
2011	403,771	444,148	7,754,481	8,529,929
2012	654,545	720,000	8,158,252	8,974,077
2013	654,545	720,000	8,812,797	9,694,077
2014	654,545	720,000	9,467,343	10,414,077
2015	654,545	720,000	10,121,888	11,134,077
2016	654,545	720,000	10,776,434	11,854,077
2017	654,545	720,000	11,430,979	12,574,077
2018	654,545	720,000	12,085,525	13,294,077
2019	654,545	720,000	12,740,070	14,014,077
2020	654,545	720,000	13,394,615	14,734,077
2021	307,367	338,104	14,049,161	15,454,077
2022	0	0	14,356,528	15,792,181
2023	0	0	14,356,528	15,792,181
2024	0	0	14,356,528	15,792,181
2025	0	0	14,356,528	15,792,181
2026	0	0	14,356,528	15,792,181
2027	0	0	14,356,528	15,792,181
2028	0	0	14,356,528	15,792,181
2029	0	0	14,356,528	15,792,181
2030	0	0	14,356,528	15,792,181
2031	0	0	14,356,528	15,792,181
2032	0	0	14,356,528	15,792,181
2033	0	0	14,356,528	15,792,181
2034	0	0	14,356,528	15,792,181
2035	0	0	14,356,528	15,792,181
2036	0	0	14,356,528	15,792,181
2037	0	0	14,356,528	15,792,181

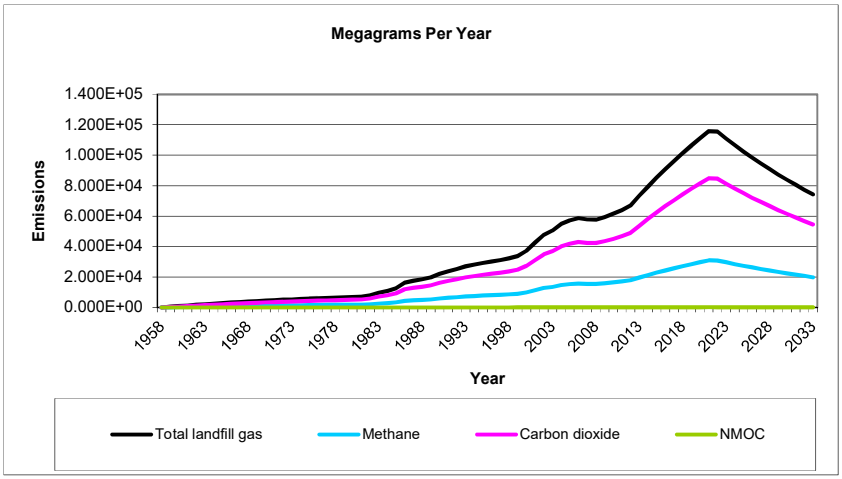
Pollutant Parameters

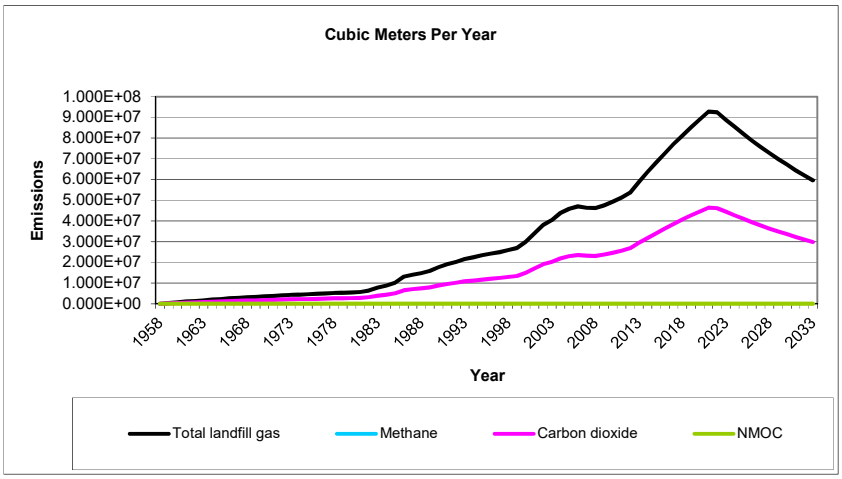
		Gas / Pollutant Default Parameters:		*User-specified Pollutant Parameters:*	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41	0.17	133.41
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85	0.01	167.85
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97	0.74	98.97
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94	0.09	96.94
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96	0.12	98.96
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99	0.02	112.99
	2-Propanol (isopropyl alcohol) - VOC	50	60.11	7.91	60.11
	Acetone	7.0	58.08	7.08	58.08
	Acrylonitrile - HAP/VOC	6.3	53.06	0.04	53.06
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11	0.97	78.11
	Benzene - Co-disposal - HAP/VOC	11	78.11	10.38	78.11
	Bromodichloromethane - VOC	3.1	163.83	0.26	163.83
	Butane - VOC	5.0	58.12	5.00	58.12
	Carbon disulfide - HAP/VOC	0.58	76.13	0.22	76.13
	Carbon monoxide	140	28.01	0.00	28.01
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84	0.01	153.84
	Carbonyl sulfide - HAP/VOC	0.49	60.07	0.18	60.07
	Chlorobenzene - HAP/VOC	0.25	112.56	0.23	112.56
	Chlorodifluoromethane	1.3	86.47	0.36	86.47
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52	0.45	64.52
	Chloroform - HAP/VOC	0.03	119.39	0.01	119.39
	Chloromethane - VOC	1.2	50.49	0.14	50.49
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147	1.45	147.00
	Dichlorodifluoromethane	16	120.91	0.96	120.91
	Dichlorofluoromethane - VOC	2.6	102.92	2.60	102.92
	Dichloromethane (methylene chloride) - HAP	14	84.94	3.40	84.94
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13	6.81	62.13
	Ethane	890	30.07	7.94	30.07
	Ethanol - VOC	27	46.08	64.43	46.08

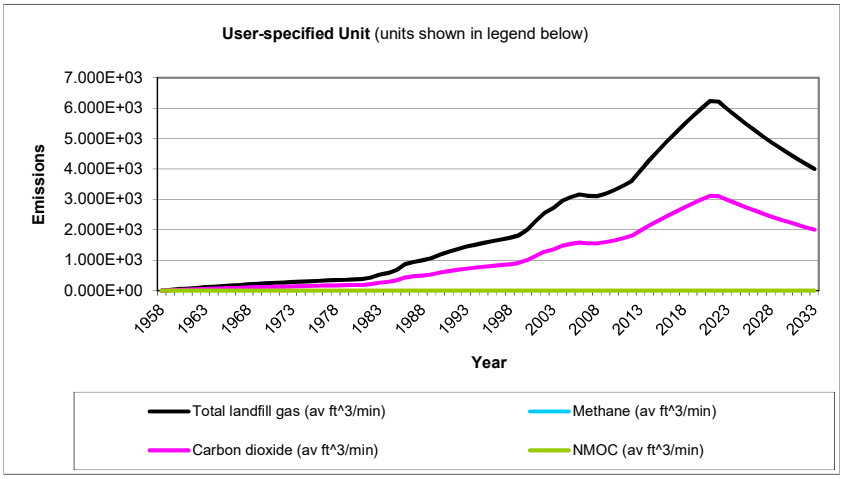
Pollutant Parameters (Continued)

		Gas / Pollutant Default Parameters:		*User-specified Pollutant Parameters:*	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2.3	62.13	0.23	62.13
	Ethylbenzene - HAP/VOC	4.6	106.16	6.79	106.16
	Ethylene dibromide - HAP/VOC	1.0E-03	187.88	0.01	187.88
	Fluorotrichloromethane - VOC	0.76	137.38	0.33	137.38
	Hexane - HAP/VOC	6.6	86.18	2.06	86.18
	Hydrogen sulfide	36	34.08	23.58	34.08
	Mercury (total) - HAP	2.9E-04	200.61	0.00	200.61
	Methyl ethyl ketone - HAP/VOC	7.1	72.11	12.69	72.11
	Methyl isobutyl ketone - HAP/VOC	1.9	100.16	0.75	100.16
	Methyl mercaptan - VOC	2.5	48.11	1.27	48.11
	Pentane - VOC	3.3	72.15	3.30	72.15
	Perchloroethylene (tetrachloroethylene) - HAP	3.7	165.83	1.19	165.83
	Propane - VOC	11	44.09	19.86	44.09
	t-1,2-Dichloroethene - VOC	2.8	96.94	0.05	96.94
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92.13	25.41	92.13
	Toluene - Co-disposal - HAP/VOC	170	92.13	37.46	92.13
	Trichloroethylene (trichloroethene) - HAP/VOC	2.8	131.40	0.68	131.40
	Vinyl chloride - HAP/VOC	7.3	62.50	1.08	62.50
	Xylenes - HAP/VOC	12	106.16	16.58	106.16

Graphs


Megagrams Per Year
Emissions
1.400E+05
1.200E+05
1.000E+05
8.000E+04
6.000E+04
4.000E+04
2.000E+04
0.000E+00
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
2013
2018
2023
2028
2033
Year
Total landfill gas
Methane
Carbon dioxide
NMOC


Cubic Meters Per Year
Emissions
1.000E+08
9.000E+07
8.000E+07
7.000E+07
6.000E+07
5.000E+07
4.000E+07
3.000E+07
2.000E+07
1.000E+07
0.000E+00
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
2013
2018
2023
2028
2033
Year
Total landfill gas
Methane
Carbon dioxide
NMOC


User-specified Unit (units shown in legend below)
Emissions
7.000E+03
6.000E+03
5.000E+03
4.000E+03
3.000E+03
2.000E+03
1.000E+03
0.000E+00
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
2013
2018
2023
2028
2033
Year
Total landfill gas (av ft^3/min)
Methane (av ft^3/min)
Carbon dioxide (av ft^3/min)
NMOC (av ft^3/min)

Results

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1958	0	0	0	0	0	0
1959	4.602E+02	3.685E+05	2.476E+01	1.229E+02	1.843E+05	1.238E+01
1960	9.024E+02	7.226E+05	4.855E+01	2.410E+02	3.613E+05	2.428E+01
1961	1.327E+03	1.063E+06	7.141E+01	3.545E+02	5.314E+05	3.571E+01
1962	1.735E+03	1.390E+06	9.337E+01	4.636E+02	6.948E+05	4.669E+01
1963	2.128E+03	1.704E+06	1.145E+02	5.683E+02	8.519E+05	5.724E+01
1964	2.504E+03	2.005E+06	1.347E+02	6.690E+02	1.003E+06	6.737E+01
1965	2.866E+03	2.295E+06	1.542E+02	7.657E+02	1.148E+06	7.711E+01
1966	3.214E+03	2.574E+06	1.729E+02	8.586E+02	1.287E+06	8.647E+01
1967	3.549E+03	2.842E+06	1.909E+02	9.479E+02	1.421E+06	9.546E+01
1968	3.870E+03	3.099E+06	2.082E+02	1.034E+03	1.549E+06	1.041E+02
1969	4.178E+03	3.346E+06	2.248E+02	1.116E+03	1.673E+06	1.124E+02
1970	4.475E+03	3.583E+06	2.407E+02	1.195E+03	1.792E+06	1.204E+02
1971	4.759E+03	3.811E+06	2.561E+02	1.271E+03	1.906E+06	1.280E+02
1972	5.033E+03	4.030E+06	2.708E+02	1.344E+03	2.015E+06	1.354E+02
1973	5.296E+03	4.241E+06	2.849E+02	1.415E+03	2.120E+06	1.425E+02
1974	5.548E+03	4.443E+06	2.985E+02	1.482E+03	2.221E+06	1.493E+02
1975	5.791E+03	4.637E+06	3.116E+02	1.547E+03	2.319E+06	1.558E+02
1976	6.024E+03	4.824E+06	3.241E+02	1.609E+03	2.412E+06	1.621E+02
1977	6.248E+03	5.003E+06	3.362E+02	1.669E+03	2.502E+06	1.681E+02
1978	6.464E+03	5.176E+06	3.478E+02	1.726E+03	2.588E+06	1.739E+02
1979	6.670E+03	5.341E+06	3.589E+02	1.782E+03	2.671E+06	1.794E+02
1980	6.869E+03	5.500E+06	3.696E+02	1.835E+03	2.750E+06	1.848E+02
1981	7.060E+03	5.653E+06	3.798E+02	1.886E+03	2.827E+06	1.899E+02
1982	7.955E+03	6.370E+06	4.280E+02	2.125E+03	3.185E+06	2.140E+02
1983	9.767E+03	7.821E+06	5.255E+02	2.609E+03	3.910E+06	2.627E+02
1984	1.084E+04	8.680E+06	5.832E+02	2.896E+03	4.340E+06	2.916E+02
1985	1.263E+04	1.012E+07	6.797E+02	3.375E+03	5.058E+06	3.399E+02
1986	1.630E+04	1.305E+07	8.771E+02	4.355E+03	6.527E+06	4.386E+02
1987	1.758E+04	1.407E+07	9.456E+02	4.695E+03	7.037E+06	4.728E+02
1988	1.860E+04	1.490E+07	1.001E+03	4.969E+03	7.449E+06	5.005E+02
1989	1.981E+04	1.586E+07	1.066E+03	5.292E+03	7.932E+06	5.330E+02
1990	2.208E+04	1.768E+07	1.188E+03	5.898E+03	8.841E+06	5.940E+02
1991	2.382E+04	1.907E+07	1.282E+03	6.363E+03	9.537E+06	6.408E+02
1992	2.531E+04	2.026E+07	1.362E+03	6.760E+03	1.013E+07	6.808E+02
1993	2.699E+04	2.161E+07	1.452E+03	7.209E+03	1.081E+07	7.260E+02
1994	2.808E+04	2.249E+07	1.511E+03	7.501E+03	1.124E+07	7.555E+02
1995	2.926E+04	2.343E+07	1.574E+03	7.815E+03	1.171E+07	7.870E+02
1996	3.020E+04	2.419E+07	1.625E+03	8.068E+03	1.209E+07	8.125E+02
1997	3.122E+04	2.500E+07	1.680E+03	8.340E+03	1.250E+07	8.399E+02
1998	3.230E+04	2.587E+07	1.738E+03	8.629E+03	1.293E+07	8.690E+02
1999	3.370E+04	2.698E+07	1.813E+03	9.000E+03	1.349E+07	9.065E+02
2000	3.725E+04	2.983E+07	2.004E+03	9.950E+03	1.491E+07	1.002E+03
2001	4.259E+04	3.411E+07	2.292E+03	1.138E+04	1.705E+07	1.146E+03
2002	4.758E+04	3.810E+07	2.560E+03	1.271E+04	1.905E+07	1.280E+03
2003	5.044E+04	4.039E+07	2.714E+03	1.347E+04	2.019E+07	1.357E+03
2004	5.481E+04	4.389E+07	2.949E+03	1.464E+04	2.194E+07	1.474E+03
2005	5.721E+04	4.581E+07	3.078E+03	1.528E+04	2.290E+07	1.539E+03
2006	5.870E+04	4.701E+07	3.158E+03	1.568E+04	2.350E+07	1.579E+03
2007	5.788E+04	4.634E+07	3.114E+03	1.546E+04	2.317E+07	1.557E+03

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2008	5.772E+04	4.622E+07	3.105E+03	1.542E+04	2.311E+07	1.553E+03
2009	5.929E+04	4.748E+07	3.190E+03	1.584E+04	2.374E+07	1.595E+03
2010	6.152E+04	4.926E+07	3.310E+03	1.643E+04	2.463E+07	1.655E+03
2011	6.394E+04	5.120E+07	3.440E+03	1.708E+04	2.560E+07	1.720E+03
2012	6.697E+04	5.362E+07	3.603E+03	1.789E+04	2.681E+07	1.802E+03
2013	7.331E+04	5.870E+07	3.944E+03	1.958E+04	2.935E+07	1.972E+03
2014	7.940E+04	6.358E+07	4.272E+03	2.121E+04	3.179E+07	2.136E+03
2015	8.525E+04	6.827E+07	4.587E+03	2.277E+04	3.413E+07	2.293E+03
2016	9.088E+04	7.277E+07	4.889E+03	2.427E+04	3.639E+07	2.445E+03
2017	9.628E+04	7.710E+07	5.180E+03	2.572E+04	3.855E+07	2.590E+03
2018	1.015E+05	8.125E+07	5.459E+03	2.710E+04	4.063E+07	2.730E+03
2019	1.065E+05	8.525E+07	5.728E+03	2.844E+04	4.262E+07	2.864E+03
2020	1.113E+05	8.909E+07	5.986E+03	2.972E+04	4.454E+07	2.993E+03
2021	1.159E+05	9.277E+07	6.233E+03	3.095E+04	4.639E+07	3.117E+03
2022	1.155E+05	9.251E+07	6.215E+03	3.086E+04	4.625E+07	3.108E+03
2023	1.110E+05	8.888E+07	5.972E+03	2.965E+04	4.444E+07	2.986E+03
2024	1.066E+05	8.539E+07	5.738E+03	2.849E+04	4.270E+07	2.869E+03
2025	1.025E+05	8.205E+07	5.513E+03	2.737E+04	4.102E+07	2.756E+03
2026	9.844E+04	7.883E+07	5.296E+03	2.630E+04	3.941E+07	2.648E+03
2027	9.458E+04	7.574E+07	5.089E+03	2.526E+04	3.787E+07	2.544E+03
2028	9.087E+04	7.277E+07	4.889E+03	2.427E+04	3.638E+07	2.445E+03
2029	8.731E+04	6.991E+07	4.698E+03	2.332E+04	3.496E+07	2.349E+03
2030	8.389E+04	6.717E+07	4.513E+03	2.241E+04	3.359E+07	2.257E+03
2031	8.060E+04	6.454E+07	4.336E+03	2.153E+04	3.227E+07	2.168E+03
2032	7.744E+04	6.201E+07	4.166E+03	2.068E+04	3.100E+07	2.083E+03
2033	7.440E+04	5.958E+07	4.003E+03	1.987E+04	2.979E+07	2.002E+03
2034	7.148E+04	5.724E+07	3.846E+03	1.909E+04	2.862E+07	1.923E+03
2035	6.868E+04	5.500E+07	3.695E+03	1.835E+04	2.750E+07	1.848E+03
2036	6.599E+04	5.284E+07	3.550E+03	1.763E+04	2.642E+07	1.775E+03
2037	6.340E+04	5.077E+07	3.411E+03	1.694E+04	2.538E+07	1.706E+03
2038	6.092E+04	4.878E+07	3.277E+03	1.627E+04	2.439E+07	1.639E+03
2039	5.853E+04	4.687E+07	3.149E+03	1.563E+04	2.343E+07	1.574E+03
2040	5.623E+04	4.503E+07	3.025E+03	1.502E+04	2.251E+07	1.513E+03
2041	5.403E+04	4.326E+07	2.907E+03	1.443E+04	2.163E+07	1.453E+03
2042	5.191E+04	4.157E+07	2.793E+03	1.387E+04	2.078E+07	1.396E+03
2043	4.987E+04	3.994E+07	2.683E+03	1.332E+04	1.997E+07	1.342E+03
2044	4.792E+04	3.837E+07	2.578E+03	1.280E+04	1.919E+07	1.289E+03
2045	4.604E+04	3.687E+07	2.477E+03	1.230E+04	1.843E+07	1.238E+03
2046	4.423E+04	3.542E+07	2.380E+03	1.182E+04	1.771E+07	1.190E+03
2047	4.250E+04	3.403E+07	2.287E+03	1.135E+04	1.702E+07	1.143E+03
2048	4.083E+04	3.270E+07	2.197E+03	1.091E+04	1.635E+07	1.098E+03
2049	3.923E+04	3.141E+07	2.111E+03	1.048E+04	1.571E+07	1.055E+03
2050	3.769E+04	3.018E+07	2.028E+03	1.007E+04	1.509E+07	1.014E+03
2051	3.622E+04	2.900E+07	1.948E+03	9.673E+03	1.450E+07	9.742E+02
2052	3.480E+04	2.786E+07	1.872E+03	9.294E+03	1.393E+07	9.360E+02
2053	3.343E+04	2.677E+07	1.799E+03	8.930E+03	1.338E+07	8.993E+02
2054	3.212E+04	2.572E+07	1.728E+03	8.580E+03	1.286E+07	8.641E+02
2055	3.086E+04	2.471E+07	1.660E+03	8.243E+03	1.236E+07	8.302E+02
2056	2.965E+04	2.374E+07	1.595E+03	7.920E+03	1.187E+07	7.976E+02
2057	2.849E+04	2.281E+07	1.533E+03	7.609E+03	1.141E+07	7.664E+02
2058	2.737E+04	2.192E+07	1.473E+03	7.311E+03	1.096E+07	7.363E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2059	2.630E+04	2.106E+07	1.415E+03	7.024E+03	1.053E+07	7.074E+02
2060	2.527E+04	2.023E+07	1.359E+03	6.749E+03	1.012E+07	6.797E+02
2061	2.428E+04	1.944E+07	1.306E+03	6.484E+03	9.719E+06	6.531E+02
2062	2.332E+04	1.868E+07	1.255E+03	6.230E+03	9.338E+06	6.274E+02
2063	2.241E+04	1.794E+07	1.206E+03	5.986E+03	8.972E+06	6.028E+02
2064	2.153E+04	1.724E+07	1.158E+03	5.751E+03	8.620E+06	5.792E+02
2065	2.069E+04	1.656E+07	1.113E+03	5.526E+03	8.282E+06	5.565E+02
2066	1.988E+04	1.592E+07	1.069E+03	5.309E+03	7.958E+06	5.347E+02
2067	1.910E+04	1.529E+07	1.027E+03	5.101E+03	7.646E+06	5.137E+02
2068	1.835E+04	1.469E+07	9.871E+02	4.901E+03	7.346E+06	4.936E+02
2069	1.763E+04	1.412E+07	9.484E+02	4.709E+03	7.058E+06	4.742E+02
2070	1.694E+04	1.356E+07	9.112E+02	4.524E+03	6.781E+06	4.556E+02
2071	1.627E+04	1.303E+07	8.755E+02	4.347E+03	6.515E+06	4.378E+02
2072	1.563E+04	1.252E+07	8.412E+02	4.176E+03	6.260E+06	4.206E+02
2073	1.502E+04	1.203E+07	8.082E+02	4.012E+03	6.014E+06	4.041E+02
2074	1.443E+04	1.156E+07	7.765E+02	3.855E+03	5.778E+06	3.883E+02
2075	1.387E+04	1.110E+07	7.461E+02	3.704E+03	5.552E+06	3.730E+02
2076	1.332E+04	1.067E+07	7.168E+02	3.559E+03	5.334E+06	3.584E+02
2077	1.280E+04	1.025E+07	6.887E+02	3.419E+03	5.125E+06	3.443E+02
2078	1.230E+04	9.848E+06	6.617E+02	3.285E+03	4.924E+06	3.308E+02
2079	1.182E+04	9.462E+06	6.357E+02	3.156E+03	4.731E+06	3.179E+02
2080	1.135E+04	9.091E+06	6.108E+02	3.033E+03	4.545E+06	3.054E+02
2081	1.091E+04	8.734E+06	5.869E+02	2.914E+03	4.367E+06	2.934E+02
2082	1.048E+04	8.392E+06	5.639E+02	2.799E+03	4.196E+06	2.819E+02
2083	1.007E+04	8.063E+06	5.417E+02	2.690E+03	4.031E+06	2.709E+02
2084	9.674E+03	7.747E+06	5.205E+02	2.584E+03	3.873E+06	2.603E+02
2085	9.295E+03	7.443E+06	5.001E+02	2.483E+03	3.722E+06	2.500E+02
2086	8.931E+03	7.151E+06	4.805E+02	2.385E+03	3.576E+06	2.402E+02
2087	8.580E+03	6.871E+06	4.616E+02	2.292E+03	3.435E+06	2.308E+02
2088	8.244E+03	6.601E+06	4.435E+02	2.202E+03	3.301E+06	2.218E+02
2089	7.921E+03	6.343E+06	4.262E+02	2.116E+03	3.171E+06	2.131E+02
2090	7.610E+03	6.094E+06	4.094E+02	2.033E+03	3.047E+06	2.047E+02
2091	7.312E+03	5.855E+06	3.934E+02	1.953E+03	2.927E+06	1.967E+02
2092	7.025E+03	5.625E+06	3.780E+02	1.876E+03	2.813E+06	1.890E+02
2093	6.750E+03	5.405E+06	3.631E+02	1.803E+03	2.702E+06	1.816E+02
2094	6.485E+03	5.193E+06	3.489E+02	1.732E+03	2.596E+06	1.745E+02
2095	6.231E+03	4.989E+06	3.352E+02	1.664E+03	2.495E+06	1.676E+02
2096	5.986E+03	4.794E+06	3.221E+02	1.599E+03	2.397E+06	1.610E+02
2097	5.752E+03	4.606E+06	3.095E+02	1.536E+03	2.303E+06	1.547E+02
2098	5.526E+03	4.425E+06	2.973E+02	1.476E+03	2.213E+06	1.487E+02

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1958	0	0	0	0	0	0
1959	3.373E+02	1.843E+05	1.238E+01	7.860E-01	2.193E+02	1.473E-02
1960	6.614E+02	3.613E+05	2.428E+01	1.541E+00	4.300E+02	2.889E-02
1961	9.727E+02	5.314E+05	3.571E+01	2.267E+00	6.324E+02	4.249E-02
1962	1.272E+03	6.948E+05	4.669E+01	2.964E+00	8.269E+02	5.556E-02
1963	1.559E+03	8.519E+05	5.724E+01	3.634E+00	1.014E+03	6.811E-02
1964	1.835E+03	1.003E+06	6.737E+01	4.277E+00	1.193E+03	8.017E-02
1965	2.101E+03	1.148E+06	7.711E+01	4.895E+00	1.366E+03	9.176E-02
1966	2.356E+03	1.287E+06	8.647E+01	5.489E+00	1.531E+03	1.029E-01
1967	2.601E+03	1.421E+06	9.546E+01	6.060E+00	1.691E+03	1.136E-01
1968	2.836E+03	1.549E+06	1.041E+02	6.609E+00	1.844E+03	1.239E-01
1969	3.062E+03	1.673E+06	1.124E+02	7.135E+00	1.991E+03	1.338E-01
1970	3.279E+03	1.792E+06	1.204E+02	7.642E+00	2.132E+03	1.432E-01
1971	3.488E+03	1.906E+06	1.280E+02	8.128E+00	2.268E+03	1.524E-01
1972	3.689E+03	2.015E+06	1.354E+02	8.595E+00	2.398E+03	1.611E-01
1973	3.881E+03	2.120E+06	1.425E+02	9.044E+00	2.523E+03	1.695E-01
1974	4.066E+03	2.221E+06	1.493E+02	9.476E+00	2.644E+03	1.776E-01
1975	4.244E+03	2.319E+06	1.558E+02	9.890E+00	2.759E+03	1.854E-01
1976	4.415E+03	2.412E+06	1.621E+02	1.029E+01	2.870E+03	1.929E-01
1977	4.579E+03	2.502E+06	1.681E+02	1.067E+01	2.977E+03	2.000E-01
1978	4.737E+03	2.588E+06	1.739E+02	1.104E+01	3.080E+03	2.069E-01
1979	4.889E+03	2.671E+06	1.794E+02	1.139E+01	3.178E+03	2.135E-01
1980	5.034E+03	2.750E+06	1.848E+02	1.173E+01	3.273E+03	2.199E-01
1981	5.174E+03	2.827E+06	1.899E+02	1.206E+01	3.364E+03	2.260E-01
1982	5.830E+03	3.185E+06	2.140E+02	1.359E+01	3.790E+03	2.547E-01
1983	7.158E+03	3.910E+06	2.627E+02	1.668E+01	4.653E+03	3.127E-01
1984	7.945E+03	4.340E+06	2.916E+02	1.851E+01	5.165E+03	3.470E-01
1985	9.259E+03	5.058E+06	3.399E+02	2.158E+01	6.019E+03	4.044E-01
1986	1.195E+04	6.527E+06	4.386E+02	2.784E+01	7.767E+03	5.219E-01
1987	1.288E+04	7.037E+06	4.728E+02	3.002E+01	8.374E+03	5.626E-01
1988	1.363E+04	7.449E+06	5.005E+02	3.177E+01	8.864E+03	5.956E-01
1989	1.452E+04	7.932E+06	5.330E+02	3.383E+01	9.439E+03	6.342E-01
1990	1.618E+04	8.841E+06	5.940E+02	3.771E+01	1.052E+04	7.069E-01
1991	1.746E+04	9.537E+06	6.408E+02	4.068E+01	1.135E+04	7.625E-01
1992	1.855E+04	1.013E+07	6.808E+02	4.322E+01	1.206E+04	8.101E-01
1993	1.978E+04	1.081E+07	7.260E+02	4.609E+01	1.286E+04	8.640E-01
1994	2.058E+04	1.124E+07	7.555E+02	4.796E+01	1.338E+04	8.990E-01
1995	2.144E+04	1.171E+07	7.870E+02	4.996E+01	1.394E+04	9.366E-01
1996	2.214E+04	1.209E+07	8.125E+02	5.158E+01	1.439E+04	9.669E-01
1997	2.288E+04	1.250E+07	8.399E+02	5.332E+01	1.488E+04	9.995E-01
1998	2.368E+04	1.293E+07	8.690E+02	5.517E+01	1.539E+04	1.034E+00
1999	2.470E+04	1.349E+07	9.065E+02	5.755E+01	1.605E+04	1.079E+00
2000	2.730E+04	1.491E+07	1.002E+03	6.362E+01	1.775E+04	1.193E+00
2001	3.122E+04	1.705E+07	1.146E+03	7.274E+01	2.029E+04	1.363E+00
2002	3.487E+04	1.905E+07	1.280E+03	8.126E+01	2.267E+04	1.523E+00
2003	3.696E+04	2.019E+07	1.357E+03	8.614E+01	2.403E+04	1.615E+00
2004	4.017E+04	2.194E+07	1.474E+03	9.360E+01	2.611E+04	1.755E+00
2005	4.193E+04	2.290E+07	1.539E+03	9.770E+01	2.726E+04	1.831E+00
2006	4.302E+04	2.350E+07	1.579E+03	1.003E+02	2.797E+04	1.879E+00
2007	4.242E+04	2.317E+07	1.557E+03	9.884E+01	2.757E+04	1.853E+00

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2008	4.230E+04	2.311E+07	1.553E+03	9.857E+01	2.750E+04	1.848E+00
2009	4.345E+04	2.374E+07	1.595E+03	1.013E+02	2.825E+04	1.898E+00
2010	4.509E+04	2.463E+07	1.655E+03	1.051E+02	2.931E+04	1.969E+00
2011	4.686E+04	2.560E+07	1.720E+03	1.092E+02	3.047E+04	2.047E+00
2012	4.908E+04	2.681E+07	1.802E+03	1.144E+02	3.191E+04	2.144E+00
2013	5.373E+04	2.935E+07	1.972E+03	1.252E+02	3.493E+04	2.347E+00
2014	5.819E+04	3.179E+07	2.136E+03	1.356E+02	3.783E+04	2.542E+00
2015	6.248E+04	3.413E+07	2.293E+03	1.456E+02	4.062E+04	2.729E+00
2016	6.660E+04	3.639E+07	2.445E+03	1.552E+02	4.330E+04	2.909E+00
2017	7.056E+04	3.855E+07	2.590E+03	1.644E+02	4.587E+04	3.082E+00
2018	7.437E+04	4.063E+07	2.730E+03	1.733E+02	4.835E+04	3.248E+00
2019	7.802E+04	4.262E+07	2.864E+03	1.818E+02	5.072E+04	3.408E+00
2020	8.154E+04	4.454E+07	2.993E+03	1.900E+02	5.301E+04	3.561E+00
2021	8.491E+04	4.639E+07	3.117E+03	1.979E+02	5.520E+04	3.709E+00
2022	8.467E+04	4.625E+07	3.108E+03	1.973E+02	5.504E+04	3.698E+00
2023	8.135E+04	4.444E+07	2.986E+03	1.896E+02	5.288E+04	3.553E+00
2024	7.816E+04	4.270E+07	2.869E+03	1.821E+02	5.081E+04	3.414E+00
2025	7.509E+04	4.102E+07	2.756E+03	1.750E+02	4.882E+04	3.280E+00
2026	7.215E+04	3.941E+07	2.648E+03	1.681E+02	4.690E+04	3.151E+00
2027	6.932E+04	3.787E+07	2.544E+03	1.615E+02	4.506E+04	3.028E+00
2028	6.660E+04	3.638E+07	2.445E+03	1.552E+02	4.330E+04	2.909E+00
2029	6.399E+04	3.496E+07	2.349E+03	1.491E+02	4.160E+04	2.795E+00
2030	6.148E+04	3.359E+07	2.257E+03	1.433E+02	3.997E+04	2.685E+00
2031	5.907E+04	3.227E+07	2.168E+03	1.376E+02	3.840E+04	2.580E+00
2032	5.675E+04	3.100E+07	2.083E+03	1.323E+02	3.690E+04	2.479E+00
2033	5.453E+04	2.979E+07	2.002E+03	1.271E+02	3.545E+04	2.382E+00
2034	5.239E+04	2.862E+07	1.923E+03	1.221E+02	3.406E+04	2.288E+00
2035	5.034E+04	2.750E+07	1.848E+03	1.173E+02	3.272E+04	2.199E+00
2036	4.836E+04	2.642E+07	1.775E+03	1.127E+02	3.144E+04	2.112E+00
2037	4.647E+04	2.538E+07	1.706E+03	1.083E+02	3.021E+04	2.030E+00
2038	4.464E+04	2.439E+07	1.639E+03	1.040E+02	2.902E+04	1.950E+00
2039	4.289E+04	2.343E+07	1.574E+03	9.995E+01	2.788E+04	1.874E+00
2040	4.121E+04	2.251E+07	1.513E+03	9.603E+01	2.679E+04	1.800E+00
2041	3.960E+04	2.163E+07	1.453E+03	9.227E+01	2.574E+04	1.730E+00
2042	3.804E+04	2.078E+07	1.396E+03	8.865E+01	2.473E+04	1.662E+00
2043	3.655E+04	1.997E+07	1.342E+03	8.517E+01	2.376E+04	1.597E+00
2044	3.512E+04	1.919E+07	1.289E+03	8.183E+01	2.283E+04	1.534E+00
2045	3.374E+04	1.843E+07	1.238E+03	7.863E+01	2.194E+04	1.474E+00
2046	3.242E+04	1.771E+07	1.190E+03	7.554E+01	2.107E+04	1.416E+00
2047	3.115E+04	1.702E+07	1.143E+03	7.258E+01	2.025E+04	1.360E+00
2048	2.993E+04	1.635E+07	1.098E+03	6.973E+01	1.945E+04	1.307E+00
2049	2.875E+04	1.571E+07	1.055E+03	6.700E+01	1.869E+04	1.256E+00
2050	2.762E+04	1.509E+07	1.014E+03	6.437E+01	1.796E+04	1.207E+00
2051	2.654E+04	1.450E+07	9.742E+02	6.185E+01	1.725E+04	1.159E+00
2052	2.550E+04	1.393E+07	9.360E+02	5.942E+01	1.658E+04	1.114E+00
2053	2.450E+04	1.338E+07	8.993E+02	5.709E+01	1.593E+04	1.070E+00
2054	2.354E+04	1.286E+07	8.641E+02	5.486E+01	1.530E+04	1.028E+00
2055	2.262E+04	1.236E+07	8.302E+02	5.270E+01	1.470E+04	9.879E-01
2056	2.173E+04	1.187E+07	7.976E+02	5.064E+01	1.413E+04	9.492E-01
2057	2.088E+04	1.141E+07	7.664E+02	4.865E+01	1.357E+04	9.120E-01
2058	2.006E+04	1.096E+07	7.363E+02	4.674E+01	1.304E+04	8.762E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
2059	1.927E+04	1.053E+07	7.074E+02	4.491E+01	1.253E+04	8.419E-01
2060	1.852E+04	1.012E+07	6.797E+02	4.315E+01	1.204E+04	8.088E-01
2061	1.779E+04	9.719E+06	6.531E+02	4.146E+01	1.157E+04	7.771E-01
2062	1.709E+04	9.338E+06	6.274E+02	3.983E+01	1.111E+04	7.467E-01
2063	1.642E+04	8.972E+06	6.028E+02	3.827E+01	1.068E+04	7.174E-01
2064	1.578E+04	8.620E+06	5.792E+02	3.677E+01	1.026E+04	6.893E-01
2065	1.516E+04	8.282E+06	5.565E+02	3.533E+01	9.856E+03	6.622E-01
2066	1.457E+04	7.958E+06	5.347E+02	3.394E+01	9.470E+03	6.363E-01
2067	1.400E+04	7.646E+06	5.137E+02	3.261E+01	9.098E+03	6.113E-01
2068	1.345E+04	7.346E+06	4.936E+02	3.133E+01	8.742E+03	5.873E-01
2069	1.292E+04	7.058E+06	4.742E+02	3.011E+01	8.399E+03	5.643E-01
2070	1.241E+04	6.781E+06	4.556E+02	2.892E+01	8.069E+03	5.422E-01
2071	1.193E+04	6.515E+06	4.378E+02	2.779E+01	7.753E+03	5.209E-01
2072	1.146E+04	6.260E+06	4.206E+02	2.670E+01	7.449E+03	5.005E-01
2073	1.101E+04	6.014E+06	4.041E+02	2.565E+01	7.157E+03	4.809E-01
2074	1.058E+04	5.778E+06	3.883E+02	2.465E+01	6.876E+03	4.620E-01
2075	1.016E+04	5.552E+06	3.730E+02	2.368E+01	6.607E+03	4.439E-01
2076	9.764E+03	5.334E+06	3.584E+02	2.275E+01	6.348E+03	4.265E-01
2077	9.381E+03	5.125E+06	3.443E+02	2.186E+01	6.099E+03	4.098E-01
2078	9.013E+03	4.924E+06	3.308E+02	2.100E+01	5.860E+03	3.937E-01
2079	8.660E+03	4.731E+06	3.179E+02	2.018E+01	5.630E+03	3.783E-01
2080	8.320E+03	4.545E+06	3.054E+02	1.939E+01	5.409E+03	3.634E-01
2081	7.994E+03	4.367E+06	2.934E+02	1.863E+01	5.197E+03	3.492E-01
2082	7.681E+03	4.196E+06	2.819E+02	1.790E+01	4.993E+03	3.355E-01
2083	7.380E+03	4.031E+06	2.709E+02	1.720E+01	4.797E+03	3.223E-01
2084	7.090E+03	3.873E+06	2.603E+02	1.652E+01	4.609E+03	3.097E-01
2085	6.812E+03	3.722E+06	2.500E+02	1.587E+01	4.429E+03	2.976E-01
2086	6.545E+03	3.576E+06	2.402E+02	1.525E+01	4.255E+03	2.859E-01
2087	6.288E+03	3.435E+06	2.308E+02	1.465E+01	4.088E+03	2.747E-01
2088	6.042E+03	3.301E+06	2.218E+02	1.408E+01	3.928E+03	2.639E-01
2089	5.805E+03	3.171E+06	2.131E+02	1.353E+01	3.774E+03	2.536E-01
2090	5.577E+03	3.047E+06	2.047E+02	1.300E+01	3.626E+03	2.436E-01
2091	5.359E+03	2.927E+06	1.967E+02	1.249E+01	3.484E+03	2.341E-01
2092	5.149E+03	2.813E+06	1.890E+02	1.200E+01	3.347E+03	2.249E-01
2093	4.947E+03	2.702E+06	1.816E+02	1.153E+01	3.216E+03	2.161E-01
2094	4.753E+03	2.596E+06	1.745E+02	1.108E+01	3.090E+03	2.076E-01
2095	4.566E+03	2.495E+06	1.676E+02	1.064E+01	2.969E+03	1.995E-01
2096	4.387E+03	2.397E+06	1.610E+02	1.022E+01	2.852E+03	1.916E-01
2097	4.215E+03	2.303E+06	1.547E+02	9.823E+00	2.740E+03	1.841E-01
2098	4.050E+03	2.213E+06	1.487E+02	9.438E+00	2.633E+03	1.769E-01

Attachment 2
Measurement of Toxic Emissions From Landfills:History and Current Developments

Measurement of Toxic Emissions from Landfills: History and Current Developments

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ABSTRACT

In 1995, the Environmental Protection Agency (EPA) established default landfill gas (LFG) concentrations for hazardous air pollutants (HAPs) in Section 2.4 of its *Compilation of Air Pollutant Emission Factors* (AP-42) document. It has recently come to light that these default values grossly overstate current emissions from landfills. Several factors have contributed to the decline of emissions since the time the AP-42 data were collected including more advanced measurement technologies and exclusion of hazardous waste from municipal solid waste (MSW) landfills. This overstatement has resulted in rigorous restrictions on emissions from solid waste landfills due to regulations based on the AP-42 default values. Regulations such as New Source Pollution Standards (NSPS), Urban Air Toxics Strategy (UATS), and Maximum Achievable Control Technology (MACT) overestimate emissions attributable to landfills causing unwarranted regulatory burdens on MSW enterprises.

A number of recent studies prove the suspected overstatement of LFG emissions in the AP-42 defaults. A study of Los Angeles County landfills reveals an overall declining trend in LFG constituents since hazardous waste exclusion programs were implemented in 1991. Industry groups have gathered data from hundreds of landfill emissions tests and analyzed the results to produce a true industry average of HAP emissions from landfills. Analysis of hydrogen chloride (HCl) data from actual source tests demonstrates that the current estimation method is inappropriate and likely results in an overestimate of HCl emissions. Reviews of mercury (Hg) studies show that current data are insufficient to support the default emission value in AP-42.

The EPA has acknowledged these shortcomings by initiating a cooperative research and development agreement (CRADA) with the MSW industry to obtain up-to-date analyses of LFG emissions and establish emission factors more accurate to industry averages. Although this action is commendable, it remains to be seen if the EPA will effectively utilize newly acquired data and available industry data in conjunction with the elimination of outdated information to establish truly representative emission factors and then use these factors to correct previous missteps.

INTRODUCTION

Air quality regulations are now a common factor in the design, permitting, and operation of municipal solid waste (MSW) landfills across the country. The estimation of air emissions from landfills is an important part of any air quality permitting effort required at a landfill. Poor emission estimates can lead to serious compliance issues for landfills, including more stringent air quality requirements and higher emission fees. In addition, testing for emissions is costly and time consuming with the current technologies. Because of this, there is a strong need for industry-wide guidance on standard methodologies and techniques for accurate emission estimation at landfills without site- specific testing as well as better source testing and analytical methods if site-specific testing is warranted.

average MSW landfill contribution per compound dropped from 13% to 1.5%. One of the more dramatic findings concerns EPA's original attribution of 84% of all 1,1,2,2-tetrachloroethane emissions to landfills; the WIAC findings show that the landfill emission level is about 2% of all sources. These findings indicate that municipal landfills have markedly less emissions, compared to other industrial sources, than EPA previously estimated. A comparison of the UATS with AP-42 data vs. WIAC data is presented in Table 5.

Compound	Annual Tons		Portion of UATS Inventory		Rank		Number of Sources
	AP-42	WIAC	AP-42	WIAC	AP-42	WIAC	
1,1,2,2-Tetrachloroethane	216	1	84.08	2.37	1	5	16
1,2-Dichloropropane	23.6	3	3.59	1.48	6	8	12
Acrylonitrile	389	2.2	15.28	0.1	3	15	17
Benzene	173	87.9	3.86	2	11	13	17
Chloroform	4.17	1.3	4.94	1.63	6	9	17
Ethylene Dichloride	47	13.7	1.15	0.34	10	*	17
Methylene Chloride	1550	367	1.67	0.4	11	*	17
Tetrachloroethylene	717	229	0.59	0.19	6	*	17
Trichloroethylene	429	104	0.64	0.16	13	*	17
Vinyl Chloride	531	77.9	19.65	3.46	2	4	17
Vinylidene Chloride	22.5	10.3	10.1	3.45	4	5	14

*Landfill emissions are less than for other ranked sources.

Table 5. Comparison Of UATS: AP-42 Data vs. WIAC Data

Hydrogen Chloride Measurements---

EPA's AP-42 method for estimating HCl emissions from landfills (a by-product of combusting LFG) results in HCl becoming the largest single HAP emitted from a site with a LFG collection and control system. The WIAC compiled and reviewed 19 source test reports to develop an HCl emission factor for LFG-fired control devices, specifically flares.[3]

The review focused on: (1) validity of the stack test methods used and (2) a review of the HCl concentrations to determine if the source tests demonstrate that HCl concentrations are overstated as compared to the methodologies presented in AP-42.

Four source test methods were used in the source test reports reviewed for this study: (1) EPA Method 26, (2) EPA Method 0050, (3) SCAQMD Method 5/California Air Resources Board (CARB) Method 421, and (4) EPA Method 600-325.3.

EPA Method 26 is an approved stack-test method for HCl. EPA Method 0050 is referenced from a document titled, *Measurement of HCl and Cl_2* published by the EPA.[8] The final two methods appear to have relatively similar preparation, sampling and analytical methodologies as EPA Method 26 and would be appropriate for use in this comparison.

Many LFG constituents listed in AP-42 are chlorinated compounds. The AP-42 methodology used to determine the HCl concentration in the outlet of a LFG-fired control device is to *assume* that the device oxidizes at least 98 percent of the chlorinated compound during combustion and converts the free chlorine atoms into HCl (i.e., mass balance). Additionally, AP-42 provides a calculation methodology that assumes a default concentration for total chloride (C_{Cl}) of 42.0 ppmv, which is based on the default concentrations of chlorinated HAPs, which were already shown above to be overstated.

The source test results reviewed show a much lower and more reasonable concentration of HCl than using the methods currently described in AP-42. According to the data, the average total chlorides assumed to be HCl concentration from the source tests is 9.43 ppmv, (see Table 6, below) as compared to the AP-42 default of 42 ppmv.

LOCATION	Maximum Concentration (ppmv)	Minimum Concentration (ppmv)	Average Concentration (ppmv)	TEST METHOD
Halifax, MA	1.43	1.34	1.4	EPA Method 0050
E. Bridgewater, MA	55.53	27.09	37.48	EPA Method 0050
Fairfield, OH	12.1	4.9	9.5	EPA Method 26
Fall River, MA	1.72	1.55	1.65	EPA Method 0050
Fall River, MA	3.35	1.26	2.02	EPA Method 26
Morrow, OH	5.1	2.9	3.8	EPA Method 26
Evansville, IN	1.83	0.39	1.04	EPA Method 26A
Hanover Park, IL	7.88	4.5	5.73	EPA Method 26
Lowellville, OH	9.4	7.3	8.1	EPA Method 26
Sorrento, LA	1.9	0.2	0.8	EPA Method 26
Oberlin, OH	27.6	20.9	23.2	EPA Method 26
Oberlin, OH	35	23.2	30.1	EPA Method 26
Atwater, OH	3.6	2.7	3	EPA Method 26
Santa Ana, CA	30	-	-	No Reference Method
Tinton Falls, NJ	1.6	<0.03	<1.08	EPA Method 26
Severn, MD	1.24	<0.11	<0.49	EPA Method 26
Lopez Canyon, CA	3.95	3.72	3.84	SCAQMD Method 5/CARB 421
Puente Hills, CA	11.2	10.3	10.8	No Reference Method
Spadra, CA	26.5	24.8	25.7	EPA 600-325.3
Average:	12.68	7.62	***9.43***	
Overall Maximum:	55.53			
Overall Minimum:	0.2			

Table 6. Summary of Hydrogen Chloride Data From Source Tests

Since HCl is a combustion by-product, it is felt that its emissions should be estimated by an industry average derived from source testing, similar to other combustion by-products like nitrogen oxides (NOx) and carbon monoxide (CO). This method is preferable to the AP-42 method and would greatly simplify the derivation of HCl emissions.

Mercury Measurements—

AP-42 History:

EPA's AP-42 document uses a raw LFG concentration of 0.292 parts per billion by volume (ppbv) for total mercury.[1] EPA claims that this default value was derived from 14 landfills from which EPA obtained data. However, 9 of these landfills were summarized by a single average concentration value, for which EPA was unable to obtain or verify each individual site concentration. The concentrations ranged from 0.0127 ppbv to 1.49 ppbv (EPA was not able to make air infiltration corrections for any of the 14 sites). EPA admits that most of the data were in the 0.01 to 0.1 range, with a single outlier at 1.49 ppbv (Fresh Kills Landfill). However, the EPA selected the arithmetic mean of the data as the AP-42 default while including the highest concentration, which in their words, "...positively skewed [the data] by one high test result." They chose not to ignore the outlier because, in their opinion, it had the highest data quality of all of the samples. Actually, it was only one of two landfills for which they had a full source test and laboratory report.

Sources of mercury data in the AP-42 document include the following:

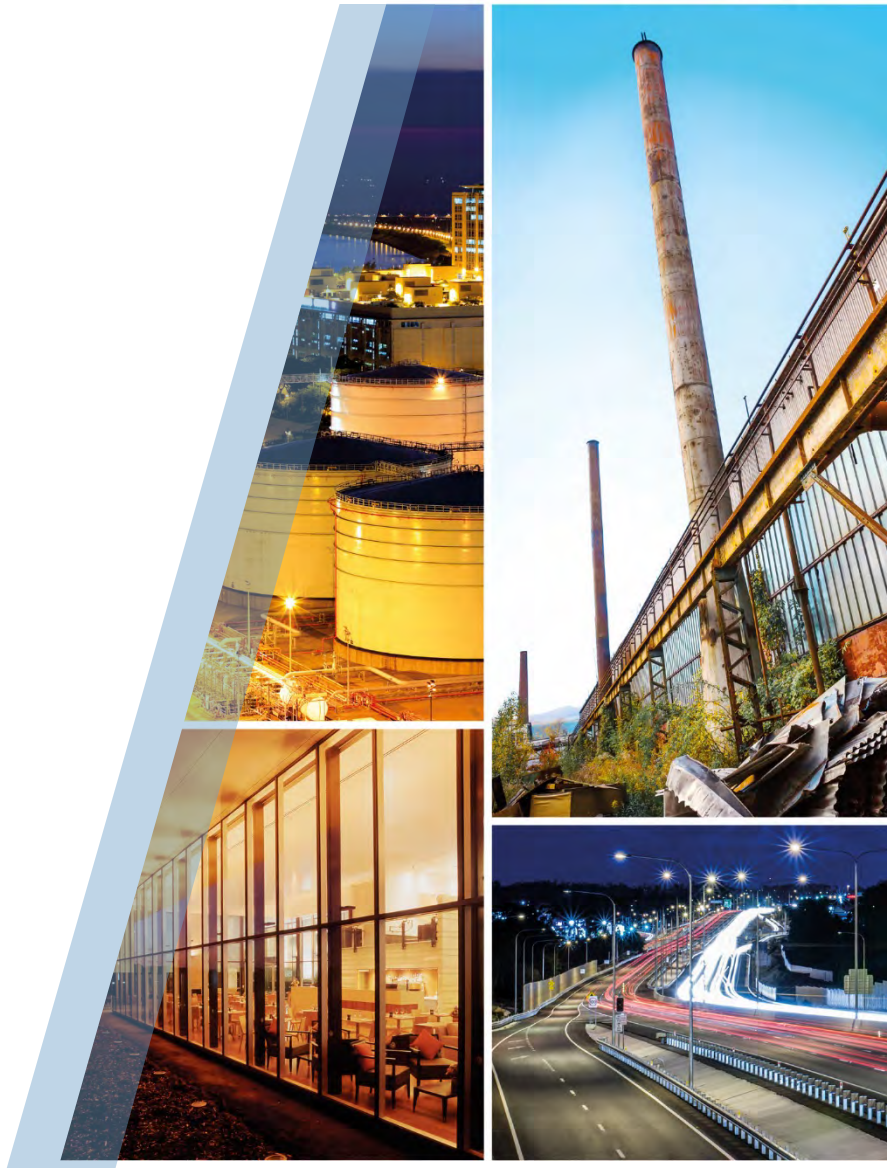
- Landfill Methane Recovery Part II, Gas Characterization, Final Report, Gas Research Institute, December 1982 (the 9 sites are summarized in this report, but not identified). Combined average concentration was 0.134 ppbv.
- Letter from J.D. Thorton, Minnesota Pollution Control Agency, to Ron Myers, EPA, February 1996 (data from 3 unidentified landfills in the "Greater Minnesota" and "Twin Cities Metropolitan Area" were obtained form this source). Reported concentrations were 0.04, 0.246, and 0.545 ppbv for the 3 sites.
- Letter and attached documents from M. Sauers, GSF Energy, to Susan Thorneloe, U.S. EPA, May 29, 1996 (this is just the submittal letter for the next item).
- Landfill Gas Particulate and Metals Concentration and Flow Rate, Mountaingate Landfill Gas recovery Plant, Horizon Air Measurement Services, prepared for GSF Energy, Inc., May 1992. Reported concentration was 0.013 ppbv.
- Determination of Landfill Gas Composition and Pollutant Emission Rates at Fresh Kills Landfill, revised Final Report, Radian Corporation, prepared for U.S. EPA. November 10, 1995. Reported concentrations ranged from 0.71 ppbv to 2.5 ppbv. The midpoint of the Fresh Kills study was 1.49 ppbv, which was used in AP-42.

Other EPA Data Sources:

In its report to Congress on mercury emissions[9], EPA indicates that concentrations of mercury in LFG can range from 7.0E-04 ppbv to 2.5 ppbv. This report cites two studies: (1) one report by ESCOR in 1982, which is actually the same Gas Research Institute report listed above and (2) a personal communication between Ron Myers of EPA and

Air Quality Modeling Protocol

Chaffee Landfill
Chaffee, New York



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1. Introduction

This document details the air dispersion modeling protocol to demonstrate that the Chaffee Landfill Facility (Facility or Site) is in compliance with the provisions of 6 NYCRR Part 212. The New York State Department of Environmental Conservation (NYSDEC) has requested that Waste Management of New York, LLC (WMNY) demonstrate compliance with 6 NYCRR Part 212 for the existing facility due to the upcoming submittal of the Title V Renewal Application for the current permit which expires on January 12, 2020.

The modeling protocol has been developed based on the following documentation:

- Policy DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212 (June 29, 2016)
- DAR-10/NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis (May 9, 2006)
- Appendix W of 40 CFR Part 51, USEPA (November 2005)
- Ambient Monitoring Guidelines for PSD, USEPA (May 1997)
- New Source Review Workshop Manual, USEPA (Draft, October 1990)

2. Facility Overview

2.1 Facility Description

WMNY owns and operates the solid waste management facility located at 10860 Olean Road in Chaffee, New York under NYSDEC Part 360, Permit #9-1462-00001/00013 (Facility or Site). The Facility accepts municipal solid waste (MSW) and other non-hazardous wastes. The landfill operations at the facility include tipping, covering, compacting, composting, solidification, landfill cell construction, hauling, leachate collection and discharge, and equipment maintenance operations. The landfill has an active LFG collection system that conveys collected LFG to on-site flares and the Renewable Energy Facility, consisting of eight internal combustion engines. The engines are operated by Waste Management Renewable Energy (WMRE) and are used to generate electricity for off-site use. The Standard Industrial Classification (SIC) for the Chaffee Landfill facility is 4953.

2.2 Land Use Classifications

The Facility is located in a predominantly rural area in the Town of Sardinia, New York.

The three nearest population centers are the Town of Sardinia (population 2,775; 2010 census), approximately 2.8 miles to the south; the Town of Yorkshire (population 3,913; 2010 census), approximately 3.8 miles to the south of southeast; and the Town of Holland (population 3,401; 2010 census), approximately 4.4 miles to the north of northwest. Land use in the vicinity of the Chaffee Landfill Facility primarily residential, agricultural, and commercial.

2.3 Topography

The topography around the Proposed Site is relatively flat. The base elevation of the Site is approximately 1,490 feet AMSL. However, the topography of the surrounding land ranges from approximately 1,430 feet AMSL to 1,525 feet AMSL.

3. Modeling Methodology

The modeling will be performed using the most recent executable versions of the USEPA AERMOD modeling system:

- AERMET, version 18081
- AERSURFACE, version 13016
- AERMAP, version 18081
- AERMOD, version 18081R
- BPIP-PRIME, version 04274

Modeling will be facilitated using the Lakes Environmental graphical user interface AERMOD View (version 9.3.0).

3.1 Modeled Compounds

WMNY will model the high toxicity air contaminant (HTAC) compound emissions from the landfill that exceed the thresholds listed in Table 2 of 6 NYCRR Part 212-2.2.

Total emission rates for the HTAC compounds to be modeled are provided in Table 5. The following HTAC compounds were included in the modeling analysis:

- Ethylene dibromide

In addition, WMNY will model non-HTAC compounds that exceeded an annual emission rate of 100 pounds per year. The following non-HTAC compounds will be included in the modeling analysis (see Table 5 for emission rates):

- 2-Propanol
- Acetone
- Butane
- Dichlorobenzene
- Dichlorodifluoromethane
- Dichlorofluoromethane
- Dichloromethane
- Dimethyl Sulfide
- Ethanol

- Ethylbenzene
- Ethylene dibromide
- Hydrogen Chloride
- Hexane
- Hydrogen Sulfide
- Methyl ethyl ketone
- Pentane
- Propane
- Toluene
- Xylene

WMNY will also model the following criteria pollutants from the flares to comply with 6 NYCRR Part 212:

- Carbon monoxide (CO)
- Oxides of Nitrogen (NOx)
- Sulfur Dioxide (SO_2)
- Particulate matter (PM)

At the request of NYSDEC, WMNY will also model the following criteria pollutants from the engines to comply with 6 NYCRR Part 200.6:

- Oxides of Nitrogen (NOx)

3.2 Facility Source Inventory

The Section provides a summary of sources to be included in the modeling evaluation. A summary of the source inventory parameters is provided in Table 6. A plan site view of all emission sources is provided as Figure 1.

3.2.1 Landfill Areas

The following landfill areas will be included in the modeling analysis:

- Original Landfill
- Western Expansion Landfill
- Valley Fill Expansion

Emissions were calculated using a maximum estimated LFG generation rate of 6,233 cubic feet per minute (cfm) which will occur when the entire landfill reaches final grade. A collection efficiency of 85 percent and a cover oxidation factor of 25 percent (referenced from 40 CFR 98, Subpart HH) were utilized in the calculations.

Concentrations for each compound in the landfill gas were based on values compiled by the Waste Industry Air Coalition (WIAC). Table 1 presents a summary of fugitive emissions from the landfill areas.

3.2.2 Landfill Gas Flares

The Facility's site is the location for one enclosed flare and one open flare, used for controlling LFG. The two flares are owned and operated by WMNY at the Chaffee Landfill (one (1) 3,300 scfm enclosed flare and one (1) 910 scfm open flare).

3.2.2.1 3,300 SCFM Enclosed Flare

The existing 3,300 cfm enclosed flare has a physical release height of 40' with a 132" diameter flare tip. Per the USEPA document "Workbook of Screening Techniques for Assessing Impacts of Toxic Air Pollutants", an effective flare release height and effect flare stack diameter can be calculated, given the design heat release rate for the flare, as described below. Further, as described in the USEPA document, an assumed stack gas exit velocity of 20 m/s and gas exit temperature of 1,273 K will be used.

The effective flare release height was calculated using the following equation:

$H_{eff} = H_s + [0.00456 \times (Q_T)^{0.478}]$

Where,

H_{eff} = effective flare release height (m)

H_s = physical flare stack height (m)

Q_T = total heat released (calories per second) assuming 55 percent radiative heat loss for methane

The effective flare stack diameter was calculated using the following equation:

$D_{eff} = (9.88 \times 10^{-4}) \times (Q_H)^{0.5}$

Where,

D_{eff} = effective flare stack diameter (m)

Q_H = net heat available (calories per second) assuming 55 percent of total heat is lost to radiation

The design heat release used in the equations above for the effective release height and stack diameter of the 3,300 cfm flare is 71.94 MMBTU/hr, which is equivalent to 9.5 million Joules per second (9,487,555 Joules per second) and 2.3 million calories per second (2,266,020 calories per second).

Table 2 presents a summary of VOC emissions from the 3,300 cfm enclosed flare. Table 4 presents a summary of criteria pollutant emissions from the 3,300 cfm enclosed flare. Criteria pollutant emissions for the enclosed flare were referenced from the Title V Modification for the Valley Fill Expansion (November 2012).

3.2.2.2 910 SCFM Open Flare

The existing 910 cfm open flare has an actual release height of 23' with an 8" diameter flare tip. As with the enclosed flare, an assumed stack gas exit velocity of 20 meters per second (m/s) and gas exit temperature of 1,273 Kelvin (K) will be used.

The design heat release used in the equations above for the effective release height and stack diameter of the 910 cfm open flares is 15 MMBTU/hr, which is equivalent to 2.0 million Joules per second (1,978,223 Joules per second) and 0.4 million calories per second (472,481 calories per second).

Table 3 presents a summary of VOC emissions from the 910 scfm open flare. Table 4 presents a summary of criteria pollutant emissions from the 910 cfm open flare.

3.2.3 Landfill Gas Engines

The Landfill Gas-to-Energy (LFGTE) Facility consists of eight (8) CAT© Model G3516 gas fired reciprocating IC engines.

The CAT© G3516 IC engine has a power generation rating of 1,148 brake horsepower. Each engine is connected to a 0.825 MW generator, with a total electrical generation capacity of 6.6 MW for the G3516 IC engines. Engine #1 at the LFGTE Facility was source tested on September 26, 2011. The source tests indicated that, at operational capacity, the G3516 engine operates at 6,331 acfm at an exhaust temperature of 837°F. Therefore, for the purposes of this protocol, all CAT© G3516 IC engines will be assumed to operate at these conditions.

3.2.4 Leachate Storage Tank

The leachate storage system consists of two above ground storage tanks within a secondary containment tank; each tank has a capacity of approximately 405,000 gallons for a total storage volume of 810,000 gallons. There are also two small underground leachate storage tanks located on the east side of the Closed Landfill (one 12,000 gallon tank and one 25,000 gallon tank); however these two horizontal tanks are considered exempt under 6 NYCRR 201-3.2(c)(26).

Emissions from the vertical storage tanks were estimated using the methodology from AP 42, Section 7.1 (Organic Liquid Storage Tanks, 11/06). The following information was used in the calculations:

- The leachate analytical data for the period of June 2014 through June 2017 was evaluated and the maximum detection value was used
- A throughput of 15 million gallons per year was utilized in the calculations.

Attachment 1 presents the calculations for the vertical leachate storage tanks.

3.2.5 Sources Not Modeled

The following emissions sources will not be included in the modeling analysis:

- Combustion sources, which include engines (these sources are not considered process operations as stated in 6 NYCRR 212 1.2(b)(18)). However, NOx emissions from the engines will be modeled only at the request of NYSDEC.
- Mobile sources (these sources are not considered process operations as stated in 6 NYCRR 212 1.2(b)(18))
- Temporary emission sources (as stated in 6 NYCRR 212 1.4(a))
- Exempt and trivial emission sources (as stated in 6 NYCRR 212 1.4(a))
- Paint Booth which is subject to 6 NYCRR Part 228-1 (as stated in 6 NYCRR 212-1.4(l), there are no A-listed contaminants in paint booth)

In addition, WMNY believes that criteria pollutants from the flares are exempt from modeling due to the following:

- 6 NYCRR Part 212-1.4 (i): process emission sources with emissions of oxides of sulfur, only with respect to oxides of sulfur emissions attributable solely to sulfur in fuel
- 6 NYCRR Part 212-1.4 (m): process emission sources with emissions of carbon monoxide or VOCs produced attributable solely to incomplete combustion of any fuel, except where material is heated, burned, combusted or otherwise chemically changed under oxygen deficient conditions by design
- 6 NYCRR Part 212-1.4 (r): process emission sources with respect to emissions of NOx produced by catalytic or thermal oxidizers used as air pollution control equipment
- The particulate matter emission rate from the exhaust of each of the flares is significantly less than 0.05 grains/dscf limit in 6 NYCRR Part 212-2.4 (b)(1)

However, WMNY has agreed to model CO, SO_2, NOx and PM from the enclosed flare and open flare.

3.3 Modeling Input Parameters

The model will be run using the "regulatory default" mode, which specified the use of the following options:

- Stack-tip downwash-reduces effective stack height when plume exit velocity is less than 1.5 times the wind speed
- Plume buoyancy induces dispersion-increases the dispersion coefficient to account for the vertical movement of the plume
- Calms processing
- Allow missing meteorological data
- Elevated terrain

Source specific input parameters will be entered into the Source Pathway of the model.

3.4 Building Downwash Analysis

Any Site structures that may impact the emission sources, with respect to influencing building downwash, will be included and considered. Direction specific building dimensions will be calculated utilizing BPIP-PRIME.

3.5 Meteorological Data

The 2014-2018 Buffalo, NY surface and profile meteorological data, as provided by the NYSDEC, will be used in the analysis. Meteorological data from Buffalo, New York was utilized as representative meteorological data for the Facility as Buffalo, New York and the Facility have similar weather patterns.

The surface and profile meteorological data will be processed using the ADJ_U* option in USEPA AERMET version 18081.

3.6 Modeled Receptors

For each pollutant, a multi-tier, uniform Cartesian grid centered on the Chaffee Landfill Facility will be established.

Distance from Facility	Receptor Node Spacing
Up to 1 km	70 m
1 km to 2 km	200 m
2 km to 10 km	500 m

A property boundary receptor grid will be established along the property boundary of the Chaffee Landfill Facility with a spacing of 20 m to capture the maximum property boundary concentration.

All receptors located within the Chaffee Landfill Facility property boundary will be removed, as the site is fenced and public access is prohibited.

The need to evaluate elevated receptors within 2 km of the Chaffee Landfill Facility, such as rooftops, balconies and similar areas with public access, will be evaluated.

3.7 Terrain Considerations

Although the topography of the region is relatively flat, the effects of terrain will be considered as part of the modeling analyses. Elevations above mean sea level corresponding to the base elevation of the Chaffee Landfill Facility will be assigned to all structures and sources modeled.

The digital terrain data will be extracted from Multi-Resolution Land Characteristics (MRLC) Consortium viewer (https://www.mrlc.gov/viewerjs/). The data is available in the World Geodetic System (WGS84) at 1/9th arc second resolution in a geoTIFF format. The geoTIFF format is converted to the USGS DEM format (30 m resolution) before processing using the AERMAP executable.

4. Conclusion

Two copies of this modeling protocol will be sent to the NYSDEC Region 9 Division of Environmental Permits for distribution to the appropriate NYSDEC personnel for technical review. Upon approval of this modeling protocol, GHD will proceed with the refined AERMOD modeling analysis.

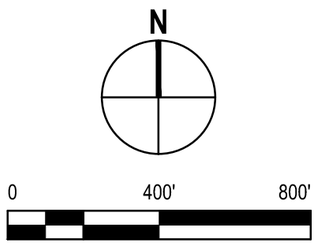

figure 1

MODELING PROTOCOL
CHAFFEE LANDFILL
WASTE MANAGEMENT
Chaffee, New York

Table 1
Landfill Fugitive VOC Emissions
Chaffee Landfill

Fugitive Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Average LFG Collected =	5,298	cfm
Fugitive Emission Estimates =	935	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent			Molecular	Median [1]	Fugitive Emissions			VOC	HAP
		VOC?	HAP?	Weight	ppmv	lb/hr	lb/yr	TPY	(TPY)	(TPY)
71-55-6	1,1,1-Trichloroethane	X	X	133.41	0.168	0.002	21.09	0.01	0.01	0.01
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.07	0.001	11.06	0.01	0.01	0.01
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.008	69.02	0.03	0.03	0.03
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.001	8.39	0.00	0.00	0.00
107-06-2	1,2-Dichloroethane	X	X	98.96	0.12	0.001	11.18	0.01	0.01	0.01
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.000	2.45	0.00	0.00	0.00
67-63-0	2-Propanol	X		60.11	7.908	0.051	447.40	0.22	0.22	
67-64-1	Acetone	X		58.08	6.126	0.038	334.88	0.17	0.17	
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.000	1.80	0.00	0.00	0.00
71-43-2	Benzene	X	X	78.11	0.972	0.008	71.46	0.04	0.04	0.04
75-27-4	Bromodichloromethane	X		163.83	0.311	0.005	47.95	0.02	0.02	
106-97-8	Butane [3]	X		58.12	5.03	0.031	275.15	0.14	0.14	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.003	22.93	0.01	0.01	0.01
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	1.01	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.001	10.35	0.01	0.01	0.01
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.003	24.05	0.01	0.01	0.01
75-45-6	Chlorodifluoromethane	X		86.47	0.355	0.003	28.89	0.01	0.01	
75-00-3	Chloroethane	X	X	64.52	0.239	0.002	14.51	0.01	0.01	0.01
67-66-3	Chloroform	X	X	119.39	0.021	0.000	2.36	0.00	0.00	0.00
74-87-3	Chloromethane	X	X	50.49	0.249	0.001	11.83	0.01	0.01	0.01
106-46-7	Dichlorobenzene	X	X	147	1.607	0.025	222.34	0.11	0.11	0.11
75-71-8	Dichlorodifluoromethane	X		120.91	1.751	0.023	199.26	0.10	0.10	
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.62	0.029	253.79	0.13	0.13	
75-09-2	Dichloromethane		X	84.94	3.395	0.031	271.41	0.14		0.14
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.045	398.17	0.20	0.20	
64-17-5	Ethanol	X		46.08	118.618	0.587	5144.49	2.57	2.57	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.009	79.29	0.04	0.04	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.077	678.34	0.34	0.34	0.34
106-93-4	Ethylene dibromide	X	X	187.88	0.046	0.001	8.13	0.00	0.00	0.00
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.005	42.28	0.02	0.02	
7647-01-0	HCl [2]		X	35.45	9.43					
110-54-3	Hexane	X	X	86.18	2.324	0.022	188.50	0.09	0.09	0.09
7783-06-4	Hydrogen Sulfide			34.076	252	0.923	8082.18	4.04		
7439-97-6	Mercury [3]		X	200.61	2.92E-04	0.000	0.06	0.00		0.00
78-93-3	Methyl ethyl ketone	X		72.11	10.557	0.082	716.50	0.36	0.36	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.75	0.008	70.70	0.04	0.04	0.04
74-93-1	Methyl mercaptan	X		48.11	1.292	0.007	58.50	0.03	0.03	
109-66-0	Pentane [3]	X		72.15	3.29	0.026	223.41	0.11	0.11	
127-18-4	Perchloroethylene	X	X	165.83	1.193	0.021	186.20	0.09	0.09	0.09
74-98-6	Propane	X		44.09	14.757	0.070	612.37	0.31	0.31	
108-88-3	Toluene	X	X	92.13	25.405	0.251	2202.92	1.10	1.10	1.10
79-01-6	Trichloroethene	X	X	131.4	0.681	0.010	84.22	0.04	0.04	0.04
75-01-4	Vinyl chloride	X	X	62.5	1.077	0.007	63.35	0.03	0.03	0.03
1330-20-7	Xylene	X	X	106.16	16.582	0.189	1656.83	0.83	0.83	0.83

Notes:

[1] Concentration of individual HAPs were referenced from Waste Industry Air Coalition (WIAC)

[2] HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".

[3] No WIAC concentration specified for compound; referenced AP-42 concentration

[4] Maximum LFG Generated and collection efficiency referenced from updated LFG model

Equations:

$$(mg/m^3) = \frac{\text{(Molecular weight) x (1 atm) x (Median ppmv)}}{\text{(298.15 K) x (0.08206 L*atm/K*mol)}}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times (\text{Fugitive LFG Emission rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = (lb/hr) \times (8{,}760\ hours/yr)$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

Table 2
Enclosed Flare VOC Emissions
Chaffee Landfill

Landfill Gas Flares - HAP Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Total LFG Collected =	5,298	cfm
LFG Collected (Enclosed Flare) =	2,398	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	Uncontrolled Emissions lb/hr	Uncontrolled Emissions lb/yr	Uncontrolled Emissions TPY	Avg. Control [5]	Controlled Emissions lb/hr	Controlled Emissions lb/yr	Controlled Emissions TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane	X	X	133.41	0.168	0.008	72.14	0.04	98.0%	0.0002	1.44	0.00	0.00	0.00
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.07	0.004	37.82	0.02	98.0%	0.0001	0.76	0.00	0.00	0.00
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.027	236.05	0.12	98.0%	0.0005	4.72	0.00	0.00	0.00
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.003	28.71	0.01	98.0%	0.0001	0.57	0.00	0.00	0.00
107-06-2	1,2-Dichloroethane	X	X	98.96	0.12	0.004	38.22	0.02	98.0%	0.0001	0.76	0.00	0.00	0.00
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.001	8.36	0.00	98.0%	0.0000	0.17	0.00	0.00	0.00
67-63-0	2-Propanol	X		60.11	7.908	0.175	1530.00	0.77	98.0%	0.0035	30.60	0.02	0.02	
67-64-1	Acetone	X		58.08	6.126	0.131	1145.20	0.57	98.0%	0.0026	22.90	0.01	0.01	
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.001	6.15	0.00	98.0%	0.0000	0.12	0.00	0.00	0.00
71-43-2	Benzene	X	X	78.11	0.972	0.028	244.37	0.12	98.0%	0.0006	4.89	0.00	0.00	0.00
75-27-4	Bromodichloromethane	X		163.83	0.311	0.019	164.00	0.08	98.0%	0.0004	3.28	0.00	0.00	
106-97-8	Butane [3]	X		58.12	5.03	0.107	940.96	0.47	98.0%	0.0021	18.82	0.01	0.01	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.009	78.41	0.04	98.0%	0.0002	1.57	0.00	0.00	0.00
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	3.47	0.00	98.0%	0.0000	0.07	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.004	35.38	0.02	98.0%	0.0001	0.71	0.00	0.00	0.00
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.009	82.24	0.04	98.0%	0.0002	1.64	0.00	0.00	0.00
75-45-6	Chlorodifluoromethane	X		86.47	0.355	0.011	98.80	0.05	98.0%	0.0002	1.98	0.00	0.00	
75-00-3	Chloroethane	X	X	64.52	0.239	0.006	49.63	0.02	98.0%	0.0001	0.99	0.00	0.00	0.00
67-66-3	Chloroform	X	X	119.39	0.021	0.001	8.07	0.00	98.0%	0.0000	0.16	0.00	0.00	0.00
74-87-3	Chloromethane	X	X	50.49	0.249	0.005	40.47	0.02	98.0%	0.0001	0.81	0.00	0.00	0.00
106-46-7	Dichlorobenzene	X	X	147	1.607	0.087	760.35	0.38	98.0%	0.0017	15.21	0.01	0.01	0.01
75-71-8	Dichlorodifluoromethane	X		120.91	1.751	0.078	681.44	0.34	98.0%	0.0016	13.63	0.01	0.01	
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.62	0.099	867.92	0.43	98.0%	0.0020	17.36	0.01	0.01	
75-09-2	Dichloromethane		X	84.94	3.395	0.106	928.18	0.46	98.0%	0.0021	18.56	0.01		0.01
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.155	1361.64	0.68	98.0%	0.0031	27.23	0.01	0.01	
64-17-5	Ethanol	X		46.08	118.618	2.008	17593.08	8.80	98.0%	0.0402	351.86	0.18	0.18	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.031	271.17	0.14	98.0%	0.0006	5.42	0.00	0.00	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.265	2319.77	1.16	98.0%	0.0053	46.40	0.02	0.02	0.02
106-93-4	Ethylene dibromide	X	X	187.88	0.046	0.003	27.82	0.01	98.0%	0.0001	0.56	0.00	0.00	0.00
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.017	144.59	0.07	98.0%	0.0003	2.89	0.00	0.00	
7647-01-0	HCl [2]		X	35.45	9.43	0.123	1075.99	0.54	0.0%	0.1228	1075.99	0.54		0.54
110-54-3	Hexane	X	X	86.18	2.324	0.074	644.65	0.32	98.0%	0.0015	12.89	0.01	0.01	0.01
7783-06-4	Hydrogen Sulfide			34.076	252	3.155	27639.35	13.82	98.0%	0.0631	552.79	0.28		
7439-97-6	Mercury [3]		X	200.61	2.92E-04	0.000	0.19	0.00	0.0%	0.0000	0.19	0.00		0.00
78-93-3	Methyl ethyl ketone	X		72.11	10.557	0.280	2450.27	1.23	98.0%	0.0056	49.01	0.02	0.02	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.75	0.028	241.79	0.12	98.0%	0.0006	4.84	0.00	0.00	0.00
74-93-1	Methyl mercaptan	X		48.11	1.292	0.023	200.07	0.10	98.0%	0.0005	4.00	0.00	0.00	
109-66-0	Pentane [3]	X		72.15	3.29	0.087	764.03	0.38	98.0%	0.0017	15.28	0.01	0.01	
127-18-4	Perchloroethylene	X	X	165.83	1.193	0.073	636.77	0.32	98.0%	0.0015	12.74	0.01	0.01	0.01
74-98-6	Propane	X		44.09	14.757	0.239	2094.19	1.05	98.0%	0.0048	41.88	0.02	0.02	
108-88-3	Toluene	X	X	92.13	25.405	0.860	7533.54	3.77	98.0%	0.0172	150.67	0.08	0.08	0.08
79-01-6	Trichloroethene	X	X	131.4	0.681	0.033	288.02	0.14	98.0%	0.0007	5.76	0.00	0.00	0.00
75-01-4	Vinyl chloride	X	X	62.5	1.077	0.025	216.66	0.11	98.0%	0.0005	4.33	0.00	0.00	0.00
1330-20-7	Xylene	X	X	106.16	16.582	0.647	5666.00	2.83	98.0%	0.0129	113.32	0.06	0.06	0.06

Notes:

[1] Concentration of individual HAPs were referenced from Waste Industry Air Coalition (WIAC)

[2] HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".

[3] No WIAC concentration specified for compound; referenced AP-42 concentration

[4] Maximum LFG Generated and collection efficiency referenced from updated LFG model

[5] Control efficiency of 98% applied for enclosed flare

Equations:

$$(mg/m^3) = \frac{\text{(Molecular weight) x (1 atm) x (Median ppmv)}}{\text{(298.15 K) x (0.08206 L*atm/K*mol)}}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times \text{(Fugitive LFG Emission rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = \text{(lb/hr) x (8,760 hours/yr)}$$

$$(TPY) = \frac{(lb/yr)}{\text{(2,000 lb/ton)}}$$

(Controlled Emissions) = (Uncontrolled Emissions) x (100% - Average Control [%])

Table 3
Open Flare VOC Emissions
Chaffee Landfill

Landfill Gas Flares - HAP Emission Estimates

Average LFG Generated [4] =	6,233	cfm
Average LFG Collection Efficiency [4] =	85%	
Total LFG Collected =	5,298	cfm
LFG Collected (Open Flare) =	500	cfm
Hours of Operation =	8760	

CAS #	LFG Constituent	VOC?	HAP?	Molecular Weight	Median[1] ppmv	Uncontrolled Emissions lb/hr	Uncontrolled Emissions lb/yr	Uncontrolled Emissions TPY	Avg. Control [5]	Controlled Emissions lb/hr	Controlled Emissions lb/yr	Controlled Emissions TPY	VOC (TPY)	HAP (TPY)
71-55-6	1,1,1-Trichloroethane	X	X	133.41	0.168	0.002	15.04	0.01	98.0%	0.0000	0.30	0.00	0.00	0.00
79-34-5	1,1,2,2-Tetrachloroethane	X	X	167.85	0.07	0.001	7.89	0.00	98.0%	0.0000	0.16	0.00	0.00	0.00
75-34-3	1,1-Dichloroethane	X	X	98.97	0.741	0.006	49.22	0.02	98.0%	0.0001	0.98	0.00	0.00	0.00
75-35-4	1,1-Dichloroethene	X	X	96.94	0.092	0.001	5.99	0.00	98.0%	0.0000	0.12	0.00	0.00	0.00
107-06-2	1,2-Dichloroethane	X	X	98.96	0.12	0.001	7.97	0.00	98.0%	0.0000	0.16	0.00	0.00	0.00
78-87-5	1,2-Dichloropropane	X	X	112.99	0.023	0.000	1.74	0.00	98.0%	0.0000	0.03	0.00	0.00	0.00
67-63-0	2-Propanol	X		60.11	7.908	0.036	319.02	0.16	98.0%	0.0007	6.38	0.00	0.00	
67-64-1	Acetone	X		58.08	6.126	0.027	238.78	0.12	98.0%	0.0005	4.78	0.00	0.00	
107-13-1	Acrylonitrile	X	X	53.06	0.036	0.000	1.28	0.00	98.0%	0.0000	0.03	0.00	0.00	0.00
71-43-2	Benzene	X	X	78.11	0.972	0.006	50.95	0.03	98.0%	0.0001	1.02	0.00	0.00	0.00
75-27-4	Bromodichloromethane	X		163.83	0.311	0.004	34.19	0.02	98.0%	0.0001	0.68	0.00	0.00	
106-97-8	Butane [3]	X		58.12	5.03	0.022	196.20	0.10	98.0%	0.0004	3.92	0.00	0.00	
75-15-0	Carbon disulfide	X	X	76.13	0.320	0.002	16.35	0.01	98.0%	0.0000	0.33	0.00	0.00	0.00
56-23-5	Carbon tetrachloride	X	X	153.84	0.007	0.000	0.72	0.00	98.0%	0.0000	0.01	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	X	X	60.07	0.183	0.001	7.38	0.00	98.0%	0.0000	0.15	0.00	0.00	0.00
108-90-7	Chlorobenzene	X	X	112.56	0.227	0.002	17.15	0.01	98.0%	0.0000	0.34	0.00	0.00	0.00
75-45-6	Chlorodifluoromethane	X		86.47	0.355	0.002	20.60	0.01	98.0%	0.0000	0.41	0.00	0.00	
75-00-3	Chloroethane	X	X	64.52	0.239	0.001	10.35	0.01	98.0%	0.0000	0.21	0.00	0.00	0.00
67-66-3	Chloroform	X	X	119.39	0.021	0.000	1.68	0.00	98.0%	0.0000	0.03	0.00	0.00	0.00
74-87-3	Chloromethane	X	X	50.49	0.249	0.001	8.44	0.00	98.0%	0.0000	0.17	0.00	0.00	0.00
106-46-7	Dichlorobenzene	X	X	147	1.607	0.018	158.54	0.08	98.0%	0.0004	3.17	0.00	0.00	0.00
75-71-8	Dichlorodifluoromethane	X		120.91	1.751	0.016	142.08	0.07	98.0%	0.0003	2.84	0.00	0.00	
75-43-4	Dichlorofluoromethane [3]	X		102.92	2.62	0.021	180.97	0.09	98.0%	0.0004	3.62	0.00	0.00	
75-09-2	Dichloromethane		X	84.94	3.395	0.022	193.53	0.10	98.0%	0.0004	3.87	0.00		0.00
75-18-3	Dimethyl Sulfide	X		62.13	6.809	0.032	283.91	0.14	98.0%	0.0006	5.68	0.00	0.00	
64-17-5	Ethanol	X		46.08	118.618	0.419	3668.28	1.83	98.0%	0.0084	73.37	0.04	0.04	
75-08-1	Ethyl mercaptan	X		62.13	1.356	0.006	56.54	0.03	98.0%	0.0001	1.13	0.00	0.00	
100-41-4	Ethylbenzene	X	X	106.16	6.789	0.055	483.69	0.24	98.0%	0.0011	9.67	0.00	0.00	0.00
106-93-4	Ethylene dibromide	X	X	187.88	0.046	0.001	5.80	0.00	98.0%	0.0000	0.12	0.00	0.00	0.00
75-69-4	Fluorotrichloromethane	X		137.38	0.327	0.003	30.15	0.02	98.0%	0.0001	0.60	0.00	0.00	
7647-01-0	HCl [2]		X	35.45	9.43	0.026	224.35	0.11	0.0%	0.0256	224.35	0.11		0.11
110-54-3	Hexane	X	X	86.18	2.324	0.015	134.41	0.07	98.0%	0.0003	2.69	0.00	0.00	0.00
7783-06-4	Hydrogen Sulfide			34.076	252	0.658	5763.00	2.88	98.0%	0.0132	115.26	0.06		
7439-97-6	Mercury [3]		X	200.61	2.92E-04	0.000	0.04	0.00	0.0%	0.0000	0.04	0.00		0.00
78-93-3	Methyl ethyl ketone	X		72.11	10.557	0.058	510.90	0.26	98.0%	0.0012	10.22	0.01	0.01	
108-10-1	Methyl isobutyl ketone	X	X	100.16	0.75	0.006	50.41	0.03	98.0%	0.0001	1.01	0.00	0.00	0.00
74-93-1	Methyl mercaptan	X		48.11	1.292	0.005	41.72	0.02	98.0%	0.0001	0.83	0.00	0.00	
109-66-0	Pentane [3]	X		72.15	3.29	0.018	159.31	0.08	98.0%	0.0004	3.19	0.00	0.00	
127-18-4	Perchloroethylene	X	X	165.83	1.193	0.015	132.77	0.07	98.0%	0.0003	2.66	0.00	0.00	0.00
74-98-6	Propane	X		44.09	14.757	0.050	436.65	0.22	98.0%	0.0010	8.73	0.00	0.00	
108-88-3	Toluene	X	X	92.13	25.405	0.179	1570.80	0.79	98.0%	0.0036	31.42	0.02	0.02	0.02
79-01-6	Trichloroethene	X	X	131.4	0.681	0.007	60.05	0.03	98.0%	0.0001	1.20	0.00	0.00	0.00
75-01-4	Vinyl chloride	X	X	62.5	1.077	0.005	45.17	0.02	98.0%	0.0001	0.90	0.00	0.00	0.00
1330-20-7	Xylene	X	X	106.16	16.582	0.135	1181.40	0.59	98.0%	0.0027	23.63	0.01	0.01	0.01

Notes:

[1] Concentration of individual HAPs were referenced from Waste Industry Air Coalition (WIAC)

[2] HCL Concentration was taken from "Measurement of Toxic Emissions from Landfill: History and Current Developments".

[3] No WIAC concentration specified for compound; referenced AP-42 concentration

[4] Maximum LFG Generated and collection efficiency referenced from updated LFG model

[5] Control efficiency of 98% applied for open flare

Equations:

$$(mg/m^3) = \frac{\text{(Molecular weight) x (1 atm) x (Median ppmv)}}{\text{(298.15 K) x (0.08206 L*atm/K*mol)}}$$

$$(lb/hr) = \frac{(mg/m^3) \times (2.205 \times 10^{-6}\ [lb/mg]) \times \text{(Fugitive LFG Emission rate } [ft^3/min]) \times (60\ min/hr)}{(35.3147\ ft^3/m^3)}$$

$$(lb/yr) = \text{(lb/hr) x (8,760 hours/yr)}$$

$$(TPY) = \frac{(lb/yr)}{(2{,}000\ lb/ton)}$$

(Controlled Emissions) = (Uncontrolled Emissions) x (100% - Average Control [%])

Table 4

Summary of Criteria Pollutant Emission Rates
Chaffee Landfill
Chaffee, New York

CAS #	Compound	Enclosed Flare [1] TPY	Open Flare [1] TPY	Engines [1] TPY	Totals TPY	Totals lb/year	Totals lb/hr	1-hour standard (ug/m^3)	8-hour standard (ug/m^3)	24-hour standard (µg/m3)	Annual Standard (ug/m^3)
630-08-0	Carbon Monoxide	63.02	13.14	---	76.16	152,322	17.39	40,000	10,000	---	---
---	Oxides of Nitrogen	18.91	3.94	119.72	142.57	285,138	32.55	---	---	---	---
10102-44-0	Nitrogen Dioxide (annual) [2]	14.18	2.96	89.79	106.93	213,854	24.41	---	---	---	100
10102-44-0	Nitrogen Dioxide (1-hour) [2]	15.12	3.15	95.78	114.06	228,110	26.04	188	---	---	---
	Sulfur Dioxide	25.96	5.41	---	31.37	62,742	7.16	196	---	---	80
	PM-10	5.36	1.12	---	6.47	12,947	1.48	---	---	150	---
	PM-2.5	5.36	1.12	---	6.47	12,947	1.48	---	---	35	12

Notes:

[1] Emissions referenced from November 2012 Title V Modification - Valley Fill Landifll Expansion

[2] Tier II for NOx, per USEPA guidance

TABLE 4A
MODELING PROTOCOL
CHAFFEE LANDFILL
CHAFFEE, NY

SUMMARY OF LFG FLARE EMISSIONS

Total LFG Generated [A] =	6,233	cfm
Collection Efficiency =	85%	
Total LFG Combusted =	5,298	cfm
LFG to Flares =	2,898	cfm

Flare Type	Operating Conditions			Estimated Flare Emissions (TPY)				
	CFM	MMSCF	Hours	PM_{10}	NMOC	CO	NO_X	SO_2
Enclosed 3,300 CFM	2,398	1,260.4	8,760	5.4	1.6	63.0	18.9	26.0
Open 910 CFM	500	262.8	8,760	1.1	0.3	13.1	3.9	5.4
Total Emissions (TPY)				6.5	2.0	76.2	22.8	31.4
Total Emissions (lb/yr)				12,947.3	3,985.9	152,321.5	45,696.5	62,741.8

Flare Emission Factors

	Pounds per Million Standard Cubic Feet				
	PM	NMOC	CO	NO_X	SO_2
Enclosed Flare 3,300 CFM	8.50	2.62	100.00	30.00	41.19
Open Flare 910 CFM	8.50	2.62	110.00	26.00	41.19

Notes: [A] Based on amount of LFG generated in peak year of LFG production in existing and future landfill areas

PM 17 lb/10^6 dscf methane per AP-42, section 2.4 (11/98)

NMOC Based on 595 ppm per AP-42, section 2.4 (11/98), and 98% destruction efficiency

CO Emission rates (in units fo lb/MMBtu) referenced from previous permit applications

NO_X Emission rates (in units fo lb/MMBtu) referenced from previous permit applications

SO_2 252 ppm TRS concentration and 0% destruction efficiency, per AP-42, section 2.4 (11/98)

Heating value	500	Btu/scf
DE (of NMOC)	98.0	%

Emission Factor Development

3,300 CFM Enclosed Flare

CO:	0.20	lb/MMBtu
NOx:	0.06	lb/MMBtu

910 CFM Open Flare

CO:	0.22	lb/MMBtu
NOx:	0.052	lb/MMBtu

LFG Data:

NMOC:	595	ppm
TRS:	252	ppm
CH_4:	50.0%	of total LFG
VOC:	39.0%	of NMOC

TABLE 4B
MODELING PROTOCOL
CHAFFEE LANDFILL
CHAFFEE, NY

SUMMARY OF CATERPILLAR 3516 ENGINE EMISSIONS

Total Number of 3516 Engines = 8
LFG to Renewable Energy Facility = 2,400 cfm

	Operating Hours	Estimated Potential 3516 Engine Emissions (TPY)				
		PM_{10}	NMOC	CO	NO_X	SO_2
Engine #1	8,760	0.1	0.2	30.0	15.0	3.2
Engine #2	8,760	0.1	0.2	30.0	15.0	3.2
Engine #3	8,760	0.1	0.2	30.0	15.0	3.2
Engine #4	8,760	0.1	0.2	30.0	15.0	3.2
Engine #5	8,760	0.1	0.2	30.0	15.0	3.2
Engine #6	8,760	0.1	0.2	30.0	15.0	3.2
Engine #7	8,760	0.1	0.2	30.0	15.0	3.2
Engine #8	8,760	0.1	0.2	30.0	15.0	3.2
Total Emissions (TPY)		0.9	1.7	240.3	119.7	26.0
Total Emissions (lb/yr)		1,802.1	3,300.9	480,656.8	239,441.6	51,959.2

3516 Engine Emission Factors

	Pounds per Hour of Operation				
	PM	NMOC	CO	NO_X	SO_2
3516 Engines	0.03	0.05	6.86	3.42	0.74

Notes:

PM Based on 0.01 grains/dscf LFG (1 grain = 1.43 x 10^{-4} lbs)

NMOC Based on 595 ppm per AP-42, section 2.4 (11/98), and 98% destruction efficiency

CO Based on February 2006 State Facility Application, prepared by McMahon & Mann

NO_X Based on February 2006 State Facility Application, prepared by McMahon & Mann

SO_2 Based on conservative TRS concentration of 252 ppm

Heating value	500	Btu/scf
DE (of NMOC)	98.0	%
Engine Power	1,148	Bhp

Emission Factor Development

Caterpillar 3516 Engines

- referenced from *Chaffee Landfill PPP State Facility Permit Application* , prepared February 2006:

CO:	2.71	g/bhp-hr
NOx:	1.35	g/bhp-hr

LFG Data:

LFG combusted /engine:	300	cfm
NMOC:	595	ppm
TRS:	252	ppm
CH_4:	50.0%	of total LFG
VOC:	39.0%	of NMOC

Table 5

Summary of Landfill Source VOC Emission Rates
Chaffee Landfill
Chaffee, New York

CAS #	Compound	Landfill Emissions	Enclosed Flare	Open Flare	AG Leachate Tank 1	AG Leachate Tank 2	Totals	Totals	Part 212 MEL	Totals	SGC	AGC	Compound Modeled?	Reason
		lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/hr	lb/yr	(lb/year)	TPY	(ug/m^3)	(ug/m^3)	(Y/N)	
71-55-6	1,1,1-Trichloroethane	21.09	1.44	0.30	---	---	0.0026	22.8	---	0.01	9000.0	5000.0	No	Not an HTAC & less than 100 lb/year
79-34-5	1,1,2,2-Tetrachloroethane [2]	11.06	0.76	0.16	---	---	0.0014	12.0	1000	0.01	---	16.0	No	HTAC, but emissions are less than Part 212 limit
75-34-3	1,1-Dichloroethane	69.02	4.72	0.98	---	---	0.0085	74.7	---	0.04	---	0.63	No	Not an HTAC & less than 100 lb/year
75-35-4	1,1-Dichloroethene	8.39	0.57	0.12	---	---	0.0010	9.1	---	0.00	---	200.0	No	Not an HTAC & less than 100 lb/year
107-06-2	1,2-Dichloroethane	11.18	0.76	0.16	---	---	0.0014	12.1	100	0.01	---	0.038	No	HTAC, but emissions are less than Part 212 limit
78-87-5	1,2-Dichloropropane	2.45	0.17	0.03	---	---	0.0003	2.6	1000	0.00	---	4.0	No	HTAC, but emissions are less than Part 212 limit
67-63-0	2-Propanol	447.40	30.60	6.38	---	---	0.0553	484.4	---	0.24	98000.0	7000.0	Yes	Not an HTAC but greater than 100 lb/year
67-64-1	Acetone	334.88	22.90	4.78	0.06	0.06	0.0414	362.7	---	0.18	180000.0	30000.0	Yes	Not an HTAC but greater than 100 lb/year
107-13-1	Acrylonitrile [2]	1.80	0.12	0.03	---	---	0.0002	1.9	25	0.00	---	0.015	No	HTAC, but emissions are less than Part 212 limit
71-43-2	Benzene	71.46	4.89	1.02	---	---	0.0088	77.4	100	0.04	1300.0	0.13	No	HTAC, but emissions are less than Part 212 limit
75-27-4	Bromodichloromethane [2]	47.95	3.28	0.68	---	---	0.0059	51.9	---	0.03	---	70.0	No	Not an HTAC & less than 100 lb/year
106-97-8	Butane	275.15	18.82	3.92	---	---	0.0340	297.9	---	0.15	238000.0	---	Yes	Not an HTAC but greater than 100 lb/year
75-15-0	Carbon disulfide	22.93	1.57	0.33	---	---	0.0028	24.8	---	0.01	6200.0	700.0	No	Not an HTAC & less than 100 lb/year
56-23-5	Carbon tetrachloride [2]	1.01	0.07	0.01	---	---	0.0001	1.1	100	0.00	1900.0	0.17	No	HTAC, but emissions are less than Part 212 limit
463-58-1	Carbonyl sulfide	10.35	0.71	0.15	---	---	0.0013	11.2	---	0.01	250.0	28.0	No	Not an HTAC & less than 100 lb/year
108-90-7	Chlorobenzene	24.05	1.64	0.34	---	---	0.0030	26.0	---	0.01	---	60.0	No	Not an HTAC & less than 100 lb/year
75-45-6	Chlorodifluoromethane	28.89	1.98	0.41	---	---	0.0036	31.3	---	0.02	---	50000.0	No	Not an HTAC & less than 100 lb/year
75-00-3	Chloroethane	14.51	0.99	0.21	---	---	0.0018	15.7	---	0.01	---	10000.0	No	Not an HTAC & less than 100 lb/year
67-66-3	Chloroform [2]	2.36	0.16	0.03	---	---	0.0003	2.6	100	0.00	150.0	14.7	No	HTAC, but emissions are less than Part 212 limit
74-87-3	Chloromethane	11.83	0.81	0.17	---	---	0.0015	12.8	---	0.01	22000.0	90.0	No	Not an HTAC & less than 100 lb/year
106-46-7	Dichlorobenzene	222.34	15.21	3.17	---	---	0.0275	240.7	---	0.12	---	0.09	Yes	Not an HTAC but greater than 100 lb/year
75-71-8	Dichlorodifluoromethane	199.26	13.63	2.84	---	---	0.0246	215.7	---	0.11	---	12000.0	Yes	Not an HTAC but greater than 100 lb/year
75-43-4	Dichlorofluoromethane [5]	253.79	17.36	3.62	---	---	0.0314	274.8	---	0.14	---	100.0	Yes	Not an HTAC but greater than 100 lb/year
75-09-2	Dichloromethane	271.41	18.56	3.87	---	---	0.0335	293.8	---	0.15	14000.0	60.0	Yes	Not an HTAC but greater than 100 lb/year
75-18-3	Dimethyl Sulfide	398.17	27.23	5.68	---	---	0.0492	431.1	---	0.22	14.0	4.8	Yes	Not an HTAC but greater than 100 lb/year
64-17-5	Ethanol	5,144.49	351.86	73.37	---	---	0.6358	5,569.7	---	2.78	---	45000.0	Yes	Not an HTAC but greater than 100 lb/year
75-08-1	Ethyl mercaptan	79.29	5.42	1.13	---	---	0.0098	85.8	---	0.04	---	3.1	No	Not an HTAC & less than 100 lb/year
100-41-4	Ethylbenzene	678.34	46.40	9.67	---	---	0.0838	734.4	---	0.37	---	1000.0	Yes	Not an HTAC but greater than 100 lb/year
106-93-4	Ethylene dibromide [2]	8.13	0.56	0.12	---	---	0.0010	8.8	5	0.00	---	0.0017	Yes	HTAC & Emissions are greater than Part 212 limit
75-69-4	Fluorotrichloromethane	42.28	2.89	0.60	---	---	0.0052	45.8	---	0.02	---	5000.0	No	Not an HTAC & less than 100 lb/year
7647-01-0	HCl	0.00	1075.99	224.35	---	---	0.1484	1,300.3	---	0.65	---	20.0	Yes	Not an HTAC but greater than 100 lb/year
110-54-3	Hexane	188.50	12.89	2.69	---	---	0.0233	204.1	---	0.10	---	700.0	Yes	Not an HTAC but greater than 100 lb/year
7783-06-4	Hydrogen Sulfide	8,082.18	552.79	115.26	---	---	0.9989	8,750.2	---	4.38	14.0	2.0	Yes	Not an HTAC but greater than 100 lb/year
7439-97-6	Mercury [3]	0.06	0.19	0.04	---	---	0.0000	0.3	5	0.00	0.6	0.3	No	HTAC, but emissions are less than Part 212 limit
78-93-3	Methyl ethyl ketone	716.50	49.01	10.22	0.02	0.02	0.0886	775.8	---	0.39	13000.0	5000.0	Yes	Not an HTAC but greater than 100 lb/year
108-10-1	Methyl isobutyl ketone	70.70	4.84	1.01	---	---	0.0087	76.5	---	0.04	31000.0	3000.0	No	Not an HTAC & less than 100 lb/year
74-93-1	Methyl mercaptan	58.50	4.00	0.83	---	---	0.0072	63.3	---	0.03	14.0	2.3	No	Not an HTAC & less than 100 lb/year
109-66-0	Pentane	223.41	15.28	3.19	---	---	0.0276	241.9	---	0.12	---	42000.0	Yes	Not an HTAC but greater than 100 lb/year
127-18-4	Perchloroethylene	186.20	12.74	2.66	---	---	0.0230	201.6	1000	0.10	300.0	4.0	No	HTAC, but emissions are less than Part 212 limit
74-98-6	Propane	612.37	41.88	8.73	---	---	0.0757	663.0	---	0.33	---	43000.0	Yes	Not an HTAC but greater than 100 lb/year
108-88-3	Toluene	2,202.92	150.67	31.42	---	---	0.2723	2,385.0	---	1.19	37000.0	5000.0	Yes	Not an HTAC but greater than 100 lb/year
79-01-6	Trichloroethene	84.22	5.76	1.20	---	---	0.0104	91.2	---	0.05	14000.0	0.2	No	HTAC, but emissions are less than Part 212 limit
75-01-4	Vinyl chloride	63.35	4.33	0.90	---	---	0.0078	68.6	100	0.03	180000.0	0.110	No	HTAC, but emissions are less than Part 212 limit
1330-20-7	Xylene	1,656.83	113.32	23.63	---	---	0.2048	1,793.8	---	0.90	22000.0	100.0	Yes	Not an HTAC but greater than 100 lb/year
	Tetrahydrofuran	---	---	---	0.01	0.01	3.1284E-06	0.03	---	0.00	30000.0	350.0	No	Not an HTAC & less than 100 lb/year
108-39-4	3-Methylphenol	---	---	---	0.00001	0.00001	2.0832E-09	0.00002	---	0.00	---	180.0	No	Not an HTAC & less than 100 lb/year
106-44-5	4-Methylphenol	---	---	---	0.000004	0.000004	8.4766E-10	0.00001	---	0.00	---	18.0	No	Not an HTAC & less than 100 lb/year
108-95-2	Phenol	---	---	---	0.00001	0.00001	1.9344E-09	0.00002	---	0.00	5800.0	20.0	No	Not an HTAC & less than 100 lb/year

Table 6

Summary of Modeling Input Parameters
Chaffee Landfill
Chaffee, New York

Source ID	Description	UTM Coordinates, NAD83		Release Height (m)	Gas Exit Temperature (K)	Gas Exit Velocity (m/s)	Inside Diameter (m)
		X (m)	Y (m)				
EFLARE01	Enclosed Flare [1]	705,725.77	4,717,314.93	17.17	1,273.00	20.00	1.49
OFLARE01	Open Flare [1]	705,737.80	4,717,334.36	9.36	1,273.00	20.00	0.68
ENG01-ENG08	Engines (8 total, per engine)	various	various	8.84	720.40	58.94	0.25
LF	Landfill	various	various	37.48	Ambient	---	---
LTANK01	Leachate Tank	704,773.02	4,717,028.24	7.01	Ambient	0.001	0.10
LTANK02	Leachate Tank	704,793.21	4,717,021.90	7.01	Ambient	0.001	0.10

Notes:

(1) Calculated effective flare parameters

Attachment 1
Vertical Leachate Storage Tank Calculations

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification	
User Identification	AG Leachate Tank 1
City	Chaffee
State	New York
Company	WMNY
Type of Tank	Vertical Fixed Roof Tank
Description	Leachate Storage

Tank Dimensions	
Shell Length (ft)	23.00
Diameter (ft)	56.00
Liquid Height (ft)	23.00
Avg. Liquid Height (ft)	11.50
Volume (gal)	405,366.00
Turnovers	18.50
Net Throughput (gal/yr)	7,500,000
Is tank heated (y/n)	N

Paint Characteristics	
Shell Color/Shade	White/White
Shell Condition	Good
Roof Color/Shade	White/White
Roof Condition	Good

Roof Characteristics	
Type	Cone
Height (ft)	0.00
Slope (ft/ft) Cone Roof)	0.00

Breather Vent Settings	
Vacuum Settings (psig)	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Buffalo, New York (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Vertical Fixed Roof Tank
Chaffee, New York

CALCULATED VALUES

Mixture/Component	Month	Daily Liquid Surface Temperature (deg F) Avg.	Min	Max	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min	Max	Vapor Mol Weight g/mol	Liquid Mass Fraction	Vapor Mass Fraction	Mol Weight g/mol	Basis for Vapor Pressure Calculations	Table 7.1-3 A	B	C	CAS Number	Detected Compounds MW_i (g/mol)	Leachate Concentration [1] (ug/L)	C_i	C_i / MW_i	X_i	$M_V = M_i [(P X_i)/P_{VA}]$
Leachate	All	49.26	-	-	47.70	0.3384	-	-	18.0008	-	-	18.00	-	-	-	-			-	-	-	-	18.0008
2-Butanone						0.7848	-	-	72.1100	0.0000	0.0000	72.11		6.8645	1150.207	209.246		72.11	7100	0.0000071	0.000000	0.000002	0.0003
Acetone						2.2051	-	-	58.0800	0.0000	0.0000	58.08		7.117	1210.595	229.664		58.08	6000	0.000006	0.000000	0.000002	0.0007
Tetrahydrofuran						1.5255	-	-	72.1100	0.0000	0.0000	72.11		6.995	1202.29	226.25		72.11	2100	0.0000021	0.000000	0.000001	0.0002
3-Methylphenol						0.0008	-	-	108.1400	0.0000	0.0000	108.14		7.508	1856.36	199.07		108.14	2700	0.0000027	0.000000	0.000000	0.0000
4-Methylphenol						0.0003	-	-	108.1400	0.0000	0.0000	108.14		7.035	1511.08	161.85		108.14	2700	0.0000027	0.000000	0.000000	0.0000
Phenol						0.0016	-	-	94.1100	0.0000	0.0000	94.11		7.1330	1516.790	174.95		94.11	1250	0.00000125	0.000000	0.000000	0.0000
Water						0.3384	-	-	18.0000	1.0000	0.9999	18.00	0.3384 psia at 68 deg F via engineeringtoolbox.com	-	-	-		18.00	999978150	0.99997815	0.055554	0.999995	17.9997
									check:	1.0000	1.0000										check:	1.00000	

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Vertical Fixed Roof Tank
Chaffee, New York

Annual Emission Calculations	FROM TANKS DETAILED PDF	AP-42 EQUATIONS	CALCULATIONS				
Standing Losses (lb)		$L_S = 365\ V_V\ W_V\ K_E\ K_S$	L_S =	359.7439	lbs		
V_V = Vapor Space Volume (cu ft)			V_V =	37785.1768	cu ft		
W_V = Vapor Density (lb/cu ft)			W_V =	0.0011	lb / cu ft		
K_E = Vapor Space Expansion Factor			K_E =	0.0298			
K_S = Vented Vapor Saturation Factor			K_S =	0.7848			
Tank Vapor Space Volume							
V_V = Vapor Space Volume		$V_V = [(Pi/4)\ D^2]\ H_{VO}$	V_V =	37785.1768	cu ft		
D = Tank Diameter							
H_{VO} = Vapor Space Outage		$H_{VO} = H_S - H_L + H_{RO}$	H_{VO} =	15.3411	ft	$H_{VO} = H_E/2$ for horizontal tank	
Hs = Tank Shell Length							
H_L = Average Liquid Height							
Roof Outage							
Roof Outage (Cone Roof)							
Roof Outage		$H_{RO} = 1/3\ H_R$	H_{RO} =	3.8411	ft		
Roof Height							
S_R = Roof Slope		$H_R = S_R * R_S$	H_R =	0.5000	ft		
R_S = Shell Radius							
Vapor Density							
W_V = Vapor Density		$W_V = M_v\ P_{VA} / R\ T_{LA}$	W_V =	0.0011	lb / cu ft		0 deg F = 459.67 R
M_V = Vapor Molecular Weight			M_V =	18.0008	lb/lb-mole		
Vapor Pressure at Daily Average Liquid Surface Temperature							
T_{LA} = Daily Avg. Liquid Surface Temp		$T_{LA} = 0.44\ T_{AA} + 0.56\ T_B + 0.0079 * alpha * I$	T_{LA} =	508.9255	R =	9.59	deg C
T_{AA} = Daily Average Ambient Temp		$T_{AA} = T_{AX} + T_{AN} / 2$	T_{AA} =	47.6792	deg F =	507.35	R
Ideal Gas Constant R				10.7310			
T_B = Liquid Bulk Temperature		$T_B = T_{AA} + 6\ alpha - 1$	T_B =	507.3692	R		
Tank Paint Solar Absorptance (Shell)				0.17			As per Table 7.1-6: White/Good = .17
Tank Paint Solar Absorptance (Roof)				0.17			
I = Daily Total Solar Insulation Factor				1,165.412	Btu/sqft d		I_{AVG} = 1,165 Btu/ft^2-d as per sources mentioned on page 6-5 of TANKS user manual

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RS = Shell Radius
0

Annual Emission Calculations	**FROM TANKS DETAILED PDF**	**AP-42 EQUATIONS**	**CALCULATIONS**			
Vapor Space Expansion Factor						As per sources listed on page 6-5 of TANKS user manual:
K_E = Vapor Space Expansion Factor		$K_E = [\text{delta } T_V/T_{LA}]+ [(\text{delta}P_V-\text{delta } P_B)/(P_A-P_{VA})]$	K_E =	0.0298		T_{AX} = 515.4867
delta T_V = Daily Vapor Temperature Range		delta $T_V = 0.72(T_{AX}-T_{AN})+0.028*\text{alpha}*I]$	delta T_V =	17.2654	R	T_{AN} = 499.2117
delta P_V = Daily Vapor Pressure Range			delta P_V =	0.0007	psia	
delta P_B = Breather Vent Press. Setting Range			delta P_B =	0.06	psia	
Vapor Pressure at Daily Average Liquid Surface Temperature				508.9255	R	
Vapor Pressure at Daily Minimum Liquid Surface Temperature						
Daily Min. Liquid Surface Temp		$T_{LN} = T_{LA} - 0.25 \text{ delta } T_V$	T_{LN} =	504.6092	R	
Vapor Pressure at Daily Maximum Liquid Surface Temperature						
Daily Max. Liquid Surface Temp		$T_{LX} = T_{LA} + 0.25 \text{ delta } T_V$	T_{LX} =	513.2419	R	
Daily Avg. Liquid Surface Temp.						
delta T_A = Daily Ambient Temp. Range			delta T_A =	16.2750	R	
Vented Vapor Saturation Factor						
Vapor Pressure at Daily Average Liquid Surface Temperature		$K_S = 1/[1+ (.053*P_{VA}*H_{VO})]$	K_S =	0.7842		
Vapor Space Outage						
Working Losses		$L_W = 0.0010 M_V P_{VA} Q K_N K_P$	L_W =	1087.7588	lbs	
M_V = Vapor Molecular Weight			M_V =	18.0008	lb/lb-mole	Q = annual net throughput = tank capacity [bbl] * annual turnover rate, bbl/yr
P_{VA} = Vapor Pressure at Daily Average Liquid Surface Temperature						K_N = working loss turnover (saturation) factor, dimensionless; see Figure 7.1-18
Q = Annual Net Throughput		1 bbl/yr = 42 US gal/yr	Q =	178,571.43	bbl/yr	for turnovers >36, $K_N = (180 + N)/6N$
Annual Turnovers			N =	18.5018		for turnovers <36, $K_N = 1$
K_N = Turnover Factor		$K_N = (180 + N)/6N$	K_N =	1.0000		K_P = working loss product factor, dimensionless
Maximum Liquid Volume						for crude oils $K_P = 0.75$
Maximum Liquid Height						
Tank Diameter						
K_P = Working Loss Product Factor			K_P =	1.00		
Total Losses			L_T =	1447.5028	lbs	

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Vertical Fixed Roof Tank
Chaffee, New York

CALCULATED VALUES

Losses (lbs)			
	Working Loss	*Breathing Loss*	*Total Emissions*
Total Leachate	1087.75883	359.74392	1447.50275
2-Butanone	0.01791	0.00592	0.02383
Acetone	0.04253	0.01406	0.05659
Tetrahydrofuran	0.01030	0.00341	0.01370
3-Methylphenol	0.00001	0.00000	0.00001
4-Methylphenol	0.00000	0.00000	0.00000
Phenol	0.00001	0.00000	0.00001
Water	1087.68808	359.72052	1447.40860

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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17 November 2021

Mr. Alan Zylinski
New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, NY 14203

Supplement to Title V Renewal Application Chaffee Landfill
Title V Permit Number 9-1462-00001/00013

Dear Mr. Zylinski:

On behalf of Waste Management of New York LLC (WMNY), GHD hereby presents this "Supplement" to the Title V Renewal Application that was previously submitted in July 2019 for the Chaffee Landfill located in Chaffee, NY (Facility or Site). This Supplement is being prepared at the request of the New York State Department Environmental Conservation (NYSDEC) in an email to GHD dated October 18, 2021. The Supplement serves to implement a number of applicable regulatory changes that have recently taken effect.

The attached table and markup of the Title V Permit presents a summary of each condition in the existing Title V Permit as well as the requested changes, some of which were carried over from the original submission in July 2019. For each condition shown in the attached table, the following is provided:

- The existing applicable regulatory requirement that the permit condition is based on.
- The revised regulatory requirement (if applicable) based on the recent promulgation of 40 CFR 60 Subpart Cf and 6 NYCRR Part 208. These rules took effect on September 22, 2021 due to the United States Environmental Protection Agency (USEPA) approving the State Implementation Plan (SIP) for New York State on August 22, 2021.
- Also included are the revised regulatory requirements (if applicable) based on the promulgation of 40 CFR 60 Subpart XXX which applies for landfills that increase their design capacity and commence construction of a landfill expansion after July 17, 2014. In the event that Chaffee Landfill expands above their current design capacity, these rules would take effect upon commencing construction of the landfill expansion area. The regulatory citations of 40 CFR 60 Subpart XXX would then override the applicable requirements of 40 CFR 60 Subpart Cf and 6 NYCRR Part 208.

We have included the original requested changes from the July 2019 Title V Renewal Application in the "Comments" field.

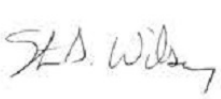
It is our understanding that NYSDEC has recently imported all of the new regulatory requirements of 40 CFR 63 Subpart AAAA (which took effect on September 27, 2021) into the NYSDEC's permit database system. Therefore, it is requested to roll those applicable conditions into the renewed Title V Permit. However, we respectfully request that duplicate requirements be omitted from the permit (as there are a number of similar requirements across 40 CFR 60 Subpart Cf, 40 CFR 60 Subpart XXX and 40 CFR 63 Subpart AAAA).

We also request an update on the status of the review of the latest modeling protocol that was provided to NYSDEC in May 2021.

We appreciate your time and consideration in this matter. Please feel free to contact the undersigned if you have any questions or if you would like clarification or additional information. We will quickly respond to any questions you have, and we appreciate your timely review.

Regards,

GHD



Steven D. Wilsey Bryan P. Szalda

BS/cs/3

cc: J. Rizzo, WMNY Chaffee
M. Mahar, WMNY Chaffee

Condition #	Existing Applicable Requirement	Requested Changes - Current Title V Renewal	Future Changes - Area 7/8 Construction	Comments
Item A	6 NYCRR 201-1.5	6 NYCRR 201-1.5	6 NYCRR 201-1.5	No Change
Item B	6 NYCRR 201-1.10(b)	6 NYCRR 201-1.10(b)	6 NYCRR 201-1.10(b)	No Change
Item C	6 NYCRR 201-6.2(a)(4)	6 NYCRR 201-6.2(a)(4)	6 NYCRR 201-6.2(a)(4)	No Change
Item D	6 NYCRR 201-6.2(d)(12)	6 NYCRR 201-6.2(d)(12)	6 NYCRR 201-6.2(d)(12)	No Change
Item E	6 NYCRR 201-6.4(a)(2)	6 NYCRR 201-6.4(a)(2)	6 NYCRR 201-6.4(a)(2)	No Change
Item F	6 NYCRR 201-6.4(a)(3)	6 NYCRR 201-6.4(a)(3)	6 NYCRR 201-6.4(a)(3)	No Change
Item G	6 NYCRR 201-6.4(a)(5)	6 NYCRR 201-6.4(a)(5)	6 NYCRR 201-6.4(a)(5)	No Change
Item H	6 NYCRR 201-6.4(a)(6)	6 NYCRR 201-6.4(a)(6)	6 NYCRR 201-6.4(a)(6)	No Change
Item I	6 NYCRR 201-6.4(a)(9)	6 NYCRR 201-6.4(a)(9)	6 NYCRR 201-6.4(a)(9)	No Change
Item J	6 NYCRR 201-6.4(g)	6 NYCRR 201-6.4(g)	6 NYCRR 201-6.4(g)	No Change
Item K	6 NYCRR 201-6.4(i)	6 NYCRR 201-6.4(i)	6 NYCRR 201-6.4(i)	No Change
Item L	ECL 19-0305	ECL 19-0305	ECL 19-0305	No Change
Item M	40 CFR 70.6(b)	40 CFR 70.6(b)	40 CFR 70.6(b)	No Change
1	6 NYCRR 200.6	6 NYCRR 200.6	6 NYCRR 200.6	No Change
2	6 NYCRR 201-6.4(a)(7)	6 NYCRR 201-6.4(a)(7)	6 NYCRR 201-6.4(a)(7)	No Change
3	6 NYCRR 201-6.4(c)	6 NYCRR 201-6.4(c)(1)	6 NYCRR 201-6.4(c)(1)	Replace with correct citation
4	6 NYCRR 201-6.4(c)(2)	6 NYCRR 201-6.4(c)(2)	6 NYCRR 201-6.4(c)(2)	No Change
5	6 NYCRR 201-6.4(c)(3)(ii)	6 NYCRR 201-6.4(c)(3)(ii)	6 NYCRR 201-6.4(c)(3)(ii)	Refer to Section 2.2 and Appendix A of July 2019 Title V Renewal Application for previously requested changes.
6	6 NYCRR 201-6.4(e)	6 NYCRR 201-6.4(e)	6 NYCRR 201-6.4(e)	No Change
7	6 NYCRR 202-2.1	6 NYCRR 202-2.1	6 NYCRR 202-2.1	No Change
8	6 NYCRR 202-2.5	6 NYCRR 202-2.5	6 NYCRR 202-2.5	No Change
9	6 NYCRR 215.2	6 NYCRR 215.2	6 NYCRR 215.2	No Change
10	6 NYCRR 200.7	6 NYCRR 200.7	6 NYCRR 200.7	No Change
11	6 NYCRR 201-1.7	6 NYCRR 201-1.7	6 NYCRR 201-1.7	No Change

Condition #	Existing Applicable Requirement	Requested Changes - Current Title V Renewal	Future Changes - Area 7/8 Construction	Comments
12	6 NYCRR 201-1.8	6 NYCRR 201-1.8	6 NYCRR 201-1.8	No Change
13	6 NYCRR 201-3.2(a)	6 NYCRR 201-3.2(a)	6 NYCRR 201-3.2(a)	No Change
14	6 NYCRR 201-3.3(a)	6 NYCRR 201-3.3(a)	6 NYCRR 201-3.3(a)	No Change
15	6 NYCRR 201-6.4(a)(4)	6 NYCRR 201-6.4(a)(4)	6 NYCRR 201-6.4(a)(4)	No Change
16	6 NYCRR 201-6.4(a)(8)	6 NYCRR 201-6.4(a)(8)	6 NYCRR 201-6.4(a)(8)	No Change
17	6 NYCRR 201-6.4(f)(6)	6 NYCRR 201-6.4(f)(6)	6 NYCRR 201-6.4(f)(6)	No Change
18	6 NYCRR 202-1.1	6 NYCRR 202-1.1	6 NYCRR 202-1.1	No Change
19	40 CFR Part 68	40 CFR Part 68	40 CFR Part 68	No Change
20	40CFR 82, Subpart F	40CFR 82, Subpart F	40CFR 82, Subpart F	No Change
21	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	No Change
22	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	Refer to Section 2.2, Appendix A and Appendix B of July 2019 Title V Renewal Application for previously requested changes.
23	6 NYCRR 201-6.4(d)(4)	6 NYCRR 201-6.4(d)(4)	6 NYCRR 201-6.4(d)(4)	No Change
24	6 NYCRR 201-6.4(f)	6 NYCRR 201-6.4(f)	6 NYCRR 201-6.4(f)	No Change
25	6 NYCRR 211.1	6 NYCRR 211.1	6 NYCRR 211.1	No Change
26	40CFR 60, NSPS Subpart A	40CFR 60, NSPS Subpart A	40CFR 60, NSPS Subpart A	No Change
27	40CFR 60.4, NSPS Subpart A	40CFR 60.4, NSPS Subpart A	40CFR 60.4, NSPS Subpart A	No Change
28	40 CFR 60.752(b)(2), NSPS Subpart WWW	40 CFR 60.33f(b)(2), NSPS Subpart Cf	40 CFR 60.762(b)(2), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
29	40CFR 60.752(b)(2)(iii)('A'), NSPS Subpart WWW	40 CFR 60.33f(c)(1), NSPS Subpart Cf	40CFR 60.762(b)(2)(iii)('A'), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
30	40CFR 60.752(b)(2)(iii)('B'), NSPS Subpart WWW	40 CFR 60.33f(c)(2), NSPS Subpart Cf	40CFR 60.762(b)(2)(iii)('B'), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
31	40CFR 60.752(b)(2)(iii)('B'), NSPS Subpart WWW	40 CFR 60.33f(c)(2), NSPS Subpart Cf	40CFR 60.762(b)(2)(iii)('B'), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
32	40 CFR 60.752(b)(2)(iii)('C'), NSPS Subpart WWW	40 CFR 60.33f(c)(3), NSPS Subpart Cf	40 CFR 60.762(b)(2)(iii)('C'), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
33	40 CFR 60.752(d), NSPS Subpart WWW	40 CFR 60.33f(f), NSPS Subpart Cf	40 CFR 60.762(d), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.

Condition #	Existing Applicable Requirement	Requested Changes - Current Title V Renewal	Future Changes - Area 7/8 Construction	Comments
34	40 CFR 60.753(b), NSPS Subpart WWW	40 CFR 60.34f(b), NSPS Subpart Cf	40 CFR 60.763(b), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement. Add statement "If monitoring demonstrates that the operational requirements are not met, corrective action shall be taken as specified in §60.36f(a)(3) of Subpart Cf or §60.765(a)(3) of Subpart XXX. If corrective actions are taken as specified in §60.36f or §60.765, the monitored exceedance is not a violation of the operational requirements in this section."
35	40 CFR 60.753(c), NSPS Subpart WWW	40 CFR 60.34f(c), NSPS Subpart Cf	40 CFR 60.763(c), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement. Add statement "If monitoring demonstrates that the operational requirements are not met, corrective action shall be taken as specified in §60.36f(a)(5) of Subpart Cf or §60.765(a)(5) of Subpart XXX. If corrective actions are taken as specified in §60.36f or §60.765, the monitored exceedance is not a violation of the operational requirements in this section."
36	40 CFR 60.753(c), NSPS Subpart WWW	Remove Condition	Remove Condition	NSPS Subpart Cf and NSPS Subpart XXX removed oxygen limit of 5% for monthly wellfield monitoring.
37	40 CFR 60.753(d), NSPS Subpart WWW	40 CFR 60.34f(d), NSPS Subpart Cf	40 CFR 60.763(d), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement. Add statement "If monitoring demonstrates that the operational requirements are not met, corrective action shall be taken as specified in §60.36f(c) of Subpart Cf or §60.765(c) of Subpart XXX. If corrective actions are taken as specified in §60.36f or §60.765, the monitored exceedance is not a violation of the operational requirements in this section."
38	40 CFR 60.755(c), NSPS Subpart WWW	40 CFR 60.36f(c), NSPS Subpart Cf	40 CFR 60.765(c), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
39	40 CFR 60.755(d), NSPS Subpart WWW	40 CFR 60.36f(d), NSPS Subpart Cf	40 CFR 60.765(d), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
40	40 CFR 60.757(d), NSPS Subpart WWW	40 CFR 60.38f(f), NSPS Subpart Cf	40 CFR 60.767(e), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
41	40 CFR 60.757(e), NSPS Subpart WWW	40 CFR 60.38f(g), NSPS Subpart Cf	40 CFR 60.767(f), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
42	40 CFR 60.757(f), NSPS Subpart WWW	40 CFR 60.38f(h), NSPS Subpart Cf	40 CFR 60.767(g), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
43	40 CFR 60.757(g), NSPS Subpart WWW	40 CFR 60.38f(i), NSPS Subpart Cf	40 CFR 60.767(h), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
44	40 CFR 60.758(d), NSPS Subpart WWW	40 CFR 60.39f(d), NSPS Subpart Cf	40 CFR 60.768(d), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.

Condition #	Existing Applicable Requirement	Requested Changes - Current Title V Renewal	Future Changes - Area 7/8 Construction	Comments
45	40 CFR 60.758(e), NSPS Subpart WWW	40 CFR 60.39f(e), NSPS Subpart Cf	40 CFR 60.768(e), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
46	40 CFR 60.759(a), NSPS Subpart WWW	40 CFR 60.40f(a), NSPS Subpart Cf	40 CFR 60.769(a), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
47	40 CFR 60.759(b), NSPS Subpart WWW	40 CFR 60.40f(b), NSPS Subpart Cf	40 CFR 60.769(b), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
48	40 CFR 60.759(c), NSPS Subpart WWW	40 CFR 60.40f(c), NSPS Subpart Cf	40 CFR 60.769(c), NSPS Subpart XXX	Replace Condition with NSPS Subpart Cf or Subpart XXX requirement.
49	40CFR 61.154, NESHAP Subpart M	40CFR 61.154, NESHAP Subpart M	40CFR 61.154, NESHAP Subpart M	No change
50	40CFR 63.1955(b), Subpart AAAA	40 CFR 60.36f(e), NSPS Subpart Cf	40 CFR 60.765(e), NSPS Subpart XXX	SSM Plan no longer required. Replace with with NSPS Subpart Cf or Subpart XXX requirement.
51	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	No change
52	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	6 NYCRR Subpart 201-6	No change
53	6 NYCRR 201-7.1	6 NYCRR 201-7.1	6 NYCRR 201-7.1	No change
54	6 NYCRR 227-1.3(a)	6 NYCRR 227-1.3(a)	6 NYCRR 227-1.3(a)	No change
55	6 NYCRR 227-2.4(g)	6 NYCRR 227-2.4(g)	6 NYCRR 227-2.4(g)	Add date of recently updated NOx RACT Plan submitted to NYSDEC
56	6 NYCRR 212.4(c)	6 NYCRR 212-2.4(b)(1)	6 NYCRR 212-2.4(b)(1)	Replace Condition with revised requirement.
57	6 NYCRR 228-1.3 (a)	Remove Condition	Remove Condition	The July 2019 Title V Renewal Application requested removal of this Condition.
58	6 NYCRR 228-1.3(b)(1)	6 NYCRR 228-1.3(b)(1)	6 NYCRR 228-1.3(b)(1)	No change
59	6 NYCRR 228-1.3(d)	6 NYCRR 228-1.3(d)	6 NYCRR 228-1.3(d)	No change
60	6 NYCRR 228-1.3(e)	6 NYCRR 228-1.3(e)	6 NYCRR 228-1.3(e)	No change
61	6 NYCRR 228-1.4(b)(4)(ii)	6 NYCRR 228-1.4(b)(4)(ii)	6 NYCRR 228-1.4(b)(4)(ii)	No change
62	6 NYCRR 212.4(c)	6 NYCRR 212-2.4(b)(1)	6 NYCRR 212-2.4(b)(1)	Replace Condition with revised requirement.
63	6 NYCRR 201-7.1	6 NYCRR 201-7.1	6 NYCRR 201-7.1	No change
64	6 NYCRR 201-7.1	6 NYCRR 201-7.1	6 NYCRR 201-7.1	No change
65	6 NYCRR Subpart 202-1	6 NYCRR Subpart 202-1	6 NYCRR Subpart 202-1	Update target CO and NOx concentrations and frequency of performance testing as requested in July 2019 Title V Renewal Application.
66	6 NYCRR 227-2.4(f)(2)	6 NYCRR 227-2.4(f)(2)	6 NYCRR 227-2.4(f)(2)	Add date of recently updated NOx RACT Plan submitted to NYSDEC
67	40 CFR 60, NSPS Subpart JJJJ	40 CFR 60, NSPS Subpart JJJJ	40 CFR 60, NSPS Subpart JJJJ	Update serial number information for engines listed (due to engine swaps).
68	40 CFR 60.4233(e), NSPS Subpart JJJJ	40 CFR 60.4233(e), NSPS Subpart JJJJ	40 CFR 60.4233(e), NSPS Subpart JJJJ	No change
69	40 CFR 60.4243(b)(2)(ii), NSPS Subpart JJJJ	40 CFR 60.4243(b)(2)(ii), NSPS Subpart JJJJ	40 CFR 60.4243(b)(2)(ii), NSPS Subpart JJJJ	No change
70	40 CFR 60.4244, NSPS Subpart JJJJ	40 CFR 60.4244, NSPS Subpart JJJJ	40 CFR 60.4244, NSPS Subpart JJJJ	No change
71	40 CFR 60.4245(a), NSPS Subpart JJJJ	40 CFR 60.4245(a), NSPS Subpart JJJJ	40 CFR 60.4245(a), NSPS Subpart JJJJ	No change
72	40 CFR 60.4245(c), NSPS Subpart JJJJ	40 CFR 60.4245(c), NSPS Subpart JJJJ	40 CFR 60.4245(c), NSPS Subpart JJJJ	No change
73	40 CFR 60.4245(d), NSPS Subpart JJJJ	40 CFR 60.4245(d), NSPS Subpart JJJJ	40 CFR 60.4245(d), NSPS Subpart JJJJ	No change

Condition #	Existing Applicable Requirement	Requested Changes - Current Title V Renewal	Future Changes - Area 7/8 Construction	Comments
74	40 CFR 63.6603(a), Subpart ZZZZ	Remove condition	Remove condition	There are no 40 CFR 63 Subpart ZZZZ or 40 CFR 63 Subpart IIII requirements for 90-HP generator (2004 year) located at major source.
75	40 CFR 63.6603(a), Subpart ZZZZ	40 CFR 63.6600(c), Subpart ZZZZ	40 CFR 63.6600(c), Subpart ZZZZ	Replace area source requirement with major source requirement for landfill gas engines. Also add applicable requirements 40 CFR 63.6590(b)(2) and 40 CFR 63.6650(g).
76	40 CFR 63.6625, Subpart ZZZZ	40 CFR 63.6625(c), Subpart ZZZZ	40 CFR 63.6625(c), Subpart ZZZZ	Replace area source requirement with major source requirement for landfill gas engines
77	40 CFR 63.6655, Subpart ZZZZ	40 CFR 63.6655(c), Subpart ZZZZ	40 CFR 63.6655(c), Subpart ZZZZ	Replace area source requirement with major source requirement.
Item A	6 NYCRR Part 201-5	6 NYCRR Part 201-5	6 NYCRR Part 201-5	No change
78	ECL 19-0301	ECL 19-0301	ECL 19-0301	No change
79	6 NYCRR 201-1.4	6 NYCRR 201-1.4	6 NYCRR 201-1.4	No change
80	6 NYCRR 211.2	6 NYCRR 211.2	6 NYCRR 211.2	No change
ADDITIONAL REQUIREMENTS				
--	--	40 CFR 63.6645(f), Subpart ZZZZ	40 CFR 63.6645(f), Subpart ZZZZ	Add initial notification requirement for LFG engines operating at major source
--	--	40 CFR 6650(g), Subpart ZZZZ	40 CFR 6650(g), Subpart ZZZZ	Add annual report requirement for LFG engines operating at major source

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air Title V Facility
Permit ID: 9-1462-00001/00013
Effective Date: 01/13/2015 Expiration Date: 01/12/2020

Permit Issued To:WASTE MANAGEMENT OF NEW YORK LLC
1001 FANNIN STE 4000
HOUSTON, TX 77002

Contact: ~~THOMAS LEWIS~~ MICHAEL MAHAR
WASTE MANAGMENT OF NY LLC - CHAFFEE
10860 OLEAN RD
CHAFFEE, NY 14030-9799
(716) 496-5192

Facility: CHAFFEE LANDFILL
10860 OLEAN RD
CHAFFEE, NY 14030-9799

Contact: ~~THOMAS LEWIS~~ MICHAEL MAHAR
WASTE MANAGMENT OF NY LLC - CHAFFEE
10860 OLEAN RD
CHAFFEE, NY 14030-9799
(716) 496-5192

Description:
(1)Waste Management of New York, LLC (WMNY) operates a municipal solid waste (MSW) landfill located in Chaffee, New York. This permit action includes the second Title V Renewal Permit for the facility.

(2)The total design capacity of the landfill is equal to 19,496,520 cubic yards (cy). The total capacity includes the ~~Existing~~ Closed Landfill (LNDFL) of 9,144,000 cy, the Western Expansion (LNDF2) of 8,312,922 cy and the Valley Fill Expansion (LNDF3) of 2,039,598 cy.

(3)Landfill air emissions are controlled by internal combustion engines, an enclosed flare and an open flare. The Renewable Energy Facility (REF) consisting of eight (8) Caterpillar 3516 internal combustion reciprocating engines each rated at 1,148 horsepower. The landfill gas is treated using filtration, dewatering, and compression prior to combustion in the REF. Exhaust gases from the engines vent to the atmosphere.

(4)The permit maintains two federally enforceable emission limits of nitrogen oxide (NOx). Engines 1 through 6 are limited to 95 tons per year (tpy) NOx and Engines 7 & 8 are limited to 35 tpy NOx.

(5)The NOx emissions from the engines are subject to the NOx Reasonably Available Control Technology (RACT) of 6NYCRR Part 227-2. The NOx RACT limit is 2.0 grams per brake horsepower-hour. The facility is required to monitor the engine NOx and carbon monoxide (CO) emissions on a monthly basis. The facility is required to complete a performance test following EPA methods on two engines during the term of this permit.

(6)WMNY remains subject to the requirements specified in the *New Source Performance Standards for Municipal Solid Waste Landfills – 40 CFR 60 Subpart WWW*. This includes the installation and monitoring of an active landfill gas collection system and operation of a gas treatment and control system. The landfill gas wells are monitored on a monthly basis for temperature, pressure and oxygen levels. Quarterly surface scans of the landfill cover are completed to monitor surface concentrations of methane along the collection area.

(7)WMNY remains subject to the requirements specified in the *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills – 40 CFR 63 Subpart AAAA*. This includes implementation of a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; a program of corrective action for malfunctioning process; and air pollution control and monitoring equipment used to comply with this standard.

(8)The permit includes the addition of two EPA regulations pertaining to the stationary internal combustion engines at the facility. The regulations added to the permit include *40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* and *40CFR60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*. These regulations include engine maintenance requirements and emission limits.

(9)WMNY operates one paint spray booth subject to 6NYCRR Part 228-1. The volatile organic compound content of the surface coatings used must comply with the appropriate limits specified in Table B4 of 6NYCRR Part 228-1.4(b)(4).

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ
NYSDEC - REGION 9
270 MICHIGAN AVE
BUFFALO, NY 14203-2915

Authorized Signature: _____ Date: ___ / ___ / _____

Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

LIST OF CONDITIONS

DEC GENERAL CONDITIONS

General Provisions

Facility Inspection by the Department

Relationship of this Permit to Other Department Orders and Determinations

Applications for permit renewals, modifications and transfers

Permit modifications, suspensions or revocations by the Department

Facility Level

Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS

DEC GENERAL CONDITIONS
****** General Provisions ******
For the purpose of your Title V permit, the following section contains state-only enforceable terms and conditions.
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:
The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:
A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 3: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 3.1:
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 3.2:
The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Item 3.3:
Permits are transferrable with the approval of the department unless specifically prohibited by

the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Condition 4: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 4.1:
The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

****** Facility Level ******

Condition 5: Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 5.1:
Submission of applications for permit modification or renewal are to be submitted to:

NYSDEC Regional Permit Administrator
Region 9 Headquarters
Division of Environmental Permits
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - TITLE V PERMIT

IDENTIFICATION INFORMATION

Permit Issued To: WASTE MANAGEMENT OF NEW YORK LLC
1001 FANNIN STE 4000
HOUSTON, TX 77002

Facility: CHAFFEE LANDFILL
10860 OLEAN RD
CHAFFEE, NY 14030-9799

Authorized Activity By Standard Industrial Classification Code:
4953 - REFUSE SYSTEMS

Permit Effective Date: 01/13/2015 Permit Expiration Date: 01/12/2020

LIST OF CONDITIONS Update index of conditions based on changes to conditions.

~~FEDERALLY ENFORCEABLE CONDITIONS~~
~~Facility Level~~

42 40CFR 60.757(f), NSPS Subpart WWW: Compliance Certification
43 40CFR 60.757(g), NSPS Subpart WWW: Reporting requirements - Collection and control system
44 40CFR 60.758(d), NSPS Subpart WWW: Compliance Certification
45 40CFR 60.758(e), NSPS Subpart WWW: Compliance Certification
46 40CFR 60.759(a), NSPS Subpart WWW: Specifications for active collection systems
47 40CFR 60.759(b), NSPS Subpart WWW: Specifications for active collection systems
48 40CFR 60.759(c), NSPS Subpart WWW: Specifications for active collection systems
49 40CFR 61.154, NESHAP Subpart M: Asbestos-containing waste material standard for active waste disposal sites
50 40CFR 63.1955(b), Subpart AAAA: Compliance Certification

Emission Unit Level

51 6 NYCRR Subpart 201-6: Emission Point Definition By Emission Unit
52 6 NYCRR Subpart 201-6: Process Definition By Emission Unit
53 6 NYCRR 201-7.1: Process Permissible Emissions
54 6 NYCRR 227-1.3 (a): Compliance Certification

EU=L-00001

55 6 NYCRR 227-2.4 (g): Compliance Certification

EU=M-00001

56 6 NYCRR 212.4 (c): Compliance Certification
57 6 NYCRR 228-1.3 (a): Compliance Certification
58 6 NYCRR 228-1.3 (b) (1): Compliance Certification
59 6 NYCRR 228-1.3 (d): Surface Coating - Handling, storage and disposal
60 6 NYCRR 228-1.3 (c): Surface Coating- application requirements
61 6 NYCRR 228-1.4 (b) (4) (ii): Compliance Certification

EU=M-00001,Proc=PSB

62 6 NYCRR 212.4 (c): Compliance Certification

EU=P-00001

*63 6 NYCRR 201-7.1: Capping Monitoring Condition
*64 6 NYCRR 201-7.1: Capping Monitoring Condition
65 6 NYCRR Subpart 202-1: Compliance Certification
66 6 NYCRR 227-2.4 (f) (2): Compliance Certification
67 40CFR 60, NSPS Subpart JJJJ: Compliance Certification
68 40CFR 60.4233(e), NSPS Subpart JJJJ: Compliance Certification
69 40CFR 60.4243(b)(2)(ii), NSPS Subpart JJJJ: Compliance Certification
70 40CFR 60.4244, NSPS Subpart JJJJ: Test methods and procedures
71 40CFR 60.4245(a), NSPS Subpart JJJJ: Compliance Certification
72 40CFR 60.4245(c), NSPS Subpart JJJJ: Compliance Certification
73 40CFR 60.4245(d), NSPS Subpart JJJJ: Performance test requirements
74 40CFR 63.6603(a), Subpart ZZZZ: Compliance Certification
75 40CFR 63.6603(a), Subpart ZZZZ: Compliance Certification
76 40CFR 63.6625, Subpart ZZZZ: Compliance Certification
77 40CFR 63.6655, Subpart ZZZZ: Compliance Certification

STATE ONLY ENFORCEABLE CONDITIONS

~~**Facility Level**~~

~~78 ECL 19-0301: Contaminant List~~
~~79 6 NYCRR 201-1.4: Malfunctions and start-up/shutdown activities~~
~~80 6 NYCRR 211.2: Visible Emissions Limited~~

~~NOTE: * preceding the condition number indicates capping.~~

FEDERALLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
The items listed below are not subject to the annual compliance certification requirements under Title V. Permittees may also have other obligations under regulations of general applicability.

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined by subpart 201-2, constitutes an affirmative defense to penalties sought in an enforcement action brought by the Department for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An emergency occurred and that the facility owner or operator can identify the cause(s) of the emergency;
(2) The equipment at the permitted facility causing the emergency was at the time being properly operated and maintained;
(3) During the period of the emergency the facility owner or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
(4) The facility owner or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item B: Public Access to Recordkeeping for Title V Facilities - 6 NYCRR 201-1.10 (b)
The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6 NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.

Item C: **Timely Application for the Renewal of Title V Permits - 6 NYCRR 201-6.2 (a) (4)**
Owners and/or operators of facilities having an issued Title V permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Item D: **Certification by a Responsible Official - 6 NYCRR 201-6.2 (d) (12)**
Any application, form, report or compliance certification required to be submitted pursuant to the federally enforceable portions of this permit shall contain a certification of truth, accuracy and completeness by a responsible official. This certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Item E: **Requirement to Comply With All Conditions - 6 NYCRR 201-6.4 (a) (2)**
The permittee must comply with all conditions of the Title V facility permit. Any permit non-compliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

Item F: **Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6 NYCRR 201-6.4 (a) (3)**
This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Item G: **Cessation or Reduction of Permitted Activity Not a Defense - 6 NYCRR 201-6.4 (a) (5)**
It shall not be a defense for a permittee in an enforcement action to claim that a cessation or reduction in the permitted activity would have been necessary in order to maintain compliance with the conditions of this permit.

Item H: **Property Rights - 6 NYCRR 201-6.4 (a) (6)**

This permit does not convey any property rights of any sort or any exclusive privilege.

Item I: **Severability - 6 NYCRR 201-6.4 (a) (9)**

If any provisions, parts or conditions of this permit are found to be invalid or are the subject of a challenge, the remainder of this permit shall continue to be valid.

Item J: **Permit Shield - 6 NYCRR 201-6.4 (g)**

All permittees granted a Title V facility permit shall be covered under the protection of a permit shield, except as provided under 6 NYCRR Subpart 201-6. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit, or the Department, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the major stationary source, and the permit includes the determination or a concise summary thereof. Nothing herein shall preclude the Department from revising or revoking the permit pursuant to 6 NYCRR Part 621 or from exercising its summary abatement authority. Nothing in this permit shall alter or affect the following:

i. The ability of the Department to seek to bring suit on behalf of the State of New York, or the Administrator to seek to bring suit on behalf of the United States, to immediately restrain any person causing or contributing to pollution presenting an imminent and substantial endangerment to public health, welfare or the environment to stop the emission of air pollutants causing or contributing to such pollution;

ii. The liability of a permittee of the Title V facility for any violation of applicable requirements prior to or at the time of permit issuance;

iii. The applicable requirements of Title IV of the Act;

iv. The ability of the Department or the Administrator to obtain information from the permittee concerning the ability to enter, inspect and monitor the facility.

Item K: **Reopening for Cause - 6 NYCRR 201-6.4 (i)**

This Title V permit shall be reopened and revised under any of the following circumstances:

i. If additional applicable requirements under the Act become applicable where this permit's remaining term is

three or more years, a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire, unless the original permit or any of its terms and conditions has been extended by the Department pursuant to the provisions of Part 201-6.7 and Part 621.

ii. The Department or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

iii. The Department or the Administrator determines that the Title V permit must be revised or reopened to assure compliance with applicable requirements.

iv. If the permitted facility is an "affected source" subject to the requirements of Title IV of the Act, and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

Proceedings to reopen and issue Title V facility permits shall follow the same procedures as apply to initial permit issuance but shall affect only those parts of the permit for which cause to reopen exists.

Reopenings shall not be initiated before a notice of such intent is provided to the facility by the Department at least thirty days in advance of the date that the permit is to be reopened, except that the Department may provide a shorter time period in the case of an emergency.

Item L: **Permit Exclusion - ECL 19-0305**

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York

(NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: **Federally Enforceable Requirements - 40 CFR 70.6 (b)**
All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

MANDATORY FEDERALLY ENFORCEABLE PERMIT CONDITIONS SUBJECT TO ANNUAL CERTIFICATIONS AT ALL TIMES

The following federally enforceable permit conditions are mandatory for all Title V permits and are subject to annual compliance certification requirements at all times.

Condition 1: **Acceptable Ambient Air Quality**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 200.6

Item 1.1:
Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Condition 2: **Fees**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (a) (7)

Item 2.1:
The owner and/or operator of a stationary source shall pay fees to the Department consistent with the fee schedule authorized by ECL 72-0303.

Condition 3: **Recordkeeping and Reporting of Compliance Monitoring**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~6 NYCRR 201-6.4 (c)~~ 6 NYCRR 201-6.4(c)(1)

Item 3.1:
The following information must be included in any required compliance monitoring records and reports:

(i) The date, place, and time of sampling or measurements;

(ii) The date(s) analyses were performed;

(iii)The company or entity that performed the analyses;

(iv) The analytical techniques or methods used including quality assurance and quality control procedures if required;

(v) The results of such analyses including quality assurance data where required; and

(vi) The operating conditions as existing at the time of sampling or measurement.

Any deviation from permit requirements must be clearly identified in all records and reports. Reports must be certified by a responsible official, consistent with Section 201-6.2 of Part 201.

Condition 4: Records of Monitoring, Sampling, and Measurement
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (c) (2)

Item 4.1:
Compliance monitoring and recordkeeping shall be conducted according to the terms and conditions contained in this permit and shall follow all quality assurance requirements found in applicable regulations. Records of all monitoring data and support information must be retained for a period of at least 5 years from the date of the monitoring, sampling, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

Condition 5: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (c) (3) (ii)

Item 5.1:
The Compliance Certification activity will be performed for the Facility.

Item 5.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
To meet the requirements of this facility permit with respect to reporting, the permittee must:

Submit reports of any required monitoring at a minimum frequency of every 6 months, based on a calendar year reporting schedule. These reports shall be submitted to the Department within 30 days after the end of a reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by the responsible official for this facility.

Notify the Department and report permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations shall be submitted to the permitting authority based on the following schedule:

(1) For emissions of a hazardous air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the ~~occurrence.~~ discovery.

(2) For emissions of any regulated air pollutant, excluding those listed in paragraph (1) of this section, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours. of discovery.

(3) For all other deviations from permit requirements, the report shall be contained in the 6 month monitoring report required above.

(4) This permit may contain a more stringent reporting requirement than required by paragraphs (1), (2) or (3) above. If more stringent reporting requirements have been placed in this permit or exist in applicable requirements that apply to this facility, the more stringent reporting requirement shall apply.

If above paragraphs (1) or (2) are met, the source must notify the permitting authority by telephone during normal business hours at the Regional Office of jurisdiction for this permit, attention Regional Air Pollution Control Engineer (RAPCE) according to the timetable listed in paragraphs (1) and (2) of this section. For deviations and incidences that must be reported outside of normal business hours, on weekends, or holidays, the DEC Spill

Hotline phone number at 1-800-457-7362 shall be used. A written notice, certified by a responsible official consistent with 6 NYCRR Part 201-6.2(d)(12), must be submitted within 10 working days of an occurrence for deviations reported under (1) and (2). All deviations reported under paragraphs (1) and (2) of this section must also be identified in the 6 month monitoring report required above.

The provisions of 6 NYCRR 201-1.4 shall apply if the permittee seeks to have a violation excused unless otherwise limited by regulation. In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets. Notwithstanding any recordkeeping and reporting requirements in 6 NYCRR 201-1.4, reports of any deviations shall not be on a less frequent basis than the reporting periods described in paragraphs (1) and (4) above.

In the case of any condition contained in this permit with a reporting requirement of "Upon request by regulatory agency" the permittee shall include in the semiannual report, a statement for each such condition that the monitoring or recordkeeping was performed as required or requested and a listing of all instances of deviations from these requirements.

In the case of any emission testing performed during the previous six month reporting period, either due to a request by the Department, EPA, or a regulatory requirement, the permittee shall include in the semiannual report a summary of the testing results and shall indicate whether or not the Department or EPA has approved the results.

All semiannual reports may be submitted electronically or physically. Electronic reports shall be submitted using the Department's Air Compliance and Emissions Electronic-Reporting system (ACE). If the facility owner or operator elects to send physical copies instead, two copies shall be sent to the Department (one copy to the regional air pollution control engineer (RAPCE) in the regional office and one copy to the Bureau of Quality Assurance (BQA) in the DEC central office) and one copy shall be sent to the Administrator (or his or her representative). Mailing addresses for the above referenced persons are contained in the monitoring condition for 6 NYCRR Part 201-6.4(e), contained elsewhere in this permit.

Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 6: **Compliance Certification**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (e)

Item 6.1:
The Compliance Certification activity will be performed for the Facility.

Item 6.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Requirements for compliance certifications with terms and conditions contained in this facility permit include the following:

i. Compliance certifications shall contain:
- the identification of each term or condition of the permit that is the basis of the certification;
- the compliance status;
- whether compliance was continuous or intermittent;
- the method(s) used for determining the compliance status of the facility, currently and over the reporting period consistent with the monitoring and related recordkeeping and reporting requirements of this permit;
- such other facts as the Department may require to determine the compliance status of the facility as specified in any special permit terms or conditions; and
- such additional requirements as may be specified elsewhere in this permit related to compliance certification.

ii. The responsible official must include in the annual certification report all terms and conditions contained in this permit which are identified as being subject to certification, including emission limitations, standards, or work practices. That is, the provisions labeled herein as "Compliance Certification" are not the only provisions of this permit for which an annual certification is required.

iii. Compliance certifications shall be submitted annually. Certification reports are due 30 days after the anniversary date of four consecutive calendar quarters.

The first report is due 30 days after the calendar quarter that occurs just prior to the permit anniversary date, unless another quarter has been acceptable by the Department.

iv. All annual compliance certifications may be submitted electronically or physically. Electronic reports shall be submitted using the Department's Air Compliance and Emissions Electronic-Reporting system (ACE). If the facility owner or operator elects to send physical copies instead, two copies shall be sent to the Department (one copy to the regional air pollution control engineer (RAPCE) in the regional office and one copy to the Bureau of Quality Assurance (BQA) in the DEC central office) and one copy shall be sent to the Administrator (or his or her representative). The mailing addresses for the above referenced persons are:

Chief – Stationary Source Compliance Section
USEPA Region 2
Air Compliance Branch
290 Broadway
New York, NY 10007-1866

The address for the RAPCE is as follows:

Regional Air Pollution Control Engineer
NYSDEC Region 9 Headquarters
270 Michigan Avenue
Buffalo, NY 14203-2915

The address for the BQA is as follows:

NYSDEC
Bureau of Quality Assurance
625 Broadway
Albany, NY 12233-3258

Monitoring Frequency: ANNUALLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2016.
Subsequent reports are due on the same day each year

Condition 7: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 202-2.1

Item 7.1:
The Compliance Certification activity will be performed for the Facility.

Item 7.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission statements shall be submitted on or before April 15th each year for emissions of the previous calendar year.

Monitoring Frequency: ANNUALLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due by April 15th for previous calendar year

Condition 8: Recordkeeping requirements
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 202-2.5

Item 8.1:
(a) The following records shall be maintained for at least five years:

(1) a copy of each emission statement submitted to the department; and

(2) records indicating how the information submitted in the emission statement was determined, including any calculations, data, measurements, and estimates used.

(b) These records shall be made available at the facility to the representatives of the department upon request during normal business hours.

Condition 9: Open Fires - Prohibitions
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 215.2

Item 9.1:
Except as allowed by Title 6 NYCRR Section 215.3, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item 9.2
Per Section 215.3, burning in an open fire, provided it is not contrary to other law or regulation, will be allowed as follows:
(a) On-site burning in any town with a total population less than 20,000 of downed limbs and branches (including branches with attached leaves or needles) less than six inches in diameter and eight feet in length between May 15th and the following March 15th. For the purposes of this subdivision, the total population of a town shall include the population of any village or portion thereof located within the town. However, this subdivision shall not be construed to allow burning within any village.
(b) Barbecue grills, maple sugar arches and similar outdoor cooking devices when actually used for cooking or processing food.
(c) Small fires used for cooking and camp fires provided that only charcoal or untreated wood is used as fuel and the fire is not left unattended until extinguished.
(d) On-site burning of agricultural wastes as part of a valid agricultural operation on contiguous

agricultural lands larger than five acres actively devoted to agricultural or horticultural use, provided such waste is actually grown or generated on those lands and such waste is capable of being fully burned within a 24-hour period.
(e) The use of liquid petroleum fueled smudge pots to prevent frost damage to crops.
(f) Ceremonial or celebratory bonfires where not otherwise prohibited by law, provided that only untreated wood or other agricultural products are used as fuel and the fire is not left unattended until extinguished.
(g) Small fires that are used to dispose of a flag or religious item, and small fires or other smoke producing process where not otherwise prohibited by law that are used in connection with a religious ceremony.
(h) Burning on an emergency basis of explosive or other dangerous or contraband materials by police or other public safety organization.
(i) Prescribed burns performed according to Part 194 of this Title.
(j) Fire training, including firefighting, fire rescue, and fire/arson investigation training, performed under applicable rules and guidelines of the New York State Department of State's Office of Fire Prevention and Control. For fire training performed on acquired structures, the structures must be emptied and stripped of any material that is toxic, hazardous or likely to emit toxic smoke (such as asbestos, asphalt shingles and vinyl siding or other vinyl products) prior to burning and must be at least 300 feet from other occupied structures. No more than one structure per lot or within a 300 foot radius (whichever is bigger) may be burned in a training exercise.
(k) Individual open fires as approved by the Director of the Division of Air Resources as may be required in response to an outbreak of a plant or animal disease upon request by the commissioner of the Department of Agriculture and Markets, or for the destruction of invasive plant and insect species.
(l) Individual open fires that are otherwise authorized under the environmental conservation law, or by rule or regulation of the Department.

MANDATORY FEDERALLY ENFORCEABLE PERMIT CONDITIONS SUBJECT TO ANNUAL CERTIFICATIONS ONLY IF APPLICABLE

The following federally enforceable permit conditions are mandatory for all Title V permits and are subject to annual compliance certification requirements only if effectuated during the reporting period. [NOTE: The corresponding annual compliance certification for those conditions not effectuated during the reporting period shall be specified as "not applicable".]

Condition 10: Maintenance of Equipment
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 200.7

Item 10.1:
Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications, required to operate such device effectively.

Condition 11: Recycling and Salvage

Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-1.7

Item 11.1:
Where practical, the owner or operator of an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of the ECL.

Condition 12: Prohibition of Reintroduction of Collected Contaminants to the air
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-1.8

Item 12.1:
No person shall unnecessarily remove, handle or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Condition 13: Exempt Sources - Proof of Eligibility
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-3.2 (a)

Item 13.1:
The owner or operator of an emission source or activity that is listed as being exempt may be required to certify that it is operated within the specific criteria described in this Subpart. The owner or operator of any such emission source or activity must maintain all records necessary for demonstrating compliance with this Subpart on-site for a period of five years, and make them available to representatives of the department upon request.

Condition 14: Trivial Sources - Proof of Eligibility
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-3.3 (a)

Item 14.1:
The owner or operator of an emission source or activity that is listed as being trivial in this Section may be required to certify that it is operated within the specific criteria described in this Subpart. The owner or operator of any such emission source or activity must maintain all required records on-site for a period of five years and make them available to representatives of the department upon request.

Condition 15: Requirement to Provide Information
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (a) (4)

Item 15.1:
The owner and/or operator shall furnish to the department, within a reasonable time, any information that the department may request in writing to determine whether cause exists for

modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the department copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the administrator along with a claim of confidentiality, if the administrator initiated the request for information or otherwise has need of it.

Condition 16: Right to Inspect
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (a) (8)

Item 16.1:
The department or an authorized representative shall be allowed upon presentation of credentials and other documents as may be required by law to:

(i) enter upon the permittee's premises where a facility subject to the permitting requirements of this Subpart is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(ii) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(iii) inspect at reasonable times any emission sources, equipment (including monitoring and air pollution control equipment), practices, and operations regulated or required under the permit; and

(iv) sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

Condition 17: Off Permit Changes
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (f) (6)

Item 17.1:
No permit revision will be required for operating changes that contravene an express permit term, provided that such changes would not violate applicable requirements as defined under this Part or contravene federally enforceable monitoring (including test methods), recordkeeping, reporting, or compliance certification permit terms and conditions. Such changes may be made without requiring a permit revision, if the changes are not modifications under any provision of title I of the act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions) provided that the facility provides the administrator and the department with written notification as required below in advance of the proposed changes within a minimum of seven days. The facility owner or operator, and the department shall attach each such notice to their copy of the relevant permit.

(i) For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

(ii) The permit shield described in section 6 NYCRR 201-6.4 shall not apply to any change made pursuant to this paragraph.

Condition 18: Required Emissions Tests
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 202-1.1

Item 18.1:
For the purpose of ascertaining compliance or non-compliance with any air pollution control code, rule or regulation, the commissioner may require the person who owns such air contamination source to submit an acceptable report of measured emissions within a stated time.

Condition 19: Accidental release provisions.
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40 CFR Part 68

Item 19.1:
If a chemical is listed in Tables 1,2,3 or 4 of 40 CFR §68.130 is present in a process in quantities greater than the threshold quantity listed in Tables 1,2,3 or 4, the following requirements will apply:

a) The owner or operator shall comply with the provisions of 40 CFR Part 68 and;

b) The owner or operator shall submit at the time of permit issuance (if not previously submitted) one of the following, if such quantities are present:

1) A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR §68.10(a) or,

2) A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan. Information should be submitted to:

Risk Management Plan Reporting Center
C/O CSC
8400 Corporate Dr
Carrollton, Md. 20785

Condition 20: Recycling and Emissions Reduction
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 82, Subpart F

Item 20.1:
The permittee shall comply with all applicable provisions of 40 CFR Part 82.

The following conditions are subject to annual compliance certification requirements for Title V permits only.

Condition 21: Emission Unit Definition
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 21.1:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: L-00001
Emission Unit Description:
WMNY operates a municipal solid waste (MSW) landfill with a total design capacity equal to 19,496,520 cubic yards (cy). This includes the ~~Existing~~ Closed Landfill (LNDFL) of 9,144,000 cy, the Western Expansion (LNDF2) of 8,312,922 cy, ~~and~~ the Valley Fill Expansion (LNDF3) of 2,039,598 cy and the Area 7/8 Expansion (LNDF4) of 5.1 million cy.

Collected landfill gas emissions are controlled by a treatment system prior to input into the internal combustion engines. Collected landfill gas is also controlled by an enclosed flare and an open flare. Air emissions from the landfill include primarily combustion components and fugitive emissions from the uncontrolled landfill gas.

Item 21.2:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: M-00001
Emission Unit Description:
Miscellaneous maintenance activities are performed at the facility for the equipment and vehicles owned by Chaffee Landfill. These activities include a paint booth and two exempt parts cleaning tank.

Building(s): MB

Item 21.3:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: P-00001
Emission Unit Description:
Emission unit P-00001 is a Renewable Energy Facility (REF) consisting of eight (8) Caterpillar 3516 internal combustion reciprocating engines rated at 1148 Bhp per engine. The landfill gas is treated using filtration, dewatering, and compression prior to combustion in the REF. Exhaust gases from the engines vent to the atmosphere.

Building(s): GASPLANT

Condition 22: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 22.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY

Item 22.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

(1) WMNY shall maintain records to document the combined total actual annual waste and alternate daily cover (ADC) / Beneficial Use Determination (BUD) material received. The actual total waste acceptance and ADC/BUD rates shall be determined by January 30 of each calendar year.

(2) If the combined total of the actual waste and ADC /BUD acceptance rate exceeds ~~720,000~~ 780,000 tpy (i.e., 600,000 tpy Municipal Solid Waste (MSW) ~~waste~~ and ~~120,000~~ 180,000 tpy ADC/BUD), the facility shall input the actual rate into the Landfill Gas Emissions Computer Model (LandGEM) and re-evaluate the emissions from the landfill. A report of the LandGEM results and re-evaluation of the applicability to New Source Review (6NYCRR Part 231-6) and Prevention of Significant Deterioration (6NYCRR Part 231-8) shall be provided to the Department within 30 days of the recorded waste increase.

(3) The site-specific and default parameters used in the analysis for Chaffee Landfill included:

(a) Permitted waste design capacity = 14,326,573 Mg; 780,000

(b) Maximum waste acceptance rate = ~~720,000~~ tons per year.

(c) NMOC concentration = 595 ppmv as hexane

(d) Default values of Lo = 140 m3/Mg, k = 0.04, methane concentration = 50%.

(4) For the purposes of determining waste acceptance rates, waste shall include: municipal solid waste, industrial waste, construction and demolition debris, contaminated soil, sludge, tire waste, and any other solid

waste material. Inert materials such as ash, asbestos and other materials may be excluded from the annual waste acceptance rate calculation.

Parameter Monitored: MUNICIPAL SOLID WASTE AND ADC/BUD
Upper Permit Limit: ~~720000 tons per year~~ 780,000 tons per year
Monitoring Frequency: ANNUALLY
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 23: Progress Reports Due Semiannually
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (d) (4)

Item 23.1:
Progress reports consistent with an applicable schedule of compliance are to be submitted at least semiannually, or at a more frequent period if specified in the applicable requirement or by the department. Such progress reports shall contain the following:

(i) dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

(ii) an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

Condition 24: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-6.4 (f)

Item 24.1:
The Compliance Certification activity will be performed for the Facility.

Item 24.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Operational Flexibility Plan

I. Protocol Objective

The objective of this condition is to maximize operational flexibility at the facility by building into the Title V permit the capability to make certain changes using a protocol. As provided under 6 NYCRR Part 201-6.4(f)(2),

changes made under an approved protocol are not subject to the Title V permit modification provisions under 6 NYCRR Part 201-6.6.

II. Protocol

A. Criteria

1. Changes reviewed under this protocol shall be evaluated in accordance with the following criteria:

a. All underlying federal and state requirements with which the new or changed emission source must comply must exist in the Title V permit. Existing permit conditions may be amended to reference or include the new or changed emission source and any related information, and/or subject to DEC approval, new conditions proposed, to provide the appropriate monitoring parameters.

b. Any new or changed emission source shall not be part of a source project that results in a significant net emissions increase that exceeds the New Source Review (NSR) thresholds identified in 6 NYCRR Part 231.

c. The facility shall not use the protocol to make physical changes or changes in the method of operation of existing emissions sources that would require a new or modified federally enforceable cap either to avoid major NSR requirements or to address and comply with other Clean Air Act requirements, such as RACT. Such changes must be addressed via the significant permit modification provisions.

B. Notification Requirements for Changes Reviewed under the Protocol

1. The facility shall notify the Department in writing of the proposed change.

2. Notifications made in accordance with this protocol will include the following documentation:

a. Identification of the Title V permit emission unit, process(es), emission sources and emission points affected by the proposed change with applicable revisions to the Emission Unit structure;

b. Description of the proposed change, including operating parameters;

c. Identification and description of emissions control

technology;

d. Documentation of the project's, or emission source's, compliance with respect to all state and/or federally applicable requirements, including the following steps:

i. Calculate the emission rate potential and maximum projected actual annual emission rates for all contaminants affected by the change.

ii. Submit documentation of major NSR program non-applicability for NYSDEC review and approval.

iii. Identify and evaluate the applicability of all regulations likely to be triggered by the new or changed emission source.

iv. Propose any operating and record keeping procedures necessary to ensure compliance.

e. Any other relevant information used for the evaluation of the proposed project or emission source under the Protocol.

C. Review and Approval of Changes

1. The Department shall respond to the permittee in writing with a determination within 15 days of receipt of the notification of the permittee.

2. The Department may require a permit modification, in order to impose new applicable requirements or additional permit conditions if it determines that changes proposed pursuant to notification do not meet the criteria under II. A above or that the changes may have a significant air quality impact or be otherwise potentially significant under SEQRA (6 NYCRR Part 617).

3. The Department may require that the permittee not undertake the proposed change until it completes a more detailed review of the proposed change, which may include potential air quality impacts and/or applicable requirements. The Department's determination shall include a listing of information required for further review, if necessary.

D. Additional Compliance Obligations for Changes Made Under this Protocol

1. Upon commencement of the change, the facility shall comply with all applicable requirements and permit conditions, including any amended or proposed in accordance with II.A.1.a above.

2. The facility shall provide with the semi-annual monitoring report, a summary of the changes made in accordance with this protocol and a statement of the compliance status of each. Changes reported should include all those made during the corresponding period and any earlier changes that have not yet been incorporated into the permit.

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 25: Air pollution prohibited
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 211.1

Item 25.1:
No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

Condition 26: Applicability of Subpart A General Provisions
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60, NSPS Subpart A

Item 26.1:
This emission source is subject to the applicable general provisions of 40 CFR 60. The facility owner is responsible for complying with all applicable technical, administrative and reporting requirements.

Condition 27: EPA Region 2 address.
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4, NSPS Subpart A

Item 27.1:
All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the following address:

Director, Division of Enforcement and Compliance Assistance
USEPA Region 2
290 Broadway, 21st Floor
New York, NY 10007-1886

Copies of all correspondence to the administrator pursuant to this part shall also be submitted to the NYSDEC Regional Office issuing this permit (see address at the beginning of this permit) and to the following address:

NYSDEC
Bureau of Quality Assurance
625 Broadway
Albany, NY 12233-3258

Condition 28: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.752(b)(2), NSPS Subpart WWW~~

Replace with 40 CFR 60.33f(b)(2), NSPS Subpart Cf or 40 CFR 60.762(b)(2), NSPS Subpart XXX

~~Item 28.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~Item 28.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~ACTIVE LANDFILL GAS COLLECTION SYSTEM~~

~~The active landfill gas collection system shall:~~
~~(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;~~
~~(a) For the purposes of calculating the maximum expected gas generation flow rate from the landfill, the following equation shall be used. The k and Lo kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.~~

~~QM = SUMi [2*k*Lo*Mi*(e^(-kti))]~~

~~where,~~
~~QM =maximum expected gas generation flow rate, cubic~~

meters per year
k=methane generation rate constant, year−1
Lo =methane generation potential, cubic meters per megagram solid waste
Mi =mass of solid waste in the ith section, megagrams
ti =age of the ith section, years
i=1 to n

(b) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equation in paragraph (a) above. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equation in paragraph (a) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) Collect gas from each area, cell, or group of cells in the landfill. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:
(a) 5 years or more if active; or
(b) 2 years or more if closed or at final grade.

For the purposes of determining sufficient density of gas collectors, the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) Collect gas at a sufficient extraction rate;

(4) Be designed to minimize off-site migration of subsurface gas.

(5) In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour;

(6) Keep 5 years up-to-date, readily accessible records of the following information. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable:
(a) The design capacity report which triggered § 60.752(b), the current amount of solid waste in-place, and

the year-by-year waste acceptance rate;

(b) The maximum expected gas generation flow rate as calculated in paragraph (1) above. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator; and

(c) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 60.759(a)(1).

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 29: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement: 40CFR 60.752(b)(2)(iii)('A'), NSPS Subpart WWW
Replace with 40 CFR 60.33f(c)(1), NSPS Subpart Cf or 40 CFR 60.762(b)(2)(iii)('A'), NSPS Subpart XXX

Item 29.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY

Item 29.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

OPEN FLARE

(1) The open flare shall be designed and operated in accordance with § 60.18 except:
"the net heating value of the combusted landfill gas as determined in § 60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under § 60.18(f)(4)."

~~(2) The following equipment shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications:~~

~~(a) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.~~

~~(b) A device that records flow to or bypass of the flare. The owner or operator shall either:~~

~~(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or~~

~~(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.~~

~~(3) Operate the control system at all times when the collected gas is routed to the system.~~

~~(4) Keep 5 years up-to-date, readily accessible records of:~~

~~(a) flare type (i.e., steam-assisted, air-assisted, or nonassisted);~~
~~(b) all visible emission readings;~~
~~(c) heat content determination;~~
~~(d) flow rate or bypass flow rate measurements;~~
~~(e) exit velocity determinations made during the performance test as specified in § 60.18;~~
~~(f) continuous records of the flare pilot flame or flare flame monitoring; and~~
~~(g) records of all periods of operations during which the flare flame or flare pilot flame is absent.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 30: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.752(b)(2)(iii)('B'), NSPS Subpart WWW~~

Replace with 40 CFR 60.33f(c)(2), NSPS Subpart Cf or 40 CFR 60.762(b)(2)(iii)('B'), NSPS Subpart XXX

~~Item 30.1:~~

~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~**Item 30.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE~~
~~Monitoring Description:~~

~~ENCLOSED COMBUSTION DEVICE~~

~~(1) The enclosed combustion device must be operated such that the average combustion temperature for all 3-hour periods of operation does not go below 28 degrees Celsius (or 82.4 degrees Fahrenheit) below the average combustion temperature established during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) was determined.~~

~~(2) The most recent performance test was completed on September 2, 2005. The average combustion temperature of all test runs was 1,482 degrees Fahrenheit. Therefore, the 3-hour average combustion temperature of the flare shall not go below 1,400 degrees Fahrenheit. If a more recent test is performed, this value will be updated accordingly.~~

~~Parameter Monitored: TEMPERATURE~~
~~Lower Permit Limit: 28 degrees C below the approved performance test combustion temperature~~
~~Monitoring Frequency: FOUR TIMES PER HOUR~~
~~Averaging Method: 3-HOUR BLOCK AVERAGE~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 31: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.752(b)(2)(iii)('B'), NSPS Subpart WWW~~
Replace with 40 CFR 60.33f(c)(2), NSPS Subpart Cf or 40 CFR 60.762(b)(2)(iii)('B'), NSPS Subpart XXX

~~**Item 31.1:**~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~**Item 31.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~ENCLOSED COMBUSTION DEVICE~~

~~(1) The control system shall be designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in paragraph (2) below.~~
~~(a) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.~~
~~(b) The control device shall be operated within the parameter ranges established during the most recent performance test. The operating parameters to be monitored are specified in paragraph (3) below.~~

~~(2) For the performance test requirement, Method 25, 25C, or Method 18 of appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:~~

~~Control Efficiency = (NMOCin – NMOCout)/(NMOCin)~~
~~where,~~
~~NMOCin = mass of NMOC entering control device~~
~~NMOCout = mass of NMOC exiting control device~~

~~(3)The following equipment shall be calibrated, maintained, and operated according to the manufacturer's~~

~~specifications:~~
~~(a) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.~~
~~(b) A device that records flow to or bypass of the control device. The owner or operator shall either:~~
~~(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or~~
~~(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.~~

~~(4) Operate the control system at all times when the collected gas is routed to the system.~~

~~(5) Keep 5 years up-to-date, readily accessible records of:~~
~~(a) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.~~
~~(b) The percent reduction of NMOC as specified in paragraph (2) above; and~~
~~(c) All 3-hour periods of operation during which the average combustion temperature was more than 28 degrees Celsius below the average combustion temperature.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 32: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.752(b)(2)(iii)('C'), NSPS Subpart WWW~~
Replace with 40 CFR 60.33f(c)(3), NSPS Subpart Cf or 40 CFR 60.762(b)(2)(iii)('C'), NSPS Subpart XXX

~~Item 32.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~

~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~**Item 32.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~GAS TREATMENT SYSTEM~~

~~(1) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of § 60.752(b)(2)(iii) (A) or (B).~~

~~(2) The landfill gas treatment system for the stationary internal combustion engines shall be designed and operated as follows:~~

~~Filtration: At a minimum, the system will filter landfill gas using a dry filter or similar device (e.g., impaction, intereception or diffusion device). The filter shall reduce particulate matter in the gas stream to a size of at least 10 microns.~~

~~Dewatering: Landfill gas is de-watered by cooling the superheated gas from the blower in the cooler. Landfill gas is cooled in the cooler, lowering the gas temperature to below the dew point and causing the water in the gas to condense. The condensed water is then trapped in the filters after the cooler. The cooled gas is then reheated prior to entering the gas plant. The system will de-water landfill gas using chillers, air-to-air coolers, dehumidification devices or other dehydration equipment as approved by the Department.~~

~~Compression: Landfill gas is extracted from the landfill under vacuum and compressed in a rotary blower. The gas is compressed in the blower such that it is approximately 5 to 7 psi coming out of the blower. The system will compress landfill gas using gas blowers or similar devices approved by the Department.~~

~~(3) WMNY submitted an acceptable monitoring plan to the Department for the treatment system. The plan describes the monitoring for the filtering, dewatering and compression of the landfill gas to assure that the treatment system operates as designed. This monitoring plan shall be followed at all times during operation of the treatment system.~~

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 33: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.752(d), NSPS Subpart WWW~~

Replace with 40 CFR 60.33f(f), NSPS Subpart Cf or 40 CFR 60.762(d), NSPS Subpart XXX

~~Item 33.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~Item 33.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~LANDFILL CLOSURE~~

~~(1) The collection and control system may be capped or removed provided that all the conditions of paragraphs (a), (b), and (c) are met:~~
~~(a) The landfill shall be a closed landfill as defined in § 60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in § 60.757(d);~~
~~(b) The collection and control system shall have been in operation a minimum of 15 years; and~~
~~(c) Following the procedures specified in paragraph (2) below, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.~~

~~(2) After the installation of a collection and control system, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed using the following equation:~~

~~$M_{NMOC} = (1.89 \times 10^{-3})^* Q_{LFG}^* C_{NMOC}$~~

~~where,~~
~~M_{NMOC} = mass emission rate of NMOC, megagrams per~~

year
QLFG = flow rate of landfill gas, cubic meters per minute
CNMOC = NMOC concentration, parts per million by volume as hexane

(a) The flow rate of landfill gas, QLFG , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.

(b) The average NMOC concentration, CNMOC , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from CNMOC as carbon to CNMOC as hexane.

(c) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(3) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:
(a) The landfill was never subject to the requirement for a control system; or
(b) The owner or operator meets the conditions for control system removal.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 34: Compliance Certification

Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.753(b), NSPS Subpart WWW~~

Replace with 40 CFR 60.34f(b), NSPS Subpart Cf or 40 CFR 60.763(b), NSPS Subpart XXX

~~Item 34.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~Item 34.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS~~
~~Monitoring Description:~~

~~NEGATIVE PRESSURE AT WELLHEAD~~

~~(1) Operate the collection system with negative pressure at each wellhead except under the following conditions:~~
~~(a) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports;~~
~~(b) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;~~
~~(c) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;~~

~~(2) Measure gauge pressure in the gas collection header at each individual well on a monthly basis. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed above. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.~~

~~Work Practice Type: PARAMETER OF PROCESS MATERIAL~~
~~Process Material: LANDFILL GAS~~
~~Parameter Monitored: PRESSURE~~
~~Upper Permit Limit: 0 pounds per square inch gauge~~

~~Reference Test Method: As per 40CFR60 Subpart WWW~~
~~Monitoring Frequency: MONTHLY~~
~~Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 35: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.753(c), NSPS Subpart WWW~~
Replace with 40 CFR 60.34f(c), NSPS Subpart Cf or 40 CFR 60.763(c), NSPS Subpart XXX

~~Item 35.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY~~

~~Item 35.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS~~
~~Monitoring Description:~~

~~GAS TEMPERATURE AT WELLHEAD~~

~~(1) Install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead;~~

~~(2) Operate each interior wellhead in the collection system with a landfill gas temperature less than 131 degrees Fahrenheit. The owner or operator may establish a higher operating temperature at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.;~~

~~(3) Monitor temperature at each well on a monthly basis. If a well exceeds this operating parameter, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An~~

alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

Work Practice Type: PARAMETER OF PROCESS MATERIAL
Process Material: LANDFILL GAS
Parameter Monitored: TEMPERATURE
Upper Permit Limit: 130 degrees Fahrenheit
Reference Test Method: As per 40CFR60 Subpart WWW
Monitoring Frequency: MONTHLY
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 36: **Compliance Certification**
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.753(c), NSPS Subpart WWW

DELETE CONDITION 36

Item 36.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY

Item 36.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:

OXYGEN OR NITROGEN CONTENT AT WELLHEAD

(1) Operate each interior wellhead in the collection system with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
(a) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established.
(b) Unless an alternative test method is established, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:
(i) The span shall be set so that the

~~regulatory limit is between 20 and 50 percent of the span;~~
~~(ii) A data recorder is not required;~~
~~(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;~~
~~(iv) A calibration error check is not required;~~
~~(v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.~~

~~(2) Monitor nitrogen or oxygen concentration at each well on a monthly basis. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.~~

~~Work Practice Type: PARAMETER OF PROCESS MATERIAL~~
~~Process Material: LANDFILL GAS~~
~~Parameter Monitored: OXYGEN CONTENT~~
~~Upper Permit Limit: 5 percent~~
~~Reference Test Method: EPA Method 3A~~
~~Monitoring Frequency: MONTHLY~~
~~Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 37: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.753(d), NSPS Subpart WWW~~
Replace with 40 CFR 60.34f(d), NSPS Subpart Cf or 40 CFR 60.763(d), NSPS Subpart XXX

~~Item 37.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 000074-82-8 METHANE~~

~~Item 37.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: AMBIENT AIR MONITORING~~
~~Monitoring Description:~~

~~SURFACE SCANS~~

~~(1) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site specific deviations from the 30 meter intervals.~~

~~(2) Areas with steep slopes or other dangerous areas may be excluded from the surface testing. For safety purposes, if a section of the landfill is covered with snow and/or ice or excessive precipitation (wet conditions) for an entire quarter, that section of the landfill does not need to be included in the surface scan required for that quarter under 40 CFR 60 Subpart WWW. The facility must return to quarterly surface monitoring in the event that conditions improve (i.e., if the snow and ice melt and the ground surface is dry enough to be accessible by personnel and suitable for the monitoring instrument) during the quarterly monitoring period.~~

~~Parameter Monitored: METHANE~~
~~Upper Permit Limit: 500 parts per million (by volume)~~
~~Reference Test Method: Method 21~~
~~Monitoring Frequency: QUARTERLY~~
~~Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 38: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.755(c), NSPS Subpart WWW~~

Replace with 40 CFR 60.36f(c), NSPS Subpart Cf or 40 CFR 60.765(c), NSPS Subpart XXX

~~Item 38.1:~~

The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 000074-82-8 METHANE

Item 38.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

SURFACE SCAN PROCEDURES

The following procedures shall be used for compliance with the surface methane operational standard:
(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications in §60.755(d).

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 8.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the following actions specified in paragraphs (i) through (vi) shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements.

(i) The location of each monitored exceedance shall be marked and the location recorded.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be

~~taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (v) has been taken.~~

~~(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring shall be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in paragraph (iii) or (v) shall be taken.~~

~~(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.~~

~~(vi) Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 39: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.755(d), NSPS Subpart WWW~~
Replace with 40 CFR 60.36f(d), NSPS Subpart Cf or 40 CFR 60.765(d), NSPS Subpart XXX

~~Item 39.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 000074-82-8 METHANE~~

~~**Item 39.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~SURFACE SCAN~~
~~INSTRUMENTATION SPECIFICATIONS~~

~~The following instrumentation specifications and procedures for surface emission monitoring devices shall be followed:~~
~~(1) The portable analyzer shall meet the instrument specifications provided in section 6 of Method 21 of 40 CFR Part 60 Appendix A, except that "methane" shall replace all references to VOC.~~

~~(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.~~

~~(3) To meet the sample, collection, preservation, storage and transport requirements in Section 8.0 of Method 21 of 40 CFR Part 60 Appendix A, the instrument evaluation procedures of section 8.1 of Method 21 shall be used.~~

~~(4) The calibration procedures provided in section 10 of Method 21 of 40 CFR Part 60 Appendix A of this part shall be followed immediately before commencing a surface monitoring survey.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 40: Reporting Requirements - Closure Report
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.757(d), NSPS Subpart WWW~~
Replace with 40 CFR 60.38f(f), NSPS Subpart Cf or 40 CFR 60.767(e), NSPS Subpart XXX

~~**Item 40.1:**~~
~~Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR Part 258.60 of this title. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a~~

notification of modification as described under 40 CFR Part 60.7(a)(4).

Condition 41: Reporting Requirements - Control Equipment Removal
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement: 40CFR 60.757(e), NSPS Subpart WWW

Replace with 40 CFR 60.38f(g), NSPS Subpart Cf or 40 CFR 60.767(f), NSPS Subpart XXX

Item 41.1:
Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with 40 CFR Part 60.757(d) of this section;
(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and
(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in 40 CFR Part 60.752(b)(2)(v) have been met.

Condition 42: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement: 40CFR 60.757(f), NSPS Subpart WWW

Replace with 40 CFR 60.38f(h), NSPS Subpart Cf or 40 CFR 60.767(g), NSPS Subpart XXX

Item 42.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-20-0 NMOC - LANDFILL USE ONLY

Item 42.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

REPORTING REQUIREMENT

(1) Each owner or operator of a landfill using an active collection system shall submit to the Administrator semi-annual reports of the following information:

(a) Value and length of time for exceedance of applicable parameters monitored for the gas wells and combustion devices;

~~(b) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow;~~

~~(c) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating;~~

~~(d) All periods when the collection system was not operating in excess of 5 days;~~

~~(e) The location of each exceedance of the 500 parts per million methane concentration and the concentration recorded at each location for which an exceedance was recorded in the previous month; and~~

~~(f) The date of installation and the location of each well or collection system expansion.~~

~~Note: This reporting condition is also required by § 63.1980(a). To avoid duplication, a condition for § 63.1980(a) has not been included in this permit.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 43: Reporting requirements - Collection and control system
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.757(g), NSPS Subpart WWW~~

Replace with 40 CFR 60.38f(i), NSPS Subpart Cf or 40 CFR 60.767(h), NSPS Subpart XXX

~~Item 43.1:~~
~~Each owner or operator seeking to comply with 40 CFR Part 60.752(b)(2)(iii) shall include the following information with the initial performance test report required under 40 CFR Part 60.8:~~

~~1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;~~

~~2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;~~

~~3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;~~

~~4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and~~

~~5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and~~

~~6) The provisions for the control of off-site migration.~~

Condition 44: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.758(d), NSPS Subpart WWW~~

Replace with 40 CFR 60.39f(d), NSPS Subpart Cf or 40 CFR 60.768(d), NSPS Subpart XXX

~~Item 44.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Item 44.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~
~~Except as provided in 40 CFR Part 60.752(b)(2)(i)(B), each owner or operator shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.~~

~~1) Each owner or operator shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under 40 CFR Part 60.755(b).~~

~~2) Each owner or operator shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in 40 CFR Part 60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in 40 CFR Part 60.759(a)(3)(ii).~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 45: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.758(e), NSPS Subpart WWW~~
Replace with 40 CFR 60.39f(e), NSPS Subpart Cf or 40 CFR 60.768(e), NSPS Subpart XXX

~~Item 45.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Item 45.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~
~~Except as provided in 40 CFR Part 60.752(b)(2)(i)(B), each owner or operator shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR Part 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 46: Specifications for active collection systems
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.759(a), NSPS Subpart WWW~~
Replace with 40 CFR 60.40f(a), NSPS Subpart Cf or 40 CFR 60.769(a), NSPS Subpart XXX

~~Item 46.1:~~
~~Each owner or operator seeking to comply with 40 CFR Part 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in 40 CFR 60.752(b)(2)(i)(C) and (D):~~

~~1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.~~

~~2) The sufficient density of gas collection devices determined in paragraph (1) above shall address landfill gas migration issues and augmentation of the collection system~~

~~through the use of active or passive systems at the landfill perimeter or exterior.~~

~~3) The placement of gas collection devices determined in paragraph (1) above shall control all gas producing areas, except as provided by paragraphs (3)(i) and (3)(ii) below.~~

~~i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 40 CFR Part 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.~~

~~ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:~~

~~$Qi = 2 k Lo Mi (e^{-kti}) (CNMOC) (3.6 \times 10^{-9})$~~

~~where,~~

~~Qi = NMOC emission rate from the ith section, megagrams per year~~
~~k = methane generation rate constant, year-1~~
~~Lo = methane generation potential, cubic meters per megagram solid waste~~
~~Mi = mass of the degradable solid waste in the ith section, megagram~~
~~ti = age of the solid waste in the ith section, years~~
~~CNMOC = concentration of nonmethane organic compounds, parts per million by volume~~
~~3.6×10^{-9} = conversion factor~~

~~iii) The values for k and CNMOC determined in field testing shall be used, if field testing has been performed in determining the NMOC emission rate or the radii of influence (the distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, Lo and CNMOC provided in 40 CFR Part 60.754(a)(1) or the alternative values from 40 CFR Part 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (3)(i) above.~~

Condition 47: Specifications for active collection systems
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.759(b), NSPS Subpart WWW~~

Replace with 40 CFR 60.40f(b), NSPS Subpart Cf or 40 CFR 60.769(b), NSPS Subpart XXX

~~Item 47.1:~~
~~Each owner or operator seeking to comply with 40 CFR Part 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:~~

~~1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other~~

~~nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.~~

~~2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.~~

~~3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.~~

Condition 48: Specifications for active collection systems
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 60.759(c), NSPS Subpart WWW~~
Replace with 40 CFR 60.40f(c), NSPS Subpart Cf or 40 CFR 60.769(b), NSPS Subpart XXX

~~Item 48.1:~~
~~Each owner or operator seeking to comply with 40 CFR Part 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with 40 CFR Part 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:~~

~~1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (2) below shall be used.~~

~~2) For new collection systems, the maximum flow rate shall be in accordance with 40 CFR Part 60.755(a)(1).~~

Condition 49: Asbestos-containing waste material standard for active waste disposal sites
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 61.154, NESHAP Subpart M

Item 49.1:
Owner or operator shall comply with the requirements of 40 CFR Part 61.154 when accepting asbestos-containing waste material from any source required to comply with 40 CFR Part 61.149, 61.150, or 61.155.

Condition 50: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 63.1955(b), Subpart AAAA~~ Replace with 40 CFR 60.36f(e), NSPS Subpart Cf or 40 CFR 60.765(e), NSPS Subpart XXX

~~Item 50.1:~~
~~The Compliance Certification activity will be performed for the Facility.~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY100-00-0 TOTAL HAP~~

~~Item 50.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~
~~If you are required by 40CFR60.752(b)(2) of subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan to install a collection and control system, you must comply with the requirements in §§63.1960 through 63.1985 and with the general provisions of part 63 as specified in table 1 of Subpart AAAA.~~

~~The facility shall develop and implement a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; a program of corrective action for malfunctioning process; and air pollution control and monitoring equipment used to comply with this standard.~~

~~This plan must be developed by the facility by the compliance date of 40CFR63, subpart AAAA (the landfill NESHAP) and must comply with all of the provisions as listed in §63.6(e)(3).~~

~~Reporting Requirements: ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 1/30/2016.~~
~~Subsequent reports are due every 12 calendar month(s).~~

****** Emission Unit Level ******

Condition 51: Emission Point Definition By Emission Unit
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 51.1:

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: L-00001

Emission Point: L0001
Height (ft.): 40 Diameter (in.): 132
NYTMN (km.): 4720.185 NYTME (km.): 213.266

Emission Point: L0002
Height (ft.): 23 Diameter (in.): 8
NYTMN (km.): 4720.185 NYTME (km.): 213.266

Item 51.2:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: M-00001

Emission Point: M0001
Height (ft.): 34 Diameter (in.): 42
NYTMN (km.): 4720.202 NYTME (km.): 213.313 Building: MB

Emission Point: M0002
Height (ft.): 34 Diameter (in.): 42
NYTMN (km.): 4720.196 NYTME (km.): 213.319 Building: MB

Item 51.3:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: P-00001

Emission Point: 00001
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.158 NYTME (km.): 213.264 Building: GASPLANT

Emission Point: 00002
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.162 NYTME (km.): 213.269 Building: GASPLANT

Emission Point: 00003
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.164 NYTME (km.): 213.273 Building: GASPLANT

Emission Point: 00004
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.169 NYTME (km.): 213.279 Building: GASPLANT

Emission Point: 00005
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.182 NYTME (km.): 213.297 Building: GASPLANT

Emission Point: 00006
Height (ft.): 29 Diameter (in.): 10

NYTMN (km.): 4720.186 NYTME (km.): 213.302 Building: GASPLANT

Emission Point: 00007
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.189 NYTME (km.): 213.308 Building: GASPLANT

Emission Point: 00008
Height (ft.): 29 Diameter (in.): 10
NYTMN (km.): 4720.193 NYTME (km.): 213.312 Building: GASPLANT

Condition 52: Process Definition By Emission Unit
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 52.1:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: L-00001
Process: 183 Source Classification Code: 5-01-004-02
Process Description:
Fugitive dust is generated through the process of landfilling refuse as a result of vehicle traffic. Dust is controlled by periodic wetting of the facility access roads to ensure visible emissions do not exceed regulatory limitations at the property boundary. No wetting of the roads is conducted when precipitation occurs.

Emission Source/Control: LNDF2 - Process
Design Capacity: 8,312,922 cubic yards

Emission Source/Control: LNDF3 - Process
Design Capacity: 2,039,598 cubic yards

Emission Source/Control: LNDFL - Process
Design Capacity: 9,144,000 cubic yards

Add LNDF4 to Process 183

Item 52.2:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: L-00001
Process: 301 Source Classification Code: 5-01-004-06
Process Description:
The landfill generates gases as a byproduct of decomposition of the waste placed at the facility. This gas is collected by a landfill gas collection and control system designed and operated in accordance with 40CFR60 Subpart WWW and 40CFR63 Subpart AAAA. Landfill gas not otherwise collected is fugitive.

Emission Source/Control: LNDF2 - Process
Design Capacity: 8,312,922 cubic yards

Emission Source/Control: LNDF3 - Process
Design Capacity: 2,039,598 cubic yards

Emission Source/Control: LNDFL - Process
Design Capacity: 9,144,000 cubic yards

Add LNDF4 to Process 301

Item 52.3:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: L-00001
Process: LEA Source Classification Code: 5-03-006-02
Process Description:
Landfill operations produce leachate which is collected in leachate tanks and condensate tanks. As the tanks near their capacity, the leachate is pumped into trucks and shipped off-site.

Emission Source/Control: TANKS - Process
Design Capacity: 68,000 gallons

Item 52.4:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: L-00001
Process: LGF Source Classification Code: 5-02-006-01
Process Description:
Process LGF includes operation of a 3,300 cfm John Zink enclosed flare ground system (0LGF1) and a 910 cfm open flare (FLR03) for control of excess landfill gas not being used by the Renewable Energy Facility. The flares combust any excess landfill gas collected from the landfill areas (LNDFL, LNDF2 and LNDF3).

The enclosed flare has a design heat input rating of 90 million British Thermal Units per hour (MMBtu/hr) and is capable of combusting up to 198,000 cubic feet per hour of landfill gas. The enclosed flare is operated in accordance with the combustion temperature requirements specified in §63.758(c)(1)(i).

The open flare is rated at approximately 27 MMBtu/hr and is operated in compliance with §60.18.

Emission Source/Control: 0LGF1 - Control
Control Type: FLARING

Emission Source/Control: FLR03 - Control
Control Type: FLARING

Emission Source/Control: LNDF2 - Process
Design Capacity: 8,312,922 cubic yards

Emission Source/Control: LNDF3 - Process
Design Capacity: 2,039,598 cubic yards

Emission Source/Control: LNDFL - Process
Design Capacity: 9,144,000 cubic yards

Add LNDF4 to Process LGF

Item 52.5:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: M-00001
Process: PSB Source Classification Code: 4-02-001-10
Process Description:
Chaffee Landfill operates a paint spray booth to coat miscellaneous metal parts and mobile equipment. The booth is approximately 25 feet wide and 60 feet long. A high volume low pressure (HVLP) spray gun is used with a rated capacity of 0.117 gal/min. Emissions are vented through particulate filters, rated at 90% efficiency and then exhausted through two identical stacks.

Emission Source/Control: 0PSB2 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 0PSB1 - Process
Design Capacity: 0.117 gallons per minute

Item 52.6:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: P-00001
Process: 601 Source Classification Code: 2-01-008-02
Process Description:
The Chaffee Landfill Renewable Energy Facility (REF) contains eight (8) Caterpillar 3516 internal combustion (IC) reciprocating engines rated at 1148 Bhp per engine. Process 601 is for the original six (6) engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06). The landfill gas enters the REF compressor room for treatment using filtration, dewatering, and compression prior to being combusted in the engines. Condensate formed during the treatment of the landfill gas drains to an underground tank where it is later transferred to a tanker truck to be hauled to a waste water treatment plant for disposal.

Emission Source/Control: ENG01 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG02 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG03 - Combustion

Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG04 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG05 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG06 - Combustion
Design Capacity: 340 cubic feet per minute

Item 52.7:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: P-00001
Process: 602 Source Classification Code: 2-01-008-05
Process Description:
The Chaffee Landfill Renewable Energy Facility (P-00001) has an emission point called a "crankcase breather vent." The function of the crankcase breather vent is to allow moisture in each of the engines crankcase to be vented so water does not collect in the engines oil pan. The water vapor might contain some motor oil in the form of a mist. Other insignificant emissions might come from the virgin motor oil storage tank, the used oil storage tank, the landfill gas condensate tank and the gas chromatograph vent.

Emission Source/Control: ENG01 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG02 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG03 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG04 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG05 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG06 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG07 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG08 - Combustion
Design Capacity: 340 cubic feet per minute

Item 52.8:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: P-00001
Process: 603 Source Classification Code: 2-01-008-02
Process Description:
The Chaffee Landfill Renewable Energy Facility (REF) contains eight (8) Caterpillar 3516 internal combustion (IC) reciprocating engines rated at 1148 Bhp per engine. Process 603 is for the two (2) additional engines (ENG07 & ENG08). The landfill gas enters the REF compressor room for treatment using filtration, dewatering, and compression prior to being combusted in the engines. Condensate formed during the treatment of the landfill gas drains to an underground tank where it is later transferred to a tanker truck to be hauled to a waste water treatment plant for disposal.

Emission Source/Control: ENG07 - Combustion
Design Capacity: 340 cubic feet per minute

Emission Source/Control: ENG08 - Combustion
Design Capacity: 340 cubic feet per minute

Condition 53: Process Permissible Emissions
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 53.1:
The sum of emissions from the regulated process cited shall not exceed the following Potential to Emit (PTE) rates for each regulated contaminant:

Emission Unit: P-00001 Process: 601

CAS No: 0NY210-00-0
Name: OXIDES OF NITROGEN
PTE(s): 21.7 pounds per hour
190,000 pounds per year
95 tons per year

Emission Unit: P-00001 Process: 603

CAS No: 0NY210-00-0
Name: OXIDES OF NITROGEN
PTE(s): 8 pounds per hour
70,000 pounds per year
35 tons per year

Condition 54: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 227-1.3 (a)

Item 54.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: L-00001

Emission Unit: P-00001

Item 54.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:

No person shall operate a stationary combustion installation which exhibits greater than 20 percent opacity (six minute average), except for one-six-minute period per hour of not more than 27 percent opacity. The Department reserves the right to perform or require the performance of a Method 9 opacity evaluation at any time during facility operation.

The permittee will conduct observations of visible emissions from the emission unit, process, etc. to which this condition applies at the monitoring frequency stated below while the process is in operation. The permittee will investigate, in a timely manner, any instance where there is cause to believe that visible emissions have the potential to exceed the opacity standard.

The permittee shall investigate the cause, make any necessary corrections, and verify that the excess visible emissions problem has been corrected. If visible emissions with the potential to exceed the standard continue, the permittee will conduct a Method 9 assessment within the next operating day of the sources associated with the potential noncompliance to determine the degree of opacity and will notify the NYSDEC if the method 9 test indicates that the opacity standard is not met.

Records of visible emissions observations (or any follow-up method 9 tests), investigations and corrective actions will be kept on-site. Should the Department determine that permittee's record keeping format is inadequate to demonstrate compliance with this condition, it shall provide written notice to the permittee stating the inadequacies, and permittee shall have 90 days to revise its prospective record keeping format in a manner acceptable to the Department.

Parameter Monitored: OPACITY
Upper Permit Limit: 20 percent
Reference Test Method: EPA Method 9
Monitoring Frequency: WEEKLY
Averaging Method: 6-MINUTE AVERAGE (METHOD 9)
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 55: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 227-2.4 (g)

Item 55.1:
The Compliance Certification activity will be performed for:

Emission Unit: L-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 55.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
WMNY submitted an updated NOx RACT Plan, dated ~~December 16, 2011~~ July 16, 2021. The plan indicates the NOx emission rate for the enclosed flare is 0.06 lb/mmBtu and the open flare is 0.068 lb/mmBtu.

The enclosed flare operates in compliance with §60.752(b)(2)(iii) and the open flare operates in compliance with §60.18.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 56: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~6 NYCRR 212.4 (c)~~ Replace with 6 NYCRR 212-2.4(b)(1)

~~**Item 56.1:**~~
~~The Compliance Certification activity will be performed for:~~

Emission Unit: M-00001

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 56.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
Emissions of solid particulates are limited to less than 0.050 grains of particulates per cubic foot of exhaust gas, expressed at standard conditions on a dry gas basis.

If this condition appears in a Title V permit, and the Department has not otherwise directed the permittee to conduct a stack test, compliance with the 0.050 grains/dscf particulate emission standard will be determined by the permittee's observation of the outlet of the emission source to determine whether or not visible emissions are present following the guidelines similar to EPA Method 22. Visible emissions will not include those due to water vapor that is present in the exhaust gas. Observations must be made once per day while operations are taking place. These observations must be recorded in a log book, and be made available to the Department on request. If visible emissions are observed for two consecutive days, a Method 9 visible emissions test must be conducted by a certified observer. If the Method 9 test determines that the opacity is less than 20%, observations of the stack in question shall be used to determine that the opacity of these emissions remain less than 20%.

The semiannual progress report and annual compliance certifications required of all permittees subject to Title V must include a summary of these observations as well an instances in which visible emissions were observed or in which observations could not be made due to weather conditions.

Parameter Monitored: PARTICULATES
Upper Permit Limit: 0.050 grains per dscf
Reference Test Method: EPA Method 5
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.

~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

~~**Condition 57:** **Compliance Certification**~~
~~**Effective between the dates of 01/13/2015 and 01/12/2020**~~

~~**Applicable Federal Requirement:6 NYCRR 228-1.3 (a)**~~

~~**Item 57.1:**~~ DELETE CONDITION 57
~~The Compliance Certification activity will be performed for:~~

~~Emission Unit: M-00001~~

~~**Item 57.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE~~
~~Monitoring Description:~~
~~No person shall cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source, except only the emission of uncombined water. Compliance will be determined by conducting a Method 9 opacity evaluation at a minimum frequency of once per year, while the source is in normal operating mode.~~

~~In addition to the above opacity evaluation, the permittee will conduct daily observations of visible emissions from the emission unit, process, etc. to which this condition applies. The observation(s) must be conducted during daylight hours except during adverse weather conditions (fog, rain, or snow).~~

~~The results of each observation must be recorded in a bound logbook or other format acceptable to the Department. The following data must be recorded for each stack:~~
~~- date and time of day~~
~~- observer's name~~
~~- identity of emission point~~
~~- weather condition~~
~~- was a plume observed?~~

~~Inclement weather conditions shall be recorded for those days when observations are prohibited. This logbook must be retained at the facility for five (5) years after the date of the last entry. If the operator observes any visible emissions (other than steam - see below) the permittee will immediately investigate any such occurrence and take corrective action, as necessary, to reduce or eliminate the emissions. If visible emissions above those~~

~~that are normal and in compliance continue to be present after corrections are made, the permittee will immediately notify the department and conduct a Method 9 assessment within 24 hours to determine the degree of opacity.~~

~~Records of these observations, investigations and corrective actions will be kept on-site in a format acceptable to the department and the semiannual progress report and annual compliance certifications required of all permittees subject to Title V must include a summary of theses instances.~~

~~** NOTE ** Steam plumes generally form after leaving the top of the stack (this is known as a detached plume). The distance between the stack and the beginning of the detached plume may vary, however, there is (normally) a distinctive distance between the plume and stack. Steam plumes are white in color and have a billowy consistency. Steam plumes dissipate within a short distance of the stack (the colder the air the longer the steam plume will last) and leave no dispersion trail downwind of the stack.~~

~~Parameter Monitored: OPACITY~~
~~Upper Permit Limit: 20 percent~~
~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Averaging Method: 6-MINUTE AVERAGE (METHOD 9)~~
~~Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY~~

Condition 58: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 228-1.3 (b) (1)

Item 58.1:
The Compliance Certification activity will be performed for:

Emission Unit: M-00001

Item 58.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The owner or operator of an emission source subject to 6 NYCRR Part 228-1 must maintain the following records in a format acceptable to the department for a period of at least five years:

1. A certification from the coating supplier or

manufacturer which lists the parameters used to determine the actual VOC content of each as applied coating used at the facility.

2. Purchase, usage and/or production records of each coating material, including solvents.

3. Records identifying each air cleaning device that has an overall removal efficiency of at least 90 percent.

4. Records verifying each parameter used to calculate the overall removal efficiency, as described in Equation 2 of Section 228-1.5(c), if applicable.

5. Any additional information required to determine compliance with Part 228-1.

Upon request, the owner or operator of an emission source subject to 6 NYCRR Part 228-1 must submit a copy of the records kept in accordance with this condition to the department within 90 days of receipt of the request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 59: Surface Coating - Handling, storage and disposal
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 228-1.3 (d)

Item 59.1:
This Condition applies to Emission Unit: M-00001

Item 59.2:
Within the work area(s) associated with a coating line, the owner or operator of a facility must:

(1) use closed, non-leaking containers to store or dispose of cloth or other absorbent applicators impregnated with VOC solvents that are used for surface preparation, cleanup or coating removal;

(2) store in closed, non-leaking containers spent or fresh VOC solvents to be used for surface preparation, cleanup or coating removal;

(3) not use VOC solvents to cleanup spray equipment unless equipment is used to collect the cleaning compounds and to minimize VOC evaporation;

(4) not use open containers to store or dispense surface coatings and/or inks unless production, sampling, maintenance or inspection procedures require operational access. This provision does not apply to the actual device or equipment designed for the purpose of applying a coating

material to a substrate. These devices may include, but are not limited to: spray guns, flow coaters, dip tanks, rollers, knife coaters, and extrusion coaters;

(5) not use open containers to store or dispose of spent surface coatings, or spent VOC solvents;

(6) minimize spills during the handling and transfer of coatings and VOC solvents; and

(7) clean hand held spray guns by one of the following:

(i) an enclosed spray gun cleaning system that is kept closed when not in use;

(ii) non-atomized discharge of VOC solvent into a paint waste container that is kept closed when not in use;

(iii) disassembling and cleaning of the spray gun in a vat that is kept closed when not in use; or

(iv) atomized spray into a paint waste container that is fitted with a device designed to capture atomized VOC solvent emissions.

Condition 60: Surface Coating- application requirements
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 228-1.3 (e)

Item 60.1:
This Condition applies to Emission Unit: M-00001

Item 60.2:
Facilities operating coating lines must use one or more of the following application techniques to apply the coating:

(i) flow/curtain coating;

(ii) dip coating;

(iii) cotton-tipped swab application;

(iv) electro-deposition coating;

(v) high volume low pressure spraying;

(vi) electrostatic spray;

(vii) airless spray, (including air assisted);

(viii) airbrush application methods for stenciling, lettering, and other identification markings; or

(ix) other coating application methods approved by the department which can demonstrate transfer efficiencies equivalent to or greater than high volume low pressure spray.

Condition 61: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 228-1.4 (b) (4) (ii)

Item 61.1:
The Compliance Certification activity will be performed for:

Emission Unit: M-00001

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 61.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
A facility operating a Miscellaneous Metal Parts Coatings coating line may not use coatings with VOC contents, as applied, which exceed the appropriate limits specified in Table B4 of 6 NYCRR Subpart 228-1.4(b)(4). The units in Table B4 are in terms of pounds of VOC per gallon of coating (minus water and excluded compounds) at application. Sampling and testing of any coating to confirm VOC content compliance must be performed in a manor directed by and at the request of the Department.

As an example, the VOC coating limit when using a General One-Component Coating, Air-Dried is 2.8 pounds of VOC per gallon of coating (minus water and excluded compounds) at application. Refer to Table B4 to determine the appropriate coating limit for each coating category.

For miscellaneous metal parts coating the following types of coatings and coating operations are exempt from the VOC content limits of table B4:

(a) stencil coating;

(b) safety-indicating coatings;

(c) solid-film lubricants;

(d) electric-insulating and thermal-conducting coatings;

(e) magnetic data storage disk coatings; and

(f) plastic extruded into metal parts to form a coating.

Parameter Monitored: VOC CONTENT
Upper Permit Limit: 2.8 pounds per gallon
Reference Test Method: EPA Method 24
Monitoring Frequency: SINGLE OCCURRENCE
Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB)
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 62: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~6 NYCRR 212.4 (c)~~ Replace with 6 NYCRR 212-2.4(b)(1)

~~**Item 62.1:**~~
~~The Compliance Certification activity will be performed for:~~

~~Emission Unit: M-00001~~
~~Process: PSB~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY075-00-0 PARTICULATES~~

~~**Item 62.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~
~~Operators of all paint spray booths must periodically monitor the booths and the accompanying particulate control device(s) by completing the following tasks on a weekly basis:~~

~~- Inspect the spray booth emission point for evidence of paint fallout and for presence of visible emissions. Presence of visible emissions indicates that the emission sources may not be operating properly and may need servicing.~~
~~- Inspect the spray booth's particulate control device for evidence that maintenance or replacement is needed.~~
~~- Record in an inspection log, which shall be made available for Department review upon request, the following information: Date, time, name of staff person performing inspection, and inspection results for each inspection; and, whenever a problem is discovered, a~~

~~description of the problem, cause and corrective action taken.~~

~~Regardless of when a problem is noted, i.e., at a time other than during the weekly inspection, it must be immediately remedied.~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 63: Capping Monitoring Condition
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 63.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-2

Item 63.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 63.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 63.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 63.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 63.6:

The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 63.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Waste Management of New York, LLC's Chaffee Landfill has accepted a cap of 35 tons per year of Oxides of Nitrogen (NOx) on the additional two engines (ENG07 & ENG08) at the Renewable Energy Facility (REF). This cap will allow the engines to not be subject to the New Source Review (NSR) regulations. The facility must track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines. The emissions factor is calculated as follows: lb/hr NOx emission rate measured during stack test divided by the kwh output from the engine during the test equals the lb/kwh emission factor. NOx emissions are calculated as kwh multiplied by the lb/kwh emissions factor equals lb/month (then converted to tons/month).

Parameter Monitored: OXIDES OF NITROGEN
Upper Permit Limit: 35 tons per year
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 64: Capping Monitoring Condition
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 64.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-2

Item 64.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 64.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 64.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 64.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 64.6:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 64.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Waste Management of New York, LLC's Chaffee Landfill has accepted a cap of 95 tons per year of Oxides of Nitrogen (NOx) on the existing six engines (ENG01, ENG02, ENG03, ENG04, ENG05 and ENG06) at the Renewable Energy Facility (REF). This cap will allow the engines to not be subject to the New Source Review (NSR) regulations. The facility must track the kilowatt-hour (kwh) output of each engine and use an emission factor developed from the most recent performance test to calculate the 12-month rolling total of NOx emissions from the engines. The emissions factor is calculated as follows: lb/hr NOx emission rate measured during stack test divided by the kwh output from the engine during the test equals the lb/kwh emission

factor. NOx emissions are calculated as kwh multiplied by the lb/kwh emissions factor equals lb/month (then converted to tons/month).

Parameter Monitored: OXIDES OF NITROGEN
Upper Permit Limit: 95 tons per year
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 65: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR Subpart 202-1

Item 65.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 000630-08-0 CARBON MONOXIDE
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 65.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The design emission rates of the internal combustion engines for nitrogen oxides (NOx) and carbon monoxide (CO) are 1.40 grams per brake horsepower-hour (g/bhp-hr) and 2.71 g/bhp-hr, respectively. The Department requires routine performance testing and periodic monitoring of the internal combustion engines to confirm the engines consistently operate within the design criteria.

PERIODIC MONITORING

(1) Each month the facility is required to analyze NOx and CO stack emissions on each engine with a portable analyzer.

February 14, 2019

(2) Based on the most recent performance test completed on ~~September 26, 2011~~, the target NOx and CO concentrations are as follows:

Engines 1 through 6

NOx = ~~217.2 ppm~~ 238.2 ppm
CO = ~~715.1 ppm~~ 784.1 ppm

Engines 7 and 8
NOx = ~~201.6 ppm~~ 226.5 ppm
CO = ~~663.7 ppm~~ 745.6 ppm

(3) If the target concentrations are exceeded, the engines shall be tuned and monitoring repeated within 10 business days. If the target concentrations are exceeded upon remonitoring, performance testing shall be conducted. If corrective actions are taken as specified, the monitored exceedance is not a violation of the operational requirements, however the permittee shall report these episodes as deviations.

(4) Records shall be maintained to include: (a) date and time of the measurement, (b) a log of the NOx and CO measurements in ppm, (c) calculations used for determining the target concentration, and (d) description of adjustments made to the engine (if any). The records shall be kept on-site and be made available to the Department upon request.

(5) A summary of all monthly monitoring results shall be reported to the Department semiannually.

ROUTINE PERFORMANCE TESTING

(1) The facility completed initial performance tests on engines #1, #4, #5, #7 and #8 between August, 2008 and ~~September, 2011~~ February 2019. The test results indicate the NOx emission rate ranges between ~~1.1~~ 1.0 grams per brake horsepower-hour (g/bhp-hr) and 1.3 g/bhp-hr. This is below the limit of 2.0 grams per brake horsepower-hour contained in 6 NYCRR Part 227-2 and 1.4 grams per brake horsepower-hour used to allow the engines to limit emissions below the applicability level of 6 NYCRR Part 231.

(2) Additional performance testing shall be completed, at a minimum, ~~every five years~~ once per permit term on one engine from each similar engine type at the facility. For purposes of this testing, engines 1 through 6 will be considered one engine type and engines 7 and 8 will be considered another engine type. More frequent performance testing may be required as determined necessary by the Department.

(3) Performance tests must demonstrate compliance with the design emission rates of 1.40 g/bhp-hr NOx and 2.71 g/bhp-hr CO.

(4) The specific engine to be tested will be selected by the Department. The test must be completed at the maximum normal operating load.

(5) The methods used to measure NOx and CO shall include EPA Methods 7 or 7E and EPA Method 10 from 40CFR60, Appendix A or another reference method approved by the Department.

(6) A performance test protocol shall be submitted to the Department for approval at least ~~60~~ 30 days prior to completion of the test. The Department must be notified ~~10~~ 7 days prior to the scheduled test date so a Department representative may be present during the test.

(7) A performance test report of the results shall be submitted to this office within ~~45~~ 60 days of completion of the test.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 66: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:6 NYCRR 227-2.4 (f) (2)

Item 66.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 66.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
WMNY submitted an updated NOx RACT Plan, dated ~~December 16, 2011~~ July 16, 2021. The plan outlines five (5) compliance test results for five of the eight engines. The test results indicate the NOx emission rate ranges between 1.1 grams per brake horsepower-hour (g/bhp-hr) and 1.6 g/bhp-hr.

To demonstrate continued compliance with the NOx RACT

standard of 2.0 g/bhp-hr, the facility is required to conduct emission monitoring and testing contained in the 6NYCRR Part 202-1 condition elsewhere in this permit.

Upper Permit Limit: 2.0 grams per brake horsepower-hour
Reference Test Method: EPA method 7, 7E or 19
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: 1-HOUR AVERAGE
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 67: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60, NSPS Subpart JJJJ

Item 67.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 67.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

FOUR
The following ~~SIX~~ engines are considered "new" stationary RICE under §63.6590(a)(2)(iii) because the order date of the engines was after June 12, 2006. In accordance with §63.6590(c)(1), new RICE at an area source must comply with 40CFR60 Subpart JJJJ. However, as per §60.4230(a)(4)(ii), the engine's are not subject to Subpart JJJJ because they were manufactured prior to January 1, 2008. As such, these engines currently do not have to meet any NSPS or NESHAP engine rules. The EPA may address requirements for these engines through future rulemaking.

Regardless of the NSPS and NESHAP rules, the engines do have to meet nitrogen oxides and carbon monoxide emission limits to demonstrate compliance with 6NYCRR Part 231 and 6NYCRR Part 227-2 as indicated elsewhere in this permit.

FOUR
This requirement is applicable to the following ~~SIX~~ engines:

Engine#, Serial#, Max Power, ~~Const.Date~~, Manf.Date
~~1, ZBA00471, 820 kW, 9/22/2006, 9/5/2006~~

~~2, ZBA00440, 820 kW, 7/24/2006, 7/10/2006~~ 1. ZBA00844, 820 KW, 11/20/2007
~~5, ZBA00435, 820 kW, 7/25/2006, 7/7/2006~~ 4. ZBA00538, 820 KW, 10/31/2006
~~6, ZBA00439, 820 kW, 7/26/2006, 7/11/2006~~ 6. ZBA00471, 820 KW, 9/5/2006
~~7, ZBA00841, 820 kW, 12/6/2006, 11/20/2007~~
~~8, ZBA00843, 820 kW, 12/5/2006, 11/20/2007~~ 8. ZBA00840, 820 KW, 11/19/2007

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 68: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4233(e), NSPS Subpart JJJJ

Item 68.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 68.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION STANDARDS

Any new engine must comply with the emission standards in Table 1 to Subpart JJJJ of Part 60 as follows:

Landfill/Digester Gas Engines (non-certified)*

Emission Standards (g/HP-hr)

Size	Date	NOx	CO	VOC
HP<500	7/1/2008	3.0	5.0	1.0
HP<500	1/1/2011	2.0	5.0	1.0
HP>=500	7/1/2007	3.0	5.0	1.0
HP>=500	7/1/2010	2.0	5.0	1.0

Emission Standards (ppmvd at 15% O2)

Size	Date	NOx	CO	VOC
HP<500	7/1/2008	220	610	80
HP<500	1/1/2011	150	610	80

HP>=500	7/1/2007	220	610	80
HP>=500	7/1/2010	150	610	80

*Note: Most SI engines are certified for using gasoline or LPG only. A stationary SI engine manufacturer may certify an engine family solely to the standards applicable to landfill/digester gas engines under the voluntary manufacturer certification program, but the engine must have a permanent label stating that the engine is for use only in landfill/digester gas applications. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).
The department has not observed any SI engines certified for landfill/digester gas. As such, most landfill/digester engines are non-certified engines.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 69: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4243(b)(2)(ii), NSPS Subpart JJJJ

Item 69.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 69.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The owner or operator of a stationary SI internal combustion engine greater than 500 HP must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition an initial performance test must be performed and subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance must also be conducted.

Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.

The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 70: Test methods and procedures
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4244, NSPS Subpart JJJJ

Item 70.1:
This Condition applies to Emission Unit: P-00001

Item 70.2:

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of 40 CFR 60.4244, including :

- Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.

- The performance tests shall not be conducted during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the stationary SI internal combustion engine is non-operational, the facility does not need to startup the engine solely to conduct a performance test, but must conduct the performance test immediately upon startup of the engine.

- The facility conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

Condition 71: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4245(a), NSPS Subpart JJJJ

Item 71.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 71.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Owners or operators of stationary SI ICE that are subject to the provisions of 40 CFR Subpart JJJJ must meet the following notification, reporting and recordkeeping requirements.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 72: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4245(c), NSPS Subpart JJJJ

Item 72.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 72.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the following:

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine

family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 73: Performance test requirements
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 60.4245(d), NSPS Subpart JJJJ

Item 73.1:
This Condition applies to Emission Unit: P-00001

Item 73.2: Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed.

~~**Condition 74: Compliance Certification**~~
~~**Effective between the dates of 01/13/2015 and 01/12/2020**~~

~~**Applicable Federal Requirement:40CFR 63.6603(a), Subpart ZZZZ**~~

~~**Item 74.1:**~~ DELETE CONDITION 74
~~The Compliance Certification activity will be performed for:~~

~~Emission Unit: P-00001~~

~~**Item 74.2:**~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~EMISSION RELATED OPERATING LIMITATIONS~~

~~No later than May 3, 2013, compliance with the following maintenance procedures must be completed as follows:~~

~~(1) Change oil and filter every 1,000 hours of operation or annually, whichever comes first;~~
~~(2) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first;~~
~~(3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace~~

as necessary;

(4) This requirement is applicable to One-90 HP generator.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 75: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 63.6603(a), Subpart ZZZZ Replace with 40 CFR 63.6600(c), Subpart ZZZZ

Item 75.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 75.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION RELATED OPERATING LIMITATIONS

No later than October 19, 2013, compliance with the following maintenance procedures must be completed:

(1) Change oil and filter every 1,440 hours of operation or annually, whichever comes first;
(2) Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first;
(3) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;

This requirement is applicable to the following TWO engines:

Engine#, Serial#, Max Power, Const.Date, Manf.Date
3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006
4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

Condition 76: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:~~40CFR 63.6625, Subpart ZZZZ~~
Replace with 40 CFR 63.6625(c), Subpart ZZZZ

~~Item 76.1:~~
~~The Compliance Certification activity will be performed for:~~

~~Emission Unit: P-00001~~

~~Item 76.2:~~
~~Compliance Certification shall include the following monitoring:~~

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~

~~OPERATION AND MAINTENANCE REQUIREMENTS~~

~~The following monitoring, installation, collection, operation, and maintenance requirements are required:~~

~~(1) Operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.~~

~~(2) Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.~~

~~(3) Utilize an oil analysis program in order to extend the specified oil change requirement in 40 CFR 63.6602, if desired. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must, at a minimum, analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:~~

(a) Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new;
(b) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or
(c) Percent water content (by volume) is greater than 0.5.

(4) If all of the condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(5) This requirement is applicable to the following THREE engines:

Engine#, Serial#, Max Power, Const.Date, Manf.Date
3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006
4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006
One-90 HP generator

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2015.
Subsequent reports are due every 6 calendar month(s).

Condition 77: Compliance Certification
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable Federal Requirement:40CFR 63.6655, Subpart ZZZZ

Replace with 40 CFR 63.6655(c), Subpart ZZZZ

Item 77.1:
The Compliance Certification activity will be performed for:

Emission Unit: P-00001

Item 77.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

~~RECORDKEEPING KEEPING AND REPORTING~~

~~The following records shall be maintained:~~

~~(1) Records of the maintenance conducted on each RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or your own maintenance plan;~~

~~(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.~~

~~(3) Maintain records in readily accessible hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report or record.~~

~~(4) This requirement is applicable to the following THREE engines:~~

~~Engine#, Serial#, Max Power, Const.Date, Manf.Date~~
~~3, ZBA00389, 820 kW, 5/23/2006, 5/4/2006~~
~~4, ZBA00388, 820 kW, 5/23/2006, 5/3/2006~~
~~One-90 HP generator~~

~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2015.~~
~~Subsequent reports are due every 6 calendar month(s).~~

STATE ONLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: **General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5**

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

STATE ONLY APPLICABLE REQUIREMENTS
The following conditions are state applicable requirements and are not subject to compliance certification requirements unless otherwise noted or required under 6 NYCRR Part 201.

Condition 78: Contaminant List
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable State Requirement:ECL 19-0301

Item 78.1:
Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 000074-82-8
Name: METHANE

CAS No: 000630-08-0
Name: CARBON MONOXIDE

CAS No: 0NY075-00-0
Name: PARTICULATES

CAS No: 0NY100-00-0
Name: TOTAL HAP

CAS No: 0NY210-00-0
Name: OXIDES OF NITROGEN

CAS No: 0NY998-00-0
Name: VOC

CAS No: 0NY998-20-0
Name: NMOC - LANDFILL USE ONLY

Condition 79: Malfunctions and start-up/shutdown activities
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable State Requirement:6 NYCRR 201-1.4

Item 79.1:
(a) The facility owner or operator shall take all necessary and appropriate actions to prevent the emission of air pollutants that result in contravention of any applicable emission standard during periods of start-up, shutdown, or malfunction.

(b) The facility owner or operator shall compile and maintain records of all equipment malfunctions, maintenance, or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the department when requested to do so, or when so required by a condition of a permit issued for the corresponding air contamination source. Such reports shall state whether any violations occurred and, if so, whether they were unavoidable, include the time, frequency and duration of the maintenance and/or start-up/shutdown activities, and an estimate of the emission rates of any air contaminants released. Such records shall be maintained for a period of at least five years and made available for review to department representatives upon request. Facility owners or operators subject to continuous stack monitoring and quarterly reporting requirements need not submit additional reports for equipment maintenance or start-up/shutdown activities for the facility to the department.

(c) In the event that emissions of air contaminants in excess of any emission standard in this Subchapter occur due to a malfunction, the facility owner or operator shall compile and maintain records of the malfunction and notify the department as soon as possible during normal working hours, but not later than two working days after becoming aware that the malfunction occurred. When requested by the department, the facility owner or operator shall submit a written report to the department describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates.

(d) The department may also require the owner or operator to include, in reports described under Subdivisions (b) and (c) of this Section, an estimate of the maximum ground level

concentration of each air contaminant emitted and the effect of such emissions.

(e) A violation of any applicable emission standard resulting from start-up, shutdown, or malfunction conditions at a permitted or registered facility may not be subject to an enforcement action by the department and/or penalty if the department determines, in its sole discretion, that such a violation was unavoidable. The actions and recordkeeping and reporting requirements listed above must be adhered to in such circumstances.

Condition 80: Visible Emissions Limited
Effective between the dates of 01/13/2015 and 01/12/2020

Applicable State Requirement:6 NYCRR 211.2

Item 80.1:
Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.