

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03900461-2011**
Application Received: **June 11, 2010**
Plant Identification Number: **039-00461**
Permittee: **City of Charleston**
Facility Name: **City of Charleston Sanitary Landfill**
Mailing Address: **P. O. Box 2749, Charleston, WV 25330**

Physical Location: Charleston, Kanawha County, West Virginia
UTM Coordinates: 445.92 km Easting • 4240.52 km Northing • Zone 17
Directions: From the City of Charleston take I 64 east to Exit 98 (35th St.). Turn right off of 35th St. onto SR61 (MacCorkle Ave. SE) and go approximately 0.15 miles. Turn left onto South Park Road. Follow South Park Road to the landfill.

Facility Description

The Charleston Sanitary Landfill is a municipal solid waste (MSW) management facility that operates under SIC Code 4953. The landfill accepts municipal solid waste, construction/demolition/debris (CDD), and approved residual waste streams. The Landfill is comprised of three disposal areas commonly referred to as Areas C1, A, and C. Area C is the only active disposal area.

The Landfill also has a Landfill Gas Collection and Control System (GCCS) and LFG (Landfill Gas) to electricity plant. The primary purpose of the GCCS at the Charleston Landfill is that the LFG is to be converted to electricity by the use of reciprocating internal combustion engines. In this process, the LFG will serve as the fuel for the engines. This process also includes the use of a high efficiency flare (23C) to destroy LFG through incineration. This is an addition to the 20 flares currently permitted under R13-2667A.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions*	2009 Actual Emissions
Carbon Monoxide (CO)	97.24	7.88
Nitrogen Oxides (NO _x)	18.40	1.31
Particulate Matter (PM ₁₀)	39.75	Not reported
Total Particulate Matter (TSP)	144.5	53.59
Sulfur Dioxide (SO ₂)	4.29	0.31
Volatile Organic Compounds (VOC)	17.47	6.19

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Potential Emissions*	2009 Actual Emissions
Total HAPs	12.72	6.19

Some of the above HAPs may be counted as PM or VOCs. No single HAP is more than 10 tpy. The largest single HAP is Toluene at 3.414 tpy

Non-methane organic compounds (NMOC) – City of Charleston Landfill reported NMOC emission of 13.47 Mg for 2008 and 10.13 Mg for 2009.

* Potential emissions are same as stated in R30-03900461-2005 (MM02) fact sheet because nothing has changed since the last permit issuance.

Title V Program Applicability Basis

This landfill has the design capacity over 2.5 million megagrams, which is the Title V applicability threshold set forth by 40 C.F.R. §60.752(b). Due to this facility's design capacity, the City of Charleston Sanitary Landfill is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR6	Open burning prohibited.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Construction permit requirement.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
	45CSR17	To Prevent and Control Fugitive Particulate Matter

	45CSR23	To Prevent and Control Emissions From Municipal Solid Waste Landfills
	45CSR30	Operating permit requirement.
	45CSR34	Emission Standards for Hazardous Air Pollutants
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
	40CFR60 Subpart WWW	Standards of Performance for Municipal Solid Waste Landfills
	40CFR60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
	40CFR63 Subpart ZZZZ	Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
	40CFR60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels
State Only:	45CSR4	No objectionable odors.
	45CSR42	Greenhouse Gas Emissions Inventory Program

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (if any)
R13-2667A	7/1/2009	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B" which may be downloaded from DAQ's website.

Determinations and Justifications

The following changes have been made to the existing Title V permit:

1. The following tanks have been taken out from Section 1.1 equipment table because there are no applicable requirements for these tanks (Note: 40 C.F.R. 60 Subpart Kb is applicable only if the tanks have capacity greater than or equal to 75 cubic meters (m³) (19,812 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.):

TK1	TK1	Motor Oil Storage Tank	1995	275 Gal.
TK 2	TK 2	Transmission Fluid Storage Tank	1995	275 Gal.
TK 3	TK 3	Gasoline Storage Tank	1995	1000 Gal.
TK 4	TK 4	Used Oil Storage Tank	1995	275 Gal.
TK 5	TK 5	Diesel Fuel Storage Tank	1995	10,000 Gal.
TK 10	TK 10	Diesel Fuel Storage Tank	1995	550 Gal.
TK 11	TK 11	Hydraulic Fluid Storage Tank	1995	275 Gal.

2. Section 2.1.4 has been added to define “rolling yearly total”.
3. Sections 3.1.1 and 3.1.2 have been changed due to changes in 45CSR6.
4. The citation in section 3.1.3 has been changed due to the repeal of 45CSR15 and now 40 C.F.R. 61 is incorporated in 45CSR34.
5. Sections 3.1.11 and 3.5.10 have been added due to new rule 45CSR42 for greenhouse gas emissions.
6. The Volumetric design flow for GCCS flare 23C is 2000 SCFM. To convert volumetric flow to mass flow, the density of the landfill gas is needed. The landfill gas is assumed to be 50% methane and 50% carbon dioxide. Using 0.67908 kg/m³ (@ 60F & 14.7 psia) for the density of Methane and 1.8696 kg/m³ (@ 60F & 14.7 psia) for the density of Carbon Monoxide, the estimated density of the landfill gas is 1.27434 kg/m³. Using convert software, the volumetric flow rate of 2000 SCFM is converted to a mass flow rate of 4.32 tons/hr. According 45CSR§6-4.1, the particulate matter limit is:
 $E = F \times \text{Incinerator Capacity} = 5.43 \times (4.32 \text{ tph}) = 23.46 \text{ pounds per hour.}$
 Meeting the 13-2667A PM limit of 1.35 lb/hr shall show compliance with 45CSR§6-4.1 limit of 23.46 lb/hr.
7. In sections 4.2.3 and 4.4.5 the following is added: “and flares (01C-20C)” because this monitoring and recordkeeping is required to show compliance with section 4.1.14 which includes flares (01C-20C).
8. Section 4.2.4 is added to show compliance with the NO_x, CO, SO₂, VOC and HCl limits in Section 4.1.13. This compliance demonstration will not be required if flare 23C is only used because NO_x, CO, SO₂, VOC and HCL limits in Sections 4.1.13 are the maximum potential emissions from flare 23C.
 Note: At present, only flare 23C is used.
9. This facility is not a major source of HAPs. Only area source part of 40 C.F.R 63 Subpart ZZZZ is applicable to the two engines in this facility; as a result, Section 6.1 has been added. Since these are spark ignition engines, by meeting the requirements of 40 C.F.R Part 60 Subpart JJJJ, the facility will show compliance with 40 C.F.R 63 Subpart ZZZZ.
10. New sections 7.1.1 and 7.2.1 are added to address 40 C.F.R. 60 Subpart Kb applicability to leachate tanks TK12 & TK13. Tanks TK12 & TK13 have capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984; hence according to EPA Applicability Determination Index (Control No. 9700144) the tanks are subject to 40 C.F.R. §§ 60.116b (a), (b) and (f). The landfill leachate is mostly water and should have very low VOL vapor pressure; hence although it appears that the tanks will be subject to 40 C.F.R 60 Subpart Kb, installation of emission controls on the tanks will not be necessary due to low vapor pressure of the VOL being stored.
11. There are no Greenhouse Gas Clean Air Act requirements for this facility because this is a renewal Title V permit and there have been no modifications that would have triggered a PSD permit

Non-Applicability Determinations

1. The following requirements have been determined not to be applicable to the subject facility due to the following:

40 CFR 64	This is the second permit renewal for this facility. At the time of the first renewal, CAM was determined not to be applicable to the sources at this facility. Therefore, a CAM applicability determination is not required.
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40 CFR §60.657(a)(3)	The design capacity of this facility is greater than 2.5 million megagrams and 2.5 million cubic meters. Therefore, amended design capacity reports are not required.
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2. 40 C.F.R. 63 Subpart AAAA is not applicable to the subject facility due to the following:

The current emission rate estimate (calculated for year 2009) is 10.13 Mg/yr. The projected closure year is 2023 with a projected maximum NMOC emission rate estimate of 29.02 Mg/yr.

This facility is not subject to AAAA because:

- (1) This MSW landfill is not a major source of HAPs.
- (2) The MSW landfill is not collocated with a major source of HAPs.
- (3) The MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions less than 50 megagrams per year (Mg/yr) NMOC.
- (4) This MSW landfill does not include a bioreactor, as defined in 40 C.F.R §63.1990.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: November 16, 2010
Ending Date: December 16, 2010

All written comments should be addressed to the following individual and office:

U.K.Bachhawat
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

U.K.Bachhawat
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1256 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

Due to EPA's comments about GHG (Greenhouse gases) comment No. 11 has been added above in Determinations and Justifications.