

# Fact Sheet



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

Permit Number: **R30-07900105-2010**  
Application Received: **March 23, 2009**  
Plant Identification Number: **07900105**  
Permittee: **Allied Waste Sycamore Landfill, LLC**  
Facility Name: **Sycamore Landfill**  
Mailing Address: **4301 Sycamore Ridge Road, Hurricane, WV 25526**

*Revised NA*

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Physical Location: Hurricane, Putnam County, West Virginia  
UTM Coordinates: 410.4 km Easting • 4250.3 km Northing • Zone 17  
Directions: Interstate 64 to Hurricane exit, south on WV State Route 34 for approximately 2 miles, turn right on Sycamore Landfill entrance road.

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## **Facility Description**

The Sycamore Landfill is a municipal solid waste (MSW) management facility that operates under SIC Code 4953 and has a design capacity of 6,502,932 Megagrams (Mg). The landfill accepts municipal solid waste, places it into active cells, compacts and covers it with soil. The landfill gasses generated by the decomposition of the waste is collected via vertical and horizontal wells and routed to a flare where it is burned prior to being vented to the atmosphere.

### Emissions Summary

<b>Plantwide Emissions Summary [Tons per Year]</b>		
<b>Regulated Pollutants</b>	<b>Potential Emissions</b>	<b>Actual Emissions (2008)</b>
Carbon Monoxide (CO)	162.89	130.97
Nitrogen Oxides (NO <sub>x</sub> )	8.69	6.99
Particulate Matter (PM <sub>10</sub> )	3.69	2.97
Total Particulate Matter (TSP)	3.69	2.97
Sulfur Dioxide (SO <sub>2</sub> )	3.03	2.44
Volatile Organic Compounds (VOC)	32.51	12.61
<i>PM<sub>10</sub> is a component of TSP.</i>		
<b>Hazardous Air Pollutants</b>	<b>Potential Emissions</b>	<b>Actual Emissions (2008)</b>
Total of miscellaneous non-major HAP (All individual HAPs have a PTE < 10 tpy)	7.88	1.5
<b>Regulated Pollutants other than Criteria and HAP</b>	<b>Potential Emissions</b>	
NMOC	66.70 (60.51Mg/yr)	
<i>Some of the above HAPs may be counted as PM or VOCs.</i>		
<p><b>Non-methane organic compounds (NMOC)</b> – The current emission rate estimate (calculated for year 2009) is 49.28 Mg/yr. The projected closure year is 2066 with a projected maximum NMOC emission rate estimate of 60.51* Mg/yr. The projected NMOC emission rate of 50 Mg/yr, triggering the requirements for the construction of a collection and control system, is estimated to occur in 2011. The NMOC emission rate estimates were calculated using EPA’s Landfill Gas Emissions Model (LandGEM) software. The values used for k and L<sub>o</sub> were 0.050 year<sup>-1</sup> and 170 m<sup>3</sup>/Mg respectively. The site specific NMOC concentration used in the model was 686 ppmv, as determined by Tier 2 testing in November 2009.</p> <p>*The actual closure date exceeds LandGEM’s 80-year waste acceptance limit. The landfill closure year with the 80-year limit is projected to be 2051 with NMOC emissions estimated at 60.44 Mg/yr</p>		

### Title V Program Applicability Basis

This facility has the potential to emit over 100 tons per year of a criteria pollutant (162.89 tpy CO). Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Sycamore Landfill is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

This facility has a design capacity over 2.5 million megagrams and over 2.5 million cubic meters. Due to this facility's design capacity, the Sycamore 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	To Prevent And Control Air Pollution From Combustion of Refuse.
45CSR11	Standby plans for emergency episodes.
45CSR13	Permits For Construction, Modification, Relocation and Operation of Stationary Sources
45CSR16	Standards Of Performance For New Stationary Sources Pursuant To 40 CFR Part 60
45CSR17	To Prevent And Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage And Other Sources Of Fugitive Particulate Matter
45CSR23	To Prevent And Control Emissions From Municipal Solid Waste Landfills
45CSR30	Operating permit requirement.
WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
40 C.F.R. Part 60, Subpart WWW	Standards of Performance for Municipal Solid Waste Landfills
40 C.F.R. Part 61	Asbestos inspection and removal
40 C.F.R. Part 82, Subpart F	Ozone depleting substances

State Only:

45CSR4	No objectionable odors.
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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)
R13-2242A	February 29, 2008	

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

1. 45CSR6 - *To Prevent and Control Air Pollution from the Combustion of Refuse.*

- The particulate matter limit for the active gas collection flare is calculated to be 29.16 lb/hr as described herein;
- The particulate matter emission limit from active gas collection flare is determined by the following formula:

$$\text{PM Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$

$$\text{Where: } F = 5.43 \text{ (from 45CSR§6-4.1)}$$

$$\text{Incinerator Capacity} = 5.37 \text{ tons/hr (see below)}$$

The Volumetric design flow for the flare is 2250 SCFM. As described above and using *Katmar Software's* "Uconeer - Units Conversion for Engineers" program and a landfill gas density of 1.2743kg/m<sup>3</sup>, the volumetric flow rate of 2250 SCFM is converted to a mass flow rate of 5.37 tons/hr.

- ◇ Since the Rule 13 (R13-2242A) permit limit is more stringent (i.e., 0.68 lb/hr) compliance with the Rule 13 permit will assure compliance with this Rule 6 limit.
- The visible emission limits for the flare is 20% opacity (45CSR§6-4.3) with the exception to smoke with is less than forty (40%) percent opacity, for a period or periods aggregating no more than eight (8) minutes per start-up (45CSR§6-4.4).
- Compliance with the opacity limits will be demonstrated through monthly visible emission checks and recordkeeping as contained in the Rule 13 permit.
- This rule also prohibits from the flares, the emission of particles of unburned or partially burned refuse or ash that are large enough to be individually distinguished in the open air (45CSR§6-4.5). The rule requires the flares, including all associated equipment and grounds, be designed, operated and maintained so as to prevent the emission of objectionable odors (45CSR6-4.6).
- Compliance will be demonstrated through visible emission checks and record keeping as contained in the Rule 13 permit.

2. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants.*

- Permit R13-2242A contains the requirements of 40 CFR 60 Subpart WWW which are incorporated into the Title V permit. It also establishes requirements for the active flare which burns the landfill gas from the gas collection system. Emission limits are established for visible particulate matter (Opacity), Volatile Organic Compounds (VOC), Carbon Monoxide (CO), Oxides of Nitrogen (NO<sub>x</sub>), Sulfur Dioxide (SO<sub>2</sub>), Particulate Matter (PM/PM<sub>10</sub>) and Hazardous Air Pollutants (HAPs). Monitoring, testing, recordkeeping and reporting requirements are also established in this permit

- ↪ Permit R13-2242A §5.3.1. requires particulate matter loading tests of the flare exhaust gases at such reasonable times as the Director may designate using 40 C.F.R. Part 60, Appendix A, Method 5 or other equivalent EPA approved method approved by the Director. The flare burns landfill gases that contain little or no particulate matter. Since it is an open flare and there are no test methods for determining particulate matter loading for open flares, this Rule 13 permit requirement is not included in the Title V permit. Until such time as the Rule 13 permit is modified, this requirement remains in effect in the Rule 13 permit.
  
- 3. *45CSR17 – To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter.*
  - ↪ This rule sets a standard for fugitive particulate matter, which is not to be discharged beyond the facility boundary lines which causes statutory air pollution.
    - Compliance with this standard will be met by the facility submitting a control plan if the Director finds the facility in violation of this rule.
  
- 4. *40 C.F.R. 60, Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills, and 45CSR23 – To Prevent and Control Emissions from Municipal Solid Waste Landfills*
  - ↪ This rule sets standards based on design capacity and nonmethane organic compounds (NMOC). The facility will maintain records of all emission data and operating parameters necessary to show compliance. If necessary the facility will demonstrate compliance by submitting a landfill gas collection and control system design plan. The facility will also demonstrate compliance by submitting an initial NMOC emission report, annual NMOC emission report, 5-year NMOC report, revision of 5-year NMOC report, and/or closure report, where applicable.
    - Since the design capacity is greater than 2.5 Mg, amended design capacity reports under 40 CFR §60.757(a)(3) are not required. Therefore, the current design capacity and the requirement to report an amended design capacity will not be included in the “Source Specific Requirements” section of the Title V permit.
  
  - ↪ The emission rate from nonmethane organic compounds (NMOC) has been calculated to be less than 50 megagrams per year using the Tier 2 methodology. Therefore the installation of a collection and control system is not required. The facility has previously and voluntarily installed a collection and control (i.e., a flare) system and has received a construction permit (R13-2242A) from the WVDAQ. Once the NMOC emission rate is equal to or greater than 50 megagrams per year, triggering the need to submit a landfill collection and control system design plan and install a collection and control system that meets the requirements of Subpart WWW based on 40 C.F.R. §60.754(a) and §60.752(b)(2) [see permit conditions 4.1.1., 4.1.2., 4.1.3. & 4.1.4.], the facility shall submit a Title V permit modification application in order to incorporate the 40 C.F.R. Subpart WWW requirements applicable to such collection and control system and design plan not already included in the permit.
    - The Title V permit requires that the annual NMOC emission report be submitted no later than June 30 of each year. The R13-2242A permit requires that the annual NMOC emission report be submitted no later than July 1 of each year. Therefore the R13-2242A permit requirement is streamlined with the Title V permit requirement. Hence, compliance with the June 30 submission deadline assures compliance with the R13-2242A permit requirement of a submission date no later than July 1. of each year.

5. 40 C.F.R. 60, Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification.*

- The leachate tank has a capacity greater than 75 cubic meters (m<sup>3</sup>) and commenced construction after July 23, 1984. The leachate is composed primarily of water and contains trace amounts of volatile organic liquids (VOL). The vapor pressure of the VOL stored in the tank is expected to be well below 3.5 kPa. An example of this low vapor pressure is reflected in EPA Region 4's Applicability Determination Index (API) determination in 1994 for leachate tanks that had a VOL vapor pressure of only 6.37 x10<sup>-4</sup> kPa. At the time of the determination, the tanks in the API were only subject to the record keeping of tank dimensions and capacity analysis sections of Subpart Kb. This subpart has since been amended and does not apply to tanks storing VOL with a true vapor pressure less than 3.5 kPa. Therefore, 40 CFR 60, Subpart Kb is considered to be non-applicable to the leachate tank located at this facility.

**Non-Applicability Determinations**

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

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.
40 C.F.R. 60 Subpart Kb	The Leachate Tanks VOL vapor pressures are less than 3.5 kPa
40 C.F.R. §61.154	The facility does not receive asbestos-containing waste material from sources covered under 40 C.F.R. §61.149, §61.150, or §61.155.
40 C.F.R. 63 Subpart AAAA	This facility is not a major source of HAPs, nor is it is collocated with a major source. It 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 (m <sup>3</sup> ) but its estimated uncontrolled emissions are not equal to or greater than 50 megagrams per year (Mg/yr) NMOC.
40 CFR 64	The facility does not have a pollutant specific emissions unit with a control device to meet an applicable standard or limit. Therefore, the facility is not subject to the Compliance Assurance Monitoring (CAM) rule.

**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: January 27, 2010  
 Ending Date: February 26, 2010

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

Frederick Tipane  
Title V Permit Writer  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> 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**

Frederick Tipane  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1215 • Fax: 304/926-0478

**Response to Comments (Statement of Basis)**

Not applicable.