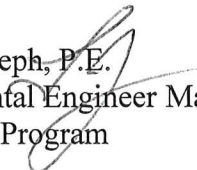



COMMONWEALTH OF PENNSYLVANIA  
Department of Environmental Protection  
Southwest Regional Office

TO AQ Case File TV- 56-00232

FROM Noor Nahar   
Air Quality Engineering Specialist  
Air Quality Program

THROUGH Thomas Joseph, P.E.   
Environmental Engineer Manager  
Air Quality Program

Mark Gorog, P.E.   
Program Manager  
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DATE June 30, 2016

RE Review of Title V Renewal Application  
Shade Landfill, Inc.  
Shade Township  
Somerset County

APS 832656 AUTH 1009187 PF 495641

### Background

Shade Landfill, Inc. (Shade, formerly known as Resource Conservation Corporation) operates a municipal solid waste landfill in Shade Township, Somerset County, Pennsylvania. The landfill was previously permitted with Disposal Area A and Disposal Area B, that design was superseded with a single disposal area. The single permitted Disposal Area for this site has a total footprint area of 183.2-acres. The amended design capacity of this facility is established at 24.1 million tons of municipal solid waste. This includes the waste deposited in the existing disposal areas, and the additional 19 million tons of capacity provided by the expansion area (PA-56-00232B).

Sources and the control devices at this facility are:

- Paved and Unpaved Roads
- Landfill Gas (waste)
- Soil Processing
- Emergency Generator

- Aggregate and Soil Handling Process
- Landfill Gas Fugitive
- LFG Ground Flare (Enclosed Flare)
- Utility candle flare
- Water Spray
- Landfill Gas collection system

Other insignificant activities are listed at the end of the TVOP.

An initial Title V Operating Permit was issued for this site on July 31, 2001, consolidating all previously issued authorizations. A Title V Renewal was issued on August 31, 2009 with an expiration date of August 31, 2014. This is the second Title V Renewal Application received by the Department on January 10, 2014. The application was deemed timely and complete on January 24, 2014.

On February 14, 2011, the installation of a 0.645 MMBtu/hr propane powered boiler used to warm leachate water was exempted from Plan Approval/Operating Permit requirements by the department. There was no other change in the facility since the issuance of the last permit renewal in 2009.

### **PREVIOUS OPERATING PERMITS AND PLAN APPROVALS:**

Air Quality Plan Approval PA-56-305-042 was issued to Shade on December 13, 1991 to allow the installation of a 250-ton per hour soil processing facility equipped with a 470 hp diesel generator. Plan Approval PA-56-322-002 was issued on June 21, 1996 to allow the construction of an interim gas collection system and a candle flare. PA-56-322-002 included conditions subjecting the facility to 40 CFR 60, Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills. Plan Approval PA-56-232A was issued on July 13, 1998 to allow the installation of an enclosed flare. The enclosed flare was installed shortly thereafter and was stack tested on March 29, 2000 with acceptable results. Plan Approval PA-56-232B was issued on August 11, 2004 to allow the expansion of the landfill into a new disposal area, and to allow the expansion of the existing collection and control system into this new disposal area.

### **Regulatory Analysis**

This source is defined as a Title V facility and is therefore subject to the Title V permitting requirements adopted in 25 Pa. Code, Chapter 127, Subchapter G.

All of the conditions derived from Title 25 of the Pennsylvania Code in the original Title V permit have been included in this renewal. The applicable emission limitations, monitoring, recordkeeping, reporting and work practice standard requirements of Pa. Code Title 25 Sections 123.1, 123.2, 123.13, 123.21, 123.31, 123.41, 123.42, 127.511, 127.513, 129.57 and 135.5 have been included in this Title V permit renewal.

The collection and control system is subject to the Department's Bureau of Air Quality Permit Manual, Section 7.10; Air Quality Permitting Criteria Including Best Available Technology (BAT) Criteria for Municipal Waste Landfills New Source Performance Standards (NSPS).

Title 25 PA Code Section 122.3 adopts in entirety the Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources promulgated in 40 CFR Part 60 Subpart WWW. The applicable requirements of Subpart WWW have been included in this Title V renewal permit.

Title 25 PA Code Section 127.35(b), and 40 CFR Part 63 NESHAP for Source Categories are incorporated by reference into the Department's permitting program. The applicable requirements of 40 CFR Part 63 Subpart AAAA- National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills has been included in this Title V permit.

The portable soil processing plant is subject to NSPS Subpart OOO. Conditions for the portable soil processing plant have been included as an Alternative Operation. The Soil Processing System is powered by a diesel engine. The engine is not subject to RICE rules since it is portable.

The emergency generator (250 hp) is subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE) found in 40 CFR Part 63 Subpart ZZZZ. Applicable requirements from this subpart have been placed in the permit. They were constructed prior to 2005 and are not subject to 40 CFR Part 60 Subpart IIII.

The 4,000 gallon used oil tank is not subject to Pa. Code Title 25 Section 129.57 since the vapor pressure of the oil stored in the tank is well below 1.5 psia. Other stationary petroleum storage tanks have capacities that vary from 500 - 275 gallons each. There are no specific regulations governing this size of tank. These sources are included in the Miscellaneous Section of the permit for site inventory purposes only.

The Greenhouse Gases Tailoring and the Mandatory Greenhouse Gas Reporting rule of 40 CFR Subchapter C, Part 98 have been evaluated for applicability to this site. Requirements from these regulations may apply to certain facilities that have taken a NSR or PSD permitting action. This facility has not undertaken a NSR or PSD permitting action; consequently, the previously mentioned GHG rules do not apply. However, the Department has elected to require reporting of GHG emissions for new construction & modifications to existing sources. As this permitting does not involve new construction or modification, we are not including these requirements in this TVOP renewal.

### **Equipment and Emissions:**

Sources of emissions at this facility consist of the landfill itself including disposal areas being constructed, disposal areas actively accepting waste, closed disposal areas, roads, and earthmoving equipment; emitting fugitive ( $PM_{10}$ ). Other sources of emissions at this facility are a landfill gas collection system (wells/manifolds routed to a flare; emitting undestroyed VOCs,

HAPs, and CO), enclosed flare (controlled VOCs and HAPs, SO<sub>2</sub>, NO<sub>x</sub>, CO, PM<sub>10</sub>, and CO<sub>2</sub>), and a soil processing system (fugitive PM<sub>10</sub>).

Summary of Potential Emissions (tons/yr)

ID#	Source	SOx	NOx	CO	VOC	PM10	CO2e	Single HAP (HCL)	Total HAPs
101	Paved and unpaved roadways <sup>2</sup>					31.75 (50% control efficiency)			
102	Landfill Gas Fugitives (NMOC's) <sup>1</sup>				11.48		154,038	0.92	3.10
103	Soil Processing	0.48	7.33	1.58	.059	1.08			
104	Emergency Generator	0.13	1.94	0.42	0.16	0.14	71.97		
106	Aggregate and Soil Handling					1.14			
CO4	Landfill Ground Flare		28.69	95.64	1.34	8.94	120,693	4.24	6.90
Total		0.61	37.96	97.64	13.57	43.04	274,803	5.16	10.00

Notes:

1. The USEPA LandGEM model was utilized to estimate the potential landfill gas generated from the maximum waste placement in the landfill. The LandGEM model estimates NMOC emissions and HAP emissions generated from maximum waste placement. Of the landfill gas generated, 85% is collected by the gas collection system and sent to the flare. This collection efficiency was utilized in the permit application to reflect site data. The remaining 15% of the landfill gas generated is emitted from the landfill as fugitive emissions. The percentage of NMOC that is VOC is determined from USEPA AP-42 and is estimated to be 40% based on landfill NMOC concentration. The LandGEM estimates for HAP are also based on AP-42 factors. The collected landfill gas is sent to the flare, where 91-98% of the VOC and organic HAPs are destroyed, based on USEPA AP-42 Table 2.4-3.

The Landfill Gas Collection System and the Fugitive Landfill Gas are both the same source and include VOC, HAPs, and CO<sub>2</sub>e emissions from the landfill gas that is not captured and sent to the flare.

2. Control efficiency for watering from USEPA AP-42 Table 13.2.2-2 and is 50%.

The Collection and Control Plan consists of gas extraction wells. Wells are connected by laterals to either a sub-header or the main collection header. Landfill gas is conveyed to an enclosed flare. The flare is equipped with a flue gas temperature monitor, ultraviolet flame scanner, automatic fail safe valve, auxiliary fuel supply, automatic start-re-start, flow/temperature recorder, purge blower, automatic and manual temperature control louvers, and an aluminum flame arrestor. 85% collection efficiency was assumed for synthetically capped areas being extracted. It is estimated that the flare achieves a 98% destruction efficiency. A candle flare is available to be used for a backup control device.

The Soil Processing System consists of a diesel engine, a screen, a crusher, conveyors and various earthmovers. The NSPS Subpart OOO for nonmetallic mineral processing applies to this affected facility.

**Conclusions and Recommendations:**

Shade Landfill has met the regulatory requirements associated with this application submittal. The recent stack test was conducted on the enclosed flare on February 2, 2012. The most recent inspection was conducted on September 18, 2015. Inspection reports indicate that facility is in compliance with all regulatory requirements. The attached proposed permit reflects terms and conditions as described in this permit application. It is my recommendation to issue a Title V Operating Permit renewal for this facility as proposed upon completion of the public comment period. Notice of intent to issue this TVOP renewal will be published in Pa Bulletin and local newspaper. EPA, the company, Air Quality District Supervisor and Air Quality inspector will be provided with this proposed TVOP renewal.