



west virginia department of environmental protection

Division of Air Quality
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Earl Ray Tomblin, Governor
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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2885
Plant ID No.: 055-00123
Applicant: Mercer County Solid Waste Authority (MCSWA)
Facility Name: Mercer County Sanitary Landfill
Location: Princeton, Mercer County
NAICS Code: 562212
Application Type: Construction
Received Date: April 29, 2011
Engineer Assigned: David Keatley
Fee Amount: \$1,000.00
Date Fee Received: May 2, 2011
Complete Date: July 13, 2011
Due Date: October 11, 2011
Applicant Ad Date: April 29, 2011
Newspaper: *Bluefield Daily Telegraph*
UTM's: Easting: 488.9 km Northing: 4,131.4 km Zone: 17
Description: This permit is for the flare.

DESCRIPTION OF PROCESS

Landfill gas (LFG) is primarily carbon dioxide and methane with traces of VOCs and other atmospheric gases. The Mercer County landfill proposes a gas collection and control system. The Mercer County landfill will collect LFG with blowers and then combust the methane and trace levels of VOCs with a 500 cfm Flare O1E which will produce primarily carbon dioxide. Carbon Dioxide is 21 times less potent than methane as a greenhouse gas.

SITE INSPECTION

The permit writer and Lee Martin performed a site inspection of the facility on July 12, 2011.

Directions to the facility from Charleston are: I77 S to exit 9. Take US460 S until you see Frontage Road. Turn left onto Frontage Road. The facility is at the intersection of Frontage Road and Shelter Road.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions were estimated with AP-42 emission factors and methane production was estimated with LandGEM. The peak methane production occurred in 2002 and will be estimated at 250 ft³/min.

Source ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
01E	Flare	Hydrochloric Acid (HCL)	0.12	0.53
		Carbon Monoxide	5.40	24.3
		Nitrogen Oxides	1.02	4.47
		Sulfur Dioxide	0.25	1.09
		Volatile Organic Matter	0.02	0.14
		PM ₁₀	0.26	1.12

REGULATORY APPLICABILITY

45CSR4 *To Prevent and Control the Discharge of Air Pollutants Into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors*

The facility is subject to the requirements of 45CSR4 and shall not allow the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

45CSR6 *Control of Air Pollution From Combustion of Refuge*

From section 2.7 this facilities flare (01E) meets the definition of incineration and is therefore subject to applicable Rule 6 requirements. The maximum capacity of the flare is 2,349 lb/hr. From section 4.1 the maximum allowable total particulate matter emission rate is 6.38 lb/hr. The flares potential to emit of total particulate matter is well below this threshold. The opacity limit for the flare is 20%.

45CSR13 *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation*

45CSR13 applies to this source due to the fact that they are subject to a substantive requirement of an emission control rule promulgated by the Secretary (45CSR6).

45CSR22 *Air Quality Management Fee Program*

The Mercer County Solid Waste Authority is required to keep their Certificate to Operate (CTO) current.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Hydrochloric Acid

Hydrochloric acid has many uses. It is used in the production of chlorides, fertilizers, and dyes, in electroplating, and in the photographic, textile, and rubber industries. Hydrochloric acid is corrosive to the eyes, skin, and mucous membranes. Acute (short-term) inhalation exposure may cause eye, nose, and respiratory tract irritation and inflammation and pulmonary edema in humans. Acute oral exposure may cause corrosion of the mucous membranes, esophagus, and stomach and dermal contact may produce severe burns, ulceration, and scarring in humans. Chronic (long-term) occupational exposure to hydrochloric acid has been reported to cause gastritis, chronic bronchitis, dermatitis, and photosensitization in workers. Prolonged exposure to low concentrations may also cause dental discoloration and erosion. EPA has not classified hydrochloric acid for carcinogenicity.

AIR QUALITY IMPACT ANALYSIS

Based on the annual emission rates this facility will not be a major source as defined by 45CSR14 and considering the nature of the emissions no air quality impact analysis was performed.

MONITORING OF OPERATIONS

MCSWA will be required to perform the following monitoring:

1. Monitor and record quantity of LFG burned in the flare (01C).

MCSWA will be required to perform the following recordkeeping:

1. Maintain records of the amount of LFG burned in the flare (01C).

2. Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
3. Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
4. Maintain records of the visible emission opacity tests conducted per the permit.
5. The records shall be maintained on site or in a readily available off-site location maintained by MCSWA for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The Mercer County Solid Waste Authority's request to construct a flare at the Princeton, Mercer County, WV site meets the requirements of General Permit G35-A and all applicable rules and regulations and therefore should be granted a Permit to construct and operate the said control device.

David Keatley
Permit Writer

DATE