TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 97OPEP182

to be issued to:

BFI Waste Systems of North America, Inc
Fountain Solid Waste Landfill
El Paso County
Source ID 0410331

Prepared by Doris Jung on January 29, 1998
Revised by Vincent Brindley on January 26, 1999, February 24, 1999
and May 5, 1999

I. Purpose

This document will establish the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA and during Public Comment. The conclusions made in this report are based on information provided in the original application submittal of March 12, 1997. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998 or if specifically requested by the source. All short term emission and production/throughput limits that appeared in the construction permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 month total. Note that, if applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation. (See Section VII for specific short term limits removed).

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Source Description

This source is classified as a municipal solid waste landfill defined under Standard Industrial Classification 4953. Municipal solid waste is delivered to the Fountain Solid Waste Landfill by independently-operated hauling trucks and placed in open landfill disposal by facility operators. The waste is unloaded and placed for disposal at the open face of the landfill. The landfill is designed to service the region for a minimum site life of 10 years.

The source is located approximately six miles southeast of the I-25 and Highway 16 interchange in El Paso County in an area designated as nonattainment for carbon monoxide. There are no affected states within 50 miles of the facility. The facility is not within 100 kilometers of any Federal Class I designated area. The pollutants of concern are Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Particulate Matter (PM), and Particulate Matter less than 10 microns (PM_{10}), and Hazardous Air Pollutants (HAPs). Facility wide potential emissions based on data submitted with the Title V application and actual emissions based on the APENs on file with the Division are as follows in tons per year (tpy):

Pollutant	Potential Emissions (tpy)	Actual Emissions (tpy)
CO	47.82	*
VOC	78.71	*
NOx	11.95	*
SO2	2.23	*
PM	2.63	*
PM_{10}	2.63	*

*Only fugitive particulate emissions were reported.

This source is considered to be a minor source (Potential to Emit < 250 tpy) for purposes of Prevention of Significant (PSD) regulations. This facility currently has no applicable MACTs but is subject to Standards of Performance for Municipal Solid Waste Landfills (Colorado Regulation No. 6, Part A, Subpart WWW, 40 CFR § 60.750 through § 60.759). BFI indicated that the Fountain Solid Waste Landfill is not a 112(r) source and certified to operating in compliance with all applicable requirements at the time of their application submittal on March 12, 1997.

III. Emission Sources

The following sources are specifically regulated under terms and conditions of the Operating Permit for this Site:

Unit P001 - Fugitive Particulate Emissions from Earthmoving Activities

1. Applicable Requirements

The sources of fugitive particulate emissions were first placed into service in 1966 and were last modified in 1994. Fugitive particulate emissions are generated from transfer of material to and from soil storage piles, wind erosion from storage piles, vehicle travel on unpaved roads, waste

dumping, and disturbed areas. This emission unit is also permitted under initial approval Colorado Construction Permit 90EP210. The applicable requirements for this unit are the following:

- PM: 32.53 tpy (Colorado Construction Permits 90EP210, Colorado Regulation No. 1, Section III.D.1.c)
- PM_{10}: 19.08 tpy (Colorado Construction Permits 90EP210, Colorado Regulation No. 1, Section III.D.1.c)
- Minimize fugitive particulate emissions (Colorado Regulation No. 1, Section III.D.1.a)
- No off-property transport (Colorado Regulation No. 1, Section III.D.1.c)
- 20% Opacity limitation during normal operations (Colorado Regulation No. 1, Section II.A.1)
- APEN Reporting (Colorado Regulation No. 3, Part A, Section II)

However, the emission limitations, no off-property transport, and 20% opacity identified in Regulation No. 1, Section III.D.1.c are guidelines, not enforceable standards. Therefore, these guidelines will not be included in the Operating Permit, however control measures will be included.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for Colorado Construction Permit 90EP210 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors

PM and PM_{10} emissions are subject to APEN reporting requirements but are not subject to annual fees since they are considered to be fugitive dust. A revised APEN was submitted with the Title V Operating Permit application for the fugitive particulate emissions. The emission factors included in this section for transfer of material to and from soil storage piles, wind erosion from storage piles, and vehicle travel on unpaved roads were used by the source to determine emissions for the revised APEN. The emissions from waste dumping and disturbed areas were not considered by the source in the Title V Operating Permit application and were calculated by the Division with the approved emission factors described below.

<u>Material Transfer to and from Soil Storage Piles</u>
The source proposed to use emission factors from AP-42 (EPA Compilation of Air Pollutant Emission Factors, January 1995), Section 13.2.4.

PM : 0.01 lb per ton of soil transferred
PM_{10} : 0.005 lb per ton of soil transferred

<u>Wind Erosion from Storage Piles</u>
The source proposed to use emission factors for PM from AP-42 (EPA Compilation of Air Pollutant Emission Factors, January 1995), Section 11.9. The PM emission factor was adjusted

using the particle size multipliers (k) taken from AP-42 (EPA Compilation of Air Pollutant Emission Factors, January 1996), Section 13.2.2 to determine the PM_{10} emission factor.

PM : 0.38 ton per acre-yr
PM_{10} : 0.17 ton per acre-yr

Vehicle Travel on Unpaved Roads
The source proposed to use emission factors (lb PM_{10}/Vehicle Miles Traveled) calculated from the predictive emission factor equation reported in AP-42 (EPA Compilation of Air Pollutant Emission Factors, January 1995), Section 13.2.2.

	PM (lb/VMT)	PM_{10} (lb/VMT)
Waste Haul Truck	1.594	0.717
Private Vehicle	0.112	0.050
Earth Moving Equip.	1.206	0.543
Water Truck	0.303	0.136

In addition, a combined control efficiency of 37.5% is used for gravel and wet suppression control measures.

Waste Dumping
The Division-approved emission factors for waste dumping are the following:

PM : 0.056 lb per ton of waste accepted
PM_{10} : 0.0024 lb per ton of waste accepted

Disturbed Areas
The Division-approved emission factors for disturbed areas are the following:

PM : 3.5 lb per acre of disturbed area
PM_{10} : 1.7 lb per acre of disturbed area

In addition, revegetation and watering (as necessary) provides approximate daily and annual control efficiencies of 25% and 85%, respectively.

3. Monitoring Plan

The fugitive particulate emission sources are subject to the requirements of Colorado Regulation No. 1, Section III.D, which requires existing sources to employ control measures and operating procedures to minimize fugitive particulate emissions using all available practical methods that are technologically feasible and economically reasonable. The source will semi-annually certify that they have complied with the intent of this regulation. Records (i.e. operating procedures and plant policies) of controls used shall be maintained and made available to the Division on request.

A revised APEN must be submitted to the Division as required by Colorado Regulation No. 3,

Part A, Section II. C.

4. Compliance Status

A current APEN reporting 1996 emissions for this emission unit is on file with the Division. No records indicating non-compliance were found in a review of the facility's Division files and the source certified in their application that they are currently in compliance with all current applicable requirements. Therefore, this unit is currently considered to be in compliance with all applicable requirements.

Unit P002 - Landfill Gas Emissions

1. Applicable Requirements

This landfill began accepting waste in 1966 and was last modified in 1994. The pollutants of interest are VOCs *(Note: VOC emissions have been assumed equal to NMOC for the uncollected landfill gas)* resulting from the decomposition of solid waste placed in the landfill and combustion emissions from the flaring of landfill gas (VOC, CO and NOx). This unit is permitted under initial approval Colorado Construction Permit 90EP210. The applicable requirements for this emission unit are the following:

- VOC: 78.71 tpy (Colorado Construction Permit 90EP210)
- CO: 47.82 tpy (Colorado Construction Permit 90EP210)
- NOx: 11.95 tpy (Colorado Construction Permit 90EP210)
- PM: 2.63 tpy (Colorado Construction Permit 90EP210)
- PM10: 2.63 tpy (Colorado Construction Permit 90EP210)
- SO2: 2.23 tpy (Colorado Construction Permit 90EP210)
- Waste Acceptance Rate Limit: 760594.8 tpy (Colorado Construction Permit 90EP210)
- Quantity of Landfill Gas Flared: 239,100 MMBTU/yr (Colorado Construction Permit 90EP210)
- New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills (Colorado Construction Permit 90EP210, Colorado Regulation No. 6, Part A, Subpart WWW)
- General Provisions of NSPS (Colorado Construction Permit 90EP210, Colorado Regulation No. 6, Part A, Subpart A)
- Odor Emission Regulation (Colorado Regulation No. 2)
- APEN Reporting (Colorado Regulation No. 3, Part A, Section II)

The emission limits for Colorado Construction Permit 90EP210 were chosen at maximum VOC emission levels the landfill could emit to eliminate the necessity to modify the construction permit during the life of the landfill. The estimated maximum emissions were determined with EPA's Landfill Air Emissions Estimation Model Version 1.0 using recorded data of mass refuse placed in the landfill for 1992 through 1996 and assuming that waste acceptance will occur at the annual limit from 1997 until landfill closure in the year 2009.

NSPS Subpart WWW requires the source to recalculate the NMOC emission rate annually subsequent to the initial NMOC emission rate report. The initial NMOC emission rate report was submitted by the source on June 4, 1996. The source has recalculated the emission rate and

it now exceeds 50 Mg per yr, as calculated per NSPS Subpart WWW requirements. The source has installed and is operating a landfill gas collection system, therefore they will no longer be required to submit annual NMOC emission reports per §60.757(b)(3). However, they will be required to submit recorded information reports for the gas collection system per §60.757(f)(1-6).

2. Emission Factors

The annual emissions from the landfill are determined with the Landfill Air Emissions Estimation Model. Therefore, there are no emission factors associated with this emission unit. The acceptable input values into the model are described in the next paragraph.

Annual VOC and CO emissions rates for the years 1992 through 2009 were estimated with EPA's Landfill Air Emissions Estimation Model Version 1.0. Inputs into the model include the methane generation potential (L_o = 100 m^3 per Mg), methane generation rate constant (k = 0.02 per yr), NMOC concentration as hexane (C_{NMOC} = 898 ppmv, Tier 2, site specific), and cumulative mass of refuse in the landfill for each year that the landfill was or will be open. Recorded data for past and present years of refuse in the landfill were used. The estimated mass of refuse in the landfill for future years were determined by adding the maximum yearly waste acceptance rate to the previous year's cumulative refuse in the landfill. The estimated date of landfill closure is 2009.

The values of the parameters (L_o, k, and C_{NMOC}) used in the Landfill Model, as described above, were chosen to represent the conditions at the landfill. The use of site-specific values for L_o, k, and C_{NMOC} that are approved by the Division is allowed. However, it should be noted that these same values should not be used to determine compliance with NSPS Subpart WWW requirements, the source must use the acceptable values and calculation methods described in 40 CFR § 60.754.

Emissions of criteria pollutants shall be based on the following factors:

Pollutant	**EF**	**Notes:**
VOC	Mass Balance	Gas generation estimated from model. Collection efficiency is 75%. Flare destruction efficiency is 98%(when installed). Material Balance for petroleum contaminated soil. (VOC assumed equal to NMOC for uncollected gas)
CO	0.4 lb/MMBTU	AP-42 (1/95)
NOx	0.1 lb/MMBTU	AP-42 (1/95)
SO2	Mass Balance	Sulfur containing compounds generation estimated from model. Collection efficiency is 75%. Conversion efficiency of 98% (H2S to SO2).
PM	0.07 gr/scf entrained in gas	Source estimation
PM10	0.07 gr/scf entrained in gas	Source estimation

3. Monitoring Plan

Waste acceptance shall be recorded monthly. A new rolling twelve month total of waste acceptance will be determined each month. The rolling twelve month total shall be used to determine compliance with the annual limitation.

The source shall be required to analyze the landfill gas annually for BTU content (per §60.18(f)(3). Compliance with emissions limitations will be demonstrated by tracking and demonstrating compliance with the waste acceptance rate, since the landfill gas emissions are dependent on the amount of waste placed in the landfill.

The source is using a sulfur emission factor that is derived from landfills across the United States and that is greater than that listed in AP-42. As such they will not be required to perform periodic testing of the sulfur content in the landfill gas.

A revised APEN must be submitted to the Division as required by Colorado Regulation No. 3, Part A, Section II. C. Emissions will be estimated with EPA's Landfill Air Emissions Estimation Model Version 1.0 or higher using acceptable input values that were discussed above. Also the emissions resulting from combustion in the flare and from petroleum contaminated soil will be determined by calculation.

NSPS Subpart WWW requires the source to install and operate a landfill gas collection system. The source has submitted the collection system plans and the plans have been reviewed by a Division Professional Engineer. The modified version of Construction Permit 90EP210 (issued 12/08/98) incorporates the landfill gas collection system requirements and emission rates and these have been incorporated into the Operating Permit.

4. Compliance Status

A current APEN reporting 1996 emissions for this emission unit is on file with the Division. No records indicating non-compliance were found in a review of the facility's Division files and the source certified in their application that they are currently in compliance with all current applicable requirements. Therefore, this unit is currently considered to be in compliance with all applicable requirements.

IV. Insignificant Activities

Chemical Storage Tank - BFI identified a chemical storage tank that qualifies as insignificant activities under Regulation No. 3, Part C, Section II.E.3.n. This unit is listed in Appendix A in the Operating Permit.

Storage Tanks - BFI identified storage tanks that qualify as insignificant activities under Regulation No. 3, Part C, Section II.E.3.zz, aaa, and fff. These units are listed in Appendix A in the Operating Permit.

Fuel Storage and Dispensing Equipment - BFI identified a fuel dispenser that qualify as insignificant activities under Regulation No. 3, Part C, Section II.E.3.ccc. This unit is listed in Appendix A in the Operating Permit.

Fuel Burning Equipment Used for Heating - BFI identified heaters that qualify as insignificant activities under Regulation No. 3, Part C, Section II.E.3.ggg. These units are listed in Appendix A in the Operating Permit.

Stationary Internal Combustion Engine - BFI identified an engine that qualifies as insignificant activities under Regulation No. 3, Part C, Section II.E.3.nnn. This unit is listed in Appendix A in the Operating Permit.

Air Pollution Emission Units with Emissions Below APEN De Minimis Level - BFI identified emission units that qualify as insignificant activities under Regulation No. 3, Part C, Section II.E.3.a. These units are listed in Appendix A in the Operating Permit.

V. Alternative Operating Scenarios

There were no alternative operating scenarios requested.

VI. Permit Shield

No specific regulations were cited by BFI as non-applicable to this source.

VII. Short Term Limits Removed from Operating Permit

- lb per month VOC limitation
- lb per month CO limitation
- lb per month NOx limitation
- lb per month PM limitation
- lb per month PM10 limitation
- lb per month SO2 limitation
- Ton per month Waste Acceptance Rate Limitation
- MMBTU per month Quantity of Landfill Gas Flared

VIII. Accidental Release Program - 112(r)

Section 112(r) of the Clean Air Act mandates a new federal focus on the prevention of chemical accidents. Sources subject to these provision must develop and implement risk management programs that include hazard assessment, a prevention program, and an emergency response program. They must prepare and implement a Risk Management Plan (RMP) as specified in

the Rule.

Section 68.215(e) of the Federal Clean Air Act requires the Division to address four issues in regards to operating permit sources subject to 112(r):

1. Verify source submitted and register an RMP by deadline

EPA is in the process of setting up a Website specifically for 112(r) plans. All 112(r) sources will electronically submit their plans to this "designated central location". The Division will require sources certify in their annual compliance certification that they are/are not subject to 112(r) and they have/have not submitted a Risk Management Plan (RMP) to the designated central location by June 20, 1999. In addition, the Division will check the 112(r) website to verify that a RMP was actually submitted to the website by the deadline. Failure to submit a RMP by the June deadline by sources subject to 112(r) will be considered a permit deviation for reporting purposes under Title V.

2. Verify that source owner/operator has submitted a source certification or in its absence has submitted a compliance schedule.

As mentioned above, the Division will require that sources certify in their annual compliance certification that they are/are not subject to 112(r) and they have/have not submitted a Risk Management Plan (RMP) to the designated central location by June 20,1999. If they are subject to 112(r) but did not submit an RMP on time, a compliance schedule under the provisions of Title V must be submitted to the Division by the source. Failure to submit a RMP or a compliance schedule by the June deadline by sources subject to 112(r) will be considered a permit deviation for reporting purposes under Title V.

3. For some or all sources use one or more mechanisms such as completeness check, source audits, record review, or facility inspections to ensure permitted sources are in compliance with the requirements of this part

The Division may choose to perform any or all of the activities listed under this subsection. Although there is no specific number of such actions required in the 112(r) rule, a June 3, 1997 draft 112(r) implementation guidance from EPA states that "Congress considered a requirement that 1.4 percent of the RMPs be audited annually, but dropped that provision."

The Division will, at a minimum, perform a "completeness check" on an unspecified number of Title V 112(r) sources. The website that EPA is in the process of developing to accept 112(r) RMP's will include software that will electronically conduct a completeness check on the RMP's. For the purposes of this operating permit, such check shall serve as the completeness check required under 68.215(e)(3). As noted in the Preamble to the final 112(r) rule (June 20, 1996 Federal Register, page 31691), "EPA agrees that the review for quality or adequacy of the RMP is best accomplished by the implementing agency..." In Colorado, the implementing agency is the U.S. EPA. If the

EPA website software indicates that a source did not submit a complete plan, it will be considered a permit deviation for reporting purposes under Title V and the Division may initiate an enforcement action for failure to meet the Title V permit condition (see below). Per the Preamble (page 31691), the Division may perform the completeness checks in a time frame consistent with the source's Title V certifications.

4. Initiate enforcement action as necessary

This refers to enforcement under Title V, not under Part 68 (112(r)). If a source fails to file a RMP or a compliance schedule by the June deadline or the EPA software indicates that the RMP is not complete, it will be considered a permit deviation for reporting purposes under Title V and the Division may initiate an enforcement action.