TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 03OPWE260

Waste Management of Colorado, Inc. – Buffalo Ridge Landfill
Weld County
Facility ID: 1230448

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1. 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 Colorado Title V Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA, during Public Comment, and for other interested parties. Information in this report is primarily from the application received on June 2, 2003, as well as discussions with the applicant. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

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.

2. Source Description

The Buffalo Ridge Landfill is classified as a municipal solid waste landfill, which falls under the Standard Industrial Classification 4953. This facility is located at 11655 WCR 59, Keenesburg, Weld County, Colorado. There are no affected states within 50 miles of this facility. The following Federal Class I designated areas are within 100 kilometers of the plant: Rocky Mountain National Park

The facility is located in an area designated as attainment for all criteria pollutants. Based on the information provided by the applicant, the facility is categorized as a minor stationary source for PSD applicability purposes (no single criteria pollutant emissions with a Potential-to-Emit greater than 250 TPY) as of the issue date of this permit. The source therefore is not subject to the PSD review requirements of 40 CFR 52.21 (Colorado Regulation No. 3, Part D, Section IV). Future modifications to this facility may result in an exceedance of the major source threshold. Once that threshold is exceeded, future modifications at this facility resulting in a significant net emissions increase for any pollutant as listed in Regulation No. 3, Part D, Section II.A.44 or a modification which is major by itself may result in the application of the PSD review requirements.

Facility-wide emissions are outlined below:

Pollutant	Potential-to-Emit (tons/yr)	2003 Actual Emissions (tons/yr)
PM_{10}	110.62	46.25
PM	463.72	192.81
CO	16.06	0.15
VOCs*	63.3	1.91
HAPs*	8 of any single HAP 20 of total HAPs	0.05

*PTE VOC and HAP emissions were estimated assuming the maximum landfill gas production near closure of the landfill in 2061. Controls will be required at that time per NSPS WWW, thus emissions were estimated assuming 75% collection and 98% control of collected landfill gas.

The potential-to-emit VOC emissions are calculated from EPA's Landfill Gas Emissions Model (LandGEM). This emission rate is based on the landfill's design capacity of 47,847,293 megagrams, and the landfill will not emit at this maximum rate until approximately 2061. The actual VOC emissions are based on AP-42 2.4 (which is the basis for LandGEM). Actual emissions were predicted by the model for the 2003 calendar year (As reported on the APEN dated 11/24/2004).

In the operating permit, compliance with the annual limits for the PM_{10} and PM emissions will be demonstrated by the implementation of the Fugitive Emissions Control Plan. The source will be required to certify semi-annually that the Fugitive Emissions Control Plan is being implemented. The source will also be required to calculate the VOC emissions annually, using EPA's Landfill Gas Model, or the AP-42 2.4 calculation method. These methods predict the landfill gas emissions only on an annual basis. Trying to use the model to estimate emissions on a monthly basis would not yield valuable results. This is the reason why an annual frequency for the VOC calculation is required instead of a monthly frequency. Any exceedances of the annual limits will result in the source being out of compliance with the terms and conditions of the operating permit. The source will provide compliance monitoring reports semi-annually and compliance certification reports annually.

The Buffalo Ridge Landfill began accepting waste in 2002. The Division received an amended design capacity report on November 29, 2004 to change the maximum capacity to 47,847,293 Mg due to design changes. The maximum amount of solid waste, 39,960,664 Mg (44,049,092 tons), is slightly less than the design capacity. This design of the landfill exceeds 2.5 million Mg, and it is subject to the requirements of the Standards of Performance for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart WWW, as adopted in Colorado Regulation No. 6, Part A). NSPS WWW requires landfills over 2.5 million Mg to obtain an operating permit. Waste Management expects to operate this landfill until 2061.

The source was issued a construction permit by the Division on August 24, 1994 (93WE113F). The landfill was properly permitted, but did not accept any waste until 2002. The source submitted an application for a construction permit modification on May 30, 2002. The modification was requested to make changes associated with the opening of the landfill. Initial Approval Construction Permit modification No. 1 93WE113 was issued on July 31, 2003. The Final Approval construction permit will not be issued for this facility. Instead, it has been incorporated into the operating permit in accordance with the procedures outlined in Colorado Regulation No. 3, Part C.

1. Emission Sources

The following emission sources are specifically regulated under the terms and conditions of the operating permit for this facility.

E001 - VOC Emissions from Landfill

a. Applicable Requirements – The requirements that are applicable to this emission point are the VOC emission limit, and the NSPS Subpart WWW regulations. The main requirement of Subpart WWW is the submittal of the annual non-methane organic compounds (NMOC) emission report. If the annual report shows that the NMOC emission rate is greater than 50 megagrams per year, the source may have to install a gas collection and control system.

MACT AAAA exists for municipal solid waste landfills. The MACT requirements are very similar to the NSPS requirements. The MACT additionally requires the development and implementation of a startup, shutdown, and malfunction plan and the submittal of reports on a more frequent basis. It should be noted that this landfill is not a major source of HAPs. The MACT applies to both major and area sources. Buffalo Ridge Landfill submitted an annual NMOC report in May 2004. The NMOC emission rate was 10.58 Mg/yr NMOC (as reported in the report dated May 27, 2004). MACT AAAA does not apply to landfills under 50 Mg/yr NMOC. I will not include the MACT AAAA conditions in the permit at this time.

b. Emission Factors* – The landfill gas emissions were estimated with EPA's Landfill Gas Model Version 2.0. This model is based on the emission calculations found in AP-42 2.4 Emission Calculations for Municipal Solid Waste Landfills. The values of the parameters used in this model were:

Lo = methane generation potential (cubic meters per megagrams solid waste). A value of 100 m^3/megagrams was used in the model. This value is acceptable when used to demonstrate compliance with the permit limit. However, the source must use a value of 170 m^3/megagrams for the annual NMOC emission report. This requirement is outlined in §60.754(a)(1).

K= methane generation rate constant (year $^{-1}$). The default value for this parameter is 0.05. However, the landfill is located in an area that receives less than 25 inches of rain per year, based on a thirty-year annual average. The regulation allows the source to use a value of 0.02 instead of 0.05.

C = concentration of NMOC (parts per million by volume as hexane). A value of 956.4 was used by the Division to estimate emissions for the Construction Permit 93WE113 and should be used in future emission calculations by the source. This value of 956.4 ppm is the average NMOC concentration for Colorado landfills as reported by the 12/99 issue of Landfill Gas Management.

The source could decide to conduct a Tier II test (per NSPS) to determine a site-specific NMOC concentration. The results of the test could be used in lieu of the 956.4 ppm value, upon approval from the Division.

Landfill capacity: the capacity of this landfill is 39,960,664 megagrams of degradable waste.

* Note that these values are acceptable for permit compliance calculations, but not the NSPS & MACT compliance calculations. The values specified in the NSPS & MACT must be used for NSPS & MACT calculations and reports.

The highest VOC emission rate that will ever occur at this landfill is 238.87 tons per year (as reported on the November 24, 2004 APEN). This emission rate will not take place until 2062. At this point, landfill gas collection and control will be required per NSPS WWW. The operating permit limit was set assuming 75% collection and 98% control of collected landfill gas. This results in a limit of 63.3 tons per year.

c. Monitoring and Compliance – The source will demonstrate compliance with the VOC emission limit with EPA's Landfill Gas Model, Version 2.0 or the most current version, or with the calculation methods detailed in AP-42 2.4. This model will be run on an annual basis. The NMOC result from the model will be multiplied by 0.39 (39%) to derive the VOC emissions. The model predicts the landfill gas emissions on an annual basis. Therefore, it is not necessary for the source to demonstrate compliance with the emission limit on a rolling 12-month basis. The source certified in the operating permit application that the landfill is currently in compliance with the applicable requirements.

E002 - Fugitive Particulate Matter Emissions

Fugitive particulate emissions will result from on-site vehicle traffic, landfill excavation, daily cover application, storage piles, and disturbed areas. Watering, vehicle speeds, and haul road graveling will be used to control emissions from these sources.

a. Applicable Requirements – The regulations that are applicable to the fugitive particulate matter emissions are found in Colorado Regulation No.1.III.D. Specifically, the source must have a fugitive dust control plan to minimize the emissions. The 20% opacity guideline, the off-property transport provision, and the nuisance provision are also applicable to this emission point.

This permit contains fugitive particulate matter emission limits. Compliance with the fugitive emissions control plan serves to demonstrate compliance with the emission limits.

This Operating Permit contains annual waste acceptance limits from the construction permit. These limits indirectly limit the fugitive dust and landfill gas emissions since the amount of incoming waste determines the amount of haul road traffic and the amount of landfilled waste will also determine how much landfill gas is generated.

b. Emission Factors – The permitted fugitive particulate matter emissions were calculated using various sections of AP-42.

c. Monitoring and Compliance – The source will demonstrate compliance with the particulate matter emission limits by implementing the Fugitive Emissions Control Plan that is outlined in the permit. In addition, the source will be required to perform a weekly check of the measures in the plan to ensure that the plan is being implemented and it is effective. The source certified in the operating permit application that the landfill is currently in compliance with the applicable requirements.

Modeling of the PM10 emissions was conducted during the review of this Title V operating permit application since requested emissions increased. Modeling was conducted using SCREEN3 and showed compliance with the NAAQS.

Buffalo Ridge Landfill requested 75% control efficiency for watering of the haul roads. This is the control efficiency used in the draft section of AP-42 13.2.2. The Division typically uses 25% control for watering of haul roads. The 75% control efficiency was allowed in the construction permit pending the submittal of a specific and adequate watering schedule. The submitted watering schedule was not very specific. A more specific watering schedule was incorporated into the operating permit and requires twice daily watering in the summer months, and once daily watering for the rest of the year. Watering can be less frequent based on conditions. These conditions must be noted in a log.

Emission Factors

From time to time published emission factors and/or other emission estimating methods are changed based on new or improved data. A logical concern is what happens if the use of the new factors/methods in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors, equations, and/or other emission estimating methods included in the permit are considered to be fixed until changed by the permit. Obviously, emission factors dependent of the fuel sulfur content or heat content of the fuel cannot be fixed and will vary with the test results. The method for determining the emissions is, however, fixed. It is the responsibility of the permittee to be aware of changes in the emission factors, etc. and to notify the Division in writing of impacts on the permit requirements when there is a change. Upon notification, the Division will work with the permittee to address the situation. In addition, the Division will review the factors, etc. as appropriate during permit modifications and renewals.

2. Final Approval for Initial Construction Permits

The Construction Permit has not yet been issued Final Approval. Since these sources will have been in operation for more than 180 days by the due date of the first semi-annual monitoring required by the operating permit, the Division will consider the Responsible Official certification submitted with that report to serve as the self certification for Final Approval for these sources.

3. Insignificant Activities

The following is a list of insignificant activities that was provided by the source to assist in the understanding of the facility layout:

- Chemical storage areas
- Chemical storage tanks
- Landscaping equipment
- 1000 gallon propane tank
- 500 gallon used oil tank
- Six 55 gallon drums of motor oil, lubricating oil, hydraulic oil
- 10,000 gallon diesel AST
- 560 gallon diesel AST
- 2000 gallon gasoline AST

- Safety Kleen degreasing unit

4. Alternative Operating Scenarios

There are no alternative operating scenarios for this facility.

5. Accidental Release - 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 provisions 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.

Based on the information provided by the applicant, this facility is not subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act).