TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 97OPWE181
to be issued to:

Waste Management Disposal Services of Colorado, Inc.
North Weld Sanitary Landfill
Weld County
Source ID 1230209

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February 23, 1998
Revised by Ashley Campsie
August 10, 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 and review of Division files. 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. 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.

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. Solid waste is received by the facility for final disposal by burial in a landfill. Emissions of methane, non-methane organic compounds (NMOC), and carbon monoxide gases result from the decomposition of solid waste placed in the landfill. Fugitive particulate emissions are emitted from landfill activities: material transfer to and from storage piles, disturbed areas, wind erosion of storage piles, waste dumping, and vehicle traffic on unpaved roads.

The source is located approximately nine miles east of I-25 on Route 14, where it intersects Weld County Road 25 near Ault. The area is designated as attainment for all criteria pollutants. There is one affected state within 50 miles of the facility: Wyoming. The facility is within 100 kilometers of the following Federal Class I designated areas: Rocky Mountain National Park and Rawah Wilderness Area. The pollutants of concern are Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Particulate Matter (PM), 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	13.59	0.5
VOC	64.31	4.7
PM	40.49	40.49
PM_{10}	15.43	15.43
HAPs	2.11	0.29

This source is considered to be a minor source (Potential to Emit < 250 tpy) for purposes of Prevention of Significant (PSD) regulations as defined in Colorado Regulation No. 3, Part A, Section I.B.58. This facility is not currently subject to any MACT standards but is subject to Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Colorado Regulation No. 6, Part A, Subpart Cc, 40 CFR § 60.30c through § 60.36c). However, a MACT for landfills is scheduled to be promulgated in November 2000. Waste Management indicated that the North Weld Sanitary Landfill is not a 112(r) source. The source certified to operating in compliance with all applicable requirements at the time of their application submittal on March 12, 1997.

Although the facility does not emit equal to or greater than 100 tpy for any one criteria pollutant, the facility is required to obtain a Title V Operating Permit per 40 CFR § 60.32c.

III. Emission Sources

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

Unit E01 - Landfill Gas Emissions

1. Applicable Requirements

This landfill began accepting waste in 1992. Emissions resulting from the decomposition of solid waste placed in the landfill are VOC (80% of NMOC) and CO. This unit is permitted under final approval Colorado Construction Permit 90WE107 issued March 17, 1999 with the following applicable requirements:

Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Emissions of air pollutants shall not exceed the following limitations:

Volatile Organic Compounds	64.13 tons per year
Carbon Monoxide	13.59 tons per year

APEN reporting in accordance with Regulation No. 3, Part A, Section II.C.

This source is subject to the odor requirements of Regulation No. 2.

This source is subject to New Source Performance Standard requirements of Regulation No. 6, Part A, Subpart Cc, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills.

In addition, requirements of Regulation No. 6, Part A, Subpart A, General Provisions, apply.

If the initial non-methane organic compound (NMOC) emission rate report of an existing landfill equals or exceeds 50 megagrams per year, the operator shall accomplish the planning, awarding of contracts, and installation of MSW landfill air emission collection and control equipment capable of meeting the emission guidelines within 30 months after the effective date of Colorado emission standards for MSW landfills. If the calculated NMOC emission rate is less than 50 megagrams per year on the effective date of the Colorado emission standard, installation of such collection and control system shall be accomplished within 30 months of the date when the emission rate cutoff is met (i.e., the date of the first annual NMOC emission rate report which equals or exceeds 50 megagrams per year). The facility has the option of

determining the site specific NMOC concentration and/or generation rate as set forth in 40 CFR 60.754(a)(3) and 60.754(a)(4). Current calculations are predicting NMOC concentrations to exceed the 50 Mg/year level around the year 2018 for this landfill.

Waste received shall not exceed 2761 tons per day and 286,000 tons per year. The short term limitation shall be removed per the policy stated above. The source requested to increase the acceptance rate to 450,000 tons per year to minimize the need for further modifications. This increase in acceptance rate does not increase the potential emissions listed below.

The emission limits for Colorado Construction Permit 90WE107F were chosen at maximum VOC and CO 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 the mass of refuse placed in the landfill for 1992 through 1998 and assuming that waste acceptance will occur at the annual limit from 1999 until landfill closure in the year 2027.

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 90WE107F and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors

The annual gaseous 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 for the model are described in the next paragraph.

Annual VOC and CO emissions rates for the years 1992 through 2027 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} = 595 ppmv), 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 cumulative mass of refuse in the landfill for future years was 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 2027.

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. However, it should be noted that these same parameters are used to determine compliance with NSPS Subpart Cc requirements and the source must use the acceptable values and calculation methods described in 40 CFR § 60.754.

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 monitor compliance with the annual limitation.

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.

The source shall employ such measures and operating procedures as are necessary to minimize odor emissions.

4. Compliance Status

A current APEN reporting 1996 emissions for the landfill 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 applicable requirements. Therefore, this unit is currently considered to be in compliance with all applicable requirements.

Unit E02 - Fugitive Particulate Emissions

1. Applicable Requirements

The sources of fugitive particulate emissions were first placed into service in 1992. 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 final approval Colorado Construction Permit 90WE107 with the following applicable requirements:

Emissions of air pollutants shall not exceed the following limitations:

Particulate Matter	40.49 tons per year
PM10	15.43 tons per year

The particulate emission control measures listed on the Division approved plan shall be applied to the particulate emission producing sources as required by Regulation No. 1, Section III.D.1.b.

APEN reporting in accordance with Regulation No. 3, Part A, Section II.C.

The Particulate Emissions Control Plan contains control measures that shall be used for enforcement purposes on the particulate emission producing sources, as required by Colorado Regulation No. 1 (Colorado Construction Permit 90WE107). The control measures are listed

in Condition 2.1 of the Operating Permit.

2. Emission Factors

Fugitive PM and PM_{10} emissions are subject to APEN reporting requirements but are not subject to annual fees. 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.

Material Transfer to and from Soil Storage Piles
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

Wind Erosion from Storage Piles
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
18 yd^3 scraper	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 particulate emission producing sources are subject to the control measures of the Particulate Emissions Control Plan. The source shall certify semi-annually that all appropriate measures have been taken to minimize fugitive emissions.

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.

IV. Insignificant Activities

Storage Tanks

Waste Management identified storage tanks that qualify as insignificant activities under

Regulation No. 3, Part C, Section II.E.3. aaa and fff.

Stationary Internal Combustion Engine

Waste Management identified an engine that qualifies as an insignificant activity under Regulation No. 3, Part C, Section II.E.3.nnn.

Air Pollution Emission Units with Emissions Below APEN De Minimis Level

Waste Management identified emission units that qualify as insignificant activities under Regulation No. 3, Part C, Section II.E.3.a.

V. Alternative Operating Scenarios

There were no alternative operating scenarios requested.

VI. Permit Shield

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