# TECHNICAL REVIEW DOCUMENT
# for
# OPERATING PERMIT 99OPJE221

to be issued to:

BFI Waste Systems of North America, Inc.
Jeffco/Foothills Landfill
Jefferson County
Source ID 0590113

Prepared by Cathy Rhodes
June, 2000

## I. PURPOSE:

This document establishes 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. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Conclusions in this document are based on information provided in the original application submittal of December 28, 1999, and supplemental Title V technical information.

Any revisions made to the underlying construction permits associated with this facility 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 facility disposes of municipal solid waste. The facility is located at the intersection of State Highway 93 and Leyden Road, in Golden. There are no affected states within 50 miles of the facility. Rocky Mountain National Park, Rawah Wilderness Area, and Eagle=s Nest Wilderness Area are Federal Class I designated areas within 100 kilometers of the plant.

Landfill construction and operation activities addressed in this operating permit include vehicle traffic on paved or unpaved roads, handling of soil cover material, and use of a landfill gas migration control system.

The Title V application reports the facility is not subject to the Accidental Release Plan provisions of 112(r)(7) of the Clean Air Act.

Facility wide emissions are as follows (tons/year):

| Pollutant | Actual | Potential |
|---|---|---|
| Particulate Matter | 68 | 586 |
| $PM_{10}$ | 29 | 259 |
| Nitrogen Oxides ($NO_x$) | 12 | 12 |
| Sulfur Dioxide ($SO_2$) | 2 | 2 |
| Volatile Organic Compounds (VOC) | 30 | 30 |
| Carbon Monoxide | 68 | 68 |

Potential emissions are based on permitted emission levels for the flare and uncontrolled fugitive particulate matter emissions, as calculated in the preliminary analysis for the Construction Permit. Actual emissions are based on permitted emissions for the flare and controlled fugitive particulate matter emissions, as estimated in the preliminary analysis for the Construction Permit.

This facility does not emit major amounts of Hazardous Air Pollutants (HAPs), according to the application.

**Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review**

This plant is located in an area designated as non-attainment for carbon monoxide and particulate matter smaller than ten (10) microns. Although the Denver metropolitan area was previously designated nonattainment for ozone, this designation was removed in 1998. Nevertheless, all SIP-approved requirements continue to apply in order to prevent backsliding under the provisions of Section 183(e) of the Federal Clean Air Act. A July, 2000 Federal Register indicated that the non-attainment status may be reinstated in 2001. In addition, Denver recently violated the new 8 hour ozone standard, and it is the Division=s understanding that the EPA will issue a non-attainment status Federal Register notice for the Metro area even though the standard itself is under judicial review as of the issuance date of this permit. The plant is categorized as a minor stationary source for PSD and Nonattainment New Source Review purposes. (Fugitive particulate matter emissions are not included when determining major source status for landfills.)

## III. EMISSION SOURCES:

## SUMMARY DESCRIPTION OF PROCESS

The following sources are specifically regulated under terms and conditions of the Operating Permit.

### S001 - Landfill Gas Flare

The anaerobic decomposition of organic wastes in landfills results in the generation of a biogas commonly referred to as LFG. A landfill with soil cover emits LFG as the LFG permeates vertically through the cover soils and escapes into the atmosphere. The Jeffco/Foothills Landfill has a landfill gas migration control system (GMCS). The LFG generated within the landfill is collected and conveyed via pipeline to the LFG flare facility.

NMOC emissions are greater than 50 Mg/year, therefore the permittee is required to install and operate a landfill gas collection and control system. The permittee has submitted the required design plan, and the Division has approved it. The design plan is included as an appendix of the permit. The control system consists of a flare.

### S002 - Landfill Fugitive Particulate Emissions

Particulate emissions result from landfill traffic, landfill construction, and landfill operations, including vehicles traveling on unpaved landfill access roads. Watering of unpaved roads reduces particulate emissions.

Final Approval Construction Permit 96JE780 was issued for the landfill gas collection and flaring system. Applicable requirements are as follows.

Construction Permit 96JE780

- Subject to the odor requirements of Colorado Regulation No. 2
- Limits amount of LFG combusted
- Limits emissions of PM, $PM_{10}$, sulfur dioxide, nitrogen oxides, volatile organic compounds and carbon monoxide on an annual basis
- Limits opacity to 20%, except during certain operating conditions, when opacity shall not exceed 30% (Colorado Regulation No. 1, II.A.2 and 4)*(Note: These opacity limits are not included in the operating permit, but are replaced by the opacity limit for flares, as set forth below.)*

Colorado Regulation No. 1

- Limits opacity to 30% - Section II.A. 5

NSPS Emission Guidelines for Existing Municipal Solid Waste Landfills (40 CFR Part 60, Subpart Cc, as adopted by reference in Colorado Regulation No. 6, Part A)

Final Approval Construction Permit 86JE554F was issued for operation of the solid waste landfill. Applicable requirements are as follows.

Construction Permit 13AD198

- Sets forth fugitive particulate emission control measures
- Limits the maximum annual refuse landfill volume and daily vehicle volume (See short term limit policy, Section V, below)
- Requires compliance with odor requirements of Regulation No. 2
- Indicates type of waste permitted

**Emission Factors-** Fugitive PM emissions are estimated using AP-42 factors and equations, along with appropriate control measure efficiencies. Waste receipt information is used to determine landfill gas emissions, including CO, VOC, NMOC, and hazardous air pollutant emissions. The waste volume data is entered into the EPA=s Landfill Gas Estimation Model. Combustion emissions from the flare are estimated using AP-42 emission factors.

**Monitoring Plan-** The permittee will perform a weekly inspection to ensure the fugitive particulate matter minimization methods are in place and effective. The Emission Guidelines set forth specific monitoring methods for collection and control of landfill gas emissions. A flow meter measures LFG combusted in the flare. Records of monthly waste acceptance rate and type are maintained. Annual Method 22 observations will be performed to monitor compliance with the opacity limit for the flare, as well as weekly observations.

**Compliance Status-** The Division believes these sources were in compliance with applicable requirements as of the date of application submittal.

## IV. Emission Factors

From time to time published emission factors are changed based on new or improved data. A logical concern is what happens if the use of the new emission factor in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors or emission factor equations included in the permit are considered to be fixed until changed by the permit. Factors dependent on the fuel sulfur content or heat content can not be fixed and will vary with the test results. The formula for determining the emission factors is, however, fixed. It is the responsibility of the permittee to be aware of changes in the factors, and to notify the Division in writing of

impacts on the permit requirements when there is a change in factors. Upon notification, the Division will work with the permittee to address the situation.

## V. Short Term Limits

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 twelve (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 the hours of operation.

The Construction Permit for particulate emissions from landfill operation includes a daily vehicle volume limit. This short term limit is retained in the Operating Permit. A review of the Construction Permit analyses indicates that this limit is deemed necessary to protect the 24 hour PM ambient standard.