TECHNICAL REVIEW DOCUMENT
For
OPERATING PERMIT 08OPPB325

Waste Connections – Southside Landfill
Pueblo County
Source ID 1010106

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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 the Southside Landfill. It is designed for reference during review of the proposed permit by the EPA, the Public and other interested parties.

Conclusions made in this report are based on information provided by the applicant in the Title V permit application submitted on August 19, 2008, additional information submitted on August 27, 2009 and April 22, 2011, and review of Division files. 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.

II. Description of Source

The Southside Landfill is a municipal solid waste landfill and falls under the Standard Industrial Classification 4953. Decomposing waste encapsulated within the landfill produces a gas by-product that is primarily composed of methane and carbon dioxide. Landfill gas (LFG) is emitted primarily through two sources. LFG can be emitted as fugitive gas through cover soils or through a LFG collection and control system (GCCS). The GCCS is installed to control LFG migration to comply with NSPS Subpart WWW. Collected LFG is sent to a flare for destruction. During its operation the flare generates various combustion by-products that are emitted into the atmosphere. Fugitive particulate emissions are generated from construction and operation of the landfill, which includes vehicle traffic on paved or unpaved roads and the handling of soil cover material. There is also a gasoline storage tank on site.

The landfill began accepting municipal solid waste in 1962 and has a design capacity of now 5,811,201 megagrams (Mg). The facility has an estimated closure date of 2020.

The facility is located south of Pueblo in Pueblo County. There are no affected states within 50 miles of this facility. The Great Sand Dunes National Park is a Federal Class I designated area within 100 kilometers of the facility.

Based on the information provided by the applicant, this source is categorized as a minor stationary source for PSD as of the issue date of this permit. Any future modification which is major by itself (Potential to Emit of > 250 TPY) for any pollutant listed in Regulation No. 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements.

Gas emissions are calculated using EPA's LandGEM. The potential to emit was calculated using an NMOC concentration value of 600 ppmv as hexane, methane generation capacity of 100 m^3/Mg and a methane generation rate of 0.02/yr for arid areas. The particulate matter potential emissions were calculated using equations and methodology from AP-42. Potential emissions (in tons/yr) at the facility as reported in the permit application are as follows:

Pollutant	PTE (tons/yr)
PM	34.6
PM_{10}	14.5
VOC	16.9
NO_X	5.8
CO	31.6

Note that the facility is not major for Title V purposes based on its level of emissions. The facility is subject to NSPS Subpart WWW which requires all municipal solid waste landfills with a design capacity greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters to obtain an operating permit.

<u>Greenhouse Gases</u>

The potential to emit greenhouse gases at this facility is less than 100,000 TPY CO_2e. Future modifications at this facility that exceed 100,000 TPY CO_2e may be subject to regulation. On July 20, 2011, a final rule regarding biogenic CO_2 emission was published in the Federal Register. This final action defers, for a period of three years, the application of the Prevention of Significant Deterioration (PSD) and Title V permitting requirements to carbon dioxide (CO_2) emissions from bioenergy and other biogenic stationary sources (biogenic CO_2). As it relates to this facility, biogenic CO_2 includes all CO_2 generated from the biological decomposition of waste in landfills and CO_2 emissions from the combustion of biogas collected from the biological decomposition of waste in landfills. Note that the emission of biogenic methane is still a contributing factor in calculating greenhouse gas emissions from the facility.

NSPS Subpart WWW

This facility is subject to the provisions of 40 CFR Part 60 Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. The design capacity of the landfill is 5,811,201 Mg and is subject to the NSPS requirement to obtain a Title V permit. Based on the NSPS prescribed Tier 1 calculations, the facility exceeded the 50 Mg per year threshold in 2001. With this exceedance, the facility has the option to install a gas collection and control system or conduct Tier 2 sampling within 180 days. The facility failed to submit a Tier 2 sampling report and associated emission calculations in a timely manner and was therefore required to install a landfill gas collection and control system (GCCS). The GCCS plan submitted in accordance with NSPS Subpart WWW was approved by the Division on December 27, 2010. The GCCS uses an open flare for emissions control, and Construction Permit 90PB487 IA Modification #2 was issued on January 25, 2011 to incorporate the GCCS and flare. The GCCS became operational by February 6, 2011 as required by the construction permit and compliance on consent agreement.

NESHAP Subpart AAAA

40 CFR Part 63 Subpart AAAA is applicable to landfills generating NMOC emission greater than 50 Mg/yr. Southside conducted Tier 2 sampling in August 2008 and found an NMOC concentration of 224.5 ppmv. Using this C_{NMOC} value, the facility calculated NMOC emissions of 6.5 Mg in 2008. The Tier 2 testing must be repeated every five years to demonstrate the facility remains below the MACT applicability threshold.

NESHAP Subpart CCCCCC

There is one gasoline storage tank identified as insignificant activity in the application under the provisions in Colorado Regulation No. 3, Part C, Sections II.E.3.fff. However, under the “catch-all” provisions in Regulation No. 3, Part C, Section II.E, sources that are subject to any federal or state applicable requirement, such as National Emission Standards for Hazardous Air Pollutants (NESHAPs), may not be considered insignificant activities for operating permit purposes. EPA promulgated National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities which apply to this tank; therefore, it can no longer be considered insignificant activity in the operating permit. Although the unit cannot be considered insignificant activity, since the Division has not yet adopted the rule, the tank is still exempt from APEN reporting and minor source construction permit requirements. The applicable requirements were included in the permit.

Compliance Assurance Monitoring

There are no emission points at this facility that use a control device to achieve compliance with an emission limitation or standard to which they are subject and have pre-control emissions that exceed or are equivalent to the major source threshold. Therefore no emissions units at this facility are subject to the provisions of the CAM program as set forth in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV.

III. Emission Sources

Initial approval of modification - 2 of construction permit 90PB487 was issued for the facility on January 25, 2011. According to the Division's database, self-certifications for these units were received on August 8, 2011. Therefore, under the provisions of Colorado Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect.

Landfill Gas and Fugitive Emissions

Applicable Requirements: The appropriate applicable requirements from the initial approval construction permit 90PB487 have been incorporated into the permit as follows.

- 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 (Condition 1).

  Visible emissions are not a result of VOC sources. This requirement is not applicable to fugitive particulate emissions per Regulation No. 1, Section II.A.6.c. Therefore the opacity requirement was not included for this emission point.

- The permit number shall be marked on the equipment (Condition 2). This is a construction permit only requirement and was not included in the operating permit.

- Emissions of air pollutant shall not exceed the following limitations (Condition 3):

  - Fugitive PM 34.6 tons/yr
  - Fugitive PM10 13.0 tons/yr
  - VOC 16.9 tons/yr

  Condition 3.1 specifies calculation methodology for uncollected landfill gas. Condition 3.2 requires VOC emissions to be calculated on an annual basis.

  The emissions limits were included in the operating permit. The parameters to be used for LandGEM calculations were set in operating permit Condition 1.1. The VOC emissions are 39% of the total NMOC emissions and the GCCS is assumed to have a capture efficiency of 75%. The permit language combines the 39% of NMOC emissions and 25% of VOC emission so that fugitive VOC emissions are 9.75% of the total NMOC emissions.

  The Division is currently developing methodology for calculating emissions from petroleum contaminated soils (PCS) in landfills. The source shall incorporate these calculations when the guidance becomes final. For sources that accept a small amount of PCS, the Division believes that LandGEM adequately estimates emissions. A separate APEN need not be filed for the acceptance of PCS waste.

- APEN reporting requirements (Condition 4). The APEN reporting requirements were not identified in the permit as a specific condition but are included in Section IV (General Conditions) of the permit under Condition 22.e.

- Odor requirements (Condition 5). The odor requirements of Regulation No. 2 are listed in the General Condition of the permit and were not included as a specific condition.

- The source must self certify compliance within 180 days of commencement of operation (Condition 6). A self certification was received by the Division on August 8, 2011. This condition was not included in the operating permit.

- The source is subject to the requirements in NSPS Subpart WWW (Condition 7). The appropriate requirements from Subpart WWW have been included in the operating permit. One-time requirements that have already been fulfilled were not included in the permit.

- The source is subject to the requirements of NSPS Subpart A, General Provisions (Condition 8). The applicable requirements from Subpart A have been included in the operating permit.

- Particulate emissions control plan measures shall be applied to the particulate emission producing sources (Condition 9). The particulate control plan was included in the operating permit.

- Condition 10 explains that prior to any increase in annual waste acceptance limits, the applicant must submit an APEN and revised particulate control plan, which will be subject to Division review and approval. It also specifies that the Division assumes annual particulate emissions limits are being met if the approved control plan is followed and the waste acceptance limit is not exceeded.

  The APEN requirements are included in Section IV (General Conditions) and therefore were not identified as a specific condition in regards to waste acceptance. Should the source request an increase in waste acceptance limits, the Division will revisit the control plan accordingly. Language regarding the presumed compliance with particulate emissions limits was included in the operating permit under the particulate matter annual limitation requirement in Condition 1.1.

- Waste acceptance limits (Condition 11).

  - Waste received shall not exceed 484,014 tons per year.

  - Total waste received from the years 2009 – 2019 shall not exceed 3,931,339 tons.

  - Records of monthly waste acceptance, annual waste acceptance (rolling 12 month total) and a waste acceptance running total for the years 2009 to 2019 shall be kept and made available to the Division upon request.

The waste acceptance requirements were included the operating permit.

Emission Factors: VOC emissions are to be calculated using LandGEM. For purposes of calculating monthly emissions the facility will use a set group of parameters, the recorded waste acceptance, and the NMOC concentration as observed during the most recent Tier 2 test. Particulate matter emissions were calculated using AP-42 methodology.

Monitoring Plan: In order to monitor compliance with the annual emission and waste acceptance limits, the source is required to monitor waste acceptance and calculate emissions on a monthly basis.

Compliance Status: In their Title V permit application, the source indicated that this emissions unit was in compliance with all applicable requirements

Flare

Applicable Requirements: The appropriate applicable requirements from the initial approval construction permit 90PB487 have been incorporated into the permit as follows.

- 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 (Condition 1).

  40 CFR §60.18 includes requirements for control equipment that is used to comply with Parts 60 and 61. Since the flare is used to comply with NSPS WWW's requirement for a gas collection and control system, the flare is subject to the requirements listed in §60.18. This requires the flare to have no visible emissions. Reg 1 has exclusions for flares that combust waste gas. This exclusion specifies that visible emissions must not exceed 30% opacity. This state requirement has been streamlined.

- Emissions of air pollutant from the flare shall not exceed the following limitations (Condition 3)

o NO_X	5.8 tons/yr	and	0.493 tons/mo
o CO	31.6 tons/yr	and	2.684 tons/mo
o PM_{10}	1.5 tons/yr	and	0.127 tons/mo
o SO_2	1.3 tons/yr	and	0.110 tons/mo
o VOC	0.2 tons/yr	and	0.017 tons/mo

  The monthly limits apply for the first twelve months of operation of the flare. Since the flare has been operating for more than twelve months the monthly limitations have not been included in the operating permit. The annual emissions limitations have been included in the permit, with the exception of permitted limits that are below the reporting level.

- Flare emissions shall be calculated using the following equation (Condition 3.3)

Emission (tpy) = (landfill gas (MMscf)) * 50% methane * Emission Factor / 2000

Emission factors for each pollutant are set at the following values (in lbs/MMscf of methane):

- PM10 17
- SOX 15.34
- NOX 68
- VOC 2.34
- CO 370
- HCl 7.83

Condition 3.3 also requires the source to monitor and record actual gas flow to the flare.

These requirements were included in the operating permit.

- APEN reporting requirements (Condition 4). The APEN reporting requirements were not identified in the permit as a specific condition but are included in Section IV (General Conditions) of the permit under Condition 22.e.

- Odor requirements (Condition 5). The odor requirements of Regulation No. 2 are listed in the General Condition of the permit and were not included as a specific condition.

- The source must self certify compliance within 180 days of commencement of operation (Condition 6). A self certification was received by the Division on August 8, 2011. This condition was not included in the operating permit.

- The source is subject to the requirements in NSPS Subpart WWW (Condition 7). The flare requirements from Subpart WWW have been included in the operating permit. The NSPS also requires the flare to meet the requirements in §60.18. These requirements have also been added to the operating permit.

- The source is subject to the requirements of NSPS Subpart A, General Provisions (Condition 8). The applicable requirements from Subpart A have been included in the operating permit.

- The manufacturer, model number, and serial number of the subject equipment shall be provided to the Division within 180 days after commencement of operation (Condition 12). This information was submitted to the Division with the Notice of Startup on February 18, 2011, therefore this requirement was not included in the operating permit.

Emission Factors: The emission factors for the flare were given in the construction permit, derived from AP-42.

Monitoring Plan: The facility will monitor flow to the flare and calculate throughput and emissions on a monthly basis. The facility will also continuously monitor the presence of a pilot flame in the flare.

Compliance Status: In their Title V permit application, the source indicated that the flare was in compliance with all applicable requirements

Gasoline Storage Tank, 500 gallon capacity

Applicable Requirements: This emission unit is exempt from the APEN reporting requirements in Regulation No. 3, Part A and the construction permit requirements in Regulation No. 3, Part B. Tank is subject to NESHAP Subpart CCCCCC, which has not yet been adopted by the state. These federal-only requirements were included in the permit.

The tank is also subject to the opacity requirements in Reg 1, however since the only emissions from the tank will be VOC and the Division typically does not include opacity regulations for VOC sources, the opacity requirements were not included.

Gasoline handling associated with emission unit is subject to the statewide requirements of Reg. 7, which are included in the general permit conditions in Section IV.29 of the permit.

Monitoring Plan: Per NESHAP Subpart CCCCCC, the source must verify monthly gasoline throughput upon request.

IV. Insignificant Activities

The source identified in the Title V permit application that the following general categories of insignificant activities:

- Landscaping and site housekeeping devices equal to or less than 10 H.P. in size (lawnmowers, trimmers, snow blowers, etc.)
- Fuel storage and dispensing equipment in ozone attainment areas operated solely for company-owned vehicles where the daily fuel throughput is no more than 400 gallons per day, averaged over a 30 day period.
- Individual piece of fuel burning equipment which uses gaseous fuel, and which has a design rate less than or equal to 10 million Btu per hour, and which is used solely for heating buildings for personal comfort.
- Air pollution emissions units, operation, or activities with emissions less than the appropriate de minimis reporting level

The list of specific insignificant activities that was provided in the permit application was included in Appendix A of the operating permit, with the exception of the 500 gallon gasoline tank that is permitted under specific permit Condition 3.

V. Permit Shield

No specific non-applicable conditions were identified in the permit.

There were no streamlined conditions other than the Reg 1 opacity requirement for the flare as previously mentioned.