

3745-76-03

~~Control requirements for municipal solid waste landfills~~
Emission guidelines for municipal solid waste landfill emissions.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (C) of rule 3745-76-01 of the Administrative Code titled, "referenced materials."]

(A) MSW landfill emissions shall be controlled at each MSW landfill meeting the following ~~three~~ conditions:

(1) The landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition~~;~~.

(2) The landfill has a design capacity greater than or equal to 2.5 million megagrams or 2.5 million cubic meters. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report~~; and~~.

(3) ~~The landfill has a nonmethane organic compound emission rate of fifty megagrams per year or more.~~The landfill commenced construction, reconstruction, or modification on or before July 17, 2014.

(4) The landfill has an NMOC emission rate greater than or equal to thirty-four megagrams per year or Tier 4 surface emissions monitoring shows a surface emission concentration of five hundred parts per million of methane or greater.

(5) The landfill in the closed subcategory has an NMOC emission rate greater than or equal to fifty megagrams per year or Tier 4 surface emissions monitoring shows a surface emissions concentration five hundred parts per million methane or greater.

(B) Each MSW landfill meeting the conditions in paragraph (A) of this rule shall install a collection and control system meeting the conditions provided in paragraph ~~(B)(2)(b)(C)~~ (C) through (F) of rule 3745-76-07 of the Administrative Code.~~this rule.~~

(C) Collection system. Install and start-up a collection and control system that captures the gas generated within the landfill within thirty months after one of the following:

(1) The first annual report in which the NMOC emission rate equals or exceeds thirty-four megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the NMOC emission rate is less than thirty-four megagrams

per year, as specified in paragraph (D)(4) of rule 3745-76-12 of the Administrative Code.

(2) The first annual NMOC emission rate report for a landfill in the closed landfill subcategory in which the NMOC emission rate equals or exceeds fifty megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the NMOC emission rate is less than fifty megagrams per year, as specified in paragraph (D)(4) of rule 3745-76-12 of the Administrative Code.

(3) The most recent NMOC emission rate report in which the NMOC emission rate equals or exceeds thirty-four megagrams per year based on Tier 2, if the Tier 4 surface emission monitoring shows a surface methane emission concentration of five hundred parts per million methane or greater as specified in paragraph (D)(4)(c) of rule 3745-76-12 of the Administrative Code.

(D) Active. An active collection system shall conform to the following:

(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control system equipment.

(2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of five years or more if active; or two years or more if closed or at final grade.

(3) Collect gas at a sufficient extraction rate.

(4) Be designed to minimize off-site migration of subsurface gas.

(E) Passive. A passive collection system shall conform to the following:

(1) Comply with the provisions specified in paragraphs (D)(1), (D)(2), and (D)(4) of this rule.

(2) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under 40 CFR part 258.40.

~~(C)~~(F) Control System: Collected MSW landfill emissions shall be controlled through the use of control devices meeting the following requirements of paragraph ~~(C)(1)~~, ~~(C)(2)~~, ~~or (C)(3)~~(F)(1), (F)(2), (F)(3), or (F)(4) of this rule.

(1) ~~An open~~A non-enclosed flare designed and operated in accordance with the parameters established in rule 3745-76-15 of the Administrative Code except as noted in paragraph (D) of rule ~~3745-76-15~~3745-76-11 of the

Administrative Code; ~~of~~.

- (2) A control system designed and operated to reduce NMOC by ninety-eight weight per cent; or when an enclosed combustion device is used for control, to either reduce NMOC by ninety-eight weight per cent or reduce the outlet NMOC concentration to less than twenty parts per million by volume, dry basis as hexane at three per cent oxygen, or less. The reduction efficiency or concentration in parts per million by volume shall be established by an initial performance test to be completed no later than one hundred eighty days after the initial start-up of the approved control system using the test methods specified in paragraph (D) of rule 3745-76-09 of the Administrative Code. The performance test is not required for boilers and process heaters with design heat input capacities equal to or greater than forty-four megawatts that burn landfill gas for compliance with this chapter.
- (a) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.
- (b) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in rule 3745-76-11 of the Administrative Code.
- (c) For the closed landfill subcategory, the initial or most recent performance test conducted to comply with 40 CFR part 60, Subpart WWW; 40 CFR part 62, Subpart GGG; or a state plan implementing 40 CFR part 60, Subpart Cc on or before July 17, 2014 is sufficient for compliance with this chapter.
- (3) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or beneficial use such as fuel for combustion, production of vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process. Venting of treated landfill gas to the ambient air is not allowed. If the treated landfill gas cannot be routed for subsequent sale or beneficial use, then the treated landfill gas shall be controlled according to either paragraph (F)(1) or (F)(2) of this rule.
- (4) All emissions from any atmospheric vent from the gas treatment system are subject to the requirements of paragraphs (C) through (F), as applicable, of this rule. For purposes of this chapter, atmospheric vents located on the condensate storage tank are not part of the treatment system and are exempt from the requirements of paragraphs (C) through (F) of this rule.
- ~~(3) An enclosed combustor designed and operated to reduce the outlet NMOC concentration to twenty parts per million as hexane by volume, dry basis at three per cent oxygen, or less.~~

(G) Design capacity. Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the director as provided in paragraph (A) of rule 3745-76-12 of the Administrative Code. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report fulfills the requirements of this chapter, except as provided in the following:

(1) The owner or operator shall submit an amended design capacity report as provided in paragraph (B) of rule 3745-76-12 of the Administrative Code.

[Comment: Note that if the design capacity increase is the result of a modification, as defined in rule 3745-76-01 of the Administrative Code, that was commenced after July 17, 2014, then the landfill becomes subject to 40 CFR part 60, Subpart XXX instead of this chapter. If the design capacity increase is the result of a change in operating practices, density, or some other change that is not a modification as defined in rule 3745-76-01 of the Administrative Code, then the landfill remains subject to this chapter.]

(2) When an increase in the maximum design capacity of a landfill with an initial design capacity less than 2.5 million megagrams or 2.5 million cubic meters results in a revised maximum design capacity equal to or greater than 2.5 million megagrams or 2.5 million cubic meters, the owner or operator shall comply with paragraph (H) of this rule.

(H) Emissions. Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams or 2.5 million cubic meters shall either install a collection and control system as provided in paragraphs (C) through (F) of this rule or calculate an initial NMOC emission rate for the landfill using the procedures specified in paragraph (A) of rule 3745-76-09 of the Administrative Code. The NMOC emission rate shall be recalculated annually, except as provided in paragraph (C)(3) of rule 3745-76-12 of the Administrative Code.

(1) If the calculated NMOC emission rate is less than thirty-four megagrams per year, the owner or operator shall do the following:

(a) Submit an annual NMOC emission rate report according to paragraph (C) of rule 3745-76-12 of the Administrative Code, except as provided in paragraph (C)(3) of rule 3745-76-12 of the Administrative Code.

(b) Recalculate the NMOC emission rate annually using the procedures specified in paragraph (A) of rule 3745-76-09 of the Administration Code until such time as the calculated NMOC emission rate is equal to or greater than thirty-four megagrams per year, or the landfill is closed.

(i) If the calculated NMOC emission rate, upon initial calculation or annual recalculation required in paragraph (H)(1)(ii) of this rule, is equal to or greater than thirty-four megagrams per year, the owner or operator shall do one of the following:

(a) Comply with paragraphs (C) through (F) of this rule;

(b) Calculate NMOC emissions using the next higher tier in rule 3745-76-09 of the Administrative Code; or

(c) Conduct a surface emission monitoring demonstration using the procedures specified in paragraph (A)(6) of rule 3745-76-09 of the Administrative Code.

(ii) If the landfill is permanently closed, a closure report shall be submitted to the director as provided in paragraph (F) of rule 3745-76-12 of the Administrative Code, except for exemption allowed under paragraph (E)(4) of rule 3745-76-02 of the Administrative Code.

(iii) For the closed landfill subcategory, if the most recently calculated NMOC emission rate is equal to or greater than fifty megagrams per year, the owner or operator shall do one of the following:

(a) Submit a gas collection and control system design plan as specified in paragraph (D) of rule 3745-76-12 of the Administrative Code, except for exemptions allowed under paragraph (E)(3) of rule 3745-76-02 of the Administrative Code, and install a collection and control system as provided in paragraphs (C) through (F) of this rule;

(b) Calculate NMOC emissions using the next higher tier in rule 3745-76-09 of the Administrative Code; or

(c) Conduct a surface emission monitoring demonstration using the procedures specified in paragraph (A)(6) of rule 3745-76-09 of the Administrative Code.

(2) If the calculated NMOC emission rate is equal to or greater than thirty-four megagrams per year using Tier 1, Tier 2, or Tier 3 procedures, the owner or operator shall do one of the following:

(a) Submit a collection and control system design plan prepared by a professional engineer to the director within one year as specified in paragraph (D) of rule 3745-76-12 of the Administrative Code, except for exemptions allowed under paragraph (E)(3) of rule 3745-76-02 of

the Administrative Code:

(b) Calculate NMOC emissions using a higher tier in rule 3745-76-09 of the Administrative Code; or conduct a surface emission monitoring demonstration using the procedures specified in paragraph (A)(6) of rule 3745-76-09 of the Administrative Code.

(3) For the closed landfill subcategory, if the calculated NMOC emission rate is equal to or greater than fifty megagrams per year using Tier 1, Tier 2, or Tier 3 procedures, the owner or operator shall do one of the following:

(a) Submit a collection and control system design plan as specified in paragraph (D) of rule 3745-76-12 of the Administrative Code, except for exemptions allowed under paragraph (E)(3) of rule 3745-76-02 of the Administrative Code;

(b) Calculate NMOC emissions using a higher tier in rule 3745-76-09 of the Administrative Code; or conduct a surface emission monitoring demonstration using the procedures specified in paragraph (A)(6) of rule 3745-76-09 of the Administrative Code.

(I) Removal criteria. The collection and control system may be capped, removed, or decommissioned if the following criteria are met:

(1) The landfill is a closed landfill (as defined in rule 3745-76-01 of the Administrative Code). A closure report shall be submitted to the director as provided in paragraph (F) of rule 3745-76-12 of the Administrative Code.

(2) The collection and control system has been in operation a minimum of fifteen years or the landfill owner or operator demonstrates that the gas collection and control system will be unable to operate for fifteen years due to declining gas flow.

(3) Following the procedures specified in paragraph (B) of rule 3745-76-09 of the Administrative Code, the calculated NMOC emission rate at the landfill is less than thirty-four megagrams per year on three successive test dates. The test dates shall be no less than ninety days apart, and no more than one hundred eighty days apart.

(4) For the closed landfill subcategory (as defined in rule 3745-76-01 of the Administrative Code), following the procedures specified in paragraph (B) of rule 3745-76-09 of the Administrative Code, the calculated NMOC emission rate at the landfill is less than fifty megagrams per year on three successive test dates. The test dates shall be no less than ninety days apart, and no more than one hundred eighty days apart.